



ASSET MANAGEMENT PLAN

CORE SERVICE INFRASTRUCTURE

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EXECUTIVE SUMMARY

The Township of Muskoka Lakes has developed an Asset Management Plan for its Core Service Infrastructure to ensure that long term consideration for sustainable reinvestment in the assets that are most relied on by its residents is implemented in a consistent and responsible manner.

The Asset Management Plan first establishes the roles and responsibilities between the Township and the District of Muskoka, defines the need for having a clear strategy on managing core service infrastructure, and describes how the plan was developed and how it will be implemented and evaluated.

The Plan then assesses the current state of the Township's roads with a 100 point condition rating system and its bridges with a uniform inspection model which has been adopted through the use of the Ontario Structure Inspection Manual (OSIM).

Levels of service are addressed by gaining an understanding of the service environment within which the Township manages and maintains its core service infrastructure. Council's strategic plan, regulated minimum standards, growth considerations, and appreciation of potential risks all provide guidelines and barriers for the Township to operate within.

An asset management strategy is next formulated to conduct inspections, maintenance, rehabilitation, replacement, disposal and expansion of the Township's roads and bridges with consideration of the current state of those assets and the expected level of service to be attained.

Finally the plan establishes a cost to implement the asset management strategy and a suggested funding model to pay for it with a financing strategy. The strategy identifies the sources of funding that are available from upper levels of government, property taxation and user fees, reserve funds, and debentures. It then applies the available funding to costs on a detailed level for 2014 and a summarized level over the next ten years.

INTRODUCTION

What is core service infrastructure?

Core service infrastructure is defined as assets related to roads, bridges, water, wastewater, and social housing. Effective management of this infrastructure is essential to provide dependable modes of transportation and safe living conditions for the residents of any municipality. Core service infrastructure is essential in supporting economy, environment, and healthy lifestyle; all of which is crucially important to the Township of Muskoka Lakes. Assets like facilities, vehicles and equipment also play an important role in municipal operations; however they will have a similar plan formulated in the future to form part of an overall asset management program.

Two tier municipal structure

The Township of Muskoka Lakes is one of six lower tier municipalities within the District of Muskoka. Due to the existence of a two tier municipal environment, core service responsibilities within the Township’s borders are defined as per the following table:

SERVICE RESPONSIBILITY		
Core Service	Township of Muskoka Lakes	District of Muskoka
Bridges & Culverts	<u>Township owned:</u> All capital investment, maintenance, and related activities. <u>District owned:</u> General maintenance and daily activities on structures that reside on non 100-series highways.	Capital investment of all structures that reside on District highways.
Roads	<u>Township owned:</u> All capital investment, maintenance, and related activities. <u>District owned:</u> General maintenance and daily activities for all non 100-series highways.	Capital investment of all structures that reside on District highways.
Water	None.	All capital investment, maintenance, and related activities.
Wastewater	None.	All capital investment, maintenance, and related activities.
Social Housing	None.	All capital investment, maintenance, and related activities.

The Township’s asset management plan for core service infrastructure is created to provide a sustainable model for assessment, maintenance, and investment in Township owned roads and bridges. The Township does provide maintenance on certain District of Muskoka owned roads

and bridges; however this is on a fee for service basis with care and control remaining wholly with the District of Muskoka.

Need for a strategy

Municipal infrastructure challenges have been identified following the implementation of asset reporting criteria as defined by the Public Sector Accounting Board (PSAB). An appropriate strategy for addressing future asset management will establish stewardship for the municipality's asset base, provide guidance for investment decisions, tailor solutions for unique circumstances, and provide criteria on which partnerships and community involvement may be forged. In the municipal context, the Federation of Canadian Municipalities (FCM) defines asset management as:

“The combination of management, financial, economic, engineering, operational, and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner.”

The definition of fiscal sustainability used by the Local Government Association of Australia is the simplest and most comprehensive:

“...a government's ability to manage its finances so it can meet its spending commitments, both now and in the future. It ensures future generations of taxpayers do not face an unmanageable bill for government services provided to the current generation.”

The Township's strategic plan is heavily reliant on adequate core service infrastructure. Roads and bridges within the Township provide the majority of the access to community events, facilities, businesses, and the natural beauty that makes the Muskoka experience. Dependable access throughout Muskoka Lakes is core to its economy.

The Township's annual budget is significantly impacted by roads and bridges infrastructure. Capital investment and daily maintenance of roads and bridges makes up the largest departmental component of the Township's financial requirements.

Plan development, implementation, continuation and evaluation

The asset management plan is originally designed by the Treasurer and Director of Public Works of the Township, with direction from Council. Initial development consisted of:

1. A roads network inventory, assessment and valuation captured by the 2013 Road Needs Study;
2. Service level expectations determined through minimum maintenance requirements, risk analysis, and the Township's strategic plan;
3. Capital planning, including inspection procedures, preventative maintenance scheduling, and refurbishment and replacement programs and utilizing innovative means (GIS, issue tracking) to conduct these task and achieve objectives; and
4. Financing strategy to identify sources of funding and develop a plan to pay for all requirements while minimizing fluctuations in impact to property taxpayers.

The plan is designed for initial implementation to proceed throughout 2014 with all elements considered in the capital portion of the 2014 budget. Implementation and plan management are to be championed by the Director of Public Works while financing and asset valuation is to be provided by the Treasurer.

The asset management plan is premised around a 10 year continuous outlook and is very much a living document. Updates will be completed at least annually, with a full review every five years to capture the most current information related to the components of the plan that may be variable in nature.

Evaluation criteria have been established to recognize successes and failures as the asset management plan is implemented and carried out. Future amendments to the plan will have the benefit of utilizing evaluation results for plan improvements.

STATE OF LOCAL INFRASTRUCTURE

Inventory

The Township's road system includes 380.5 kilometres to form its inventory. The following table summarizes the road system inventory by four major categories – road environment, road function, road class, and road surface type:

ROADS INVENTORY		
Road Environment		
Rural	363.9 km	96%
Semi-urban	13.6 km	4%
Urban	3.0 km	1%
Road Function		
Local	360.0km	95%
Collector	20.5 km	5%
Arterial	0.0 km	0%
Road Class*		
Class 1	0.0 km	0%
Class 2	0.0 km	0%
Class 3	1.1 km	1%
Class 4	260.6 km	68%
Class 5	35.9 km	9%
Class 6	82.9 km	22%
Road Surface Type		
Gravel	153.1 km	40%
Low Class Bituminous (LCB)	135.4 km	36%
Intermediate Class Bituminous (ICB)	59.7 km	16%
High Class Bituminous (HCB)	32.3 km	8%

*Road classification as prescribed in O.Reg. 239/02

In addition to the road system, the Township has 21 structures (17 bridges, 4 major culverts) that span three metres or greater to form its bridge and major culvert inventory.

A complete itemized listing of road sections and bridges and major culverts can be found in the Road Needs Study 2013. This study is updated on a biennial basis.

Valuation

The value of Township core service assets are considered from two different angles, a financial accounting valuation and a replacement cost valuation. The financial accounting valuation provides the current depreciated value of assets based on their estimated useful life and is updated on an, at least, annual basis. The replacement cost valuation provides an outlook of future expenditure that will be required when the assets reach their useful life, including anticipated inflationary impact, technological advancements and other factors. Replacement cost valuation is updated on an annual basis, taking into consideration construction price indexing.

A summary of the Township's core service infrastructure valuations are provided in the table below:

CORE SERVICE INFRASTRUCTURE VALUATION			
Asset	Net Book Value*	Replacement Cost	Difference
Roads			
Gravel	\$609,149	\$23,314,068	\$22,704,919
Low Class Bituminous (LCB)	\$3,817,105	\$48,061,584	\$44,244,479
Intermediate Class Bituminous (ICB)	\$1,515,788	\$22,161,600	\$20,645,812
High Class Bituminous (HCB)	\$386,877	\$56,606,616	\$56,219,739
Bridges & Culverts			
Bridges	\$1,915,903	\$25,000,000	\$23,084,097
Culverts	\$90,366	\$3,000,000	\$2,909,634
TOTAL	\$8,335,188	\$178,143,868	\$169,808,680

*Net book value as at December 31, 2013

In formal terms, the municipal infrastructure deficit refers to the unfunded investments required to maintain and upgrade existing, municipally owned infrastructure assets to a minimum acceptable level for operation over their service life, through maintenance, rehabilitation, repairs and replacement. Public Works staff is developing a model to continually track the infrastructure deficit of the Township, however after factoring in useful life of the current state of the infrastructure and not providing for current levels of reinvestment, the annual deficit is in excess of \$12.9 million per year.

Condition rating system

Road system

The condition rating is a score on a 100 point basis to provide an indication of the physical condition of the road section as it relates to the individual road elements. 50% of the roads network (typically the worst 50%) and all structures being inspected for a Needs Study *Update*; 100% of the road network and all structures being inspected for a *full* Needs Study. Points are awarded using the following criteria:

ROAD CONDITION RATING SYSTEM		
Criteria	Rural & Semi-Urban	Urban
Structural adequacy	25 points	25 points
Surface condition	10 points	10 points
Drainage	10 points	10 points
Maintenance demand (inverse)	10 points	10 points
Surface width	15 points	25 points
Shoulder width	10 points	
Horizontal alignment	10 points	
Vertical alignment	10 points	
Level of service		20 points
Total	100 points	100 points

Bridges and culverts

Needs and improvements for bridges and culverts are assessed based on suspected structure performance deficiencies and maintenance needs. A uniform inspection model has been

adopted through the use of the Ontario Structure Inspection Manual (OSIM). It sets out standards for detailed visual inspections and condition ratings of structures and their components, which are inspected biennially.

Condition Assessment

Road system

The total overall system adequacy is defined as:

$$\text{System Adequacy (\%)} = \frac{\text{total km} - \text{"now" deficient km}}{\text{total system kilometres of road}} \times 100$$

Based on a total system length of 380.3 kilometres and the 84.5 kilometres requiring improvements in the “now” period, the current system adequacy is 77%. For comparison, the system adequacy as determined in the *2011 Road Needs Study Update* was 70%, 63% in the *2009 Road Needs Study* and 73% in the *2005 Road Needs Study Update*. This difference in system adequacy over the four studies can be attributed to a number of factors: the time of year the inspections were completed, the severity of the spring thaw and road improvements completed by the Township. The inspections were completed in May 2005, April 2009, September 2011 and July 2013. The inspections in 2009 would have been more heavily influenced by the spring thaw than those completed later in the year, while mid-summer inspections would reflect the much drier conditions. That is reflected in the system adequacy values above.

It is noted however that the standards employed in evaluating the deficiencies, and hence adequacies, of the road system were revised as part of the 2009 study to better reflect current practices adopted by the Township (as opposed to utilizing MTO standards). In this regard, the basis for identification of deficiencies is not consistent across the studies and will have had some effect on the system adequacy values as well.

It is noted that approximately 50% of the identified road improvements by length (67.5 of 135.3 km) relate to the need to increase the width of the driving surface. While these improvements have been identified based on appropriate road design standards, they are not considered as core service as the remaining improvements given that the roads are currently operating acceptably. In most cases, those road sections requiring widening are deficient by only 0.5 to 1.0 metres in width. Furthermore, in the case of rural roads, the road width is assumed to equal the platform width minus 1.0 metre to account for shoulders. In fact, on many of these roads, the entire platform width is appropriate for travel lanes (and is used as such). Overall, these widenings account for approximately \$14.2 million of the \$25.3 million of required improvements.

Without consideration for improvements relating to road width alone, 67.8 kilometres of road require upgrades over the next 10 years, at an estimated cost of \$11.1 million. Of this, 17.0 kilometres should be addressed in the “now” period, at a cost of \$5.2 million.

Stormwater Management

The Township does not currently maintain any Stormwater Management Facilities. Any facilities that are brought on-line will be incorporated into the plan to manage maintenance and renewal.

The majority of the Storm Sewer System in the Township is in good condition with very little physical renewal needs. Future renewals technology is constantly evolving and the technologies involved are monitored by staff. From a maintenance standpoint, all catch basins are cleaned on an annual basis to ensure the systems are functioning properly.

Bridges & culverts

36 structure performance deficiencies and 48 maintenance needs have been identified as a result of the latest Road Needs Study.

The suspected performance deficiencies include pedestrian/vehicular hazards, rough riding surface, undermining of foundation, continuing movements, load carrying capacity and unstable embankments. The maintenance needs include repairs to structural steel, repair of bridge concrete, bridge hand rail maintenance, rout and seal joints, erosion control at bridges, repair of bridge timber and other needs such as signage erection and additional investigations required.

The suspected performance deficiencies and maintenance needs noted as urgent include repairs to severely eroded footings or piers, replacement of joint seals, deck replacements, load carrying capacity investigations, installation of hazard warning signs where they are missing and the provision of barrier/roadside protection measures where no such systems are otherwise currently provided or the current system is not suitable or is damaged.

DESIRED LEVELS OF SERVICE

Service standards

The Township utilizes the following established service standards for its core service infrastructure:

- Inventory Manual for Municipal Roads. Ministry of Transportation of Ontario.
- Ontario Structure Inspection Manual (OSIM). Ministry of Transportation of Ontario.
- Ontario Municipal Act, 2001. Minimum Maintenance Standards.
- Accepted design guidelines.

Performance

Inquiries are manually entered onto a form, investigation is tracked and confirmation of contact with originator is recorded. Although we have no software system to track these inquiries, they are kept on file under the appropriate road name. Currently there is no system in place to track inquiries and develop metrics. We are working towards a new payroll/work order system for Public Works that will tie into our financial system. This will allow us to monitor work history on specific assets and track patterns in an attempt to improve our preventative maintenance programs. It is the goal of the Public Works Department to utilize a GIS-centric asset management solution, combined with ArcGIS and an asset data management repository, to perform intelligent and cost-effective inspection, monitoring, and condition assessment. Considering the interdependencies of maintenance, operations, asset performance, environmental conditions, life cycle costs, and capital planning prevents the replacement of many perfectly good assets with useful remaining life, which can happen when using only age-based asset replacement recommendations.

Link to strategic plan

Development and implementation of this asset management plan directly supports Council's Strategic Plan Implementation Matrix item 6.B.ii., 9.A.i., 9.A.ii., 9.A.iii., 9.B.ii.

Growth consideration

In assessing the functionality of the Township's transportation network Average Annual Daily Traffic Volumes (AADT) were updated in 2013 and forecasted to 2023. The District of Muskoka has also commissioned a Second Home Study to compliment Statistics Canada information in forecasting growth and developing growth strategies.

Risk consideration

Risk may be mitigated by adhering to Provincial Minimum Maintenance Standards and accepted design/specification guidelines, such as the Canadian Highway Bridge Design Code, Ontario Provincial Standard Designs/Specifications and Transportation Association of Canada guidelines. The Township is also committed to implementing best practices in asset management and sustainability. Changes in weather patterns have necessitated that the Township design any Stormwater Management Facilities or Systems to be capable of managing a 100 year rainfall event.

ASSET MANAGEMENT STRATEGY

Guiding policy and procedures

The Township of Muskoka Lakes currently has two policies in place that directly impact asset management. Council Policy C-FS-10 guides treatment of tangible capital assets and Council Policy C-CAO-13 guides procurement by the municipality.

Identification

The Townships asset inventory, depreciation and value were captured through the Tangible Capital Asset processes established under PSAB 3150.

Roads

	Improvement Strategy	Improvement Length (km)				Improvement Cost (\$1000s)			
		now	1-5 yrs	6-10 yrs	total	now	1-5 yrs	6-10 yrs	total
Surface & Structure Improvements	Base and Surface Improvements	17.0	1.9	0.0	18.9	\$5,166	\$302	\$0	\$5,468
	Resurfacing	0.0	15.5	33.4	48.9	\$0	\$1,729	\$3,879	\$5,608
	Sub-total	17.0	17.4	33.4	67.8	\$5,166	\$2,031	\$3,879	\$11,076
Road Widening	Widen only (gravel)	37.6	0.0	0.0	37.6	\$6,839	\$0	\$0	\$6,839
	Widen and Resurface	29.9	0.0	0.0	29.9	\$7,365	\$0	\$0	\$7,365
	Sub-total	67.5	0.0	0.0	67.5	\$14,204	\$0	\$0	\$14,204
Total		84.5	17.4	33.4	135.3	\$19,370	\$2,031	\$3,879	\$25,280

There are a total of 135.3 kilometres of road that require resurfacing or construction improvements within the next 10 years, representing 105 of the 352 road sections (including those sections identified as requiring widening only). The associated road improvement costs are estimated at \$25.3 million.

With respect to the immediate needs, 84.5 kilometres were identified as requiring improvements at a cost of \$19.4 million, which represents 62% of the overall improvement kilometres and 77% of the total cost (road widening needs are considered “now” needs and thus included in these figures).

Bridges & Culverts

Structure Performance Deficiency Time of Need				Maintenance Need Time of Need			
urgent	1-5 yrs	6-10 yrs	total	urgent	<1 year	1-2 yrs	total
\$1,850	\$1,926	\$1,051	\$4,827	\$55	\$9	\$289	\$353

The suspected performance deficiencies include pedestrian/vehicular hazards, rough riding surface, undermining of foundation, continuing movements, load carrying capacity and unstable embankments. The maintenance needs include repairs to structural steel, repair of bridge concrete, bridge hand rail maintenance, rout and seal joints, erosion control at bridges, repair of bridge timber and other needs such as signage erection and additional investigations required. The suspected performance deficiencies and maintenance needs noted as urgent include repairs to severely eroded footings or piers, replacement of joint seals, deck replacements, load carrying capacity investigations, installation of hazard warning signs where they are missing and the provision of barrier/roadside protection measures where no such systems are otherwise currently provided or the current system is not suitable or is damaged.

Inspection procedures

All core service assets are inspected at regular intervals. The processes vary from informal patrol with visual inspection, to the formal compilation of a needs study that is undertaken every two years.

Preventative and regular maintenance

The transportation network is often maintained through re-active repairs and maintenance. These activities are monitored to determine a pattern of degradation which would trigger a more invasive renewal activity.

More pro-active activities are also employed to mitigate the effects of aging/weathering, such as resurfacing and sealing. These increase the lifespan of the asset and increase customer satisfaction of the end user.

Renewal, rehabilitation or replacement

The current culture of tending to asset renewals on a 'worst first' basis is changing. The Township will get to a point where preventative maintenance is the top priority, resulting in the Township investing in the right treatment on the right asset at the right time in order to optimize the use of available resources.

It should be noted as well, that most materials used in the construction of core service assets are salvaged and recycled during a renewal or rehabilitation activity. This has as much to do with good stewardship, as it has to do with the high cost of virgin materials.

Expansion

Growth and development within the Township may have an impact on future demands for core service infrastructure. Development is subject to the Official Plans of both the Township and the District of Muskoka, as well as the Comprehensive Zoning By-Law of the Township. A well designed Development Charges By-Law in coordination with subdivision agreements can curb much of the initial cost of construction. The Township is set to renew its Development Charges By-Law in the summer of 2014, with much consideration given to the relevant components of this asset management plan.

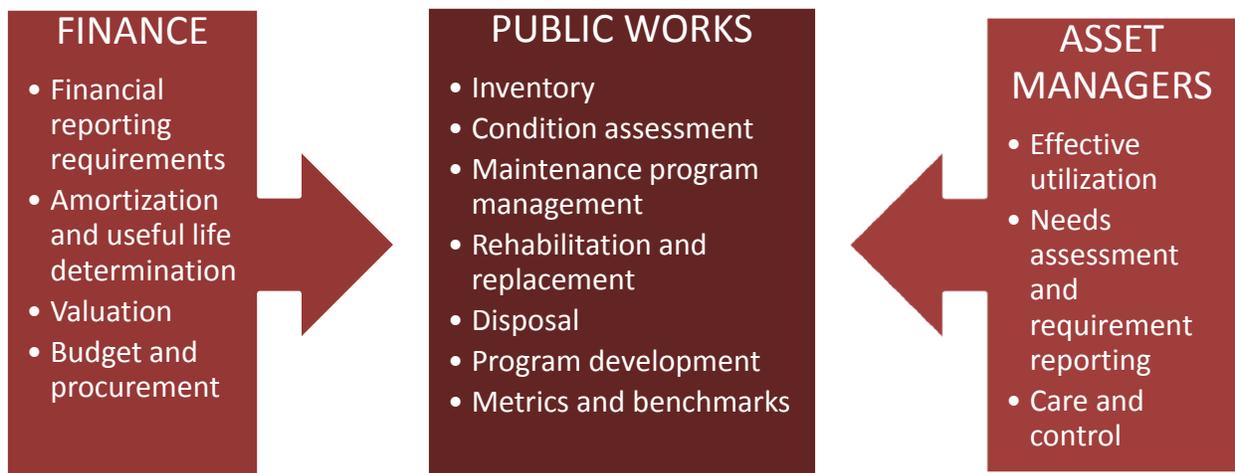
Life cycle identification

Life cycle of an asset has 5 parts: contemplation, design and construction, use of asset, preventative maintenance, and decommissioning or renewal.

Communication occurs with District of Muskoka and neighbouring municipalities to ensure synchronization and collaboration with respect to necessary construction activities, where possible. Coordination of data (section, material type, age, work order alerts) is an important part of the working relationship between the Township and other asset owners. The Township strives to overlap replacement forecasts to ensure that water/sewer/road/sidewalk replacements are scheduled to be undertaken at the same time.

Implementation

The chart below allocates portions of the strategy to specific departments and positions so that there is clear understanding of where responsibility lies with respect to implementation of the strategy.



FINANCING STRATEGY

Expenditure forecasts

The following table summarizes the 10 year expenditure forecast for the Township (based on the Township's most recent 10 year capital plan) with two years of historical reference (2012 and 2013) for comparison purposes:

10 YEAR EXPENDITURE FORECAST					
Year	Non-Infrastructure	Maintenance	Rehabilitation	Replacement	Total
2012	\$0	\$772,673	\$365,638	\$1,047,978	\$2,186,289
2013	\$36,982	\$608,615	\$387,203	\$654,538	\$1,687,338
2014	\$0	\$596,500	\$443,950	\$902,000	\$1,942,450
2015	\$20,400	\$608,430	\$1,077,732	\$519,588	\$2,226,150
2016	\$0	\$620,599	\$258,747	\$1,671,090	\$2,550,436
2017	\$47,754	\$633,011	\$442,205	\$1,558,702	\$2,681,672
2018	\$0	\$645,671	\$421,824	\$1,087,628	\$2,155,123
2019	\$22,082	\$658,584	\$797,202	\$730,681	\$2,208,549
2020	\$0	\$671,756	\$544,443	\$988,771	\$2,204,970
2021	\$51,691	\$685,191	\$542,697	\$987,870	\$2,267,449
2022	\$0	\$698,895	\$566,790	\$991,224	\$2,256,909
2023	\$23,902	\$712,873	\$357,452	\$1,072,237	\$2,166,464

*Table assumes 2% inflation per year after 2014.

Funding sources and availability

Discretionary Reserves

Muskoka Lakes has implemented an aggressive program to adequately replenish a discretionary reserve on an annual basis so that it may be used to fund capital requirements for roads and bridges. The Roads Reserve is funded from three sources: property taxation, revenues earned from the sale of road allowances, and revenues earned from entering into license agreements for encroachments on municipal land. The Roads Reserve is intended to be the main source of funding for core service infrastructure because of it is completely under control of the municipality, allowing for stability and discretionary use.

Federal and Provincial Grants

Muskoka Lakes does not currently have any capital funding agreements in place with either the federal or provincial government. There are two programs administered by senior levels of government that may still be expected with reasonable certainty: Canada's Gas Tax Fund and the Ontario Municipal Partnership Fund.

Canada's Gas Tax Fund is a source of funding for municipal infrastructure. The 2013 Federal Budget committed to enhancing the Fund by 2% per year. Though there is no guarantee that the Fund will remain in place indefinitely, it is reasonable to assume consistent funding for the purpose of this plan.

The Ontario Municipal Partnership Fund (OMPF) is a program administered by the Province of Ontario to provide unrestricted financial support to Ontario's municipalities. There is a scheduled phase down of the program to \$500 million by 2016. Historically, the Township has utilized OMPF to fund various capital requirements. It is the Township's intention to eventually divert OMPF proceeds to other capital requirements, leaving core service infrastructure funded by the Township's own source revenues and Canada's Gas Tax Fund.

Development Charges

Muskoka Lakes will be completing a new background study and by-law for development charges in 2014. As such, revenue to be potentially earned from development charges have not been considered in the suggested funding model.

Taxation and User Fees

Muskoka Lakes utilizes general property taxation to fund 100% of its regular and preventative maintenance activities. It also uses a combination of general property taxation and proceeds from the sale of road allowances and license agreements to fund the Roads Reserve.

Debentures

At this time Township Council wishes to avoid additional debt being incurred by the municipality. With this direction in mind, the suggested funding model does not utilize debentures as a funding source. Should Council alter its position, the municipality would have to calculate its Annual Repayment Limit (ARL) to ascertain its ability to incur long-term financial obligations. The latest calculation of the ARL is \$2,471,240, which at an interest rate of 5% per annum over 20 years, would provide access to \$30,797,106.

Application of funding to needs

2014

2014 APPLICATION OF FUNDING TO NEEDS			
	Maintenance	Rehabilitation	Replacement
Needs			
Hammils Point Road			\$109,200
Falkenburg Road			\$202,800
Acton Island Road		\$121,000	
Innisfree Road		\$79,200	
Tondern Island Road		\$35,200	
Buckeye Road		\$30,600	
Packers Bay Road		\$6,800	
Redwood Road		\$21,000	
Bradley Road		\$22,050	
Broadley Road		\$11,550	
Marina Road		\$24,150	
Cranberry/Medora Roads		\$42,000	
Shea Road		\$24,150	
Rosseau Road #1		\$14,700	
Lawrence Pit Road		\$11,550	
Beatrice Townline Bridge #2			\$530,000
Culvert Installation			\$60,000
General	\$596,500		
Total	\$596,500	\$443,950	\$902,000
Funding			
Ontario Municipal Partnership Fund		\$443,950	\$227,750
Federal Gas Tax Rebate			\$194,203
Discretionary reserves			\$480,047
Taxation	\$596,500		
Total	\$596,500	\$443,950	\$902,000

10 Year

10 YEAR APPLICATION OF FUNDING TO NEEDS						
Year	Needs	Funding				
		Taxation	Reserves	Gas Tax	OMPF	Total
2014	\$1,942,450	\$596,500	\$480,047	\$194,203	\$671,700	\$1,942,450
2015	\$2,226,150	\$608,430	\$700,000	\$198,087	\$719,633	\$2,226,150
2016	\$2,550,436	\$620,599	\$800,000	\$202,048	\$927,789	\$2,550,436
2017	\$2,681,672	\$633,011	\$900,000	\$206,089	\$942,572	\$2,681,672
2018	\$2,155,123	\$645,671	\$1,000,000	\$210,211	\$299,241	\$2,155,123
2019	\$2,208,549	\$658,584	\$1,100,000	\$214,415	\$235,550	\$2,208,549
2020	\$2,204,970	\$671,756	\$1,150,000	\$218,703	\$164,511	\$2,204,970
2021	\$2,267,449	\$685,191	\$1,200,000	\$223,077	\$159,181	\$2,267,449
2022	\$2,256,909	\$698,895	\$1,250,000	\$227,539	\$80,475	\$2,256,909
2023	\$2,166,464	\$712,873	\$1,221,501	\$232,090	\$0	\$2,166,464

RELATED DOCUMENTATION

1. Road Needs Study 2013 – Township of Muskoka Lakes.
2. Township of Muskoka Lakes Strategic Plan Implementation Matrix.
3. Inventory Manual for Municipal Roads. Ministry of Transportation of Ontario, February 1991.
4. Ontario Structure Inspection Manual (OSIM). Ministry of Transportation of Ontario, April 2008.
5. Ontario Municipal Act, 2001. Minimum Maintenance Standards.
6. Township of Muskoka Lakes 2014 Budget.
7. Township of Muskoka Lakes 10 Year Capital Plan.