

Notice

In accordance with the Town's Procedure By-law, no decisions are to be made but rather this meeting is an opportunity for Council to have informal discussion regarding various matters.

Declarations of Pecuniary Interest

Items

1. Mr. Dean Rurak of Yaku Consulting to address Council with a PowerPoint p. 1 presentation regarding the draft Asset Management Strategy Summary.
2. The Director of Financial Services to address Council with a PowerPoint p. 53 Presentation regarding 2017 Budget Financial Sustainability Pillars.

Adjournment

Integrated Asset Management Strategy

The Corporation of the Town of Newmarket



October 2016

The Town of Newmarket Integrated Asset Management Strategy

Version and Date:	Version 1.0 Full Report
Developed for:	The Town of Newmarket
Produced by:	Yaku Consulting Inc. and Cole Engineering

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Executive Summary

The integrated asset management strategy documents the findings of an independent assessment of the Town of Newmarket's Asset Management capability undertaken in August to September 2016. It provides an analysis of the current state of practice and identifies the needs in terms of asset management projects to achieve a higher level of practice. Projects in an implementation plan have been scheduled over a 5-year period outlining the sequence, cost and resources required.

Overall compared against best practice, the Town is at an early state of maturity of asset management practice. Many of the asset lifecycle processes are in place but are not fully developed, documented or applied consistently throughout the asset lifecycle or across the entire asset portfolio. This state of maturity is consistent with many other municipal organizations in Ontario although many are working to improve their current level of practice.

The implementation plan in this strategy addresses the challenges to improve the state of asset management by considering practices, technology and resources. The Town is well positioned to significantly improve its state of practice by following this implementation plan.

Implementation Plan

The asset management implementation plan will guide the overall development of the asset management system (program) within the Town. It is comprised of about 30 individual improvement projects organized in five asset management program objectives. The focus of each of the five asset management program objectives is outlined below:

- **Governance:** building Town wide asset management frameworks such as risk and levels of service, and building organizational capacity such as through skills development
- **Capital Program Decision-Making:** improving the decision-making process for capital spending by developing lifecycle models and incorporating into the asset strategy tying spending with service levels
- **Data and Information:** improving data and information standards including new technology and integration of existing systems to support the asset management system
- **Maintenance Management:** improving maintenance practices and implementation of a new computerized maintenance management system (CMMS)
- **Optimizing Asset Management:** ongoing works to further advance asset management practices and incorporate results of previous improvements into long-range financial plans including rates and reserves

An overview of the plan together with the estimated schedule, new resource requirements and cash flow is provided in the figure below, Figure 1: Overview of Implementation Plan.

The cost indicated are for the asset management strategy projects and do not include the cost of staff time on the projects or the cost of recommended new staff resources. In 2019 the focus and costs include the purchase of a computerized maintenance management system (CMMS). A CMMS is a significant investment, which is why the costs are higher than in other years.

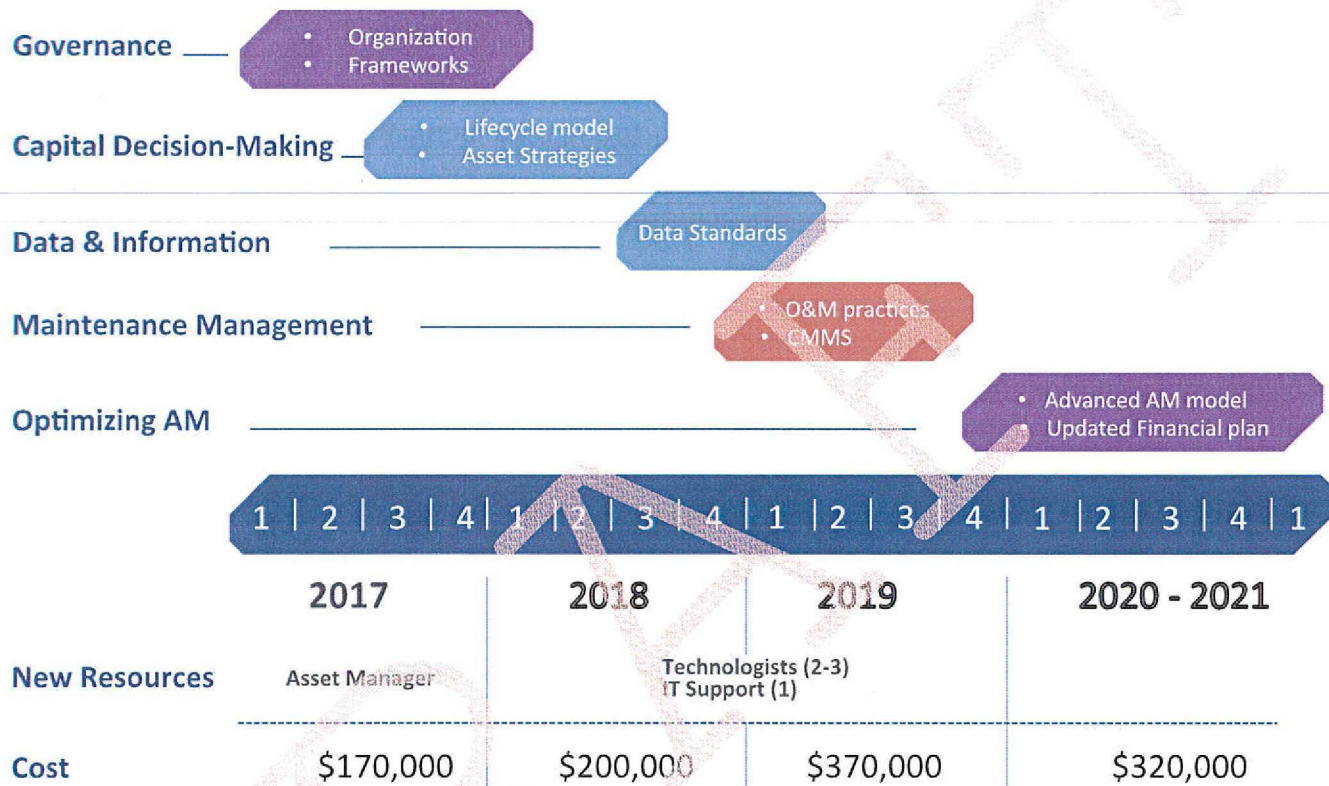


Figure 1: Overview of Implementation Plan

Based on the current level of practice of asset management within the Town and the requirements to continuously deliver at the higher level anticipated in this strategy, additional staff resources would be required. The positions and responsibilities are:

- **Asset Manager:** oversee and provide direction across the Town to implement asset management practices in a coordinated and integrated fashion.
- **Technical staff:** technologists or engineers to develop asset specific programs to measure and monitor asset performance, collect, manage and analyze asset data and support the program
- **Information Technology staff:** support the configuration and ongoing maintenance of asset management software including a computerized maintenance management system (CMMS), advanced (capital) decision-making software, and the integration of various systems to facilitate asset management.

Asset Management Vision

The development of this integrated asset management strategy is part of an initiative adopted under the Council's Strategic Priorities for the 2014-2018 term under the theme of Efficiency / Financial Management.

The asset management vision, collaboratively developed by Town staff, demonstrates alignment with the Town's approach to service delivery.

Managing service delivery through asset management

Our vision for asset management is to be innovative and fiscally responsible stewards of our infrastructure assets for the benefit of the community we serve and the people we employ, now and in the future. We will develop and continuously improve how we manage our infrastructure assets throughout their lifecycle to ensure they support our goal of a healthy, happy, thriving, dynamic and extraordinary community in which to live, work and play.

We seek to:

- Reach out and build understanding among residents, business, staff and elected officials about the role infrastructure plays in providing services that make our quality of life even better.
- Recognize and respond to current and emerging trends in regulations, society and environment.
- Maintain a balance between an acceptable level of service and a cost that is sustainable for residents and businesses now and into the future.
- Ensure that funding levels and revenue sources are sufficient to meet current and future infrastructure demands.

We will put best practices in asset management into effect, including an asset management strategy that links disciplines and departments, integrates data and software resources and coordinates decision-making so that we will be able to invest capital resources wisely and make informed choices about how we maintain our assets and deliver our services.

The asset management vision provides the direction for the level of development for the asset management program in the Town. Ultimately to achieve this vision for asset management the Town will have to develop a high level of practice of asset management. Given the Town's vision, a reasonable target level of maturity for asset management within a five-year time frame is a level above the current level of practice.

Assessment of Asset Management Program

Assessing Asset Management maturity against a framework of best practice in asset management is a fundamental method to identify the needs to improve an asset management system (program). The process to assess maturity level is to evaluate current practices by each asset sector considering the context of the assets against the standard of best practice.

The assessment was conducted through a structured workshop format with each of the Town's departments or groups responsible for the different asset sectors in the Town. A series of questions related to asset management was presented for discussion that includes examples of the practice level for each of five states of maturity.

The questions are structured around 10 different areas of asset management practice that includes Strategy and Planning, Performance and Demand, Organization and People, Asset Data and Information and Data Management.

The results of the assessment including current state, end state after completing the Implementation Plan, and of the asset management vision is shown in the figure below.

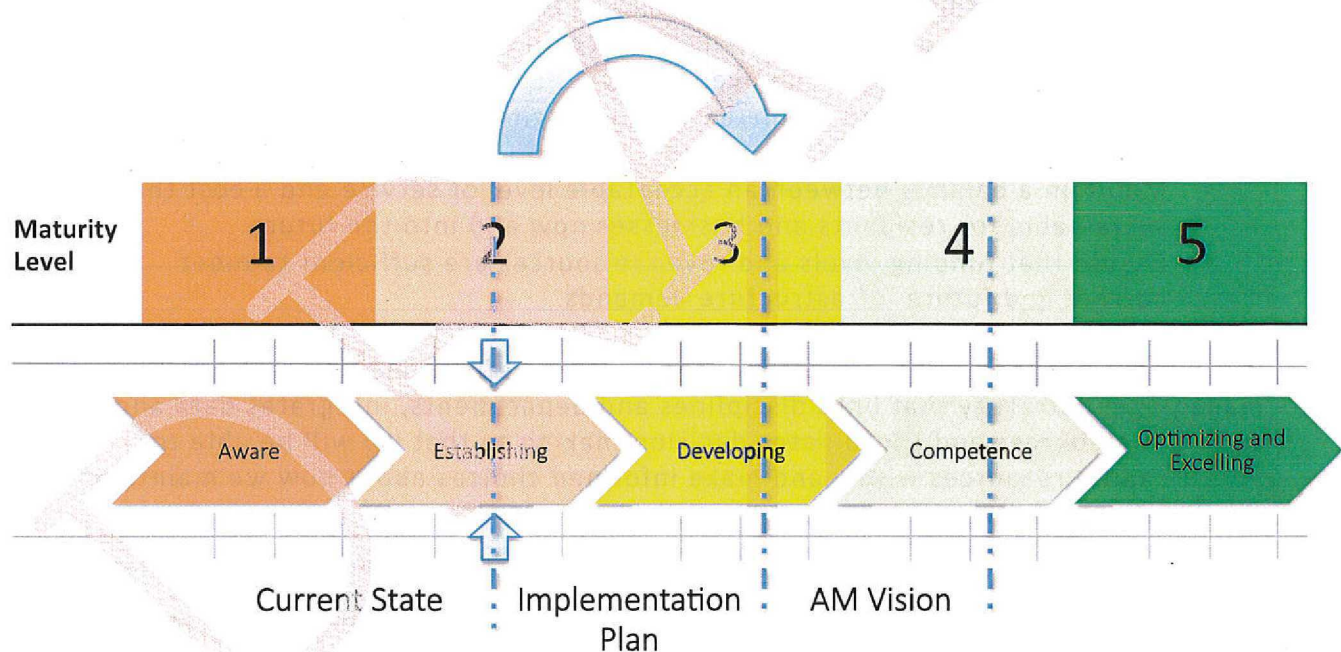


Figure 2: Asset Management Maturity Levels

This independent **Maturity Assessment** of the capability of the Town's asset management system (program) provides insights to understand how the Town may advance its practices and is the basis for the development of the implementation plan.

A summary of the current state findings is presented in the table now.

ID	Assessment Area	Description of Results
100	Strategy and Planning	The Town has recently developed or is completing the major AM documents (policy, strategy, plan) as a result of a Corporate strategy. Although developed, the AM policy has not yet been fully communicated, and the AM Plan has only been developed for major asset classes. Although there are a few gaps, the Town has a solid foundation from which to progress.
200	Performance and Demand	Within its AMP, performance indicators have been identified for the major service assets (e.g. roads, water). There is limited formal customer levels of service, and no link between customer LOS and technical performance indicators (KPIs) or program KPIs. On a positive note the Town regularly conducts customer surveys including questions about the services delivered and their cost.
300	Organisation and People	Like many smaller Town's and Cities, Newmarket has yet to formally identify and develop its asset management team through dedicated or defined roles. The Town has however formed an Asset Management Committee to oversee its AM program and initiatives. This is an important step in program development already accomplished.
400	Life Cycle Practices	Operations and maintenance activities are relatively well formulated although formal cost models linked with the asset strategy (e.g. the trade-off between O&M and capital rehabilitation) are not in place. In addition deterioration curves to understand future performance based on current state or condition have not been developed.
500	Asset Data and Information	The Town uses JD Edwards as its financial system and asset register. While essential, it lacks data and capability of a comprehensive asset management system to track assets condition and performance. The asset hierarchy, asset identification, and asset attribute systems are not well defined for asset management purposes.
600	Monitoring & Improvement	There is no standard framework for condition measurement (e.g. 1 to 5) across asset classes and frequency of data collection, depending on asset class, may not be optimal for asset management purposes. Whereas condition is measured for most assets, overall performance assessment framework is not in place, e.g. asset capacity, reliability, etc.
700	Risk Management	A risk management framework applicable for the Town as a whole is not in place or a standard method to assess risk. Critical assets have not been formally identified nor asset specific plans to address risks.
800	Decision Making	There is good practice for capital planning and integration in place. What the Town lacks is a coordinated and developed process to identify and define optimal alternatives at the project, program and service level.
900	Finance	Within the context of available asset and service information, the Town's financial planning (contained in Capital Financing Strategy/Asset Replacement Fund (ARF) Study) appears well developed and comprehensive. As asset information is improved the Town should easily be able to update and improve their financial planning.

ID	Assessment Area	Description of Results
1000	Data Management	For the formal hallmarks of robust data management practice, the Town does not achieve a high level of practice. The Town has not adopted a data management strategy, standards or for the most part identified data stewards. The legislated requirements such as FIR and PSAB are well met, as well as the GIS system in particular for water and wastewater.

2017 Projects

The overall schedule of implementation considers a five-year period and is included in Appendix L: Implementation Schedule. The table below includes the projects recommended for the first year of the Implementation Plan.

WBS	Assessment Area	Assessment Element	ID	Project
1	Governance			
1.1	Strategy and Planning	Asset Management Strategy	120-1	120-1 Adopt Newmarket Asset Management Strategy (this project)
1.3	Strategy and Planning	Asset Management Plan	140-1	140-1 Define and assign responsibility for stormwater assets
1.4	Strategy and Planning	Asset Management Plan	140-2	140-2 Develop AMP for missing asset classes
1.2	Organization and People	Asset Management Structure	310-2	310-2 Create or designate Asset Manager position to provide guidance and oversee implementation of AM within the Town
1.6	Organization and People	Asset Management Structure	310-1	310-1 Develop AM roles and responsibility matrix and incorporate into job descriptions
1.9	Organization and People	Competency	320-1	320-1 Identify required AM specific training and develop learning plan for the organization
1.5	Asset Data and Information	Asset Hierarchy	510-1	510-1 Develop asset hierarchy from FIR reporting to the maintenance managed item level
1.7	Data Management	Data Owner	1020-1	1020-1 Establish data roles - owners, users, collectors
1.8	Performance and Demand	LOS	210-1	210-1 LOS Model: define LOS and KPIs, and model associated activities and costs associated with it.
2	Capital Program Decision Making			
2.1	Decision Making	Capital Plans	820-1	820-1 Optimize the current capital plan with updated asset information
2.2	Monitoring & Improvement	Condition Assessment	620-1	620-1 Establish standard condition grading framework and align to asset class/sector condition scales
2.3	Strategy and Planning	Asset Strategy	160-1	160-1 Evaluate and document lifecycle practices

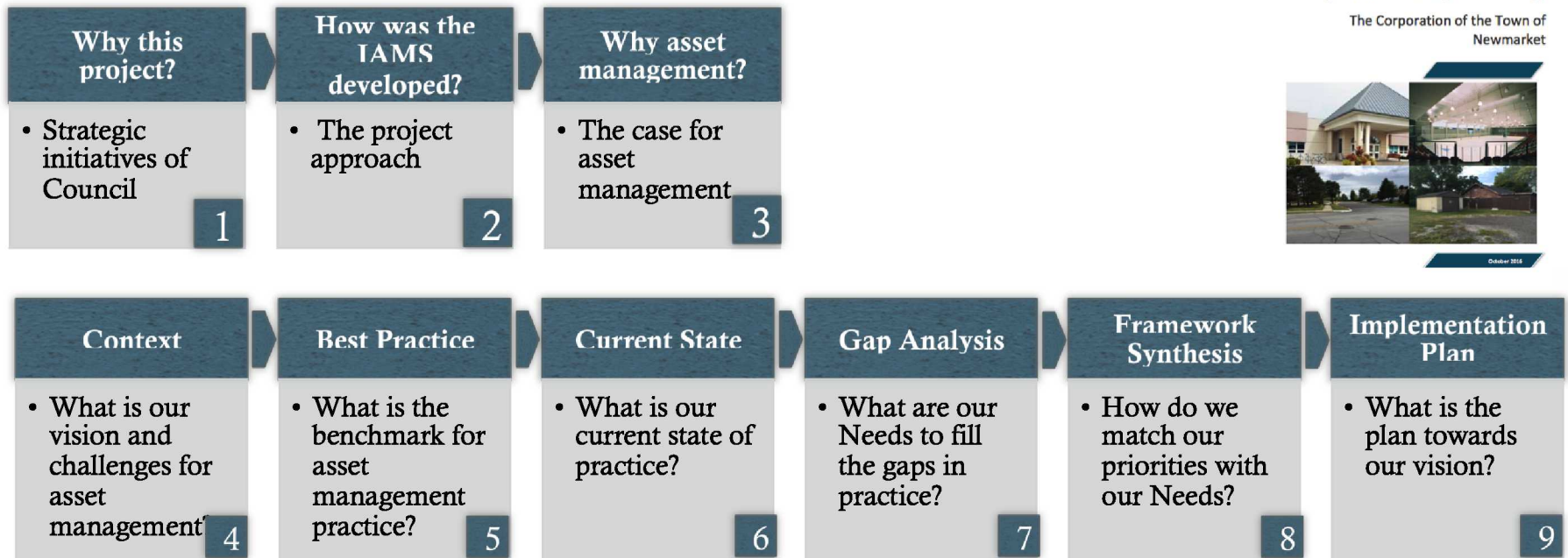
Details of these projects are provided in various sections of this strategy.

Town of Newmarket

Integrated Asset Management Strategy



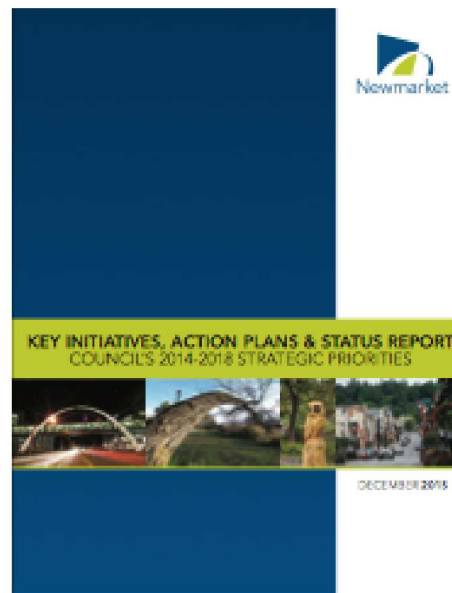
Agenda – Review of Integrated Asset Management Strategy



Why this project?

- Development of an asset management strategy (plan, policy & program) is an initiative adopted under the theme of Efficiency / Financial Management.

Council's 2014-2018 Strategic Priorities



- Economic Development / Jobs
- Enhanced Recreational Opportunities
- Community Engagement
- Efficiency / Financial Management
- Traffic Safety & Mitigation

Why this project?

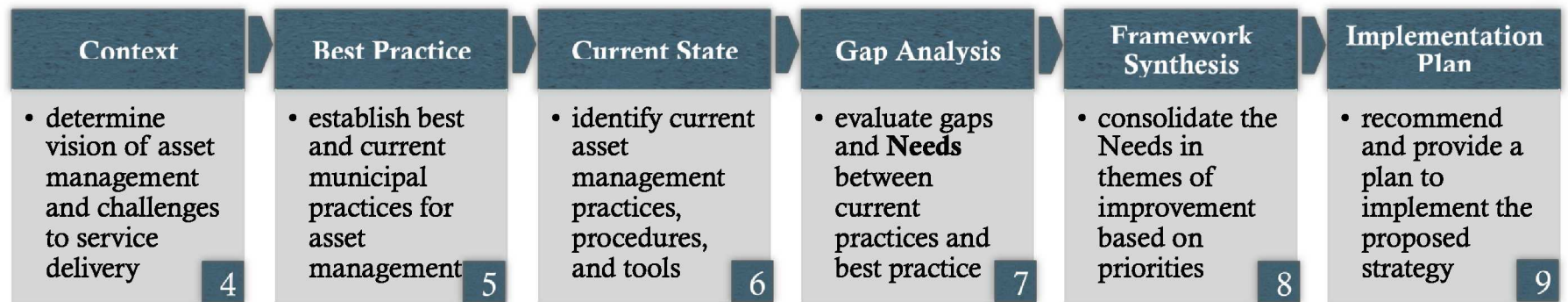
- Strategic initiatives of Council

1

Project Objectives

- The Town views this project as:
 - an essential first step in implementing an Integrated Asset Management Strategy
 - Leads to a more comprehensive deployment of a fulsome municipal - wide asset management program
 - Program expected to balance leading practices with the needs, requirements and expectations of the municipality as a whole

Project Approach



How was the IAMS developed?

- The project approach

2

Project Approach



- Build awareness and participation through workshops
- Discovery through cross functional reviews across Town services
- Evaluate opportunities or gaps that can be systematically addressed
- Identify priorities using Town objectives
- Develop plan for implementation based on vision and resources

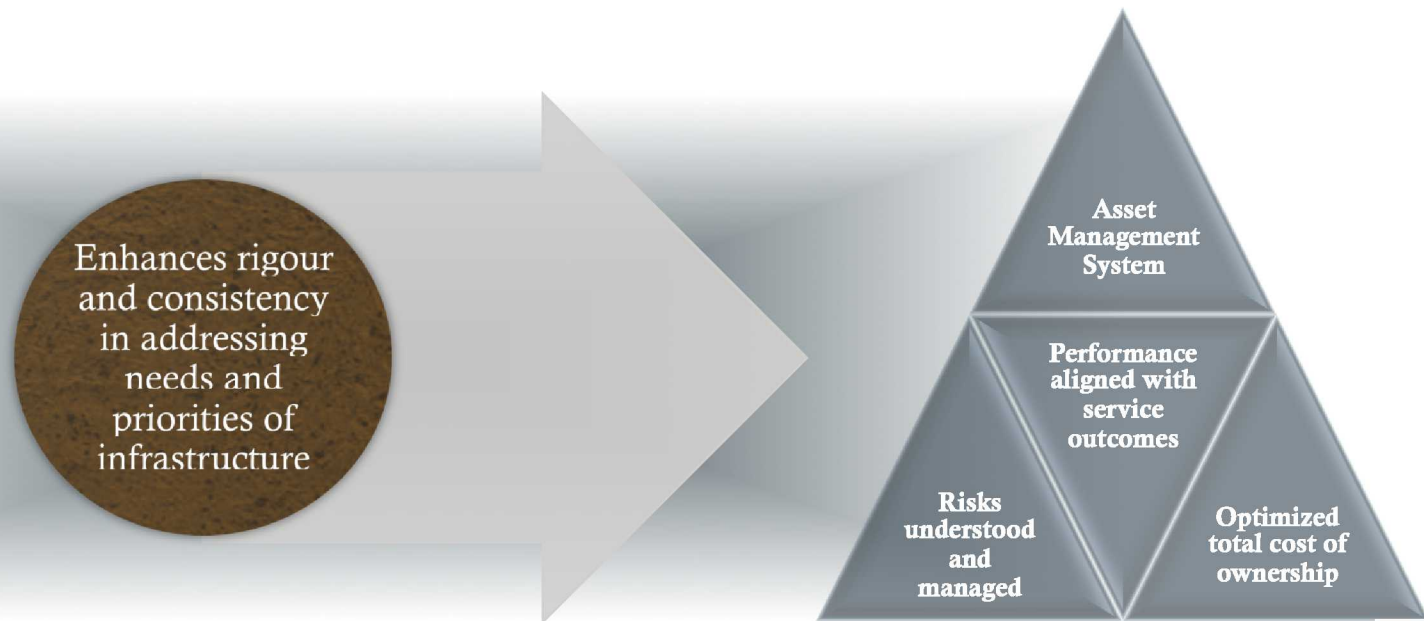
How was the IAMS developed?

- The project approach

The case for asset management

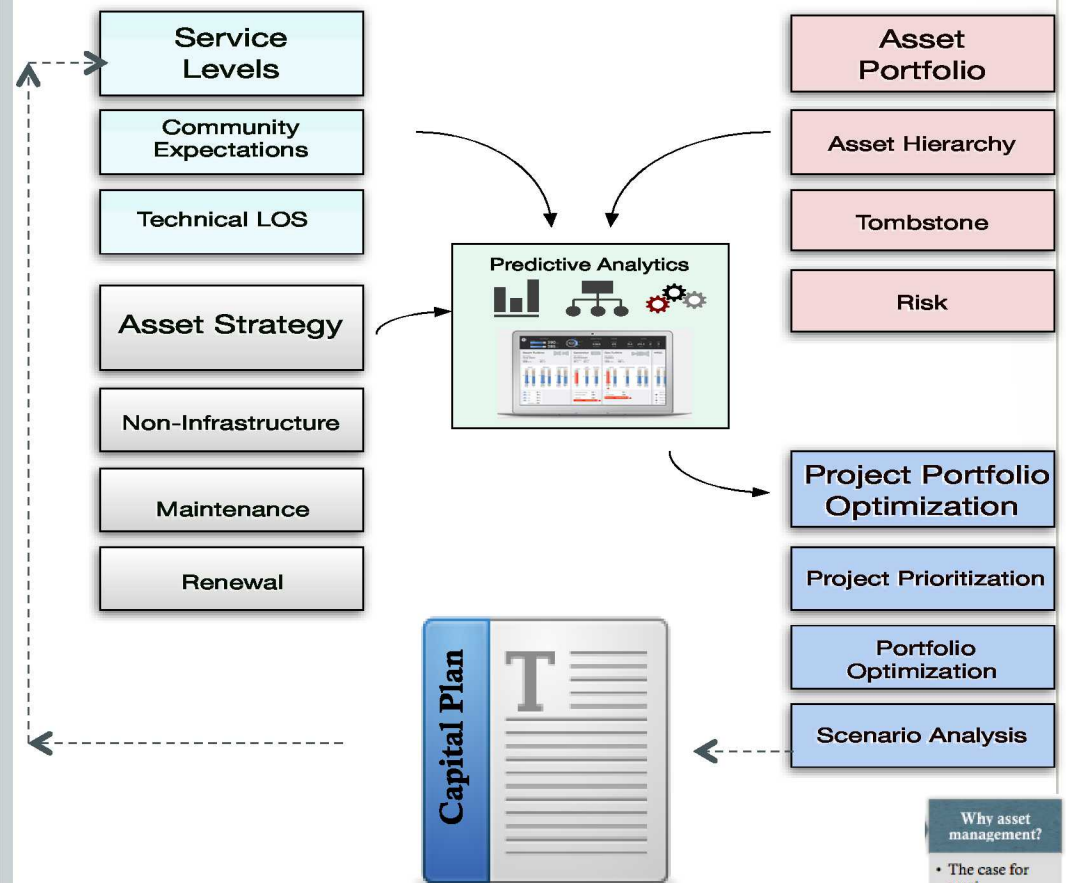
- Competing priorities
 - Where funding is limited
 - Bias towards lowest initial cost rather lowest whole-life cost
- External factors
 - Understanding and adapting assets to climate change (extremes of temperature, more frequent flood events, etc.)
 - Changes in demography and the way customers interact with infrastructure
- Economic challenges
 - increasingly difficult to fund infrastructure in a period of economic uncertainty
- Shortage of critical skills and knowledge
 - Limited ability to detect deterioration unless visible
 - Difficult to understand relationship between condition and probability of failure
 - Ineffective data capture and knowledge management

Systematically address issues



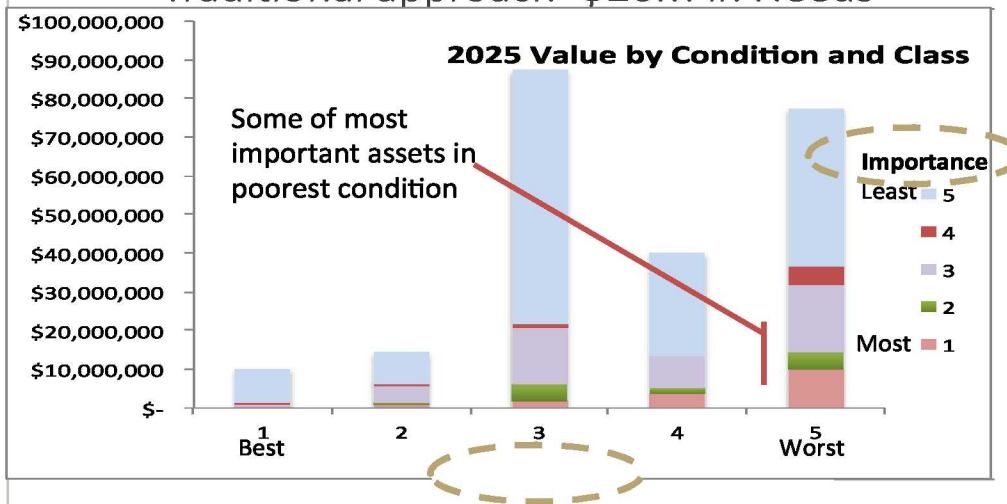
Asset management core activities

- Assets organized for effective management
- Asset condition and importance used to assess risk
- A defined level of service
- Asset strategy to define interventions tied to LOS
- Capital plan optimized by budget and risk to support service levels
- Result is transparent evidence of service level achieved and the outcome with full or partial funding



Example: Current Capital Planning

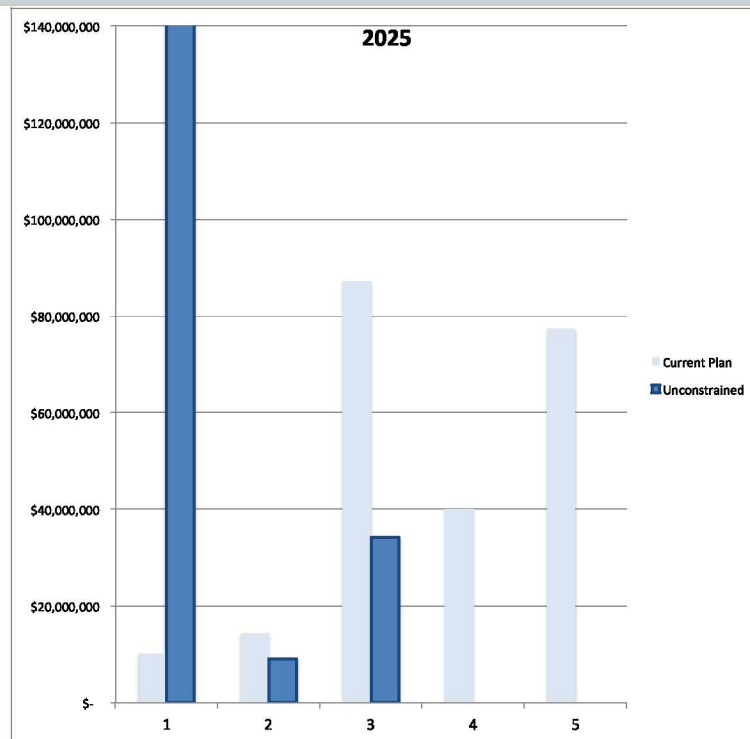
Traditional approach- \$26M in Needs



- Condition of Roads in 2025 based on current plan
 - Cost of Road assets on Y axis
 - Condition of Road assets on X axis
 - Importance of Road assets based on colour

- Decisions based primarily on condition
- Essentially worst first approach
- Reliance on judgment / expert opinion

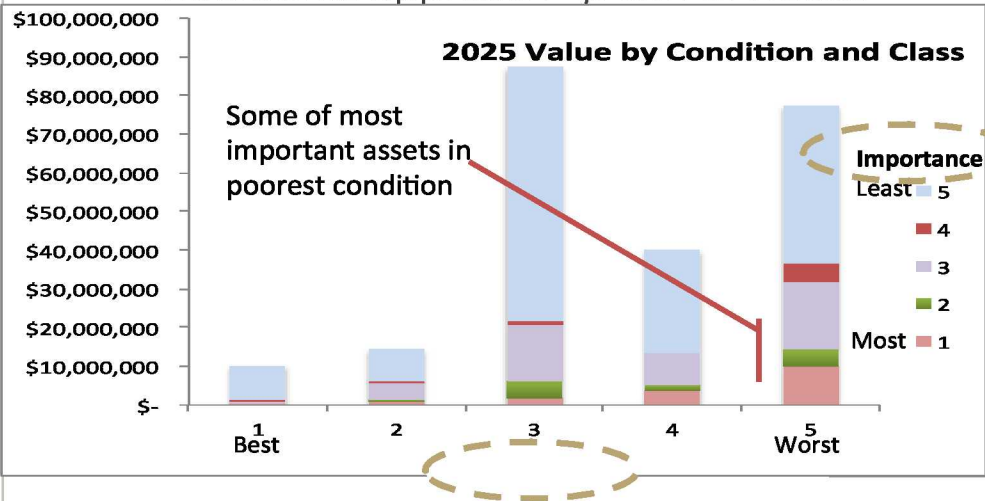
Example: Current Capital Planning



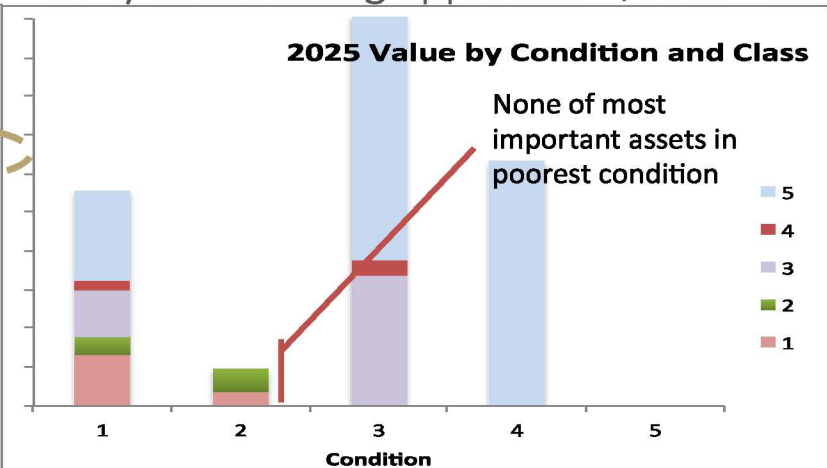
- Light blue is current plan (same information as previous slide)
- Dark blue is applying decision logic of current plan with predictive analysis
- Required spending is \$64M

Example: Modeled Capital Planning

Traditional approach- \$26M in Needs



Lifecycle modeling approach - \$37M



- Decisions based primarily on condition
- Reliance on judgment / expert opinion

- Decisions based on condition and CoF
- Use of predictive analysis & scenarios

Why asset management?

- The case for asset management

3

Vision for Asset Management

Managing service delivery through asset management

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We seek to:

1. Reach out and build understanding among residents, business, staff and elected officials about the role infrastructure plays in providing services that make our quality of life even better.
2. Recognize and respond to current and emerging trends in regulations, society and environment.
3. Maintain a balance between an acceptable level of service and a cost that is sustainable for residents and businesses now and into the future.
4. Ensure that funding levels and revenue sources are sufficient to meet current and future infrastructure demands.

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Influences on Newmarket

Rank	Asset Management Driver	Why this may be a driver
1	Asset Replacement/Renewal or Ageing Infrastructure	Ageing Infrastructure drives rehabilitation and replacement needs, this could be significant if the predominant age of the assets is more than half useful life, or there is significant value of assets that have less than 50% useful life remaining. Asset renewal also could be a concern where detailed knowledge of assets is lacking or where renewal spending has consistently been cut back.
2	Asset Maintenance	Maintenance practices may not be formalized in a strategy, or for other reasons there is a predominance of reactive maintenance, or if it's necessary to focus more on short term lower spending maintenance practices than on more expensive but longer term needs.
3	Operational Efficiency	When facing resource constraints a way organizations respond is to look for efficiencies in current operations. Efficiency in current operation may also be a part of a continuous improvement program.
4	Sustainability	Sustainability can be driven by resource constraints but it may also reflect an organization's limited understanding of their long-term asset needs.
5	Service Level Improvement - customer expectation	A common belief is that the public is increasingly demanding higher levels of service. While customer surveys may be employed and even indicate satisfaction, a lack of full understanding customer expectations limits ability to increase customer satisfaction
6	Regulation and Compliance	All organizations are driven by regulations with some services more heavily regulated than others. This is a specific driver when the organization is challenged to meet its requirements whether because of current operational performance or because of new or impending legislative changes.
7	Knowledge of Assets	Most organizations have a good degree of confidence in the basic inventory. Beyond this data needed to support comprehensive asset management plans may be missing. In some cases inventory knowledge may be good for major assets but not for all.

Context

Best Practice

Current State

Gap Analysis

Framework
Synthesis

Implementation
Plan

Standards and Best Practices for AM

- ISO 55000 - 2014
- BSI PAS 55 – 2008 (withdrawn January 2015)
- Global Forum on Maintenance and Asset Management (GFMAM) The Asset Management Landscape - 2014
- The International Infrastructure Management Manual (IIMM) - 2011

Context

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Asset Management Maturity Assessment

- Maturity Assessment is the process of measuring asset management capability against standards and/or best practices.
- It is a tool to identify asset management maturity level and helps to determine gaps between current and desired practice.

Context

Best Practice

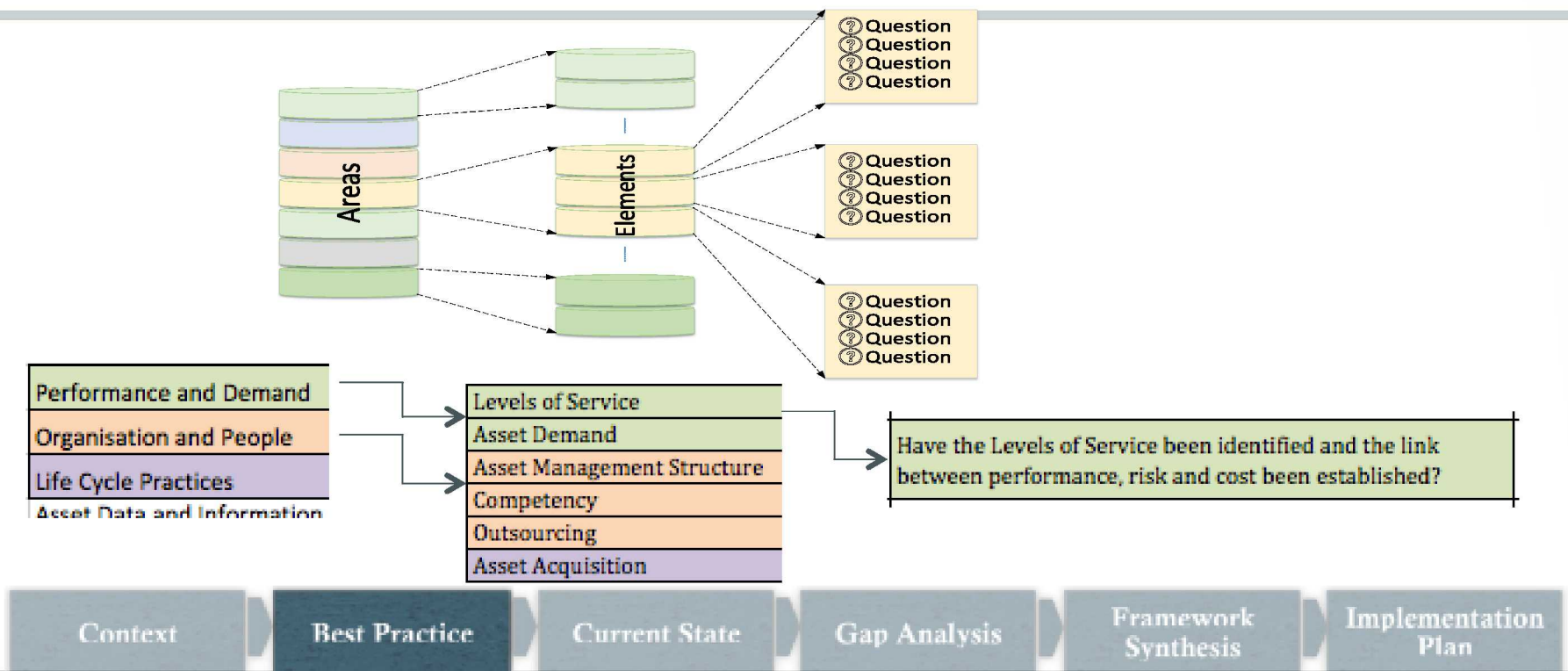
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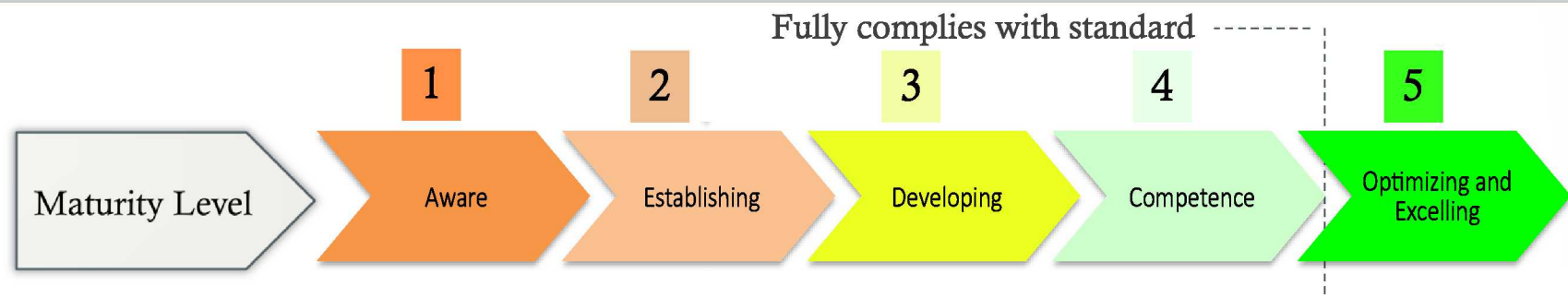
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AM Maturity Assessment

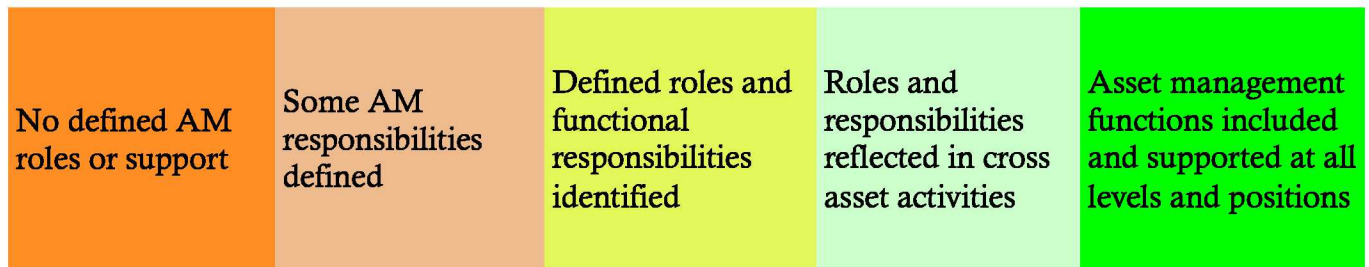


Measuring Maturity



AM Structure

Is there an established including defined roles and responsibilities, appointing AM manager, providing sufficient resources, acceptance by senior management, and elected officials of the importance of asset management?



Asset Management Vision

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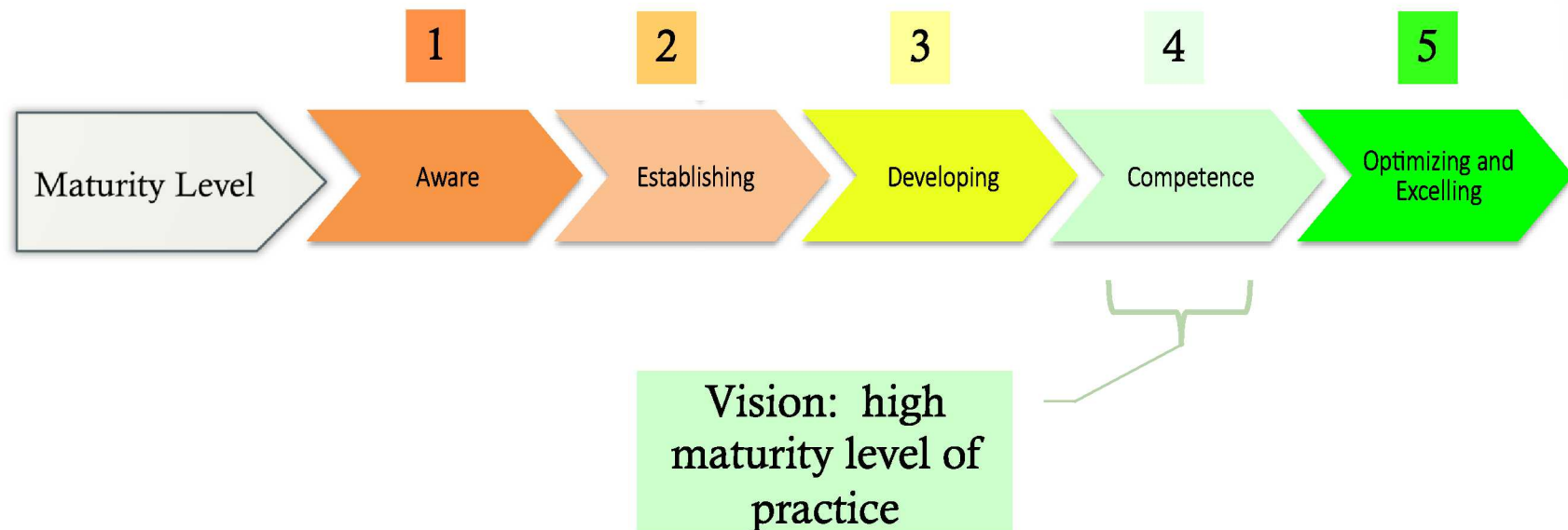
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Plan

Vision for asset management



State of practice in North America

Barrier to Asset Management

Complexity, Effort and Cost of Implementation

54%

Lack of Adequate Data for Rigorous Analysis and Planning

45%

Difficulty in Developing Useful Service-Level Measures and Targets

30%

Drivers for Asset Management

Need to Increase System Reliability

42%

Need to Understand Risk of Asset Failures

39%

Need to Improve Service Levels at Same or Lower Cost

24%

- According to research by McGraw Hill



Findings

- The Town is at an early state of maturity of asset management practice
- Many of the asset lifecycle processes are in place but
 - not fully developed
 - documented
 - or applied consistently throughout the asset lifecycle or across the entire asset portfolio
- This state of maturity is consistent with many other municipal organizations in Ontario although many are working to improve their current level of practice

Context

Best Practice

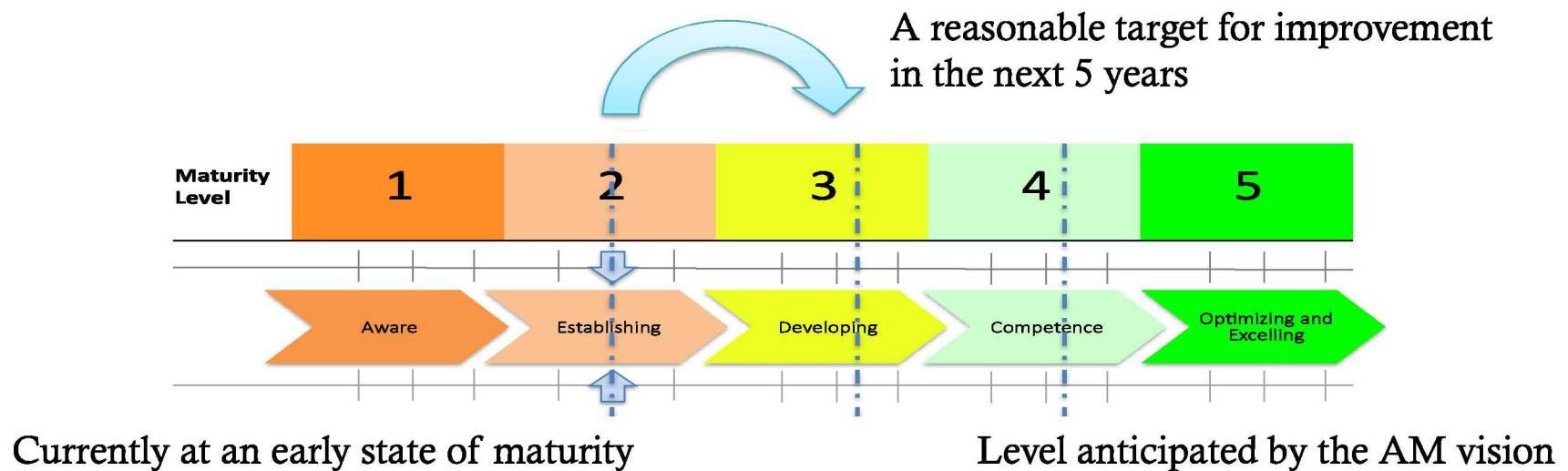
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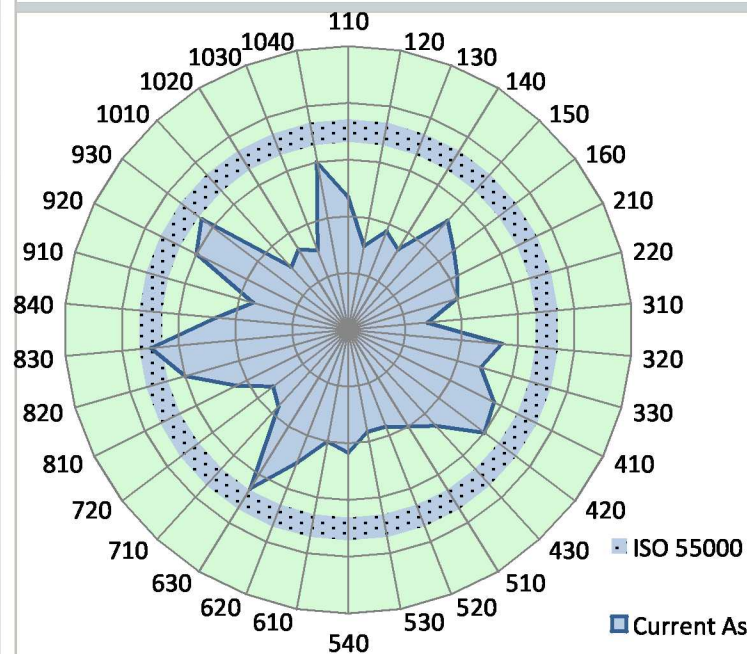
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Plan

Maturity Assessment Results



Composite results for Newmarket



100 Strategy and Planning 110 Asset Management Policy 120 Asset Management Strategy 130 Master Plan 140 Asset Management Plan 150 Contingency Planning 160 Asset Strategy	500 Asset Data and Information 510 Asset Hierarchy 520 Asset Management Data 530 Asset Management Data Availability 540 Information Systems	900 Finance 910 Financial and Funding Strategy 920 Reserve Fund 930 PS315
200 Performance and Demand 210 LOS 220 Asset Management Strategy	600 Monitoring & Improvement 610 Performance Assessment 620 Condition Assessment 630 Performance Improvement	1000 Data Management 1010 Data Standards 1020 Data Owner 1030 Information Quality 1040 Communication
300 Organisation and People 310 Asset Management Structure 320 Competency 330 Outsourcing	700 Risk Management 710 Risk Management 720 Risk Assessment	
400 Life Cycle Practices 410 Acquisition 420 Operations & Maintenance (O&M) 430 Performance Modelling	800 Decision Making 810 Optimized Decision Making 820 Capital Plans 830 Capital Projects Integration 840 Non-Capital Projects	

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Visualizing the Gap

The Corporation of the Town of Newmarket
Needs Assessment and Gap Analysis

ID	Assessment Area	ID	Score	Assessment Element	Score	1	2	3	4	5
800	Decision Making	840	47	Non-Capital Projects	55					
900	Finance	910	35	Financial and Funding Strategy	52					
		920	60	Reserve Fund						
		930	60	PS3150						
1000	Data Management	1010	30	Data Standards	38					
		1020	33	Data Owner						
		1030	30	Information Quality						
		1040	60	Data Sharing						
Overall Average			45		45	1	2	3	4	5
						Aware	Establishing	Developing	Competence	Optimizing &

Easy to visualize the gap

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Identifying the Needs

Score	Assessment Element	Score		2	Needs Assessment
	Asset Management Program				Formal improvement program has not been established
47	Asset Management Policy	41	1		
30	Asset Management Strategy				Completion and adoption of a formal Asset Management Stra
37	Master Plan				Master planning process not linked with AM Plan
33	Asset Management Plan				AM Plan not developed for all asset classes; weak link between for Stormwater not well defined
52	Contingency Planning	41			Business continuity and asset specific contingency plans not in
47	Asset Strategy				Current AM practice not fully reflected in AMP asset strategy
43	LOS				Limited formal customer LOS, and no link between customer
40	Asset Demand				Asset demand not formally captured for many assets

What the Need is for the Gap



Strengths and Opportunities

ID	Area	Description of Results
100	Strategy and Planning	The Town has recently developed or is completing the major AM documents (policy, strategy, plan) as a result of a Corporate strategy. Although developed, the AM policy has not yet been fully communicated, and the AM Plan has only been developed for major asset classes. Although there are a few gaps, the Town has a solid foundation from which to progress.
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ID	Area	Description of Results
500	Asset Data and Information	The Town uses JD Edwards as its financial system and asset register. While essential, it lacks data and capability of a comprehensive asset management system to track asset condition and performance. The asset hierarchy, asset identification, and asset attribute systems are not well defined for asset management purposes.
600	Monitoring & Improvement	There is no standard framework for condition measurement (e.g. 1 to 5) across asset classes and frequency of data collection, depending on asset class, may not be optimal for asset management purposes. Whereas condition is measured for most assets, overall performance assessment framework is not in place, e.g. asset capacity, reliability, etc.
700	Risk Management	A risk management framework applicable for the Town as a whole is not in place or a standard method to assess risk. Critical assets have not been formally identified nor asset specific plans to address risks.
800	Decision Making	There is good practice for capital planning and integration in place. What the Town lacks is a coordinated and developed process to identify and define optimal alternatives at the project, program and service level.
900	Finance	Within the context of available asset and service information, the Town's financial planning (contained in Capital Financing Strategy/Asset Replacement Fund (ARF) Study) appears well developed and comprehensive. As asset information is improved the Town should easily be able to update and improve their financial planning.
1000	Data Management	For the formal hallmarks of robust data management practice, the Town does not achieve a high level of practice. The Town has not adopted a data management strategy, standards or for the most part identified data stewards. The legislated requirements such as FIR and PSAB are well met, as well as the GIS system in particular for water and wastewater.

Context

Best Practice

Current State

Gap Analysis

Framework
Synthesis

Implementation
Plan

Opportunity to fill the Gap

ID	Assessment Area	ID	Score	Assessment Element	Needs Assessment	Project Action
300	Organization and People	310	28	Asset Management Structure	Organization and responsibility for Asset Management not formally defined	310-1 Develop AM roles and responsibility matrix and incorporate into job descriptions 310-2 Create or designate Asset Manager position to provide guidance and oversee implementation of AM within the Town
		320	54	Competency	Limited AM specific training	320-1 Identify required AM specific training and develop learn
		330	49	Outsourcing		
		410	57	Acquisition		Improvements due to other elements
400	Life Cycle Practices	420	60	Operations & Maintenance (O&M)	O&M activities not integrated with asset strategy including costs	420-1 Document current O&M practices, coordinate with asset strategy, and evaluate and document O&M costs
		430	46	Performance Modeling	Formal deterioration curves have not been developed	430-1 Develop asset performance lifecycle (deterioration) model
500	Asset Data and Information	510	40	Asset Hierarchy	Asset hierarchy, asset identification, and asset attribute systems are not well defined for asset management purposes	510-1 Develop asset hierarchy from FIR reporting to the maintenance managed item level
		520	37	Asset Management Data	Very likely that the data collected is not all the required data for asset management purposes	520-1 Evaluate data collected after identifying required and critical data and identify gaps
		530	37	Asset Management Data Availability		Improvement due to Asset Hierarchy, Data Standards
		540	43	Information Systems	Lack of a comprehensive asset management system which tracks assets condition and performance; difficult user interface on JDE work management module and not deployed for all asset classes	540-1 Evaluate needs, develop user requirements for software and develop TOR for procurement (Phase 2 of this project) 540-2 Procure asset management software, and configure and implement, and identify key integration points with JDE
600	Monitoring & Improvement	610	40	Performance Assessment	No formal performance assessment system in place	610-1 Develop asset performance assessment framework and system
		620	50	Condition Assessment	There is no standard framework for condition measurement (e.g. 1 to 5) across asset classes and frequency of data collection may not be optimal	620-1 Establish standard condition assessment framework and align to asset class condition scales 620-2 Evaluate and establish condition assessment frequency

Projects needed to fill the gap

31 initiatives in total

Context

Best Practice

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Framework Synthesis

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Projects to fill the gap - partial

WBS	Assessment Area	Assessment Element	ID	Project
1	Governance			
1.1	Strategy and Planning	Asset Management Strategy	120-1	120-1 Adopt Newmarket Asset Management Strategy (this project)
1.3	Strategy and Planning	Asset Management Plan	140-1	140-1 Define and assign responsibility for stormwater assets
1.4	Strategy and Planning	Asset Management Plan	140-2	140-2 Develop AMP for missing asset classes
1.2	Organization and People	Asset Management Structure	310-2	310-2 Create or designate Asset Manager position to provide guidance and oversee implementation of AM within the Town
1.6	Organization and People	Asset Management Structure	310-1	310-1 Develop AM roles and responsibility matrix and incorporate into job descriptions
1.9	Organization and People	Competency	320-1	320-1 Identify required AM specific training and develop learning plan for the organization
1.5	Asset Data and Information	Asset Hierarchy	510-1	510-1 Develop asset hierarchy from FIR reporting to the maintenance managed item level
1.7	Data Management	Data Owner	1020-1	1020-1 Establish data roles - owners, users, collectors
1.8	Performance and Demand	LOS	210-1	210-1 LOS Model: define LOS and KPIs, and model associated activities and costs associated with it.
2	Capital Program Decision Making			
2.1	Decision Making	Capital Plans	820-1	820-1 Optimize the current capital plan with updated asset information
2.2	Monitoring & Improvement	Condition Assessment	620-1	620-1 Establish standard condition grading framework and align to asset class/sector condition scales
2.3	Strategy and Planning	Asset Strategy	160-1	160-1 Evaluate and document lifecycle practices

Context

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Outcome from project implementation

The Corporation of the Town of Newmarket Needs Assessment and Gap Analysis										Future			
ID	Assessment Area	ID	Score	Future	Assessment Element	Score	Future	1	2	3	4		
800	Decision Making	840	47	60	Non-Capital Projects	55	66						
900	Finance	910	35	60	Financial and Funding Strategy	52	63						
		920	60	70	Reserve Fund								
		930	60	60	P53150								
1000	Data Management	1010	30	65	Data Standards	38	65						
		1020	33	65	Data Owner								
		1030	30	65	Information Quality								
		1040	60	65	Data Sharing								
			45	62		45	62	1	2	3	4		
								Aware	Establishing	Developing	Compete		

Current state score

Score after completion of projects

Context

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Rank and Order

- Priority considered by:
 - Importance of asset management element
 - Link between driver and AM element
 - Current state
 - Predecessor logic or natural order
 - Town input
- Projects and priority rank (sample)
 - 140-1 Define and assign responsibility for stormwater assets - Rank 1
 - 140-2 Develop AMP for missing asset classes Rank - 2
 - 210-1 LOS Model: define LOS and KPIs, and model associated activities and costs associated with it Rank - 14
 - 310-2 Create or designate Asset Manager position to provide guidance and oversee implementation of AM within the Town Rank- 1

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Summary of project requirements

Item	Effort (months/ \$)	Annual (% or \$)	Annual (% or \$)
Total Duration	87	87 months	60 months
Management (5)	15	3%	5%
Technical staff (1 PM+ support)	31	28%	40%
Stakeholders (15)	29	2%	3%
External Cost (Town staff not included)	\$1,060,000	\$146,207	\$212,000

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Themes for Implementation



- **Governance:** building Town wide asset management frameworks such as risk and levels of service, and building organizational capacity such as through skills development
- **Capital Program Decision-Making:** improving the decision-making process for capital spending by developing lifecycle models and incorporating into the asset strategy tying spending with service levels
- **Data and Information:** improving data and information standards including new technology and integration of existing systems to support the asset management system
- **Maintenance Management:** improving maintenance practices and implementation of a new computerized maintenance management system (CMMS)
- **Optimizing Asset Management:** ongoing works to further advance asset management practices and incorporate results of previous improvements into long-range financial plans including rates and reserves

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Resource requirements

For the plan

- Average of ~\$200,000/year over 5 years for various projects
- Several new positions
 - AM Manager
 - Technical staff
 - It staff

Available from Town

- OCIF grant funding for eligible asset management activities including capital, asset management planning, and salaries
- Total OCIF grant ~ \$318,000/year
- 1 vacant position for asset management

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Recommended new positions and responsibilities

- Asset Manager (1 immediately):
 - oversee and provide direction across the Town to implement asset management practices in a coordinated and integrated fashion.
- Technical staff (2-3 in 2018/19):
 - technologists or engineers to develop asset specific programs to measure and monitor asset performance, collect, manage and analyze asset data and support the program
- Information Technology staff (1 in 2019):
 - support the configuration and ongoing maintenance of asset management software including a computerized maintenance management system (CMMS)

In lieu of hiring consider outsourcing: but there is limits to how much vendors can be relied on as ultimately Town staff must manage data and decisions, and requirement is ongoing rather than project based

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Schedule Details by Program Theme

Program Theme	Project Costs	Start	End	Months
Governance	\$140,000	09-Jan-17	26-Dec-17	12
Capital Program Decision-Making	\$150,000	05-Jun-17	29-Aug-18	15
Data and Information	\$110,000	04-Jun-18	02-Apr-19	10
Maintenance Management	\$320,000	29-Oct-18	22-Nov-19	13
Optimizing the Asset Management program	\$340,000	25-Nov-19	21-Dec-21	25
Total	\$1,060,000			

Context

Best Practice

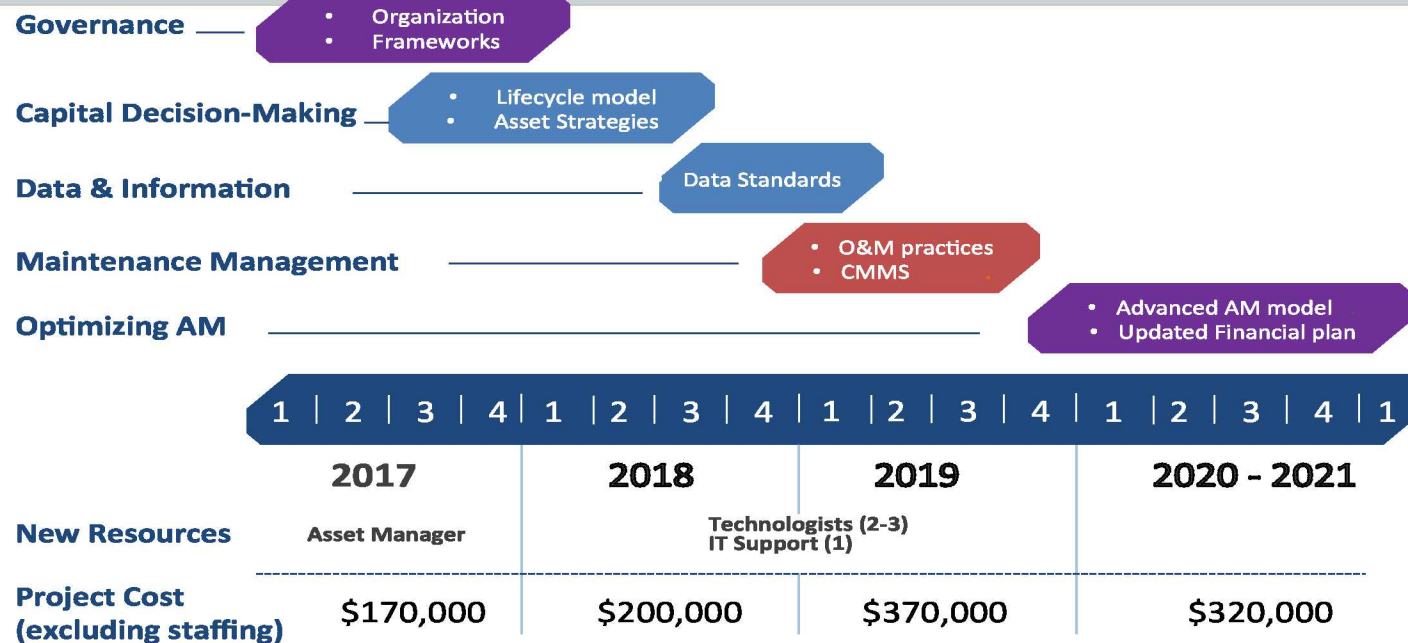
Current State

Gap Analysis

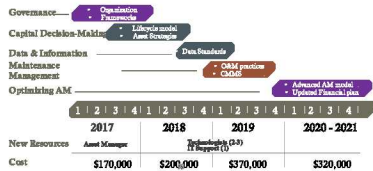
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Schedule



Success Factors



1. **Project management** to develop and monitor detailed work plans
2. **Leadership** and endorsement from Council and management
3. Regular and focused **communications** on progress of the asset management program
4. **Staff development** to improve technical capabilities for delivery of asset management practices
5. **Managing change** and disruption to existing operations while transitioning to new practices and fostering commitment of staff to program development



Context

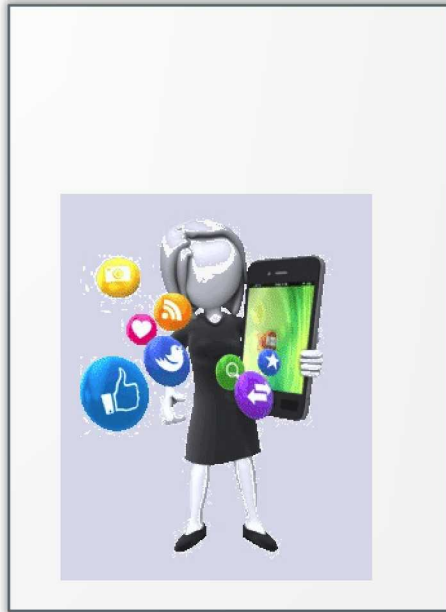
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Current State

Gap Analysis

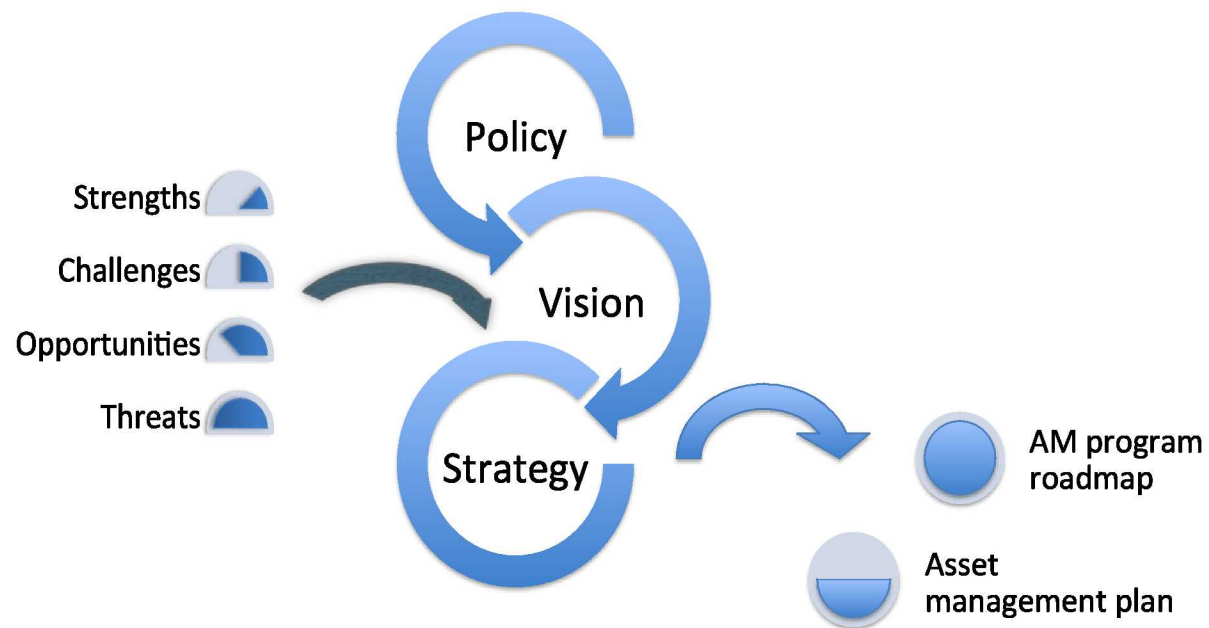
Framework
Synthesis

Implementation
Plan



Appendices

Link between Policy and Strategy



Asset Management Assessment Framework

ID	Assessment Area	ID	Assessment Element
100	Strategy and Planning	110	Asset Management Policy
		120	Asset Management Strategy
		130	Master Plan
		140	Asset Management Plan
		150	Contingency Planning
		160	Asset Strategy
200	Performance and Demand	210	LOS
		220	Asset Demand
300	Organisation and People	310	Asset Management Structure
		320	Competency
		330	Outsourcing
400	Life Cycle Practices	410	Acquisition
		420	Operations & Maintenance (O&M)
		430	Performance Modeling
500	Asset Data and Information	510	Asset Hierarchy
		520	Asset Management Data

ID	Assessment Area	ID	Assessment Element
600	Monitoring & Improvement	610	Performance Assessment
		620	Condition Assessment
		630	Performance Improvement
700	Risk Management	710	Risk Management
		720	Risk Assessment
800	Decision Making	810	Optimized Decision Making
		820	Capital Plans
		830	Capital Projects Integration
		840	Non-Capital Projects
900	Finance	910	Financial and Funding Strategy
		920	Reserve Fund
		930	PS3150
1000	Data Management	1010	Data Standards
		1020	Data Owner
		1030	Information Quality
		1040	Communication

Financial Sustainability

Presenter: Mike Mayes
Date: November 21, 2016

Elements of a Sustainable Financial Strategy



1. Asset Management
2. Debt
3. Investment Strategy
4. Revenues
5. Reserves and Reserve Funds
 - Asset Replacement Fund
6. Capital budgeting



Asset Management



Asset Management Strategy covered by previous presentation

Asset Management Plan

- December 2014 – 1st plan
- Early 2017 – update
- Requirement for most grants

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Debt - basics

The *Municipal Act* limits the use of debt:

- to capital purposes
- to an Annual Repayment Limit (ARL)
- Lower Tier municipalities must borrow through an Upper Tier Municipality

However, this applies to *external* debt and not *internal* debt, i.e. borrowing from our own reserve funds



Debt - indicators

By normal business standards, the Town's debt levels are low

Long-term debt as a % of the net book value of tangible capital assets

2012	2013	2014	2015
11.2%	10.4%	9.3%	8.5%



Debt – indicators (cont'd)



However, our debt levels are higher than the average of other municipalities

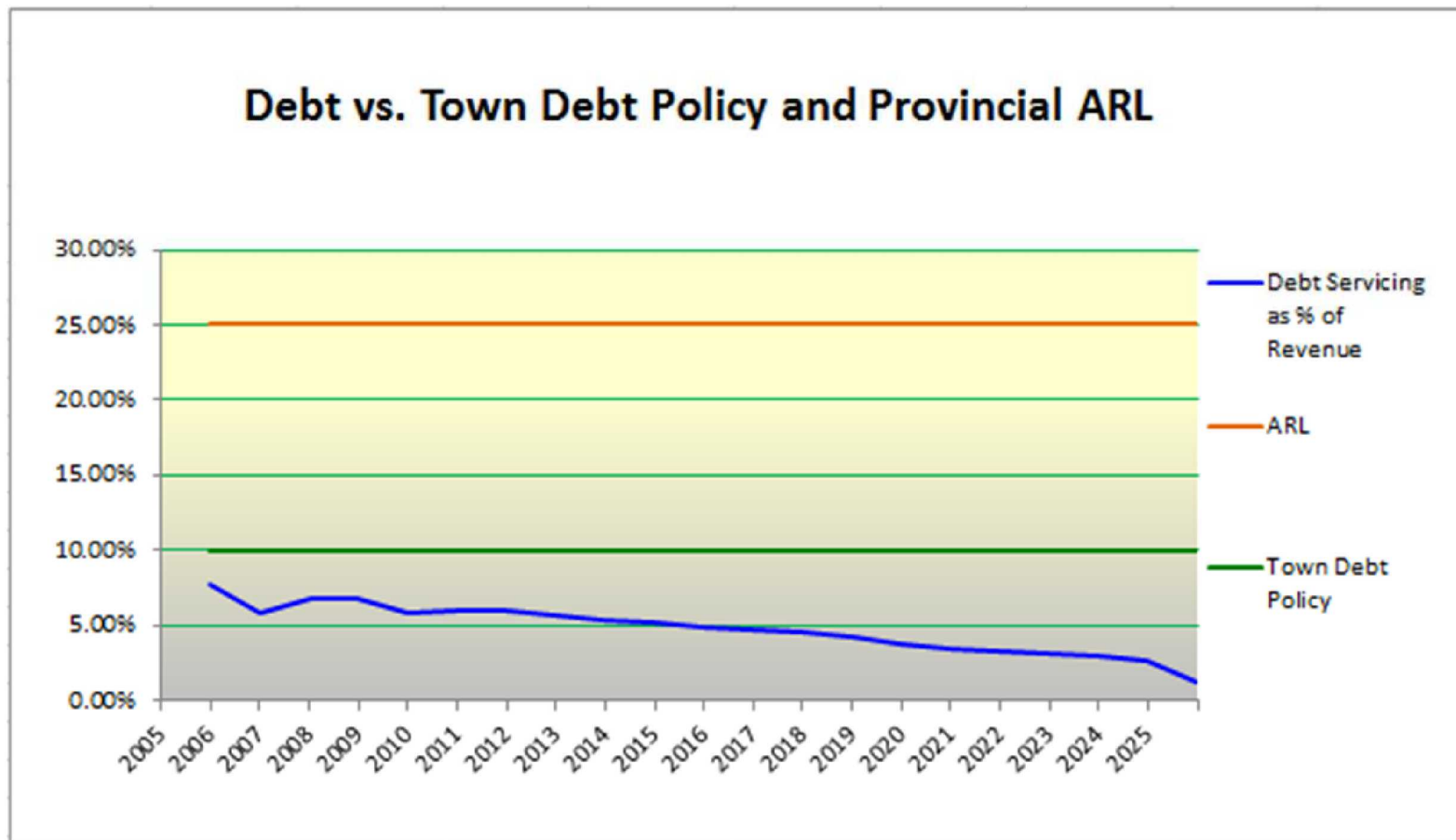
2015 Debt Servicing Cost as a % of Total Operating Revenue

Newmarket	Median	Average
4.1%	3.6%	3.4%

According to the Ministry of Municipal Affairs, this is a “low level of challenge”, i.e. good



Newmarket has the capacity to increase debt by \$85 million



Debt – policy considerations



Current policy focuses on limiting the use of debt but does not provide any guidance on when to use it.

Proposed Debt Policy changes

1. Criteria for the use of debt
2. Criteria for the use of Internal (Reserve Fund) Loans
3. Defining debt limit and terms for debt



Investments - overview

Investment Policy adopted - 2012

Investment Strategy initiated - 2013

Updates – January 2016

Incremental investment income earned

2013	2014	2015	2016 Q3
\$ 59,767	\$ 221,951	\$ 244,299	\$ 299,447



Investments

– a 3 stream approach



	1. Short-term	2. Medium and Long-term
Term	Less than 1 year	1 year or more
Benchmark	Interest earned on bank balances	Average yield on 5-10 year Government of Canada bonds
Bank accounts	Operating funds	Reserve funds
Source	Seasonal and cyclical cash fluctuations	Projected surplus of long-term reserve fund cash balances
Eligible investments	Government securities, Tier I banks Tier II banks (up to 6 months)	Government securities, Tier I banks
Status	Will be implemented for 2017	Challenged by lack of formal multi-year capital plan

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Investments - 3rd stream

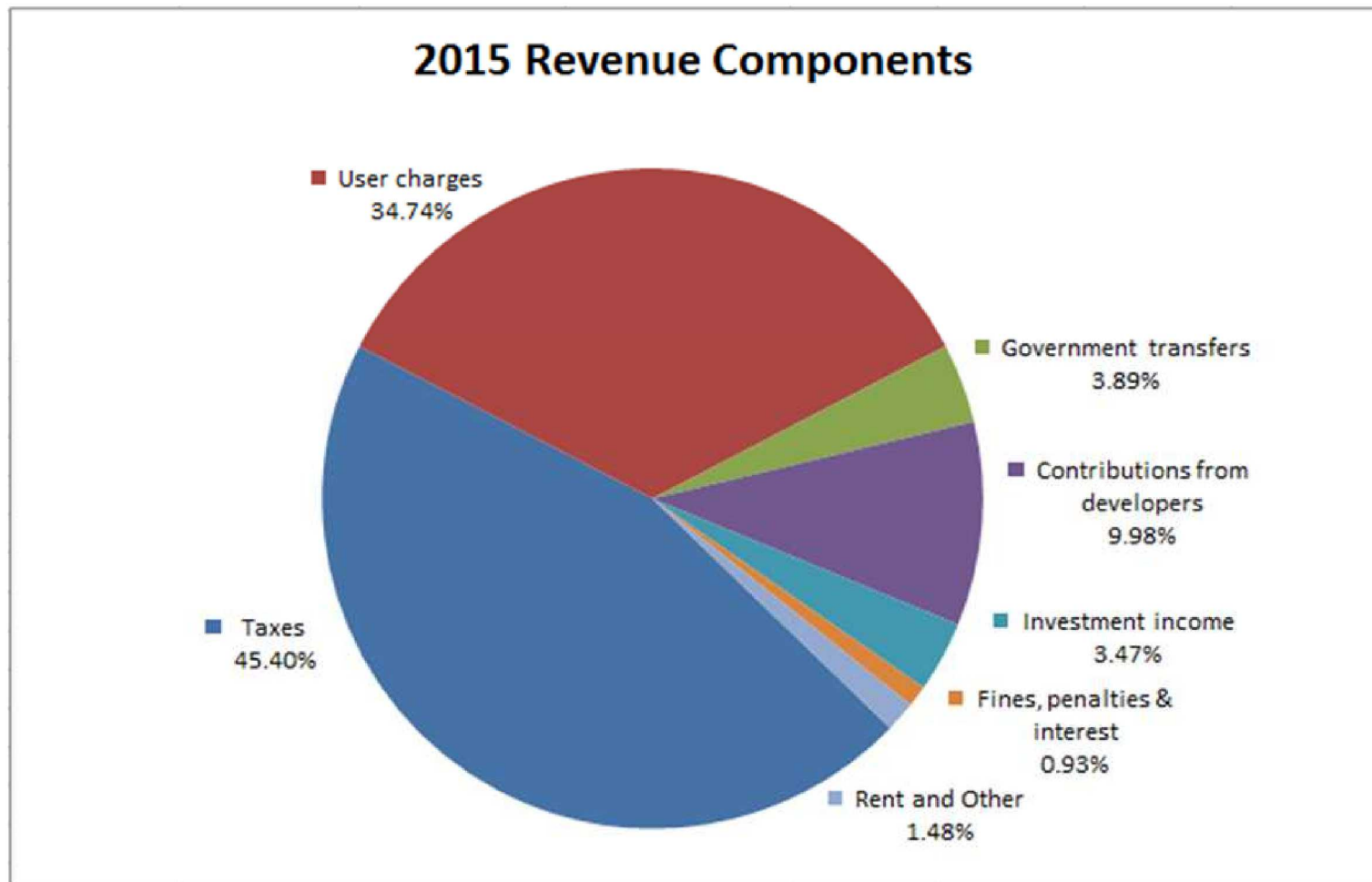


	2012	2013	2014	2015
Hydro Equity	\$1,369,669	\$1,343,532	\$1,678,520	\$1,671,129
Interest on Promissory Note	\$1,205,600	\$1,205,600	\$1,205,600	\$1,205,600
Dividends	\$1,336,000	\$1,336,000	\$1,336,000	\$1,336,000
TOTAL	\$3,911,269	\$3,885,132	\$4,220,120	\$4,212,729

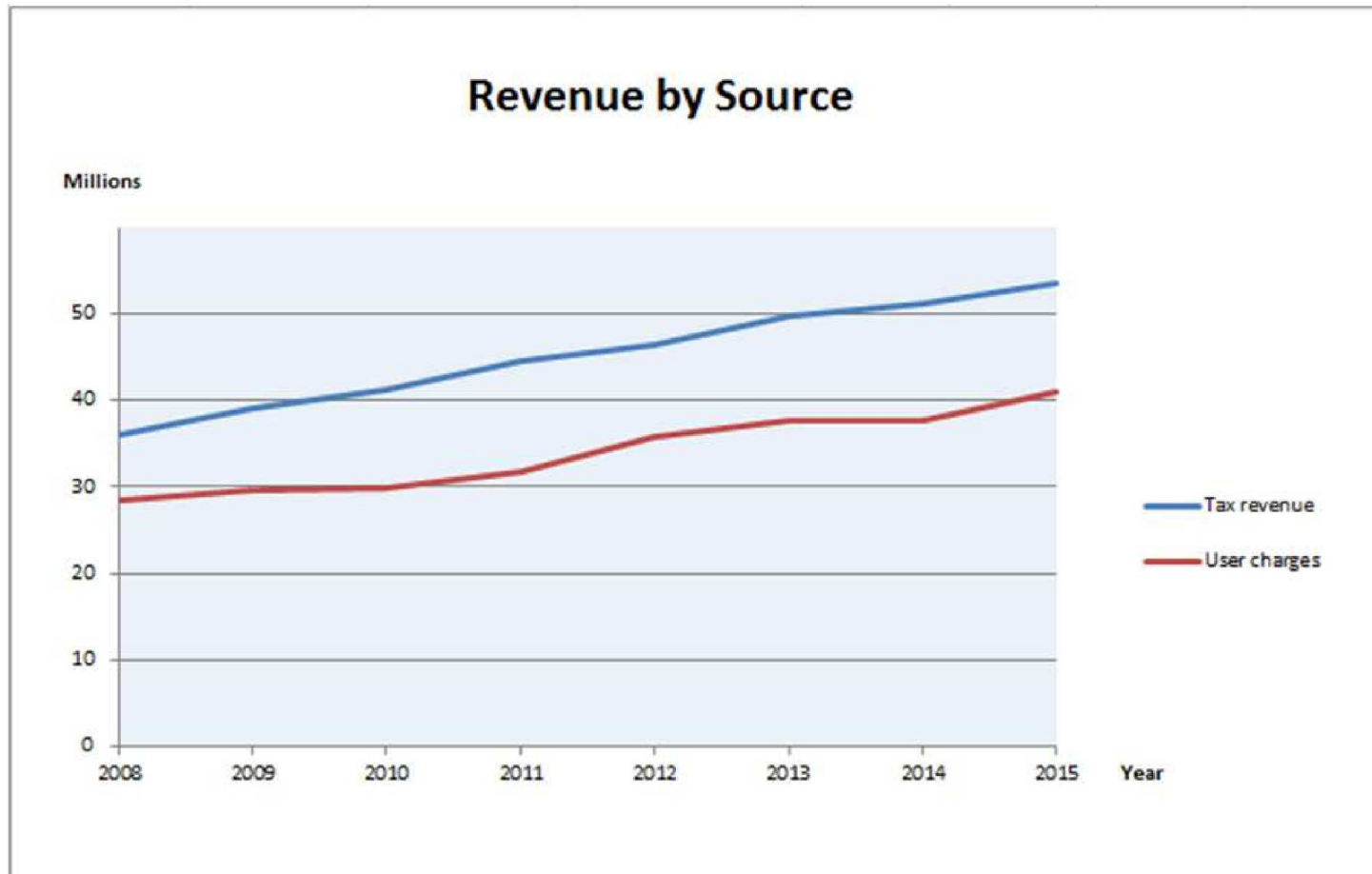
Our investment in Newmarket-Tay Hydro generates substantial income with a favourable return



Revenue - overview



80% of our revenues are Taxes and User Fees



Property Taxes & Assessments



1. Proactive Assessment Management - protecting our assessment base

Partnering with MPAC, and more extensive use of tax and assessment tools

Town initiated assessment appeals

Active review of tax reductions

2. Effective policies, consistently applied

Late Payments Fees Policy which is equitable and maintains revenues

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Service Pricing Policy Update



Revenue factors to be considered in general and with regards to updating the SPP policy:

1. Cost recovery - full or incremental
2. The market place / competitiveness
3. Incentives
4. Funding requirements

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Reserves and Reserve Funds

- definitions



Reserve

- An appropriation from net revenue after the provision for all known expenditures, i.e. from annual surplus
- No cash, no revenue and no expenses

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Reserve Fund

- Funded either by the transfer of revenues from other funds or by an external source of revenue
- Has segregated cash, revenues and expenses; and earns interest on its cash balance



Reserves and Reserve Funds - definitions (cont'd)



Obligatory Reserve Fund

- Looks exactly like a reserve fund

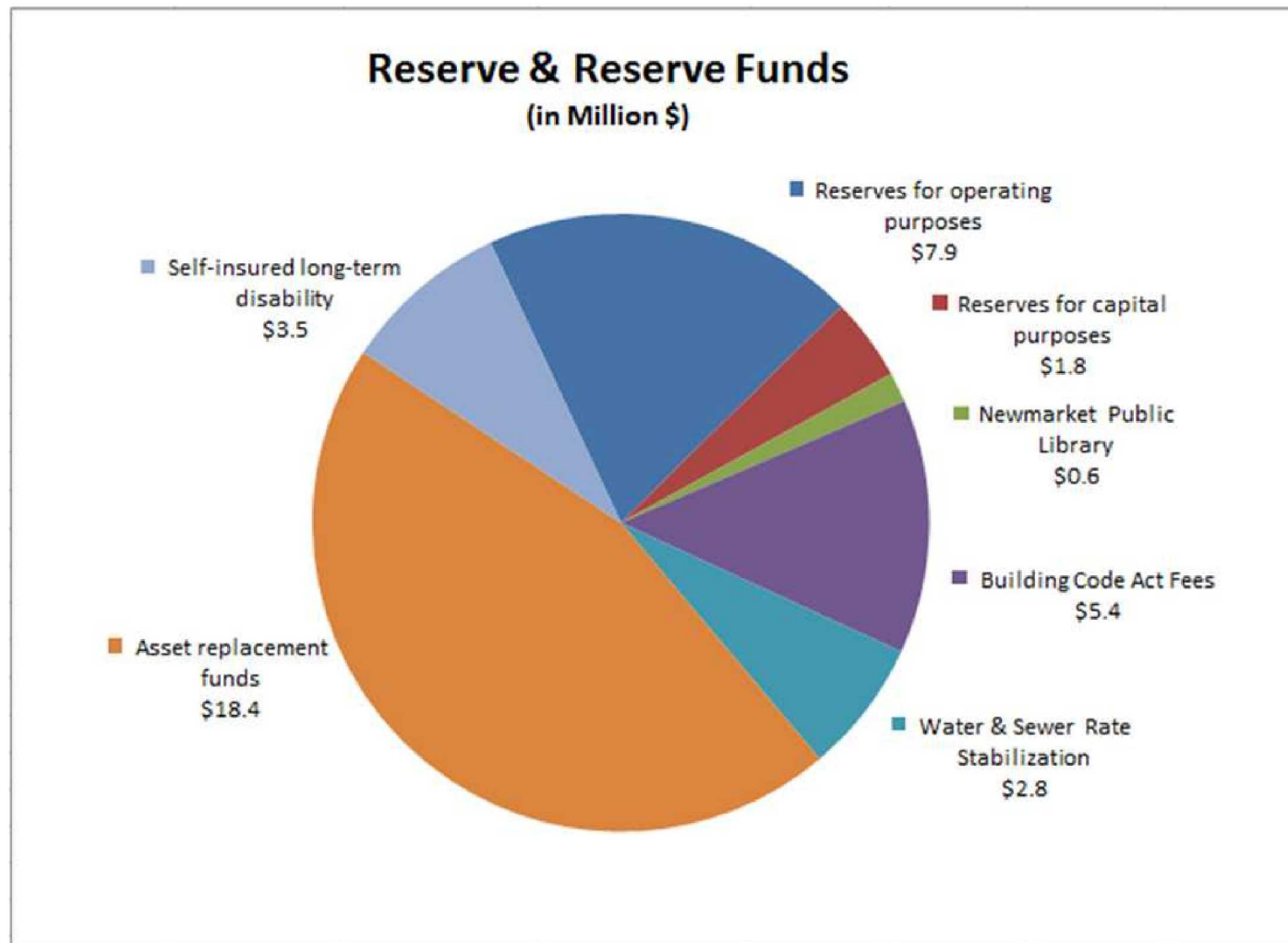
BUT

- Is restricted by legislation and treated as deferred revenue (per PSAB)

The generic term “reserve” is often used to encompass reserves, reserve funds and obligatory reserve funds.



The Town has many different Reserves and Reserve Funds



Reserves and Reserve Funds

- indicators



On a consolidated basis, our reserves and reserve funds appear to be adequate although slightly less than average

Total Reserves and Discretionary Reserve Funds as a % of Operating Expenses

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Newmarket	Median	Average
37.9%	51.0%	51.2%

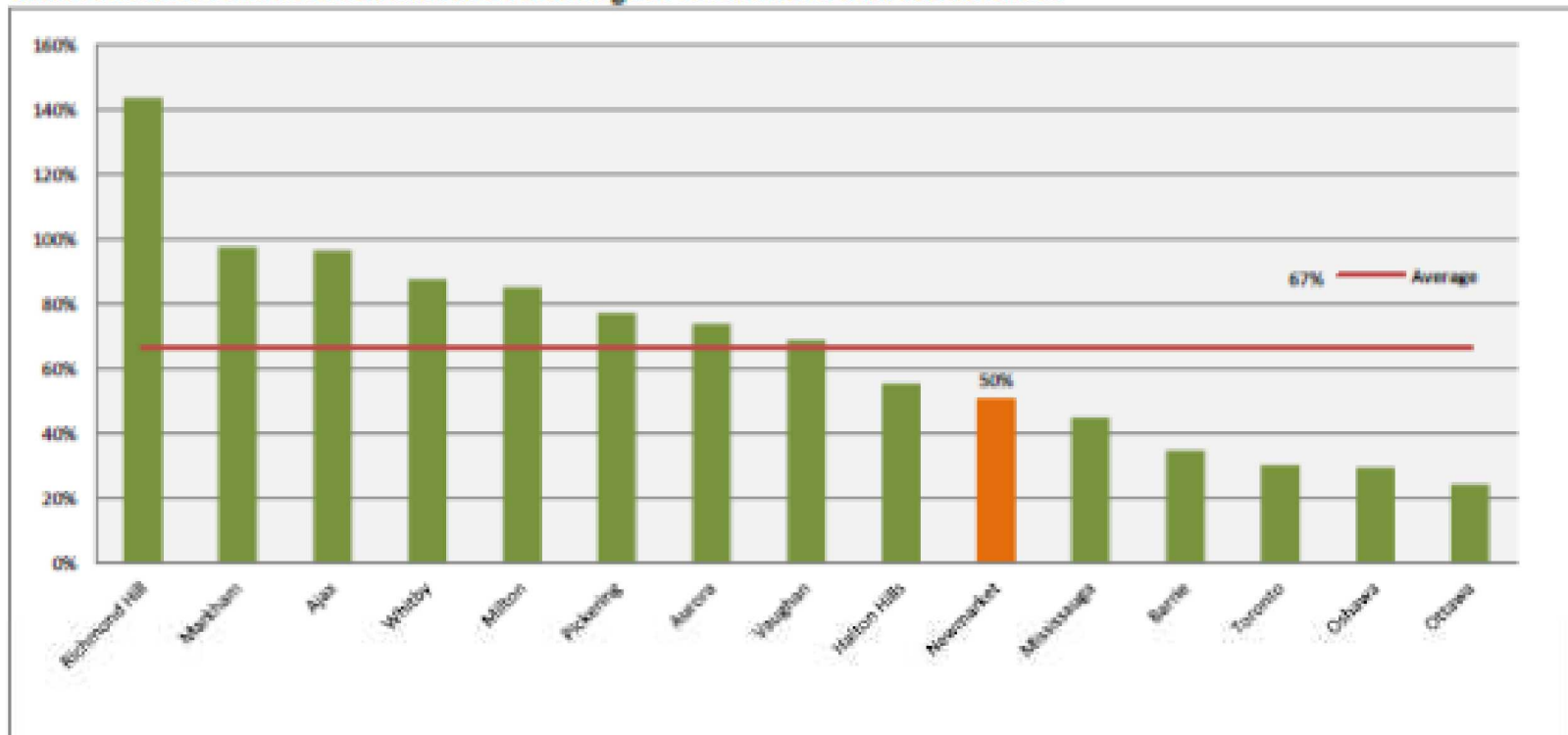
According to the Ministry of Municipal Affairs, this is a “low level of challenge”, i.e. good



Reserves and Reserve Funds - our comparators



Chart 7: Reserves and Reserve Funds as a Percentage of Taxation and User Fee Revenues



And the balance is essentially Water and Wastewater



	2012	2013	2014	2015
Tax Discretionary Reserves as a % of Taxation Revenue	27%	32%	15%	-3%
Water Reserves as a % of Water Revenues	132%	140%	149%	154%
Wastewater Reserves as a % of Wastewater Revenues	85%	93%	106%	116%

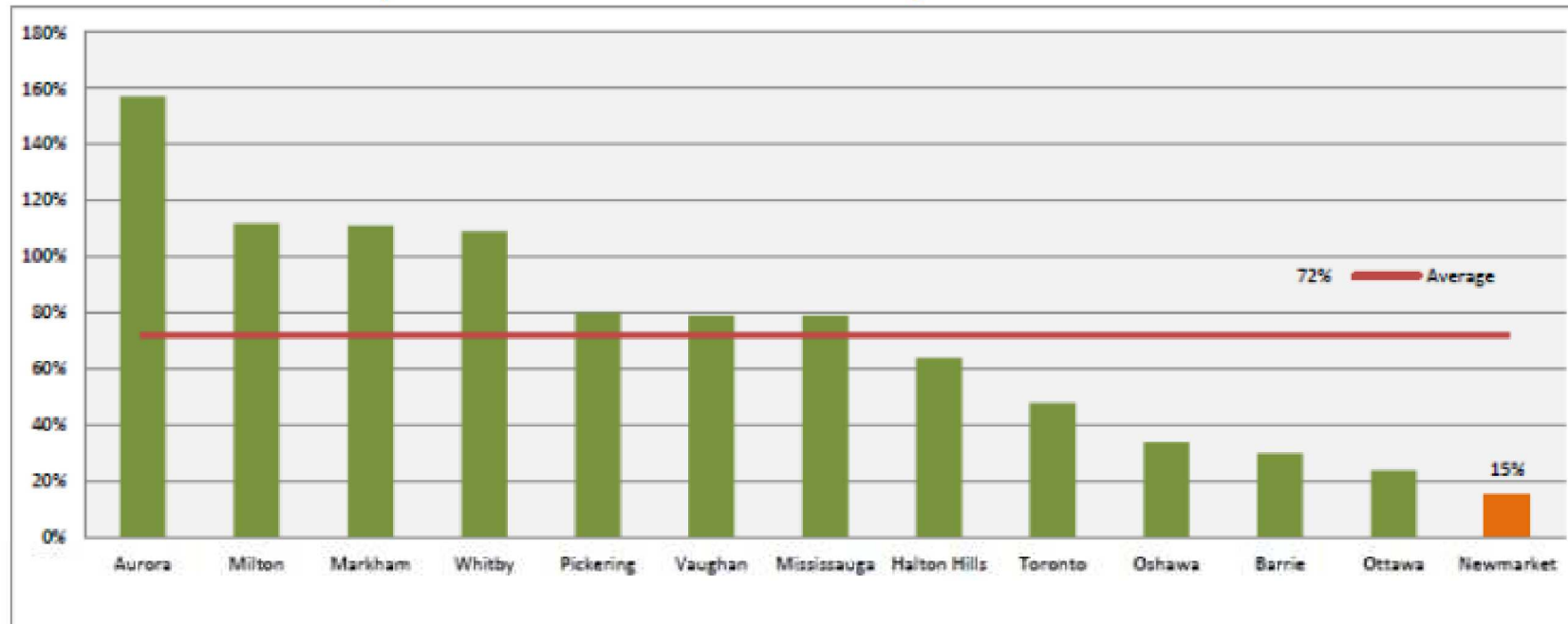
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Comparison of Tax-supported Reserves and Reserve Funds



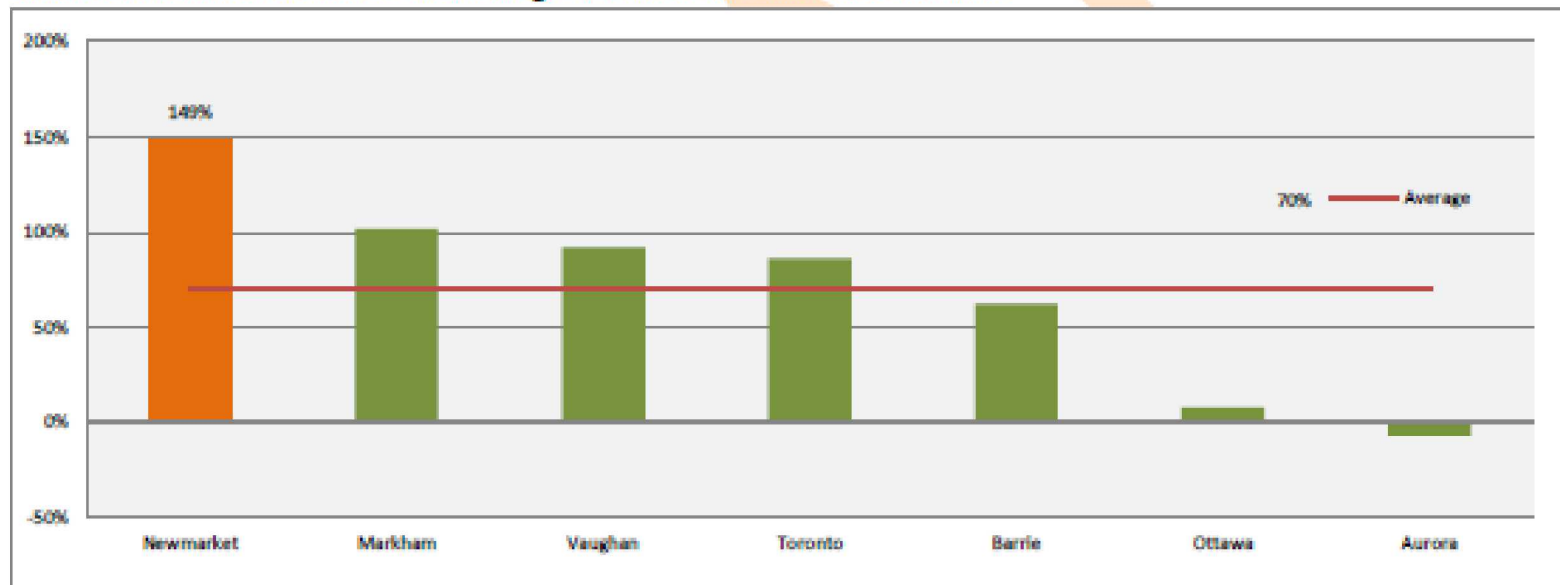
Chart 2: 2014 Tax Discretionary Reserves and Reserve Funds as a Percentage of Taxation Revenues



Newmarket is a leader in Water and Wastewater Reserves and Reserve Funds



Chart 5: 2014 Water Reserves as a Percentage of Total Water Own Source Revenues



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Summary of Reserve and Reserve Funds Balances



	2015	2016 projected
	In \$ millions	
Water/wastewater ARF	\$ 38.9	\$ 43.7
Water/wastewater rate stabilization	2.9	2.3
Building Permits	5.4	4.5
Tax-supported ARF	- 20.5	- 22.1
Tax-supported capital	12.2	11.5
Tax-supported operations	14.0	12.6
Internal loans	- 12.4	- 12.3
	\$ 40.5	\$ 40.2



Reserves and Reserve Funds

- policy considerations



Our current guidelines are 8 years old and need to be updated

Proposed Reserves and Reserve Fund Policy housekeeping changes:

1. Re-categorize reserves and reserve funds
2. Define delegated authority
3. Formalize the current practices

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Asset Replacement Fund

- overview



The Asset Replacement Fund (ARF) was created in 1998

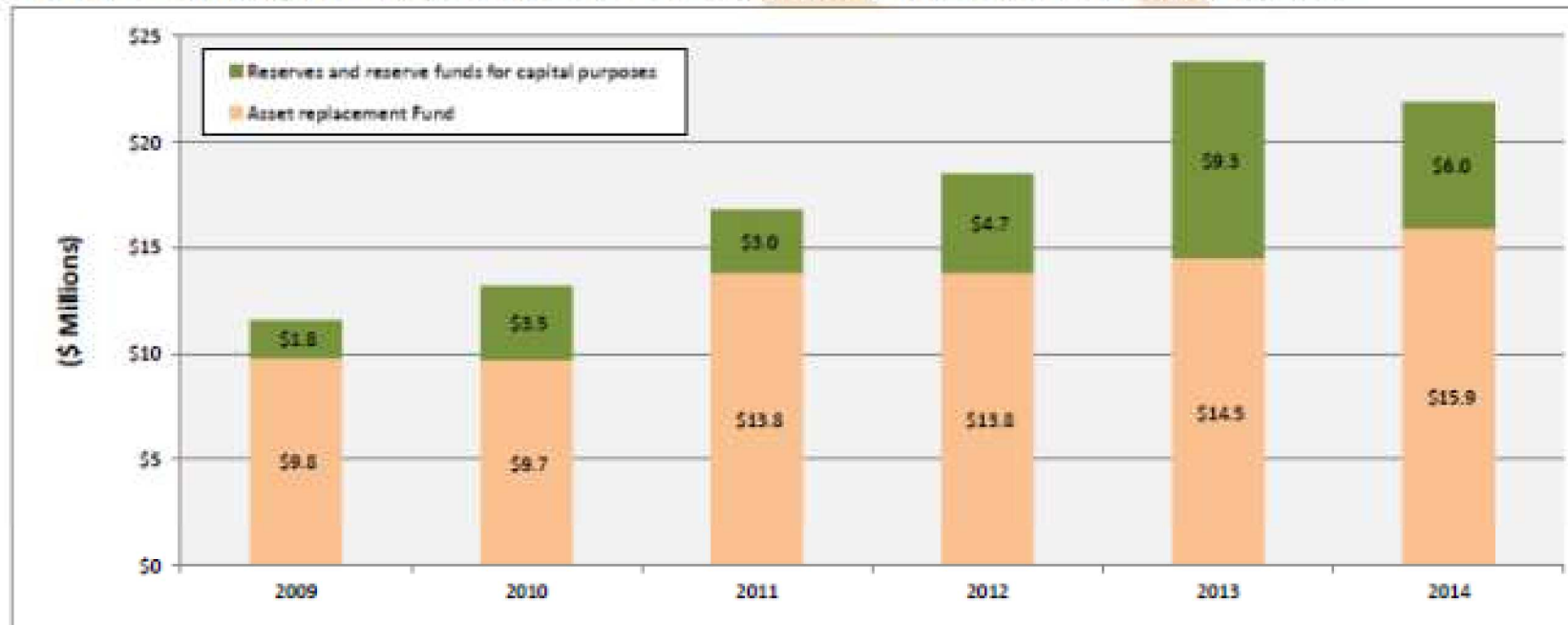
Goal: to ensure that Newmarket can afford to replace future capital assets as required

Contributions were based on estimated annual contribution requirement – initially 100% for water, wastewater and fire; 50% for other assets (which grew to 100% by 2008)



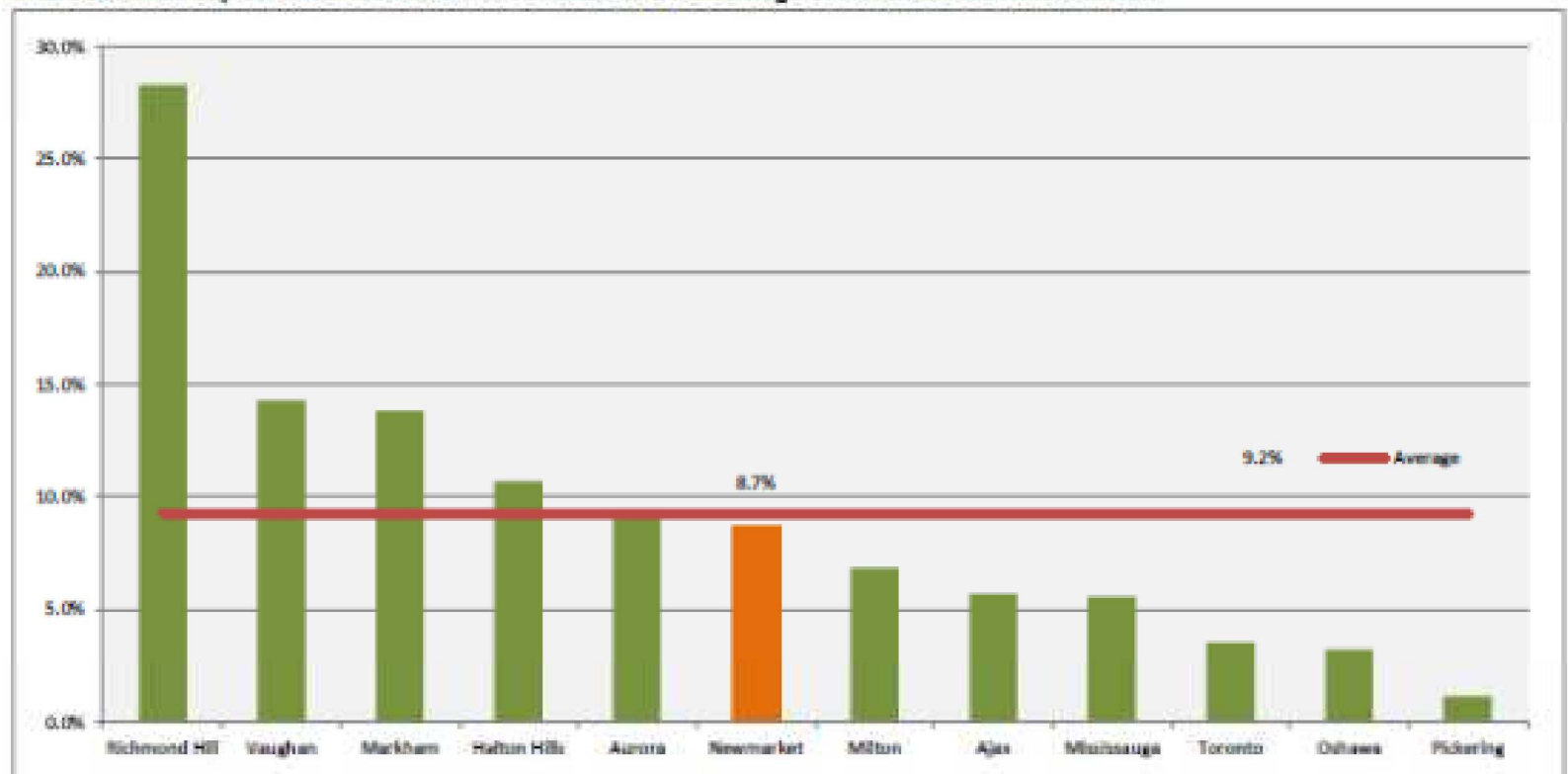
Asset Replacement Fund - trends

Chart 1: Growth in Capital Reserves and Reserve Funds of the Town of Newmarket between 2009 and 2014



Consolidated balances are comparable

Chart 10: 2014 Capital Reserves and Reserve Funds as a Percentage of Accumulated Amortization



Addressing the funding gap



Contributions to capital reserves and reserve funds as a % of amortization expense

	2012	2013	2014	2015
Combined	88%	86%	88%	92%
Tax-supported	69%	74%	85%	82%
Rate-supported	116%	99%	94%	113%

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Methodologies for Funding Capital Reserves



1. Operating surplus
2. Budgeted contributions
3. Designated revenue source:
 - Share of assessment growth
4. Combination of the above



Asset Replacement Fund - policy considerations



Proposed inclusions for an Asset Replacement Fund Policy:

1. Align categories with the AMP
2. Set an ARF target
3. Define acceptable use of ARF
4. Dealing with the interfund imbalance

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Capital carryovers are increasing



Capital carryovers occur when funds are allocated to a capital project but are not spent

	\$ millions	% of budget
2012	\$ 25.5	60.2%
2013	\$ 28.0	67.9%
2014	\$ 28.1	54.7%
2015	\$ 38.8	67.5%



Good practice includes multi-year capital plans



Municipality	Number of Years Covered in Capital Plan
Ajax	5 years
Aurora	10 years
Barrie	5 years
Halton Hills	10 years
Markham	5 years
Milton	15 years
Mississauga	10 years
Oshawa	9 years
Pickering	5 years
Richmond Hill	10 years
Toronto	10 years
Vaughan	4 years



Capital Budget

- policy considerations



Proposed capital budgeting changes:

1. Formalize multi-year capital plans
2. Asset Management Plan (AMP) to drive replacement capital program
3. Development Charges background study to drive growth capital program
4. Eliminate capital carryovers by moving to a Capital Spending Authority model

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Budget Schedule



ACTIVITY	DATE	STATUS
Special Committee of the Whole Workshop – Operating Budget	November 14 1:30 p.m.	Completed
Special Committee of the Whole Workshop – Financial	November 21 1:30 p.m.	In progress
Committee of the Whole – remaining Fees & Charges	November 28 1:30 p.m.	
Special Committee of the Whole – Preliminary draft budget	December 5 10 a.m.	
Council approval of remaining Fees & Charges	December 5 7 p.m.	



Budget Schedule (cont'd)



ACTIVITY	DATE	STATUS
Draft budget information available to public and on website	December 12	
2017		
Special Committee of the Whole – Capital Budget and Asset Replacement Fund	January 16 10 a.m.	
Special Committee of the Whole – Operating Budget	January 30 1:30 p.m.	
Committee of the Whole - Draft capital and operating budgets	February 6 1:30 p.m.	
Council approval of the Budget	February 13 7 p.m.	

