Asset Management Governance
Impact Assessment Report

The Regional Municipality of Niagara

December 2018

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Executive Summary

The first part of the Asset Management (AM) Governance initiative has recommended creating a formal AM Governance Model with a clear organizational structure and appropriate authority, roles and responsibilities. The AM Governance Model (see Figure ES-1) will support the development and implementation of leading AM practices and enable the Region to meet *Ontario Regulation 588/17: AM Planning for Municipal Infrastructure*.

Figure ES-1 Proposed AM Governance Model
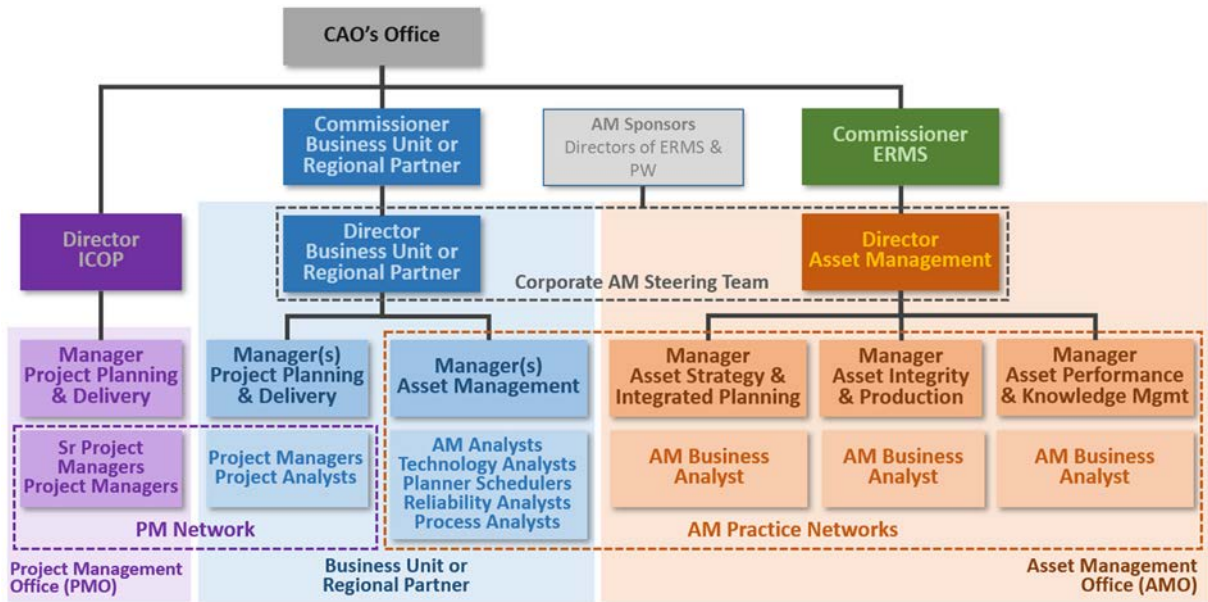
The AM Governance Model recommendations include a three step implementation plan, as shown below in Table ES-1.

Table ES-1 Recommended AM Governance Model Implementation

1. Corporate (Immediate)	2. Department (Short Term)	3. Departmental (Medium Term)
1.1 Create a Corporate AM Steering Team		
1.2 Create (new) a formal Corporate AM Office (AMO): - Director of AMO - AM Manager & Analyst: Strategy & Integrated Planning - AM Manager & Analyst: Asset Integrity & Productivity - AM Manager & Analyst: Asset Performance & Asset Knowledge	**2.1 Create (augment) formal Departmental AM Responsibilities:** - Departmental AM Managers **2.2 Establish AM Practice Networks across the Departments:** - AM Planning Network - AM Productivity Network - Asset Knowledge & Performance Management Network	**3.1 Create (augment & new) formal Departmental AM Responsibilities:** - Departmental Planner Schedulers - Departmental Technology Analysts (new) - Departmental Reliability Analysts - Departmental Process Analysts

The first part of this Impact Assessment Report provides details on the proposed AM Governance Model including the organizational structure, roles and responsibilities for both new and augmented corporate and departmental positions, and career track progressions. The estimated budget for the immediate seven new positions for the Corporate Asset Management Office (AMO) is estimated to be $0.9 million per year.

With the implementation of the recommended AM Governance Model, some Region staff members will be required to adopt some form of change to their day-to-day work. Identifying the potential impacts resulting from this change on Regional staff, processes and technology provoked meaningful discussion around the change and will inform courses of action to address the change impacts within the Region in the appropriate timeframe (e.g. targeted communication, special training requirements).

The second part of this report outlines risks associated with change impacts to start building momentum within the Region, begin preparing leadership to guide people through the change, and inform the initiatives required to lead the Region towards success.

For the proposed AM Governance Model changes, the impact from a structure, people, and process perspective was assessed to be low to medium. Table ES-2 provides an overview of the assessment and strategies to mitigate the identified impacts and assessed degree of change.

Note: for the table below (C)=Communication, (T)=Training

Table ES-2 Overview of Change Impacts and Mitigation Strategies

Category / Criteria	Assessment	Rating	Mitigation Strategy*
Governance & Structure			(C) Benefits of new structure
Change in accountability or reporting relationship (e.g. level and / or position)?	Minor accountability change	Low	(C) How AM Networks will enable better collaboration of the AM practice across the Region
Change in the number of people required to do the work?	Yes		(C) New AMO and dept structures and roles
Change in location where work is performed?	No		
People			(C) Benefits of AM practices
Requires new skill(s) to perform the activity?	Considerable	Medium	(C) New skill(s) for roles
Tasks added or eliminated for a position?	Yes		(C) Added or eliminated task(s) for role
Requires a change in behavior or culture?	Minor		(C) How AM Governance Model will impact work
Requires significant training to learn how to perform the activity	Considerable		(T) Leverage capacity, skills and knowledge in HR for training to support the AMO (T) How to access curriculum and course info
Process			(C) Benefits of new process
Change in the way the work gets done?	Moderate	Medium	(C) New process (T) How to access curriculum and course information
Change in the frequency of performance of an activity?	Minor		
Change in the length of time required to perform an activity?	Minor		
Change in data sources or inputs?	Moderate		(C) New data sources
Change in reports or outputs?	Moderate		(C) New reports or outputs
Change in communication / interaction required to complete an activity	Minor		

1. Introduction

1.1 Background

The Region of Niagara has embarked on a multi-year phased Asset Management (AM) Program that is focused on improving the Region's overall efficiencies and effectiveness in delivering sustainable services through the development and implementation of leading asset management practices.

The AM Program consists of the following three (3) phases:

Phase 1	**Phase 2**	**Phase 3**
• Learning • Documentation & Definition of Existing AM Plans • Gap Analysis • Vision & Roadmap	• Resourcing • Procurement • Additional Data Collection	• Roll Out • Initial Output • Continuous Improvement • Additional Data Collection

The first phase of the Region's AM Program, which was completed in 2017, included the development of an AM Strategy that measured the Region's asset management system maturity and outlined an AM Roadmap of initiatives to achieve efficiency and effectiveness in service delivery across the Region. The supporting services recommendations in the AM Strategy included initiative SS1: Develop and Implement an AM Governance Model.

The first part of the AM Governance initiative (documented in Technical Memorandum No. 1 *Asset Management Governance Charter, Vision, Mission and Potential Models*) has reviewed various AM governance models and identified a clear structure with appropriate authority, roles and responsibilities to support the development and implementation of leading asset management practices at the Region. The organizational structure considers the needs for corporate standardization and consistency in asset management and also provides the flexibility for implementation unique to the asset class and operating environment.

This report builds on Technical Memorandum No. 1 and provides a detailed impact assessment of the proposed AM governance model on the organization's structure focused on:

- How the proposed AM governance structure integrates with the Region's current organizational structure
- Details of positions being proposed for the AM governance model (including roles and responsibilities, anticipated new FTEs, augmentation of existing roles)
- A RACI (*Responsible, Accountable, Consulted and Informed*) chart which identifies the flow of information and the delineation of responsibility

- Job descriptions and career track progression for AM roles.

The following elements of the impact analysis are provided under separate covers:
- Tech. Memo No. 3: Training, Change & Communication Plan
- Tech. Memo No. 4: Business Case

1.2 Why does the Region need an AM Governance Model?

The Region's current capital asset portfolio has a replacement value in excess of $7.4 billion. A structured and consistent approach to asset management is needed to coordinate and prioritize infrastructure spending.

In 2017, the Ontario government released a new regulation under the Jobs and Prosperity Act, 2015 – O.Reg.588/17 AM Planning for Municipal Infrastructure which prescribes the requirement for point responsibility for AM as well as deadlines for achieving the following:
- Strategic AM Policy (July 2019)
- Core Infrastructure AM Plan & current Levels of Service (July 2021)
- Comprehensive Infrastructure AM Plan & proposed Levels of Service (July 2023)
- Alignment of AM plans to the proposed Levels of Service and Financial Strategy (July 2024)

In addition to the above regulation, Federal and Provincial governments require updated comprehensive AM plans for Federal Gas Tax funding, future application based funding, and Development Charges.

1.3 Methodology for Assessing Change Impacts

As part of the approach to develop the AM Governance Model and to inform the impact analysis, workshops and interviews were held with key staff from across the Region. The Corporate Leadership Team (CLT), which also served as the Project Steering Team, was engaged at key milestones to review and endorse project recommendations and findings.

To align project recommendations with industry and leading practice, key project recommendations were also vetted through a peer review group made up of six other municipalities (Region of Waterloo, Region of York, Region of Peel, Toronto Water, City of Barrie and the City of Calgary) that have implemented AM governance models.

The approach used to gather change impacts for the AM Governance Model included the following steps:

- Assessing current state and to-be processes through the AM Strategy development (in 2017)
- Gathering change impacts through staff and middle management interviews (in August 2018)
- Reviewing and validating change impacts through middle management and senior leadership interviews in (September 2018)
- Identifying mitigation tactics.

The *Congruence Model* is based on the principle that an organization's performance is derived from four elements – structure, people, work and culture. The higher the congruence, or compatibility amongst these elements, the greater the performance.

As part of the impact analysis for the Region's AM Governance Model, GHD assessed congruency among the following elements of asset management to inform development of the deliverables for this phase of the project.

Table 1-1   Congruence Model

Elements of Congruency Model	Impact Analysis
Structure	
How standardized is the work?	• Training Plan
People	
Who interacts to get the work done?	• RACI Chart
What are people's expectations for career progression & organizational commitment?	• Job Descriptions • Career Track Progression • Business Case
Work	
What work needs to be done?	• RACI Chart
What work requires specific knowledge or skill?	• RACI Chart • Training Plan • Job Descriptions
What approach is needed to do the work best?	• Governance Model / Structure
Culture	
How does information flow around the organization?	• RACI Chart
How can leadership be leveraged?	• Change & Communications Plan • Business Case

2. Defining the Change

2.1 Proposed AM Governance Model

2.1.1 Organizational Design Principles

The most successful and effective AM governance models in place at municipalities and utilities share many of the same organizational design principles. The most common of these are:

- Sponsorship of the strategic vision, mission and values of the organization
- Alignment with the organization's current Human Resources policies and practices
- Clear definition of roles, responsibilities, communication links and decision making rights
- Balancing of human resources and workload across positions within existing and vacant positions and provision for appropriate critical functions
- Provision for the performance measurement of Asset Management program delivery
- Leveraging of existing skill and expertise areas of management and staff
- Facilitation of career development and progression through formal skills, training and succession planning programs
- Support for the integration of Asset Management across the organization and the necessary interdepartmental relationships required to move the organization towards its vision so that activities that need to be coordinated fall within program boundaries
- A flexible structure that can support and adapt to future Asset Management needs.

2.1.2 Current AM Governance at the Region

The Region's Corporate Leadership Team (CLT) also serves as the Corporate AM Steering Team. AM initiatives are supported and delivered through informal task teams made up of representatives from each department.

- Advantages of this model
  - A high level of engagement and representation of all Departments in AM strategic and tactical decision making
  - No new hires or FTEs are needed for AM
- Disadvantages of this model
  - A perceived absence of AM authority and sponsorship
  - Lengthier implementation times for AM initiatives because accountability is divested with many groups / individuals

- A lack of consistency in how AM processes and practices are being applied across service groups
- Prolonged investment horizons to realize and demonstrate the ROI from outlays in AM
- Slow adoption of change and cultural shifts.

2.1.3 Proposed AM Governance Model for the Region

A number of asset management governance models were reviewed for the Region. Of the models reviewed, the model shown in Figure 2-1 (on the following page) is recommended. This model is characterized by:

- A Corporate Asset Management Steering Team
  - Consists of departmental representation to provide guidance, direction and feedback for the Asset Management Program
- A Corporate Asset Management Office (AMO)
  - A Director of AM
  - A Manager of AM Strategy and Integrated Planning
  - A Manager of Asset Integrity and Productivity
  - A Manager of Asset Knowledge and Performance Management
  - Three AM Analysts
- Formal Decentralized Departmental Delivery and Coordination
  - Guided by AM practitioners embedded in the various departments that will work together to form various networks to coordinate AM activities with representatives from the Corporate AMO.
- Practice Networks (or Work Offices or Task Teams)
  - Made up of appropriate members selected from any of the departments to support implementation of the AM Strategy and associated Asset Management Roadmap
  - As Asset Management initiatives are identified and implemented, progress is reported back up to the CAM Office and the Asset Management Steering Committee periodically.

Figure 2-1 Proposed AM Governance Model
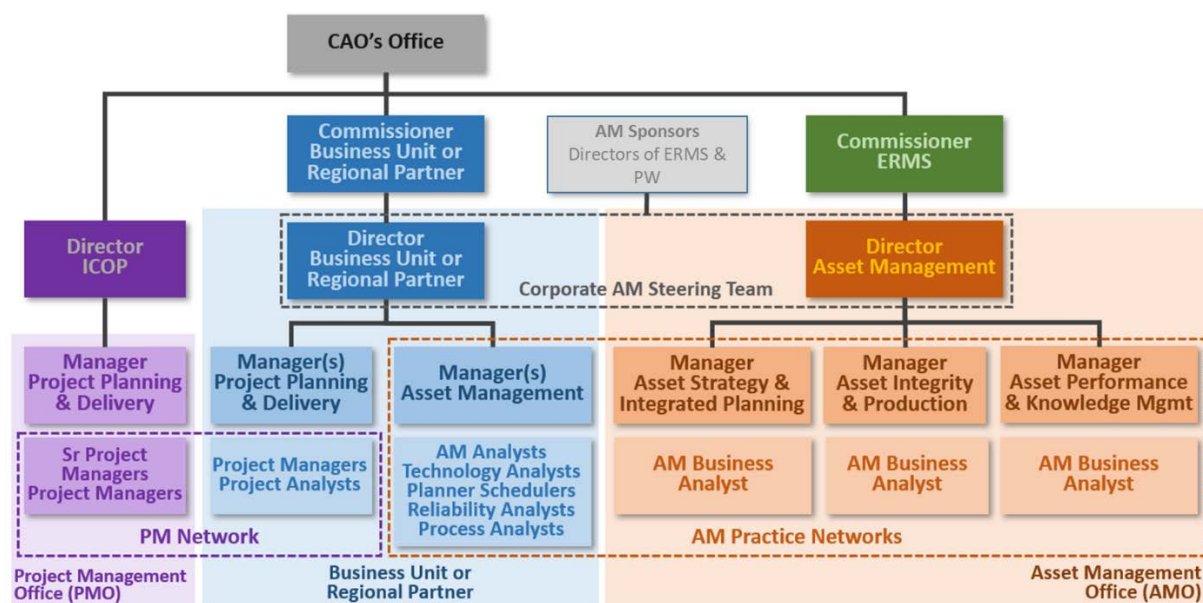
This model fits in well with the Region's present governance strategy that advocates the use of a hierarchical structure to provide oversight, leadership, management, implementation and collaboration and support authorities and functions (See Table 2-1).

Table 2-1   Governance Strategy at the Region

Governance Function	Governance Responsibility
Oversight	CAO / Corporate Leadership Team
Advocacy & Leadership	Steering Committee(s)
Management	Departmental Management
Implementation	Program Managers
Collaboration & Support	Departmental Leads

The Region has been successful in implementing a centralized corporate functional group with decentralized departmental support to the business lines in the Communications, Human Resources, IT and Finance Groups.

2.2 Proposed Roles & Responsibilities for AM Governance

2.2.1 Proposed Roles for AM Governance

A summary of the proposed new or augmented roles for the AM governance model by Office / Department is provided below.

Table 2-2   Corporate Asset Management (CAM) Office

Proposed Position	New or Augmented Role
Director of AM	New (1)
Manager of AM Strategy & Integrated Planning	New (1)
Manager of Asset Integrity & Productivity	New (1)
Manger of Asset Knowledge & Performance Management	New (1)
AM Analysts	New (3)

Table 2-3   Departments New or Augmented Roles (number)

Proposed Position	Transport	W&WW	Waste	Facilities	IT
AM Manager	Aug (1)	Aug (1)	Aug (1)	Aug (1)	Aug (1)
AM Analyst	Aug (1)	Aug (1)	Aug (1)	Aug (1)	Aug (1)
Technology Analyst	Potential Future (1)	Potential Future (1)	Potential Future (1)	Potential Future (1)	Potential Future (1)
Planner / Scheduler	Aug (2)	Aug (2)		Aug (1)	
Process Analyst		Aug (2)			
Reliability Analyst		Aug (1)			

Table 2-4   Departments New or Augmented Roles, cont'd (number)

Proposed Position	EMS	Police	LTC	NRH
AM Manager	Aug (1)	Aug (1)	Aug (1)	Aug (1)
AM Analyst	Potential Future (1)	Potential Future (1)	Potential Future (1)	Potential Future (1)
Technology Analyst	Aug (1)	Aug (1)	Aug (1)	Aug (1)

2.2.2 Proposed Responsibilities for AM Governance

AM is a business model that requires governance to implement and sustain it. To be effective, an AM governance framework must include a clear description of the governance roles, accountabilities and responsibilities. Doing so helps to form the terms of reference for the roles making up an organization's AM governance model.

A RACI (Responsible, Accountable, Consulted and Informed) chart which includes key elements of the AM System (aligned to the Region's AM Strategy and Roadmap), sub elements or practices, practice descriptions and responsible parties is shown in the RACI chart below (See Table 2-5). The following legend applies to the chart:

- R: Does the step
- A: Accountable for the step
- C: Consulted with before the step
- I: Informed when the step is completed

Table 2-5   AM Governance RACI Chart

Key AM Elements	Leading Practices Description	LENGEND: R: Does the step C: Consulted with A: Accountable I: Informed	AM Steering Committee	Corporate AM Office	Dept AM Managers	Dept AM Analyst	Dept Technology Analyst	Dept Planner/ Schedulers	AM Planning Network	AM Productivity Network	Project Management Network
Setting Direction											
AM Policy	The asset management policy has been documented, authorized and approved. It is aligned with other Organizational policies and is monitored and updated on a regular basis.		A	R/C	C/I	I	I	I	C/I	C/I	C/I
AM Strategy	The AM strategy is derived from the AM policy and the strategic plan and takes into account the lifecycle of assets, related risks, criticality, asset types and system functions and condition. It describes the approach and principal methods by which assets will be managed. Like the AM policy, the AM strategy is reviewed on a regular basis.		I	I	A/R	C	C	C	C	C	C
Demand Analysis	This area focuses on the capture and analysis of historical demand data. It incorporates the impact of demand from demographic changes in the customer base, growth, aging infrastructure, key stakeholders, state and nature of the economy, pending or proposed changes in regulations.		I	C/I	A/R	C	C	C	C	C	C
Setting AM Objectives	Measurable objectives have been developed (i.e. capable of objective assessment that incorporates legal, regulatory, statutory, stakeholder and business requirements).		C/I	C/I	A/R	C	C	C	C/I	C/I	C/I
Programming											
Accounting & Costing	Asset valuations and effective lives are in place. Costs are captured throughout the asset lifecycle and are capable of being rolled up through the asset hierarchy. A process is in place for determining future liabilities (capital and operational) based on residual risk and an asset renewal program. A process in place for TCA (PSAB 3150).		I	C/I	A	R/C	C	C	C	C/I	C/I
Strategic Planning	Processes are in place for making optimized asset renewal decisions by identifying the most economical renewal solution and point in time to renew an asset, capturing/assessing lifecycle costs, identification of cost reduction or service level improvement opportunities, and for working with customers and other stakeholders during long term strategic planning. In addition, capital, operations and maintenance expenditures are linked with overall business goals in triple bottom line (social, economic and environmental) terms.		I	A	R	C/I	C	C	C	C/I	C/I
Capital Expenditure Evaluation	Policies are in place for linking service demand with the level of expenditure necessary to achieve long term sustainability. In addition, processes are in place for evaluating capital projects and supply or program delivery options. Out of the Box solutions (such as "Do Nothing, Project Deferral, manage the Risk, and Non-Asset solutions) are considered and recorded as options. Economic evaluations (business cases that develop Internal Rate of Return, Benefit Cost Ratio or Net Present Values) are used to decide on options and includes Operations and Maintenance costs.		I	C/I	A/R	C	C	C	C	C/I	C/I
Preparation											
Maintenance Decision Making	A maintenance policy is in place to define what, why and when the municipality undertakes maintenance of its assets. Processes are in place for setting strategic level maintenance framework (such as Preventive Maintenance, Predictive Maintenance and Reliability Centered Maintenance) that defines how the organization undertakes maintenance of its assets. Processes are in place for reviewing and analyzing the effectiveness of maintenance programs.		I	A	A/R	I	C/I	R	C/I	R/C	C/I
Asset Management Plans (AMPs)	AMPs exist for each service that is provided (usually by major asset class) and there are processes in place for producing AMPs from a strategic perspective. AMPs include a record of current and future levels of service, knowledge of the assets, predictions of major failure modes and the business risk exposure, optimal renewal strategies to extend asset life LOS, capital projects necessary to service new customers or requirements. AMPs have a clear link to business plans and goals.		I	A	R	R	C	C	C	C	C
Implementation of AM Plans	Roles & responsibilities for AMP implementation are clearly defined together with processes for AMP implementation, review and update. Processes are also in place to ensure that the municipality is capable of delivering the work programs set out in the AMP.		I	C/I	A/R	R	R	R	C/I	C/I	C/I

Key AM Elements	Leading Practices Description	LEGEND: R: Does the step A: Accountable	C: Consulted with I: Informed	AM Steering Committee	Corporate AM Office	Dept AM Managers	Dept AM Analyst	Dept Technology Analyst	Dept Planner/ Schedulers	AM Planning Network	AM Productivity Network	Project Management Network
Maintenance Decision Making	Processes are in place for setting strategic level maintenance framework (such as Preventive Maintenance, Predictive Maintenance and Reliability Centred Maintenance) that defines how the organization undertakes maintenance of its assets. Processes are also in place for reviewing and analyzing the effectiveness of maintenance programs.			I	A	A/R	I	C/I	R	C/I	R/C	C/I
Implementation												
Operations	Processes exist for successful operation and monitoring of assets supported by well documented operating procedures/manuals. There is a complaints system that ensures customer complaints are handled effectively. In addition, processes are in place for the development and maintenance of Emergency Response Plans including for what event and against what level and criticality of asset the plans are to be completed.			I	C/I	C/I	C	R/C	A/R	C/I	R/C	C/I
Creation & Acquisition	Processes are in place for the successful program management of the asset creation or acquisition program. In addition, processes exist for contract administration, project management, value engineering, optimum maintainability/operability, construction, and for asset commissioning and handover. These are all based on clearly defined standards (e.g. design standards by asset class).			I	C/I	C/I	I	C/I	C/I	C/I	C/I	A/R
Maintenance	Processes exist for the monitoring and control of the maintenance program, recording and reporting maintenance costs and for developing and maintaining contents of maintenance manuals and instructions. In addition, there are processes in place for ensuring that facilities, equipment and tools are maintained and calibrated as required.			I	C/I	C/I	I	R/C	A/R	C/I	C/I	I
Work & Resource Management	Processes are in place for matching skills to the demand for services and activities, prioritizing work, control inventory stock and managing larger projects that involve multiple tasks.			I	C/I	C/I	I	R/C	A/R	C/I	C/I	C/I
Rationalization & Disposal	Processes are in place for the Rationalization of the asset portfolio and disposal of unwanted assets.			I	I	A/R	C/I	R/C	R/C	C/I	C/I	C/I
Asset Monitoring												
Asset Condition Monitoring	Processes are developed for assessing the condition for the various asset classes, together with appropriate controls, analysis and corrective action following asset condition parameter exceedance.			I	C/I	A/R	C/I	R/C	R/C	C/I	C/I	C/I
Asset Performance Monitoring	Processes are developed for monitoring of asset performance for the various asset classes, together with appropriate controls, analysis and corrective action following poor performance.			I	C/I	A/R	C/I	R/C	R/C	C/I	C/I	C/I
Incident Investigation	There is a clear process and responsibility for handling investigation and mitigation of asset related failures, incidents and emergency situations. In addition, a process is in place for determining preventative actions and communicating results of the investigation.			I	C/I	C	I	C/I	A/R	I	I	I
Management System Review												
Management System	The asset management system (including AM policy, strategy, objectives and plan(s)) is defined, documented and fully established. It includes process diagrams/flow charts and records to demonstrate conformance. There are internal quality assurance practices in place ensure that the performance of the asset management system is as desired.			A	A/R	R	R	R	R	I	C/I	C/I
Business Risk Management	A risk management framework is in place and considers desired levels of service, probability and consequences. Processes exist for analyzing risks including the makeup and ranking of risks and managing risk reduction including the assessment of mitigation options. Business risk management also includes weather risk, climate change adaptation and mitigation.			C/I	A/R	R/C	C	C	C	C	C/I	C/I
Asset Risk Management	This is similar to the above but with a focus on the physical asset. It includes failure mode prediction (processes for predicting expected failure modes of assets) and control of asset risks.			C/I	A/R	R/C	C	C	C	C	C/I	C/I

Key AM Elements	Leading Practices Description	LENGEND: R: Does the step C: Consulted with A: Accountable I: Informed	AM Steering Committee	Corporate AM Office	Dept AM Managers	Dept AM Analyst	Dept Technology Analyst	Dept Planner/ Schedulers	AM Planning Network	AM Productivity Network	Project Management Network
Continuous Improvement	An audit program for continual improvement of the AM system and processes is in place with assigned responsibilities for auditing. Processes are in place for externally benchmarking AM. There is also a sustainable development strategy in place that considers social, environmental, staff wellbeing and environmental responsibilities.		I	C/I	A/R	C	C	C	C	C/I	C/I
Legal, Regulatory & Other Requirements	Procedures are in place for identifying and providing access to all applicable legal and statutory requirements, these requirements are incorporated into the asset management system. Processes are also in place to communicate requirements and demonstrate compliance.		I	I	A/R	C	C	R/C	I	C/I	C/I
People & Organization											
Organizational Issues	There is a clear structure with appropriate authority, roles and responsibilities in place to support AM. There is usually a single executive with overall AM responsibility, an AM Coordinating Group or Steering Committee, Implementation Team or Coordinating group, and a AM Managers/Coordinators by major asset class.		I	I	A	C	C	C/I	I	C/I	C/I
People Issues	Desired AM skills and competencies are documented and a training program is in place to deliver these skills to staff. There are processes in place to manage and implement AM related change throughout the business and to review whether the appropriate skills and staff numbers are available for implementing best practices. In addition, processes are in place for managing knowledge throughout the business.		I	I	A	C	C	C/I	I	C/I	C/I
Commercial	Core and non-core activities have been defined together with a clear contracting strategy. Processes are in place to develop and manage high quality specifications for contracts and service agreements as well as to ensure contractors have access to the required information and data. In addition, there are processes in place for assessing and selecting contractors as well as monitoring their performance.		I	I	A	C	C	C/I	C/I	C/I	C/I
Communication	There are processes in place to enable dissemination and feedback of asset management related performance and other relevant information on a timely basis. This process also enables continuous improvement in the AM space.		I	I	A	C	C	C/I	C/I	C/I	C/I
Data & Information											
Processes for Managing Asset Knowledge	Asset management data and information required to perform asset management activities, considering all phases of the asset life cycle, have been identified. The appropriate level of asset detail, the appropriate asset attributes, and the appropriate quality of each data element have been established based on the benefit garnered by each data element. Available and access to data are defined for different types of users and different types of data. Procedures have been defined to ensure security, archiving and preservation of data.		I	C/I	A	A/R	R/C	R/C	C/I	C/I	C/I
Asset Data & Knowledge	Asset data required for asset management are being collected at the appropriate level of asset detail, for the appropriate the asset attributes, and with the appropriate quality. Asset data is organized in a way that allows for analysis, reporting and manipulation based on type, location, material, site and other characteristics relevant to the business. Spatial data are stored within GIS, especially all distributed linear assets and locations of larger facilities. Parent and child relationships have been defined to allow asset data to be aggregated in ways that are meaningful to the organization.		I	C/I	A	A/R	R/C	R/C	C/I	C/I	C/I
Activity Data & Knowledge	Risk assessments provide input into identification of adequate resources and training and competency needs. Historical maintenance, operational and cost data are available. Asset valuation, life cycle costs and cost data for construction, renewal and maintenance interventions are available. Resource information on work force, skills, materials and tools are used to manage operational and capital activities.		I	C/I	A	A/R	R/C	R/C	C/I	C/I	C/I
Technology Systems											

Key AM Elements	Leading Practices Description	LENGEND: R: Does the step A: Accountable C: Consulted with I: Informed	AM Steering Committee	Corporate AM Office	Dept AM Managers	Dept AM Analyst	Dept Technology Analyst	Dept Planner/ Schedulers	AM Planning Network	AM Productivity Network	Project Management Network
Information System Issues	The organization has processes to ensure that asset management information systems are appropriate for its needs, and data are of requisite quality, accuracy and consistency. IT systems are linked and staff have ready access to IT systems and up-to-date data. An IT system strategy has been developed, which addresses AM activities and accommodates growth in AM data and information. Mobile computing tools are used by field operations and maintenance staff for rapid entry and live access.		I	C/I	R/C	C/I	R/C	R/C	C/I	C/I	C/I
Financial & HR Information Systems	IT systems are available to support financial activities; to track customer property details; to store, manage and report on data derived from independent information systems; and to plan workforce competency, training and recruiting. Cost centres have been structured to allow meaningful categorisation of costs at an appropriate level of detail. Costs are attributed to appropriate levels of the asset hierarchy. Maintenance and operational costs are attributed to specific assets.		I	C	C	A/R	C/I	C	C/I	C/I	C/I
Asset & Work Management Information Systems	IT systems store and track customer complaints and enquiries from receipt to resolution. Unique asset identification numbers assigned to all assets in the system, and associated to asset attributes. Asset locations and key attributes for all distributed and linear / networked assets are spatially stored (GIS). Maintenance activities, including work orders, work scheduling, controlling and costing are managed by a maintenance management system. Labour, equipment, tools and materials are tracked in a job resource management system. Emergency response plans are linked through to the asset register in accordance with the data standard using an emergency response plan information system. Condition data is stored and analyzed with respect to parameters or required level of service. Risk assessments are performed to determine probabilities and consequences of failure. Results are stored in a risk assessment information system. Tools are used to track timing and costing of multiple project tasks and resources required to produce required deliverables.		I	A/R	R/C	I	C	R/C	C/I	R/C	C/I
Supply & Logistics Management Information Systems	IT systems are used to track inventory, spares, stores, purchasing and supplier information. Levels of stores and spare parts to be carried are optimized across the organization based on criticality, planned or scheduled consumption and order lead time.		I	C/I	C/I	I	R/C	A/R	C/I	C/I	C/I
Advanced Information Systems	IT systems are used to manage, store and access detailed drawings, documents, guidelines, manuals and policies related to assets and asset management. Capacity modelling tools are used to determine current capacity needs and to forecast future needs. Predictive models are used to estimate asset failure in terms of capacity, reliability, condition, performance and outages / emergency failures. Life cycle costs are modelled for different asset options to support comparison of renewal and investment alternatives.		I	A/R	R/C	R/C	R/C	R/C	C/I	C/I	C/I

2.2.3 Proposed Job Descriptions for AM Governance

Key roles have been identified as part of the proposed AM governance model. The aim is to align defined qualifications and competencies within each role to achieve consistency across the governance model, and to support training and succession planning.

There are certain job descriptions that the Region needs to incorporate into any new positions, and over time, augment and align existing positions to meet the roles, responsibilities and qualifications of the proposed AM governance model.

Standardized job descriptions have been developed for each of the following roles / positions and are provided in Appendix A.

Table 2-6 Proposed Job Summaries for AM Governance

Role	Summary Description
CAM Director of Asset Management	• Provides Region wide leadership in the development and sustainability of the Asset Management program • Works collaboratively with PMO to meet and implement project planning and delivery objectives • Takes ownership for overall Asset Management maturity improvement at the Region
CAM Manager of Strategy & Integrated Planning	• Leads the implementation of Planning related initiatives on the Asset Management Roadmap • Provides quality assurance of the Region's Capital Program developed by each department • Develops and updates processes around Asset Management Planning
CAM Manager of Asset Integrity and Productivity	• Leads the implementation of O&M related initiatives on the Asset Management Roadmap • Prepares the Region's State of the Asset Report • Develops, implements and supports a Region‑wide asset reliability program
CAM Manager of Asset Knowledge and Performance Management	• Leads the implementation of Performance and knowledge related initiatives on the Asset Management Roadmap • Leads the development of the Asset Management Communication program • Leads the development and implementation of the Asset Management Training program
Dept Asset Manager	• Leads the implementation of Asset Management Roadmap initiatives at the department/Business Unit level • Leads the development and update of the Asset Management Plan • Develops and maintains the LOS Framework for the department, tracks asset performance (condition assessment, availability, capacity etc.)

| Role	Summary Description
	• Conducts an asset knowledge gap analysis, develops and implements a knowledge management plan for the department's assets
Dept Business Analyst	• Plans for and controls the budget • Plans for asset financial investments • Develops risk profiles • Develops and evaluates business cases or capital project requests • Conducts asset scenario modeling using the Decision Support System
Dept Technology Analyst	• Provides departmental level input for technology and data asset management • Actively provides and supports departmental requirements for ongoing system development lifecycle activities for Asset Management technology enablers
Dept Planner / Scheduler	• Develops and maintains the maintenance dashboard • Conducts basic and advanced work order planning & scheduling • Conducts preventive maintenance optimization exercises • Analyzes asset data and conducts root cause analyses and reliability improvement initiatives • Provides input into ongoing work management system development
Dept Reliability Analyst	• Conducts PM Optimization analysis • Conducts Root Cause Failure analysis • Conducts continuous improvement training for staff and facilitate CI initiatives
Dept Process Analyst	• Creates process documentation/workflows, knowledge articles and self-service guidance for the department • Collects and documents business requirements for project and process improvement/automation efforts • Reviews information and trends to ensure that the output of processes are achieving the desired results and that services are meeting agreed upon service levels • Conducts maturity assessments against the process activities to highlight areas of improvement or concerns

2.2.4 Proposed Career Track Progression for AM Governance

Career progression is a critical part of a governance framework and demonstrates an organization's commitment to developing career paths for its employees. It also facilitates its ability to recruit and retain top-performing talent. Formalized career paths sends a message to employees that they are valuable and benefits the organization by:

- Supporting business continuity planning
- Establishing a pipeline of qualified and motivated talent that is prepared to take on broader responsibilities when current staff and other key employees leave the organization
- Ensuring key core competencies and qualifications are available to achieve strategic plans and objectives of the organization.

The following figure summarizes role responsibilities for AM governance roles proposed for the Region. It is noted that formal succession planning for AM roles will be facilitated as part of the Region's *Succession Planning and Critical Roles Program* once the governance model is established.

Figure 2-2   Proposed AM Governance Model Career Track Progression
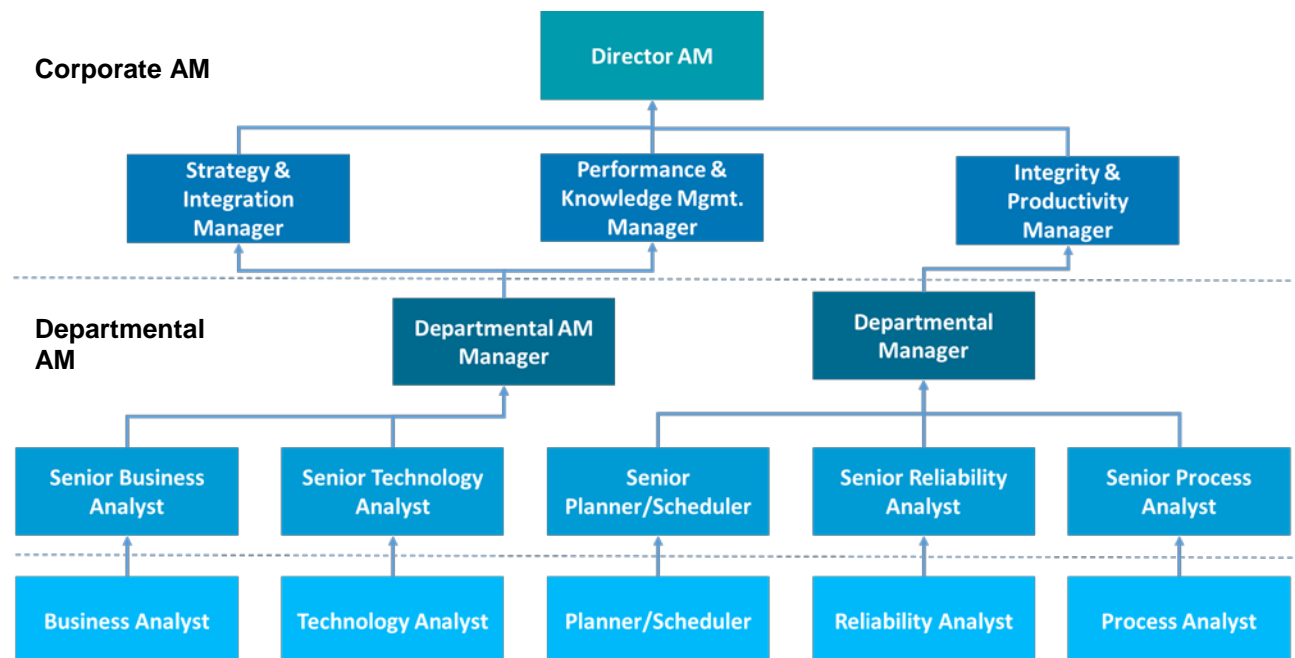
3. Change Impact Assessment

3.1 Introduction

With the implementation of the recommended AM Governance Model, some Region staff members will be required to adopt some form of change to their day-to-day work. Identifying the potential impacts resulting from this change on Regional staff, processes and technology will provoke meaningful discussion around the change and inform courses of action to address the change impacts within the Region in the appropriate timeframe (e.g. targeted communication, special training requirements).

This part of the AM Governance initiative identifies key benefits and risks associated with change impacts to start building momentum within the Region, begin preparing leadership to guide people through the change, and inform the initiatives required to lead the Region towards success.

To understand the Region's current readiness for change, a number of factors were considered. Table 3-1 provides an overview of the assessment factors, and how they have been assessed.

Table 3-1   Overview of Impact Assessment Categories and Criteria

Category	Criteria	High	Medium	Low
Governance & Structure	• Does the accountability or reporting relationship change? • Is there a change in the number of people required to do the work? • Does the location where the work is performed change?	Significant accountability change (level and position)	Moderate accountability change	Change in location
People	• Are there new skills required to perform the activity? • Are there tasks eliminated for a position? • Is there a change in behavior or culture? • Is significant training required?	Requires significant amount of training and support	Requires considerable training; tasks are added or deleted	1 out of 3 criteria apply
Process	• Change in the way work gets done • Change in the frequency required to perform an activity • Change in the length of time required to perform an activity • Change in data sources or inputs	4 out of 6 criteria apply	3 out of 6 criteria apply	2 out of 6 criteria apply

Category	Criteria	High	Medium	Low
	• Change in reports or outputs • Change in communication / interaction required to complete an activity			

3.2 Summary of Change Impacts

The following tables provide summaries of the following assessments:

- **Impacts on Internal AM Stakeholders:** Region's internal stakeholders are listed in the table together with their interest in Asset Management (taken from the AM Governance Model report) and the impacts of the AM Governance Model from structure, people and process perspectives.

- **Change Readiness Assessment and Strategies:** The purpose of a change readiness assessment is to analyse the preparedness of the conditions, attitudes and resources needed for change to happen successfully. The table provides a summary of the assessment for change readiness including change history, business capacity, current climate, change infrastructure and sponsorship / leadership.

- **Summary of Change Impacts and Mitigation Strategies:** This table summarizes the impacts on internal AM stakeholders and change readiness assessment and strategies.

Table 3-2   Impacts on Internal AM Stakeholders

Stakeholder	Interest in AM	Structure Impacts	People Impacts	Process Impacts
Staff	• Adequate resources to manage assets (do the right thing) • Adequate processes to manage projects (do things right) • Improved collaboration & coordination • Reduced risk taking • Quality service delivery • Customer satisfaction	• Addition of seven new roles in the Corporate AM Office (AMO) including Director, Managers and Analysts • Potential future addition of one new role in each Department (Technology Analysts) • Current Department reporting relationships are unchanged except for collaboration on AM Networks • No change in the location where work is performed	• New tasks will be added to some roles • Requires new or augmented specialized skills and/or knowledge based on role changes, new process, new technology, etc. • Requires training to learn how to perform new tasks • Minimal change in behavior or culture if AMO is perceived as guiding development of standard tools and templates for implementation and application by Departments	• Requires change in the way work is performed including formalization of existing processes and modification to include leading practices and to standardize processes across the Region • May require change in data sources and reporting • No anticipated changes to the volume of work
Middle Management	• Effective planning (growth, renewal/replacement & maintenance) • Adequate resources to manage assets (do the right thing) • Improved collaboration & coordination • Regulatory compliance • Reduced risk taking • Quality service delivery	• Current Department reporting relationships are unchanged except for collaboration on the Corporate AM Steering Team • Core responsibilities for development of the AM program shouldered by AMO, with future new Department staff	• Ownership of AM program implementation remains with the Departments • Requirements for new or augmented specialized skill and/or knowledge defined and training facilitated by AMO	• Requirements for new or augmented AM work flows, data requirements and reporting defined by AMO

Stakeholder	Interest in AM	Structure Impacts	People Impacts	Process Impacts
	• Customer satisfaction		• Clear career paths and succession planning for AM	
Senior Leadership	• Confidence that budget requests are realistic • Fiscal responsibility in delivery of service • Minimum cost of asset ownership • Managed risk • Quality service delivery • Regulatory compliance • Customer satisfaction	• Continued participation on the Corporate Leadership Team	• Formalization and standardization of staff development and succession planning for AM	• Formalization and standardization of new or augmented AM work flows, data requirements and reporting

Table 3.3   Change Readiness Assessment and Strategies

Factor	Description	Assessment	Strategies
Change history	• What type of change has been previously managed well? What made the difference? • What type of change hasn't been managed so well? What was missing or not done? What could have been done?	Recent changes at the Region include: • Implementation of a new Financial Management System including embedding new Program Financial Specialists (PFSs) and Program Financial Analysist (PFAs) into the Departments (reporting to Manager Program Financial Support). • The FTE's for the PFS and PFA roles were provided by each Department which reduced existing capacity within the Departments • The addition of the PFS and PFA roles was required for implementation of the Financial Management System • Implementation of a new corporate Project Management Office with five staff from Information Technology (Fall 2018) to lead and support standardized best in class PM practices within Regional departments • The implementation is just beginning	• Continue to track performance from past and current change initiatives • Incorporate lessons learned
Business capacity	• What other initiatives are going on at the Department level? • Who will feel the most impact and when?	• The capacity of each department varies • Addition of responsibilities to some of the smaller departments is viewed as a big change • Particular times of the year may be busier than others (e.g. budget development)	• Clearly communicate the roles, responsibilities and time commitments to enable staff to understand the impacts
Current climate	• What's morale like in your part of the organization at the moment?	• Improving the effectiveness and efficiency of service delivery across the Region is viewed as a positive change by most Regional staff	• Clearly communicate how the AM Governance Model will impact the work the Region does • Communicate progress

Factor	Description	Assessment	Strategies
	• What are people's views on the current projects being planned and in progress?		
Change infrastructure	• How well do the organization's communication channels work for building awareness and engagement in projects (compared to business as usual)? • Are there any natural "champions" in your team who embrace change and motivate others?	• Internal Control and Organizational Performance (ICOP) group provides guidance on business improvements • Human Resources group can assist with development and implementation of communications and training plans	• Leverage capacity, skills and knowledge in ICOP (business process improvements) and HR (communications and training) to support the AMO • Select "champions" throughout the organization who embrace the change to motivate others
Sponsorship and leadership	• Do senior managers visibly sponsor change – e.g. by role modelling new behaviours or using new systems? • Are people involved in projects given performance objectives that indicate how seriously the success of those projects is taken?	• AM Program co-sponsors are: • The Commissioner of Enterprise Resource Management Services / Treasurer who is responsible for the Regional Budget and Plan • The Commissioner of Public Works who is responsible to deliver Transportation, Water, Wastewater, Stormwater and Waste Management services, including lifecycle management of the assets that support delivery of these services • AM Program co-sponsors have a good understanding of the vision and of the impacts of the change	• Ensure that co-sponsors are visible "champions" of change • Include performance objectives that indicate how seriously the success of the AM Strategy initiatives is to the Region

Table 3.4   Summary of Change Impacts and Mitigation Strategies

Category / Criteria	Assessment	Rating	Mitigation Strategy
Governance & Structure			Communicate: Benefits of new structure
Change in accountability or reporting relationship (e.g. level and / or position)?	Minor accountability change • Current Department reporting relationships are unchanged except for collaboration with peers on AM Networks • New Corporate AM Steering Team	Low	• Communicate: How AM Networks will enable better collaboration of the AM practice across the Region • Communicate: Ensure that co-sponsors are visible "champions" of change
Change in the number of people required to do the work?	Yes • Addition of seven new roles in the Corporate AM Office (AMO) including Director, Managers and Analysts • Core responsibilities for development of AM program shouldered by AMO • Addition of one future new role in each Department (Technology Analysts) • The capacity of each department varies: Addition of responsibilities to some of the smaller departments is viewed as a big change		• Communicate: New AMO and dept structures and roles • Communicate: Performance of PMO and dept structures • Communicate: Time commitments for implementing AM program initiatives
Change in location where work is performed	No		
People			Communicate: Benefits of AM practices
Requires new skill(s) to perform the activity?	Considerable • Requires new or augmented specialized skills and/or knowledge based on role changes, new process, new technology	Medium	• Communicate: New skill(s) for roles
Tasks added or eliminated for a position?	Yes • New tasks will be added to some roles		• Communicate: Added or eliminated task(s) for roles
Requires a change in behavior or culture?	Minor • Ownership of AM program implementation remains with the Departments		• Communicate: How the AM Governance Model will impact the work the Region does

Category / Criteria	Assessment	Rating	Mitigation Strategy
	• Minimal change in behavior or culture if AMO is perceived as guiding development of standard tools and templates for implementation and application by Departments		
Requires significant training to learn how to perform the activity	Considerable • Requires training to learn how to perform new tasks		• Leverage capacity, skills and knowledge in HR for training to support the AMO • Training: How to access curriculum and course info
Process			Communicate: Benefits of new process
Change in the way the work gets done?	Moderate • Requires change in the way work is performed including formalization of existing processes and modification to include leading practices and to standardize processes across the Region • No anticipated changes to the volume of work		• Leverage capacity, skills and knowledge in ICOP for business process improvements to support the AMO • Communicate: New processes • Training: How to access curriculum and course info
Change in the frequency of performance of an activity?	Minor		
Change in the length of time required to perform an activity?	Minor	Medium	• Communicate: Roles, responsibilities and time commitments to enable staff to understand the impacts
Change in data sources or inputs?	Moderate • May require change in data sources		• Communicate: New data sources that result from process changes
Change in reports or outputs?	Moderate • May require change in reporting		• Communicate: New reports or outputs that result from process changes
Change in communication / interaction required to complete an activity	Minor		• Leverage capacity, skills and knowledge in HR for communications to support the AMO