

County of Haliburton

Asset Management Plan 2013

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County of Haliburton

Asset Management Plan 2013

Executive Summary

Key principles of the County of Haliburton's Asset Management Plan are:

- Engages Council in a dialogue about services and service levels
- Recognizes and manages limited resources by systematically establishing priorities
- Minimizes total cost of ownership while realizing maximum potential useful life

This plan contains a comprehensive inventory of the County of Haliburton's roads and structures. It describes the condition and characteristics of those assets using industry accepted methods and asset inventory management software. The plan sets out strategic priorities to optimize investments to provide the desired level of service of each asset.

The plan states the goals and objectives of the County of Haliburton and it proposes a number of long term financial strategies to support the expansion, renewal and preservation of its assets. This plan interacts with the County's Official Planning Documents and various studies that are conducted from time to time and is used by County Council and Staff when considering yearly budgets and to assist in planning all new County programs and expansions. The plan is to ensure that, each year, infrastructure improvements will be recorded in the infrastructure databases and financial spreadsheets and that this information will be reported to Council. The entire plan will be reviewed during the next year's budget deliberations.

This plan incorporates best practices in providing a reasonable level of service of the most basic infrastructure and it prioritizes absolute needs over all other demands. It is clearly evident that the County of Haliburton cannot support the financial requirements of the plan without the continued assistance of the Provincial and Federal Governments. The financial component of the plan indicates how this should be accomplished.

Data from the current road needs study indicates:

Identified Needs	KM	%	Value
None	62.35	15.5	-
Now	66.25	17.0	\$15,747,945.00
1 to 5 year	122.90	31.0	\$10,613,280.00
6 to 10 year	<u>144.30</u>	<u>36.5</u>	<u>\$12,999,535.00</u>
Totals	395.80	100.0	\$39,360,760.00

The framework presented will assist Council with development of new competencies for the effective transition to ongoing asset management and financial planning activities. This framework seeks to maximize municipal resources and utilize core competencies so that the County can better identify, manage and address its individual infrastructure needs, while taking into consideration key asset management and financial planning principles.

Asset management promotes the coordination of infrastructure repair and rehabilitation activities, thus allowing the County to make informed and cost effective decisions. Sustainable infrastructure also promotes economic development by creating a place where people want to live, work and do business.

Our County understands that the median household incomes are below the Provincial average, unemployment rates tend to be higher in rural areas and the percentage of income from government transfers (rather than employment earnings) is significantly higher here than for Ontario as a whole. Without a change in the economic circumstances of Rural Eastern Ontario continued above CPI increases in property taxes are not sustainable.

The Provincial and Federal governments have provided extensive assistance to the local municipalities over the past decade. Although funding has become increasingly more difficult to obtain, it is still being offered. The assumption is the County will be successful in obtaining funding in the future and in 2014 possibly receive 50% funding for the Head Lake Bridge.

The County has many competing needs for the taxes it generates. Infrastructure costs are the major demanding needs. Although current ratings for the roads is at 83%, this figure can change very quickly as unforeseen circumstances occur such as flooding and washouts from beaver dam breaks. Flooding experienced in the spring of 2013 put critical strain on many bridges and culverts. Any such future event will significantly affect the service level rating.

The County will continue to look for opportunities to improve efficiencies. This may be through sophisticated technology, collaboration with other municipalities and or service adjustments. The challenges are evident and the County will continue to strive to meet them.

Population growth in the County has been minimal over the last decade, however the County has experienced significant growth in users of its facilities and infrastructure due to seasonal property owners moving to the area full time and adding pressure to those facilities. This usage translates into increased needs that have to be met with tax dollars or through funding opportunities provided by upper levels of government.

A small population base cannot provide the taxes necessary to sustain the demands placed on the County's infrastructure. Funding from senior levels of government is the only avenue left to municipalities that have been forced to accept downloaded services and infrastructure.

County of Haliburton

Asset Management Plan 2013

Introduction

The purpose of an Asset Management Plan is to create an effective budgeting strategy that allows for scheduled improvements to assets. The improvements created from an Asset Management Plan are to: ensure the assets meet a desired level of service, realize the maximum potential useful life of an asset, and ensure the best use of limited financial resources. The Asset Management Plan will look at all aspects of an asset to predict future needs life cycles and future growth.

The 2013/2014 Asset Management Plan is a 10 year plan put together by the Director of Public Works, Treasurer, Manager of Engineering, Confidential Finance Assistant, Engineering Assistant and included consultation with council member Moffatt who regularly attended our Asset Management Committee meetings and advised the committee of Council's guiding principles on various strategies put forth. The entire Council has been included in the process with open discussions and valued input. The Director of Public Works made a presentation "Haliburton County Asset Management Plan – Roads & Bridges" to the Roads Committee at their regular scheduled meeting on November 13th 2013 as seen in **Appendix I**.

The plan was built using the Road Needs Study, Structure (Bridges & Culverts) Needs Study, PSAB working sheets, the County's 10 year capital budget, and the County's current and past budgets. The document has been created within the guidelines of the Ministry of Infrastructure – Building Together: Guide for Municipal Asset Management Plans.

Smaller municipalities similar to the County of Haliburton are facing increased financial uncertainty and more needs to be done to keep infrastructure in good condition. Long term asset management and financial plans will be an important and timely turning point for smaller municipalities in Ontario as they look towards a sustainable future. Over the years, Ontario municipalities have invested billions of dollars in tangible capital assets. These assets play an

essential role in a community’s ability to improve the quality of life, diversify and cope with changing needs, and improve environmental conditions.

Presently the County of Haliburton’s Asset Management Plan focuses on its two major assets, roads and bridges. The Asset Management Plan will be expanded throughout time with good quality data as it is collected. Assets that will be included are as follows;

Asset	Year added to AMP
Road Networks (10 Year Plan)	2013
Structures (Bridges & Culverts)	2013
Building Assets	2014
Equipment and Vehicles	2014
Regulatory and Warning Signage	2015
Culverts (Less than 3meters in diameter)	2016
Traffic Barriers	2017

Accurate, reliable data will be collected to build the plan. Data for Regulatory/ Warning Signage, Traffic Barrier and Culverts (less than 3m in diameter) will be collected using a handheld GPS, utilizing Terrasync and Pathfinder software. The data can then be correlated using ARC GIS, Microsoft Access and Excel. Data for equipment, vehicles and buildings will be collected and stored in a similar manner for analysis and planning.

Throughout the creation of this Asset Management Plan the staff of the Finance and Public Works Departments have worked together to review all County policies, planning documents, economic development studies and recent public interest group submissions. This methodology ensures that the management of infrastructure assets supports the goals of Council, the economic vitality of the business community and unique quality of life in the County of Haliburton.

The Plan sets desired levels of service. It also provides a comprehensive reference for Council and staff to; measure performance, set targets, develop yearly budgets and plan for future improvements and expansion.

This plan covers a 10 year period. As a best practice, the goal of the plan is to renew assets with small but timely investments to prolong the life cycle of the infrastructure. Each year infrastructure improvements will be recorded in the infrastructure databases and financial spreadsheets. This information will be reported to Council and the entire plan will be reviewed annually as the document is updated. Through the annual budget deliberations there will be a review of all of the needs, which include other pressures and projects that Council wants to see go forward.

Council has reviewed a five year plan for roads in the past, but has not been presented with this entire picture (10 year plan) which captures the plan to incorporate a sustainable level of funding for all roads and structures.

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Asset Management Plan 2013

State of Infrastructure

Roads Infrastructure

The County of Haliburton Road Infrastructure consists of 395.8km of two lane hard top roads.

Roads data has been collected and evaluated using the Municipal Inventory Manual (1991), published by the Ontario Ministry of Transportation. AECOM Consulting Engineers have visually inspected and rated each road in the County system based on the following criteria:

- Drainage
- Structural Adequacy
- Surface Type
- Surface Condition
- Maintenance Demand
- Surface and Platform Widths
- Horizontal and Vertical Geometrics
- Average Safe Speed

AECOM has compiled their findings and prepared an update to the County's Road Needs Study for 2013. This study explains in detail how the data was collected and contains value ratings of the condition of the components of each section of road in the County road system. A copy of the study is contained in ***Appendix II*** of this document.

From this data, a 10 year expenditure plan was created and is contained in **Appendix III**. This plan was presented to the Road Committee on November 9th 2013, and the 2014 projects will be incorporated into the 2014 Capital Budget. The County Finance staff also used this road needs study and incorporated the data into the financial Public Sector Accounting Board (PSAB) spreadsheet which you will find in this document in **Appendix IV**.

The following tables show the basic characteristics of the road system.

Road Break Down By Surface Type

Surface Type	Length (km)	Length (%)
Low Cost Bituminous	233.0	58.9
High Cost Bituminous	162.8	41.1
Totals	395.8	100

Road Breakdown by Roadside Environment

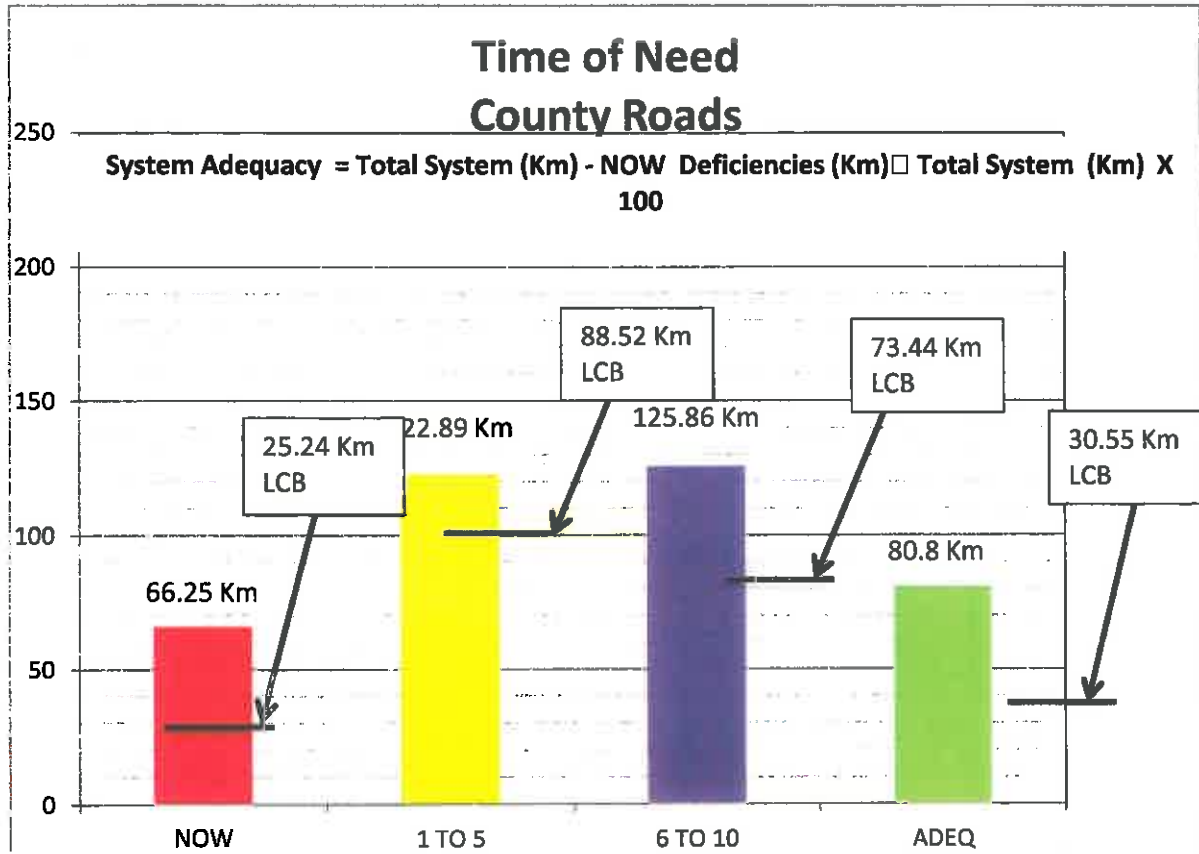
Roadside Environment	Length (km)	Length (%)
Rural	384.2	97.1
Semi-urban	7.7	1.9
Urban	3.9	1.0
Totals	395.8	100

The Road Needs Study analyzes road attributes. This data forms the basis for determining condition ratings, time, type and cost of improvement needed including a priority guide for the improvements.

In 1997 approximately 120 km of two lane secondary highways, which were in a reasonable state of repair, were downloaded from the Province to Haliburton County. These highways now account for 31% of the total length of roads that the County is responsible for. Haliburton County has been diligent in its efforts to provide preventative type improvements where warranted and in the past has borrowed money for its share when funding programs were available. However these secondary highways are of a higher design standard, carry larger volumes of traffic at higher rates of speed and have reached the time where more expensive reconstruction is required. It is evident that the County will require financial support to keep these highways in good condition.

Council and staff will use this information to prepare a strategy for the management of the road system asset.

The following graph shows the road length of each surface type in each “Time of Need” category. An overall system adequacy calculation is also shown. According to the most recent study the County’s adequacy rating is 83%; therefore 17% of the road system is in the “NOW



NEED” category.

LCB – Low Cost Bituminous

Examples of the surface condition of County Road 648, a NOW need



Bridge and Culvert Infrastructure

The County of Haliburton Bridge and Culvert Infrastructure consists of 16 bridges and 24 culverts with a span of more than 3 metres. There are numerous culverts less than 3 meters which will be inventoried and analyzed. These culverts will be included as part of our future asset management plan by 2016.

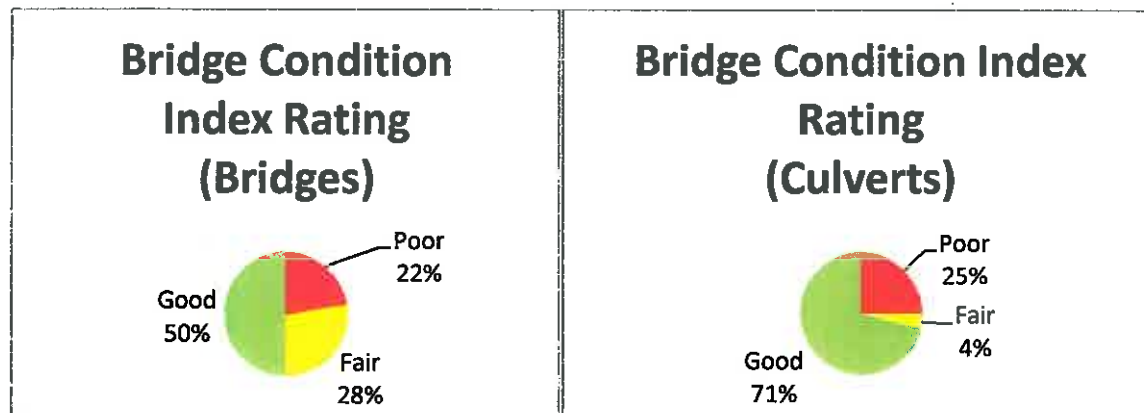
Structures within the County have been assessed by independent structural engineers using the Ontario Structure Inspection Manual (OSIM) and outlined in the County's Structure Needs Study, ***Appendix V***. The structures were assessed based on the capital investment needed to return the structure to its original state. As structures become eligible for rehabilitation, consideration is made for improvements to reflect more modern technology and methods.

Data collected on County structures has been input into Municipal Data Works (MDW) which is a program administered by the Ontario Good Roads Association for all its member municipalities.

The data collected for the structures is analyzed to determine a Bridge Condition Index (BCI) which is a range between 0 - 100, the higher the number the better the overall condition of the structure. Each bridge or culvert (greater than 3.0 metres), is assigned a BCI upon completion of a structural analysis.

The BCI is a planning tool that helps schedule maintenance and rehabilitation. The Ministry of Transportation uses these guidelines, to calculate a rating as per ***Appendix VI***. A Bridge Condition Index rating between 70-100 indicates a structure that is in good shape and maintenance work is not usually required within the next five years; a rating of 60 – 70 indicates a structure is in fair shape and this would be the ideal time to schedule major bridge repairs from an economic perspective; below 60 is generally considered to be poor and work on these structures should be scheduled within a year.

Figures 2 and 3 indicate the bridges and culverts which fall into these categories



Appendix VII shows the Ten Year Bridge and Culvert Asset Management Plan to rehabilitate/replace all structures under County jurisdiction. The chart is arranged to show the structures with the worst BCI rating to the best and identifies the expenditure or transfer to reserve for each structure.

The Manager of Engineering presented **Appendix VIII** at the November 13th Road Committee meeting, and was able to demonstrate needs for funding of the structures. As well as the NOW needs and the current application (2013 Small, Rural and Northern Municipal Infrastructure Fund) for funding of the Head Lake Bridge, there are long term needs that require management through the County's financing strategy.

Bridge structures can be rehabilitated periodically i.e. 40 – 60 years depending upon level of service, maintenance program and maintenance methods. It is conceivable that concrete bridge structures may have a life expectancy of 100 years if regular maintenance and periodic rehabilitation is carried out.

Steel structures are not as versatile as concrete for rehabilitation; however, they are more economical to replace and, with current technology, can have a life expectancy of 75 years.

Kingscote Culvert: a NOW need.



County of Haliburton

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Expected Levels of Service

The County road system reacts to the amount of use it gets. Traffic counts on the road system and population growth show there is increased usage of the roads. The new users are from areas that are heavily serviced and as a result they demand a higher level of service in this area.

The condition of roads and structures impact the perception of the County i.e. if the facilities look like they are in a state of disrepair then tourists have a negative perception of the County. A well maintained infrastructure provides a more secure feeling about the area that is being visited.

Roads

The road system is evaluated predominantly on surface condition and structural adequacy. Through this evaluation an overall road system adequacy can be determined. A target of 75% system adequacy rating has been set for the level of service. (25% of the system kilometers would be in the NOW NEED category). Presently, only 17% of the system is rated as a NOW NEED category giving the overall adequacy rating of 83%. Unfortunately, this 17% makes up 40% of the total NEEDS cost. The most expensive part of the road system (asphalt section) is the part that is in need of improvement the most. Additionally one third of the road system is in the 1 to 5 year NEED category.

At the levels of funding identified in this plan, it will take 5 years to improve those sections of roads in the NOW NEED time frame. During this time the County will provide maintenance of those sections in accordance with the Minimum Maintenance Regulation of the Municipal Act to provide a safe condition.

The County will continue to seek additional funding opportunities to clear the backlog of NOW NEEDS in order to reduce the high costs of maintaining those roads requiring repair. Without increased spending the level of service will decrease to a level below the desired level of service.

Due to the high dollar value of the now needs for roads, all possibilities for funding will need to be explored. Any assistance from other levels of government will be applied for, with the County's contribution being attained through debt financing.

Examples of asphalt patching to help extend the life of the County's roads.

County Road 16



County Road 7



Bridges and Culverts

Biennial inspections of bridges and culverts provide an assessment of each component of each Structure. A Bridge Condition Index (BCI) is derived from the assessment process and the County of Haliburton sets a performance target on this value. Any bridge or culvert with a BCI of 70 or less will be evaluated for improvement. This evaluation will be used to create an improvement program. In addition to the improvement program, the County will carry out annual maintenance that will include cleaning, preventative coatings and minor repairs.

Replacement of a steel culvert on County Road 1



County of Haliburton

Asset Management Plan 2013

Asset Management Strategy

Currently annual operating expenditures for transportation services are being used to maintain assets in ways that prolong their useful life or contribute to major reconstruction efforts.

The County supports the Eastern Ontario Warden's Caucus (EOWC) in their proposal to provide leadership in the development and implementation of a region-wide program to assist local governments. This assistance for rural areas is for evaluation and introduction of measures to control operating costs for provision of transportation services. The County will continue to work in partnership with the EOWC and the Province to design and implement a permanent predictable infrastructure fund for rural areas such as The County of Haliburton.

Two 10 year detailed capital plans, one for roads and one for structures have been prepared and are attached to this plan as ***Appendix III and Appendix VII***. These plans are based on the current financial commitment to capital, as well as the Needs Studies. These will all be updated and reviewed by Council on a yearly basis. These 10 year strategies are also combined and detailed again in the financing strategy.

This plan does not contain all of the County's assets. The County will have the following assets included within the asset management plan by 2017.

In order to properly develop a long term strategy for these assets, it will be necessary to obtain funding from other levels of government. To assume that the County can meet a 75% expected level of service for roads and an over 70 BCI for bridges using our own means, i.e. reserves, tax dollars and debt, and is unattainable. When the County reviews the past history of upper levels of government contributions along with the downloaded highways, it is evident

that the County of Haliburton will need assistance to meet the levels of service expected by our ratepayers.

The strategy that has been developed does not take into account the need for money to be secured or plans to be altered in the event of an emergency situation, such as flooding.

The County has been partnering with its lower tier municipalities for several contracts. There is a large cost savings in combining contracts as it locks down contractors and suppliers to a larger amount of work within one area. The County currently combines the following tenders: Warning/Regulatory Signage; surface treatment; line painting/purchase of small culverts. The County is always willing to partner with their lower tiers and other neighbouring municipalities to take advantage of the cost savings.

Replacement cost rather than original cost must be considered when estimating the financial costs of addressing ongoing maintenance of capital assets. The replacement costs of virtually all municipal assets have increased markedly over the past decade. There is significant Local evidence that the cost of materials and other inputs associated with municipal services has increased through the 2000-2011 period, well beyond the Consumer Price Index for the period.

The 2013/2014 Asset Management Plan recognizes the significance of the proposed EMS base at 12410 Highway 35, Minden. Although the plan has not yet incorporated the buildings, it will be necessary for the County to borrow funds for this initiative. The County is still hopeful that we may be eligible for Federal or Provincial, funding for this necessary project. It will be necessary to borrow funds to complete this new EMS base in Minden.

Roads Strategy

Roads capital improvements will focus on rehabilitation rather than reconstruction. Expansion of the road system is not anticipated in the next 10 years.

A comprehensive Pavement Management System using pavement condition indexing will be developed and used to produce a long term pavement preservation plan. This preservation plan will include new technology and treatments used to create a perpetual asphalt surface.

A complete up date of the Road Needs Study will be conducted every 4 years and updated annually by County staff.

Significant efforts will be made through preventative maintenance such as; localized thin lift overlays, micro surfacing and crack sealing to preserve pavements and prolong the need for rehabilitation. For high volume paved roads, such as the former Provincial highways, standard practice is to pave them with two lifts of hot mix. Due to budget limitations, and the need to address improvements on many other roads, the following policy has been adopted:

- During the year a road is reconstructed, a 50mm single lift of hot mix pavement will be applied.
- The second lift of hot mix will then be applied in 6 to 10 years' time.

In the end, this procedure will allow for improvement of more kilometres of roads and achieve the desired results. Continued monitoring of the paved roads will dictate the appropriate time for adding the second lift of pavement.

Rehabilitation projects will consist of in place processing of the surface, stabilization of the base and either double surface treatments or single lifts of asphalt. Additional surface lifts will be applied in subsequent years as appropriate.

High priority will be given to those rehabilitation projects that include the preservation of the existing surface. The application of stress absorbing membranes and hot mix overlays to improve the structural adequacy of the road will be used when possible to reduce costs. This strategy will be used in the place of a full rehabilitation of the surface and base.

Bridge & Culvert Strategy

The County will be continuing with the legislated structural inspections on a biennial basis in accordance with the Ontario Bridge Code. The Operations Department will be carrying out regular maintenance to ensure the waterway channel is kept clear and any brush or small

trees are removed in a timely manner. Independent, specialized contractors will be employed as recommended in the biennial engineering reports to rehabilitate aging and deteriorated components of the structures and extend the life cycle of the structure into the 100 year range. Mitigating measures for the deterioration of the concrete and steel components of the structures will be implemented. These measures will consist of a program of applying preservative coatings on an annual basis or as recommended by the manufacturer.

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Financing Strategy

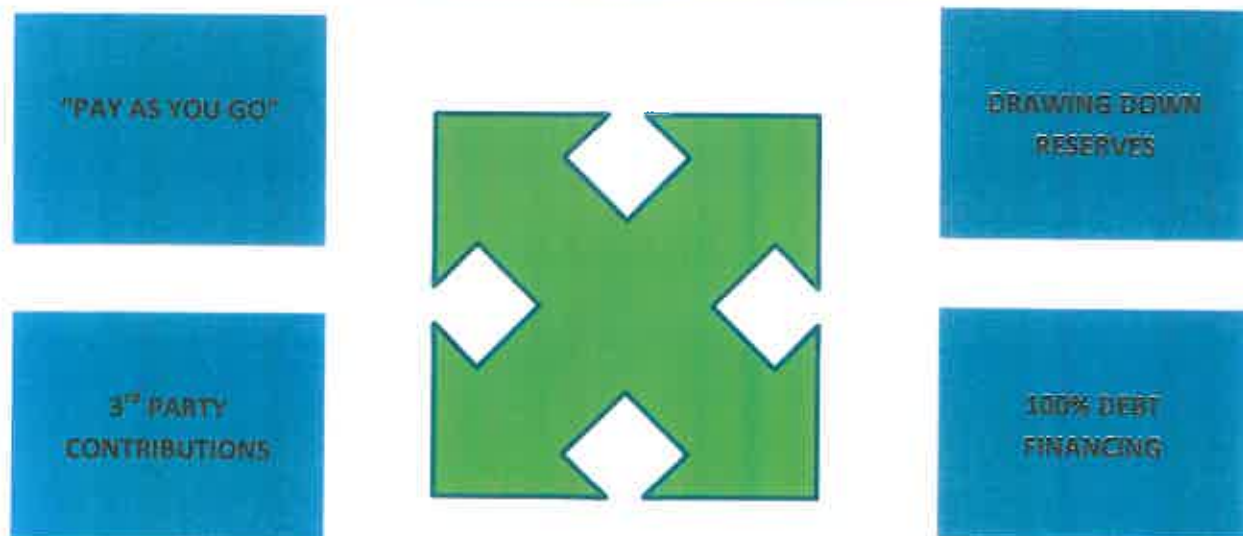
The financial strategy links integrated asset management into the financial planning and budgeting of the County, broadening the infrastructure financing options available.

Local governments face particular challenges to their financial sustainability if expenditures are rising faster than the sources of revenue to support them. The primary source of income for municipalities is household-based property taxes. In Rural Eastern Ontario, operating expenditures have increased much faster than the tax base that supports them. Fifteen to twenty percent of expenditure growth is driven by population and household growth, at least 80% of expenditure growth is driven by other factors.

Municipalities have four options for financing services and infrastructure:

- Property tax revenues, user fees and other charges paid by ratepayers
- Debt which must be repaid out of property tax revenue
- Reserves which can be a short-term contributor to infrastructure financing; but this option disappears once reserves are depleted
- Third Party Contributions – Provincial & Federal Funding

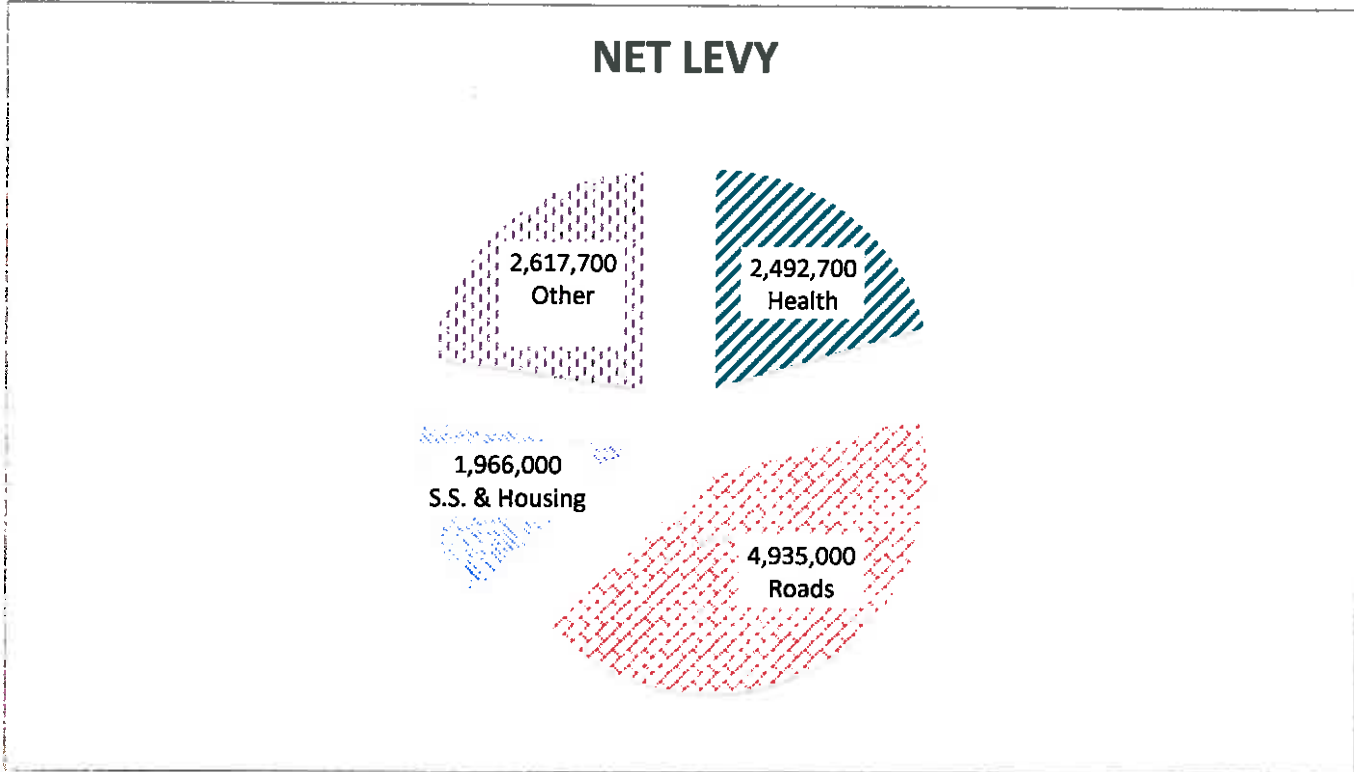
Budget Financing Strategies Continuum



SOME COMBINATION THERE OF

“Pay as You Go” Strategy

This strategy involves saving all funds in advance of building, acquiring or improving your assets and requires great discipline and patience. This financing strategy may mean forgoing many needs in the meantime and may prove to be more costly in the long run due to implications of forgone services.



100% Debt Financing

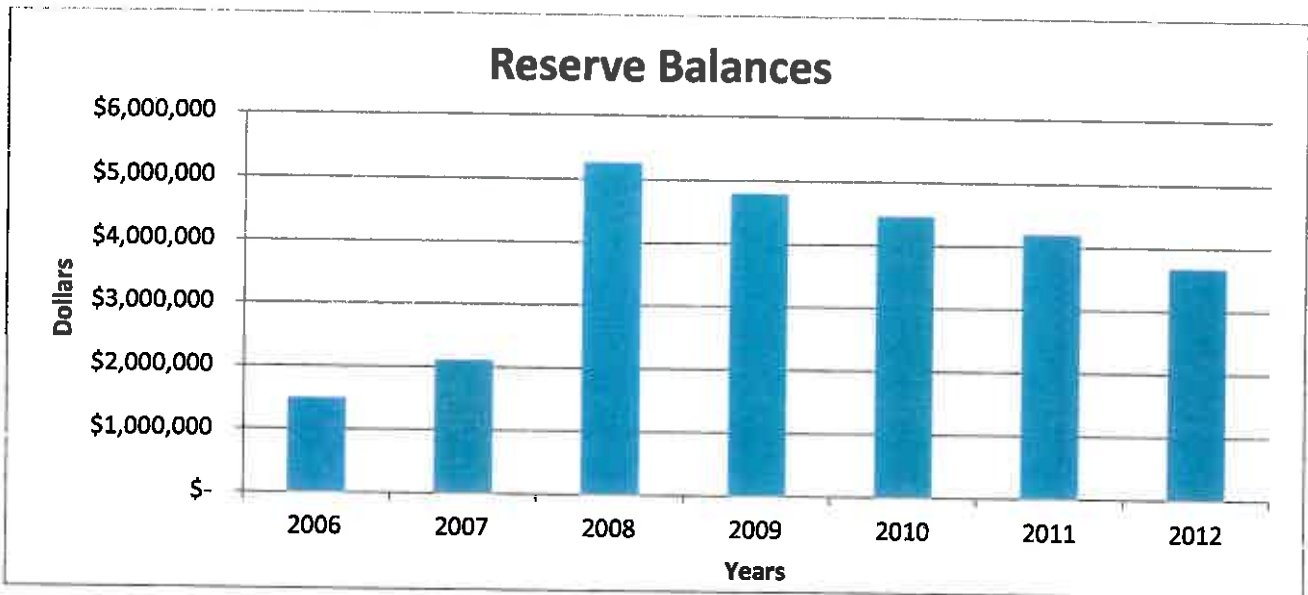
Debt Financing allows the costs to be spread over the taxpayers consuming the goods or services and is a more expensive financing strategy since it involves paying for the asset plus the interest. The Province establishes limits on the total amount of debt allowed to be repaid by a municipality by setting Annual Repayment Limits (ARL). The County of Haliburton’s ARL can be found in ***Appendix IX***.

Drawing Down Reserves

This financing strategy is established via tax base funding making lifecycle contributions per year to fund capital projects/purchases. This financing is not sustainable in the long term is a one-time funding that must be replenished.

The pressures to use the County’s reserves to fund capital needs will put additional pressure on operations once borrowing is required for operating costs.

The graph below is the County of Haliburton Reserve Balances over the past 7 years

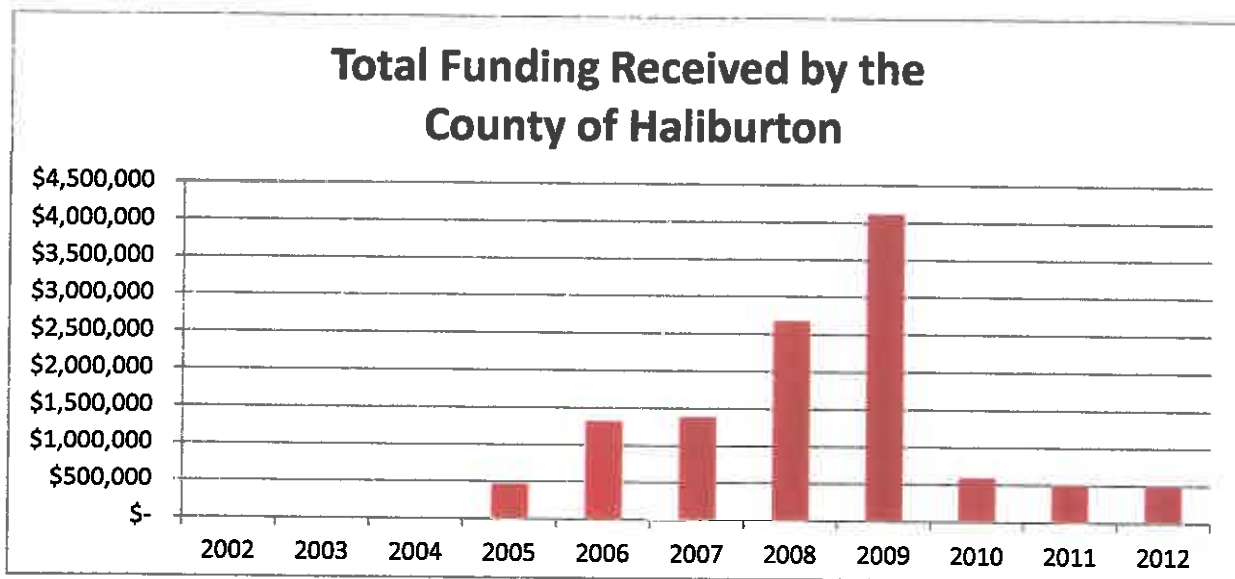


All three of the above financing strategies have an impact on the ratepayers.

3rd Party Contributions

This financing strategy is a higher risk approach to financing due to municipalities not having any control over these contributions and their variable nature. These contributions could be given in such forms of subsidies, recoveries, grants from developers or builders, community groups or from senior levels of government. There is no tax impact with this financing strategy; someone else is paying for these contributions.

The graph below indicates the funding the County has received in the last 10 years from both the Provincial and Federal governments.



The County of Haliburton currently uses a combination of three of the above strategies, Pay as you Go, Drawing Down Reserves, and 3rd Party Contributions. The County only uses the Debt Strategy for their portion, if needed, when funding is provided by a senior level of government. This leaves us in a better position to have borrowing capacity, when a large funding opportunity becomes available.

The financial strategy has been to determine a base level of annual average cost to sustain the targeted service levels over the 10 year period. Identified is the 2013 level of capital spending with an added 2% increase each year. The projection of this spending for roads and structures, and no further injection of funding, will result in a \$1.2 million shortfall over this time period. County staff will continue to align the estimates with Council's preference of budgetary increases and work within these specified envelopes.

Our continued strategy will be to work with all levels of government and outside agencies to continue to explore funding options that can aid the County in managing the desired levels of service.

There are efficiencies through many strategies outlined in this document and we will continue to look for these opportunities in the future.

County of Haliburton

Asset Management Plan 2013

Appendix I

Haliburton County Asset Management Plan – Roads & Bridges - INTRO

COUNTY OF HALIBURTON

Asset Management
2013

WHO WHAT WHY WHERE WHEN

- ▣ Staff will prepare, with help of consultant
- ▣ Council will endorse a plan and level of service
- ▣ A plan is mandatory to apply for provincial funding.
- ▣ Roads and bridges are incorporated in the plan this year, other assets added in the future
- ▣ Staff will present the Asset Management Plan at the November County Council meeting