HALTON HILLS

ASSET MANAGEMENT PLAN

FEBRUARY 2014

Asset Management Plan

2014-2023

Prepared by the Town of Halton Hills

February 2014

Community Vision

"Halton Hills is a vibrant and distinctive small Town in the Greater Golden Horseshoe

- *characterized by its spectacular countryside, natural heritage system and cultural heritage;*
- *enriched by its unique blend of urban and rural interconnected communities and neighbourhoods; and*
- *supported by its prosperous employment areas."*

Town of Halton Hills Strategic Plan 2031

ASSET MANAGEMENT PLAN

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EXECUTIVE SUMMARY

Executive Summary

The Asset Management (AM) Plan outlines how the Town of Halton Hills will manage its transportation infrastructure assets until the year 2023. The Plan is a compilation of the various steps being undertaken to implement and improve its asset management practices.

Transportation Infrastructure Services

The Town provides an integrated road network primarily to support accessibility, safety and efficient movement of people and goods within its community and between neighbouring Municipalities. It acknowledges the significant impact that transportation plays in its economic, social and environmental affairs and commits to providing and maintaining its infrastructure assets in a state of good repair.

The AM Plan covers roads (*minor arterial, local and collector*) and structures (*bridges and major culverts*). Within the Town's jurisdiction there are about 443 km of roads, 75 bridges and 69 major culverts for which it has financial responsibility. Their estimated replacement value totals $842.9 million.

The Town's road network is expected to have marginal growth by 2023 as a result of residential and commercial/industrial development. Its Community Sustainability Strategy *'Imagine Halton Hills'*, calls for continuous improvement/updates in its infrastructure to support other economic prosperity themes and to accommodate the greater urban density anticipated by 2031. It also calls for the development of a transportation network which prioritizes the movement of people and goods over the movement of vehicles.

Future demand on the transportation system is expected to rise as a result of an expected population increase *(from 58,000 to 90,000 residents by 2031)* and the growth in adjacent Municipalities. In response, the Town has also implemented a Transportation Master Plan and other programs which provide strategies and policies to meet existing and future demand.

State of Local Infrastructure

The Town has adopted a four-point rating scale for assessing the condition of its assets. Condition assessment of each asset type is done according to industry/regulatory standards and has been mapped to provide comparability in definitions across different asset types. Table 1 provides details on the condition rating used.

Table 1 - Condition Rating Summary

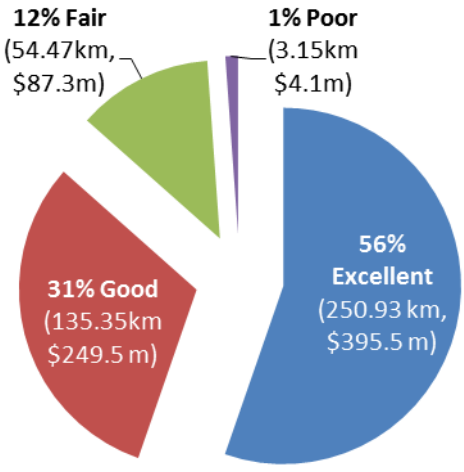
	Asset Condition Grade	Condition Grade Definition
1	Excellent	Infrastructure asset is typically new or recently rehabilitated. Well maintained and in very good condition.
2	Good	Infrastructure is in the early stage of its useful life. Acceptable condition with some elements showing slight signs of deterioration. May require minor maintenance or rehabilitation.
3	Fair	Infrastructure is in the mid-stage of its useful life. May show general signs of minor deterioration and requires attention. Some elements exhibit significant deficiencies. May require ongoing monitoring, major maintenance or rehabilitation.
4	Poor	Infrastructure approaching or is at the end stage of its useful life. Most of its elements are below acceptable standard with signs of advanced deterioration and imminent failure that affects service.

Roads

87% of the road network (396.3km) is in good to excellent condition which reflects the success of the Town's current pavement management program. As shown in Figure 1, the remaining 57.6 km of roads *(with an estimated replacement value of $91.2m)* are in a fair to poor state.

Figure 1 - Condition of Roadways

(Based on no. of road segments)

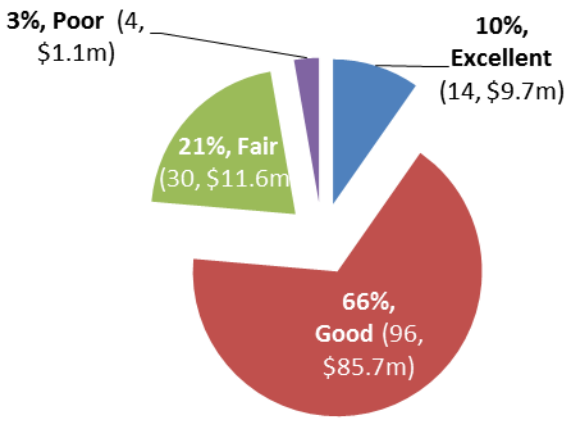


Structures (Bridges and Major Culverts)

Figure 2 shows that over 76% of the Town's bridges and culverts are in good to excellent condition indicating that they are meeting current needs. In order to maintain this level of service, a preventative maintenance strategy should be implemented.

Structure assets ranked as fair and poor (i.e.24%) are in the middle or approaching the end of their useful lives indicating a need for investment in the short to medium term. As these assets age, regular maintenance and rehabilitation strategies are required. If deferred, it will be comparatively more expensive to perform the required work to ensure that the assets perform as intended.

Figure 2 - Condition of Bridges and Culverts



Levels of Service

The Town has improved its level of service (LOS) for its roads and structures in recent years through increased internal funding and support from Federal/Provincial grants. Condition assessment results show that this level of funding has provided small but consistent improvement in the overall condition of the structures and road network.

The Town is aware that additional funding will be required to maintain current levels of service and has therefore adopted a number of financial strategies as part of its Long-Range Financial Planning. It is also exploring alternative technical strategies that may result in improved savings, lower lifecycle costing and extended useful lives of its assets within the constraints of its financial resources.

Another challenge that the Town will have to consider is the increasing expectation that residents have for an improved, safe and environmentally sustainable road network. This will undoubtedly create a ‘gap’ between what the Town can provide and what the community expects. As part of its AM program, the Town will need to clearly define its current level of service and hold further consultations with residents to discuss the implications of any increased levels of service.

Asset Management Strategy

The approach being adopted for the management of roads and structures is primarily aimed at the maintenance, rehabilitation, reconstruction and/or replacement stages of the assets' life.

In the early stages of the assets' life, their condition and performance deteriorate at a slow rate and very minimal maintenance, if any, is required. As the assets age, they move into the maintenance phase where strategies are applied to minimize continued deterioration. As they approach the end of their useful lives steps are taken to restore the assets to a condition close to their original state. Therefore the time at which the Town intervenes is important. If renewal activities are not taken in a timely manner, the condition of the asset will deteriorate quickly and the cost for reconstruction or rehabilitation will be significantly higher than if preventative maintenance were applied.

Financing Strategy

The Town's funding of road and structure assets has been fairly steady over the period (2008-2012) with an average annual allocation of $10.5 million dollars (i.e. Operating and Capital Budgets).

Consistent with its Long-Range Financial Strategy and Plan, the Town has committed to build its Reserves. It will eventually phase out funding of road-related works from its Capital Replacement Reserve. Consequently a Pavement Management Reserve has been established and is funded through annual contributions from the Operating Budget. Road and structure-related capital projects are also funded from other reserves such as Special Infrastructure Levy Reserve and Canada Gas Tax (Federal) Reserve.

Growth related road works are primarily funded from development charges. As part of its financing strategy, the Town will also consider ways to engage other levels of government to assist in managing its infrastructure deficit. Refer to *Section 6 - Financing Strategy* for additional information on 2014-2023 projections.

The estimated infrastructure deficit for roads and structures for the next 10 years is $154 million and is reflected in Table 2.

Table 2 - Estimated Infrastructure Deficit
('000)

Financial Year	2014	2015	2016	2017	2018	2019-23	Total
Budget Available	5,863	7,052	7,764	4,413	3,796	30,890	59,778
Required Funding	60,455	12,400	12,635	11,676	15,132	101,001	213,299
Deficit	54,592	5,348	4,871	7,263	11,336	70,111	153,521

Section 5 - Asset Management Strategy of this document outlines steps that are currently being taken to manage the Town's road and structure assets. It also indicates that further research is being carried out to identify and recommend other cost-effective strategies and programs that will ensure the Town's current level of service (LOS) is maintained. Option Analyses are being explored and Council will be provided with other Reports with appropriate recommendations and funding requirements.
The Town will also be looking at ways to engage other levels of government for external funding to support the management of its infrastructure deficit. Therefore current funding strategy may be adjusted following Council's review of the AM Plan and other Reports.

Monitoring and Improvement

The AM plan is a dynamic document which reflects and adapts to changes in services and associated programs, processes and strategies. It is therefore important to monitor the Plan to ensure that it supports the Town's:

a. Compliance with legislative/regulatory requirements;
b. Proposed program and related strategies;
c. Compliance with service delivery quality and targets;
d. Risk and performance management practices;
e. Investment and budget decisions.

As the Town seeks to build on its asset management program, it is necessary to implement appropriate mechanisms to monitor, showcase and improve its impact on the Town's investment planning and service delivery. The AM program will also allow the Town to further strengthen its capacity by applying evidenced-based asset management practices to its decision-making process.

An AM Improvement Plan has been developed to assist the Town as it embarks on advancing its program across Departments. Refer to *Section 6 - Improvement and Monitoring* for additional information.

SECTION ONE
INTRODUCTION

Section 1- Introduction

1.1 Defining Asset Management

Asset management is the application of financial, technical, strategic planning and other inter-disciplinary techniques to effectively utilize the Town of Halton Hill's physical assets over their lifecycles. Its primary purpose is to ensure that the Town provides required levels of service consistent with its goals in a cost effective manner.

The Town, like other Municipalities, allocates very scarce resources amongst relevant and often competing needs. The Asset Management (AM) Plan therefore describes the rationale, approach and strategies used to assist the Town in its investment planning and decision-making process.

1.2 Supporting the Goals of Halton Hills

Council-approved Strategic Plan 2031 expresses the Town's commitment to nine key strategic directions, which includes "providing sustainable infrastructure & services". The Town's goal in this regard is *'to maintain and enhance community infrastructure and services that support our quality of life'*.

Building on the direction, the Town has further established specific strategic objectives which guide its transportation services. They include:

- To facilitate the safe and efficient movement of people and goods within the Town's community and to and from adjacent Municipalities;
- Establish an integrated transportation system that safely and efficiently accommodates various modes of transportation;
- Protect transportation corridors to facilitate the development of a transportation system that is compatible with and supportive of existing and future land uses;
- Ensure that new roads in urban development areas are constructed safely, designed in a grid-oriented street network to help distribute car and truck traffic evenly and provide access for the future operation of an efficient public transit system.

In support of the Province's "*Places to Grow"* program, the Town has been actively undertaking a number of initiatives to manage anticipated growth and development in the community. The Town's transportation services are inextricably linked to its community's economic, recreational and environmental activities and future forecasts.

Its transportation infrastructure assets are therefore critical to the Town's quality of life and viability.

The Town owns and controls 443 km of roads, 75 bridges and 69 major culverts as part of its transportation network service. The Municipality has a strong commitment to transportation safety so it is important to make wise investments in the acquisition, upkeep, rehabilitation and replacement of these assets. Well-maintained roads and structures last longer, saving taxpayer dollars in the long run.

In support of the Town's vision, goals and objectives, its asset management objectives are:

- To ensure adequate and timely funding for capital reinvestment of the Town's capital assets;
- To adopt clearly defined and appropriate levels of service;
- To efficiently and effectively manage all capital assets using a lifecycle approach to inform capital and operational expenditures; and
- To build partnerships and support with different stakeholders for reinvestment opportunities through education, collaborations and engagement.

1.3 Scope of the Asset Management Plan

This first version of the Plan covers roads, bridges and major culverts which are primary resources used to (among other things) '*facilitate the safe and efficient movement of people and goods within the Town's communities, and to and from adjacent municipalities*'[1].

1.4 Asset Management Plan Updates

As a decision-making support tool, the AM Plan will be updated regularly to reflect internal and external changes as well as improvements in the Town's asset management process. Updates will also be predicated on approved implementation and monitoring activities associated with the AM Plan.

The AM Plan will cover planning periods of 10 years consistent with the Town's Long-Range Financial Planning Framework and Capital Budgeting.

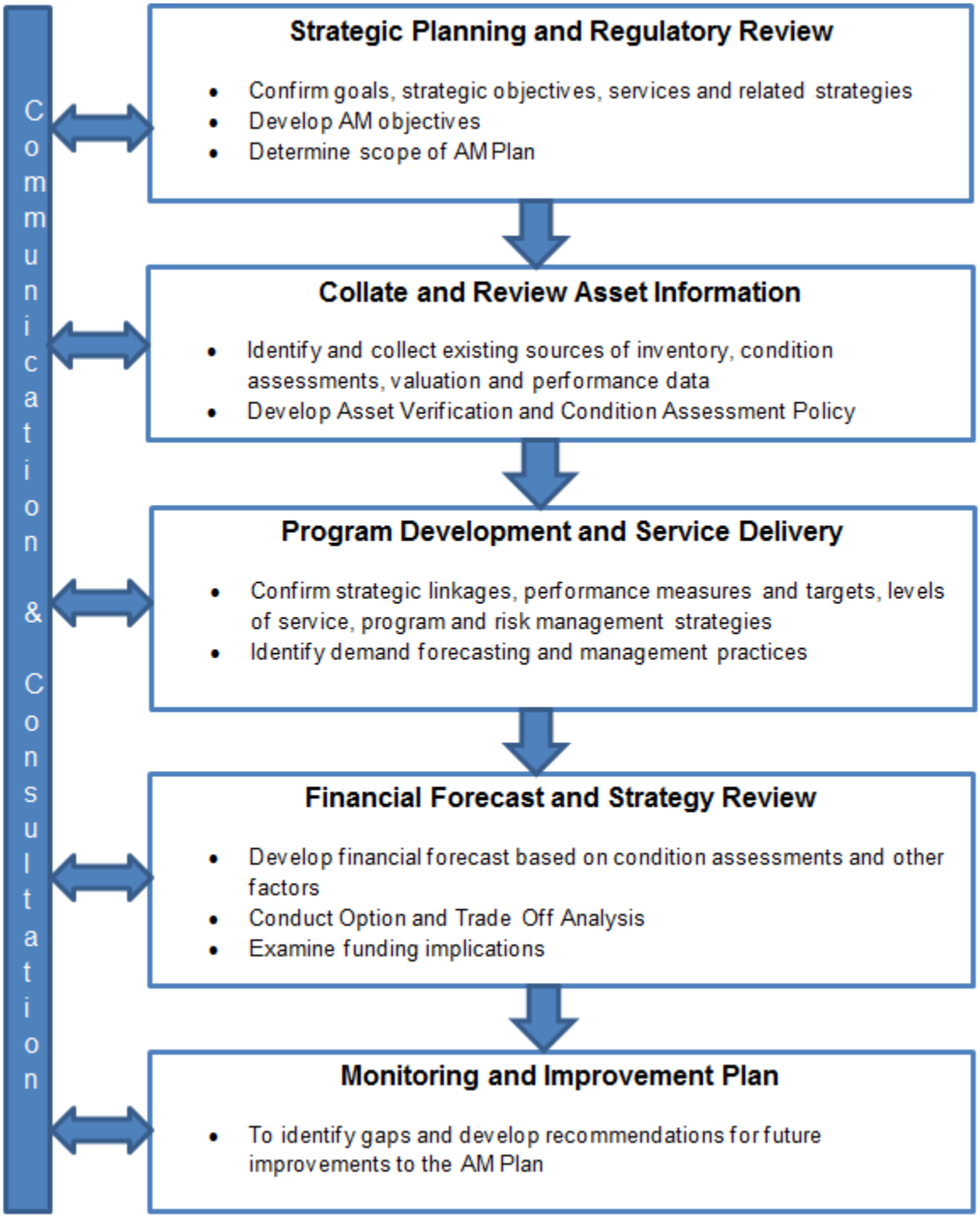
1.5 Asset Management Plan Methodology

The Town has decided to take an incremental approach to its asset management program. Over time, guided by its priority and availability of funds, the Town will

[1] TOHH Strategic Plan 2031

gradually move from a foundation to advanced asset management. Figure 1.1 outlines the approach used to develop this first version of the AM Plan.

Figure 1.1 - Asset Management Methodologies



1.6 Stakeholders Involved In the Plan

The AM Plan was developed internally with valuable contributions from the following departments:

- Infrastructure Services
- Recreation & Parks
- Corporate Services

1.7 Relevance to Other Municipal Documents

A key contributor to the Town's planning, performance and financial management processes, the AM Plan incorporates and/or supports the following documents:

- Local and Regional Infrastructure Master Plans – *Transportation, Cycling, Green, Active*
- Official Plan – *utilize and informs the land use policy directions for long-term growth and development*
- Development Charges Bylaw and Background Study
- Customer Service Charter
- Business Plans – *policies, strategies, operational processes and related budgets in the AM Plan aligns with the business plans and will be monitored through agreed performance measures*
- Long-Term Financial Plan and Budgets – *the decision framework and infrastructure needs identified in the AM Plan will inform the basis on which Operating and Capital Budgets are prioritised and formulated*
- By-laws, Standards and Policies – *the AM Plan informs and adopts standards, policies and practices which support the Town's asset management practices e.g. Asset Condition and Verification Policy*
- Regulations – *the Plan incorporates Industry, Provincial and Federal Regulations so as to ensure conformance and minimise risk exposure to the Town and its residents*

1.8 Data Alignment

For the Town's Asset Management project, information was drawn from several sources namely, AMANDA, Road Matrix Pavement Management, FMW (budgeting), Excel spreadsheets and stored in Municipal Dataworks (MDW).

MDW contains the asset inventory, valuation information, lifecycle activity predictions, cost data, project prioritization criteria, asset management strategies and financial forecast applicable to the assets covered in this Plan.

The Town in the next phase of its asset management program will identify appropriate ways to integrate these applications. Integration of systems will allow for ease of updates, scenario building and reporting of performance results.

Asset data for roads and structures is primarily based on information available as at December 31, 2012. Assets acquired and/or disposed after this date may not be reflected in this report, however condition data has been updated as a result of recent rehabilitation programs.

1.9 Plan Monitoring and Review

The Town's development of the AM Plan has provided a clearer understanding of the requirements to prepare future updates. As a result, some data, process and knowledge gaps have been identified. An improvement and monitoring plan has been drafted for Senior Management's consideration and if adopted will address those issues over time. Refer to *Section 6 Improvement and Monitoring* for additional information.

Corporate Services Department will be responsible for monitoring the progress of the AM Plan annually.

SECTION TWO
STATE OF LOCAL INFRASTRUCTURE

Section 2 - State of Local Infrastructure

2.1 Asset Inventory

This Section of the AM Plan covers the Town's infrastructure assets (roads, bridges and major culverts) associated with its transportation service. It excludes infrastructure assets for water and social housing services which fall under the Region of Halton's portfolio.

The Town of Halton Hills owns and manages 443 kilometres of roads, 75 bridges and 69 major culverts. The estimated asset value, based on 2012 replacement cost data, is $842.9 million. Roads make up approximately 86% of the assets defined in this AM Plan with an estimated replacement value of $737.5 million. Table 2.1 below provides an overview of the road and structure inventory that falls within the scope of this plan.

The Town will continue to refine its AM Plan and will incorporate the following assets in its next revision:

- Sidewalks
- Storm water infrastructure *(storm water facilities and conveyance systems)*
- Traffic signalization and street signs
- Street Lighting

Table 2.1 - Inventory of Transportation Infrastructure Assets

Asset Type	Inventory
Road (km)	
Arterial	86.78
Collector - Residential	30.53
Collector - Commercial/Industrial	1.37
Local - Residential	320.59
Local - Commercial	7.28
Total	**442.88**
Structure (Units)	
Bridges	63
Major Culverts (> 3m)	68
Pedestrian Bridge	12
Total	**144**

2.2 Halton Region Road Rationalization

In 2000 the Town, with other Halton Municipalities, approved a Functional Road Network which facilitated the classification of road systems within the Region according to their function. Following further discussions in 2003, the Municipalities agreed that Region of Halton (upper-tier Municipality) will have jurisdiction over all roads classified as major arterial while the remaining roads *(minor arterial roads)* would be the responsibility of the respective local Municipality. The approved transfers became effective in 2004.

All Municipalities within the Region agreed to a review every five (5) years to ensure that the classifications remain current and accurate. The reviews will evaluate the classification and jurisdictional control of roads that may change in character due to reconstruction activities, designating by-laws and/or surrounding land use modifications that occur over the intervening period.

The first update to the classifications began in 2007 and was approved by Regional Council in March 2010. The Region has initiated the next review in 2014 which may consequently affect the road asset inventory and projections reflected in this AM Plan.

2.3 Asset Valuation

In addition to replacement costs, details on the amortized historical costs[2] are included in this Plan. A comparison of both datasets provides a general indication of how much of the assets' estimated useful life has been consumed.

However, this Plan relies on the use of current replacement cost of assets as its basis for asset valuation. With relatively long useful lives; the use of replacement cost valuation with condition assessment for these asset types is a more useful indicator for decision-making than depreciated values.

Financial Accounting Valuation

Consistent with Public Sector Accounting Board (PSAB) financial reporting requirements, the Town uses historical cost and amortization assumptions to determine the net book value of its tangible capital assets.

In 2008 the Town, in its adoption of PS 3150 Accounting Standard, carried out a Tangible Capital Asset Project to determine the value of its assets. Actual costs were used to record assets and where limited documentation existed, historical costs were computed by discounting current replacement costs to construction year using an

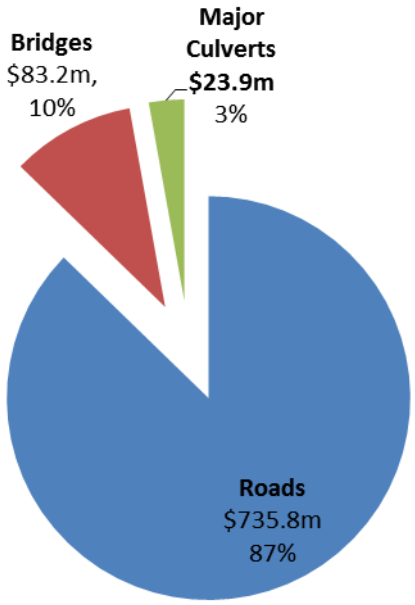
[2] Based on a combination of the 2012 Closing or 2013 Opening Net Book Values

appropriate price index. The total netbook value of the assets covered in the AM Plan as at December 31, 2012 is $ 142.2 million.

Replacement Cost Valuation

In 2012, the Town carried out its road and OSIM-compliant bridge inspections. It also completed two important studies - Development Charges and Transportation Master Plan. Data from these studies were used to reconcile the Town's fixed asset register. Replacement cost valuations computed by qualified consultants and internal technical staff were used to arrive at the estimated replacement values. As shown in Figure 2.1 the total estimated replacement values for the assets addressed in this plan is $842.9 million.

Figure 2.1: Estimated Total (2012) Replacement Cost of Assets Included in the AM Plan $842.99 million



Assumptions

All replacement costs are based on cost to replace the asset with the exact asset, without any consideration for growth, technological change or enhancement assumptions. Other factors which may affect the cost of replacement not covered in these calculations are land acquisition, legal fees and design changes. Therefore the actual replacement cost is expected to be higher than amounts reflected in this Plan.

2.3.1 Roadway Valuation

The estimated replacement value of the Town's road network as reflected in Table 2.2 is $735.58 million. It includes all local, arterial and collector roads[3] except those under the ownership and or jurisdiction of the Region. It also includes road base, ditches, curbs, pavement and islands.

Table 2.2 - Road Assets Valuation

Asset Type	Asset – Functional Classification	Inventory (Km)	2012 Net Book Value ($'000)	2012 Replacement Value ($'000)
Roadways	Arterial	86.78	129,563	128,772
	Collector - Residential	30.19		50,862
	Collector - Commercial/Industrial	1.37		2,065
	Local - Residential	317.26		540,166
	Local - Commercial	7.28		13,711
	Total	**442.88**	**129,563**	**735,576**

2.3.2 Structures Valuation

Based on 2012 data, the Town's structures *(bridges and major culverts)* have an estimated replacement value of $107.4 million. *Refer to Table 2.3 for additional information.*

Table 2.3 - Structures Asset Valuation

Asset Type	Asset	Inventory (Units)	2012 Net Book Value ($'000)	2012 Replacement Value ($'000)
Structures	Bridges	63	13,718.5	79,945
	Pedestrian Bridges	11		3,575
	Culverts (>3m)	69		23,902
	Total	**144**	**13,718.5**	**107,422**

2.4 Asset Age Distribution

The information below reflects estimated useful lives derived by technical staff and the methodologies used for PS 3150 accounting purposes. A key assumption is that the assets are properly constructed and maintained. In such instances, it is possible that the assets may exceed their useful lives.

[3] According to the Town's Official Plan, the road classification includes arterial, collector *(residential and commercial)* and local *(residential and commercial)* roads

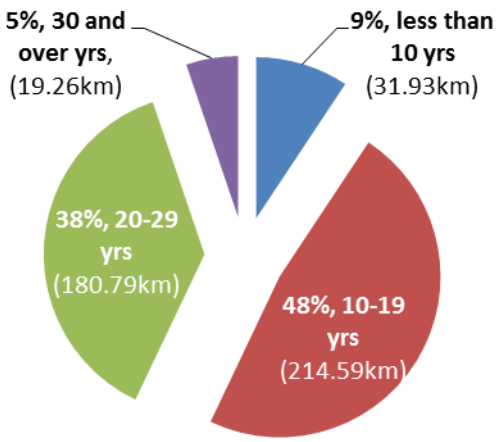
2.4.1 Roads

The age of the Town's roads is one of the factors used to determine their current state. Studies recommend that it is often more cost effective to perform preventative maintenance early in a road's life. The typical road deteriorates in the first third of its life. At this stage, less expensive rehabilitation can be used to restore its quality. However, within the middle third of the pavement's life, its quality deteriorates at a much faster rate. Rehabilitation at this time in the pavement's life is more costly to bring it up to a new level. During the final stage in its life, very rapid deterioration occurs which can result in the need for a high cost reconstruction.

As the Town implements its AM program, a guiding principle will be to employ the most effective rehabilitation technique at the optimal time, within the constraints of the Town's financial capacity. Refer to Section 4 Asset Management Strategy for more details.

The Town's roads have an estimated useful life of 40 years. As indicated in Figure 2.3, 48% of the Town's roads are at the middle of their estimated useful lives. Another 38% are approaching that mark. Their average remaining useful life is 21 years.

Figure 2.3 - Age Distribution of Roads
(Based on No. of Sections)

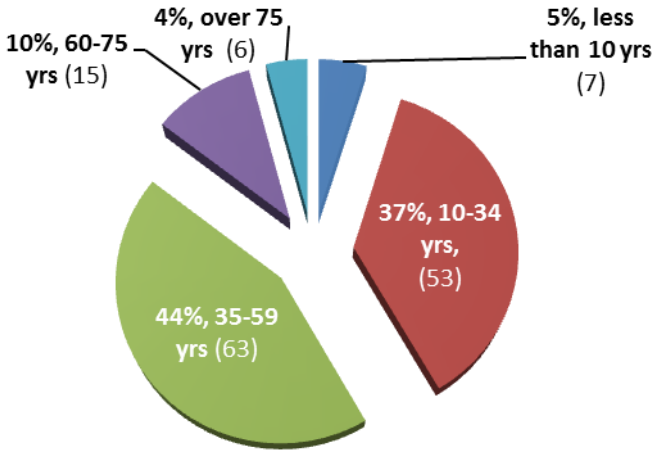


2.4.2 Structures

The average life expectancy of the Town's bridges and major culverts is about 75 years. Over 50% of its structures have gone beyond the halfway point of their expected life and will be due for minor to major rehabilitation or potential replacements within the next 10 years. The Town is therefore approaching a critical period of its asset management to ensure that these assets continue to meet future transportation needs.

As indicated earlier, age is only one of the factors used by the Town to determine asset condition so an analysis of their overall condition is provided in *2.5 Asset Condition.* Refer to Figure 2.4 for more information.

Figure 2.4 - Age Distribution of Structures



2.5 Asset Condition

The Town has adopted a four-point rating scale (Table 2.4) for assessing the condition of its assets. This provides a useful basis for evaluating across different asset types. Condition assessment of each asset type is done according to industry/regulatory standards and has been mapped to provide comparability in definitions across different asset types.

Table 2.4 - Condition Rating Summary

	Condition Grade	Condition Grade Definition
1	Excellent	Infrastructure asset is typically new or recently rehabilitated. Well maintained and in very good condition.
2	Good	Infrastructure is in the early stage of its useful life. Acceptable condition with some elements showing slight signs of deterioration. May require minor maintenance or rehabilitation.
3	Fair	Infrastructure is in the mid-stage of its useful life. May show general signs of minor deterioration and requires attention. Some elements exhibit significant deficiencies. May require ongoing monitoring, major maintenance or rehabilitation.
4	Poor	Infrastructure approaching or is at the end stage of its useful life. Most of its elements are below acceptable standard with signs of advanced deterioration and imminent failure that affects service.

2.5.1 Roadways

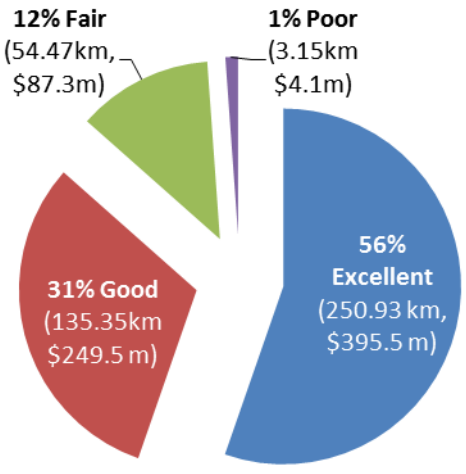
Data *(including pavement condition)* is managed and maintained in the *Road Matrix Pavement Management System* by Infrastructure Services. Infrastructure Services perform pavement inspections every five years in accordance with industry standards and principles. The most recent inspection was carried out in 2012.

Consistent with Ontario Provincial Standards for Roads & Public Works; Regulation 239/02 (*of the Municipal Act - Minimum Maintenance Standards for Municipal Highways),* Public Works conducts road patrols to identify deficiencies that need to be addressed by routine maintenance.
Pavement inspection data is used to generate a numeric condition rating (Pavement Quality Index) of the overall performance of the pavement. This condition rating is updated after completion of any road rehabilitation/reconstruction projects.

The condition ratings are used for the purpose of developing rehabilitation, reconstruction and maintenance programs as well as prioritizing projects for budgeting purposes. These numeric condition ratings have been mapped to the Condition Rating illustrated in 2.4 above.

As shown in Figure 2.5, 87% of the road network (396.28 km) is in excellent to good condition which reflects the success of the Town's current pavement management program. The remaining 91.2 km of roads with an estimated replacement value of $91.4 million are in a fair to poor state. This is where the Town has been focusing its asset management strategies to address impending reconstruction and rehabilitation.

Figure 2.5 - Condition of Roadways
(Based on No. of Road Segments)



The Town is currently exploring options to expand its preventative maintenance program so as to maintain road assets which are currently in “good condition”, as such practices will extend their useful lives or retard any deterioration which may occur. *Refer to Section 4 for the current asset management strategies applicable to roads for more information.*

2.5.2 Structures (Bridges and Major Culverts)

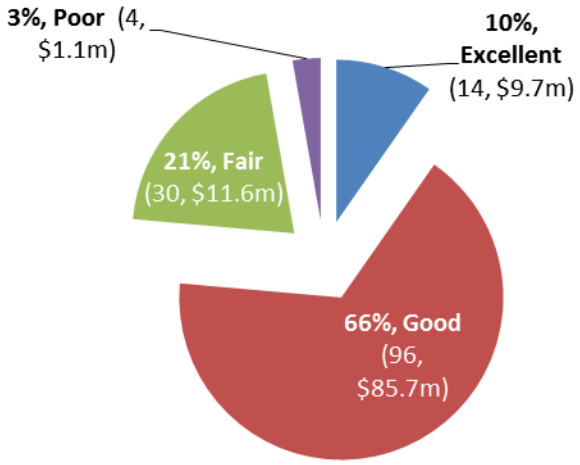
Inventory data, including condition (Bridge Condition Index), for the Town’s structures is maintained in Municipal Dataworks. The Town performs OSIM-compliant inspections every two years consistent with *Regulation 104/97 of the Ontario Public Transportation & Highway Improvement Act (1990).*

The Town uses the condition rating and other factors to formulate its structure priority ranking to prioritize projects and develop its rehabilitation and reconstruction program. The condition rating has been mapped to the Asset Condition Rating used in this plan.

76% of the Town's bridges and culverts (Figure 2.6) are in good to excellent condition indicating that they are meeting current needs.

Structure assets ranked as fair and poor (i.e. 24%) are in the middle or approaching the end of their useful lives indicating a need for investment in the short to medium term. As these assets age, regular maintenance and rehabilitation programs are required. If deferred, it will be comparatively more expensive to perform the required work to ensure that the assets perform as intended.

Figure 2.6 - Condition of Bridges and Culverts



2.6 Asset Verification and Condition Policy

The Town has begun and will continue to develop clearly defined policies and procedures for sustaining its asset verification and condition assessment activities. Drawing on current practices it has recently developed a policy which states how and when assets will be verified and assessed. Refer to Appendix 1 for a draft copy of the Town's Asset Verification and Condition Assessment Policy.

The Policy seeks to:

- Safeguard the Town's assets and the integrity of related information;
- Establish the current condition of assets as a means to prioritise and forecast asset management requirements;
- Set the standard for monitoring the assets' performance to prevent/mitigate premature failure and significant exposure to safety/other risks.

As the Town advances its asset management practices, it will be guided by a philosophy which focuses on managing assets to condition/performance targets aimed at achieving service levels and risk management targets.

Other activities that the Town will or has already embarked on to improve its practices include:

- Ensuring sustainability between maintenance, rehabilitation and replacement activities and the average annual revenue required to maintain the Town's assets at an acceptable risk level;
- Developing procedures for the management of condition/performance rating and replacement cost data across transportation services;
- Improving its condition rating methodology to ensure that associated programs support the Town's infrastructure requirements.

SECTION 3
DESIRED LEVELS OF SERVICE

Section 3 - Desired Levels of Service

A well-defined level of service (LOS) is a key component of Asset Management. It refers to the outcomes that customers receive from services provided and may be expressed in terms of cost, quantity, quality, responsiveness and performance.

Municipalities can use defined service levels to effectively control their asset life cycle costs, forecast expected return for the investment in infrastructure, and state how success or failure will be measured. In return, customers will know what levels of service to expect and the costs/investments to provide them.

In order to achieve and maintain acceptable service standards, Municipalities must commit adequate funds to maintain, renew and replace assets which support their services.

This Section outlines factors which impact the Town's LOS, its performance results, and anticipated future demand on its road network services.

3.1 Factors Which Influence the Town's Transportation Levels of Service

The following are primary factors which influence the Town's standards for levels of service.

- Community Vision and Strategic Goals
- Community Expectations
- Legislative, Regulatory and Technical Requirements
- Funding Capabilities
- Condition of Assets
- Other External Trends

3.1.1 Community Vision and Strategic Goals

Halton Hills' community vision and strategic goals are expressed in its Strategic Plan 2031. The document also outlines the direction the Town will take to get there and the services it will provide to achieve its vision. Supporting Transportation Master Plans, Business Plans and Budgets are aligned to the Strategic Plan.

The Town's levels of service are consequently informed by the strategic goals, priorities and objectives outlined in that document.

3.1.2 Community Expectations

The Town of Halton Hills exists to provide municipal services to its residents and other customers. As a steward entrusted with governing the local affairs in the community, it is necessary to understand its constituents' needs. Some of the ways in which community expectation is ascertained are:

- Consultation meetings;
- Surveys (e.g. Citizen Satisfaction Surveys);
- Public hearings; and
- Written or verbal communication to their Council Representatives.

This level of engagement then guides the development of any policy, program and related service which the Town offers.

3.1.3 Legislative, Regulatory and Technical Requirements

LOS in this category communicates, in objective and measurable terms, how an asset will perform and includes a suitable minimum condition grade (*in line with the impact of asset failure*) and a specified performance standard.

3.1.3.1 Pavement Management

The condition of the Town's road network is monitored through its pavement management system which monitors and measures how well the paved road network is performing using condition indices (*pavement quality, surface distress, ride comfort, structural adjustments).* This system is used to inform the timely upgrading, rehabilitation and replacement of paved roads. The objective of the Town's pavement management program is to maintain the road network at an average pavement quality index of 7 out of 10.

3.1.3.2 Routine Maintenance

The Town of Halton Hills has adopted the *Ontario Regulation 239/02 – Minimum Standards for Municipal Highways* and implements a road maintenance program consistent with the timeframes required to meet the levels of services stipulated in the Regulation. This program ensures public safety and preservation of the Town's road assets.

3.1.3.3 Inspections and Assessments

i. Bridges and Culverts
   The Town, as part of its bridge management program, carries out bi-annual inspections for all bridge and major culvert assets in accordance with *Regulation 104/97 of the Ontario Public Transportation & Highway Improvement Act (1990)*.
ii. Roads
   The Municipality, in accordance with its internal policy, carries detailed survey assessments (road needs study) of its road assets within a five-year cycle.

3.1.3.4 Routine Patrol

Routine inspections of all road assets are carried out consistent with *Regulation 239/02 - Minimum Maintenance Standards for Highways of the Ontario Municipal Act.* Effective 2014 routine inspections of its bridges and culverts will be done as a means of identifying and correcting minor deficiencies which may arise between bi-annual inspections.

3.1.3.5 Road Capacity

The Town's Transportation Master Plan *(with overarching influence from Provincial and Regional programs and activities)* impacts the anticipated road capacity requirements of the Town. With performance indicators of evening peak hour traffic volume against existing capacity and expected increase capacity requirements, the Plan provides practical roadway solutions to accommodate the expected increase in travel demand growth to 2031 for the Town.

3.1.3.6 Other Legislative Requirements

- Places to Grow Act, 2005 and its Plan
- Designation of Greenbelt Area and its Plan
- Accessibility for Ontarians with Disability Act, 2005 and Ontario Regulation 413/12 - Integrated Accessibility Standards

3.1.4 Funding Capabilities

As the asset management program is advanced, one of its goals will be to more accurately evaluate the costs *(operating & capital)* related to maintaining the current LOS and understand the implication *(costs/savings)* associated with any adjusted service level.

3.1.5 Condition of Assets

The current service levels experienced by residents are greatly influenced by the current condition of the Town's transportation infrastructure assets.

3.1.6 Other External Factors

Technology is expected to affect the Town's service delivery in the following ways:

a. Road seal renewal treatments are expected to increase the road assets' residual life and lower lifecycle costs.
b. Inspection and inventory data captured by video inspection and mapped to the Town's Geographic Information System will lead to spatial location and condition of assets being verified by GIS.

3.2 Performance Measures and Results

As part of any strategic planning process, there is need to review progress towards meeting the Town's strategic goals and objectives. This involves being clear what resources are required and what will be measured to give an indication of how well the Town is performing.

It is for that reason suitable performance measures should be used to track and assess performance. Clearly defined performance measures assist in:

- Evaluating how the Municipality is performing;
- Ensuring as part of the control mechanism that responsible Departments do the correct thing;
- Shaping the budget decisions as to what programs/projects to spend on;
- Motivating staff to improve performance;
- Promoting and convincing others that the municipality is doing a good job; and
- Learning what does not work and improving/changing approaches.

3.2.1 Performance Monitoring and Reporting Mechanism

The Town's levels of service are measures for evaluating and reporting on the outcome of programs and services delivered to meet its goals.
Town performance monitoring and reporting mechanism includes:

Corporate Plan Monitoring Report - Consistent with its existing strategic planning framework, the Town produces Annual Monitoring Reports to Council which Town performance monitoring and reporting mechanism includes:

i. Corporate Plan Monitoring Report - Consistent with its existing strategic planning framework, the Town produces Annual Monitoring Reports to Council which highlight the projects associated with each strategic objective and their

accomplishments. Departmental reports are also produced and feeds into the Corporate Monitoring Report.

ii. Municipal Performance Measurement Program (MPMP) - Reports on efficiency and effectiveness measures of services provided, including transportation. The Town's performance results are reported through the Financial Information Return and on its website.

iii. Citizen Satisfaction Surveys are carried out every four years. It measures the level of satisfaction and the level of importance of services provided by the Town of Halton Hills. It also seeks to gain an understanding of citizens' needs and perceptions related to areas of improvement.

3.3 Current Performance

The most current information on the Town's performance with its transportation services' are shown in the Financial Information Reports and Citizen Satisfaction Survey. They are provided below:

3.3.1 Financial Information Report

Table 3.1 - Transportation Services Current Performance Results

	Asset Type	Key Performance Indicator	Performance Measure	Results		
				2010	2011	2012
Financial	Roads	Paved road Maintenance of (efficiency)	5.1 a) Operating costs for paved (hard top) roads per lane kilometre.	N/A (formula was revised in 2011)	23,287.21	3,817.88 *(large revaluation of assets in 2011)*
			5.1 b) Total costs for paved (hard top) roads per lane kilometre.	N/A formula was revised in 2011)	31,837.84	12,888.14
		Maintenance of unpaved roads (efficiency)	5.2 a) Operating costs for unpaved (loose top) roads per lane kilometre.	6,132.77	6,860.40	6,649.96
			5.2 b) Total costs for unpaved (loose top) roads per lane kilometre.	6,353.81	7,565.50 *(amortiza-tion cost increased)*	11,221.78 *(change in useful life methodology)*
	Bridges & Culverts	Maintenance of bridges and culverts (efficiency)	5.3 a) Operating costs for bridges and culverts per square metre of surface area.	15.66	9.44	11.79

	Asset Type	Key Performance Indicator	Performance Measure	Results		
				2010	2011	2012
			5.3 b) Total costs for bridges and culverts per square metre of surface area.	58.06	52.37	58.10
	Roads	Winter maintenance of roadways	5.4 a) Operating costs for winter control maintenance of roadways, excluding sidewalks and parking lots, per lane kilometre maintained in winter.	1,194.56	1,817.85	1,292.91
			5.4 b) Total costs for winter control maintenance of roadways, excluding sidewalks and parking lots, per lane kilometre maintained in winter.	1,194.56	1,817.85	1,292.91
Quality (sustainable road network)	Roads	Pavement Condition Index (effectiveness)	5.5 Percentage of paved lane kilometres where the condition is rated as good to very good.	67.1%	68.7%	76.8%
Quality (sustainable road network)	Bridges & Culverts	Bridge Condition Index (effectiveness)	5.6 Percentage of bridges and major culverts where the condition is rated as good to very good.	51.5%	54.5%	49.5%
Safety	Road, Bridges & Culverts	Response to winter storm events (effectiveness)	5.7 Percentage of winter events where the response met or exceeded locally determined municipal service levels for road maintenance.	100%	100%	100%

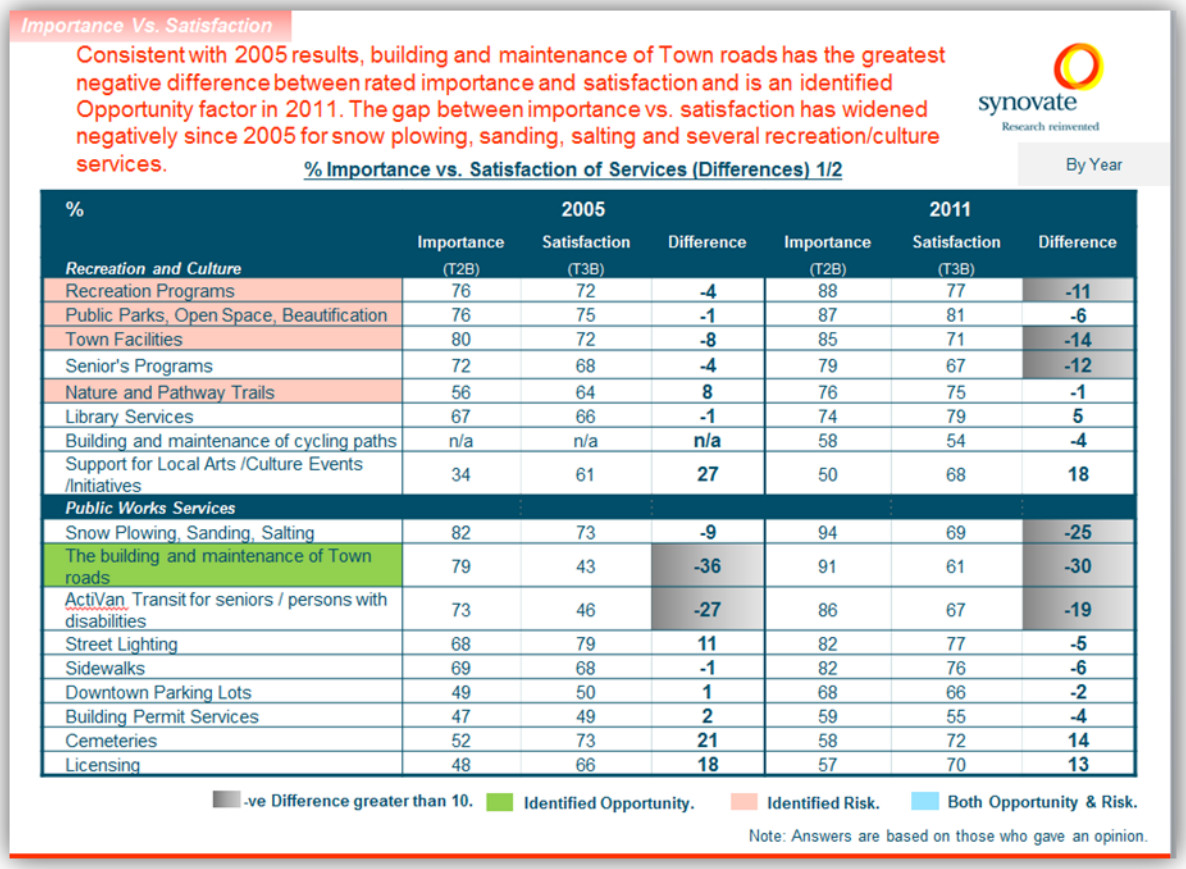
3.3.2 Citizen Satisfaction Survey

The Town's last Citizen Satisfaction Survey was undertaken in 2011. The survey was conducted using computer assisted telephone interviewing among a representative sample of 400+ residents. The survey gathered data on all the Town's services including "Transportation Services".

The survey results indicate that 80% of respondents were overall satisfied with the Town's services. The report also revealed that "*satisfaction with Public Works services*[4] *increased and at the same time, its rated importance* (one of the highest) *since 2005 has also increased. The report concluded that this "signifies that both citizens' involvement in the Town and expectations for Town services have risen over the years*."

[4] Public Works Services for the purpose of the Survey include routine maintenance, rehabilitation and replacement of assets covered in the AM Plan

Table 3.2 - 2011 Citizen Satisfaction Survey Extract



Importance Vs. Satisfaction

Consistent with 2005 results, building and maintenance of Town roads has the greatest negative difference between rated importance and satisfaction and is an identified Opportunity factor in 2011. The gap between importance vs. satisfaction has widened negatively since 2005 for snow plowing, sanding, salting and several recreation/culture services.

synovate
Research reinvented

By Year

% Importance vs. Satisfaction of Services (Differences) 1/2

%	2005			2011		
	Importance (T2B)	Satisfaction (T3B)	Difference	Importance (T2B)	Satisfaction (T3B)	Difference
Recreation and Culture						
Recreation Programs	76	72	-4	88	77	-11
Public Parks, Open Space, Beautification	76	75	-1	87	81	-6
Town Facilities	80	72	-8	85	71	-14
Senior's Programs	72	68	-4	79	67	-12
Nature and Pathway Trails	56	64	8	76	75	-1
Library Services	67	66	-1	74	79	5
Building and maintenance of cycling paths	n/a	n/a	n/a	58	54	-4
Support for Local Arts /Culture Events /Initiatives	34	61	27	50	68	18
Public Works Services						
Snow Plowing, Sanding, Salting	82	73	-9	94	69	-25
The building and maintenance of Town roads	79	43	-36	91	61	-30
ActiVan Transit for seniors / persons with disabilities	73	46	-27	86	67	-19
Street Lighting	68	79	11	82	77	-5
Sidewalks	69	68	-1	82	76	-6
Downtown Parking Lots	49	50	1	68	66	-2
Building Permit Services	47	49	2	59	55	-4
Cemeteries	52	73	21	58	72	14
Licensing	48	66	18	57	70	13

-ve Difference greater than 10. Identified Opportunity. Identified Risk. Both Opportunity & Risk.

Note: Answers are based on those who gave an opinion.

3.4 Future Demand/Forecast

The Town of Halton Hills' primary role is to provide services to its residents and customers. Its road and structure assets are therefore crucial to meeting its transportation services' goals.

3.4.1 Factors Influencing Future Demands for Transportation Services

Future demand for transportation services is linked to customers' demand and preferences. Some other factors that may impact or influence future demand for transportation services include:

- Population growth or change
- Changes in demographics
- Environmental factors
- Vehicle ownership
- Economic factors

Some of these factors are outlined in Table 3.3:

Table 3.3 - Factors Influencing Future Demands for Transportation Services

Factor	Current Position	Projection	Impact on Services
Population	According the 2011 Census, the Town of Halton Hills has a population of 59,008, representing a percentage change of 6.7% from 2006. This compares to the national average growth of 5.9%.	Based on Halton Region's *Sustainable Halton Plan*, population growth is expected for the Town of Halton Hills. Anticipated growth trends, suggest an increase of approximately 32,000 people Neighbouring municipalities are also growing rapidly.	Increased roadway congestion, roadway safety concerns and impact on the quality of life
Demographics	In 2011, the percentage of the population aged 65 and over was 11.9%, The percentage of the working age population (15 to 64) was 67.7% and the percentage of children aged 0 to 14 was 20.4%.	The population continues to age and this is consistent with provincial trends towards an ageing populations and longer life expectancy.	Increase in demand for accessibility and mobility impaired. Increase in demand for safe multiple-purpose use roadway.
Environmental	The Town of Halton Hills is made up of Protected Countryside Area, Niagara Escarpment Plan Area, Urban and Hamlet Areas.		Impacts cultural, heritage and natural environmental resources
Economic Factors	Like most of the Greater Toronto Area (GTA), the Halton Hills' economy has been negatively impacted by continued global economic challenges. These factors have led to slow economic growth across the GTA which is likely to continue over the short to mid-term.	The local economy is expected to grow over the long-term as the global economy stabilizes and its population continues to expand increasing demand for local goods and services. As a result, the Halton Hills economy is projected to add thousands of new jobs with total employment increasing to about 43,000 by 2031.	Impacts movement of people, goods and services
Travel Patterns[5]	The existing travel characteristics and	In 2031, the Halton Region EMME model reflects an	Impacts quality of life (road congestion and possible

[5] Extracted from the TOHH 2011 Transportation Master Plan Study

Factor	Current Position	Projection	Impact on Services
	patterns for the Town of Halton Hills, based on the 2006 Transportation Tomorrow Survey (TTS), indicates that: mode of travel is: - 84% uses automobile. - 7% use school bus walking / cycling trips; and - 2% use transit. Majority of the transit trips reflect inter-municipal transit trips using GO rail and bus services.	increase in transit utilization as a result of transit initiatives identified in MetroLinx's "Big Move. A summary of mode of travel projections for the Town of Halton Hills is as follows: - 82% will utilize the automobile; - 4% will utilize transit - 7% walk and cycle; and - 7% will utilize the school bus.	effects of gas emissions on the eco-system)

3.4.2 Upgrades or New Assets

New works are those that create a new road/structure which did not previously exist or works which upgrade or improve them beyond current capacity. They are usually as a result of growth, social or environmental needs. The Transportation Master Plan 2011 recommended some road improvements in anticipation of the expected growth in the Halton Hills area by 2031.

Additionally, roads are acquired at no cost to the Municipality from land development. As part of the Town's strategy, road assets acquired from development are assumed (*become the responsibility of the Town)* when all related requirements have been met. The requirements include building of roadways in accordance to the Town's road design specifications.

SECTION 4
ASSET MANAGEMENT STRATEGY

Section 4 - Asset Management Strategy

4.1 Aim of the Asset Management Strategy

The asset management strategy outlines the Town of Halton Hills' approach, informed by leading practices, of how its assets will be effectively managed to provide sustainable and quality transportation services to the residents and other users.

The Town will, through its AM program, continue to improve its asset lifecycle methodology. This will be achieved by expanding the coverage of its asset base, implementing, evaluating and revising its processes over time. Below is an overview of the current asset management practices of the Town as it relates to the assets covered in this AM Plan.

4.2 Non-infrastructure Solutions – Transportation Road Network

The Town has adopted a number of strategic and operational solutions to support its asset management strategy. These include:

a) Consultation and coordination with the Region of Halton, Ministry of Transportation and other Municipalities on matters which will have a direct impact on the Town. For example, studies and related plans.
b) Project coordination with the Region of Halton to reduce the impact of construction activities on residents and benefit from cost savings.
c) Joint contracts with the Region and other Municipalities to conduct inspections/ assessments and procure winter control materials to achieve economies of scale.
d) Coordination of our Transportation Master Plan with Active Transportation (ActiVan for Senior Residents), Cycling and Green Plans; and their programs.
e) Boundary Agreements with adjacent Municipalities which defined the responsibilities of both parties and facilitate shared costs associated with managing roadway assets.

4.3 Other Strategies

4.3.1 Roads

Approximately 324 km or 73% of the Town's roadway is local roads. Consequently the Pavement Management Program[6] was established 'to address the condition of local

[6] Council Report INF-2011-0053 'Pavement Management Program dated October 20, 2011.

residential streets in the Town'. It was introduced in 2003 after a Pavement Management Study which recommended a "needs driven" system for road repairs.

The 2012-2017 Program is currently focused on *"upgrading the roads in the rural and urban areas to ensure that they are safe and in top condition for residents"*. Employment of the "worst-first basis" ensures that road assets in the worst condition are addressed first.

A look at the condition of roadways (see 2.3.1) and feedback from the 2011 Citizen Satisfaction Survey (see 4.4.2), one can conclude that the program has been quite successful. However, the survey indicated that residents' expectation for road related services is increasing compared to their level of satisfaction. Another point worthy of consideration is that as indicated in the Council Report INF-2011-0053 Pavement Management Program dated October 20, 2011 "*with only a worst roads first (approach), it will be difficult to get ahead of the repairs.*" This approach, in the long-term, does not support the goal of adopting optimal strategies that support the preservation or extension of assets to the end of their useful lives.

The program will therefore continue in its present form until the end of 2015 and alternative strategies will be identified to address the changing transportation infrastructure needs of the Town. One possibility is to complement the local pavement management program with a preventative maintenance program to address roads (all functional categories) currently in good to excellent condition but reaching the middle of their useful lives. The rationale is that preventative works will be more cost effective in the long run.

The Town also coordinates all of programs with Halton Region as one way to maximize its returns on roadwork investments. For example, in 2013, as part of its *Building a Better Halton* Program, the Region carried out water and wastewater main replacements in Halton Hills.

4.3.1.1 Condition Assessment/ Inspections

The Town carries out detailed survey assessments for all its road assets every five years. In addition, it performs routine inspection consistent with *Regulation 239/02 - Minimum Maintenance Standards for Highways of the Ontario Municipal Act*.

Pavement inspection data is used to generate a numeric condition rating (Pavement Quality Index - PQI) of the overall performance of the pavement. A minimum acceptable PQI score has been developed for each type of functional road classification. When the PQI for a given pavement section falls below the minimum, it is considered to be in need of rehabilitation.

Pavement characteristics (*soil strength and pavement thickness*) and traffic loading data are used to determine the typical performance curve the roadway will exhibit for each section of the network. Field data surveys are used to determine at what point the section is on the performance curve and therefore the section's remaining life performance.

When this data shows the PQI below the minimum acceptable level, the section is classified as a need. When the road section is considered a need, it then goes through a series of decision trees to determine potential rehabilitation strategies. These strategies are then used to perform an economic analysis to determine the optimal strategy. Budget information is applied and a rehabilitation program is developed.

4.3.1.2 Routine Maintenance

The Town's routine maintenance program covers all minor arterial, collector and local roads primarily aimed at complying with *Regulation 239/02 Maintenance Standards*. The maintenance strategies used are as follows:

Maintenance Strategies	Comment
Crack sealing	Used on both urban and rural roads. Normally for 5-7 year old roads
Surface treatment and grader asphalt	Used on rural roads. Most economical. Extends life of road for an additional 5-6 years. Grader asphalt is used in preparation for surface treatment
Micro paving	Used on rural roads. More expensive than surface treatment but does a more refined job. This strategy was tested on Side Road 27 in 2013.

4.3.1.3 Renewal/Rehabilitation

As described in 4.3.1.1 the Town uses the Pavement Quality Index (PQI) as the trigger to schedule and recommend pavement preservation, major rehabilitation and reconstruction strategies.

As part of the decision tree analysis, several treatment options are reviewed and the most appropriate one selected. Criteria for selection include cost of construction, and expected/extended useful life. A more detailed study is done closer to each road rehabilitation/reconstruction project.

The following table shows the rehabilitation/reconstruction strategies used and their expected benefit levels.

	Rehabilitation and Reconstruction Treatment/Strategies	Benefit Level and Description		Estimated/ Extended Useful Life
a)	Base Repair + Chip Seal	1	Cosmetic	5
b)	Mill Curb+40mm Overlay	2	Overlay Level 1	10-15
c)	Asphalt Removal + 90mm overlay	3	Overlay Level 1	25
d)	Wedge + 40mm overlay	3	Overlay Level 2	10-12
e)	40mm A/C overlay			15-20
f)	Pulverize (R)+60mm Overlay	4	Minor Reconstruction	20
g)	Pulverize (R)+80 mm Overlay			20
h)	A/C Removal + B. repair + O/L – Art			15-20
i)	A/C Removal + B. repair + O/L – Coll			15-20
j)	Reconstruction - Local - no exist curb	5	Reconstruction	40
k)	Reconstruction - Collector - no exist curb			40
l)	Reconstruction - Arterial - no exist curb			40

The RoadMatrix Pavement Management System calculates the expected or extended useful lives of the road assets based on traffic load, soil and road design.

4.3.1.4 Disposal

The Town participates in the Regional Road Rationalization where some road assets may be reallocated by the Region. The next rationalization exercise is currently taking place.

Council-approved 2011 Transportation Master Plan recommended that some road assets *(for example, Winston Churchill Boulevard between Guelph Street (Highway 7) and 32 Side Road),* be reverted to the Regional Municipality of Halton. The rationale for its recommendation is that, consistent with the existing functional road classification, if a local is upgraded to a major arterial road then it should be reverted to the Upper-Tier Municipality.

4.3.1.5 Upgrades/New

The Town's Transportation Master Plan outlines the capital improvements necessary to meet the expected increase in demand on transportation services as a result of growth

until 2031. This will impact the renewal of some road infrastructure before their estimated useful life.

Activities which may occur as a result of Provincial and Regional Transportation Plans are taken into consideration and, where possible, coordinated with the Town's approved capital works, to reduce the effects of any early renewal, rehabilitation or replacement activities.

The Town is also considering extension of Halton Hills Drive *(Maple Avenue to Princess Anne Drive)* and is undertaking a Municipal Class Environmental Assessment Study. Future works are expected to occur during the period of this AM Plan.

4.3.2 Structures – Bridges and Major Culverts

The Town has adopted the following asset management strategies for its structures:

4.3.2.1 Inspections

Consistent with Ontario Public Transportation & Highway Improvement Act (1990) Regulation 104-97, the Town conducts detailed bridge and culvert condition inspections bi-annually. Structure components are evaluated and tested providing severity, extent of deterioration and overall condition.

Guided by key factors such as the bridge component age, assumed life span and inspection results, appropriate strategies and timelines within which they should be done are formulated. As part of the bi-annual review, staff compares each structure rating to the previous inspection to determine if there has been any accelerated deterioration.

Effective 2014, the Town will carry out routine inspections of its structures consistent with the Ontario Structure Inspection Manual guidelines.

4.3.2.2 Routine Maintenance

The Town will be implementing, as budget allows, a preventative maintenance strategy effective 2014 which includes bridge washing to minimize corrosion and remove debris from key structural elements; minor maintenance repairs; and recoating of barrier walls to prevent decay or rapid deterioration.

4.3.2.3 Renewal/Rehabilitation Activities

Strategies for bridge/major culvert rehabilitation and replacement are based on bridge component age, assumed life span and condition survey/ inspection results. They include:

Strategies	Extended Useful Life
Asphalt deck resurfacing	15-20 years
Waterproofing and asphalt desk resurfacing	15-20 years
Patch concrete deck, waterproof and asphalt deck surfacing	15-20 years
Joint replacement	15 years
Expansion seal	5-10 years

Guided by the bi-annual inspection, the Town has implemented a structure priority ranking system for its rehabilitation and replacement program. The Town then carries out engineering design and drawings and obtain the relevant permit for the selected project so that they can move to the tender/construction phase. This approach also gives the Town an opportunity to access external funding whenever they become available.

4.3.2.4 Upgrade and Disposal Activities

The upgrade and disposal of structures are also impacted by the Regional Road Rationalization mentioned in 4.3.1.4 above.

4.4 Procurement Methods

The Town's Purchasing By-law 2012-0072 directs the procurement practices of the Town and is supported by internal policies and procedures. The goals of the Town's procurement policy are to ensure:

a. An Open, Objective and Competitive Process
b. Transparency, Fairness and Efficiency
c. Ethical Practices and Transparency

Current procurement practices include joint contracts with other Municipalities in the Region.

The Town currently applies different procurement delivery methods to individual projects so as to take advantage of possible savings and reduction in service disruptions. As its asset management practices improve, new procurement options

(such as alternative financing and procurement models) that will result in getting the best expected useful life at the most economic cost will be considered.

4.5 Risks Associated with Strategy

A significant risk to this asset management strategy is infrastructure failure. In order to mitigate such occurrence, the Town's inspection programs inform the priorities and work required.

There has been a significant reliance on external funding for the bridge maintenance program, as indicated in Section 6 – Financing Strategy. In some instances, those funding sources are no longer available. The Town will therefore have to consider alternative funding sources.

4.6 Option Analysis

The Town carries out trade-off and option analyses at the project and program levels in order to, where possible, maximise the useful life of assets and also minimize expenditures associated with the different stages and treatment of assets.

As the AM program develops, additional steps will be taken to extend the analyses across services and associated programs.

4.7 Benefits and Costs

In arriving at its decision, other policies and associated programs are taken into consideration. They include transportation demand management, active transportation, traffic calming, road safety and roundabout management.

The following benefits are considered:

- Infrastructure improvements needs are addressed;
- Reduction in travel times and congestions;
- Improvement in road safety;
- Increase in active transportation modes;[7]
- The overall quality of life for the Town's residents improved;
- Contribution to the Town's economic well-being; and
- The Municipal be and be seen as a service-oriented organization.

Some costs which are considered:

- Vehicle Ownership - fixed costs of owning a vehicle;
- Travel Time - the value of time used for travel;
- Congestion - congestion costs imposed on road users;
- Land Value - the value of land used in public road rights-of-way;
- Air Pollution - costs of vehicle air pollution emissions;
- Barrier Effect - delays that roads and traffic cause to non-motorized travel;
- Land Use - Increased costs of sprawled, automobile-oriented land use.

[7] TOHH Transportation Master Plan 2011

SECTION FIVE
FINANCING STRATEGY

Section 5 - Financing Strategy

This Section outlines the financial requirements for managing assets covered in this AM Plan over the next ten years. The estimates are based on best available data and financial projections will be improved as additional information become available on desired levels of service.

It is assumed that the AM Plan will be integrated with the Town's Long-Term Financial Planning and 10 year Capital Budgeting processes. It reflects expenditures that will be required to meet current levels of service.

5.1 Prior Years' Budget and Expenditure

5.1.1 Operating Budget History

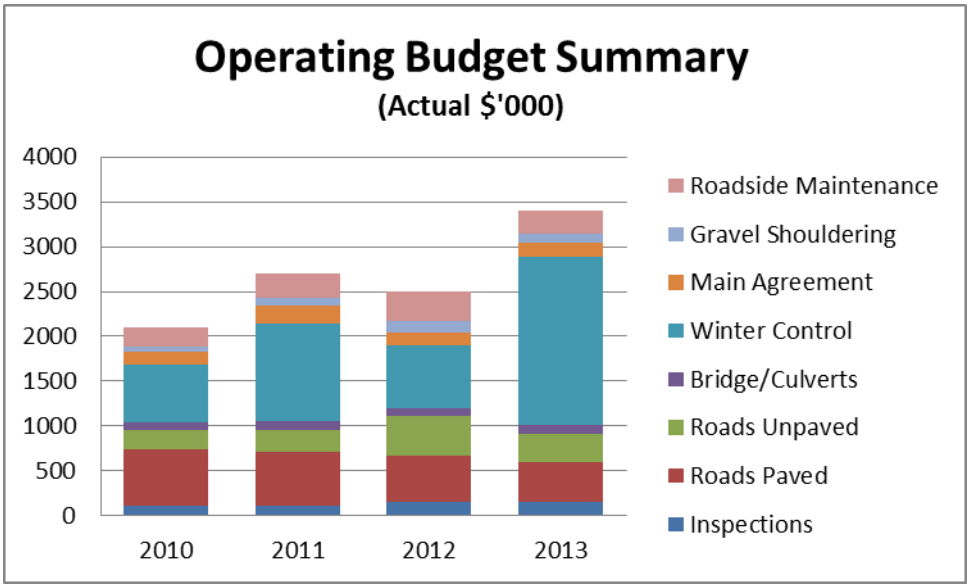
Table 5.1 provides a summary of Actual vs. Approved operating expenditures for roads and structures during 2010 – 2013. It shows a cumulative approved budget of $20.1 million (*average $5 million*) and cumulative actual expenditure of $18.7 million over the last four years.

Table 5.1 - Operating Budget Summary
2010-2013 (Actual vs. Approved Budget) $'000

Financial Year	2010		2011		2012		2013	
Operating Service Type	Actual	Approved Budget	Actual	Approved Budget	Actual	Approved Budget	Actual	Approved Budget
Inspections	106	82	107	86	151	87	159	87
Roads Paved	632	558	603	592	525	597	446	746
Roads Unpaved	219	221	250	431	442	441	308	285
Bridge/ Culverts	90	73	101	75	77	76	106	115
Winter Control	633	1,093	1,087	1,155	704	1,164	1,871	1,773
Main Agreement	151	145	199	148	150	$152	155	158
Gravel Shouldering	49	131	75	135	129	132	93	79
Roadside Maintenance	220	302	277	297	316	324	259	328
Total	**4,110**	**4,615**	**4,710**	**4,930**	**4,506**	**4,985**	**5,410**	**5,584**

The Operating Budget for roads and structures has seen marginal increases over the last four years with an average increase of 6% year over year. Notably, financial year 2013 had a 12% increase compared to prior year. This is as a result of increased allocation for winter control events. The changes can be seen in Figure 5.1 which shows actual expenditures according to operating activities.

Figure 5.1 - 2010-2013 Operating Budget (Actual) According to Activity Type



5.1.2 Capital Budget History

Table 5.2 shows Actual vs. Approved Capital Budgets for roads and bridges/culverts over the period 2008 – 2012. Adjustments were made to exclude amounts relating to capital projects carried out on behalf of other Municipalities and the Region. Financial year 2009 reflects an extraordinary approved budget amount of $7.6 million inclusive of a $2 million Building Canada Fund - Federal Grant. The average annual available funding over the period is approximately $5.3 million.

Table 5.2 - Capital Budget Actual vs. Approved 2008-2012 (in $'000s)

	Actual Budget				Approved Budget		
Year	**Roads**	**Structures**	**Total**		**Roads**	**Structures**	**Total**
2008	2,363.7	40.5	2,404.2		3,266.0	131.0	3,397.0
2009	4,605.1	500.9	5,106.0		7,263.0	359.2	7,622.2
2010	4,970.6	878.1	5,668.7		4,474.3	1,814	6,288.3
2011	2,917.7	779.1	3,696.8		3,016.0	1,583	4,599.0
2012	2,130.8	1,616.2	3,747.0		3,308.0	1,512	4,820.0
Total			**20,622.7**				**26,726.5**

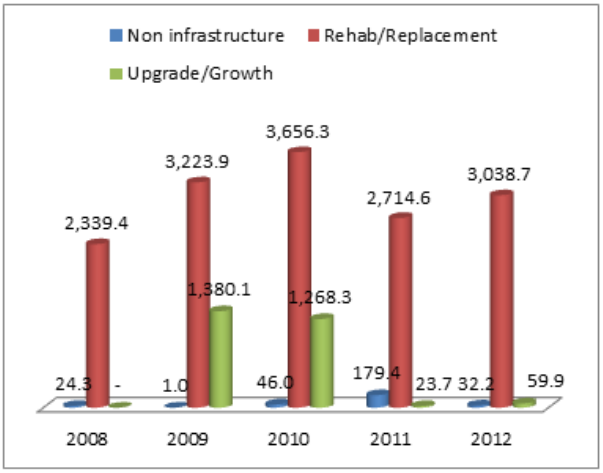
The difference between budgeted and actual expenditure is primarily as a result of capital projects' duration which normally goes beyond one financial year. The graphs (Figure 5.2) also give a breakdown according to the non-infrastructure, rehab/replacement and growth/upgrade activities.

Figure 5.2 - Actuals vs. Approved Capital Budgets *(According to Strategies)*

Roads - 2008-2012 Actual Capital Budget

($'000)

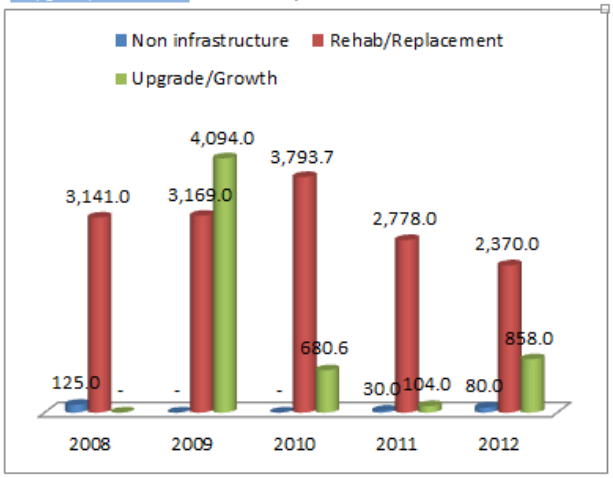
Year	2008	2009	2010	2011	2012
Non infrastructure	24.3	1.0	46.0	179.4	32.2
Rehab/Replacement	2,339.4	3,223.9	3,656.3	2,714.6	3,038.7
Upgrade/Growth	-	1,380.1	1,268.3	23.7	59.9



Roads - 2008-2012 Approved Capital Budget

($'000)

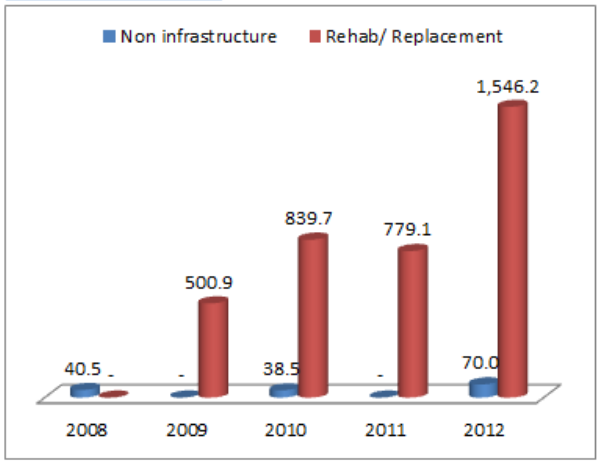
	2008	2009	2010	2011	2012
Non infrastructure	125.0	-	-	30.0	80.0
Rehab/Replacement	3,141.0	3,169.0	3,793.7	2,778.0	2,370.0
Upgrade/Growth	-	4,094.0	680.6	104.0	858.0



Bridges - 2008-2012 Actual Capital Budget

($'000)

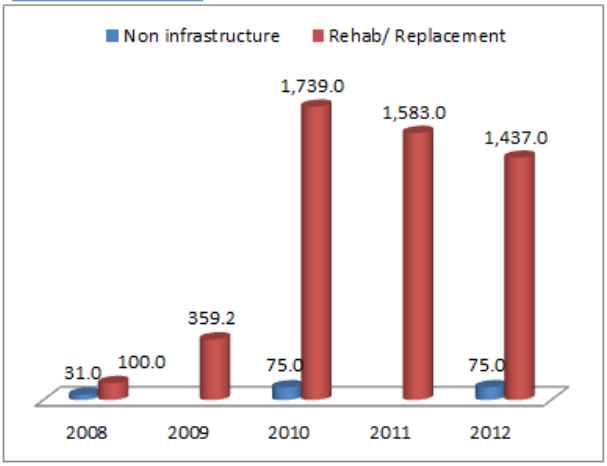
Year	2008	2009	2010	2011	2012
Non infrastructure	40.5	-	38.5	-	70.0
Rehab/ Replacement	-	500.9	839.7	779.1	1,546.2



Bridges - 2008-2012 Approved Capital Budget

($'000)

Year	2008	2009	2010	2011	2012
Non infrastructure	31.0	-	75.0	-	75.0
Rehab/ Replacement	100.0	359.2	1,739.0	1,583.0	1,437.0



5.2 Budget Forecasts

The Capital Budget is based on the 2014-2023 budget forecast approved by Council in November 2013. The Operating Budget reflects Council-approved Operating Budget for 2014 and will be used as the basis for the remaining 9 years.

These projections are subject to further revision after the AM Plan and its funding requirements have been reviewed by Senior Management and Council.

5.2.1 Operating Budget

The Operating Budget, as shown in Table 5.3, is approximately $5.6 million reflecting the financial year 2014 forecast.

Based on the Town's projected growth, it is assumed that there will be very little change in the Operating Budget for the next 9 years as there is no anticipated change in service level or associated programs. As the AM Plan is improved and additional information becomes available the forecast will be adjusted.

Table 5.3 – 2014 Operating Budget Forecast

Operating Budget Summary	Approved Budget
	$'000
Inspections	101
Roads Paved	786
Roads Unpaved	260
Bridge/Culverts	114
Winter Control	1,770
Main Agreement	156
Gravel Shouldering	81
Roadside Maintenance	289
Total	**5,571**

5.2.2 Capital Budget

Following the selection and prioritization process for capital projects as explained in Section 4 - Asset Management Strategy, departments prepare their respective budgets using current dollar values.

At this stage, the proposed budget is assessed against any changes in program needs, trends and priorities. Capital projects are then ranked against eleven criteria including health/welfare/ safety, mandated or legislated and environmental improvement.

Consideration is also given to how much fund is allocated to the applicable reserves used to fund future capital projects. For each project funding sources are identified. There is also coordination between the Capital and Operating Budget processes to ensure that funds are available to address the associated program needs.

After several internal reiterations, a 10 year Capital Budget is submitted to Council for their review and approval. Council approves the Capital Budget for the upcoming financial year and, in principle, the following year. Future Capital Budgets will be developed based on recommendations and forecasts of the AM Plan.

For roads and structures, the Town has forecasted a Capital Budget of $59.7 million over the next 10 financial years. The breakdown shown in Table 5.4 reflects non-infrastructure solutions[8], rehabilitation and upgrade/growth-related activities.

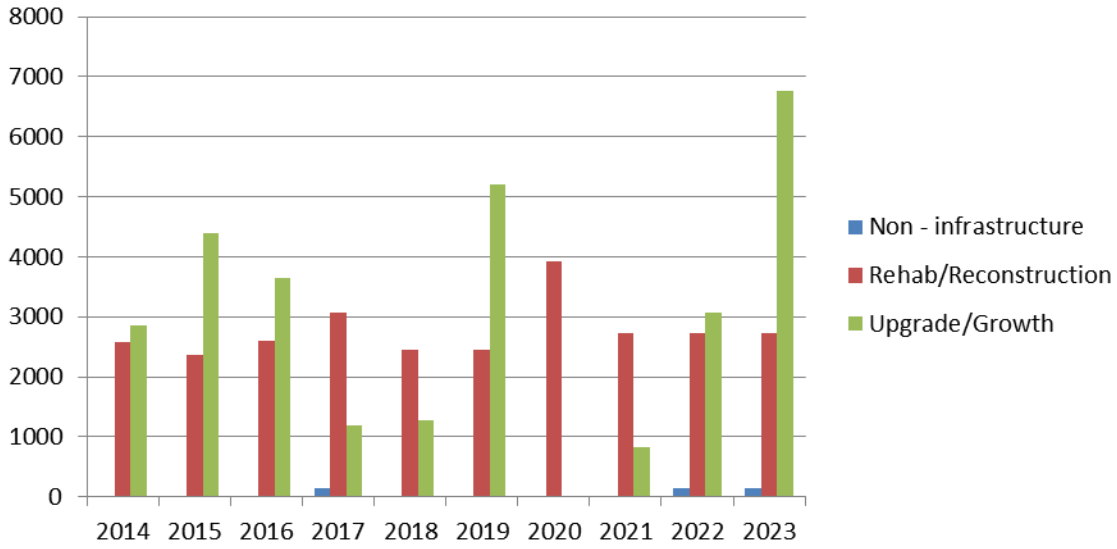
Table 5.4 - 2014-2023 Projected Capital Budget Expenditures ($'000)

	2014	2015	2016	2017	2018	2019-23	Total
Roads							
Non - Infrastructure				150		150	300
Rehabilitation/ Reconstruction	2,569	2,367	2,599	3,063	2,453	14,571	27,622
Upgrade/growth	2,849	4,385	3,650	1,200	1,268	16,019	29,371
Total	**5,418**	**6,752**	**6,249**	**4,413**	**3,721**	**30,740**	**57,293**
Bridges							
Non- Infrastructure	75		75		75	150	375
Rehabilitation/ Replacement	370	300	1,440				2,110
Total	**445**	**300**	**1,590**	**-**	**75**	**150**	**2,485**
Grand Total	**5,863**	**7,052**	**7,764**	**4,413**	**3,796**	**30,890**	**59,778**

Figure 5.3 shows that (*compared to the period 2008-2012*) more investments will be made in upgrading the roadway infrastructure consistent with recommendations from the Town's Transportation Master Plan. This is to support the anticipated changes in demand for the transportation network as alluded to in earlier sections of this Plan.

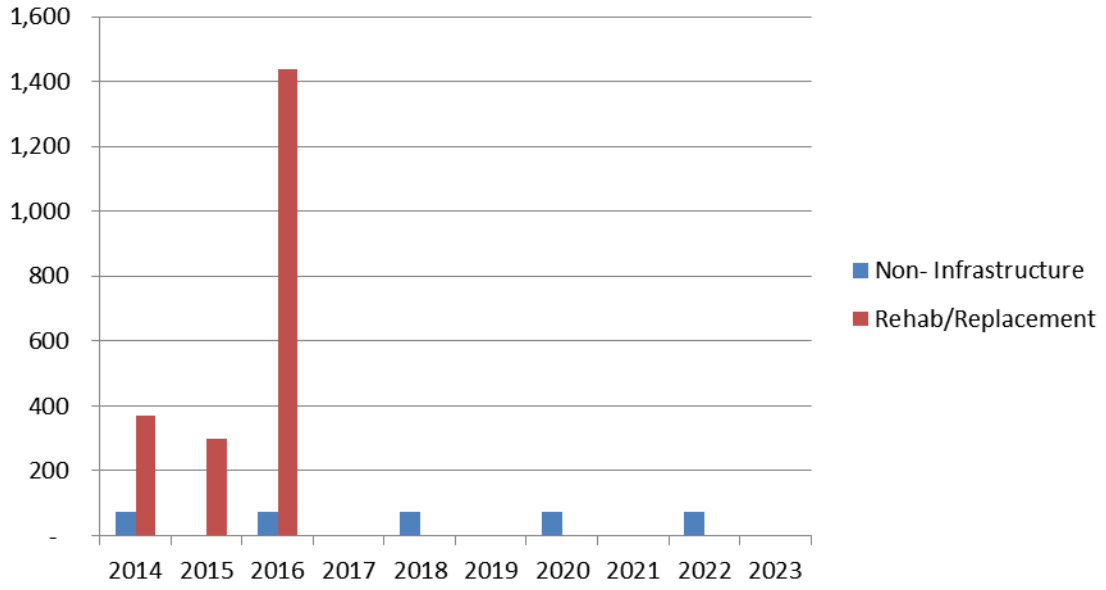
[8] Non infrastructure solutions are actions or policies which can lower costs or extend asset life (e.g. studies and plans, demand management, insurance, coordination of projects with other agencies to save cost and minimize disruptions, etc.).

Figure 5.3 2014-2023 Projected Capital Budget - Roads ($'000)



There is a provision of $2.56 million in the Capital Budget for structures within the next 10 years. With three structures slated for rehabilitation/replacement between 2014 and 2016, the remaining activities include surveys and bi-annual inspections. Figure 5.5 provides an overview of the projected spending.

Figure 5.4 - 2014-2023 Projected Capital Budget - Structures ($'000)



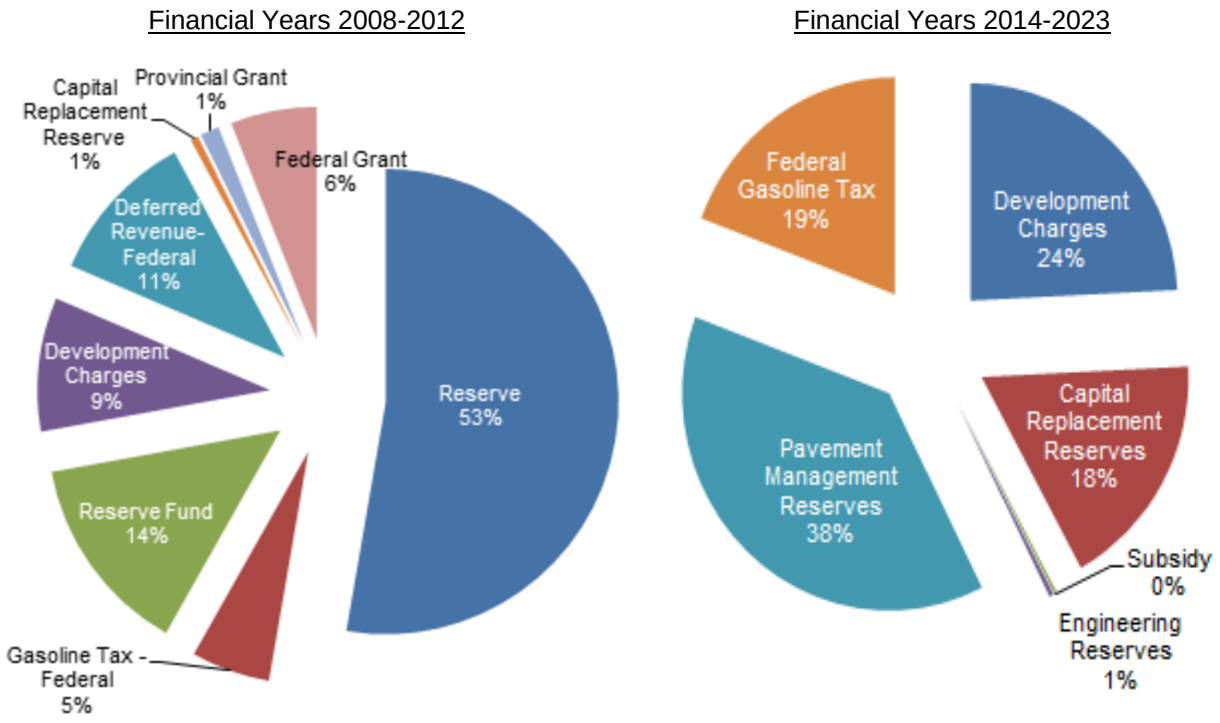
5.3 Funding Sources

The main sources for the Town's roads and structure-related 2008-2012 Capital Budgets are:

- Reserves and Reserve Funds *(Including Pavement Management Reserves)*
- Grants and Subsidy - *(Including Federal and Provincial)*
- Federal Gasoline Tax
- Development Charges *(limited to growth-related activities)*

Figure 5.6 illustrates the percentage funding levels for roads and structures between financial years 2008-2012 and 2014-2023. During 2008-2012 Reserves and Reserve Funds represent 68% of funding sources while in 2014 -2023 Reserves of 57% is forecasted.

Figure 5.6 - 2014-2023 Capital Budget Funding Sources



5.4 Infrastructure Deficit

Infrastructure deficit is defined as the shortfall between capital funding required and the funding available to maintain the Town's asset in a reasonable state of repair.

5.4.1 Baseline Funding[9]

The baseline value of required funding is the current replacement value of assets rated as fair and poor in 2012. Using 2012 replacement cost values this is approximately $101.1million *(i.e.12% of total replacement value of assets covered in the Plan).*

An assumption is that assets ranked as fair may shift into the poor category during the next 10 years. The rate at which these assets deteriorate will depend on their useful lives, operational and maintenance strategies used and the environmental conditions to which they are subjected.

The level of deterioration can however be mitigated if the Town adopts a sound maintenance strategy and provides appropriate funding allocations. By applying effective maintenance strategies at the right time the deterioration process will be reduced and consequently the infrastructure deficit.

Using decision tree analyses and forecasting models, it is estimated as shown in Table 5.5 that $213.3 million over 10 years would be required to implement a comprehensive program. The estimated required funding and infrastructure deficit for each asset type are outlined in 5.4.2 and 5.4.3.

Table 5.5 - Estimated Infrastructure Deficit
($'000)

Financial Year	2014	2015	2016	2017	2018	2019-23	Total
Budget Available	5,863	7,052	7,764	4,413	3,796	30,890	59,778
Required Funding	60,455	12,400	12,635	11,676	15,132	101,001	213,299
Deficit	54,592	5,348	4,871	7,263	11,336	70,111	153,521

5.4.2 Structures

Appendix 2 shows a comprehensive program which incorporates preventative maintenance and rehabilitation strategies for structures. It reflects recommended strategies emanating from the 2012 OSIM inspection and requires a budget of $18.76 million for the next 10 years.

[9] Represents cost estimate before the adoption of enhanced maintenance regime, adjusted level of service, use of innovative technologies and the application of alternative funding mechanisms to reduce the infrastructure deficit.

With a total provision of $2.67 million for capital projects and routine maintenance for 2014-2023, there is an estimated $16.09 million funding deficit for the Town's structures.

If the Town assumes a "do nothing' approach, it can be forecasted that structures in a 'good or fair' state with identified maintenance needs (i.e. 57 structures) will shift to a 'fair or poor state' respectively in the next 10 years. This analysis is based on trends from the last three inspections demonstrating a steady deterioration of structure condition values.

Conversely, it could be assumed that those 57 structures with identified maintenance needs would benefit from a preventative maintenance strategy. According to 2012 data, these structures had 294 maintenance needs to be addressed in the next 1- 5 years.

If a sound preventative maintenance strategy was initiated, these structures' condition and performance would improve with a maintenance program of approximately $1.9 million over 5 years.

The 2014 Ontario Structure Inspection Manual (OSIM) Inspection will allow for further analysis and updating of the maintenance needs forecast. Refer to Appendix 3 *Option Analysis for Bridges and Major Culverts* for summary information on the options to be considered.

5.4.3 Roads

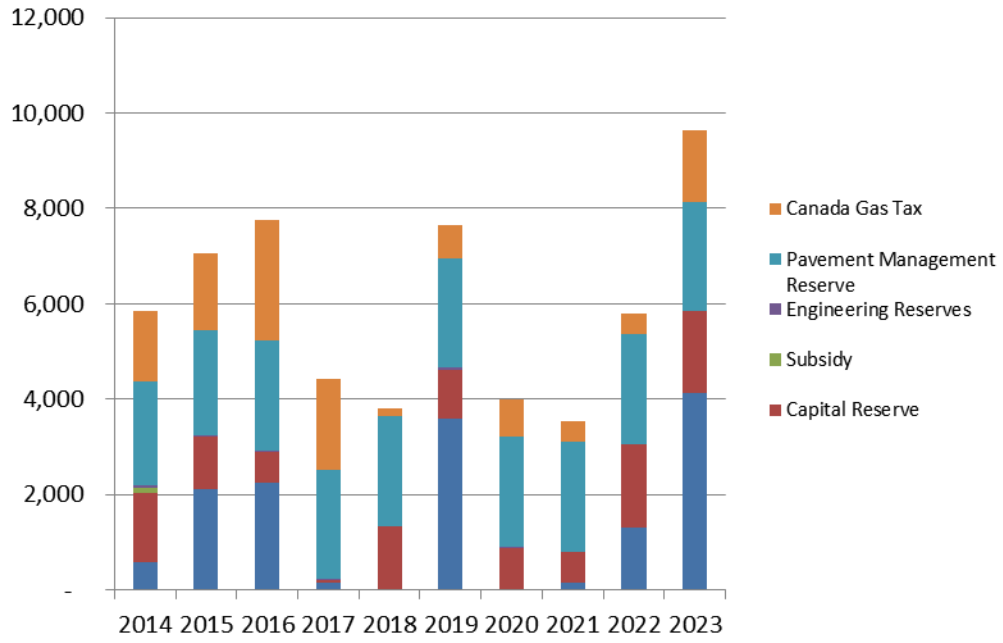
The projected forecast for road-related Capital Budget is $57.2 million. Of that $27.6 million has been allocated to the Town's pavement management *(rehabilitation)* program. Based on analysis of 2012 condition assessment data, it is estimated that $165 million will be required over 10 years to carry out a comprehensive pavement management rehabilitation program for all road classifications. The estimated infrastructure deficit for roads is therefore $134.4 million.

As indicated in Section 5 Asset Management Strategy, the Town is currently carrying out further research to identify and recommend cost effective strategies and programs that will ensure the Town's current level of service is maintained. Appendix 4 *Option Analysis for Roads* provides summary information on the strategies and programs being explored.

5.5 Funding Strategies

Figure 5.7 outlines the planned funding sources for the 2014-2023 Capital Budget.

Figure 5.7 - Funding Sources for Capital Budget 2014-2023 ($'000)



	Development Charges	Capital Reserve	Subsidy	Engineering Reserves	Pavement Management Reserve	Canada Gas Tax	Total
2014	585	1,440	126	50	2,180	1,482	5,863
2015	2,123	1,082	-	40	2,200	1,608	7,052
2016	2,256	643		30	2,300	2,535	7,764
2017	150	50	-	30	2,300	1,883	4,413
2018	-	1,343	-	-	2,300	153	3,796
2019	3,586	1,038	-	30	2,300	703	7,657
2020	18	877	-	30	2,300	803	4,028
2021	159	655	-	-	2,300	437	3,550
2022	1,468	1,818	-	-	2,300	430	6,015
2023	4,132	1,705	-	-	2,300	1,503	9,639
Total	14,476	10,650	126	210	22,780	11,536	59,777

Consistent with its Long-Range Financial Strategy and Plan, the Town has committed to meeting its community's needs by putting measures in place to build its reserves. It will gradually phase out contributions from Capital Reserves for road related assets and has consequently established the following dedicated Reserves:

- Pavement Management Reserve
  As per Council Report CS-2011-0029 Long-Range Financial Plan dated May 2, 2011, this Reserve is used for the replacement and refurbishment of roads and will be funded through annual contributions from the Operating Budget.

- Special Infrastructure Levy Reserve
  It is used for new projects and will also supplement infrastructure replacement/ refurbishment needs.

- Canada Gas Tax (Federal) Reserve
  Annual contributions from Federal Government are on a per capita basis. This is used for infrastructure related capital projects consistent with terms of the agreement.

Growth related activities will be primarily funded from development charges as shown in Figure 5.6. It represents 24% of funding sources over the period 2014-2023.

As part of its financing strategy, the Town will also consider ways to engage other levels of government to assist in managing its infrastructure deficit. The current funding strategy may be adjusted following Council's review of the AM Plan and any successful award of external funding.

SECTION SIX
IMPROVEMENT AND MONITORING

Section 6 - Improvement and Monitoring

6.1 Rationale

As the Town seeks to build on its asset management program, it is necessary to implement appropriate mechanisms to monitor, showcase and improve the impact it makes in the Town's investment planning and service delivery. It will also allow the Town to further strengthen its capacity to apply evidenced-based asset management methodologies to its decision-making process.

6.2 Improvement Plan – Next Steps

This Asset Management Improvement Plan (Table 6.1) has been informed by gaps in data and related processes that became evident during the development of the asset management plan. The proposed activities will be reviewed by Senior Management and scheduled based on priority and resource availability.

Table 6.1 - Asset Management Improvement Plan

Activity No.	Activity	Responsible Department	Resources	Timelines
1	Expand the asset groups covered in the Plan to include:			
	- All transportation infrastructure assets so as to meet the provincial minimum requirements; (sidewalks, storm water and sewer systems, traffic signalization and street signs).	Infrastructure Services	Internal & External	TBD
	- Other Tangible Capital Assets.	Recreation & Parks, Library, Fire	Internal & External	TBD
2	Collate and upload inventory data into asset management application.	TBD	Internal & External	TBD *(Dependent on timeline for inclusion of other assets into the Plan)*
3	Develop data collection manual to ensure consistency and ongoing improvements in data collection and modelling processes.	TBD	Internal	TBD

4	Adoption of the Asset Verification & Condition Assessment Policy	Corporate Services	Internal	2014
5	Data Verification and Inventory Management	TBD	Internal	Ongoing
6	Finalize desired Levels of Service, for each Department, associated indicators and performance targets to be adopted by Council	TBD	Internal	TBD
7	Revise the Town's existing Performance Monitoring and Reporting Framework	TBD	Internal & External	TBD
8	Fine-tune the business planning and budgeting processes to incorporate budget requests, approvals and impacted assets according to the Asset Management Plan	Corporate Services	Internal	TBD *(Dependent on inclusion of other assets into the Plan)*
9	Update and revise the Asset Management Plan to reflect changes in asset portfolio and business practices		Internal	Annual *(As part of the Strategic Plan, Business Plan and Budget Processes)*
10	Develop a comprehensive approach to capital investment prioritization within and across Departments	Corporate Services	Internal	TBD
11	Develop Asset Management Plans for each Department and consolidate into a Corporate-wide Asset Management Plan	All Departments	Internal	TBD *(Dependent on inclusion of other assets into the Plan and will be an ongoing activity)*
12	Assessment and Integration of Information Systems	TBD	Internal/ External	TBD
13	Develop and adopt risk assessment tool	TBD	Internal	TBD

6.3 Monitoring and Review of Plan

6.3.1 Future Updates

Following the adoption of this AM Plan the Town will carry out future updates to ensure its relevance and usefulness to its capital investment and strategic decisions.

In support of this move, the following improvement and monitoring activities are considered priority areas to be carried out:

- Senior Management/Council's review and adoption of the AM Plan;
- Review and formal adoption of the applicable levels of service;
- Further development and update of a corporate-wide AM Plan. Specific sections of the plan will be updated as required based on changes in asset data, information, and decision and will be communicated to Council as required;
- The AM Plan will inform the long-range financial planning and budget processes. Necessary operational changes will be made to ensure its integration in these processes; and
- Periodic independent review of asset management information to ensure consistency and integrity of data collected and used in the Town's decision-making process.

6.3.2 Performance Measures

The effectiveness of the Town's asset management program will be measured in the following ways:

- The extent to which the required cash flow identified in the asset management plan is incorporated into the Town's long-term financial planning, strategic planning and budgeting processes.
- The extent to which the business operational plans, budgets and associated programs take into account the overall infrastructure work trends provided in the AM Plan.

Other measures which could be monitored to ensure the effectiveness of the Town's AM program include:

a. compliance with legislative/regulatory requirements
b. capital project delivery outputs to schedule and budget
c. quality of service delivery – % compliance with service targets
d. risk management quality and effectiveness

APPENDICES

Appendix 1 – Asset Verification and Condition Assessment Policy

TOWN OF HALTON HILLS

ASSET VERIFICATION AND CONDITION ASSESSMENT POLICY

1.0 Terms and Definitions

TERMS AND DEFINITIONS	
Term / Acronym	**Definition**
Asset Verification	The process of confirming/substantiating the correctness assets' values, title, condition and existence in the organization.
Condition Assessment	A process which measures both actual and required condition of assets; and identifies the actions needed to maintain the assets at the required standard. It may include reviews, surveys, inspections or audits which evaluate the physical state of an asset in order to plan short and long term asset management programs to address the specific needs/condition of the asset.
OSIM	Ontario Structure Inspection Manual
Asset Management Application	Computer application used to maintain all asset inventories, condition and related long-range capital forecasting data.
Asset Condition Report	This document provides information on the state of the Town's physical assets. It will be used as part of the annual budget and long-range financial planning processes to guide asset investment decisions.
PS 3150	Public Sector Accounting Board Standard 3150 – Tangible Capital Assets

2.0 Purpose

The Town of Halton Hills is committed to applying leading asset management practices which support the delivery of effective, efficient and environmentally sustainable services to its customers. Therefore to improve asset management decision-making and achieve sustainable improvements in service performance, the Town must better understand the condition, performance, remaining useful life and associated risks of its asset portfolio.

This policy provides guidance to ensure that all assets are appropriately recorded and adequately safeguarded. In addition, it seeks to ensure that the condition, existence and use of the Town's assets are monitored so as to inform asset management programs and associated investment decisions.

3.0 Condition Rating

The Town has adopted a four-point rating scale for assessing the condition and performance of its assets. This provides a useful basis for evaluating across different asset types. Condition assessment of each asset type is done according to industry /regulatory standards and has been mapped to provide comparability in definitions across different asset types.

	Asset Condition Grade	Condition Grade Definition
1	Excellent	Infrastructure asset is typically new or recently rehabilitated. Well maintained and in very good condition.
2	Good	Infrastructure is in the early stage of its useful life. Acceptable condition with some elements showing slight signs of deterioration. May require minor maintenance or rehabilitation.
3	Fair	Infrastructure is in the mid-stage of its useful life. May show general signs of minor deterioration and requires attention. Some elements exhibit significant deficiencies. May require ongoing monitoring, major maintenance or rehabilitation.
4	Poor	Infrastructure approaching or is at the end stage of its useful life. Most of its elements are below acceptable standard with signs of advanced deterioration and imminent failure that affects service.

4.0 Annual Verification

4.1 Each year an asset verification exercise will take place. Corporate Services will inform each department two weeks prior to its commencement and the timelines for completion.

4.2 Corporate Services will extract data from its asset management application and advise each department of known recorded assets in their custody.

4.3 Each department will review and update their asset inventory and make appropriate adjustments in respect of any errors or omissions, additions or disposals in regard to the inventory data maintained. Assets not verified must be investigated and reported accordingly.

4.4 Where specialised computerised applications with inventory data are housed in other departments, those departments will ensure the data remains current by providing annual updates. These annual updates will ensure that:

a) Related capital projects that have been completed are updated in their systems;
b) Any additional urgent maintenance or major project needs identified from inspections are identified and their inventory is updated; and
c) Relevant data (including revised condition rating and cost information) is submitted to Corporate Services to update its asset management application.

4.5 Corporate Services will ensure data remains current in its asset management application by compiling data obtained from each department. It may review source documentation as part of the verification exercise.

4.6 Corporate Services or the Town's auditors may carry out spot checks of the existence and condition of assets. The results of those spot checks will be disclosed in management reports.

4.7 Corporate Services will prepare an Annual Asset Condition Report - summarising the information contained in the inventory. This report will be used in the annual budgeting exercise to identify and support requests for maintenance, rehabilitation, replacement etc. Therefore, in the course of any inspection all relevant information will be completely reviewed and updated in the asset management application.

5.0 Condition Assessment – Structure (Bridges and Major Culverts)

5.1 Infrastructure Services, as part of its bridge management program, will carry out formal inspections for all bridge and major culvert assets falling under the Town's jurisdiction.

5.2 Inspections will be carried out in accordance with Regulation 104/97 of the Ontario Public Transportation & Highway Improvement Act (1990).

5.3 As a minimum, each asset shall receive an OSIM inspection once every two (2) years.

6.0 Condition Assessment – Roads

6.1 Infrastructures Services, as part of its pavement management program, will carry out detailed survey assessments for all road assets falling under the Town's jurisdiction.

6.2 The Public Works division will perform routine inspections of all road assets consistent with Regulation 239/02 - Minimum Maintenance Standards for Highways of the Ontario Municipal Act.

6.3 As a minimum, each road asset shall receive a detailed survey assessment once every 5 years.

7.0 Condition Assessment - Sidewalks

7.1 Public Works division, as part of its sidewalk management program, will carry out visual inspections for all sidewalk assets falling under the Town's jurisdiction.

7.2 Visual inspections of all sidewalk assets will be performed in accordance with the Town's Quality Standards Policy for Sidewalks and Regulation 239/02 - Minimum Maintenance Standards for Highways of the Ontario Municipal Act.

7.3 As a minimum, each sidewalk asset shall receive a detailed visual inspection annually.

8.0 Condition Assessment - Buildings

8.1 Designated departments[10] will carry out inspections of the Town's building assets to ensure that they are maintained in a state of good repair and meet regulatory standards.

8.2 The detailed condition assessments will be performed in accordance with Ontario Building Code, Ontario Fire Code, Ontario Electrical Safety Code and other related standards/regulations.

8.3 As a minimum, each building asset shall receive a detailed condition assessment once every 5 years. The Town will adopt a cyclical program which ensures that at least 20% of its buildings have a detailed inspection each year.

[10] Recreation and Parks, Fire, Public Works

8.4 The following routine inspections will be carried to ensure conformance with regulatory requirements:

- Electrical safety inspections – bi-annually
- Fire alarm – annually
- Kitchen exhaust – semi-annually i.e. twice per year
- Health and safety (inside & outside) – monthly
- Backflow preventers – annually
- Cooling towers – monthly
- Generators – monthly
- Fire systems – monthly

9.0 Condition Assessment – Storm Water Facilities and Conveyance Systems

9.1 Consistent with Council-approved Storm Water Policy (2009) the Town's Storm Water Facilities should be inspected in semi-annual, annual and ten year cycles. The inspections are performed in accordance with the Ministry of Environment's requirements.

9.2 As part of its Capital Works program, Infrastructure Services will conduct video inspections for underground conveyance systems. Public Works will also carry out inspections of surface storm water conveyance systems consistent with Regulation 239/02 - Minimum Maintenance Standards for Highways of the Ontario Municipal Act.

10.0 Condition Assessment – Motor Vehicles, Equipment and Other Assets

10.1 Each department will carry out inspections of assets consistent with internal operational practices and manufacturing standards/recommendation.

10.2 Other factors which may inform the department's assessment schedule will include age, performance and critical risks associated with the assets.

11.0 Responsibilities

11.1 Each department will be responsible for:

(a) Coordinating all condition assessment of the Town's assets falling under their portfolio.
(b) Maintaining a listing of all assets to be inspected.
(c) Compiling and providing data on asset condition as required.

(d) Ensuring the integrity of the data provided from their applications systems to be inputted into the Municipal Dataworks application.
(e) Submitting an annual update to Corporate Services no later than December of each year.
(f) Providing input into the development of the Town's Asset Management Plan, Long-Term Capital Plan and Operational Plans.

11.2 Corporate Services will be responsible for:

(a) Coordinating the annual verification exercise of the Town assets and communicating with relevant parties to resolve any discrepancies in inventory data.
(b) Providing financial planning advice and assistance to Department as required.
(c) System development and or integration of computer applications to meet the Town's asset management needs.
(d) Coordinating updating of its asset management application.
(e) Developing, implementing and monitoring the Town's Asset Management and Long-Term Capital Plans.
(f) Making adjustments or updates to the Town's financial data consistent with PS 3150 requirements.

12.0 Results Statement

This policy will ensure that high quality information is maintained in the Town's asset management system to assist in investment decision-making.

13.0 Associated Documents

SUPPORTING DOCUMENTS	
Document Name	**Relationship**
Tangible Capital Asset Policy and Procedures	Policy document
Asset Management Plan	Strategy document
Budgeting Manual	Procedures
Long-Range Capital Plan	Strategy document

Appendix 2 – Proposed Structures Preventative Maintenance & Rehabilitation Program

(Based on 2012 Data)

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
1/C	Crewson's Line - 1/C	Replaced				172,800		
11/C	Culvert No. 11, Wallace St, Acton	Superstructure (Re)Construction						19,840
115/C	Sixth Line Culvert	Superstructure (Re)Construction						9,120
12/C	McDonald Blvd Culvert	Superstructure (Re)Construction						399,740
12201	Structure No. 12201, 25 Sideroad	Replaced						507,000
126/C	Sideroad 5 Culvert	Replaced		216,000				
13/C	Culvert No. 13, Wallace St, Acton	Superstructure (Re)Construction						132,060
14/C	Culvert No. 14, Division St, Acton	Superstructure (Re)Construction						149,450
142/C	Sideroad 10 CSP Culvert	Superstructure (Re)Construction						18,900
14401-75C	Mill Street Culvert	Rehabilitation						2,562
145/C	10 Sideroad Culvert - 145/C	Superstructure (Re)Construction						18,600
15/C	Culvert No. 15, McDonald Blvd, Acton	Superstructure (Re)Construction						306,000
15232/C	15232/C - 15 Sideroad	Replaced		308,250				

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
15233/C	Lot 15/16, Concession 6	Superstructure (Re)Construction						143,200
16/C	Third Line, Lot 13	Replaced			501,750			
164/C	164/C - 15 Sideroad	Superstructure (Re)Construction						38,700
17/C	Third Line, Lot 12	Superstructure (Re)Construction			300,800			
18	Bridge No. 18, Guelph Street (Hwy7), Georgetown	Replaced						342,125
19/C	Third Line, Lot 9	Replaced					232,313	
194/C	Eighth Line Culvert	Replaced				225,000		
196/C	17 Sideroad Culvert	Superstructure (Re)Construction						20,140
19910	Culvert No. 19910, Winston Churchill Blvd	Replaced						228,000
19913	Culvert No. 19913, Winston Churchill Blvd	Replaced						122,000
203/C	Nassagaweya Esquesing Townline Culvert	Superstructure (Re)Construction					40,500	
21/C	Third Line - 21/C	Replaced			273,000			
236/C	Culvert No. 236/C, Winston Churchill Blvd.	Replaced						105,875
24/C	17 Sideroad Culvert	Replaced				155,250		
25/C	Fourth Line, Lot 15	Replaced						39,600
26/C	Fourth Line, Lot 13	Superstructure (Re)Construction		211,500				
267/C	Fifth Line Culvert	Superstructure (Re)Construction						21,000

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
27/C	10 Sideroad Culvert	Replaced					118,125	
32/C	17 Side Road, Concession 6	Superstructure (Re)Construction		212,970				
33/C	Fifth Line Culvert	Replaced				247,566		
333/C	Bishops Court Culvert	Superstructure (Re)Construction						72,160
34/C	Fifth Line, Lot 14	Superstructure (Re)Construction						100,740
35/C	10 Sideroad Culvert	Superstructure (Re)Construction						29,160
36	Culvert No. 36, Brock St, Acton	Superstructure (Re)Construction						76,500
37/C	37/C Fifth Line, Lot 3	Replaced			425,250			
41/C	Sixth Line, Lot 21, Concession 6/7	Superstructure (Re)Construction						54,600
42/C	Culvert No. 42/C - 20 Side Road	Superstructure (Re)Construction						36,270
44/C	Sixth Line Culvert	Replaced						74,375
45/C	Sixth Line Culvert	Superstructure (Re)Construction			28,440			
46/C	Side Road 27, Concession 8	Superstructure (Re)Construction						16,000
48/C	Side Road 5, Concession 8	Replaced						228,750
49/C	Culvert No. 49, Ewing Street, Georgetown	Superstructure (Re)Construction			49,880			
50/C	Culvert No. 50, Mill Street, Georgetown	Superstructure (Re)Construction						108,000

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
505/C	Winston Churchill Blvd Culvert	Superstructure (Re)Construction						114,000
51/C	Eighth Line Culvert	Replaced						66,500
54/C	Side Road 27, Concession 9	Replaced						106,000
55/C	Eighth Line, Lot 27/28	Superstructure (Re)Construction					32,000	
56/C	Eighth Line, Lot 26	Superstructure (Re)Construction					80,500	
57/C	Wildwood Road, Glen Williams/Hwy 7	Superstructure (Re)Construction		158,400				
59/C	Eighth Line Culvert - 59/C	Superstructure (Re)Construction						22,400
6/C	Culvert No. 6, Main St. South, Acton	Superstructure (Re)Construction			73,100			
60/C	Eighth Line Culvert	Replaced				382,500		
61/C	Ninth Line Culvert	Superstructure (Re)Construction				23,290		
63/C	Culvert No. 63/C, Confederation Street	Superstructure (Re)Construction				62,280		
65/C	65/C - Tenth Line	Superstructure (Re)Construction				31,860		
65/C	65/C - Tenth Line	Superstructure (Re)Construction						31,860
66/C	Tenth Line, Lot 19/20 Side Road	Superstructure (Re)Construction		28,560				
68/C	Tenth Line Culvert - 68/C	Superstructure (Re)Construction						19,520
73/C	Culvert No. 73/C, Main Street South	Superstructure (Re)Construction						217,580

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
9241	Lot 5/6, Conc 6	Superstructure (Re)Construction		22,200				
9611 / 9613	Lot 5/6, Concession 2	Superstructure (Re)Construction						36,250
9616	Lot 5/6, Concession 4	Replaced						133,500
9617	Lot 5/6, Concession 4	Superstructure (Re)Construction						47,040
9619	Lot 5/6, Concession 5	Replaced					171,875	
25	Bridge No. 25, 32 Sideroad	Rehabilitation				114,380		
10	Tenth Line, Lot 23	Rehabilitation			750,000			
11	Bridge No. 11, John Street	Superstructure (Re)Construction						41,400
12	Bridge No. 12, Maple Avenue	Superstructure (Re)Construction						380,760
13	Bridge No.13, Main St North	Superstructure (Re)Construction						982,800
13207	Mountainview Road CNR Overhead	Rehabilitation						211,869
13213	Bridge No. 13213, Mountainview Rd	Rehabilitation						100,246
15211	Bridge No. 15211, 15 Sideroad	Superstructure (Re)Construction				117,520		
17	Main Street Bridge #1, G. Williams	Rehabilitation			600,000			
19902	Bridge No. 19902, Winston Churchill Blvd	Superstructure (Re)Construction						351,360

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
19911	Bridge No. 19911, Winston Churhchill Blvd	Replaced						409,313
20	Bridge No. 20, Main Street South	Superstructure (Re)Construction						210,453
21	Fourth Line, Lot 24	Rehabilitation						24,915
22/C	32 Side Road, Conc 4	Rehabilitation						21,150
23/C	Fourth Line, Lot 13	Replaced				123,625		
23	Sixth Line, Lot 23/24	Replaced					148,962	
23208	Bridge No. 23208, River Drive	Rehabilitation				399,590		
25	Bridge No. 25, 32 Sideroad	Reconstructed						101,308
27	Side Road 5, Concession 9	Rehabilitation						78,975
29	River Drive Paper Mill Dam	Rehabilitation						254,800
30	Bridge No. 30, Ann Street, Georgetown	Rehabilitation						104,310
31	Bridge No. 31, Ontario St, Georgetown	Replaced						102,408
32	Fifth Line, Lot 22	Superstructure (Re)Construction						99,572
33	Third Line, Lot 24	Replaced						30,525
34	Bridge No. 34, Mill Street, Acton	Rehabilitation					75,000	
37	Bridge No. 37, Main Street North, Acton	Replaced						1,037,400
4	Fifth Line, Lot 1	Rehabilitation				154,148		
42921	Bridge No. 42921, 32 Sideroad	Replaced						142,416

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
43	Adamson St North (Norval)	Superstructure (Re)Construction						360,750
43203	Bridge No. 43203 - Limehouse Bridge	Rehabilitation			91,463			
47/C	Side Road 22, Lot22/23, Concession 8	Superstructure (Re)Construction						44,520
5/C	17 Side Road, Conc 2	Replaced						300,300
62	Bridge No. 62, Wildwood Road	Superstructure (Re)Construction		45,120				
9	Sixth Line, Lot 21/22	Superstructure (Re)Construction						109,564
9227	Lot 5/6, Concession 6	Superstructure (Re)Construction						129,430
9615	Lot 5/6, Concession 4 East	Superstructure (Re)Construction						153,090
Fairy Lake Dam/Elevated Walkway	Fairy Lake Dam/Elevated Walkway	Superstructure (Re)Construction						371,360
Ped. Bridge #1	Pedestrian Bridge #1	Reconstructed						299,625
Ped. Bridge #1	Pedestrian Bridge #1	Replaced	260,000					
Ped. Bridge #10	Main Street Pedestrian Bridge #10	Superstructure (Re)Construction						55,420
Ped. Bridge #11	Main Street Pedestrian Bridge #11	Superstructure (Re)Construction						36,080
Ped. Bridge #12	Hungry Hollow - Miller Drive Pedestrian Bridge 12	Superstructure (Re)Construction						37,400

Asset ID	Asset Name	Strategy	2014	2015	2016	2017	2018	2019 - 2023
Ped. Bridge #2	Cedarvale Park Pedestrian Bridge #2	Superstructure (Re)Construction						10,360
Ped. Bridge #3	Eagle Bridge - 3	Superstructure (Re)Construction						80,520
Ped. Bridge #4	Eagle Bridge - 4	Superstructure (Re)Construction						102,000
Ped. Bridge #5	Acton Library West - Pedestrian Bridge No. 5	Superstructure (Re)Construction						24,000
Ped. Bridge #7	Prospect Park/Rotary Park - Pedestrian Bridge #7	Superstructure (Re)Construction						13,520
Ped. Bridge #8	Dominion Gardens Park Pedestrian Bridge #8	Superstructure (Re)Construction						25,000
Ped. Bridge #9	Willow Park Ecology Centre Pedestrian Bridge #9	Superstructure (Re)Construction						40,950
		Total	**260,000**	**1,203,000**	**3,093,683**	**2,209,809**	**899,275**	**$11,094,985**
		Grand Total						**$18,760,751**

Appendix 3 - Option Analysis for Structures (Bridges and Major Culverts)

Departmental Objective "… to *complete annual construction program within investment approved level; utilize innovative construction techniques and ensure that new sustainable infrastructure meets public safety standards; to meet Legislative and Council approved LOS*".

Program	Service	Objective	Performance Indicator and Target	Alternatives		Trade-Offs	
				Technical	Financial	Alternatives	Cost
Routine Maintenance	• Bridge washing • Routine inspections	Operational/ Technical Objective – "*to extend the overall life of the structure elements.*"	Annually (each Spring) Annually and after every major event	• Routine maintenance of all structures (inclusive of routine inspections and bridge washing). Delivery Option: In-house personnel	• Operating Budget ($140,000 per annum)	Limit to bi-annual inspections	$75,000 bi-annually
Preventative Maintenance	• Surface repairs, • Painting, • Rout and seal, • Handrail maintenance etc.)		Percentage Change in Condition (BCI)	• Do nothing • Complete Preventative Maintenance Program for structures in fair to excellent condition. Delivery Option: In-house personnel and Contract Services	- • Capital/Operating Budget ($1.9 million for next five years).	• Routine Maintenance	• $140,000 per annum
Rehabilitation and Replacement	• Superstructure reconstruction/rehabilitation • Replacements		Percentage Change in Condition (BCI)	• Do Nothing • Rehab program for structures in fair to poor condition. Delivery Option: Contract Services	- • External Funding (approximately $2 million per annum)	• Combined Routine and Preventative Maintenance Program	• $2.6 million for next five years

Appendix 4 - Option Analysis for Roads

Departmental Objective "… to *complete annual construction program within investment approved level; utilize innovative construction techniques and ensure that new sustainable infrastructure meets public safety standards; to meet Legislative and Council approved LOS*".

Program	Service	Objective	Performance Indicator and Target	Alternatives		Trade-Offs	
				Technical	Financial	Alternatives	Cost
Routine Maintenance	Routine Patrol and Patching	Operational - To meet Provincial Minimum Maintenance Standards/ Council approved level of service targets	% of patrol completed and associated maintenance work carried out to meet or exceed Council approved LOS for road maintenance	• Use premium cold mix • Use hot mix asphalt Delivery Option: In-house personnel and Contract Services.	• Operating Budget	N/A	N/A
	Winter/Ice Control		% of winter events where response meets or exceeds Council approved LOS for road maintenance	• Pre-wetting • Anti-Icing • Dry Blending • Spot Use of Solid De-icer • Sanding Delivery Option: In-house personnel and Contract Services.	• Operating Budget	N/A	N/A
Pavement Management Program	Pavement Rehabilitation and Reconstruction	Upgrade and maintain the roads … to ensure safety and quality condition for	Percentage Change in Condition (PQI)	• Local Roads Program Delivery Option: Contract Services	• Pavement Management Reserves • Coordination with the Regional	Pavement Management Program – Arterial & Collectors	TBD

Program	Service	Objective	Performance Indicator and Target	Alternatives		Trade-Offs	
				Technical	**Financial**	**Alternatives**	**Cost**
		residents			Municipality of Halton	Combined Pavement Management Program (i.e. Arterial/Collector and Local Roads)	TBD
Upgrade and Growth Related Program	Road widening, changes to road functional class	"to provide for a transportation system that is sustainable, integrated and encourages a healthy and active lifestyle[11]	Reduction in congestion Percentage Change in Condition (PQI)	Provide/promote alternate mode of transportation to relieve congestion Intersections improvements and road expansions Delivery Option: Contract Services	• Development charges *(limited to growth related capital costs)* • *Tax Levy*		

[11] Extracted from the 2011 Transportation Master Plan

ACRONYMS AND DEFINITIONS

Acronyms and Definitions

AM – Asset Management

AM Plan – Asset Management Plan

Amortization – The accounting process of allocating the cost less the residual value of a tangible capital asset over its useful life.

FIR (Financial Information Return) – A set of standard reports which captures financial and statistical information for each Municipality in the Province of Ontario

Historical Cost – The original cost to acquire an asset and/or make it operational. Includes all costs associated with the purchase/acquisition (e.g. delivery, set-up).

KPI – Key performance indicator

Life Cycle Costing – An analytical method to estimate the total cost of an asset over its expected useful life

LOS – Levels of Service

MOI – Ministry of Infrastructure

NBV (Net Book Value) – The remaining value of an asset expressed as the asset's original cost (historical cost) minus accumulated amortization

OSIM – Ontario Structure Inspection Manual

Pavement Quality Index (PQI) - A composite of three indices, namely Surface Distress Index (SDI), Ride Comfort Index (RCI), Structural Adequacy Index (SAI) that defines the condition of a pavement.

PSAB – Public Sector Accounting Board

Replacement Cost – The cost to replace an asset at today's value

Tangible Capital Assets (TCA) – Non-financial assets that are held for use in the production or supply of goods and services, used for administrative purposes or for the development, construction, maintenance or repair of other tangible capital assets, have useful economic lives extending beyond an accounting period, and are to be used on a continuing basis

Useful Life – The period over which the Municipality expects to use a tangible capital asset.