

Ministry of Infrastructure

State of Infrastructure: From Regulation to Data Optimization

Ontario Good Roads Association
2020 Conference

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Overview

- Municipal Asset Management Planning Regulation
- Tools and Supports
- Using Municipal Data to Inform Decision-making
- Next Steps
- Technical Q&As



Municipal Asset Management Planning Regulation

There are four key components of an asset management plan which form the foundation of O Reg. 588/17, *Asset Management Planning for Municipal Infrastructure*

1. Asset Inventory

- What assets are in each asset category
- The total replacement value of assets in each asset category (RV)
- The average age, condition of assets in each asset category
- How condition information is gathered for each asset category

2. Levels of Service

- Included within the regulation for core infrastructure assets

3. Lifecycle Management Strategy

- Identification of lifecycle activities
- Estimated annual costs over a 10-year period
- Estimated annual revenue over a 10-year period

4. Financial Strategy

- Strategy for managing the tradeoffs between proposed service levels and revenue shortfalls



Regulatory Timelines

Phase 1

July 2019

Finalize strategic assessment policy outlining commitments to best practices and continuous improvement

Phase 2

July 2021

Asset management plan for **core** infrastructure **assets** (water, wastewater, stormwater assets, roads, bridges and culverts), including current levels of service and costs to maintain these levels

Phase 3

July 2023

Asset management plan for **ALL** municipal assets, including current levels of service and costs to maintain these levels

Phase 4

July 2024

Building on Phase 3, plans shift from current levels of service to focus on proposed levels of service, as well as related lifecycle management and financial strategy for all assets.

- Municipalities with population < 25,000 are not required to include growth or employment forecasts
- Plans are be updated every 5 years.

Tools and Supports

Initiatives include hands-on seminars, online forums, peer reviews, asset management readiness assessments, benchmarking and other training opportunities



AMONTario has made a number of resources available on their site including a **Municipal Metrics Catalogue** and a **Comprehensive Guide to the Asset Management Process**, which respectively provide information on establishing service levels and prioritizing investments

Visit the AMONTario website to access tools and resources, including those identified above

<https://amontario.ca/amontario-resources/>

MFOA has also developed a number of AM resources including:

Strategic Policy Toolkit provides guidance to municipalities to help them prepare their Strategic Asset Management Policy

Asset Management Self- Assessment Tool and **Maturity Framework** helps municipalities evaluate their existing AMP capacity and also allows them to explore activities that could to move them to higher levels of maturity

AMP It Up 2.0 targets municipalities that have a population of less than 25,000, providing them with expert, in-person assessments of their AM plans and helping them to create localized action plans to develop and improve their plans

Visit the MFOA website (below) to learn more about these and other resources

https://www.mfoa.on.ca/MFOA/Main/Asset_Management/Resources/Main/MFOA_Policy_Projects/AMResources.aspx?hkey=12b67fe9-0d16-4fde-8bdd-901db4707f3d



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Value of Municipal AMP Data

- Municipalities own a significant portion of Ontario's core infrastructure assets and these assets provide critical services
- While 99% of Ontario municipalities had some type of asset management plan in 2018, the level of detail in plans and quality of underlying data vary significantly
- MOI has leveraged data from existing AMPs to develop a new estimate of the value of municipal infrastructure in Ontario
- More consistent and comprehensive plans can help inform the prioritization of infrastructure investments based on existing asset conditions

PRE 2012

Less than 40% of municipalities have an asset management plan



TODAY

Almost all municipalities have some type of asset management plan



BY 2024

100% of municipalities will have up-to-date plans that inform investment decisions

Using AMP Data to Estimate the Value of Municipal Infrastructure Stock

Data Collection

- Reviewed 400+ municipal AMPs
- Derived replacement values for different asset types by mapping them into common classes and sectors, with relevant data imported into a database

Data Gaps

- Reviewed data from Financial Information Returns to determine which municipalities own what assets
- Compared FIR data with municipal AMPs to identify situations where missing data should be present

Data Imputation

- Estimated missing values using different methods, e.g. applying average values per capita or household, by sector

Estimate

- Using this information, MOI estimates the replacement value of municipal infrastructure stock in Ontario to be approximately **\$420 - \$440B**, or roughly \$30,000 per capita (range reflects different methods)

Linking Replacement Value with Asset Condition

- As part of this analysis, MOI collected and stored available asset condition data
- Condition data is incomplete and reported inconsistently, limiting their analytic value. Phase-in of the regulation should help to support collection of better data
- In the interim, MOI is analyzing microdata (municipal level) from Canada's Core Public Infrastructure (CCPI) survey. While not complete, the CCPI has the benefit of using a standardized definition for asset condition
- Better and more detailed data on municipal asset condition will also complement condition data for provincially-owned assets
- These data, along with modeling tools and analysis, make it possible to forecast the amount of renewal investment needed in the future

Next Steps

- Province will assess the outcomes of the tools and supports initiatives
- Data from plans will continue to be analyzed as the regulation is phased in over time. Using this data, the Province could work with municipalities to:
 - Identify structural challenges, such as the long term financial sustainability of certain asset types and systems
 - Design evidence-based programs and policies that are responsive to municipal needs
- Province will continue to explore opportunities to improve data collection methods including leveraging existing reporting structures



Technical Q&As

Q1. Which assets do municipalities need to include in their plans?

- All infrastructure assets directly owned by a municipality or included in its consolidated financial statements, beginning with 'core infrastructure assets' by July 1, 2021 and all other municipal assets by July 1, 2023
- Plans due in 2024 must identify proposed levels of service. As such, municipalities should include planned infrastructure assets where they expect these assets to be constructed within the 10-year reporting period.

Q2. What are the essential components of lifecycle management activities? Do we need to specify each component when describing planned activities?

- As defined in the regulation, 'lifecycle activities' are activities undertaken for a municipal infrastructure asset over its service life, including construction, renewal, maintenance, operations as well as engineering / design work associated with these activities
- Understanding lifecycle activities on a year-over year basis is necessary to develop accurate cost projections. For example, as lifecycle activity requirements vary from year to year, some years will require greater levels of capital maintenance and renewal
- Municipalities are required to estimate the costs of lifecycle activities necessary to meet proposed levels of service; however, the exact level of detail they choose to provide within their plans is at their discretion.

Technical Q&As

Q3. Why does the lifecycle management and financial strategy require municipalities to outline two different sets of lifecycle activities?

- Every municipality is required to outline the lifecycle activities that would be required to support their proposed levels of service for ten years, with consideration given to the full lifecycle of the assets
- In some cases, the municipality may be able to afford all of the lifecycle activities required to support the proposed levels of service. However, if a municipality cannot afford the lifecycle activities required to support the proposed levels of service, it must outline the activities that it will undertake, based on projected funding availability.

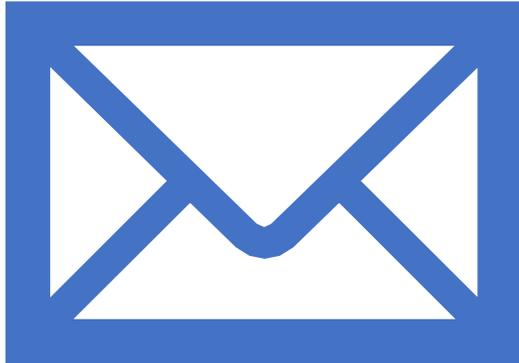
Q4. What is meant by “significant operating costs”?

- In accordance with accounting standards, some lifecycle activities are considered “capital expenditures” and some are considered “operating costs”
- Municipalities are required to separately report on operating costs and capital expenditures on a year-over-year basis, but they are only required to include “significant” operating costs and have flexibility to determine their own threshold for what they consider significant
- The regulation requires municipalities to set a threshold ‘with respect to all municipal infrastructure assets within an asset category; however, a municipality could establish a threshold(s) for discrete types of operating costs which yields a total threshold for the category. Costs below the threshold need to be included in their asset management plan

Technical Q&As

Q5. What do you mean when you say that condition data should be based on “recognized and generally accepted good engineering practices, where appropriate”?

- “Recognized and generally accepted good engineering practices” refers to the use of proven methods, procedures, codes and standards that are accepted by engineering practitioners licensed by Professional Engineers Ontario
- Age-based condition assessment may not accurately reflect condition of assets. The regulation specifies that physical condition assessments are to be determined using recognized and generally accepted good engineering practices where appropriate, to ensure that assessments are accurate.
- It is recognized that some assets are not typically assessed using standard engineering practices. For these types of assets, it is acceptable to determine condition using alternative physical assessments, such as a mechanic’s inspection of fleet vehicles, for example.
- For a better understanding of the types of documents that engineers consult, the American Society of Civil Engineers (ASCE) publishes many guidelines on things like water pipeline condition assessment, quantitative risk assessment, as well as documents on the design, maintenance and renewal of infrastructure.



THANK YOU

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