Strategic Asset Management Plan

City of Somerville, MA | **January 2026**

Somerville City Hall

Building on the Past — **Enhancing the Future Together**

Foreword

Note to the Reader:

This Strategic Asset Management Plan (SAMP) is being released during a period of mayoral transition and ongoing organizational shift within the City. As with any change in administration, there may be adjustments to departmental structure, reporting relationships, or governance roles as the Mayor's priorities are implemented and the City's organization is finalized.

These changes do not alter the intent, objectives, or long-term strategy of the Asset Management Program. The principles, service-focused approach, and decision-making framework outlined in this SAMP remain consistent and durable, regardless of administrative or organizational shifts. Asset management is a foundational business practice for the City—supporting transparent decision-making, responsible stewardship of public assets, and alignment between services, risk, cost, and performance.

This SAMP focuses on the "what" and "why" of asset management—service expectations, decision-making principles, and strategic priorities—rather than prescribing a fixed "how" or "who" at a point in time. Roles, responsibilities, and governance mechanisms will continue to evolve as part of the program's maturity and continuous improvement.

Once the City's organizational changes are finalized, this SAMP will be updated as appropriate to reflect revised governance arrangements, accountability structures, and enabling roles. The core asset management strategy, however, remains unchanged and continues to guide consistent, transparent, and value-based management of the City's infrastructure assets.

Executive Summary
SAMP at a Glance: Big Goals, Smart Moves, and a Clear Path Forward!

Purpose, Policy, and Objectives

DRIVE – Somerville operates in a resource-constrained state; therefore, we prioritize our needs and make the best use of limited funds and staff. We're focused on clearly defining our actions.

FORMALIZE – Establishing formal asset management enhances service, lower long-term costs, and support transparent, data-driven decisions. It moves us from short-term fixes to long-term resilience.

QUALITY – Effective asset management yields transparency, proactive management, and fair, justifiable decisions. The Steering Committee will ensure Somerville's approach aligns with City initiatives.

OBJECTIVE – We have identified five asset management objectives for formalizing the Asset Management Program. The Asset Management Policy guides this effort, ensuring activities are systematic, aligned, and goal-oriented.

Commitment to Quality and Reliability

ALIGN – We adopted the Institute of Asset Management Conceptual Model to provide a common language and align all departments with industry-standards to deliver a comprehensive program.

COMMITMENT – We emphasize constituent satisfaction as demonstrated by the service goals and associated level of service statements, which articulate our commitment to providing reliable, accessible, and sustainable service.

DESIRABLE LEVEL OF SERVICE – We will meet our service goals to provide dependable operations and service value to our constituents.

ORGANIZATIONAL ALIGNMENT – We will collaborate across the organization to establish realistic procedures aimed at optimizing asset lifecycle and levels of service.

Governance and Decision-Making

BUILD – We performed an asset management maturity assessment to baseline our relative strengths and opportunities for improvement. We will continue to mature in every area to provide a consistent, desirable customer experience.

INSIGHT – Our Likelihood of Failure and Consequence of Failure frameworks will help us identify areas of greatest risk. We will intervene to minimize any disruption to constituents.

PROACTIVE MANAGEMENT – We will confidently manage risk of asset failure to maximize service and accessibility to constituents.

DATA-BACKED DECISIONS – We will combine institutional knowledge with asset data to make informed and defensible capital and O&M investment decisions.

Implementation Roadmap

PORTFOLIO OVERVIEW – Six asset systems were identified based on urgency, departmental readiness, and data availability to develop and apply a strategic, sustainable, and people-driven asset management approach.

ACCURATE INFORMATION – We will have a data governance strategy, ensure asset registers for each asset system are up-to-date, and implement software systems for ongoing data capture.

ACCESSIBILITY – As we enhance data management through use of enterprise systems, our staff will have access to maintained asset information.

PLAN-DO-CHECK-ACT – We will achieve buy-in from City staff and ensure training during the transition to electronic data management and proactive asset management.

Status | Complete | In-Progress | Future

Building on the Past → Enhancing the Future, Together

This Strategic Asset Management Plan (SAMP) summarizes Somerville's journey to build and formalize the Asset Management Program. It also provides guidance for implementation to help us move forward in a thoughtful and organized way.

00 **AM Terms and Concepts:** Defines essential asset management terminology and frameworks used throughout the plan.

01 **Organizational Approach to Asset Management:** Explains Somerville's strategy for integrating asset management principles, roles, and processes across the organization.

02 **Strategic Asset Management Objectives:** Outlines the main objectives driving Somerville's asset management efforts and decision-making.

03 **Portfolio Overview:** Describes how the plan organizes, prioritizes, and expands asset management coverage, including rationale for focus areas and future growth.

04 **Service Goals and Levels of Service:** Details Somerville's service goals and how levels of service are defined and measured for each asset type.

05 **Risk-Based Decision Making:** Summarizes the methods used to assess and prioritize asset risk for informed resource allocation.

06 **Capital Improvement Planning:** Explains how the Asset Management Program identifies and prioritizes potential capital projects.

07 **The Plan Forward:** Highlights next steps and priorities for advancing Somerville's Asset Management Program.

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Terms and Concepts

Asset Investment Planning (AIP)

The process of planning and prioritizing investments in assets to meet organizational goals. AIP involves budgeting, forecasting, and resource allocation for asset acquisition and upgrades. The primary benefits of AIP include improved financial planning, as organizations can better predict and manage capital expenditures.

Asset Lifecycle

Time interval that commences with the identification of the need for an asset and terminates with the legal disposal of the asset and any associated liabilities. The phases of an asset lifecycle include initiation, planning, design, construction or installation, replacement/refurbishment, decommission/retirement and salvage/disposal.

Asset Management Enablers

The tools, processes, skills and competencies that support effective asset management.

Asset Management Maturity

The level of an organization's AM capability assessed by a standard assessment tool; effectively a benchmark of the organization against a standard. The maturity of the organization will determine its ability to recognize and implement an appropriate solution.

Asset Management Roadmap

The program of initiatives designed to develop and improve organizational capabilities and systems for managing assets.

Asset Management System

The set of people, processes, technology and other resources involved in the delivery of asset management, including governance.

Asset System

A cohort of assets grouped for reporting, organizational, technical or financial purposes. Examples include water distribution, collection and conveyance, right-of-way, and parks.

The Institute of Asset Management

The Institute of Asset Management is the international professional body that develops asset management knowledge and best practices and generates awareness of the benefits of the asset management discipline for individuals, organizations, and wider society.

Formalize

To establish a structured, documented, and standardized approach to asset management by defining policies, procedures, roles, responsibilities, and performance metrics to ensure consistency, accountability, and alignment with organizational goals. Typically includes creating written plans, setting clear objectives, and implementing governance frameworks.

Performance Target

Level of desired performance from the organization, an asset system, or individual asset.

Risk Assessment

Overall process of risk identification, risk analysis and risk evaluation.

Ten Box Model

An evolved framework introduced by the Institute of Asset Management in 2024 to enhance asset management practices. It aligns with ISO 55000 standards and includes ten areas that organizations need to develop to improve their asset management capabilities.

Organizational Approach to Asset Management

Purpose of the SAMP

The City of Somerville is committed to formalizing and embedding asset management practices into all planning and daily operations. This inaugural Strategic Asset Management Plan (SAMP) serves as a written forum to describe the strategy for delivering asset-related business objectives in an optimized way. Within the SAMP, the city communicates its vision for the Asset Management Program and translates strategic objectives into tangible asset management objectives. The SAMP builds upon the City's Comprehensive Plan – SomerVision2040 and the 2024 Asset Management Policy to align with the City's broader vision of providing an equitable, inclusive environment for all. The SAMP also serves as a strategic guidebook to align system-specific asset management plans that will be aligned as they are developed.

SomerVision 2040

- Serves as the City's Comprehensive Plan
- Collaboratively developed with the constituents of Somerville
- Articulates Somerville's vision and top 15 priorities
- Focused on eight specific topics with wellness and equity threaded throughout

AM Policy

- Leadership's commitment to the principles of asset management and continual improvement
- Outlines guiding principles and practices for decision making
- Provides the framework for the strategy (SAMP)

SAMP

- Provides guidance for implementation of the Policy
- Identifies the asset management objectives
- Establishes the asset management framework to be applied to asset systems

AMP

- Sets out the specific lifecycle activities for an asset system
- Includes long-term plan for assets, including service expectations, resource requirements, and timelines
- Typically created after adoption of the SAMP

View SomerVision 2040

somervision2040.com

Drivers for Formalizing Somerville's Asset Management Program

The Asset Management Program is intended to:

- Help prioritize the most urgent needs
- Improve maintenance practices to maximize service life of existing assets
- Gather reliable data for smarter capital and operational planning

Like many other municipalities with constrained budgets and political pressure to prioritize visible, near-term needs, maintenance of physical infrastructure has been set aside. After years of deferred maintenance and limited investment in capital improvements, Somerville is experiencing unprecedented challenges; asset systems are aging, outdated, and falling short of current codes and service expectations. Somerville lacks the resources to fix everything at once, and needs a formalized approach for prioritizing infrastructure investment.

Somerville is formalizing its Asset Management Program to make the best use of its funds and staff. The Asset Management program will identify high-priority projects, improve coordination, and help establish a more appropriate balance of reactive and proactive response. It introduces tools like risk-based planning, lifecycle cost analysis, and digital work order systems to ensure that decisions are based on data — not just tradition or urgency.

		Current State	Enhanced State
	Staff and Culture	Varying levels of awareness and knowledge of asset management	Unified understanding, culture shift, and formal organizational roles
	Processes, Systems, and Data	Disparate and immature IT tools and systems	Enterprise systems, decision support tools, reporting and visualizations
	Operation and Maintenance	Reactive and time-based maintenance	Blend of preventive, predictive, and reliability-centered maintenance
	Capital and Financial Planning	Prioritization of future needs is largely based on institutional knowledge	Long-range funding strategy across asset classes based on risk

Figure 1-1: Characteristics of the Current and Enhanced State of Asset Management for Somerville

Alignment with Industry Framework

Somerville considered three industry-standard frameworks for aligning their Asset Management Program. They ultimately selected the Institute of Asset Management Conceptual Model because of its status as an international standard to which many organizations around the world were aligning, its emphasis on documentation and maintenance of standard operating procedures (SOPs), its focus on continuous program improvement, and its easily-understood and flexible elements. The selection of the Conceptual Model was the first step in the Asset Management Program development process, helping to determine where Somerville currently stands relative to industry best practices and to identify gaps and opportunities for improvement through an asset management maturity assessment.

The Conceptual Model Framework provides a structured way for Somerville to develop its formalized asset management approach by highlighting the key areas needed for strong and consistent asset management practices and procedures. It covers asset management program purpose, planning, delivery, risk management, and support functions such as information management, leadership and governance, and the organization and people required to successfully implement and manage the program. Importantly, the Conceptual Model offers a common language and structure for discussing asset management across departments, making it easier to benchmark and share best practices.
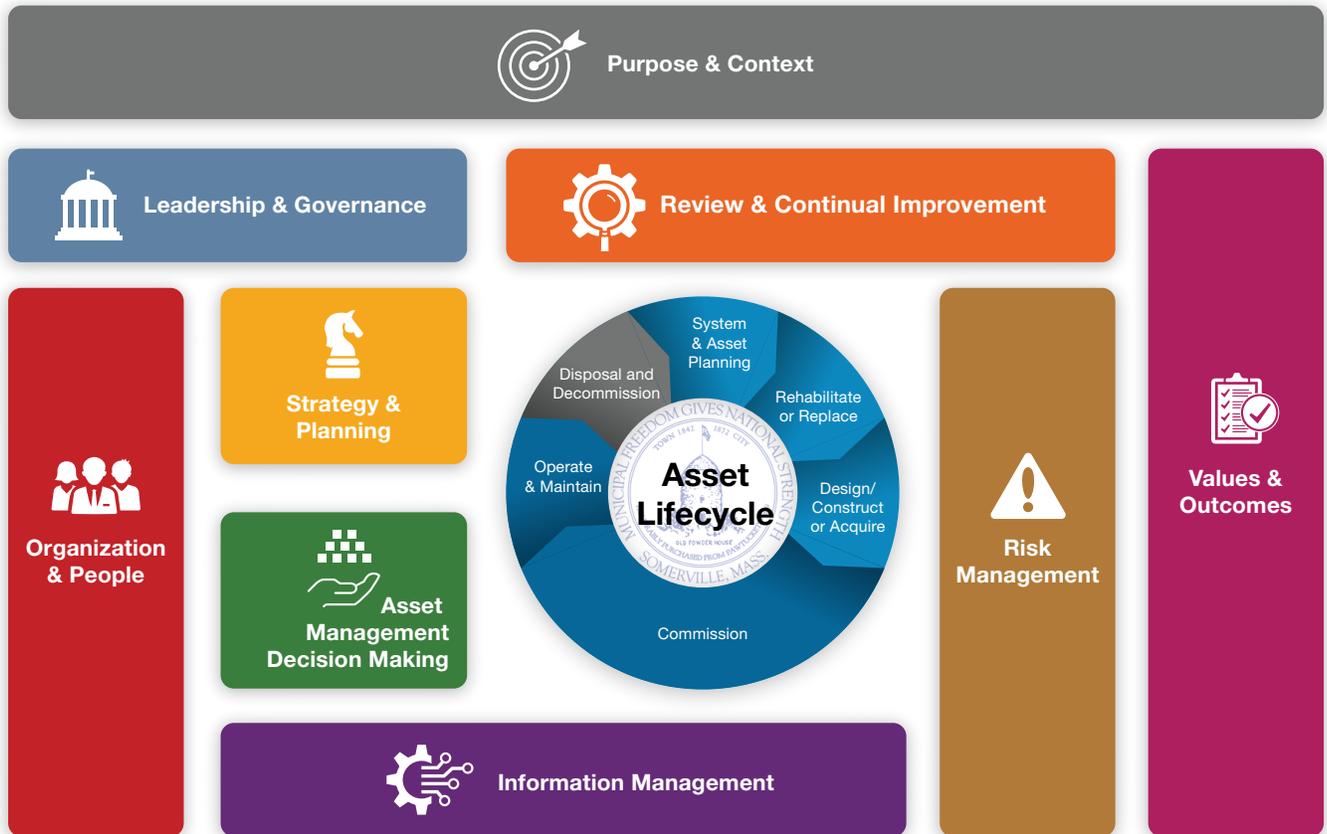

Figure 1-2: Institute of Asset Management 10-Box Conceptual Model

Building on Asset Management Maturity Assessment Findings

To better understand the current state of asset management throughout Somerville's operating departments, the Department of Infrastructure and Asset Management conducted an asset management maturity assessment in the Summer of 2021 that included groups from DPW, W&S, IAM, and OSPCD. An asset management maturity assessment shows how developed a program is by rating elements of the asset management system from "innocent" to "industry leader." It helps identify areas of relative strengths and opportunities for improvement to achieve "competency" in most areas.

The maturity assessment shows that while Somerville benefits from strong leadership and stakeholder engagement, there is still a need to strengthen data governance and management; planning processes; and performance management. By developing within these areas, Somerville can move toward a more proactive, strategic approach for decision making— balancing quality of service, cost of service, and risk.

2021 Maturity Assessment

★ Relative Strengths
- Engaged stakeholders
- Meeting acceptable LOS through reactive response
- Established vision and leadership
- Capital investment decision making

⬆ Opportunities for Improvement
- Data management
- Strategy and planning
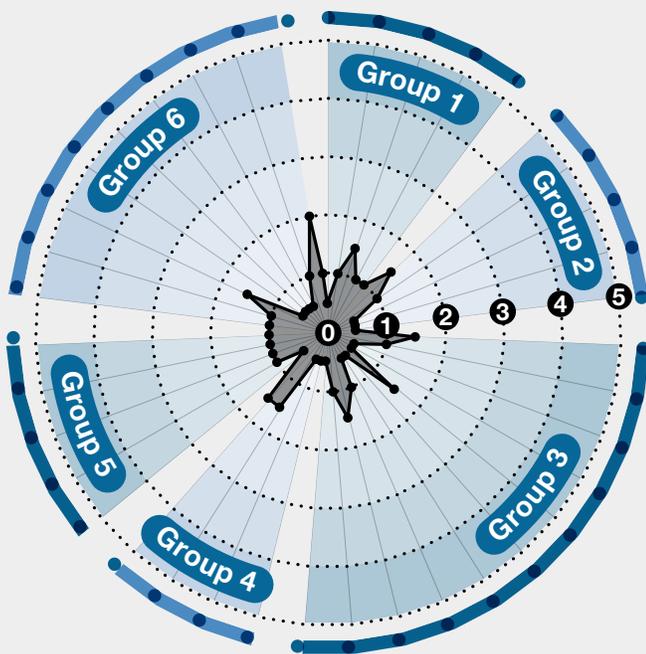- Management of change
- Asset performance monitoring

Maturity Level

0 Innocent
The City has not recognized the need for this requirement and/or there is no evidence of commitment to put it in place

1 Aware `Somerville at Project Start`
The City has identified the need for this requirement and there is evidence of intent to progress it

2 Developing
The City has identified the means of systematically and consistently achieving the requirements, and can demonstrate that these are being progressed with credible and resourced plans in place

3 Competent
The City can demonstrate that it systematically and consistently achieves relevant requirements set out in the IAM Anatomy

4 Mature
The City can demonstrate that it is systematically and consistently optimizing its asset management practice, in line with the City's objectives and operating context

5 Industry Leader
The City can demonstrate that it employs the leading practices and achieves maximum value from the management of its assets, in line with the City's objectives and operating context

Figure 1-3: Radar plot of the 2021 Maturity Assessment results

Group 1 Strategy & Planning   **Group 4** Asset Information

Group 2 AM Decision-Making   **Group 5** Organisation & People

Group 3 Lifecycle Delivery   **Group 6** Risk & Review

The Institute of Asset Management modified the 6-Box Conceptual Model to be the 10-Box Capabilities Model in 2024.

Asset Management: A Formalized Approach

The maturity assessment indicated Somerville has been meeting their level of service objectives reactively. Somerville is resource-limited with an increasing need for investment, and reactive management is costly due to emergency labor, rushed parts, unplanned downtime, collateral damage, and safety risks. Somerville requires a more strategic, formalized approach; balancing proactive and reactive investment to do more with less resources. Formalization means aligning people, documenting processes, and systematically collecting and leveraging data and tools to make informed decisions. It's about making smarter decisions that deliver lasting value.

"Asset Management tools and technologies may be helpful, but the engagement of the workforce, the clarity of leadership, and the collaboration between different departments and functions are the real differentiators of a leading asset management organization."

— The Institute of Asset Management

"Managing assets" refers to what you do to assets in a relatively near-term context. "Asset Management" refers to how the City manages the full portfolio of physical in a way that aligns with strategic priorities and long-term vision.

Managing Assets

Managing Assets	A Formalized AM Approach
Focuses on individual assets	Takes a strategic, long-term approach
Centered on tasks like maintenance and repair	Provides consistent processes
Reactive and short-term	Proactively manages risks over the full lifecycle

Why It Matters

By formalizing asset management, Somerville can improve services, reduce long-term costs, and make more transparent, data-informed decisions. It shifts the focus from short-term fixes to building a resilient, sustainable future.

Programmatic Oversight and Alignment

The Asset Management Steering Committee consists of representatives from various departments throughout the City to oversee the process of formalizing Somerville's asset management approach.

Community Engagement and Participation

Outcomes of Quality Asset Management

Transparency in government

- Identify asset, system, and constituent needs
- Know where resources are allocated
- Understand the impact of financial investment

Ability to "do more with less"

- Optimize existing assets before constructing new
- Lower lifecycle costs of assets
- Enhance existing workflows to be more effective and efficient
- Obtain more value for the same financial investment

Benefits

☑ Proactive management of physical infrastructure

☑ Planned expenditures to ensure financial sustainability

☑ Long-term customer service and regulatory compliance

☑ Equitable and defensible decisions with widespread understanding and acceptance

Site Visit

Strategic Asset Management Objectives

Asset management objectives describe what Somerville aims to achieve by formalizing and embedding asset management practices into existing policies and procedures. The Asset Management Policy finalized in Spring 2025 provided direction for establishing the following objectives.

Develop a Consensus-Based Approach for Prioritizing Infrastructure Needs
Establish a transparent decision-making framework to identify and address critical infrastructure and prioritize major investments for modernization. This approach ensures that long-term community benefits for Somerville are maximized while balancing fiscal responsibility with finite public resources.

Integrate Asset Management Principles Across All Divisions and Departments
Ensure that the principles of asset management are embedded into the operations of every division and department within the organization.

Deliver Expected Levels of Service to Somerville's Constituents
Provide the residents of Somerville with the quality of service they expect in exchange for the rates they are paying.

Foster a Culture of Continuous Improvement and Proactive Management
Promote ongoing asset improvement through proactive asset maintenance and risk-based practices to ensure the longevity of existing infrastructure.

Maintain a Successful Workforce
Attract and retain qualified staff to ensure the sustainability and effectiveness of the asset management program.

To achieve these objectives, Somerville continuously evaluates the tradeoffs between cost of service, level of service, and tolerance for risk to ensure each decision aligns with community expectations, fiscal constraints, and acceptable risk threshold. The figure at right illustrates the relationship between these elements, emphasizing that the Asset Management Program aims to establish the appropriate balance for each asset system.

Risk
Manage risk of infrastructure failure

Service
Continuously deliver the level of service constituents desire and regulators require
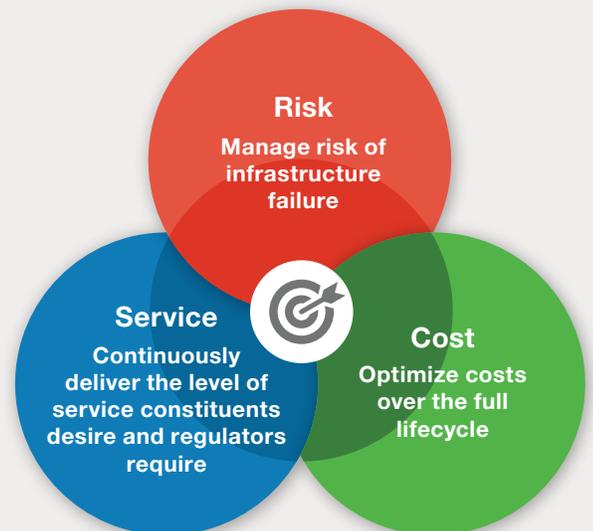
Cost
Optimize costs over the full lifecycle

Figure 2-1: Asset management seeks the appropriate balance amongst service, risk, and cost

03
Portfolio Overview

Somerville is advancing a phased asset management strategy to address City infrastructure asset systems. The initial six key asset systems were selected based on urgency, departmental readiness, and data availability.

Somerville started with six key asset systems:

Phase 1

- Water Distribution System
- Collection and Conveyance System
- Right-of-Way (Roadways and Sidewalks)
- Municipal Buildings and City Schools
- Traffic Signals

And will expand to other asset systems:

As Somerville strengthens its approach to data management and execution of established asset management frameworks, this approach will expand to the other asset systems, such as parks, streetscapes, and urban forests. The goal is a consistent, citywide asset management model that is strategic, sustainable, and people-driven.

- Parks
- Urban Forests
- Streetscapes
- Streetlights

Roles and Responsibilities

A successful and sustainable Asset Management Program requires participation from all departments and levels of the organization. Each department is accountable for discrete asset management responsibilities, which are united across the organization by sound business processes and technology enablers.

Asset Category	System and Asset Planning	Design/Construct or Acquire, Commission	Operate and Maintain	Rehabilitate or Replace, Disposal and Decommission
Water Distribution System	Engineering	Engineering	Water Department	Engineering, Water Department
Collection and Conveyance System	Engineering	Engineering	Sewer Department	Engineering, Sewer Department
Right-of-Way (Roadways and Sidewalks)	Engineering, Mobility	Engineering	DPW - Highways	Engineering, Mobility, DPW - Highways
Municipal Buildings and City Schools	Capital Projects	Capital Projects	DPW - Buildings	Capital Projects, DPW - Buildings
Traffic Signals	Mobility, Engineering	Engineering, DPW	DPW – Lights & Lines	Engineering, Mobility, DPW - Highways

Table 3-1: Roles and Responsibilities Throughout the Asset Lifecycle

Water Distribution System

✧ Mission

Ensuring safe and adequate water service is one of Somerville's core services. Providing potable water and fire protection across the city are key objectives of managing the water system. Maintenance of water appurtenances, such as valves and fire hydrants, to control water flow when necessary is also an important part of the work of the City.

◎ Current Focus

Like many other communities, Somerville's water system is aging, with some active pipes dating back over 100 years. Years of deferred maintenance have left the City in a reactive mode, where staff must constantly address urgent failures as they occur. This ongoing need for immediate repairs often pushes long-term planning to the back burner, slowing efforts to modernize and improve the system.

Some key areas of focus of the City include:

- Responding to constituent complaints and making the necessary repairs in a timely manner.

- Addressing water main breaks and other emergency incidents.

- Maintaining water appurtenances, such as water meters and fire hydrants as time allows.

- Replacing or rehabilitating water mains as budget allows.

- Reviewing water rates annually to ensure water system maintenance and improvements are appropriately funded and completed.

⇒》 Drivers for Rehabilitation

The City completed the **Water Distribution System Improvements Plan** (2020), which is based on the City's water system hydraulic model simulations and a system wide risk analysis. The plan was flexible, allowing project prioritization that addressed both constraints and opportunities.

A key outcome of the plan was the **Immediate Action CIP** (2020). This CIP identified the pipes that should be rehabilitated as soon as possible, including pipes in the High Risk and Failing Risk categories. The remaining pipes will be inspected, monitored, and maintained. Since the completion of the Plan, the City has been replacing or rehabilitating the water mains identified in the Immediate Action CIP as annual budgets allow. The following table and figure show the CIP results.

ᐧ�晳 Asset Stats

- 116 miles of water mains

- 16,000 water connections and meters

- 3,380 water valves

- 1,600 fire hydrants

- Average age of system – 92 years

- Approximately 110 remaining known lead services or unknown material services

While the Asset Stats are based on the best available data, the level of data confidence varies significantly and is generally low. A key objective of the Asset Management Program is to standardize and document asset related information in an accurate and reliable manner.
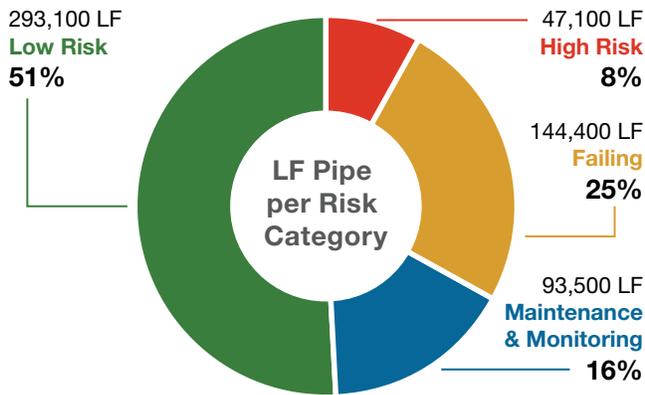

Water Meter Replacement

293,100 LF
Low Risk
51%

47,100 LF
High Risk
8%

144,400 LF
Failing
25%

93,500 LF
Maintenance & Monitoring
16%

LF Pipe per Risk Category

Figure 3-1: Linear feet of pipe per risk category in the 2020 Immediate Action CIP

REHABILITATION PRIORITY CATEGORY	LENGTH OF PIPE (FEET)	ESTIMATED TOTAL REHABILITATION COST*
High Risk Pipes	47,100	$38,940,000
Failing Pipes	144,400	$92,550,000
Six-Inch Diameter and Smaller Water Mains	20,700	$11,580,000
TOTAL	212,200	$143,070,000

*In March 2020 Dollars, ENR Boston CCI = 14763.25

Figure 3-2: 2020 Immediate Action CIP components, lengths of pipes, and estimated total rehabilitation cost

Funding Source

Water rehabilitation is funded by a Water Enterprise Fund, a dedicated municipal fund used to account for the costs and revenues associated with providing water services. Enterprise funds are typically the best funding source to promote and maintain long-term financial sustainability for water service. The Water Enterprise Fund covers the cost of water supplied by the MWRA and debt incurred from past projects. It also funds salaries, ordinary maintenance, and projects to improve the water distribution system.

Projects Around Town – Our Team at Work!
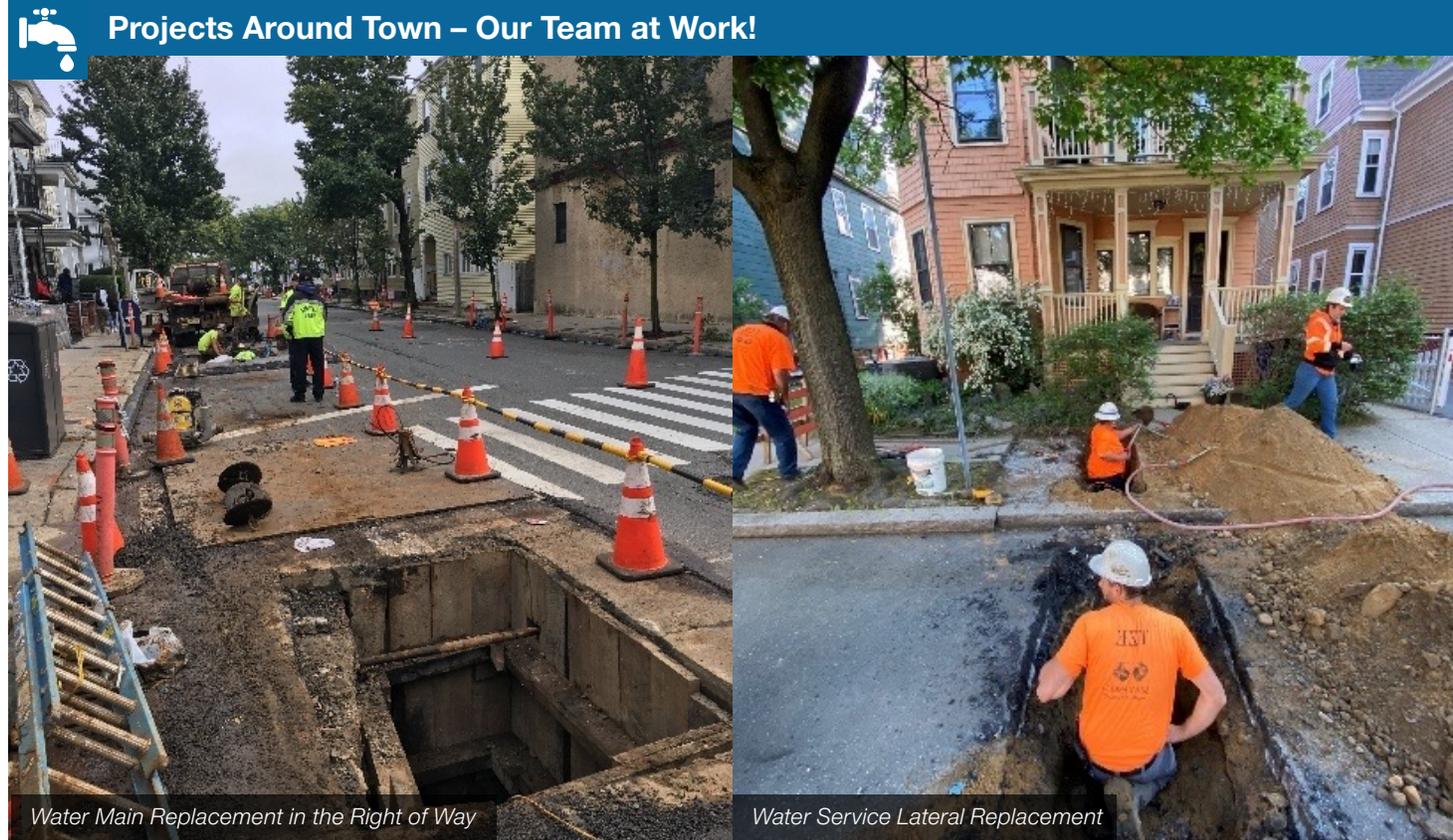
Water Main Replacement in the Right of Way

Water Service Lateral Replacement

Collection and Conveyance System

☆ Mission

Environmentally responsible conveyance of sanitary sewer, combined sewer, and stormwater is a Somerville core service. Protecting public health by improving water quality and reducing combined sewer over-flows are key priorities in how the City manages their collection and conveyance system.

◎ Current Focus

Somerville's sewer collection system has deep historical roots, with portions dating back more than 100 years. Originally built as a combined sewer system typical of New England, it has evolved through significant investments, aimed at improving water quality and safeguarding local resources. The City continues to fund major capital projects that redirect flows to the MWRA treatment facility whenever budgets permit.

Despite these efforts, aging infrastructure and deferred maintenance have created operational challenges. Much of the current work is driven by customer service requests rather than proactive planning. When not responding to constituent concerns, crew tasks include:

- Cleaning catch basins.
- Inspecting and repairing pipelines.
- Tracking all maintenance activities.

⇛ Drivers for Rehabilitation

A key driver to improve the conveyance system is the annual **Sewer and Storm Drain Inspection Program**, which strives to video inspect every sewer and drainpipe in the City within 10 years using NASS-CO's standard industry condition coding. Scores associated with the structural, O&M, and overall condition of the pipe / appurtenances help identify pipes that must be addressed in the short term and those that can be monitored. The most high-risk pipes identified are then rehabilitated through the annual **Sewer Pipeline & Manhole Rehabilitation Program**. Defects identified in the previous year's Annual Sewer and Storm Drain Inspection Program are addressed using a combination of methods, including spot repairs, pipe lining, open trench excavation, and injection grouting.

In addition to annual programs, the City improves the conveyance system through larger, multi-year projects that address more systemic concerns, such as flooding and water quality. The City completed a

▁▁▊ Asset Stats

- 183 miles of piping
- 29,000+ customer connections
- 4,800 manholes
- 3,600 catch basins
- 16 stormwater outfalls
- 1 stormwater interconnection
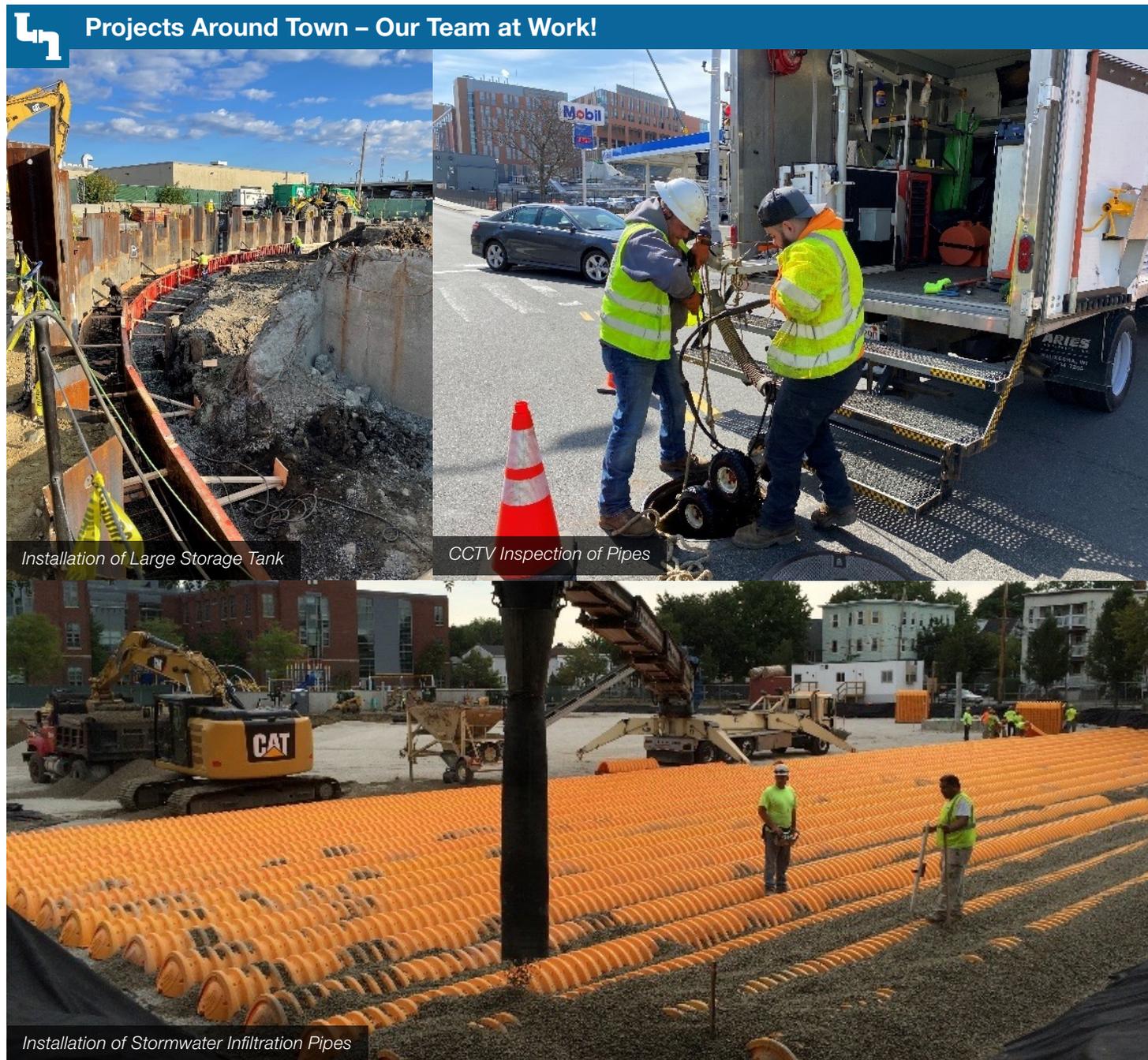- 2 stormwater pump stations

Green Stormwater Infrastructure

Citywide Drainage and Water Quality Master Plan (2022) that aims to reduce flooding, improve water quality, and mitigate combined sewer overflows. These reconstruction projects are major improvements and often include other benefits, such as new roadways and sidewalks, green infrastructure opportunities, and cyclist and pedestrian safety improvements.

💲 Funding Sources

Sewer projects are funded by a Sewer Enterprise Fund, a dedicated municipal fund for the costs and revenues associated with maintaining the physical infrastructure and providing sewer services. Enterprise funds are considered best practice for promoting and maintaining long-term financial sustainability for sewer services. It also funds operating costs and sewer rehabilitation projects.

Projects Around Town – Our Team at Work!

Installation of Large Storage Tank

CCTV Inspection of Pipes

Installation of Stormwater Infiltration Pipes

Right-of-Way (Roadways and Sidewalks)

Mission

Roadways and sidewalks are the foundation for Somerville's dynamic urban streetscapes and ancillary to the City's drainage system. Somerville's adoption of the complete streets framework embraces multi-modal transportation that is accessible, inviting, and safe for all pedestrians, bicyclists, and transit riders.

Current Focus

Somerville is the most densely populated city in Massachusetts and boasts a robust network of streets and sidewalks to accommodate multimodal transportation. Our roadway and sidewalks must withstand significant traffic through all weather conditions. Safe travel in the winter is a top priority. To maintain the integrity of the City's roads and sidewalks, the City focuses on:

- Upgrading sidewalks and intersections to meet modern accessibility recommendations.
- Enforcing street cut moratorium on newly paved roadways.
- Coordinating resurfacing projects with external utilities (e.g., electric and natural gas).
- Conducting systematic condition assessment.

Asset Stats

- 4 square miles
- 125 miles of paved roadways
- 168 miles of sidewalks
- 1,826 Crosswalks
- 4,658 Ramps
- Mean PCI = 55.0 out of 100
- Mean SCI = 70.9 out of 100
- 2 stormwater pump stations

Site Specific Sidewalk Ramp Designs

Drivers for Rehabilitation

The City uses a data-driven **Roadway and Sidewalk Condition Program** to assess the condition of every roadway and sidewalk over three year periods in Somerville. The objective of this Program is to identify repair needs and monitor deterioration. The results of the Roadway and Sidewalk Condition Program and other projects that include surface work, such as those driven by subsurface work, inform the **Pavement and Sidewalk Management Plan**. This Plan is updated every year and lays out the planned roadway and sidewalk rehabilitation and reconstruction for the next five years.

Starting in FY20, the City divided the Pavement and Sidewalk Management Plan into three key areas:

1. **MAJOR RECONSTRUCTION:** Complete major corridor streets with full-width pavement mill-and-overlay, full sidewalk reconstruction to attain ADA compliance, and targeted safety improvements.
2. **SIDEWALK AND INTERSECTION IMPROVEMENTS:** Targeted sidewalk and intersection reconstruction to improve pedestrian safety and ADA compliance on priority routes.
3. **PARTIAL PAVING:** Partial paving of travel lanes only for side streets that are not priority pedestrian routes or major corridors.
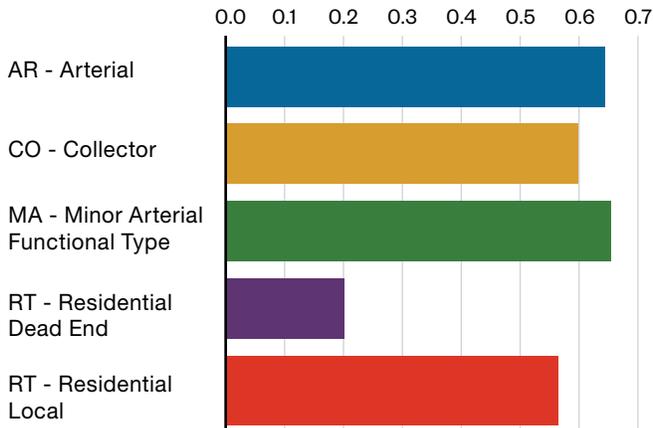
Figure 3-3: Weighted Average Sidewalk Priority Ranking (SPR) by Functional Type, 2020-2022

Functional Type	SPR
AR - Arterial	0.65
CO - Collector	0.59
MA - Minor Arterial Functional Type	0.65
RT - Residential Dead End	0.21
RT - Residential Local	0.57

Figure 3-4: Weighted Average Pavement Condition Index (PCI) by Pavement Functional Type, 2020-2022

Functional Type	PCI
AR - Arterial	64
CO - Collector	66
MA - Minor Arterial Functional Type	62
RT - Residential Dead End	53
RT - Residential Local	51
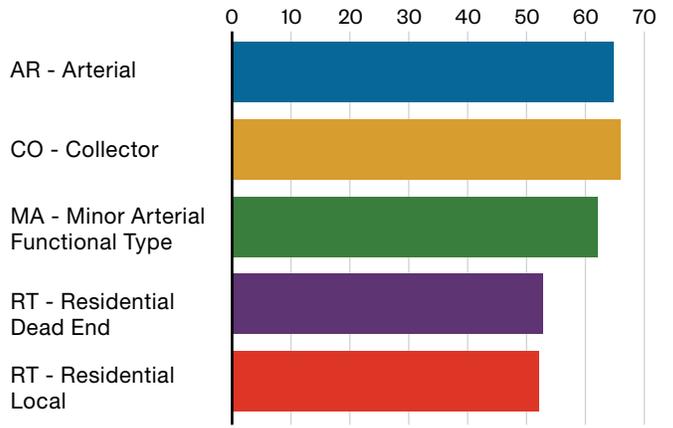
💲 Funding Sources

Funding for roadway and sidewalk improvements varies every fiscal year and comes from different sources. Key roadway and sidewalk funding sources include:

- Massachusetts Chapter 90 program for roadway repairs
- City bonds for street resurfacing, sidewalk improvements, and ADA ramps and improvements (as stand-alone projects or in conjunction with subsurface improvements)
- City General Fund or Street Reconstruction Stabilization Fund for street & sidewalk repairs and ADA improvements

Projects Around Town – Our Team at Work!

Installation of Bollards to Protect Pedestrians

Green Bike Lanes
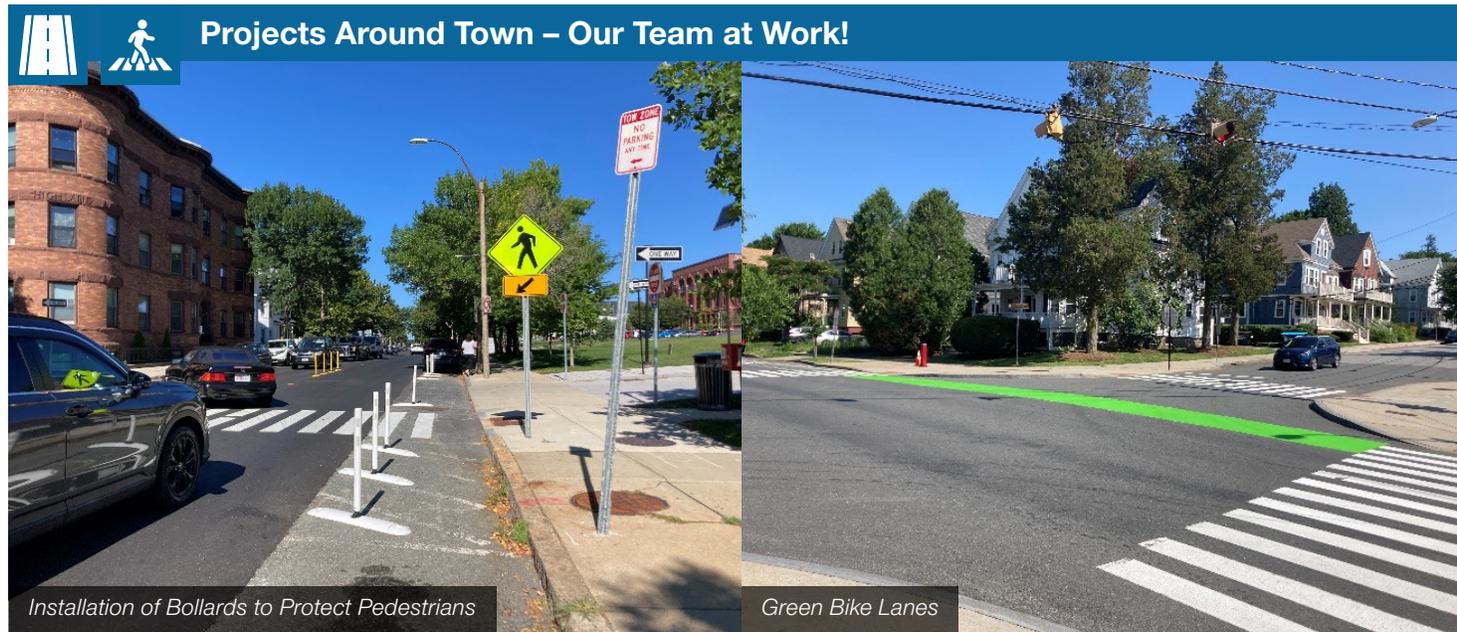
Municipal Buildings and City Schools

☆ Mission

Ensuring City and School facilities are safe, reliable, and welcoming environments that support public services and community life is a core priority of Somerville. The City maintains building systems, completes repairs and renovations, and supports new construction. City goals— such as sustainability, equity, and inclusivity—continue to be part of our public buildings improvement strategy.

◉ Current Focus

City-owned buildings remain one of the most significant challenges for municipal operations. These facilities deliver essential public services and must remain functional to serve residents effectively. Because they are continuously occupied by the public, staff, and schoolchildren, any downtime can severely disrupt service delivery.

Many of these structures are historically significant, with several listed on the National Register of Historic Places and many were built long before modern HVAC systems and accessibility standards. Maintaining these aging assets is complex and costly. Like other parts of the City's infrastructure, building maintenance has suffered from years of deferred upkeep. While repairs continue, they are largely reactive - driven by complaints rather than proactive planning. The City prioritizes school facilities to ensure the health and safety of students.

Current efforts focus on creating a comprehensive inventory and assessing major building components, with particular attention to mechanical systems and both interior and exterior repairs and renovations.

📊 Asset Stats

- 1.9 million square feet
- 37 City-owned municipal and public-school buildings
- 6 rented facilities

Existing Building Evaluations

⇛ Drivers for Rehabilitation

The City acknowledges the significant work required across all municipal buildings and has invested in strategies to maintain public services while addressing facility needs. Key planning efforts include the Departmental **Relocation Strategy and Implementation Plan** (2019), which explored ways to consolidate City and School departments to enhance constituent experience, improve service efficiency, and reduce operating costs.

Building on this, the Buildings Master Plan advanced the effort through two major components:

- **Preliminary Design Program (PDP, 2021)**: A comprehensive survey of facilities and guiding principles for department organization within each building.

- **Preferred Schematic Report (PSR, 2021)**: Development of conceptual layouts, sections, and renderings based on the PDP's preferred design concept.

Beyond these holistic plans, the City continues to prioritize accessibility through annual ADA Building projects. Following the **Transition Plan** (2013) prepared by the Institute for Human Centered Design, the City has consistently identified and addressed accessibility improvements in and around public buildings each year.

$ Funding Sources

City buildings are funded through City general funds and bonds, depending on the scope of the project. Maintenance and smaller reconstruction, such as ADA accessibility improvements and preventative maintenance, are typically funded through City funds while major reconstruction or full renovations are secured through City bonds.

New School Building with Improved Outdoor Spaces

Traffic Signals

Mission

Ensure the safe and efficient passage of all users of the public right-of-way, including but not limited to, pedestrians, cyclists, transit vehicles, and emergency vehicles.

Current Focus

As the most densely populated city in Massachusetts, Somerville is responsible for the safe movement of right-of-way users. The City routinely reviews and updates traffic signal timing to provide safe passage and prioritize emergency vehicles throughout the city.

Drivers for Rehabilitation

Most traffic signal upgrades are completed as part of streetscape reconstruction projects. These projects are typically driven by water and sewer projects, or by the City's Pavement and Sidewalk Management Program.

Funding Sources

Traffic signal work is typically paid for through the City's general funds or bonds as part of other projects.
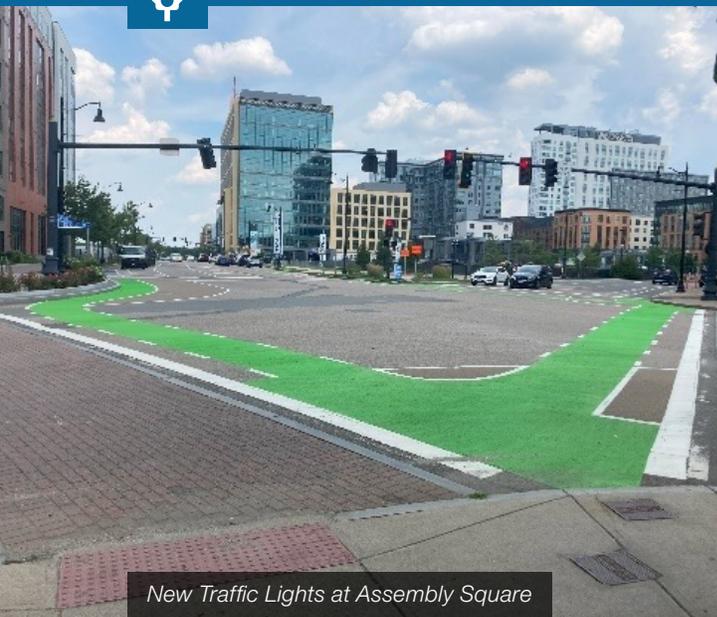
Asset Stats

- 62 City owned traffic signals
- 13 MassDOT-owned traffic signals
- 2 DCR-owned traffic signals
- 77 controlled intersections
- 60 of 364 ADA compliant pedestrian signals

Projects Around Town – Our Team at Work!

New Traffic Lights at Assembly Square

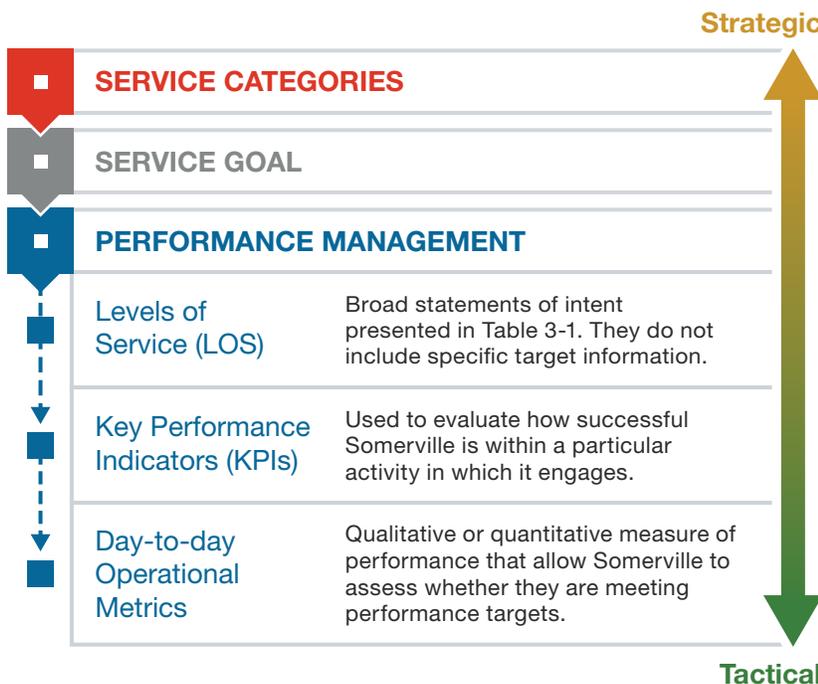New Fire Station Priority Traffic Lights

04
Service Goals and Levels of Service:
A Commitment to the Public

Service categories and Levels of Service (LOS) define how Somerville evaluates infrastructure performance from a constituent perspective. They establish a shared, Citywide understanding of what the community expects from their infrastructure and provide a consistent framework for decision-making across departments and asset systems. The City's service categories—quality, reliability, accessibility, and sustainability—were established through cross-departmental leadership to reflect enduring community values and priorities. These categories are intended to be stable over time, providing continuity in how infrastructure performance is defined and discussed regardless of external changes.

For each service category, the City defined service goals that sets baseline expectations for how our assets should perform. These goals are deliberately high-level and values-based. Levels of Service translate these service goals into clear, system-specific statements. LOS describe how each asset system contributes to meeting the City's service goals in practice. While actual service delivery may vary based on asset condition, operational constraints, or external factors, the LOS statements establish a common benchmark for evaluating performance and identifying gaps.

Table 4-1 defines the service category and goals and the LOS statements specific to each asset system.

Strategic

SERVICE CATEGORIES	
SERVICE GOAL	
PERFORMANCE MANAGEMENT	
Levels of Service (LOS)	Broad statements of intent presented in Table 3-1. They do not include specific target information.
Key Performance Indicators (KPIs)	Used to evaluate how successful Somerville is within a particular activity in which it engages.
Day-to-day Operational Metrics	Qualitative or quantitative measure of performance that allow Somerville to assess whether they are meeting performance targets.

Tactical

Benefits of Defining Levels of Service

Level of service statements are crucial to guiding Somerville's strategic asset management objectives and determining the actions needed to improve asset infrastructure. Defined LOS serve many additional purposes:

☑ Agreed upon definition of what "good service" means to constituents

☑ Communicates the trade-offs between service quality, cost of service, and risk exposure

☑ Ensure routine decisions and daily activities align with targets set by Somerville and acceptable to constituents

Levels of Service (LOS) Defined for Each Asset System

	Service Categories			
	Quality	**Reliability**	**Accessibility**	**Sustainability**
City-wide Service Goal	Ensure satisfaction by providing quality infrastructure, products, services, and facilities.	Deliver reliable service by designing and maintaining resilient infrastructure and providing effective service at an established and acceptable frequency.	Infrastructure, facilities, services, data and information are inclusive and welcoming to all by providing universal access along with promoting equity, clarity and transparency.	Enhance sustainability, minimize and mitigate the impact of hazards by the proactive and coordinated use of technological, natural, human, and financial resources.
Water Distribution System LOS	Provide water that is potable and palatable by consistently meeting water quality standards.	Minimize service interruptions and provides adequate fire protection by responding to unplanned outages quickly and proactively renewing the aging pipes.	Ensure water services are accessible by providing information in multiple formats and maintaining affordable rates.	Deliver sustainable service by designing and maintaining water distribution assets to maximize their useful life.
Collection and Conveyance System LOS	Protect public health, the environment and property by maintaining the integrity of the collection and conveyance infrastructure.	Perform routine inspection and maintenance activities to identify defects that would impact the reliability of the sewer system, while also responding to customer needs quickly.	Ensure sewer services are accessible by providing information in multiple formats and maintaining affordable rates.	Enhance sustainability by maximizing existing system capacity and separating combined infrastructure when feasible, incorporating the impacts of climate change.
Right of Way (Roadways and Sidewalks LOS	Promptly address known maintenance needs within the right-of-way and performs high-quality repairs.	Strive to maintain acceptable paths of travel for all modes of transportation 12 months of the year.	Go beyond minimum requirements to make all streets and sidewalks safe, accessible, equitable, and welcoming.	Promote sustainability by optimizing the use of the right-of-way to promote non-vehicular modes of transportation, while meeting the needs of single occupancy vehicles and mass transit.
Municipal Buildings and City Schools LOS	Strive to design and maintain all buildings to meet the modern needs of their designated function while also providing a well-maintained, clean and safe environment.	Ensure the reliability of buildings by promptly responding to reactive service requests and proactively managing future needs.	Strive to provide continual access to buildings and the services they provide through physical and on-line access that accommodate the full Somerville Community.	New construction and significant renovations are designed to be environmentally sustainable and carbon neutral, while keeping aging facilities operational.
Electric Lights & Lines LOS	Provide quality, well-placed and adequately bright lights to enhance the safety of the community.	Monitor the performance of smart lights and responds quickly to unplanned lighting outages.	When renewing aging infrastructure, Somerville replaces call boxes and traffic lights with modern, ADA compliant infrastructure.	Promote environmental sustainability through investment in solar lights and engineering traffic timing to reduce City's carbon footprint.

Table 4-1: Levels of Service Defined for Each Asset System

Investing in Maintaining Desirable Levels of Service

Defining levels of service is part of the asset management process as it sets the goal for how the constituents of Somerville will experience the assets and associated service provided by the City. LOS definition also sets the stage for budget planning and project delivery.
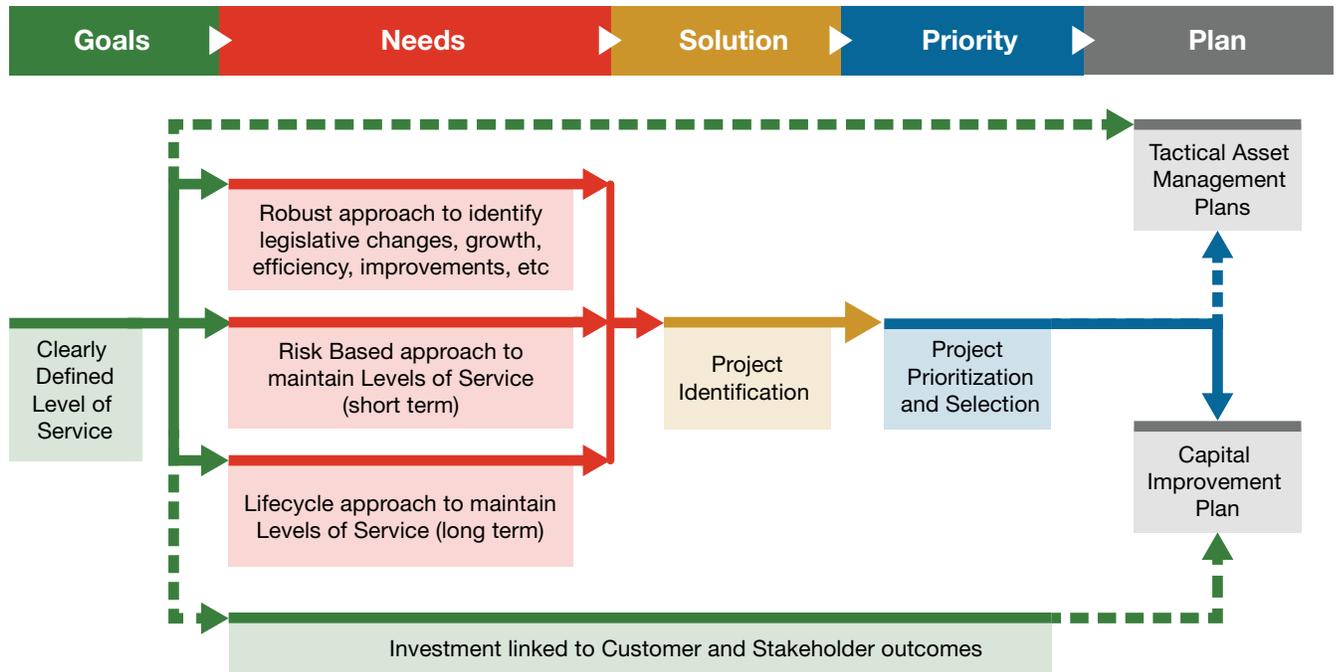
Goals ▶	Needs ▶	Solution ▶	Priority ▶	Plan

Clearly Defined Level of Service

Robust approach to identify legislative changes, growth, efficiency, improvements, etc

Risk Based approach to maintain Levels of Service (short term)

Lifecycle approach to maintain Levels of Service (long term)

Project Identification

Project Prioritization and Selection

Tactical Asset Management Plans

Capital Improvement Plan

Investment linked to Customer and Stakeholder outcomes

Figure 4-1: Defining LOS Sets the Foundation for Prioritizing Infrastructure Needs

Setting the Stage for Performance Management

Performance management is a framework to establish how Somerville measures and manages organizational and asset performance to meet constituent needs and expectations. LOS, KPIs, and Operational Metrics provide the linkage between assets and City-wide objectives by aligning the day-to-day management of assets with a broader vision. It involves routine measurement and tracking of performance against pre-defined targets to guide maintenance strategies and capital investments. In other words, by understanding the level of service Somerville is committed to, resources can be prioritized and allocated to ensure the right work is being performed at the right time on the right assets.

05
Risk-Based Decision Making

Figure 5-1: Asset Lifecycle Components

Application Risk

Asset risk drives the need for action such as proactive maintenance; performance monitoring or condition assessment; asset renewal schedules; and contingency planning. **Risk is assessed after construction or acquisition, but most often leveraged during the longest phase of the lifecycle – the operating and maintain phase.** The risk score is comprised of the quantification of likelihood of failure and consequence of failure.
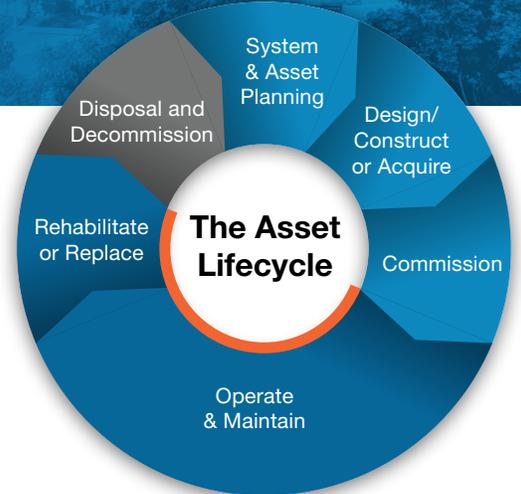
Quantification of Risk

A systematic approach to risk assessment ensures Somerville's infrastructure remains resilient, cost-effective, and sustainable over the course of its lifecycle. An assessment of risk couples the urgency of attention with the importance of the asset – also commonly referred to as the likelihood of failure and consequence of failure. Assessing risk throughout the lifecycle of the assets within the City's portfolio is a fundamental practice within an Asset Management Program. The intent of risk-based decision-making is to identify the highest risk assets within any system in a consistent way so that lifecycle management activities and associated monetary investment can be prioritized.
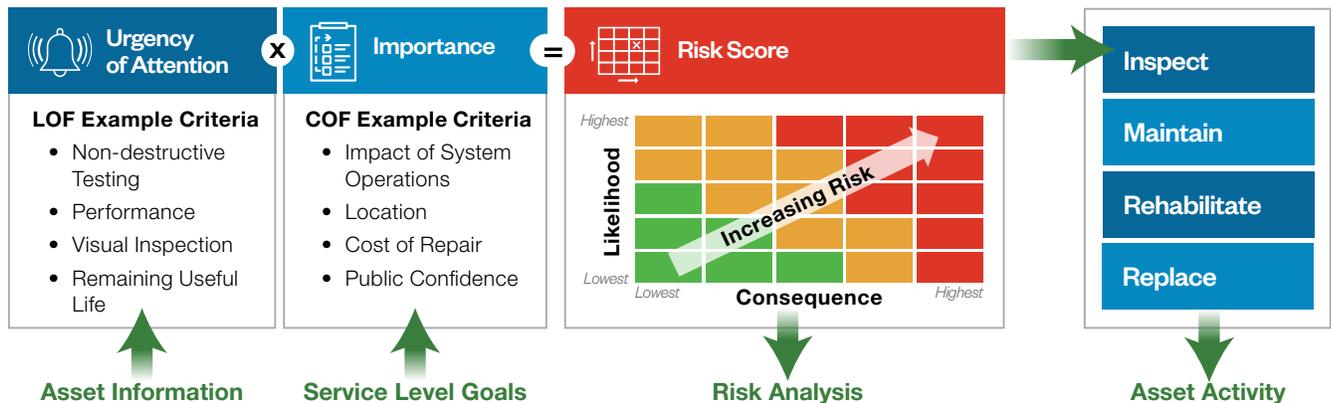

Figure 5-2: Risk Assessment Approach

Likelihood of Failure (LOF)

The quantification of LOF aims to answer the question: 'What is the likelihood this asset will fail?' or alternatively, How urgent is it to renew this asset?

The likelihood of an asset failing may be the result of physical condition, capacity, changes in levels of service, or because of inefficient or ineffective operations.

Consequence of Failure (COF)

The determination of consequence of failure focuses limited resources on those assets with the highest importance. Unlike LOF, COF tends to remain constant over time; the impact of asset failure changes only when the importance of an asset's good working order changes due to a change to the system, a change to the surrounding environment, or a change to the amount or type of customers served.

Enterprise Risk Management Framework

The intent of the enterprise risk framework is to apply it to city-owned asset classes by adapting the definitions herein to the uniqueness of each asset class within all systems. The enterprise risk was workshopped by the Asset Management Steering Committee in Summer 2023. The COF categories chosen by the AM Steering Committee align with the established levels of service.

Likelihood of Failure Rubric

	LOF Criteria	① Excellent	② Very Good	③ Moderate	④ Poor	⑤ Very Poor
Mortality	**Condition** Integrity of the asset or system	Fully operable, well maintained, and consistent with current standards. Little wear shown and no further action required.	Sound and well maintained but may be showing slight signs of early wear. Delivering full efficiency with little or no performance deterioration. Only minor renewal or rehabilitation may be needed in the near term.	Functionally sound and acceptable and showing normal signs of wear. May have minor failures or diminished efficiency or increase in maintenance cost. Moderate renewal or rehabilitation needed in near term.	Functions but requires a high level of maintenance to remain operational. Shows abnormal wear and is likely to cause significant performance deterioration in the near term. Replacement or major rehabilitation needed in the near term.	Effective life exceeded and/or excessive maintenance cost incurred. A high risk of breakdown or imminent failure with serious impact on performance. No additional life expectancy with immediate replacement needed.
Performance	**Capacity** Ability to meet current capacity and future needs	Optimal capacity to meet current and future functional requirements. Appropriate utilization and function.	Sufficient to meet current and future functional requirements. Equipment is undersized or oversized, causing O&M issues.	Sufficient to meet typical needs, but does not meet functional requirements, or severely over-utilized. Not be able to handle future needs in peak situations.	Achieving intended function on typical days but does not meet functional requirements during peak events. Would not be able to handle future average or peak conditions.	Does not meet its intended function or typical needs. Would not be able to manage future requirements.
	O&M Issues Frequency of O&M issues (excluding breakdown)	Never	Very Infrequently (e.g., Bi-Annually)	Infrequently (e.g., Quarterly)	Frequently (e.g., Monthly)	Very Frequently (e.g., Weekly/Daily)
	Reliability Avg. percentage of time asset is available when needed	99 - 100% (4 days out of service)	95 – 99% (up to 18 days out of service)	90 – 94% (up to 36 days out of service)	85 – 89% (up to 55 days out of service)	< 84% (over 55 days out of service)

Consequence of Failure Rubric

COF Criteria	① Negligible	② Low	③ Moderate	④ High	⑤ Extremely High
Quality — Maintaining public confidence in the quality of services provided by COS.	No impact.	A few complaints made directly to Somerville.	Complaint to City Council and/or social media.	Substantial but short-term disruption. Adverse, but localized media coverage.	Potential long-term impact. Area-wide disruption. Regional media coverage. Downgrade to bond rating. Results in organizational restructuring.
	100% compliance with permits and regulations.	Possible technical violation.	Regulatory sanctions likely.	Probable enforcement action but fines unlikely.	Enforcement action with fines or financial impact.
	Managed internally.	Managed internally no outside agencies involved.	Outside agencies are aware but no formal response.	Outside agencies mobilized to assist with response.	Likely that outside agencies take over response.
Reliability — Minimizing length and severity of service impacts.	Spares readily available.	Minor impact to process. Minor repairs required. Repair time likely within 7 days.	Moderate impact to process. Repairs and new parts necessary. Repair time likely within a month.	Significant impact to process. Repair time within 90 days or replacement required.	Major impact to process. Loss of process control. Repair time exceeds 90 days or major replacement required.
	No impact.	Localized impact to customer service.	Significant impact to number of customers affected or critical customers impacted.	Significant impact to customer or critical customers impacted.	Widespread impact to customers.
	Repair time within 24 hours.	No loss in redundancy.	No loss in redundancy.	Limited / reduced redundancy.	No redundancy.
Accessibility — Ensuring accessible services by removing barriers and minimizing health and safety risks.	Little or no impact to constituent and/or staff health & safety or public safety.	Minor injury requiring first aid or perceived impact to public safety.	Moderate injury requiring medical treatment or possible threat to public safety.	Major injury requiring hospitalization or loss of confidence in public safety.	Potential fatality, widespread illness or permanent disability or adverse impact to public safety.
Sustainability — Maximizing the sustainable use of financial resources and minimizing impacts to the environment.	Little to no impact on environment.	Short-term, localized or imperceptible environmental impact.	Prolonged, localized environmental impact.	Short-term, widespread environmental impact.	Prolonged, widespread environmental impact.
	Cost of failure within existing budget.	Cost of failure considered an operating expense.	Cost of failure would be a minor capital expense.	Cost of failure considered moderate capital expense.	Cost of failure would result in a significant capital expense.

Fundamental to data-driven asset management decision making is the quantification of asset-level risk associated with asset deterioration and failure. Risk analysis is used to understand the cause, consequences, and likelihood of adverse events occurring, and manage such risks to an acceptable level. Quantifying asset-level risk aids in prioritizing asset activities such as inspections, maintenance, rehabilitation, and replacement uniformly across the portfolio of assets.

Risk-Based Asset Management

Somerville employs basic asset lifecycle management strategies to maintain, operate and renew assets. The Asset Management Program aims to build on current practices to optimize Somerville's portfolio of assets, which requires a more formal approach to identifying lifecycle management strategies and deciding when to intervene. Risk-based asset management prioritizes activities based on the level of risk so Somerville's resources are allocated effectively, focusing on assets that pose the highest threat to the level of service.

Since the operate and maintain (O&M) phase is the longest phase of an asset's lifecycle, the following sections focus on the most prevalent lifecycle management activities for this phase: inspection, maintenance, rehabilitation, and replacement.
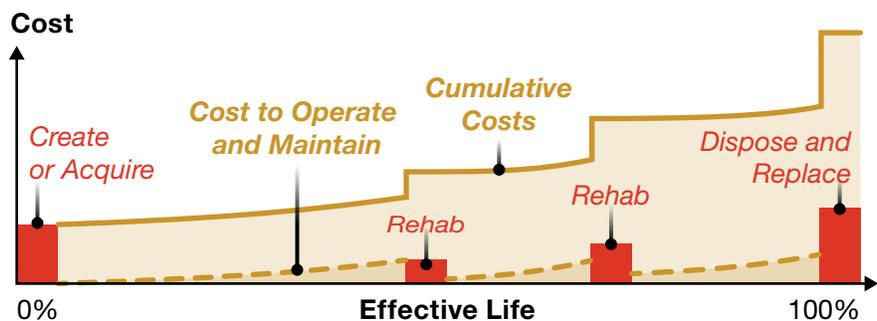

Figure 5-3: Typical Activities During the Asset Lifecycle and Associated Economic Impact

Asset Activities

Inspect

Inspection activities provide current information about asset condition and performance, which can be used to assess the need for maintenance, rehabilitation, or replacement.

Asset condition is monitored through periodic inspection. Frequency of inspection is dependent on the asset's level of risk: low-risk assets may be infrequently inspected, if at all, while high-risk assets are inspected more frequently. Assets typically have a manufacturer-recommended inspection frequency; however, if no inspection frequency is designated, the City adopts industry standards or targets established by the Department (e.g., inspect the entire wastewater collection system every 10 years).

The type of inspection performed is also dependent on asset risk: low-risk assets may be visually assessed, while high-risk assets might be assessed using technology that provides greater insight into asset condition/performance.
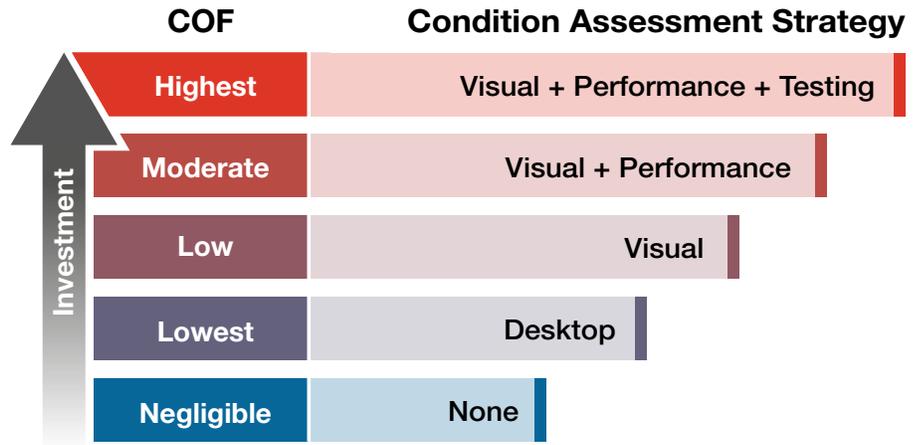
Maintain

Asset maintenance not only enhances the reliability and performance of the assets, but also contributes to long-term cost savings and improved asset management.

To optimize an asset's lifespan, maintenance strategies should be selectively applied based on the asset's risk category. There is no single maintenance strategy that fits all assets within the City's portfolio; therefore, to optimally manage the full portfolio of physical infrastructure, each of these maintenance strategies is relied upon.

COF	Condition Assessment Strategy
Highest	Visual + Performance + Testing
Moderate	Visual + Performance
Low	Visual
Lowest	Desktop
Negligible	None

Investment ↑

Maintenance Strategies

Reactive Maintenance	Not an intentional maintenance strategy. Corrective maintenance upon asset failure.
Manufacturer (or Industry) Recommended Maintenance	Preventive maintenance based on a suggested schedule to achieve the manufacturer's estimated useful life and often required to maintain a warranty.
Condition/ Performance-Based Maintenance	Using data such as results from non-destructive testing, to anticipate failures and intervene early. Maintenance is only performed when the asset's condition warrants it. Typically used for assets that are frequently inspected.
Reliability-Based Maintenance	A very deliberate management methodology that follows rigorous standards. Used to ensure the asset will operate to a defined standard for a defined period in a defined environment. Reserved for single point of failure assets and those that cannot fail.

New underground infrastructure to convey flows
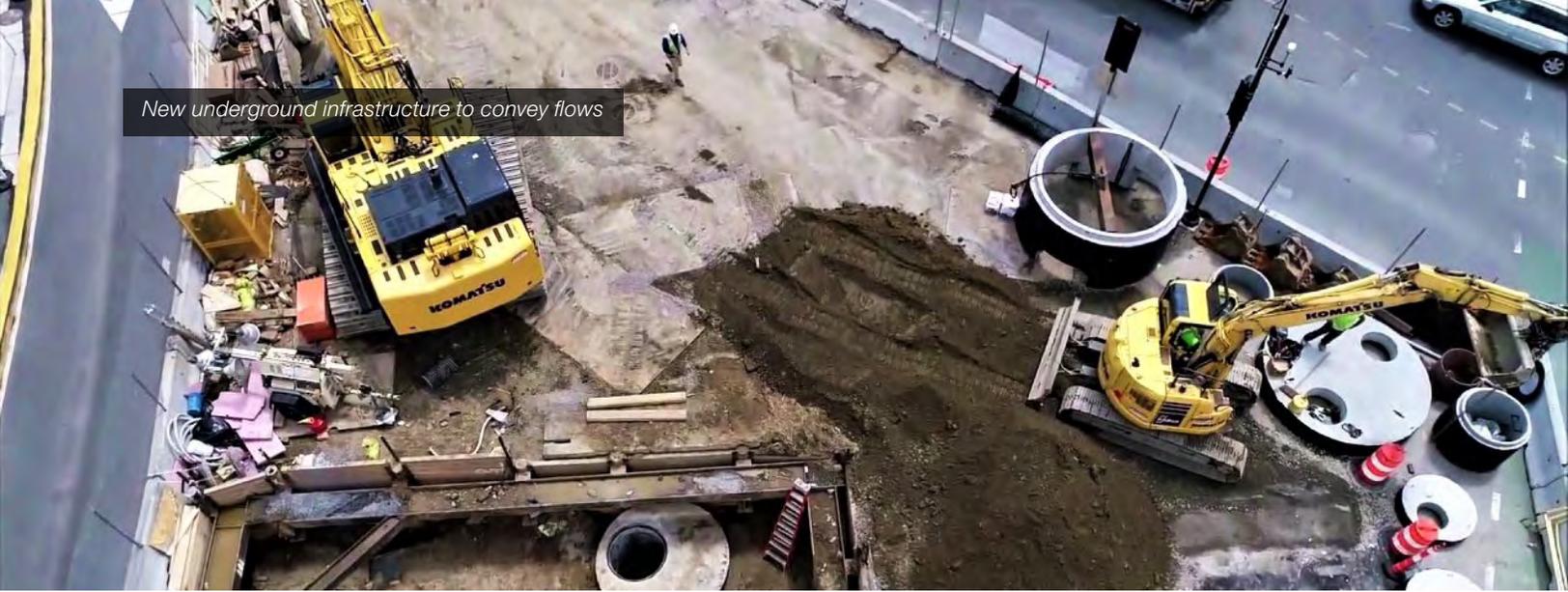
Rehabilitate

Rehabilitation involves restoring assets to extend their service life and improve performance / condition. It is often more economical than replacement, as it renews the asset without the need for removal or disposal. Typical strategies include:

- **Asset Renewal –** Restoring asset functionality through major repairs or replacements.

- **Refurbishment –** Partial or full restoration to extend asset lifespan.

- **Rehabilitation** – Upgrading existing assets to improve performance.

Replace

Eventually, as it becomes no longer cost-effective to repair or rehabilitate, every asset will reach the end of its service life and require replacement. Replacement involves complete removal of an asset and installation of a new asset.

By planning and budgeting for asset replacement, Somerville is proactively managing risk and maintaining the desired level of service while optimizing long-term investment in infrastructure.

06
Capital Improvement Planning

Infrastructure renewal needs are identified through various sources including asset management planning; master planning; the result of new/updated regulations; and system capacity/strategic growth initiatives. Capital improvement planning aims to align spending on physical infrastructure with the City's strategic goals and constituent expectations. As discussed throughout this document, risk assessment is an industry-standard tool for prioritizing infrastructure renewal needs, particularly in a resource-constrained environment. Using the quantification of risk to prioritize capital expenditures is a defensible method for capital improvement planning. This method will serve to identify projects of greatest benefit in the early years of the CIP.

> The inherent values for effective investment prioritization are objectivity, transparency, and confidence that the City is spending capital dollars on the highest priority needs.

Three Key Steps to Effective Investment Decision-Making

Step 1

Asset Risk

- Define failure
- Quantify LoFand CoF
- Consider risk tolerance
- Pursue risk mitigation strategies
- Pursue lifecycle management strategies

Tool: Asset Management Plans

- Prepare Asset Management Plans to assess risk then consider best treatments to achieve asset management outcomes, such as:
  - Modify/increase condition assessment
  - Change maintenance or operations strategies

Step 2

Ensure Best Solutions

- Clearly define problem
- Consider innovations
- Focus on lifecycle
- Focus on managing risk
- Consider triple bottom line benefits
- Select best alternative considering AM Objectives

Tool: Business Case Evaluations

- Conduct BCE when appropriate
- BCE outcome may include capital and non-capital solutions

Step 3

Prioritize Investments

- Consider all potential capital projects
- Consider full lifecycle costs
- Use prioritization criteria:
  - Regulatory drivers
  - Impact to service levels
  - Financial impact
  - Health/Safety
  - Environmental stewardship
  - Public trust
- Consider resource constraints

Tool: CIP Prioritization Workbook

- Rank projects and project 5-year CIP
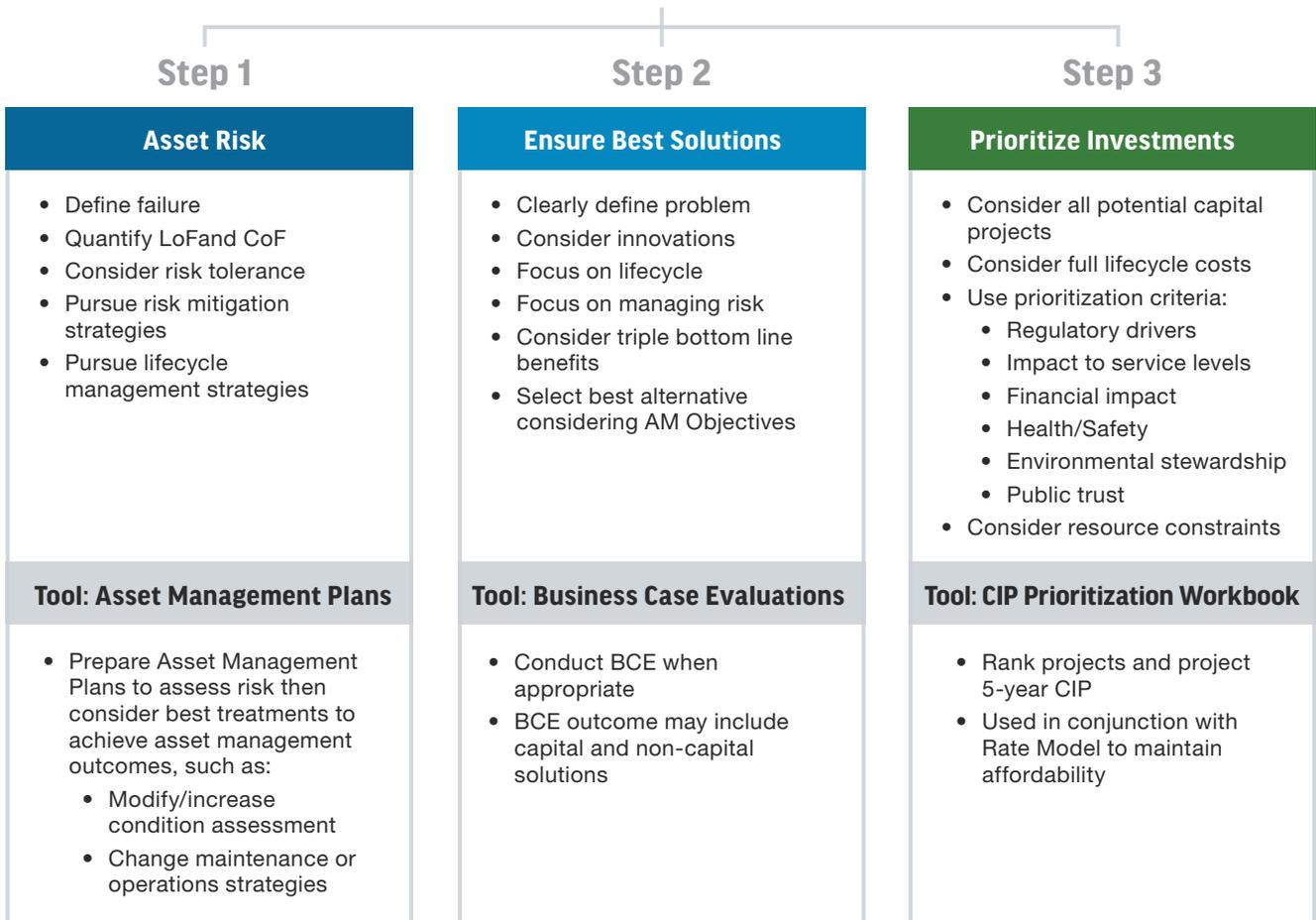- Used in conjunction with Rate Model to maintain affordability

Figure 6-1: Illustration of how risk and a formal decision-making process yields a defensible CIP

Validating and Prioritizing the CIP

The City uses a clear and consistent process to decide which capital projects move forward each year. This process helps ensure that limited funding is directed to the projects that address the greatest needs and provide the most benefit to the community
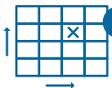
① Identification of asset-level needs. Assets with the highest risk scores are prioritized for capital renewal. Lower risk assets are appropriately managed over the course of the operating phase.

② Grouping needs together to form specific projects. Looking at the full landscape of needs, combine asset-level needs into bundled projects. The bundling of needs is typically based on proximity, type of work, or specific funding source.

③ Project verification. Projects are validated by a committee that represents a cross section of Departments and Divisions. The committee will review each project's relative priority and decide on the appropriate timing of the project.

④ Funding. The evaluation of funding occurs multiple times during the CIP planning process – at the very beginning, while evaluating project feasibility, and upon compiling a draft of the full, prioritized CIP. Accurately forecasting future needs helps to ensure funding is available when required, reducing the likelihood of removing or delaying projects.

⑤ Approval. The Mayor and City Council representing the constituents of Somerville have ultimate approval of the CIP each year.

The Future for Capital Planning

As the Asset Management Program matures, so will the information used for capital planning. Prioritizing proposed capital projects has traditionally been conducted ad hoc; however, shifting towards a formalized risk-based capital planning methodology and approach will result in a more objective and repeatable CIP prioritization with greater certainty that the project solutions that provide the most value to Somerville's constituents are implemented first.

The vision for an enhanced capital planning process includes:

Project Prioritization Criteria	An important component of asset management is validating the proposed projects in a fair, transparent, and repeatable manner. A triple-bottom-line approach inclusive of environmental, social, and economic categories will be developed to rank proposed projects. Using prioritization criteria based on asset management objectives ensures the best outcomes for Somerville's constituents.
Business Case Evaluation	Methodology for documenting and presenting a solution to an identified infrastructure need as a result of the asset management planning process or through other ad-hoc processes. The resulting solution to addressing the need could be a capital project, an operational program or changes to O&M strategies. A Business Case discusses the supply and demand issues and drivers for the project, documents the range of alternatives analyzed, explains the reasons for accepting and rejecting each option, makes a recommendation on how the project should proceed, and provides the documented justification for proceeding with the project.
Project Management Technology Support	Capital projects need to be efficiently initiated and managed through completion. Project management software can serve as a technology enabler to manage the full portfolio of capital improvement projects. Most commercially available project management software solutions help managers track financial, project management, and resource planning needs throughout project initiation, planning, execution, monitor & control, and closeout.

The Plan Forward

Maturing the Program

The City of Somerville is focused on building a resilient foundation that is guided by a framework for asset management published by the Institute of Asset Management. Long term success is based on embedding the principles of asset management into the fabric of how Somerville conducts business and manages assets. Somerville's Asset Management program will continue to create policies and procedures that align people, processes, and technology to optimize the value of the portfolios managed. Although the adaptive management approach may cause the path to shift along the way, the vision remains unchanged.

People

Technology **Process**
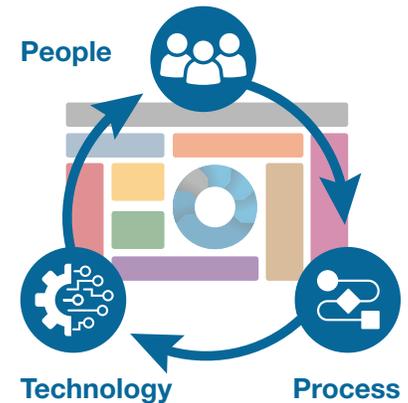
People:
Building a Culture of Asset Stewardship

Somerville is cultivating a citywide culture of asset management by empowering staff within all departments to actively participate in the responsible stewardship of public infrastructure. This collaborative approach strengthens organizational alignment by instilling a common language, shared technology, and accepted approach to asset renewal. Asset management decision making is based on institutional knowledge and professional expertise that is captured through staff engagement and cross-functional coordination. This people-first strategy fosters accountability and shared ownership of asset outcomes, laying the groundwork for long-term success.

Process:
Embedding Strategy into Daily Operations

To ensure consistent and effective asset management, Somerville is standardizing and optimizing business processes. By integrating asset management practices into daily operations, the City is shifting from reactive response to planned and preventive activities, thereby heightening value to our constituents. The use of a Consequence of Failure framework, for example, helps prioritize resources toward the highest-risk assets, while performance management systems enable continuous improvement and alignment with service delivery goals.

Technology:
Leveraging Data for Informed Decisions

Robust data governance aided by industry-standard technology plays a critical role in Somerville's asset management strategy. The City is enhancing its asset information capability by developing accurate asset registers and data management practices that make asset information accessible to staff. Access to quality data provides a reliable foundation for data-driven decisions that balance performance, cost, and risk. By integrating technology with operational insights, Somerville ensures that capital and O&M investments deliver long-term value. This alignment supports proactive risk management and reinforces the City's commitment to delivering consistent, dependable infrastructure at the lowest lifecycle cost.

The Asset Management Implementation Roadmap

- Steering Committee
- Strategic Documents
- Levels of Service Development
- Key Performance Indicators Development
- Risk Assessment Framework Development
- Capital Improvement Planning
- Staffing / Contracted Resources
- Data Governance
- Data / Technology Management
- CMMS Implementation
- Maintenance Approach
- Change Management and Monitoring

The Maturity Assessment completed in 2021 yielded an Asset Management Implementation Roadmap. It contains strategic initiatives to enhance the maturity and formalization of Somerville's Asset Management Program across twelve categories and five years. While it may take more or less time to achieve all of the initiatives identified, the Roadmap provides a playbook for near, mid- and long-term focus. Each uniquely identified initiative in the Roadmap aligns with the framework set forth by the Institute of Asset Management and contains:

- A brief description of the initiative
- Details about the status and any relevant comments
- Acknowledgment of who is responsible, accountable, consulted, and informed (RACI)
- Approximate timeline for commencement

The living document is available to City of Somerville staff via this link:

Somerville roadway

Roles and Responsibilities through the Lens of Asset Management

Formalizing Somerville's Asset Management Program means the principles of asset management are embedded in the way the City conducts business. As such, each department plays a collaborative role in shaping a sustainable and mature program. While the City continues to provide core service delivery, formalizing asset management within the City of Somerville will require contribution and support from all departments and business units.

Business Unit	Key Asset Management Responsibilities
Infrastructure and Asset Management • Engineering • Capital Projects • GIS	• Develop and coordinate formal AM Program • Maintain digital asset register and asset commissioning and decommissioning • Capture and manage data related to asset condition and system risk • Analyze AM data to develop priorities for capital improvements • Approve CIP prioritization • Plan for system growth and future demands • Manage delivery of capital projects • Develop and enforce minimum design standards • Develop operational and capital budgets to support AM priorities, asset renewals, and O&M needs • Identify and apply for external funding
Communications and Community Engagement • Constituent Services	• Receive and document customer requests for service • Lead and support stakeholder engagement activities • Instill consistent and accurate messaging by all City employees
Department of Public Works • Buildings • Highways • Electric Lights and Lines • Grounds • Fleet	• Actively engage in design, construction and startup of capital projects to ensure operational performance of new assets • Track operational performance of assets • Establish and implement preventive and corrective maintenance programs for all assets • Use AM technology consistently across all operational groups to capture data on asset maintenance and performance • Identify critical assets and their future operational and maintenance needs • Provide direct input during the development of system-specific asset management plans • Prepare capital and operating budget • Meet regulatory compliance • Manage fleet, replacement plan, and performance metrics.

Business Unit	Key Asset Management Responsibilities
Water and Sewer Department • Water • Sewer	• Manage and maintain billing meters • Bill and collect revenue • Communicate with customers about AM drivers for rate changes • Use AM data and priorities to develop proactive communications around rates and projects
Office of Sustainability and Environment	• Set strategic plan and metrics around energy goals for the city
Office of Strategic Planning and Community Development • Mobility • Public Space and Urban Forestry	• Set strategic plan and metrics around community development for the city • Provide input during design of system specific assets
Inspectional Services Division	• Enforce compliance to building regulations
Human Resources	• Modify classification descriptions to include AM knowledge, skills, and abilities • Facilitate hiring process
Purchasing	• Facilitate AM related procurement of goods and services
IT	• Provide "back-end" support for information management systems and technical support for database management • Manage IT assets • Plan for and execute technology upgrades • Implement cybersecurity measures
Finance	• Oversee City capital and operating budgeting • Guide and support long-term City financial forecasting
SomerStat	• Analyze and communicate data trends
Asset Management Steering Committee	• Maintain strategic direction of the program • Provide oversight and accountability, ensuring that asset management aligns with organizational goals • Reinforce the mission through communication, education, and example
Mayor's Office	• Provide overt support for the maturing AM Program

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Institute of Public Works Engineering Australasia. (2015, October). *International Infrastructure Management Manual (5ᵗʰ ed.).* IPWEA. https://www.ipwea.org/resourcesnew/bookshop/iimm

Somerville City Hall

Prior Asset Management Program Deliverables

The following documents can be made available upon request:

- **City of Somerville.** (2021, October). *Asset Management Maturity Assessment Technical Memorandum.*
- **City of Somerville.** (2022, July). *Asset Inventory Assessment Technical Memorandum.*
- **City of Somerville.** (2025. April). *Asset Management Policy Statement.*
- **City of Somerville.** (2025, November). *Asset Management Implementation Roadmap.*

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