

EXECUTIVE SUMMARY

In 2018, the Province came forward with Ontario Regulation 588/17 (O.Reg 588/17) under the Infrastructure for Jobs and Prosperity Act. The Act defines the steps required to achieve standardization and consistency in the management of municipal assets. The first step in achieving compliance involved the development of a Corporate Asset Management Policy, which the Town completed in July 2018. The next step in achieving compliance requires the development of an asset management plan for core infrastructure assets. O.Reg 588/17 defines core municipal infrastructure assets as assets that support the provision of the following services: water, wastewater, stormwater, roads, bridges, and culverts. For the Town of Halton Hills, core infrastructure assets include roads, bridges, stormwater, and culvert assets. These asset groups work together to deliver services the Town refers to as Transportation and Stormwater Management.

The Core Infrastructure Asset Management Plan (Core Infrastructure AM Plan) communicates the interconnected relationship between levels of service, risk, lifecycle activities, and the associated costs to establish an open dialogue to inform planning and decision-making in order to realize best value from its core infrastructure assets.

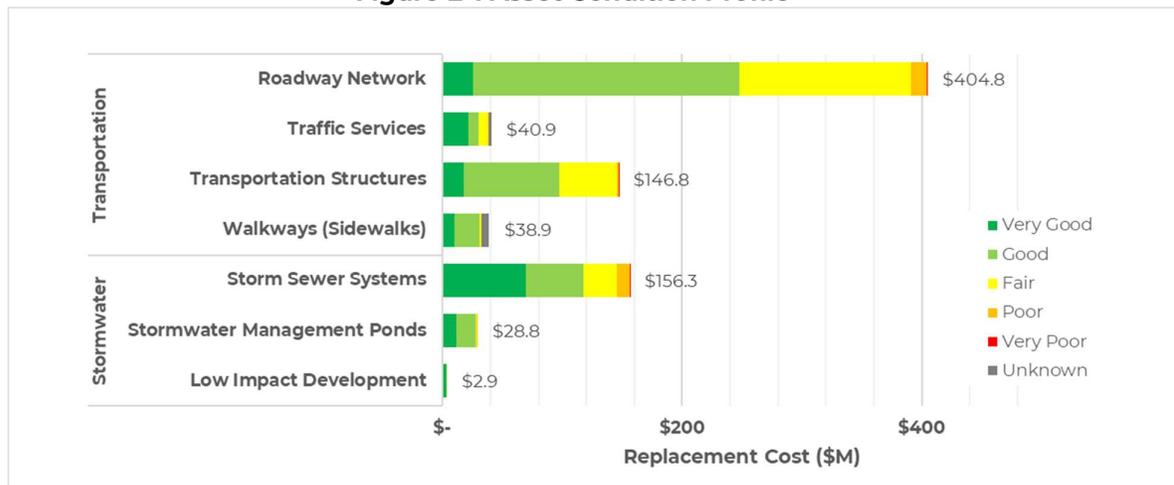
State of Local Infrastructure

The infrastructure assets included in this plan are listed below:

- Roads
- Curb & Gutter
- Retaining Walls/Guidrails
- Sidewalks
- Signs
- Traffic Signals
- Street Lighting
- Roadway Bridges
- Pedestrian Bridges
- Traffic Culverts
- Stormwater Management Ponds
- Stormwater Mains
- Maintenance Holes
- Catch Basins
- Drainage Culverts
- Outfalls
- Infiltration Galleries

The total replacement value of these assets is **\$819.4 M**. The condition profile of the Town's core infrastructure assets is shown in Figure E-1.

Figure E-1 Asset Condition Profile



Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives the Town intends to deliver to its residents, businesses and other stakeholders. Developing, monitoring and reporting on LOS are all integral parts of an overall performance management program that is aimed at improving service delivery and demonstrating accountability to the Town's stakeholders.

Table E.1 below provides a summary of the Town's current performance for the mandated Technical LOS within O.Reg 588/17.

Table E.1 Mandated Technical Levels of Service

Asset Group	Technical Performance Measure	Technical LOS Performance
Bridges & Culverts	Percentage of bridges in the municipality with loading or dimensional restrictions	8%*
	The average BCI for bridges	72.2
	The average BCI for culverts	66.5
Roads	# of lane-kilometres of arterial roads as a proportion of square kilometres of land area of the municipality	0.31
	# of lane-kilometres of collector roads as a proportion of square kilometres of land area of the municipality	0.12
	# of lane-kilometres of local roads as a proportion of square kilometres of land area of the municipality	1.19
	Average pavement condition index value for paved roads in the municipality.	70.7
	Average surface condition for unpaved roads in the municipality.	67.7
Stormwater	Percentage of properties in municipality resilient to a 100-year storm.	Future**
	Percentage of stormwater assets resilient to a 5-year storm	Future

*Calculated using roadway bridges only.

**Stormwater services across the Town are provided by various levels of government. To report on this metric for the areas covered by Town-owned stormwater infrastructure would be a misrepresentation of actual resilience across the Town.

Current performance is based on existing resource provision and work processes. Levels of service are expected to change over time due to shifts in customer priorities and technology used to complete work. Updating customer and technical levels of service metrics and their associated performance is an ongoing process.

Risk Management

The Town's key asset management principle is to meet service levels and manage risk, while minimizing lifecycle costs. The Town's risk strategy develops the framework for quantifying the risk exposure of the Town's assets to enable prioritization of projects across asset classes and service areas. The relative importance of the assets to support

service delivery, referred to as asset criticality, is a key driver in selection of the most appropriate asset management strategy for each asset. Criticality is evaluated on an asset's impact upon failure to service delivery, health and safety, the environment, financial position, and reputation. Risk exposure is the multiplication of the criticality or consequence of failure (CoF) by the probability of failure (PoF), which is the likelihood or chance that an asset failure may occur.

Future Demand

Factors influencing the future demand of core infrastructure assets include:

- Population increases
- Economic Factors
- Change in Demographics
- Transportation Preferences
- Climate Change
- Environmental Factors

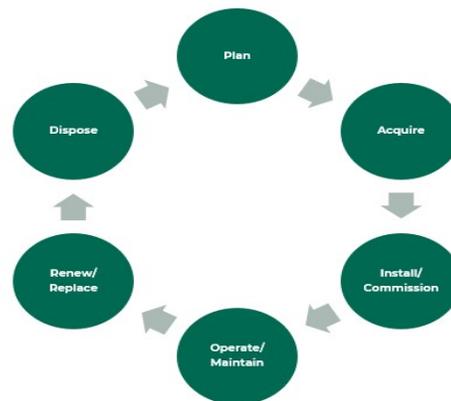
Future demands will be managed using a combination of interventions used to address capacity and use, and function discrepancies. These interventions include:

- Management of existing assets
- Upgrade or expansion of existing assets
- Acquisition of new assets
- Policy and design changes
- Operation and maintenance changes

Lifecycle Management Planning

Maintaining levels of service, meeting future demand, and managing risk inform the whole lifecycle management activities that the Town performs on its core infrastructure assets. These activities include planning, acquisition, installation/commissioning, operations/maintenance, renewal/replacement, and disposal. Asset lifecycle management activities have a financial impact and require short and long term financial planning. The whole lifecycle needs of assets are forecasted and planned for in the Town's Operational and Capital budgets and are reflected in the Long Range Financial Plan.

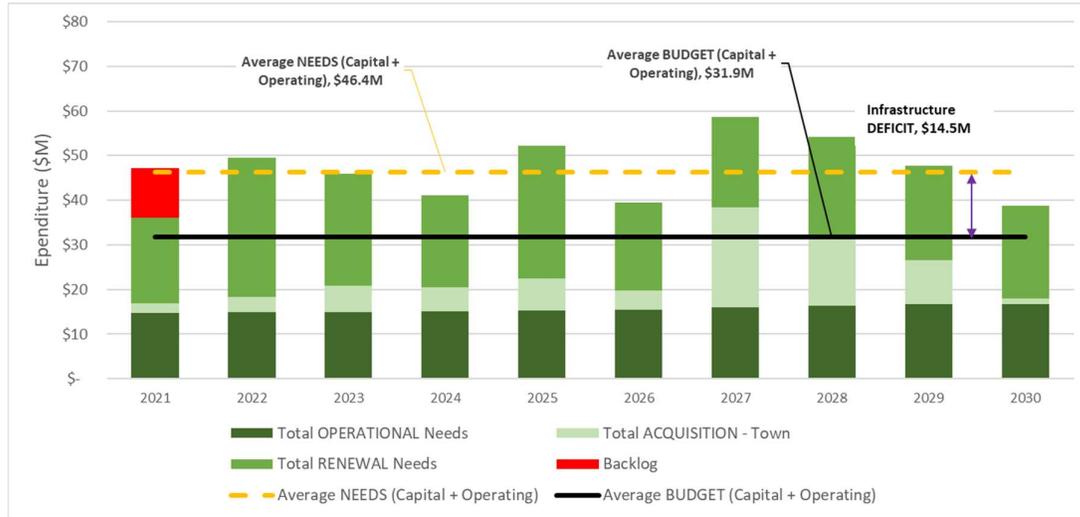
Figure E-2 Whole Asset Lifecycle



Financial Summary

The Core Infrastructure AM Plan defines the infrastructure deficit as the difference between the planned budget and the whole lifecycle needs of the assets. When comparing the forecasted whole lifecycle needs to the planned Capital and Operating budgets, the Core Infrastructure AM Plan identified an infrastructure deficit of \$14.5 million per annum. Changes or enhancements to lifecycle management activities will impact this figure and will need to be considered in short and long term financial planning. Figure E-3 shows a summary of the operational and capital needs compared to the planned budget for the Town's core infrastructure assets over the next 10 years.

Figure E-3 Whole Lifecycle Summary



What will we do?

The infrastructure deficit indicates inadequate capital and operational spending on the lifecycle activities required to maintain service levels, meet future demand, and minimize risk. Inadequate capital and operational spending pose a risk to services provided by core infrastructure assets in terms of capacity and use, function, and quality. To address this, the Town has developed a lifecycle management program for core infrastructure assets that will optimize the lifecycle activities that are currently in place, prioritizing high risk assets first.

To address the infrastructure deficit, the Town prioritizes the needs of existing assets over the addition of new assets. This approach targets funding towards maintaining current infrastructure in a state of good repair. The Town also prioritizes its existing assets based on asset criticality, which is described in more detail in the ‘Risk Management’ section of the AM Plan.

Assumptions

Data gaps are inevitable when developing asset management plans, therefore key assumptions were made in the development of the Core Infrastructure AM Plan. These include:

- The capital projects that are funded by development charges in the 2021-2030 10-year Capital forecast, as well as future development plans were used to represent new asset value to be acquired for 2021-2030.
- The planned budget for operations and maintenance was based on the 2021 Operational planned budget.
- Forecasted operations and maintenance were derived based on new asset growth at the Town over the next 10 years.
- The 2021 Operational shortfall was calculated by input from Town staff to determine current estimated needs.
- The planned budget for renewal and replacement was determined by designating renewal amounts each Capital project in the 2021-2030 Capital Plan
- Carry over budgets previously funded capital projects (but not yet completed) were included in estimating the 10-year average budgets.

- Where no engineering-based needs assessments were conducted - forecasted renewal year for assets were calculated by adding the useful life to the installation year of the asset.
- Unknown installation dates were estimated based on condition ratings.
- Age-based condition was used in the absence of formal condition assessment information wherever applicable.
- Inflation factors (Non-Residential Building Consumer Price Index, Construction Price Index) were used to update replacement costing in the absence of formal inventory and condition assessment information.
- Unknown renewal/replacement costs were based on benchmarks and industry best practice.
- Population growth was estimated using data obtained during the development of the Town's 2021-2022 Development Charge Study. Actual population and employment growth will impact demand for the services provided by the Town's core assets.
- Population growth will result in new infrastructure. The extent of new infrastructure assets required, and the subsequent lifecycle costing requirements will become clearer as development plans are finalized.
- Missing information and data gaps were resolved by substituting institutional knowledge from Town stakeholders.

The confidence level in the data regarding accuracy and completeness is considered to be "Moderate". Areas requiring improvement are noted in the Improvement Plan.

Continuous Improvement

Development of AM Plans is an iterative process that includes improving data, processes, systems, staff skills, and organizational culture over time. This section provides an overview of recommended improvements to the Town's asset management practices. As summarized in Table E.2, this AM Plan is compliant with O.Reg. 588/17 Current Levels of Service requirements for July 1st, 2022.

Table E.2 O.Reg. 588/17 Compliance for Current Levels of Service

AM Plan Section	O.Reg. 588/17 Compliance	Comment
State of Local Infrastructure	Compliant	The AM Plan provides a summary of the assets, the replacement cost of the assets, the average age of the assets, the condition of the assets, and the approach to assessing condition of assets.
Levels of Service	Compliant	The AM Plan provides the qualitative community description and technical metrics as required by O.Reg. 588/17, and the current performance.
Asset Management Strategy	Compliant	The AM Plan provides the population and employment forecasts as set out in Schedule 3 to the 2017 Growth Plan for the Greater Golden Horseshoe. It also provides the lifecycle activities that would need to be undertaken to maintain the current LOS for each of the next 10 years, based on an assessment of lowest lifecycle cost options and risks.

AM Plan Section	O.Reg. 588/17 Compliance	Comment
Financing Plan	Compliant	The AM Plan provides the financial forecast for the next 10 years based on the costs of the lifecycle activities to maintain current levels of service.

Asset management is an evolving process that seeks continuous improvement to enable data-driven decisions. The following improvement items have been documented as a result of preparing this plan:

- Track and document current customer and technical levels of service
- Integrate climate change into levels of service
- Determine proposed levels of service and identify performance gaps
- Improve accuracy and completeness of core asset data by addressing inventory and condition data gaps
- Develop Data, Risk, and Lifecycle Management Strategies
- Implement an asset management information software (AMIS) that includes a work management system as well as decision support software
- Develop a Stormwater Master Plan
- Formalize a more robust condition and inspection monitoring program for all assets to help determine true infrastructure needs
- Determine the cost implications of implementing climate change adaptation strategies
- Determine more accurate lifecycle costing that is tracked at the asset level
- Determine operational budget impacts of proposed growth projects
- Bridge the gap between asset management planning processes and executing the capital and operating budgets
- Update condition information for Town Signage based on reflectivity testing
- Proactively update asset unit replacement costs based on latest industry data

Conclusion

The Core Infrastructure AM Plan communicates the interconnected relationship between levels of service, risk, lifecycle activities, and the associated costs to establish to inform planning and decision-making to realize best value from its core infrastructure assets. It is an important planning and communication tool for staff with Council and the community about the sustainable management of its core infrastructure assets to continue deliver required levels of service while optimizing costs and minimizing risks.

Town staff will continue to work collaboratively to address the infrastructure deficit and performance gaps and to achieve sustainable service delivery as part of its continuous improvement process.