

City of Markham Asset Management Plan

General Committee

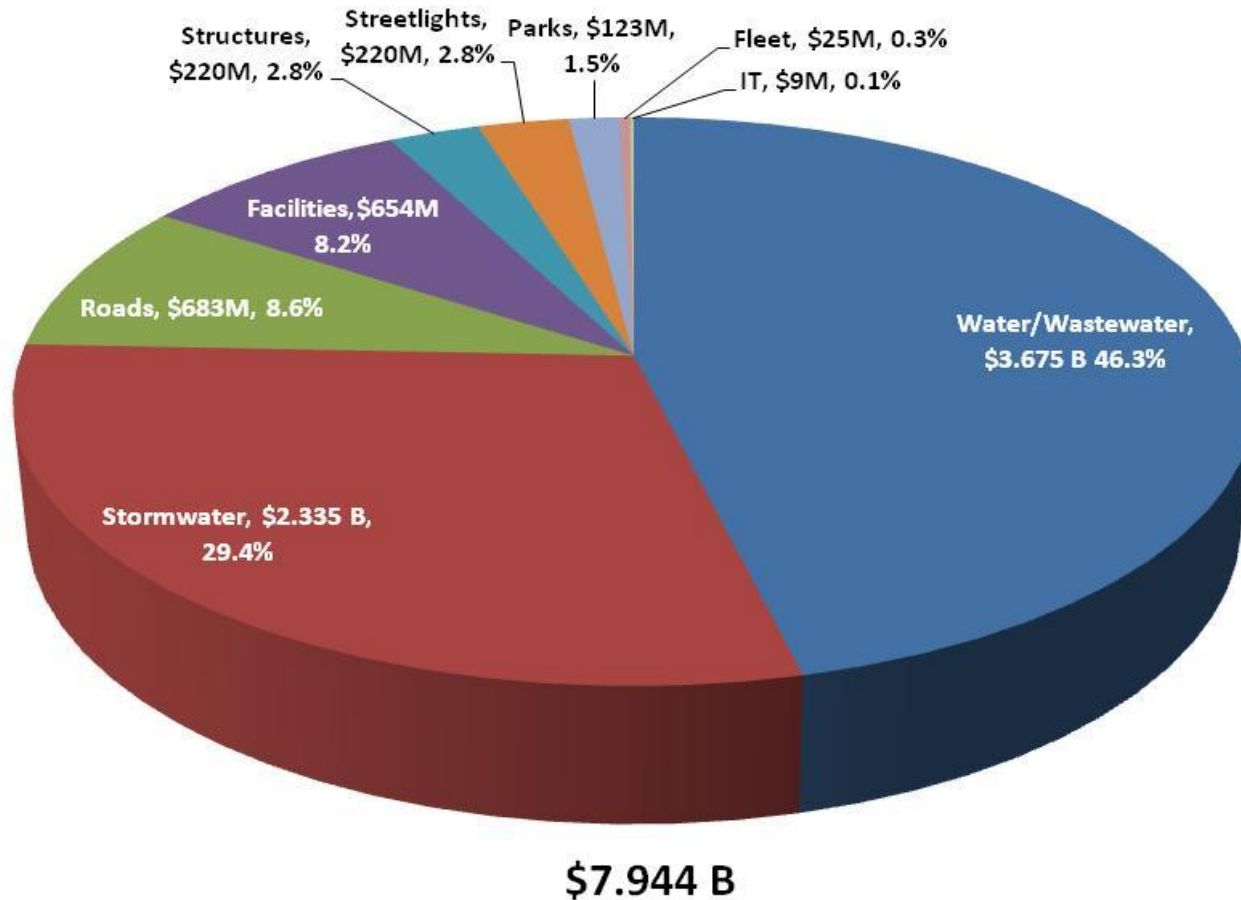
October 31, 2016

Purpose and Background

- The purpose of this report is to seek Council endorsement of the completed City of Markham Asset Management Plan.
- In accordance with the guidelines set out in *Building Together: Guide for Municipal Asset Management Plans*, the City of Markham prepared the required Asset Management Plan (AMP) and once endorsed will be submitted by the December 31, 2016 due date, in order to be eligible for federal Gas Tax Funds,
- The AMP documents current practices that includes the state of the City's infrastructure, the current levels of service, the asset management strategy (renewing, operating, maintaining, building, replacing and disposing of infrastructure), and financial strategy.

State of Infrastructure

City Asset Distribution (%) & Replacement Costs (\$M)



City has total of approximately \$7.9B of assets, of which 90% are linear assets (water/wastewater/stormwater pipes, roads, structures – bridges/culverts, streetlights)

State of Infrastructure (Cont'd)

Recommended Asset Condition Rating Scale

Overall Asset Condition	Description
Good Stage 1 Remaining Useful Life 50-100%	-The asset is performing as designed -Achieving service levels with minimal maintenance needs -Generally in good condition -Limited deterioration if any but requires monitoring -Minor maintenance early in useful life but increasing towards half life
Fair Stage 2 Remaining Useful Life 25-49%	-The asset is performing as designed -Achieving service levels with monitoring & maintenance needs -In fair condition -General deterioration gradually increasing -Increased maintenance necessary -Attention required with monitoring e.g. Condition assessments
Aging Stage 3 Remaining Useful Life < 25%	-The asset is performing as designed -Requires increased ongoing monitoring to ensure service levels are achieved -Increased maintenance and repairs -Increasing risks of failure -Preparing for replacement

Note: The above Rating Scale was applied to each asset class based on available data. The assessment was primarily based on age. However Roads and Information Technology assets were rated based on both age & condition assessment information.

State of Infrastructure (Cont'd)

Asset Condition Rating

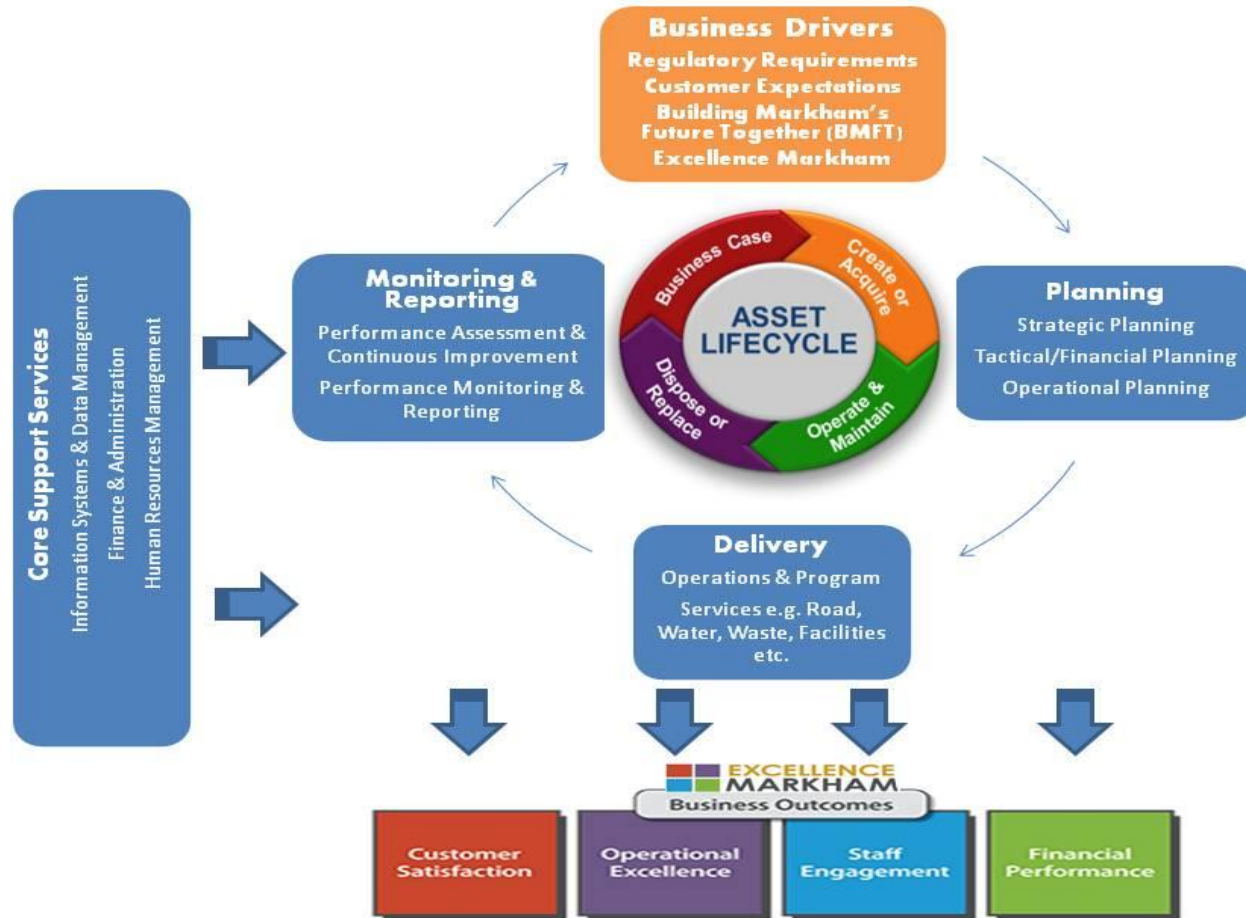
Asset Classes	Average Rating %	Condition	Management Assessment	Overall Asset Condition
CITY WIDE		Good	Good	Good
Water/Wastewater	66%	Good	Good	Stage 1 Remaining Useful Life 50-100%
Stormwater	63%	Good	Good	
Roads	68%*	Good	Good	Fair Stage 2 Remaining Useful Life 25-49%
Facilities	48%	Fair	Good	
Structures	53%	Good	Good	
Streetlights	62%	Good	Good	Aging Stage 3 Remaining Useful Life < 25%
Parks	54%	Good	Good	
Fleet	31%	Fair	Good	
IT	85%*	Good	Good	

*Rating includes condition, not just based on age

Overall City Infrastructure Condition Rating = Good

Condition assessment may change rating based on actual condition

Asset Management Framework & Strategy



Documentation of Present AM Strategies

1. Do you have a program?
2. Describe condition audit process?
3. What is your evaluation criteria?
4. What is your data confidence level? (completeness, reliability, confidence, accuracy, and how it is stored/tracked)

Financing Strategy

- Revenue Sources

- Development Charges (for new growth related assets)
- Water and Wastewater Reserve Inflows
 - water and wastewater rate revenues
- Life-Cycle Replacement and Capital Reserve Inflows
 - annual contributions from the operating budget, interest and dividends earned from investments, and Federal Gas Tax funding

Federal Gas Tax Revenue Allocation Framework (approved by Council on October 2013)

Spending is prioritized as follows:

1. Incremental Life-cycle Investment (\$3M to Lifecycle Reserve)
2. Strategic Investments (\$4M to MDEI up to 2017)
3. Committed Funding Approved by Council (\$2M to Stormwater projects; \$4M to non-DC portion of growth projects starting in 2018)
4. Other Unfunded Proposed Initiatives

Financing Strategy

- Expenditures
 - The timing and amount of outflows from the reserves are identified through development of a long-term rehabilitation and replacement program based on the City's asset management strategies
 - The future costs are calculated and reviewed annually, using the current value of a rehabilitation or replacement, and inflated at an assumed rate of inflation.

Financing Strategy

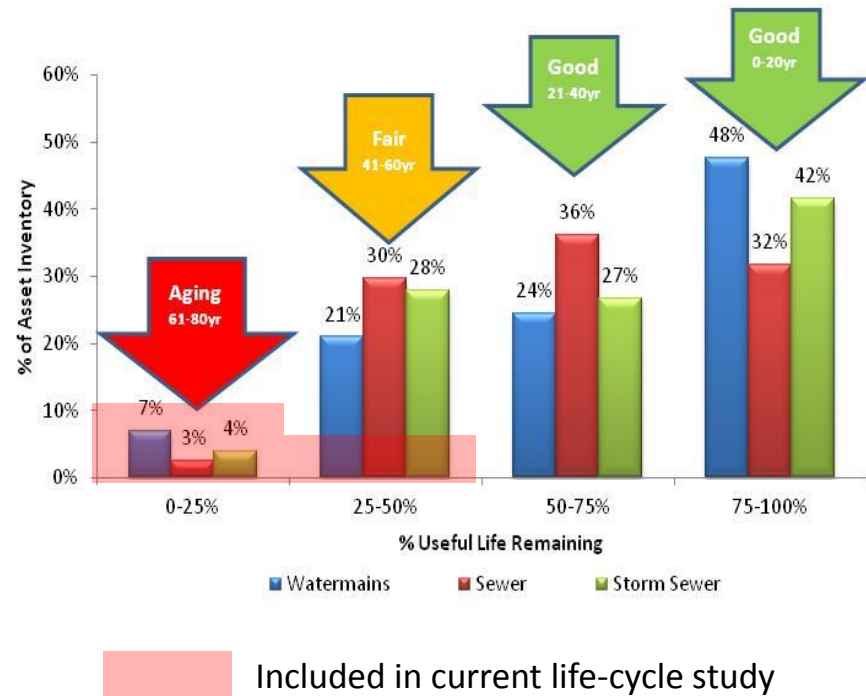
- Reserve Adequacy
 - Cash-flow analyses of the projected inflows and outflows of the reserves are used to determine the adequacy of the reserves over the 25-year planning horizon.
 - The analysis targets available funding at the time of rehabilitation and replacements, and a revenue neutral position for the reserve at the end of the planning period.
 - If the analysis identifies a shortfall, then the necessary steps are taken to address it, either by increasing the transfer to the reserve or finding mitigating strategies to reduce outflows from the reserve.
 - The reserve study updates for the 2016 budget identified sufficient funds for the scheduled rehabilitation and replacement of existing assets with known work programs for the next 25 years.

Financing Strategy

• Identifying Shortfalls / Alternative Scenarios

- The funding required to maintain infrastructure in the next 25 years is only a fraction of what will be required beyond 25 years
- Increased contributions to reserves will be required in order to ensure the sustainability of these assets into the future
- Annual updates to the reserve adequacy studies will identify additional funding requirements

Water Linear Assets ~80yrs Service Life Expectancy



Financing Strategy

- Identifying Shortfalls/Alternative Scenarios – cont'd
 - Staff are currently reviewing alternative approaches for determining and ensuring reserve fund adequacy
 - The funding challenges are:
 1. Inflow requirements are based on replacements within the 25 year period, not over the life cycle of assets
 2. Replacement of assets outside the 25 year period are not currently being funded
 3. New assets being added to the City's inventory from 2016 to build out, and the need to plan for the eventual replacement of new assets

Financing Strategy

- Identifying Shortfalls/Alternative Scenarios – cont'd
 - Markham will continue to seek sustainable ways to mitigate the forecasted infrastructure funding gaps to reduce the impact on Markham taxpayers.
 - Potential methods of closing the funding gap include:
 - reducing replacement/rehabilitation costs
 - extending lifecycles of assets
 - identifying new revenue opportunities:
 - increased levels of Federal Gas Tax revenues
 - improved legislative powers from the Province, such as the ability to levy a Land Transfer Tax

What's Next?

Enhanced Asset Management Strategy

- Phase II of the City's Asset Management Strategy will further enhance our current practices to:
 - Strengthen the way the City manages its infrastructure
 - Ensure strategies are in place to maximize life of the asset while minimizing operating costs and maintaining required service levels
 - Minimize risk of major infrastructure to meet the Excellence Markham outcomes of Customer Satisfaction, Operational Excellence and Financial Performance
- Future tasks for continuous improvement:
 - Develop a plan and fill in the area of improvement and program opportunities
 - Document approved levels of service (LOS) and performance measures/monitoring matrices
 - Develop risk management framework
 - Perform strategic integrated planning (e.g. co-ordinating water & road activity)
 - Explore other service delivery methods (e.g. partnerships with other municipalities)

Summary

- Overall, the City of Markham is taking a proactive approach to manage both infrastructure needs and the requirement for sound financial planning.
- The present condition rating of the City's infrastructure is "Good".
- The City is managing only a small fraction of assets at present; there will be high volumes of aging assets that will require future investment.
- **RECOMMENDATION:**
 - THAT the report titled "City of Markham Asset Management Plan" be received;
 - AND THAT Council endorse the 2016 City of Markham Asset Management Plan Final Report and adopt the proposed asset management strategy and framework;
 - AND THAT staff be authorized and directed to do all things necessary to give effect to this resolution.