

Columbia's Wastewater and Stormwater Integrated Management Plan

Phase 2 Vision and Update Approach

JULY 2024

<https://www.como.gov/utilities/sewer/sewer-imp/>

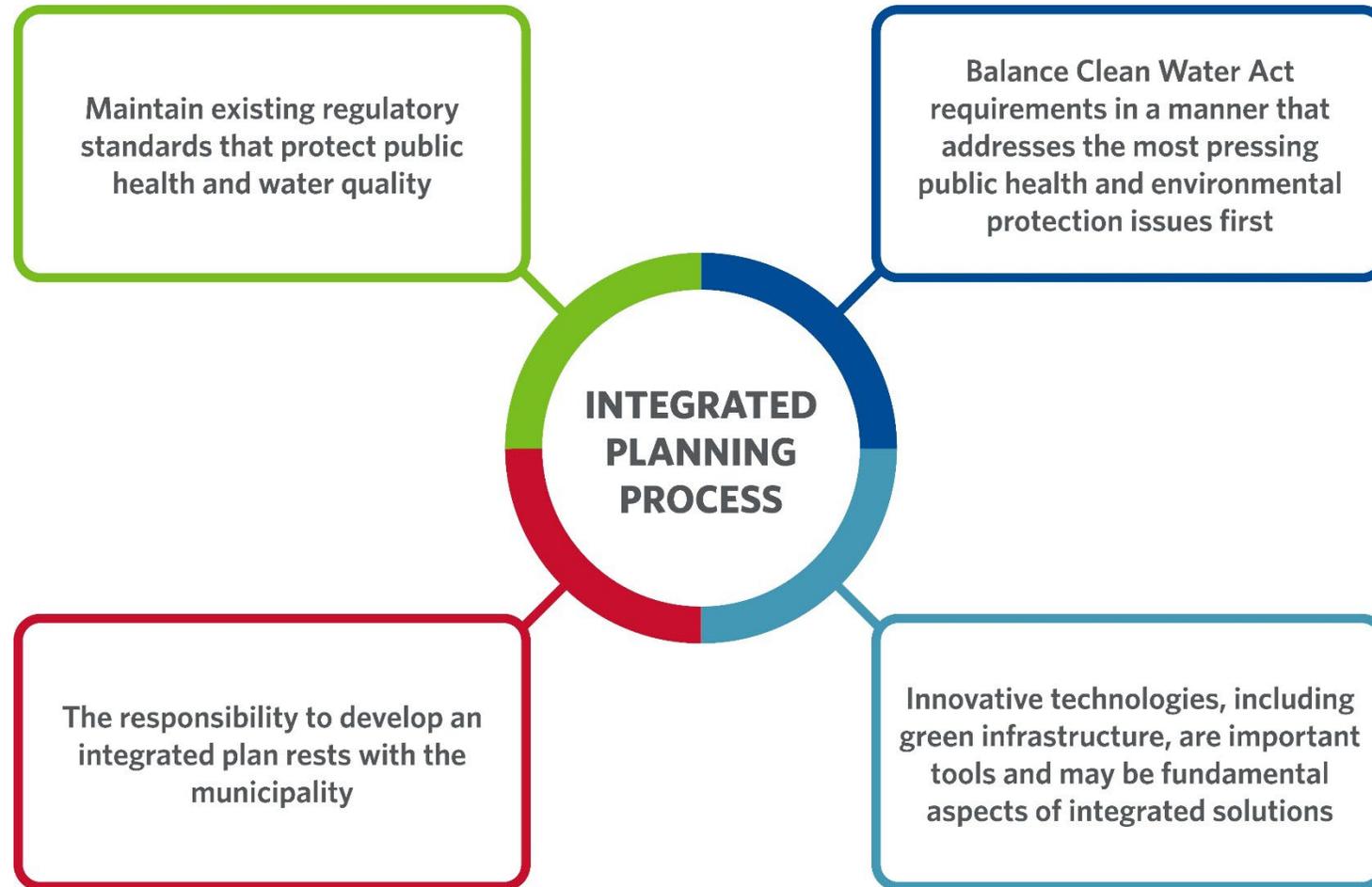


Columbia Faced Significant Infrastructure and Regulatory Challenges before 2019

- Draft Administrative Order
- Columbia Wastewater Treatment Plant NPDES Renewal
 - Ammonia
 - Bacteria
- Bacteria Total Maximum Daily Load
- Aging Infrastructure



Clean Water Act Integrated Planning Framework Provides an Approach for Prioritizing Infrastructure Investments



The Integrated Planning Framework is Adaptive and Supports Periodic Plan Updates

20
YEAR

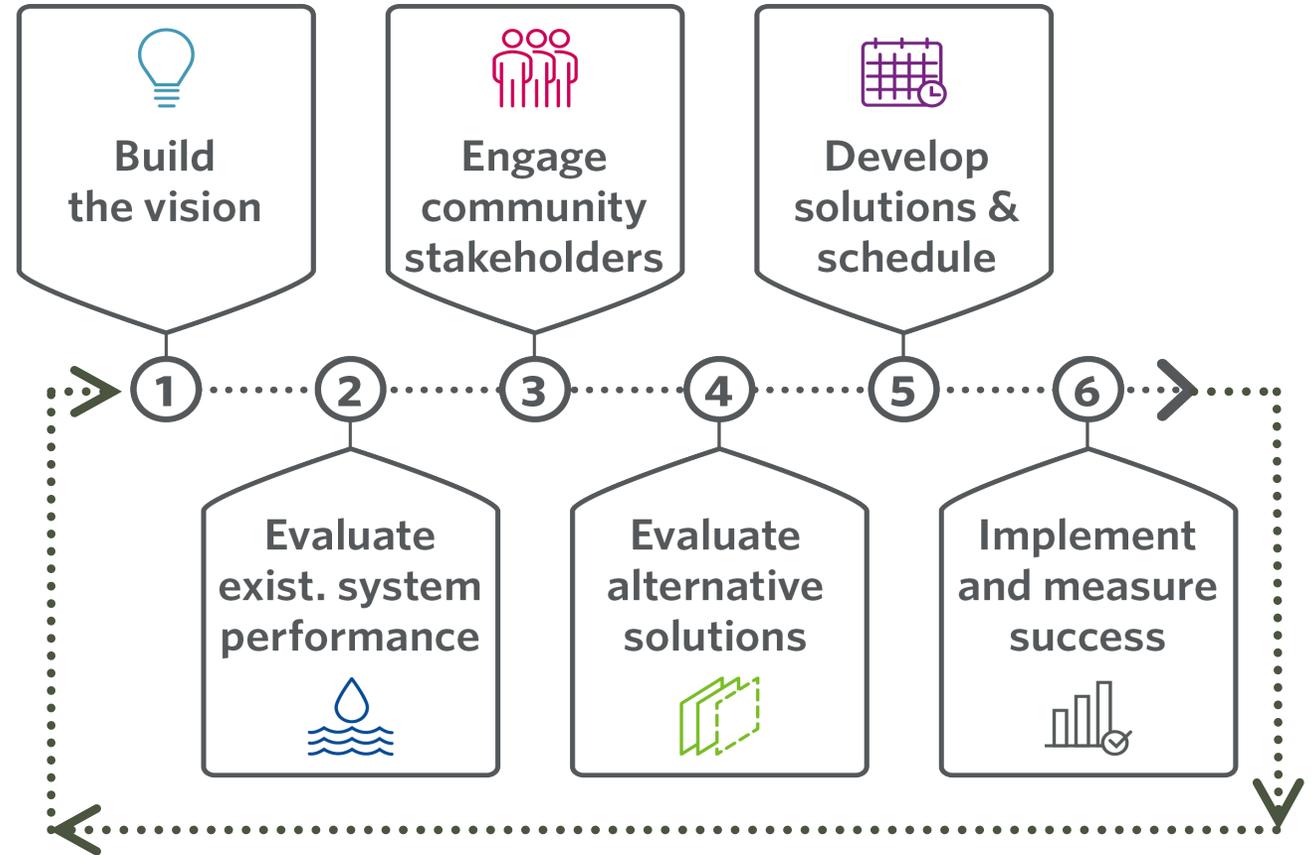
[Investment
Schedule](#)

5
YEAR

[Action Plan &
Implementation Guide](#)

1
YEAR

[Annual Report](#)



The City's 5-Year Action Plan Provides a Roadmap for Long-term Success

- 5-Year IMP Action Plan Identifies:
 - Goals
 - Anticipated Actions
 - Targeted Community Benefits
- The City delivered on the first 5-Year IMP Action Plan
- Currently developing the second 5-Year IMP Action Plan

Columbia 5-Year IMP Action Plan ¹			
Program or Project ²	Goal	Anticipated Actions	Targeted Community Benefits ³
Stormwater Management			
MS4 Program Enhancements*	Enhance Public Education and Outreach, Illicit Discharge Detection and Elimination, and Construction Site Stormwater Runoff Control to reduce bacteria, sediment, and trash discharges.	<ul style="list-style-type: none"> • Continue to develop and distribute public education messages as outlined in the Stormwater Management Plan. • Hire technician to support MS4 program with focus on IDDE. • Conduct streamwalks and outfall inspections in all City streams within 5-year action plan period. • Develop map of stormwater outfalls. • Update Erosion and Sediment Control Manual and policies and procedures. • Continue to work with MS4 partners to effectively implement stormwater management program, particularly Minimum Control Measure #4. • Continue to work with MS4 partners to implement CAM program to improve Hinkson Creek water quality. 	<ul style="list-style-type: none"> • Improved water quality in City streams • Protect important regional waterbodies • Progress towards meeting Clean Water Act requirements • Reduced safety hazards from system failures • Reduced pathogen exposure
System Renewal	Implement renewal program to address failing corrugated metal pipe (CMP) and structures beyond physical effective life.	<ul style="list-style-type: none"> • Initiate renewal activities as resources and funding allow. • Secure additional funding to implement these actions. 	<ul style="list-style-type: none"> • Renew systems beyond effective life • Improved water quality in City streams • Protect important regional waterbodies • Reduced safety hazards from system failures

Columbia's Phase 1 (2020 – 2025) Integrated Management Plan (Phase 1 Plan) Goals

- Meet multiple demands with limited resources
- Align investments with community priorities
- Deliver effective wastewater & stormwater operations
- Improve water quality and meet regulatory requirements



Columbia's Phase 1 Integrated Management Plan

Wastewater Treatment Priorities

- Constructed Wetlands Maintenance
- Wet Weather Improvements
- Nitrification Capacity
- Nutrient Removal
- Chemical Disinfection
- Biosolids Improvements



Wastewater
Treatment

Columbia's Phase 1 Integrated Management Plan

Wastewater Collection Priorities

- Sewer Overflow Reductions
- System Renewal
- Private Collectors
- Building Backup Reductions
- Regional Service
- Maintenance



**Wastewater
Collection**

Columbia's Phase 1 Integrated Management Plan

Stormwater Management Priorities

- System Renewal
- System Assessment
- Flood Management
- Runoff Treatment
- Stream Erosion
- MS4 Programs



**Stormwater
Management**

Columbia's Phase 1 Integrated Management Plan

Ongoing CAM Studies

- Proposal for Additional Hinkson Creek Surface Water Monitoring, Sampling, and Chloride Regression Model Development
- USGS Chemical Analysis
- Chloride Study
- Synoptic Sampling



**Stormwater
Management**

Columbia's Phase 1 Integrated Management Plan

BMP

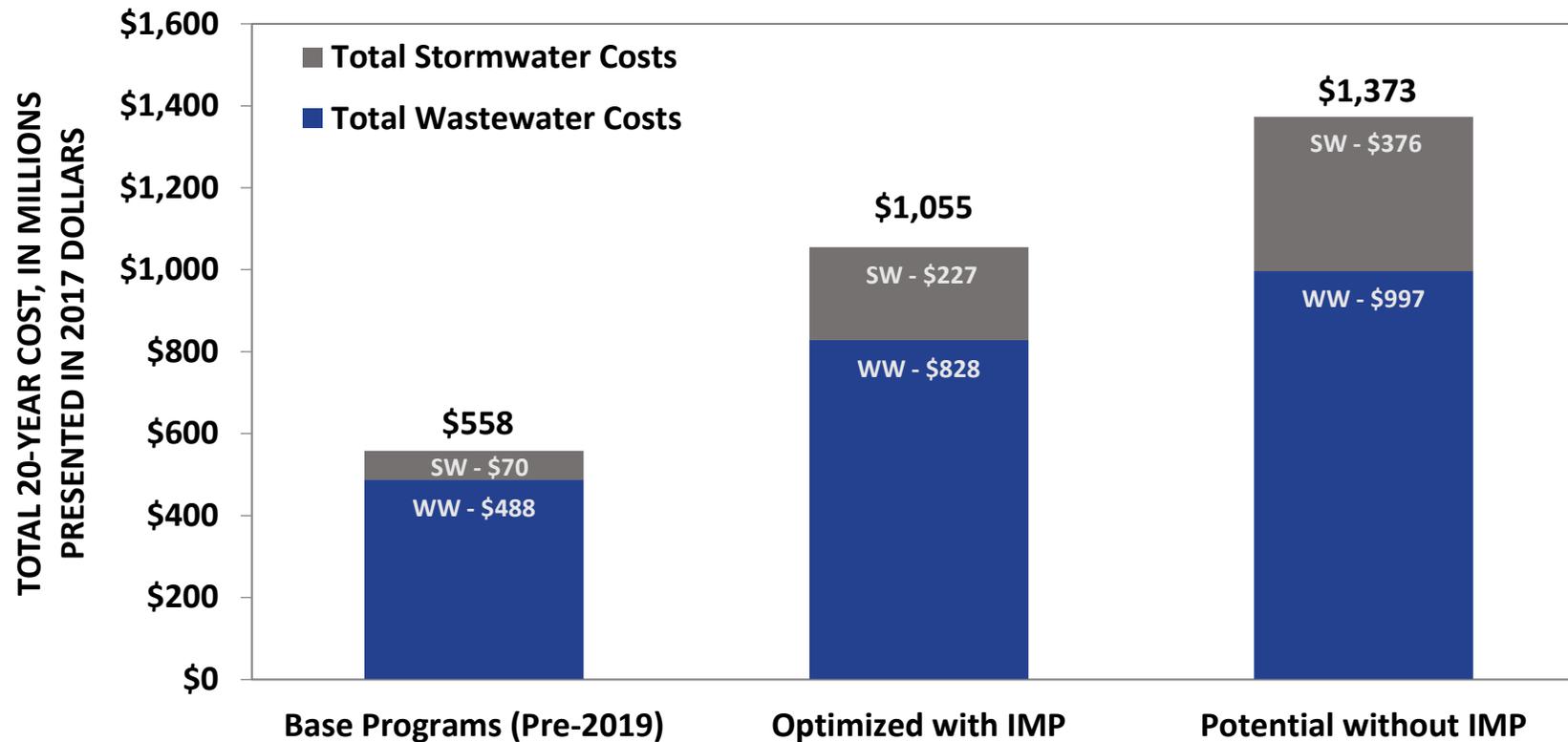
- Over 600 BMPs within the City
 - Mostly privately owned
 - Annual Inspection Report
- City BMPs
 - Revitalization through CAAP
- Water Quality



**Stormwater
Management**

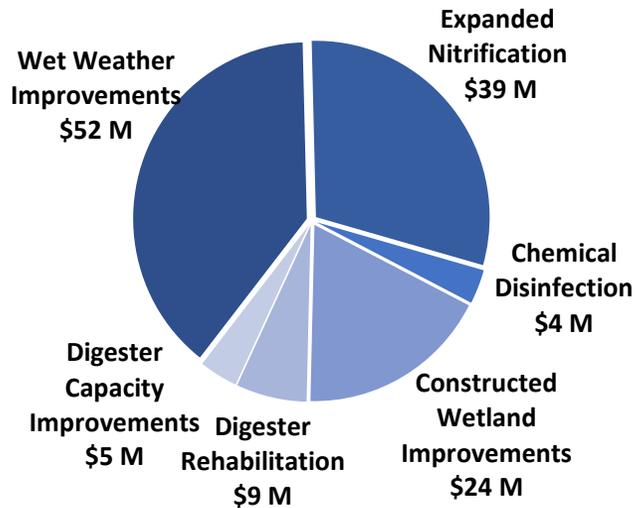
The IMP Reduced Potential Compliance Costs and Addresses Needs over the Next 20 Years

WASTEWATER & STORMWATER
TOTAL 20-YEAR PLANNING COSTS, IN 2017 DOLLARS



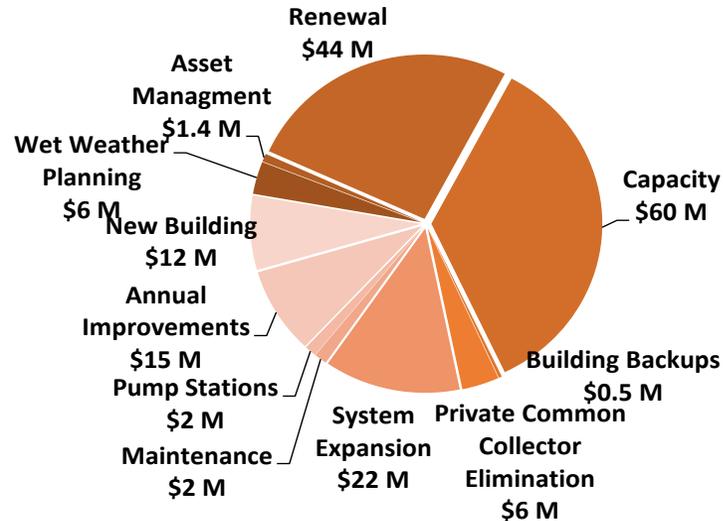
The Optimized IMP Alternative Includes Investments to Address New Infrastructure and Community Needs

Wastewater Treatment



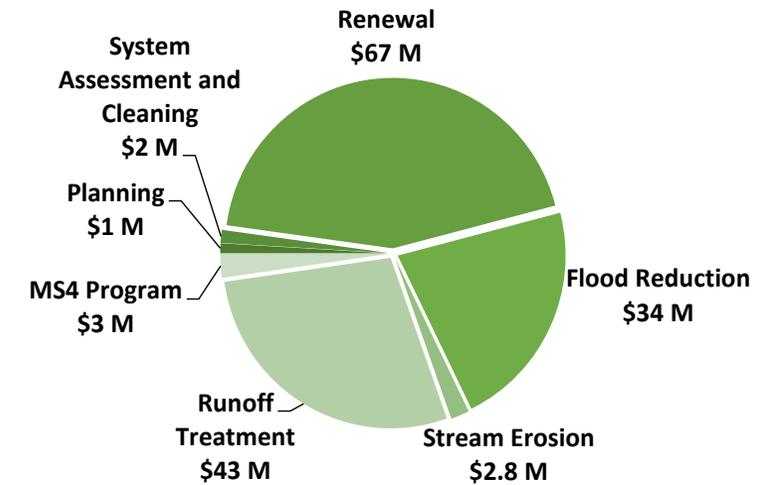
\$132 Million

Wastewater Collection



\$170 Million

Stormwater Management



\$154 Million

The Phase 1 Plan Received Unanimous Approval by City Council (12/3/2018)



“Thank you for an impressive report. You’ve thought of all of the issues and I hope that we can move forward with it.”



“I think this whole process has been excellent.”



“The optimization approach is great because it aligns with our community priorities and highlights underfunding in the stormwater system.”



“The community and stakeholder engagement piece was authentic and well done.”



“I appreciate the process that was used and the outreach with the community...we’re going to have to pay for necessary improvements and this plan will help support that.”

The Phase 1 Plan is Memorialized in the City's Wastewater Discharge Permit and Stormwater Permit (MS4)

- MDNR considers the Phase 1 Plan in current and future regulatory decisions
- Annual updates and communication with the regulatory agencies when the plan changes
- If the City does not make reasonable progress with identified actions, MDNR's support for the IMP will cease



We Have Delivered on Our Phase 1 Commitments



Top Left: Wastewater Treatment Plant Improvements — Digester Rehabilitation

Top Right: MS4 Program Enhancements — MDNR Tour of Best Management Practices

Bottom Left: Wastewater Collection Improvements — Sewer Pipe Rehabilitation

Bottom Right: Stormwater Improvements — North Garth Ave. Flood Management

Phase 1 Plan Outcomes benefit the City and Environment



ASSESS condition of system, the next step of asset management



FOCUS limited funding on renewal of existing system



IMPROVE existing systems to benefit water quality



ENHANCE public support by making meaningful and cost-effective improvements

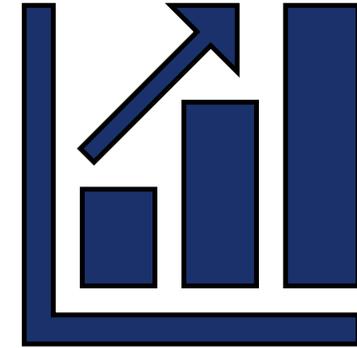
Vision for the Phase 2 Plan Update



Consider New and Evolving
Regulatory Drivers



Reassess Phase 1
Projects and Priorities

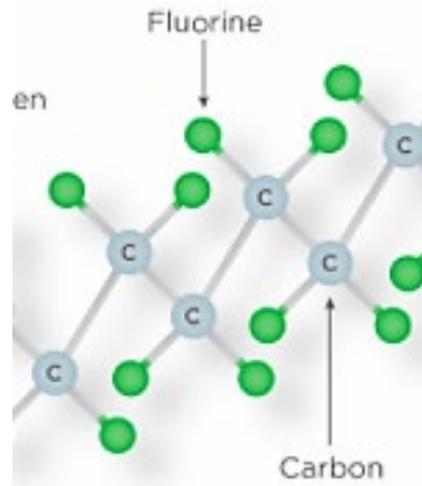


Incorporate New High
Priority Projects

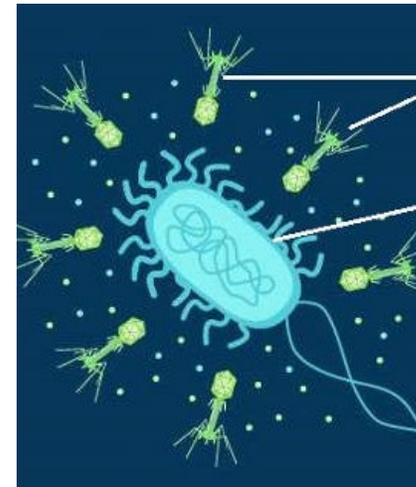
Consider New and Evolving Regulatory Drivers



Nutrient Reductions
(Phosphorus and Nitrogen)



PFAS and other Emerging Contaminants



Recreational Water Quality Criteria



Revised Ammonia Criteria

Incorporate New High Priority Projects



Treatment

- Biosolids treatment evaluation and expansion
- Wetlands maintenance plan
- Facilities asset management



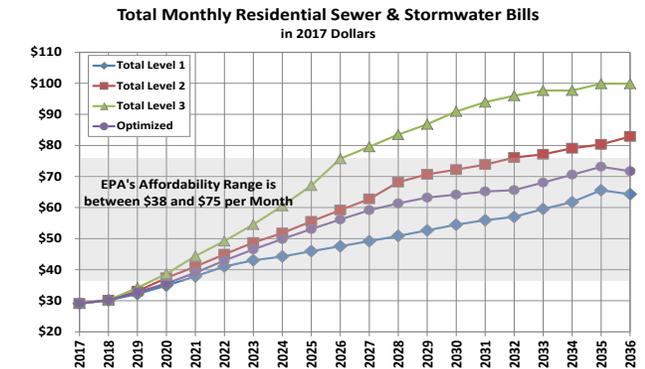
Collection

- Targeted flow monitoring and I/I reductions
- Asset management software implementation and coordination across departments
- Sewer hydraulic model refinement
- Continued rehabilitation of system infrastructure



Stormwater

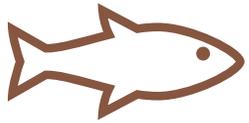
- Flood Management Improvements
- Design manual updates
- MS4 program updates
- Continued rehabilitation of infrastructure



Financial

- Cost of service study
- Update short (5-year) and long (20-year) term capital projections and rate impacts
- Incentivize private inflow and infiltration work

Community Input will Continue to Inform Phase 2 Planning Priorities



Environmental
Objectives



Social
Objectives



Economic
Objectives

- ✓ Protect Public Health and Safety
- ✓ Improve Quality of Life
- ✓ Improve Water Quality in City Streams
- ✓ Achieve Regulatory Compliance
- ✓ Provide Sustainable Services for the Future

Phase 2 Integrated Management Plan Project Timeline

- **Now – September 2024:** Public survey seeking input

Anticipated Council Updates and Requested Actions

- **August 2024:** Project introduction and progress update
- **October 2024:** Progress update
- **December 2024:** Approve and adopt Phase 2 Plan

Project Task	April	May	June	July	August	September	October	November	December
Build the Vision	■	■							
Evaluate System Performance			■	■					
Community Outreach		■	■	■	■				
Identify Project Alternatives			■	■	■				
Prioritize and Schedule Projects						■	■		
Develop Phase 2 Plan							■	■	■
Agency Coordination				■		■			■