

Integrated Asset Management Strategy

The Corporation of the Town of Newmarket



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The Town of Newmarket Integrated Asset Management Strategy

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The Town of Newmarket

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Table of contents

EXECUTIVE SUMMARY	5
IMPLEMENTATION PLAN	5
ASSET MANAGEMENT VISION	7
ASSESSMENT OF ASSET MANAGEMENT PROGRAM	8
2017 PROJECTS	10
1 INTRODUCTION	11
2 PROJECT APPROACH	12
3 BEST AND INDUSTRY PRACTICE	13
3.1 CURRENT INDUSTRY PRACTICE	14
4 ASSET MANAGEMENT CURRENT STATE ASSESSMENT	17
4.1 ASSET MANAGEMENT VISION	17
4.2 BUSINESS DRIVERS	18
4.3 ASSESSMENT RESULTS	19
4.4 RIGHT-OF-WAY SECTOR ASSESSMENT RESULTS	23
4.5 STORMWATER SECTOR RESULTS	24
4.6 WATER AND WASTEWATER SECTOR RESULTS	24
4.7 INFORMATION TECHNOLOGY SECTOR RESULTS	26
4.8 PARKS SECTOR RESULTS	27
4.9 FACILITIES SECTOR RESULTS	29
4.10 FLEET SECTOR RESULTS	30
4.11 CENTRAL YORK FIRES SERVICES SECTOR RESULTS	32
4.12 LIBRARY SECTOR RESULTS	34
5 NEEDS ASSESSMENT AND GAP ANALYSIS	37
5.1 SUMMARY OF NEEDS AND GAP ANALYSIS	38
5.2 GAP ANALYSIS – IMPROVEMENT PROJECTS	43
6 FRAMEWORK SYNTHESIS	44
7 ASSET MANAGEMENT SOFTWARE	49
8 IMPLEMENTATION PLAN	50
8.1 IMPLEMENTATION PROJECT SCHEDULE	52
8.2 RESOURCE REQUIREMENTS	52

8.3 ASSET MANAGEMENT PROGRAM GOVERNANCE	53
8.3.1 STRUCTURE	54
8.3.2 ROLES AND RESPONSIBILITIES	55
8.3.3 FRAMEWORK AND PROGRAM	56
APPENDIX A: MATURITY ASSESSMENT QUESTIONNAIRE	58
APPENDIX B: TOWN RESULTS	63
APPENDIX C: RIGHT-OF-WAY SECTOR ASSESSMENT RESULTS	67
APPENDIX D: WATER AND WASTEWATER SECTOR RESULTS	82
APPENDIX E: INFORMATION TECHNOLOGY SECTOR RESULTS	93
APPENDIX F: PARKS SECTOR RESULTS	104
APPENDIX G: FACILITIES SECTOR RESULTS	116
APPENDIX H: FLEET SECTOR RESULTS	127
APPENDIX I: CENTRAL YORK FIRES SERVICES SECTOR RESULTS	140
APPENDIX J: NEWMARKET PUBLIC LIBRARY SECTOR RESULTS	146
APPENDIX K: ASSET MANAGEMENT GAPS AND NEEDS	151
APPENDIX L: IMPLEMENTATION SCHEDULE	158

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.

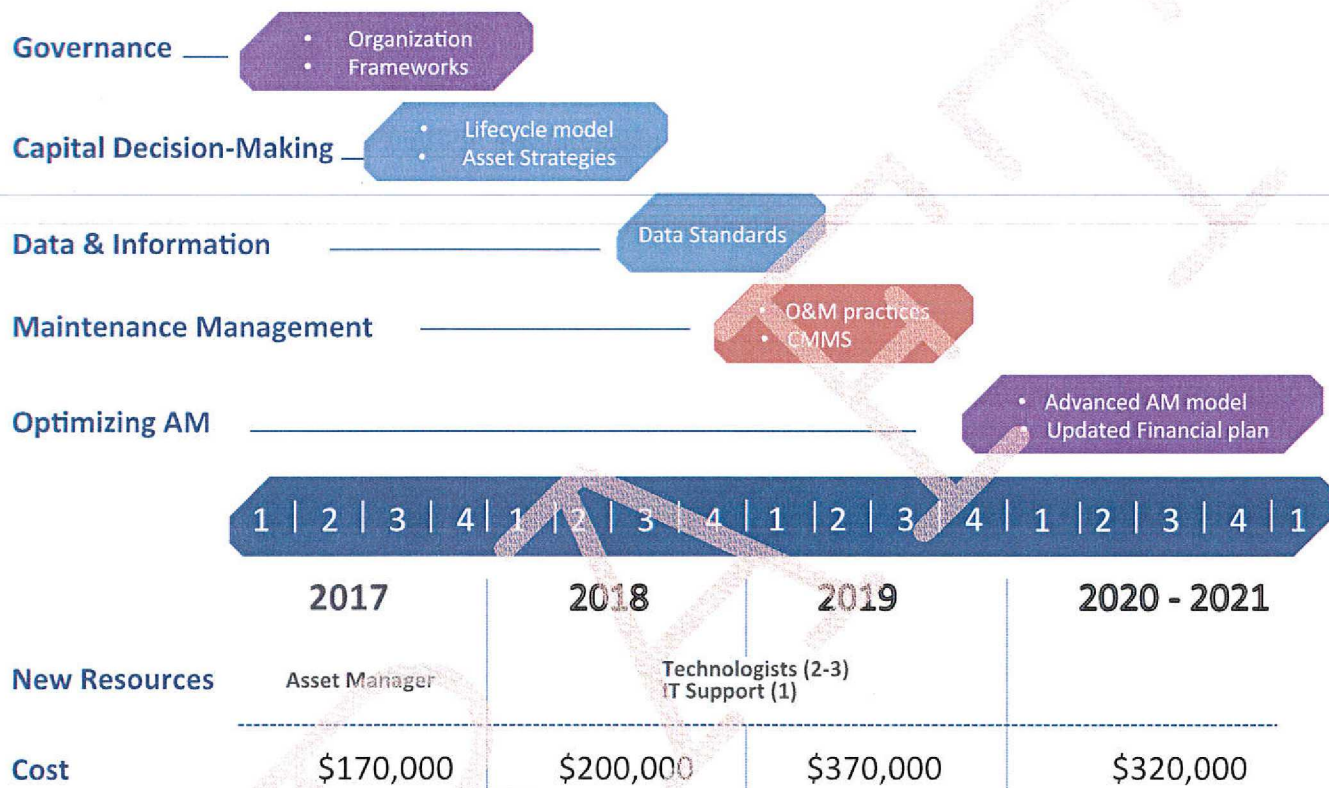


Figure 1: Overview of Implementation Plan

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.

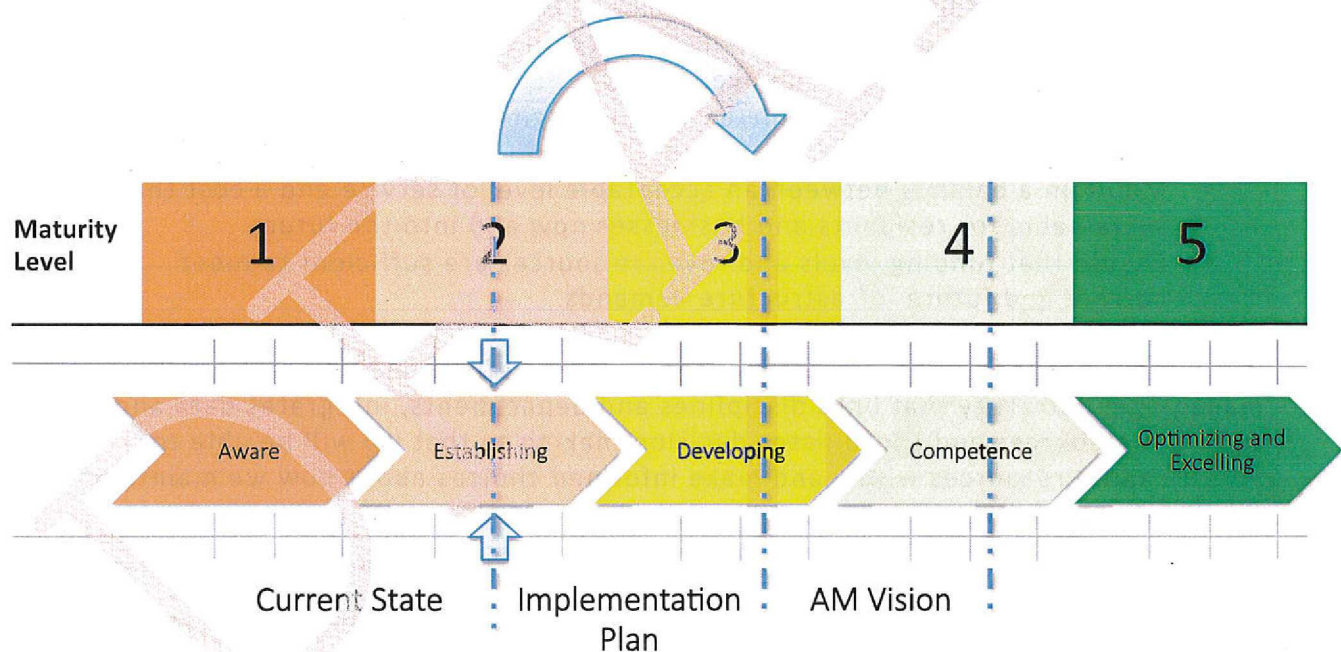


Figure 2: Asset Management Maturity Levels

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.