

Asset Management Webinar Series Fundamentals

The Association of Municipalities of Ontario (AMO) entered into an Agreement with FCM to work directly with municipalities to make progress in asset management. AMO engaged Asset Management Ontario (AMONTario) in this initiative.

The initiative is delivered through the Municipal Asset Management Program, which is delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.

Contact GasTax@amo.on.ca for more information

Establishing an Asset Hierarchy & Performing Data Gap Analysis

Introduction

February 6, 2020

Four Topics and Four Myths

1. Structured Asset Information

- *Myth: Lots of asset data = useful information.*

2. Establishing the Asset Hierarchy

- *Myth: Asset data is a dry (technical) topic.*

3. Setting up the Asset Register

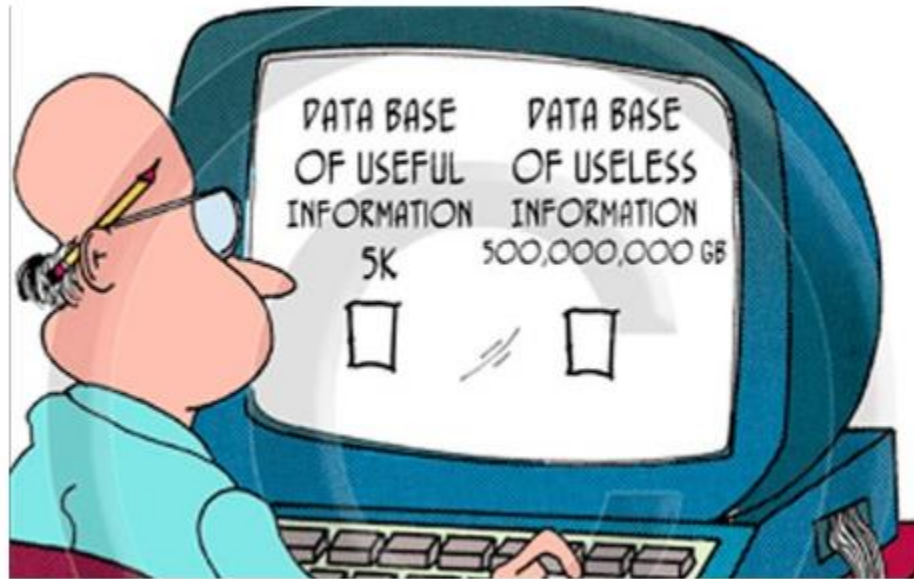
- *Myth: Acquiring a new asset software (IT) system will resolve asset information issues.*

4. Performing the Data Gap Analysis

- *Myth (sort of): Updating an Asset Register is an overwhelming task.*

1. Structured Asset Information

Myth: Lots of asset data = useful information.



Reality: A municipality needs clarity of purpose in how its asset information will be used. That will shape what asset data to collect.

- The objective of your municipality's asset data strategy should be to build processes that create a foundation of sound asset information.
- Sound information is derived from data.
- Data is accurate, complete, consistent, and up to date, it provides a clear, cohesive picture of how assets achieve service performance over time.
- ***Asset Hierarchy is the foundation for structuring municipal asset data into information that will facilitate decision-making.***

Structured Asset Information facilitates various advantages by providing:

- Greater insight into the condition and performance of an asset in relation to the level of service defined;
- Strategic Information for senior decision makers;
- Tactical Information for professionals and managers for technical planning;
- Operational Information for operational staff and technical professionals; and
- Accountability in working relationships.

Asset data can be organized to enhance different perspectives needed to run a municipality.

- Physical Asset Attribute Data
- Location and Spatial Links
- Work Management Data
- Performance Data
- Condition Data
- Cost Data
- Ownership and Maintenance responsibility Data
- Relationship Data (Service, Organizational)

Evaluate the quality of your data by asking the following questions:

- **Accuracy** — *Does the data correctly represent the asset it relates to?*
- **Completeness** — *Are all assets and required attributes populated?*
- **Validity** — *Is the data stored in the correct format?*
- **Consistency** — *Does the same asset have the same identifier across data sets?*
- **Uniqueness** — *Is each asset recorded only once?*
- **Timeliness** — *What is the time delay between a change to an asset and the corresponding data change?*

Poll Question:

Does your municipality have an asset hierarchy for core infrastructure assets?

2. Establishing the Asset Hierarchy

Myth: Asset data is a dry (technical) topic.



Reality: Quality asset data drive effective asset management. The collection and processing of data must be structured strategically, typically through an Asset Hierarchy.

Quality and up-to-date asset data:

- Facilitate the 'line of sight' between technical and community levels of service;
- Enable an enterprise-wide evaluation of risk and its mitigation.
- Drive progress from a municipality's Strategic Asset Management Policy to its Asset Management Plan.

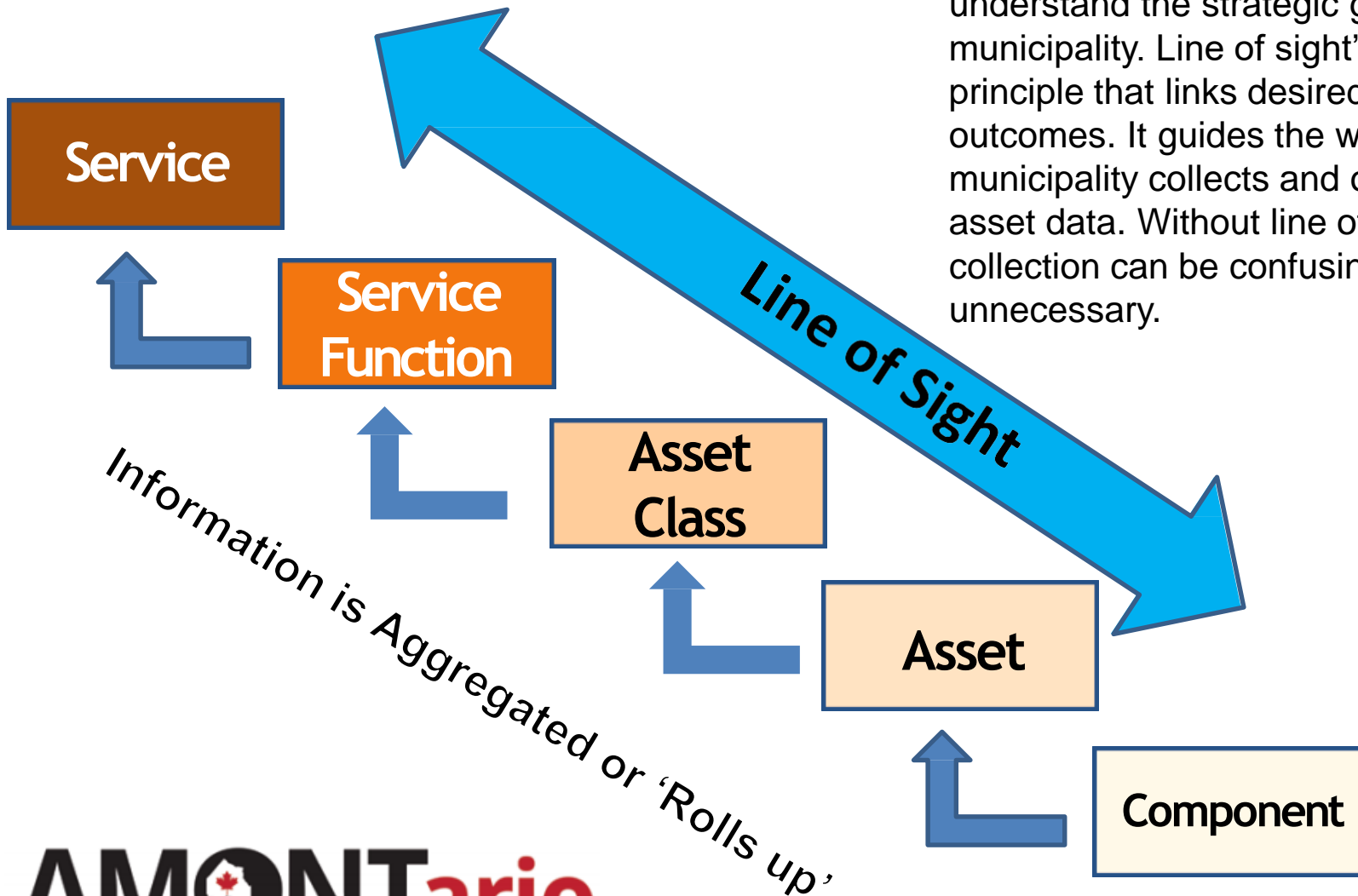
Good data support other things, as well, such as mandatory reporting (e.g., Financial Information Returns) and performance benchmarking, but we're going to focus on the above three reasons.

psst...



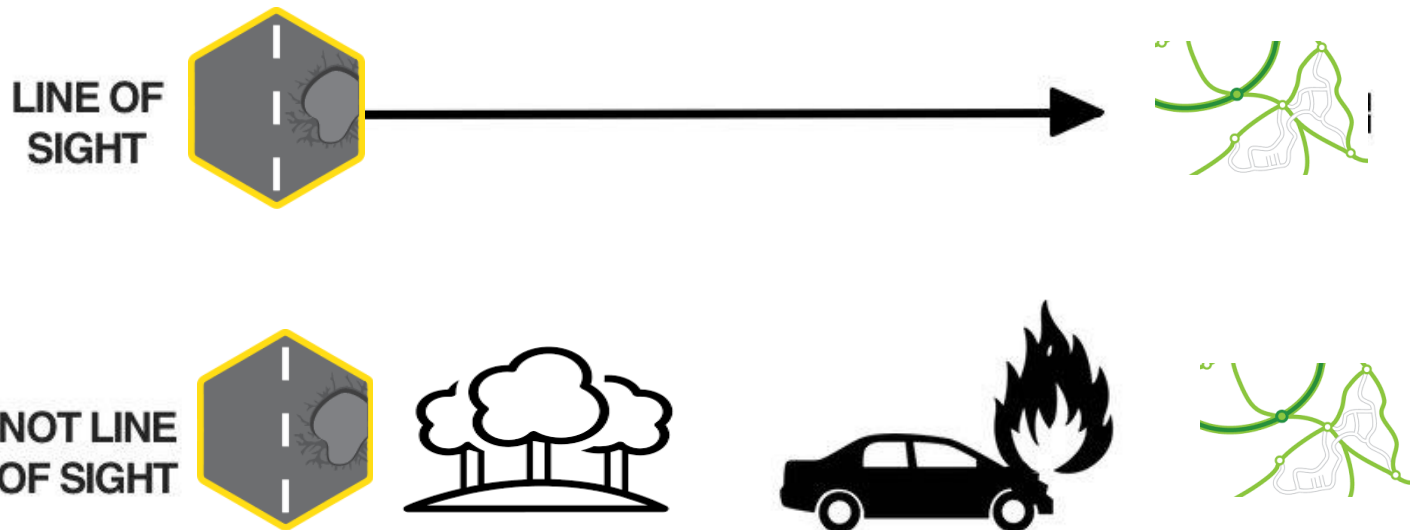
What do we mean by 'Line of Sight'?

All levels of the organization need to understand the strategic goals of their municipality. Line of sight' is the principle that links desired services & outcomes. It guides the way that a municipality collects and organizes asset data. Without line of sight, data collection can be confusing and seem unnecessary.

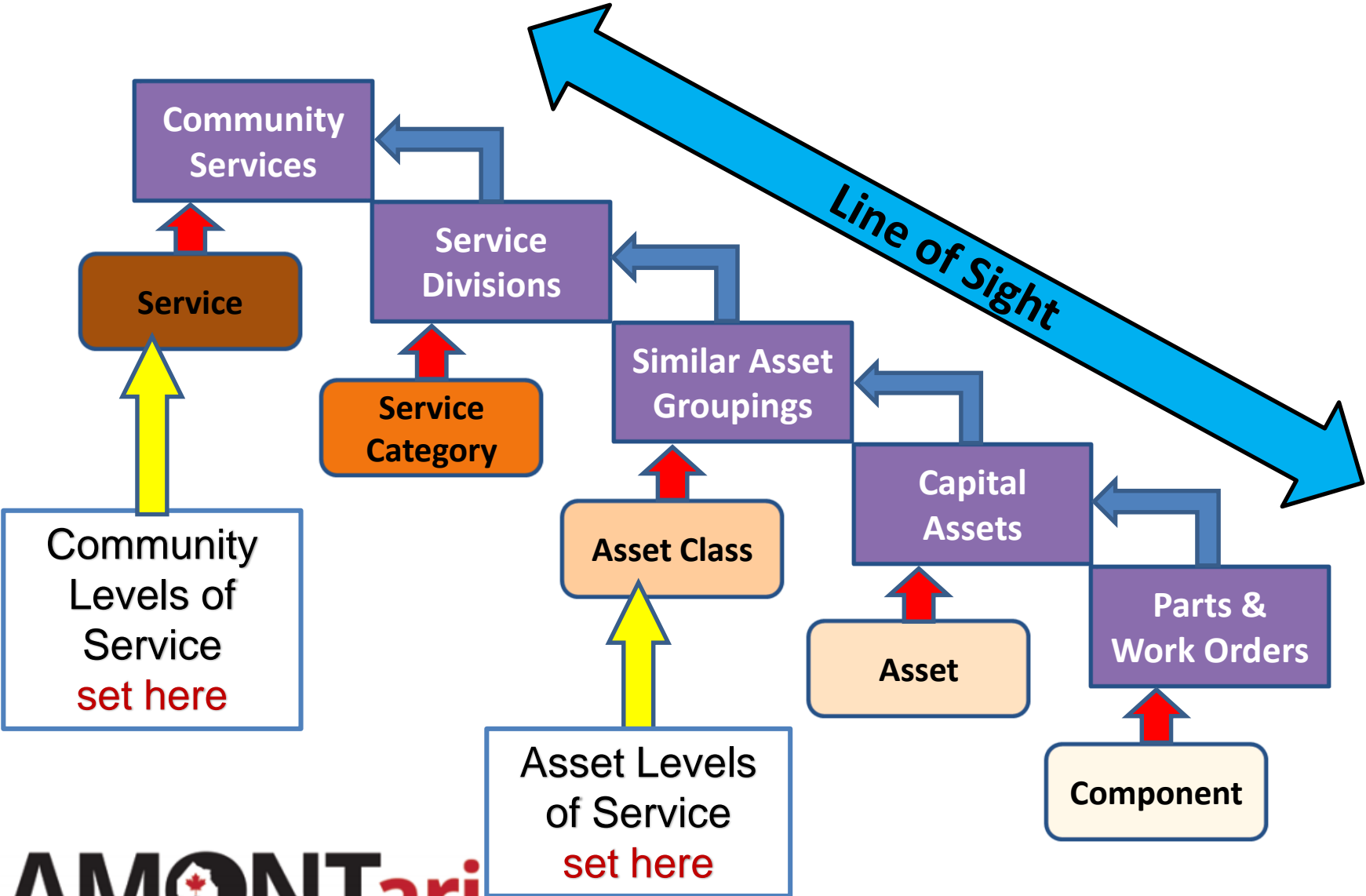


Why is 'Line of Sight' important?

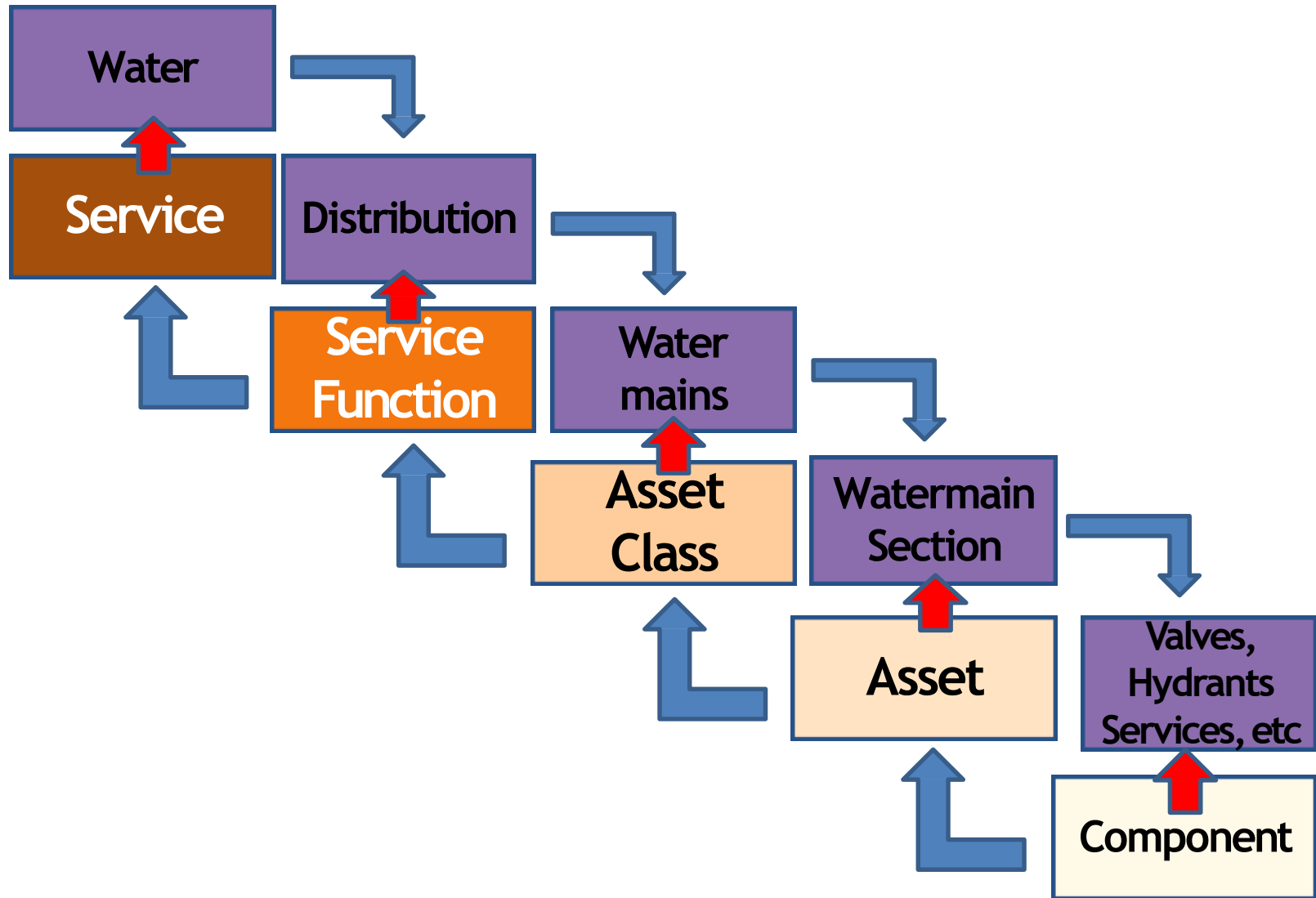
Asset Management is not about merely 'managing assets'. Instead, it encompasses a more strategic view that focuses on sustainable services and outcomes for residents (as reflected in a Strategic Asset Management Policy) that are explicitly linked with capital and operating decisions (as reflected in an Asset Management Plan).



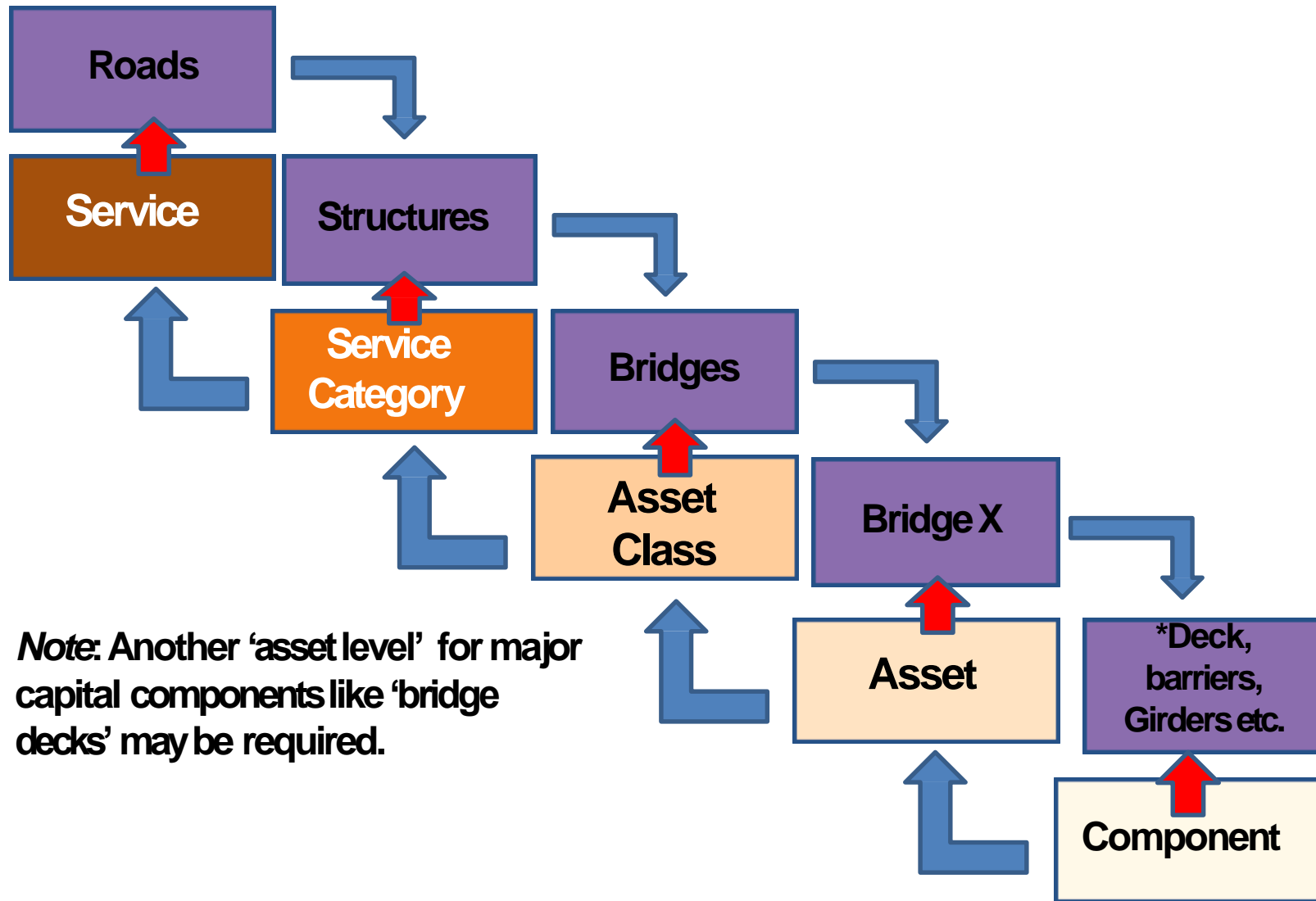
Service to Asset Hierarchy



Example: Water Assets



Example: Roads



Note: Another 'asset level' for major capital components like 'bridge decks' may be required.

Poll Question:

Does your municipality organize assets based on the services it provides?

3. Setting up the Asset Register

Myth: Acquiring a new asset software (IT) system will resolve asset information issues.



"We have lots of information technology. We just don't have any information."

Sidney Harris, cartoonist. *The New Yorker*.

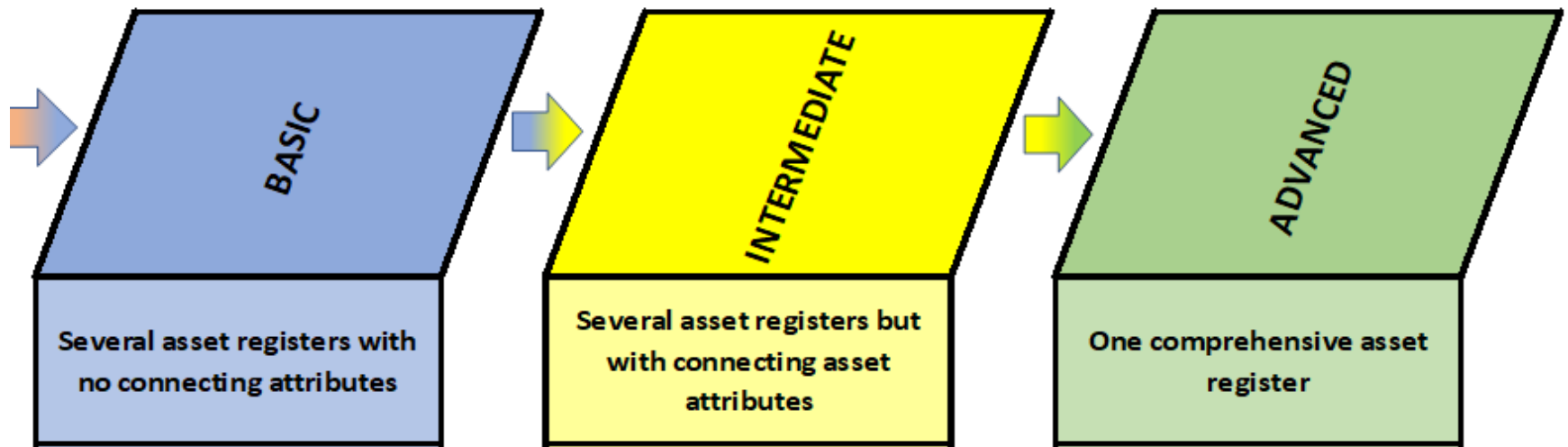
Reality: Before implementing an asset information system / database, a municipality should answer several questions.

- What asset information do we need to support strategic decision-making?
- How can we efficiently collect the relevant data?
- How will this data be processed to deliver useful information?
- How will the information (analysis of data) be shared to support various levels of decision-making?
- In what form should the information/analysis be shared? How frequently?
- What is the cost-benefit in terms of resources to collect and analyze the information vs. value to decision-making process?

The Asset Register is the repository for essential asset data. It should be structured by the asset hierarchy.

- The asset register's outputs should support various kinds of decision-making:
 - Strategic
 - Tactical / Operational
 - Reporting
- 'Essential' data differs by asset/asset requirements.
- Data requirements defined by what is needed to manage assets and make decision around the asset life cycle.
- The asset register must be the source of asset data 'truth'.
- Each asset must have a unique ID number. This is critical if the asset appears on multiple databases that have not yet been integrated into a single comprehensive asset data register.

The ideal is to integrate towards a comprehensive repository of asset data. However, municipalities can manage multiple asset data sources provided each asset has a unique Asset ID to link across registers.



Poll Question:

Does your municipality have a master database or spreadsheet that contains technical and financial data on all infrastructure assets?

Checklist for Developing the Asset Register

- Must have a **‘Line of Sight’ (asset hierarchy)** between the assets and associated services.
- **Standardization**
 - Consistent naming & numbering conventions.
- **Data Quality**
 - Critical Attributes: Accuracy; Completeness; Validity; Consistency; Uniqueness; Timeliness.
- **Systems Integration**
 - Linkages between asset register (inventory database) & financial systems.
- Should be guided by an accepted framework:

4. Performing the Data Gap Analysis

Myth (sort of): Updating an asset register is an overwhelming task.



“Are we there yet?”

Danny Shanahan, cartoonist. *The New Yorker*.

Performing an Asset Data Gap Analysis

- Outline the asset data that you have.
- Identify the data that you do not have but need in the asset register. Use your asset hierarchy as a guide.
- Prioritize the missing data based on:
 - *Criticality*
 - *Ease of collection*
 - *Cost of collection*
 - *Availability of reasonable assumptions*
 - *Staff availability*
- Budget, plan and execute the necessary data collection processes until data categories are filled.
- Rinse and repeat. This is an iterative process.

Tips for starting the asset data gap analysis

- Focus on the critical assets. Start with the top 20-30 assets within the municipality.
- Prioritize the data that are most valuable and cost effective to collect.
- Document reasonable assumptions for non-critical data.
- Use and document any 'proxy' data used for the short-term.
 - *Example: Age and design life as a proxy for condition.*
- Leave non-critical data blank for the short-term.

A municipality's answers to the Asset Information questions should shape its analytics approach.



Source: IBM Business Analytics

Most municipalities focus on Descriptive and Diagnostic Analytics. As the municipality's AM capacity becomes more sophisticated, the analytics will also likely become more sophisticated to encompass predictive or planning (scenario-based) applications.

Developing a good asset register is an important part of the asset management journey that is foundational for a useful Asset Management Plan.

Consider taking a course – like AMO's free Technical Assistance Workshops – to get better at this.

What's *really* at stake when a municipality has a clear 'Line of Sight' across the organization?



The power of unified purpose across all levels of an organization.

“One of my favorite stories is when John F. Kennedy visited the NASA space center, he saw a janitor carrying a broom and walked over and asked what he was doing. The janitor responded: 'Mr. President, I'm helping put a man on the moon.'”

Mark Zuckerberg

Founder & CEO of Facebook

2017 Commencement Speech at Harvard University

Questions?

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