MFOA | MUNICIPAL FINANCE OFFICERS' ASSOCIATION OF ONTARIO

A guide to asset management for municipalities in Ontario

ASSET MANAGEMENT FRAMEWORK

This publication was made possible through funding from the Province of Ontario, MFOA and its members

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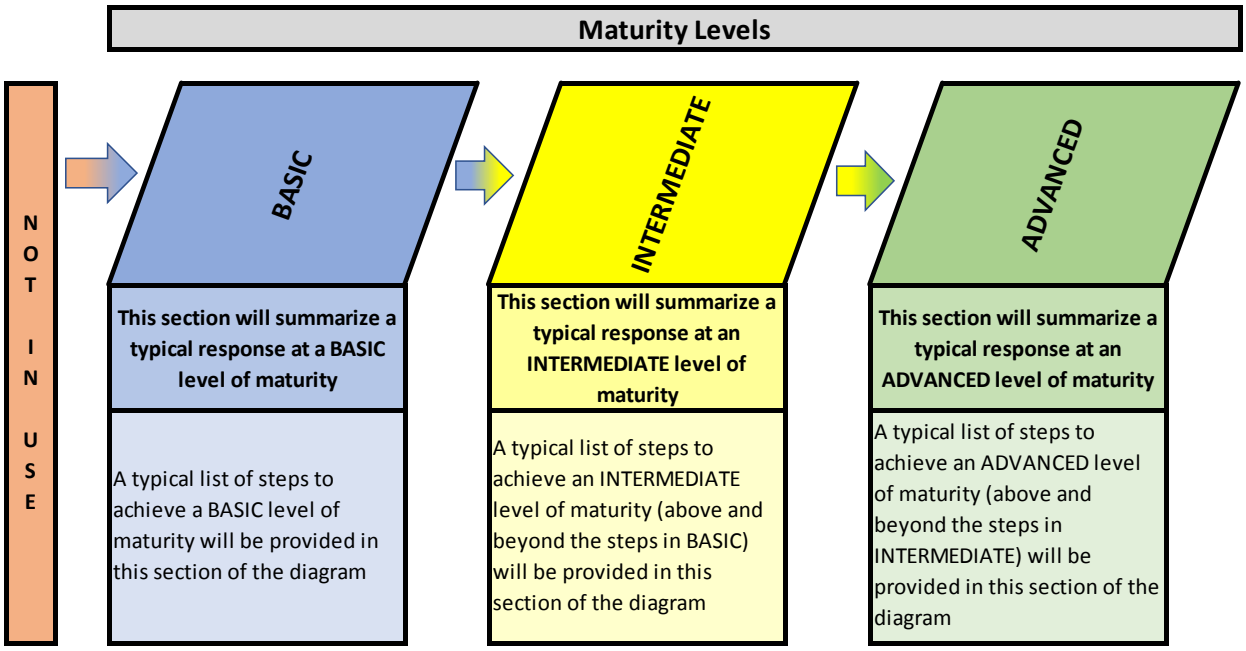
8 Continuous Updates and Improvements

8.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake in order to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices

to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic leve*l requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

8.2 Overview

Asset management planning is a continuous process, meaning municipalities should view their asset management plans as “living documents”, which will need continuous updates and improvements. Maintaining and updating the various tools, plans, policies, and strategies of an asset management plan is a major part of the ongoing work required to keep an asset management process operational. Furthermore, implementing improvements to the asset management process introduced brought about by innovation, technological and process advancements, or upgrades to existing assets are necessary in order to ensure optimal planning over time.

This chapter discusses ideas and strategies of how to navigate the analysis, planning, and execution needed in order for a municipality to nurture its asset management process over time.

Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements

O.Reg 588/17 outlines the following requirements with respect to AM Updates and Improvements:

A Strategic Asset Management Policy (SAMP) must be developed and adopted by *July 1, 2019* and reviewed and updated at least every 5 years. The SAMP outlines the requirement to consider the municipality's approach to continuous improvement and adoption of best practices regarding AM planning.

In addition, a municipality's AM plan must be reviewed and updated at least every 5 years.

8.3 Updates to Asset Management Planning Process

Continuous updates to the asset management planning process are needed due to changes in asset data, calculation assumptions, policies and strategies, and overall corporate direction.

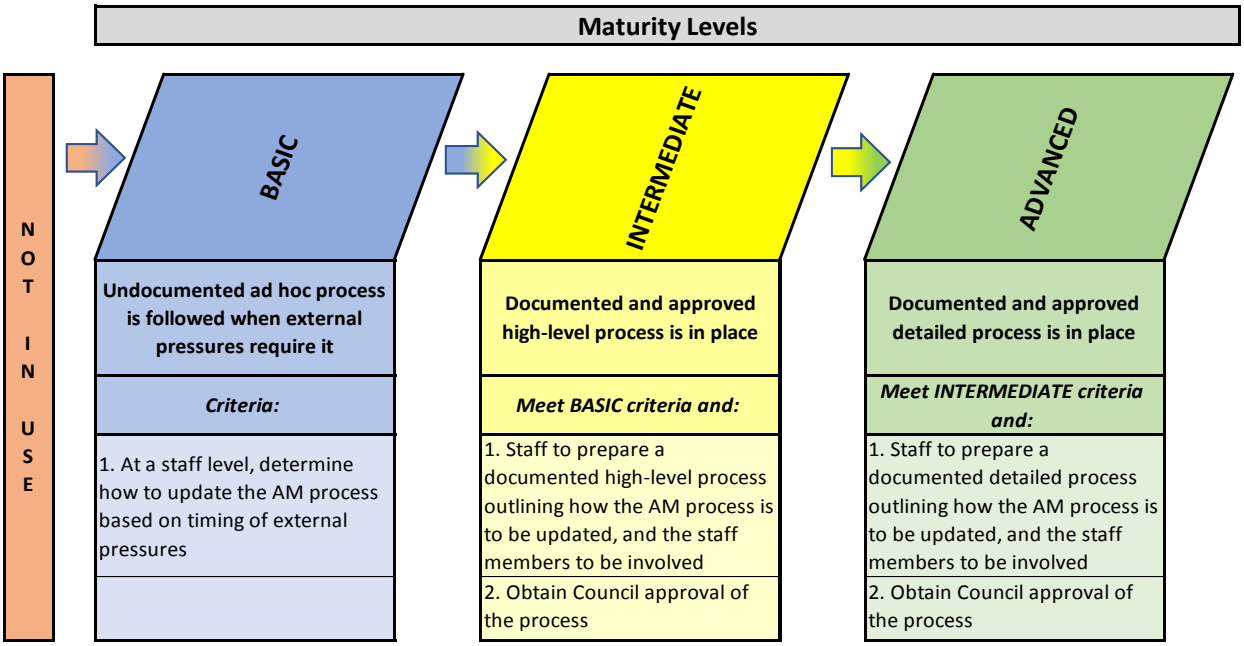
Does the municipality have a process in place to update the asset management planning process?

Background

A municipality that has an established long-term asset management process will, over time, encounter situations where updates to the assumptions, variables, and content need to be made. These types of updates are vital for the AM process as it ensures all planned actions are based on the most current data available. To this end, this section discusses updates that a municipality may undertake to ensure its asset management process can remain accurate.

Levels of Maturity – Updating the Asset Management Planning Process

Does the municipality have a process in place to update the asset management planning process?



At the **basic level of maturity**, municipalities update the asset management planning process when external pressures necessitate it (such as applying for a capital grant). Further, there is typically no documentation available to outline the process to follow when updating the asset management planning process (including the AM plan). As such, updates to the asset management planning process are typically carried out on a reactionary basis. Municipal staff determine how and when to update the asset management process based on the timing of external pressures. Some high level commentary on AM updates can be found in the municipality's AM policies/strategies (see Chapter 2) as required in O.Reg 588/17.

At the **intermediate level of maturity**, municipalities have an approved and documented high-level process in place to guide updates to the asset management planning process (including the AM plan). To reach this level, staff will need to prepare a document that outlines how the asset management process is to be updated, and which staff members should be involved in the process.

At the **advanced level of maturity**, municipalities have an approved, documented and detailed process in place to guide updates to the asset management planning process in place (including the AM plan). Staff prepare a document that outlines how the asset management planning process is to be updated, the schedule to which to adhere for the updates, and which staff members should be involved in the updates.

Strategy and Policy Updates

As discussed in *Chapter 2: Policies*, asset management strategies and policies guide the development and ongoing maintenance of the asset management process. This document (or documents) should mandate the frequency and content of asset management updates (both process related and asset management plan related). Municipal staff should use the strategies and policies in place as a starting point on how to initiate updates. Strategies and policies may suggest the timing of a review process for all components of the asset management process, including: plans, inventories, tools, and the strategies and policies themselves. For example, a potential policy could be to "perform a comprehensive review of all components of the asset management process every four years".

Another purpose of performing updates to asset management policies and strategies is to ensure the asset management process remains consistent with overall corporate strategies and objectives. As corporate strategies change, corresponding changes should be made to the asset management process.

Asset Management Plan Updates

Updates to an asset management plan can come in formats and complexities that can result in a wide range of actions necessary to implement them. For instance, a municipality that has recently discovered that it will receive increased grant funding for a major capital project may have to look into updating the lifecycle management strategy for updated project costing and timing, and the financing strategy to account for the grant itself. This is more of a "self-contained" update that flows through the entire asset management plan. However, if a municipality identifies that a specific level of service in a particular area is no longer sufficient, it may require the entire asset management plan to be updated (i.e. a more comprehensive update).

A clearly defined process should be included in the asset management policies and strategies that spells out who is responsible for carrying out updates, and how frequently these updates should be performed. Examples are as follows:

- Identify roles of staff who are responsible for updates.
- Determine how frequently staff should be performing updates while considering future needs. This could be tied to legislative requirements, such as updating condition assessments for bridges every 2 years in line with Ontario Structure

Inspection Manual (OSIM) requirements, or recording asset acquisitions and disposals annually in accordance with financial reporting (PSAB) requirements.
- Outline exactly what is to be updated, and how. This ensures consistency from one update to the next.
- Document the approval process needed for each update (including Council input/approval and public involvement). This will be discussed in more detail in later Chapters.

Examples of asset management plan updates include:

State of Local Infrastructure (see Chapter 3)

- How and when asset acquisitions and disposals should be monitored and updated (i.e. is this in conjunction with annual PSAB updates?);
- Asset condition, risk, and current valuation are constantly evolving and should be reviewed/updated;
- Remaining service life should be updated annually (as condition is updated); and
- Other asset attributes that a municipality may collect should be reviewed and updated (e.g. asset maintenance levels, capacity, functionality, etc.).

Levels of Service (see Chapter 4)

- How and when to review and reassess services being provided, and community/customer expectations for each service;
- How and when to review strategic (community) LOS and technical LOS including whether or not “current LOS” has changed since the last update, and if “expected LOS” is any different than originally stated;
- Update performance measures, review the trending analysis to determine progress towards expected service levels, and determine if new performance measures are needed; and
- Reassess the overall impact the LOS analysis has on the lifecycle management strategy.

Lifecycle Management Strategy (see Chapter 5)

- Review projected lifecycle costs (non-infrastructure solutions, maintenance and operations, rehabilitation, replacement, and expansion) over the forecast period based on:
    - Revised asset data;

- Updated LOS analysis;
- Updates to other inter-related processes (master plans, capital needs studies, expansion related studies, budget process, etc.); and
- Updates to the municipality's capital priorities.

Financing Strategy (see Chapter 6)

- Updates from other sections of the asset management plan (State of Local Infrastructure, Levels of Service, and the Lifecycle Management Strategy) and how they impact potential funding sources;
- Updates to other inter-related processes (budget process, rate studies, etc.);
- Updates due to new information on available funding sources (grants, third party contributions, taxation, user fees, debt, etc.);
- Adjustments to financial indicators (i.e. infrastructure gap, funding gap, other ratios) due to actual results; and
- Updates to historical operating and capital information due to actual results.

8.4 Improvements to the Asset Management Process

Continuous improvements to the AM process ensure that it keeps pace with the changing needs of the organization, as well as with evolving best practices, legislative requirements, and new technologies.

Does the municipality have a process in place to incorporate improvements into the asset management planning process?

Background

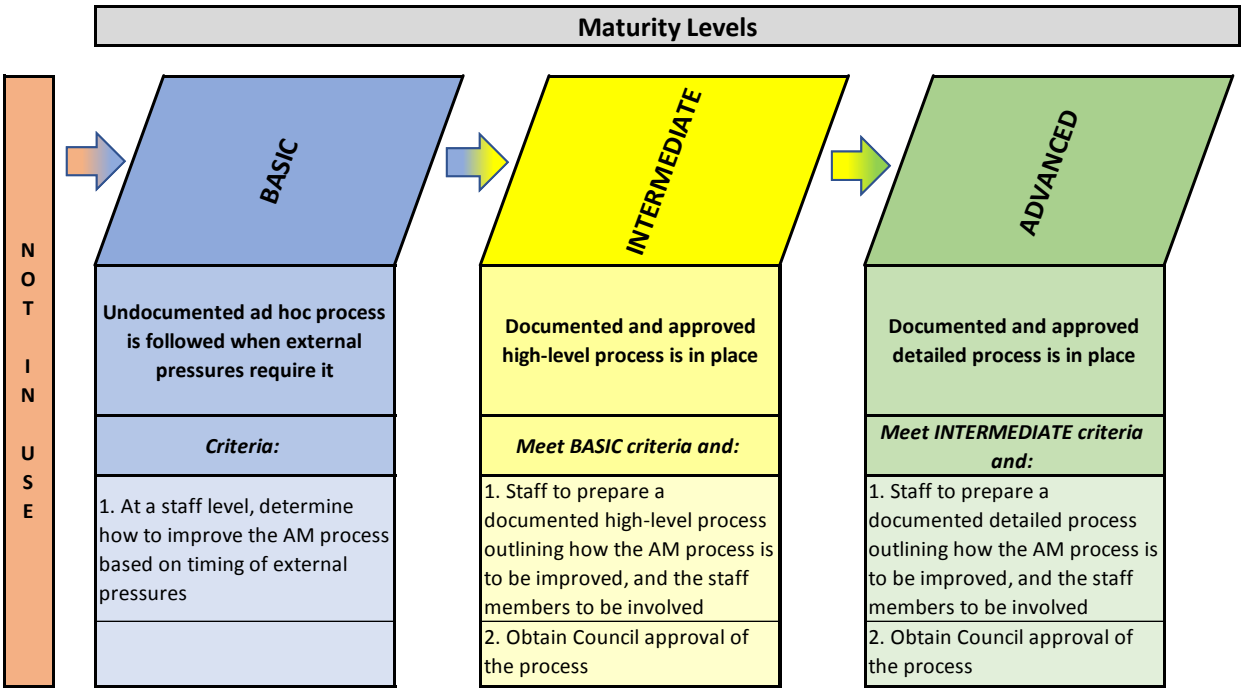
Improvements to elements of an asset management process are important for ensuring that it is meeting the evolving needs of the municipality. Remaining in line with best practices, new technologies, and legislative changes is key to meeting these needs. Networking with colleagues in other municipalities, attending relevant seminars/conferences, remaining current with related technological journals and/or magazines, and becoming involved in professional organizations can provide different approaches and strategies to succeeding in asset management planning.

This section on updates and improvements differs from the previous section (which focused on "updates" to your asset management *process*), and focuses instead on

updates related to ensuring your *existing strategies*, *policies*, *data*, and *variables* are updated as needed over time. Improvements relate to evolving and changing a municipality's strategies, policies, and asset management framework to make them better. "Better" in this context can mean more effective, more efficient, more informative, more accurate, and so forth. It is safe to say that a municipality will never be "done" implementing asset management planning. It is a process that develops and evolves over time.

Levels of Maturity – Asset Management Planning Improvements

Does the municipality have a process in place to incorporate improvements into the asset management planning process?



At the **basic level of maturity**, municipalities incorporate improvements into the asset management planning process when external pressures necessitate it. Further, there would be no documentation available which would outline how to incorporate improvements into the asset management planning process. As such, asset management planning improvements are done on a reactionary basis with municipal staff determining how and when to incorporate improvements into the asset management process based on the timing of external pressures. Some high level commentary on AM improvements can be found in the municipality's AM policies/strategies (see Chapter 2) as required in O.Reg 588/17.

At the **intermediate level of maturity**, municipalities have an approved and documented high-level process in place for incorporating improvements into the asset management planning process. To implement improvements, staff prepare a document outlining how the asset management process is to be updated to reflect improvements as well as the staff members to be involved in the process.

At the **advanced level of maturity**, municipalities have an approved and documented detailed process in place for incorporating improvements into the asset management planning process. To accomplish this, staff need to prepare a document that outlines how the asset management process should be updated to reflect improvements, the schedule to adhere to for implementing the improvements, and for which staff members should be involved in the improvements.

Identifying Areas of Improvement

There are challenges that come from improving an asset management process, including: identifying where areas of weakness are; what "ideal" means specifically to the municipality: how to provide solutions to bridge any gaps: and which improvement solution is right to pursue. In addition, the frequency of implementing improvements should be identified. The following represents a suggested approach:

- **Develop an Asset Management Improvement Strategy**: An improvement strategy should be included in a municipality's overall asset management strategies and policies. Aspects of the improvement strategy might include an indicator for how and when asset management improvements are to be sought out and implemented. For example, if a municipality decides to complete a full update of their asset management plan every "X" years at a minimum, the improvement strategy should require an analysis of ways to improve the process before the update is started.
- **Identify Shortcomings and Weaknesses**: Locating all shortcomings may not be an easy task, especially if the outputs from the system appear to be functioning adequately. However, "functioning adequately" does not necessarily translate into "functioning optimally".
    - This guide provides differing levels of maturity (basic, intermediate, and advanced) for many asset management components and can be a useful tool in identifying areas of improvement in a municipality's current processes.

    - A municipality should look at asset management areas that, if improved, could provide increased benefit inside the organization (both in asset management and in other areas). An approach for assessing weaknesses/deficiencies would be to identify areas of the asset management process that the municipality struggled with during the last round of updates.
- **Identify Optimal or Ideal Solutions**: With a weakness identified, the municipality should attempt to define what the asset management area should look like or how it should function in order to provide increased or optimal benefit to the organization. A review of asset management best practices or discussing asset management with other municipalities could identify improvements that were not considered in the past. It should be noted that there may be multiple approaches to dealing with a single issue. In such cases, each municipality will need to determine what the optimal solution is, based on their specific circumstances.
- **How to Close the Gap**: A potential improvement to the asset management process involves closing (or minimizing) the gap between what is currently being done and what is considered optimal. This is a vital step in understanding the divide between what improvements would look like and where a municipality currently resides in specific asset management process areas. With this information, a municipality is better able to understand what solutions are appropriate for implementing asset management improvements.
- **Cost-Benefit Analysis**: Once weaknesses have been identified and compared to optimal, and once potential solutions drafted, the final step in the improvement process is to determine the solutions to implement. A proposed solution may easy to implement for the municipality, and may also bridge the gap between what is current and desired (optimal).But the municipality may still choose to forgo implementation due to the cost, time and/or resources associated. In addition, solutions to numerous problems may be identified, but it may not be feasible to implement all of them at once. In such a situation, performing cost-benefit analysis allows a municipality to apply a priority ranking to improvement solutions and determine which solutions would be most beneficial to pursue in the short term versus long-term. This cost-benefit analysis should be performed for each proposed improvement solution to ensure that the costs of implementation do not exceed the benefits. In determining this cost-benefit analysis, a municipality should pay particular attention to:

Benefits

- Cost savings;
- Time/effort efficiency savings;
- Increased accuracy and completeness to the asset management process;
- Improved integration with other municipal processes;
- Added transparency/understanding of resultant outputs;
- Risks mitigated; and
- Legislative adherence.

Costs

- Monetary costs;
- Risks involved;
- Time horizon;
- Staff/Council resourcing required; and
- Difficulty inserting into current operational workflows.

Examples of improvements that could be made to an asset management process include:

- Creating a business process manual for inclusion with the asset management policies and strategies;
- Introducing methods of evaluating and tracking asset management progress over time;
- Developing a more efficient and effective condition assessment process for assets; and
- Enhancing the level of service analysis to incorporate input from Council and new performance measures.

Summary

The improvement review process is a framework for staff and Council to follow that guides how to execute overall asset management objectives. Identifying the areas that need improvement is an important step that outlines what needs to be done to move towards that asset management vision.

This review process should specify the frequency at which it should occur and identify the roles of staff and Council during the improvement process. It should state how to evaluate the municipality's maturity levels, past performance, identify best practices that

are currently not being employed, and perform a cost-benefit analysis in order to determine which solutions to employ. It should be a formalized process that is included in the municipality's asset management strategies and policies (see Chapter 2). It may be prudent to synchronize the schedules of the improvement process and the timing for updating the asset management plan, as scheduling the improvement process to run preceding any updates to the asset management plan will ensure any improvements make their way into the newest iteration of the plan.

8.5 Frequency of Updates/Improvements to the Asset Management Process

The frequency of updates and improvements is an important factor to the overall AM process. Ensuring the AM process and plan consistency meet internal needs as well as external pressures ensures its overall usefulness.

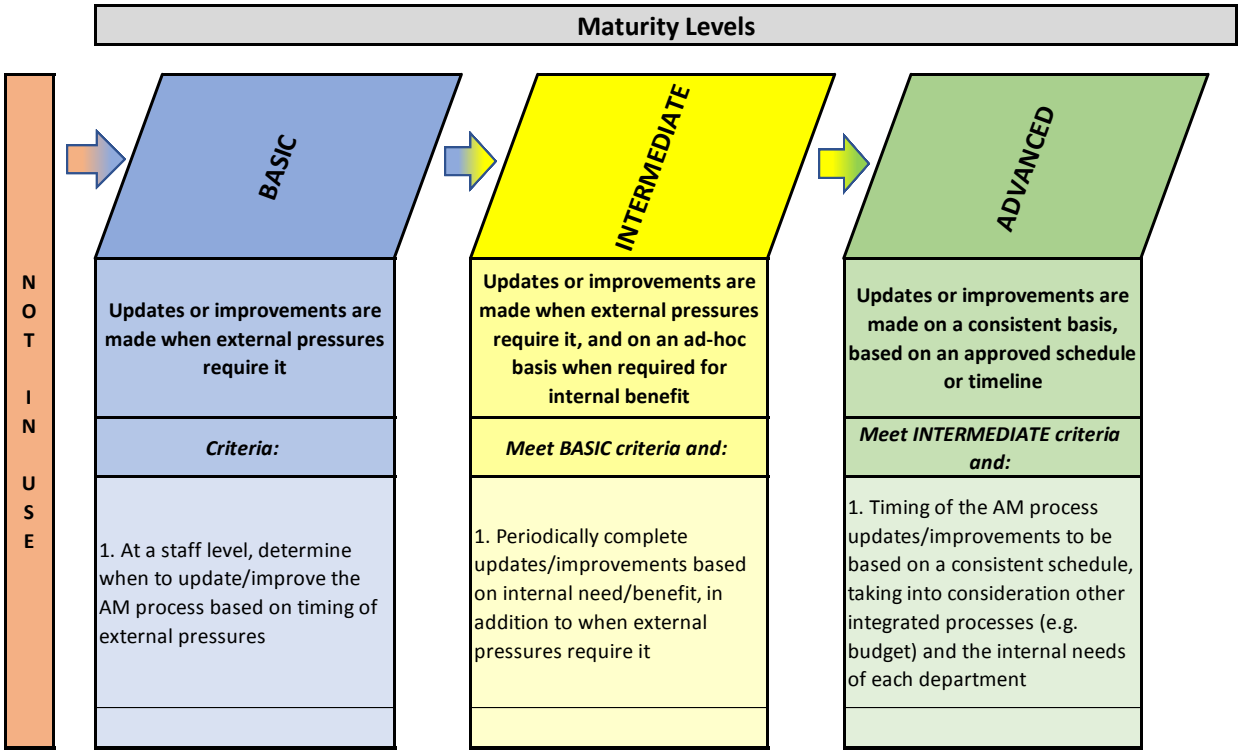
How often are asset management updates or improvements implemented/integrated into the AM process?

Background

AM updates and improvements (as discussed above) are important to the overall AM process. The ongoing needs of the municipality are constantly evolving to the point where many policies and strategies corporately have to be reviewed and updated on a periodic basis. As technology, existing processes/policies, services offered, and staff change, the AM process should also change to adapt to the municipality.

Levels of Maturity – Frequency of Updates/Improvements

How often are asset management updates or improvements implemented/integrated into the AM process?



At the **basic level of maturity**, municipalities incorporate updates/improvements into the asset management planning process on an ad hoc basis when external pressures necessitate it. Asset management planning updates/improvements are done on a reactionary basis.

At the **intermediate level of maturity**, municipalities update/improve the asset management process both based on external pressures (i.e. reactionary changes), and occasionally as needed for significant changes to internal needs.

At the **advanced level of maturity**, municipalities update/improve the asset management process based on a consistent and regular schedule. The schedule would account for any externally required changes as well as regular updates/improvements for internal needs. The types of updates and/or improvements would also been planned for and tracked.

Frequency of Updates and Improvements

With the increasing importance to asset management planning and the associated regulation in place under IJPA, municipalities will be searching for approaches to make their process more efficient and more effective. In addition, municipalities will not put in place perfect AM processes during regulation implementation. Therefore, there should

be processes in place to look at the strengths, weaknesses, opportunities and threats of the overall AM process and plan in order to determine what updates or improvements are needed, and when. This should take into account both external and internal needs.

The need to continuously update and improve a municipality's AM process is consistent with Ontario Regulation 588/17 requirements for a "strategic asset management policy". Therefore, each municipality has a requirement to have a process in place to incorporate updates and improvements as needed. Examples are as follows:

- Update the AM plan:
  - Annually?
  - Every 2 to 3 years?
  - Every 5 years? (Ontario Regulation 588/17 requires updates to occur, at a minimum, every 5 years).
- Improve the AM process and plan:
  - Annually?
  - Every 2 to 3 years?
  - Every 5 years?
  - When a planned significant improvement is needed? (Ontario Regulation 588/17 requires municipalities to incorporate improvements, however a frequency is not provided).