

**Building Asset Management
Capacity in Ontario:**

A Framework for Success

April 2023



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Introduction

This report outlines a framework for policy makers and funders to accelerate progress on asset management outcomes for Ontario’s municipal sector.

The framework for sector engagement is based on three interrelated pillars: performance guidance, resourcing, and capacity-building. Each of the pillars identifies key findings, themes, opportunities, and recommended actions. ‘Quick wins’ and ‘high impact’ actions are identified under each pillar.

The report answers six questions:

- 1. How should sector progress be assessed?**
- 2. What are the best ways to accelerate sector progress?**
- 3. How should guidance around asset management expectations be refined?**
- 4. What are the key issues and opportunities around resourcing?**
- 5. What should funders focus on to build municipalities’ asset management capacity?**
- 6. What forces are shaping the future of asset management?**



This report was commissioned by the Association of Municipalities of Ontario (AMO) as part of its administration of the Canada Community-Building Fund, which requires that municipalities make progress in asset management.

1. How should sector progress be assessed?

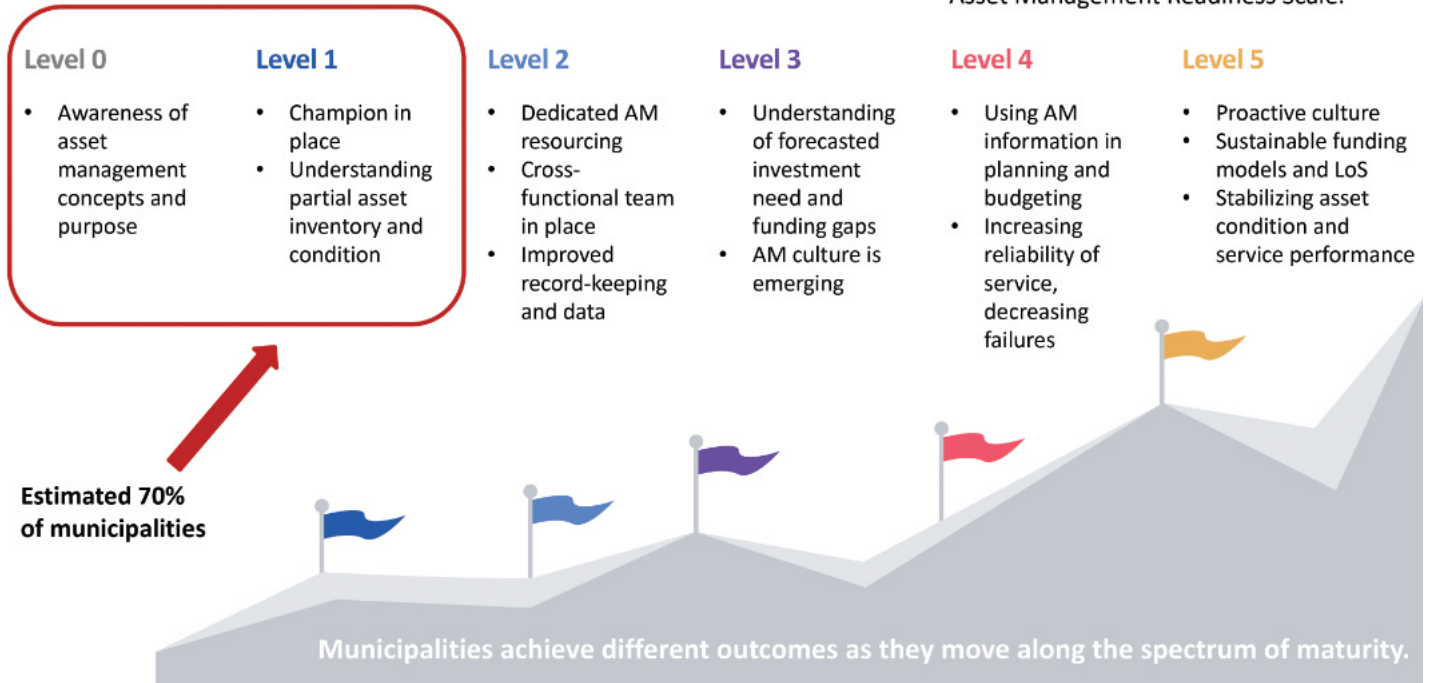
The industry standard for benchmarking organizational or sector progress is through asset management maturity assessments. A credible assessment process looks at how asset management practices drive outcomes and add value to an organization. Maturity assessments establish:

“the extent to which the capabilities, performance and ongoing assurance of an organisation are fit for purpose to meet the current and future needs of its stakeholders, including the ability of an organisation to foresee and respond to its operating context.”¹

This goes beyond analyzing Asset Management Plans (AMPs) as standalone documents. In an assessment, AMPs are one of many inputs into how asset management is practiced.

Fig. 1: AM Practices Correlated with Level of AM Maturity

Maturity levels are referenced from the Federation of Canadian Municipalities’ Asset Management Readiness Scale.



¹ *Asset Management Maturity - A Position Statement*, Global Forum on Maintenance and Asset Management, Oct. 2015, https://gfmam.org/sites/default/files/2019-08/GFMAM_ASSET%20MANAGEMENT%20MATURITY_FIRST%20EDITION_ENGLISH%20VERSION.pdf.

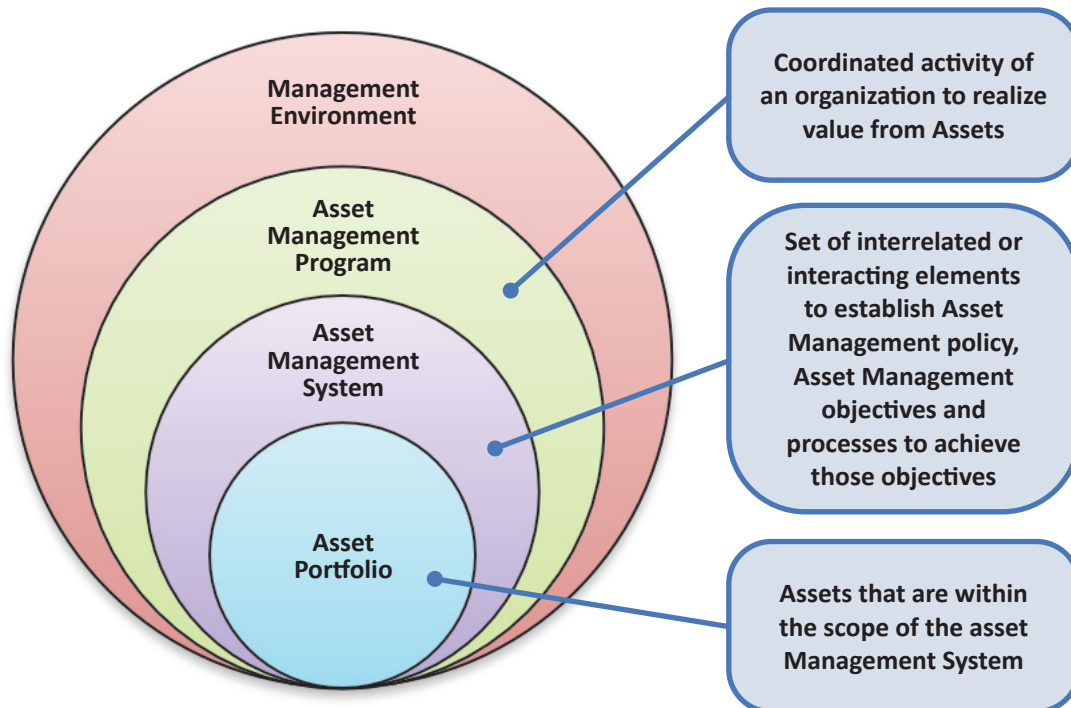
How should sector progress be assessed?

In the absence of detailed maturity assessments, one way of approximating the assessment approach is by conducting in-depth qualitative interviews, which is how the Association of Municipalities of Ontario (AMO) engaged Asset Management Ontario (AMONTario).

Methodology for this work included qualitative interviews with a diverse selection of Ontario municipal leaders and a pre-interview survey for each municipality, as well as drawing on AMONTario's experience in working with municipalities across the province and Canada.

The challenge facing higher levels of government in assessing asset management progress is that insights available from Asset Management Plans (AMP) address concerns mainly at the Asset Portfolio level whereas more valuable insights are often from the Management Environment level, which cannot be derived from AMPs alone. The insights from AMONTario's interviews are intended to help address that gap. **Figure 2** lays out the relation across different levels or spheres of asset management.

Fig. 2: Relationship of Different Asset Management System Elements, ISO 55000



How should sector progress be assessed?

Findings at the Asset Portfolio level include trends towards more complete asset inventories across municipalities, more publicly reported asset condition data, the presence of asset management policies, or the establishment of levels of service.

Although these insights are helpful, they reveal little about whether asset management is practiced effectively. Provincial and federal levels of government benefit most from insight into whether municipalities' adoption of asset management informs better infrastructure investment decisions. This would encompass the realms of the Asset Management Program and the Management Environment.

Even though there is modest progress across municipalities' Asset Portfolios, we're not seeing commensurate improvements in condition and performance of infrastructure assets. Findings from Canada's Core Public Infrastructure Surveys between 2016 and 2020, which focus on condition, are mixed.² In 2016, 17% of local roads in Ontario were in poor or very poor condition; by 2020, this percentage had declined to 16.3%, indicating modest condition improvement. For other assets, conditions have worsened. In 2016, 5.7% of Ontario's water treatment facilities were in poor or very poor condition; this deteriorated to 7.5% in 2020.

The reasons behind these mixed results could be complex. Better asset inventory and condition data industry wide may reveal a more accurate assessment than previously available. On the other hand, the mixed results could also indicate opportunities for better decision-making and optimized investments.

From a performance standpoint, studies like the Financial Accountability Office's Costing Climate Change to Public Infrastructure project reports that climate hazards "are expected to increase the costs of maintaining Ontario's transportation infrastructure by approximately \$1.5 billion per year in this decade, above what would have occurred in a stable climate".³ This indicates that the performance of municipal assets and costs associated with maintaining services are predicted to increase significantly as a result of anticipated changes in climate.

² See the data tables at Statistics Canada's website for Canada's Core Public Infrastructure Survey: <https://www.infrastructure.gc.ca/plan/ccpi-ipec-eng.html>

³ *Costing Climate Change Impacts to Public Infrastructure: Transportation*, Financial Accountability Office of Ontario, 2022, <https://www.fao-on.org/web/default/files/publications/EC2204%20CIPi%20Transport/CIPi%20Transportation-EN.pdf>.

2. What are the best ways to accelerate sector progress?

Based on our interviews and work with individual municipalities, federal and provincial/territorial governments should implement an integrated sector progress framework that coordinates actions under three pillars: performance guidance; resourcing; and capacity-building as per Figure 3.

This report lays out a 3-pillar framework with associated findings, themes, opportunities, and recommendations. In order to prioritize action, recommendations have also been further identified as ‘quick wins’ or ‘high impact’.

The proposed approach in the integrated framework is different in that it advances a systems approach to sector issues. The framework is intended to facilitate development of a coordinated roadmap of interconnected, prioritized actions. For example, the framework and its associated recommendations identify the role of communities of practice and municipal practitioners in helping to develop guidance on integrating climate change considerations into asset management. The practitioners themselves would also play a critical role in facilitating sector acceptance of new guidance or standards.

In **Figure 3**, **Performance Guidance** refers to refining the standards and expectations for municipal asset management. In Ontario, municipalities comply with O.Reg. 588/17⁴, but the sector is asking for greater clarification about standards and guidance related to non-core infrastructure and the integration of climate change considerations into the asset management process.

Fig. 3: Policy & Program Development Framework for Accelerating Sector Progress in Municipal Asset Management



Resourcing refers to finding more effective solutions for the sector around staffing and asset management implementation.

Capacity-building refers to building governance and leadership capacity and stronger organizational cultures to implement asset management. It includes training but encompasses significantly more in assessing how sector capacity can be developed by leveraging the contributions of various stakeholders.


⁴ <https://www.ontario.ca/laws/regulation/r17588>

3. How should guidance around asset management expectations be refined?

Findings indicate that even though there has been modest progress on asset management processes, such as more complete asset inventories, Ontario’s municipal sector overall demonstrates low AM maturity as per Fig. 4.

In this context, it is important for policy makers to provide increased clarity around asset management guidance, especially for non-core infrastructure services and how climate change action can be integrated into AM processes. If done effectively, this would benefit not just municipalities, but also the provincial and federal governments in receiving better and more comparable data.

Fig. 4: Performance Guidance – Findings & Themes

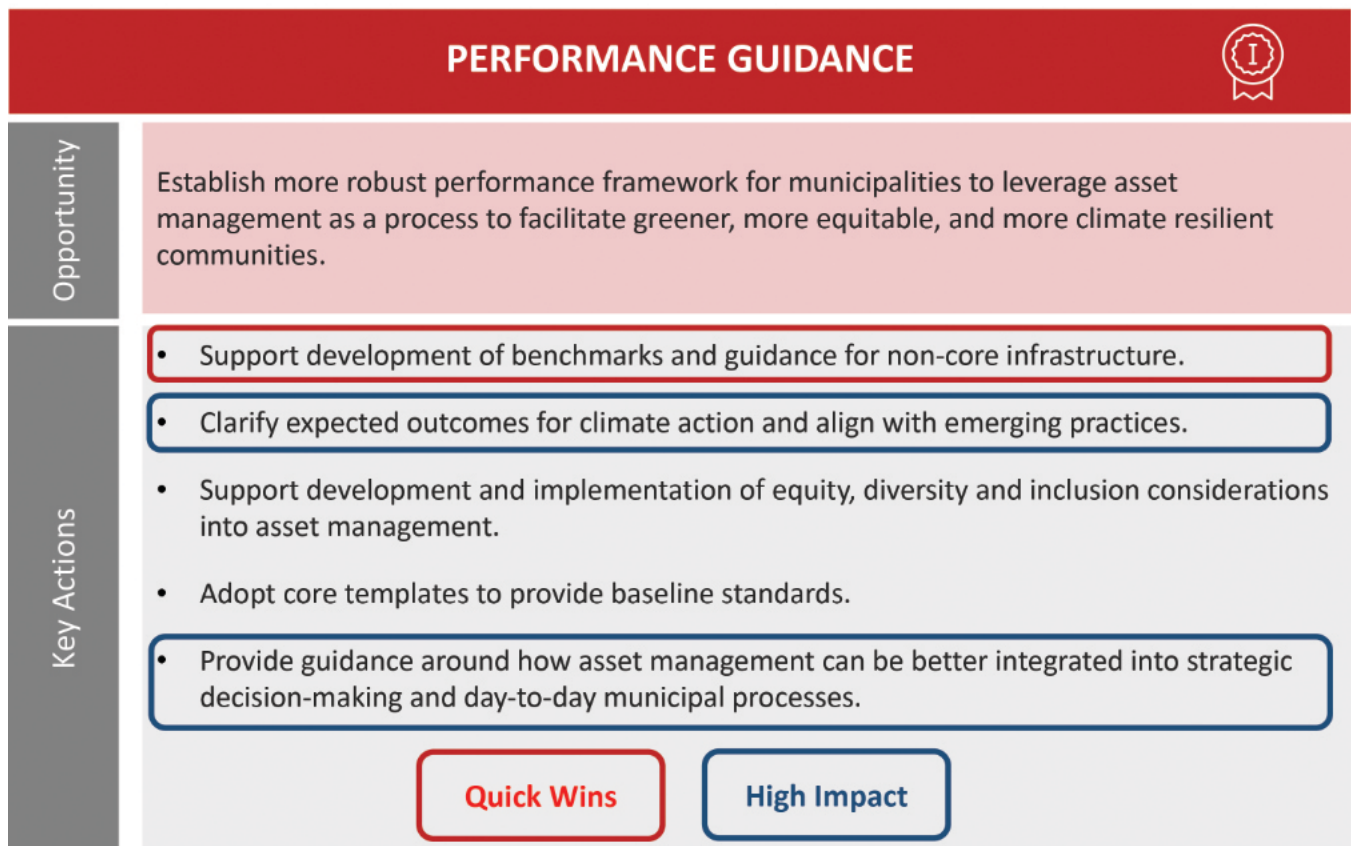
PERFORMANCE GUIDANCE 	
Findings	<ul style="list-style-type: none"> • Approx. 70% of municipalities are at a 0 or 1 on an AM maturity scale (0 beginner to 4 advanced). • Different approaches to adopting AM after O.Reg. 588/17 have broadened the gulf between least and most sophisticated. • AM should be more clearly linked with emerging, pressing issues such as climate change, social inclusion, & community resilience.
Themes	<ul style="list-style-type: none"> • Implementing AM effectively often entails a depth of organizational transformation that many are not prepared for. Funders should recognize that measuring meaningful sector maturity progress can take 8+ years for municipalities to drive material changes in outcomes. • Municipalities with greater asset management maturity are effectively integrating AM information into decision-making. This helps them to ‘leapfrog’ or accelerate their progress over other municipalities that may be complying with regulatory requirements but not implementing AM meaningfully. • There is an opportunity to improve the performance measurement, monitoring, evaluation, and learning framework on a sector wide basis. The opportunity to do so relates to addressing pressing issues facing communities around growth, climate change, social inclusion, and community resilience.

How should guidance around asset management expectations be refined?

These recommendations are interlinked with key actions under the Resourcing pillar: higher levels of government should centrally engage municipal asset management practitioners to develop this guidance through existing networks and communities of practice. This is important for credibility and sector uptake. The federal government – as through INFC and FCM-related initiatives – has modeled effective approaches for engaging municipal sector practitioners and asset management communities of practice.

Figure 5 identifies key opportunities, high impact actions, and quick wins under the Performance Guidance pillar.

Fig. 5: Performance Guidance – Opportunities & Key Actions




4. What are the key issues and opportunities around resourcing?

It is a truism that small, rural municipalities lack the resources of larger municipalities. Often this size difference is used to explain the slower uptake of asset management across smaller municipalities and justify proportionately more funding for them.

The reality is more nuanced. Small municipalities do lack the investment resources of larger municipalities (as per **Figure 6**), which is most apparent in investments in enterprise asset management systems and related process training that can support more sophisticated, evidence-informed decision-making. But smaller municipalities also tend to have fewer barriers in overcoming functional silos, and so can be – in theory – more nimble in adopting leading practices across the organization. That is a leadership issue.

Fig. 6: Resourcing – Findings & Themes

RESOURCING 	
Findings	<ul style="list-style-type: none"> • Lack of dedicated resourcing for AM in low AM maturity municipalities, which are predominantly small / rural. • Asset and service failures are often rooted in avoidable reactive practices. • Ecosystem of stakeholders and existing communities of practice are significantly underutilized to accelerate sector progress. • Continual re-training necessary to address staff turnover and change.
Themes	<ul style="list-style-type: none"> • Shortage of qualified AM practitioners. • Resourcing challenges are intensified at small, rural and remote municipalities. • Existing communities of practice should be engaged more actively and strategically. • Retirements and turnover are creating institutional knowledge gaps.

One thing that we find at smaller, more rural municipalities is a less developed understanding about how asset management can support more robust decision-making. Partly this derives from Council expectations, and partly from residents'. At large urban municipalities, for example, there is greater public pressure for asset management to support climate resilience aims or contribute solutions to community or social inclusion. These pressures encourage alignment of asset management with climate action planning or community growth plans; they tend to be less pronounced concerns in smaller municipalities.

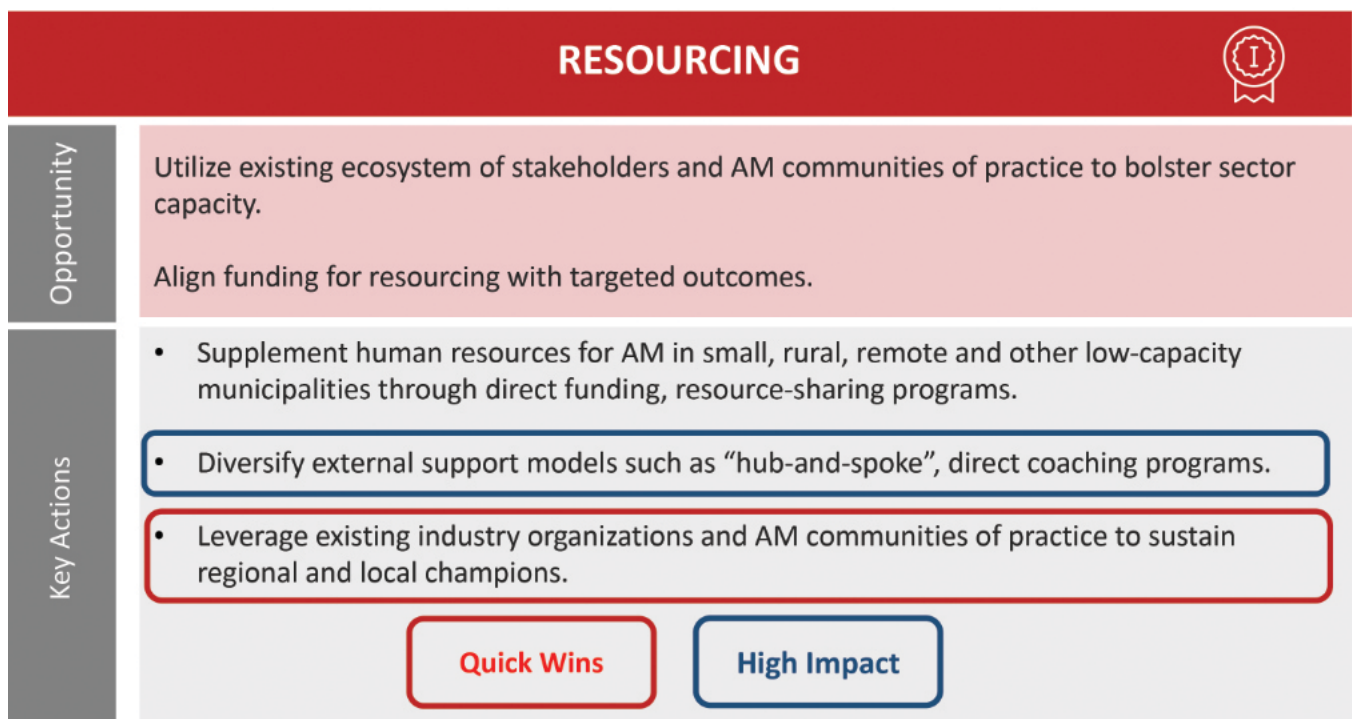
Another factor that differentiates small versus large municipalities is how staff turnover affects continuity of progress in asset management. Small municipalities are particularly vulnerable to staff turnover. When a staff member who champions asset management leaves a small municipality, that can set back progress significantly

What are the key issues and opportunities around resourcing?

at that municipality. Since asset management practices at many small, rural municipalities are not mature (as per **Figures 1 and 4**), there often is not an organization-wide culture to support the same level of continuity. Further, as demand for asset management analysts or coordinators has increased, there is often a dearth of suitable candidates to fill these positions, which exacerbates progress.

Higher levels of government have made funding available for municipalities to recruit asset management staff. Although this is helpful, it does not fully address the complexity of municipalities' resourcing challenges. In order to be more effective, provincial and federal governments should expand their resourcing strategies beyond funding for asset management positions (or consultants) and leverage existing ecosystems of industry associations and communities of practice as per **Figure 7**.

Fig. 7: Resourcing – Opportunities & Key Actions



Communities of practice are crucial to develop, sustain, and strengthen because they help to embed effective practices across multiple municipalities organically and at a grassroots level. Municipalities share practices, knowledge, and experiences – in so doing, they arrive at acceptable ways to solve common challenges. AMONTario's Large Urban Asset Management Community of Practice, for example, is animated by an active network of practitioners who share ideas around governance, cross-disciplinary staffing structures, and resourcing strategies. This approach validates ideas, allows municipalities to explore issues as peers, and share strategies for group benefit. That is more efficient and effective than alternative approaches.


5.

What should funders focus on to build municipalities' asset management capacity?

Figure 8 identifies key findings and themes from interviews and work with municipalities. For asset management to realize its potential, funders should focus on how well municipalities operationalize or implement asset management. This refers to how effectively asset management is incorporated into day-to-day processes and decision-making. It's important to focus on implementation because that provides the best direct indication about how asset management adds value to an organization.

The challenge for funders is that it's usually not possible to glean the quality of asset management implementation just by analyzing its asset management plan (AMP) or strategic asset management policy (SAMP), especially when these documents have been prepared by third party consultants.

Fig. 8: Capacity Building – Findings & Themes

CAPACITY BUILDING 	
Findings	<ul style="list-style-type: none"> • Limited practical knowledge on how to move from concepts to implementation. • Slow sectoral progress on organizational culture and process changes needed for AM implementation success. • Lack of Executive/Council champions and commitment. • Now integrating more complex issues (e.g. climate change adaptation; equity, diversity, & social inclusion) into AM.
Themes	<ul style="list-style-type: none"> • The most important determinant of AM progress is the quality of the AM culture within an organization, which takes time, effort and is often underestimated in terms of commitment to implement. • Shortage of qualified practitioners and lack of educational pathways to develop AM competencies. • Development of Council skills and ownership will be crucial. • Implementing and operationalizing AM is the next horizon for many municipalities.

Most of the available training is geared towards parts of the asset management process, such as levels of service, risk assessment, governance, or lifecycle management. This was appropriate when asset management was being rolled out across municipalities but should be revamped in light of shifting sector needs.

Five years after the introduction of O.Reg. 588/17, and more than a decade after the publication of *Building Together – Guide for Municipal Asset Management*⁵, municipal staff require more guidance about how to integrate the different aspects of asset management to support robust decision-making and drive better outcomes.

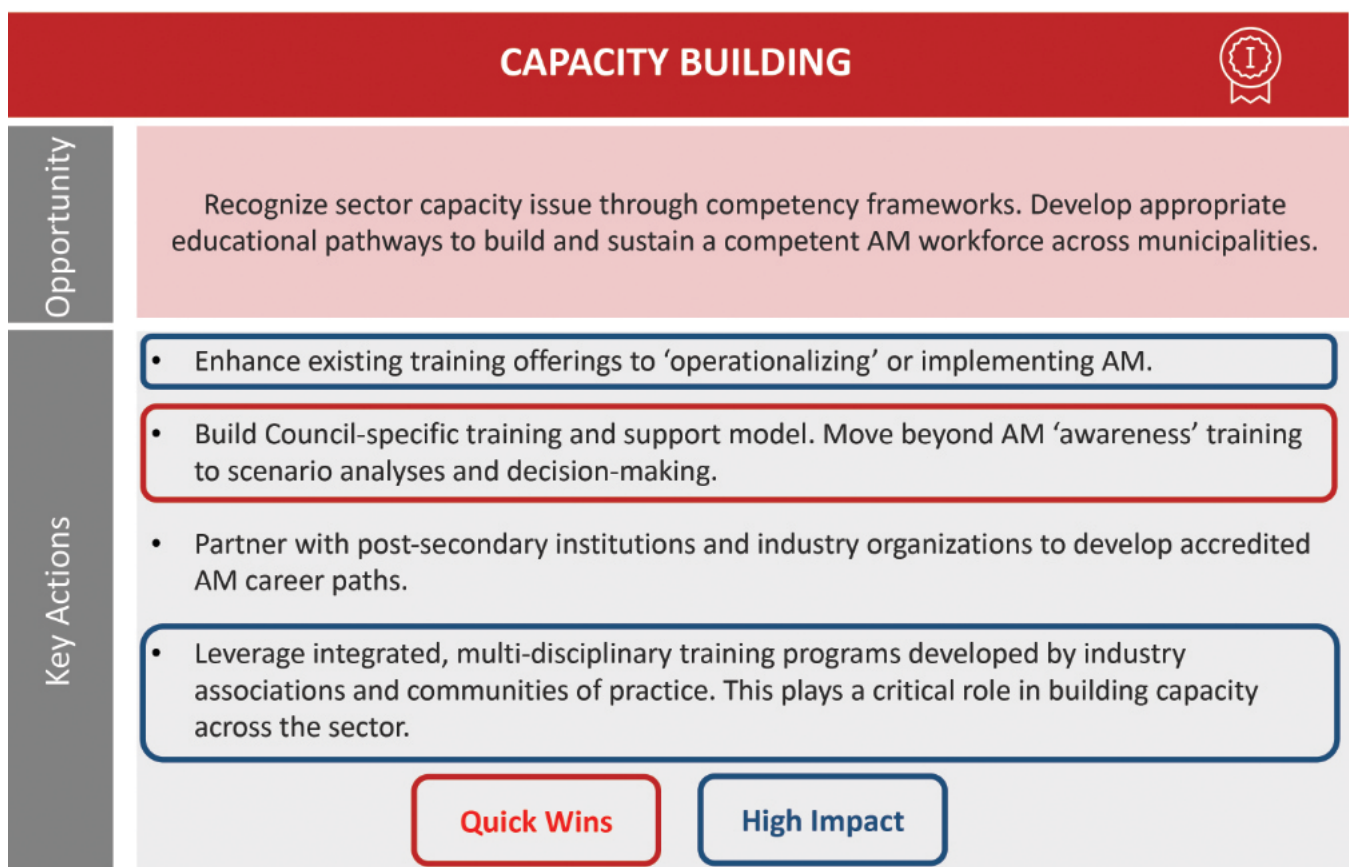
What should funders focus on to build municipalities' asset management capacity?

Part of this guidance can entail strengthening the advisory interface between staff and elected officials. There are also opportunities to support elected officials in using asset management in a more advanced way as a decision-making framework.

This type of training would go beyond the 'asset management awareness building' sessions that are available to elected officials. This can entail having them participate in guided decision-making scenario analyses with staff where the elected officials are coached to understand how the different elements of asset management can connect to their deliberative processes in situations that require substantive trade-offs.

A broad range of industry partners and communities of practice offer programs that can be tailored to achieving these ends while delivering 'quick wins' that are also 'high impact' as per **Figure 9**.

Fig. 9: Resourcing – Opportunities & Key Actions

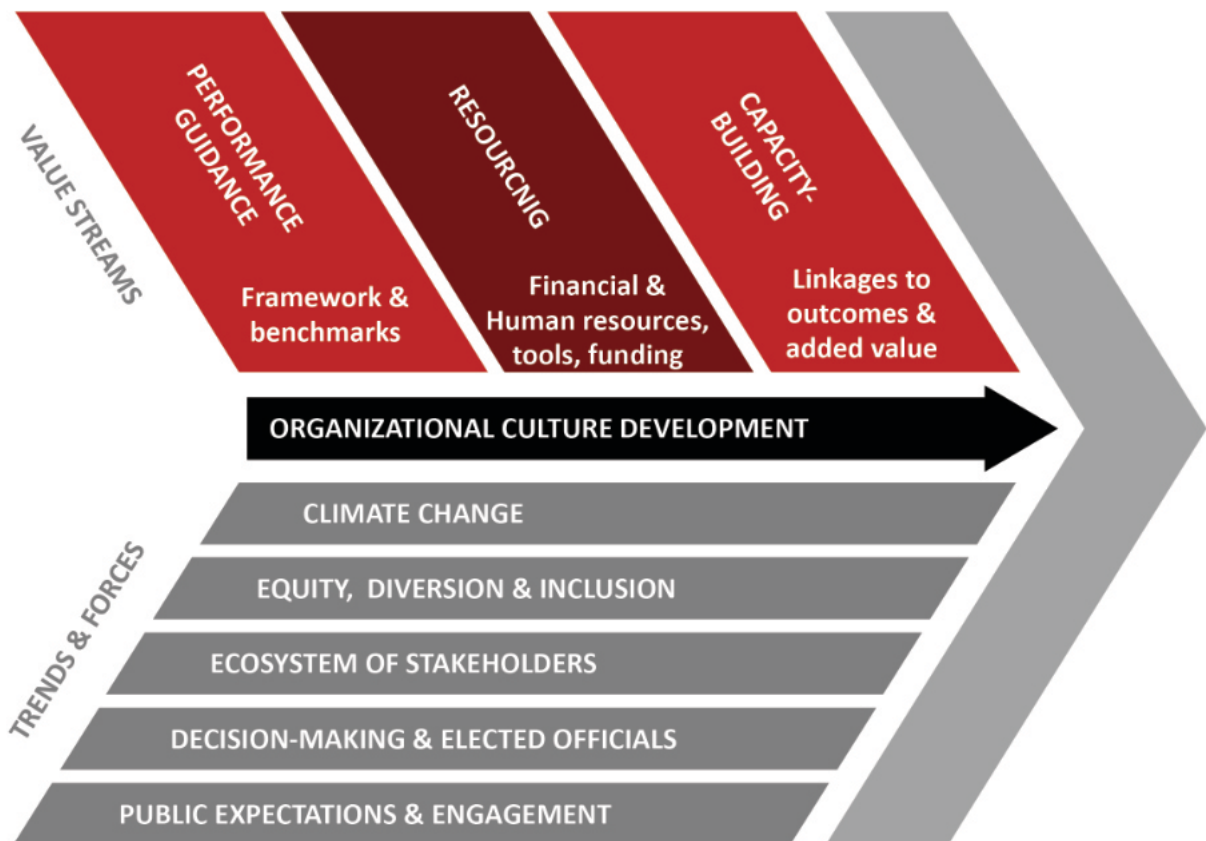


⁵ *Building Together: Guide for Municipal Asset Management Plans*. Ministry of Economic Development, Job Creation and Trade, Sept. 2012. <https://www.publications.gov.on.ca/building-together-guide-for-municipal-asset-management-plans>

6. What forces are shaping the future of asset management?

A framework that facilitates an integrated approach will be important to address five developments that are reshaping asset management. Figure 10 outlines these developments under ‘Trends & Forces’. The success with which these trends are addressed will influence how asset management can realize value for municipalities.

Fig. 10: Trends Shaping the Future of Asset Management



Climate Change

Municipalities are on the front lines of climate change action in terms of mitigation and especially climate adaptation, which relates to the management of forecast risks to infrastructure-related services. Asset management presents a powerful institutional framework from which to address climate change challenges in a complementary and coordinated way.

What forces are shaping the future of asset management?

Over the next five years, municipalities will increasingly seek to redress climate change considerations through their asset management programs. This is an area that policy makers should support in terms of the three pillars around performance guidance, resourcing (as with integrated climate change and asset management roles or funding), and capacity-building. Regional communities of practice across Canada – like Asset Management Ontario (AMONTario), Asset Management British Columbia (AMBC), Atlantic Infrastructure Management Network (AIM), and others – collaborate on the development of integrated climate change and asset management planning tools and resources to meet the growing demands of municipalities in this area.

The integration of ‘green infrastructure’, which encompasses nature-based solutions and low-impact development (LID) interventions, with “traditional” or ‘grey’ infrastructure will take on heightened importance as these practices can embody environmental and sustainability co-benefits.

Equity, Diversity & Inclusion

Coming out of the pandemic and in the wake of major social events, there is a growing awareness about who accesses services and whether those services are provided equitably. Asset management is the only framework within municipalities that oversees the comprehensive provision of services to residents through assets and infrastructure. Large urban municipalities are beginning to incorporate equity, diversity and inclusion (EDI) considerations into their levels of service and risk assessment models. Over the medium-term, these practices will become more widespread.

Small, rural municipalities with low or declining growth often have aging populations, and the techniques developed for addressing EDI can be adapted to help municipalities address the specific needs of seniors or other vulnerable populations.

Ecosystem of Stakeholders

For policy makers and funders to maximize the value of their interventions, it’s crucial to recognize existing ecosystems of stakeholders, industry associations, and communities of practice. Otherwise, duplication of efforts – or, worse yet, working at cross purposes – can ensue.

Understanding how ecosystems of stakeholders overlap becomes increasingly important as policy makers and funders work to address intersectional issues like climate change or community resilience. There is nuance to the implementation of this work at the community-level. For funding to have maximum impact, policy makers and funders should leverage existing networks consisting of practitioners across the range of functions represented by asset management.

This coordination or even awareness often does not happen successfully because it takes extra work at the program design and implementation phases. But when engagement across stakeholders is coordinated, this multiplies impact and achieves a higher return on investment. Established asset management communities of practice typically have a good understanding about the networks of practitioners and associations that should be meaningfully engaged in order to achieve policy aims.

What forces are shaping the future of asset management?

Decision-Making & Elected Officials

Elected officials can propel their municipalities forward in the way that they utilize asset management in deliberations and decision-making. This should be recognized as a councillor-related competency, from basic to advanced, that requires its own development. Briefings about what asset management is and why it's useful are helpful but should be regarded as merely introductory, not sufficient by themselves to drive asset management-informed deliberations.

One significant opportunity is to deepen the culture of active collaboration and coordination between staff and Council. Although elected officials may have a general understanding about the tenets of asset management, staff can help Council better understand how their decisions are necessary to uphold stated levels of service or mitigate risks within approved thresholds.

Training can be offered for individual Councillors or Councils as a whole. Part of the training can involve supporting elected officials in the way that they frame decisions to residents about weighing trade-offs around service levels, mitigation of often-unseen risks, and intergenerational costs.

Public Expectations & Engagement

Pressure from taxpayers and residents can drive municipal action. Over the past several years, engagement with issues related to the climate or inclusive communities is intensifying. With the proliferation of social media, there are also more demanding expectations that Councils and municipal staff are responsive in real-time to concerns or trends.

For municipal staff and elected officials, the capacity to communicate asset management priorities and progress is becoming an increasingly important skill for documenting or communicating rationales behind decisions and community investments.



Appendix: Methodology

This report draws on AMONTario’s experience in working with municipalities across the province. It provides insights from interviews conducted with municipal staff from communities that range in size, tier (upper-, lower- and single), and region, each with a unique community context around growth and development, state of infrastructure, service levels and AM practices developed to date. Complementing these interviews is extensive experience working intensively with over 110 Ontario municipalities - meeting regularly over a year - on building their AM programs through AMO’s AM Technical Assistance Program. This allows for a strong basis of trust, credibility, and deep understanding about Ontario municipalities’ AM needs, strengths, and challenges.

Interview participants include chief administrative officers, chief financial officers/treasurers, directors and managers of corporate AM, directors of public works, AM coordinators, and various other roles. Pre-interview surveys were issued prior to the interviews to provide a baseline understanding of AM maturity. Interviewees were promised anonymity to encourage candor, but their comments illustrating key findings are identified according to position, type of municipality, and region of province.



Asset Management Ontario

Asset Management Ontario (AMONTario) is a centre of excellence for public sector asset management. Its mission is to strengthen infrastructure asset management capacity and effectiveness across Ontario’s public sector.

We’ve worked with over 200 municipalities and are a program partner with the Federation of Canadian Municipalities’ (FCM) Municipal Asset Management Program. We also deliver asset management technical assistance on behalf of the Association of Municipalities of Ontario (AMO).

In addition to mentoring, coaching and direct assistance, AMONTario offers online certificate courses integrating climate change considerations into the AM process, including an introduction to green infrastructure.

Find out more about our events & resources via

<https://www.amontario.ca/>
or [Asset Management Ontario’s YouTube](#).

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