Municipality of East Ferris

ASSET MANAGEMENT PLAN

DECEMBER 2013 (Released in August 2014)

Asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets.

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1. EXECUTIVE SUMMARY

2. INTRODUCTION

In 2011 the Ministry of Infrastructure released a 10-year infrastructure plan, "*Building Together"*. In 2012 the Ministry announced funding to assist municipalities in Ontario with the development of asset management plans. The East Ferris Asset Management Plan has been prepared in the format outlined in the document *Building Together – Guide for Municipal Asset Management Plans*.

Municipalities are the stewards of the infrastructure they own. They are expected to make optimal use of a full range of budgeting and financing tools including reserve funds and long term debt. East Ferris will have a Long Term Capital Funding and Financing Policy, a Debt Management Policy and a Reserve Fund Policy to provide guidance and direction in the development of a sound financing strategy to reach a sustainable capital funding level. The provincial and the federal governments have both recognized they have an obligation to help municipalities address infrastructure challenges.

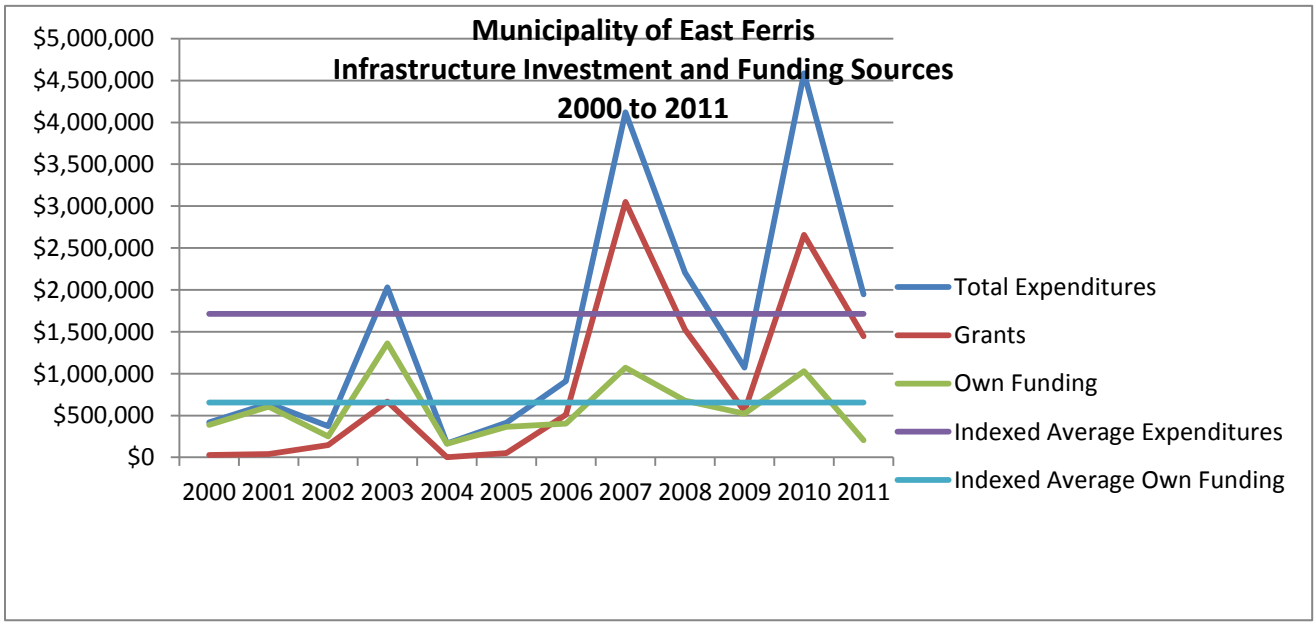
Asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets. The objective is to maximize benefits, manage risks, and provide satisfactory levels of service to the public in a sustainable manner. Asset management requires a thorough understanding of the characteristics and condition of infrastructure assets, as well as the service levels expected from them. It also involves setting strategic priorities to optimize decision-making about when and how to proceed with investments. Finally, it requires the development of a financial plan, which is the most critical step in putting the plan into action.

The need for an Asset Management Plan was not fully understood or recognized by federal, municipal or local government in Canada for decades. Much of the infrastructure had been built through the high growth years, in the twenty-five years following World War II, during which there was an immense expansion in the Canadian economy and unemployment remained very low. Through this period the infrastructure was relatively new and required little maintenance. Infrastructure investment began to fall off through the mid-1970s,1980's and 1990's as government tax dollars were directed towards publicly funded health care, education, the Canada Pension Plan and other welfare state costs. Canada experienced economic recession in the early 1980's and again in the early 1990's that led to massive government deficits and high unemployment. Aging infrastructure required more funding but the investments were not made. The term "infrastructure deficit" was born. This is the difference between the funding needed for maintenance, repair, rehabilitation, retrofitting and replacement of existing deteriorating infrastructure and the funding available from all sources, including taxes, government subsidies and grants and private sector contributions.

The Federation of Canadian Municipalities (FCM) and McGill University completed a number of surveys between 1985 and 2003 trying to address the infrastructure deficit. The "2007 FCM-McGill Municipal Infrastructure Survey – DANGER AHEAD: THE LOOMING COLLAPSE OF CANADA'S MUNICIPAL INFRASTRUCTURE" received wide exposure and media attention. The infrastructure deficit was rising exponentially and had to be addressed.

In 2008 the Province of Ontario, the Association of Municipalities Ontario (AMO) and the City of Toronto released "**The Provincial-Municipal Fiscal and Service Delivery Review**". The review included an **Infrastructure Table** that filed a report that included the following comments:

> *"Infrastructure is important to economic competitiveness and quality of life in every municipality and the province as a whole. Provincial and municipal governments invested heavily in infrastructure, especially in the 1950s and 1960s, in response to changing patterns of work and housing. That infrastructure is now, in many cases, reaching the end of its expected life. Modeling carried out for the infrastructure working table estimated that it would take at least $5.9 billion a year for 10 years to close a gap between total infrastructure needs of roughly $9.8 billion and recent spending of about $3.9 billion a year. The gap includes a backlog of needed upkeep to bring systems into a state of good repair. After the backlog is cleared, the ongoing gap would be an estimated at $3.7 billion a year to meet ongoing costs to rehabilitate, replace and upgrade existing systems and build new ones to meet growth needs".*



Until 2012 East Ferris has relied heavily on grant availability to determine the level of infrastructure investment over and above the amounts available in the Operating Budget allocations for Pay As You Go. The municipality's reserve funds were used to provide the municipal share required under the grant programs. No long term debt was used.

The capital program spending levels were based solely on what the Council felt they could afford and not based on what was needed to maintain the infrastructure.
In 2009 the municipality undertook to complete a Roads Needs Study and an Accommodations Needs Study. The municipality concluded in 2011 that it wanted to begin development of an Asset Management Plan. As the first step, the 2012 Operating Budget included funds to develop a Reserve Fund Policy, a Long Term Capital Funding and Financing Policy and a Debt Management Policy. Council felt that these steps would allow them to make informed decisions before proceeding with a more aggressive infrastructure program which would require use of reserve funds and issuing of long term debt for the first time in recent history. Council decided to utilize reserve funds to fund roads and building projects. The level of discretionary reserve funds declined by 41%, dropping from $2,878,000 on December 31, 2008 to $1,694,000 on December 31, 2012. The municipality issued $1,200,000 in long term debt in 2012 for road projects and the 2013 Capital Budget assumed the issuance of $1,500,000 for a new administration building.

The indexed average total capital expenditure level during this 12 year period, based on a 2% per year inflation factor, was $1,715,000 per year. The indexed average own purpose funding during this same period was only $656,000 and much of that has been funded from reserves which have been substantially depleted and can no longer be relied upon in the future. The pay-as-you-go funding has declined since it peaked in 2008 and bottomed out at $50,000 in 2012.

This demonstrates the difficulty East Ferris will have reaching a sustainable capital funding level on a go forward basis. The Financial Strategy in Section 6 of the Asset Management Plan will address the impact of maintaining the current service levels without federal or provincial partnerships.

The goals and objectives of the municipality of East Ferris are highly dependent on the infrastructure and how it supports economic activity and improves the quality of life for its citizens. Two existing policy documents that substantiate this dependency are the Official Plan and the Economic Strategic Plan. The Asset Management Plan will become a key policy that will integrate with other policies and plans including the following:

- Long Term Financial Plan
- Long Term Capital Funding and Financing Policy
- Debt Management Policy
- Reserve Fund Policy
- Capital Budget and Five Year Capital Forecast
- Operating Budget

This Asset Management Plan will include all of the infrastructure assets that the Municipality of East Ferris has direct control and responsibility over. Infrastructure owned and maintained by agencies, boards and commissions funded by East Ferris tax rates are not included in this plan. The initial plan will include all components for roads,

bridges and culverts. This plan will eventually include the entire depreciable infrastructure assets of the Municipality of East Ferris reported in the annual audited Financial Report. Other infrastructure including improved land, buildings, machinery, equipment and vehicles will include only the components of the plan currently available, with the balance of the plan to be completed within 3 years as funding permits.

The East Ferris Asset Management Plan has been developed by an Asset Management Team which includes the Chief Administrative Officer John Fior, the Treasurer Jason Trottier and the Director of Public Works and Engineering Antoine Boucher, with co-ordination and support provided by Brian Rogers Municipal Financial Services. The Mayor, Council and other staff have provided feedback during the development of the plan. A draft Asset Management Plan will be posted on the municipality's web site and the public will be invited to a public meeting in 2014 prior to adoption of the updated plan by Council in late 2014.

This plan is the first step in the development of a Comprehensive Asset Management Plan for the Municipality of East Ferris. It will be reviewed and updated in the fall each year based on current engineering, financial and economic data available. The municipality will include an Operating Budget funding allocation each year to ensure continuous improvement to the Asset Management Plan. The quality of the plan and extent of enhancements will be somewhat dependent on future funding opportunities.

3. STATE OF THE INFRASTRUCTURE

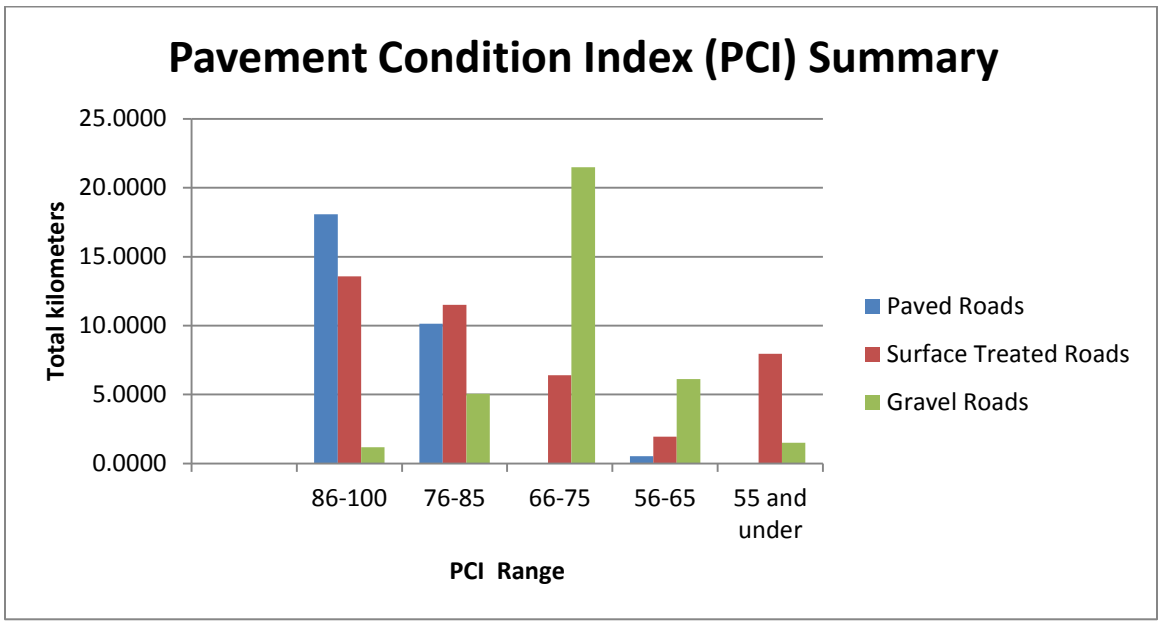
MUNICIPALITY OF EAST FERRIS
INFRASTRUCTURE REPORT CARD
STATE OF THE CURRENT INFRASTRUCTURE

MUNICIPALITY OF EAST FERRIS ROAD PAVEMENT CONDITION REPORT CARD 2013				
ROAD SURFACE CATEGORY	**RATING 2013**	**KILOMETERS IN CATEGORY**	**WEIGHTED AVERAGE Pavement Condition Index**	**COMMENTS**
PAVED ROADS	A	28.7	89.5	In excellent condition with very smooth surfaces.
SURFACE TREATED ROADS	C	41.4	75.2	In fair condition. Comfortable with intermittent bumps or depressions.
GRAVEL ROADS	C	35.3	70.2	In fair condition. Comfortable with intermittent bumps or depressions.

MUNICIPALITY OF EAST FERRIS BRIDGE CONDITION REPORT CARD 2013				
BRIDGE	**CURRENT VALUE**	**REPLACEMENT COST**	**2013 BRIDGE CONDITION INDEX**	**RATING**
Wasi River Bridge (Groulx Road)	$147,172	$205,623	71.6	C
Bailey Bridge (Edmond West)	$36,797	$69,051	53.3	D

South Shore Bridge (Costs shared with Chisholm)	$176,000	$181,800	96.8	A
BRIDGES WEIGHTED AVERAGE			**67.0**	**C GOOD**

MUNICIPALITY OF EAST FERRIS CULVERT CONDITION REPORT CARD 2013			
CULVERT CLASS	**RATING**	**WEIGHTED AVERAGE CONDITION RATING**	**COMMENTS**
ROAD CROSSING CULVERTS OVER 1.2m DIA.	B	Not available	Based on Engineer's knowledge of culverts A detailed inventory and condition rating is planned for 2014 and updated yearly
ROAD CULVERTS UNDER 1.2m DIA.	B	Not available	Based on Engineer's knowledge of culverts A detailed inventory and condition rating will be considered for 2014 and condition reassessed as road work is scheduled
ENTRANCE CULVERTS	C	Not available	Condition ratings not maintained for entrance culverts. Replacement is considered for future years based on complaints and budget for rehabilitation/replacement of 30 entrance culverts per year in Operating Budget
CULVERTS WEIGHTED AVERAGE	**B**	**Not available**	**Culverts are generally in good condition**



The paved roads are generally in excellent condition with very smooth surfaces and a weighted average PCI of 89.5. Considerable effort has been put into paved road rehabilitation over the past 10 years and the methods of rehabilitation have had long lasting benefits. Major rehabilitation projects for 83% of the paved roads were undertaken with the assistance of grants in 2003 (7.04km), 2007(10.58km) and 2009(6.3km). The impact of the rehabilitation shows with 98% of the paved roads in good to excellent condition having a PCI higher than 75. Only 2% of paved roads are in poor to very poor condition having a PCI of lower than 66. The conditions will

deteriorate somewhat over the next few years. There will be expenditure spikes when these roads require top coating or other minor rehabilitation approximately 10 years after the major rehabilitation. There will be major expenditure spikes when these roads require reconstruction 30 years after the major rehabilitation projects.

The surface treated roads are generally in fair condition, comfortable with intermittent bumps or depressions, and a weighted average PCI of 75.2. Only 61% of the surface treated roads are in good to excellent condition having a PCI higher than 75. Meanwhile 24% are in poor to very poor condition having a PCI of lower than 66. In 2011 and 2012 the municipality used reserve funds and debt to complete major rehabilitation of 18.5km (45%) of surface treated road. Unfortunately 50% (20.5 km) of the surface treated roads have not had a major rehabilitation for 10 years or more and should be completed immediately. East Ferris' strategy will be to do a major rehabilitation at least every 8 years on these roads. The condition of surface treated roads will likely deteriorate over the next few years (ie. weighted average PCI for surface treated roads will drop) unless additional funding is allocated. East Ferris has recently applied for a grant under the Small, Rural and Northern Municipal Infrastructure Fund to do a major rehabilitation on 13.9km of surface treated roads (Macpherson Drive, Centennial Crescent and Mirimishi Road). This application was not approved and the scope of the project was scaled back.

Gravel roads are in fair condition with a weighted average PCI of 70.2. Only 18% of the gravel roads are in good to excellent condition having a PCI higher than 75 while 22% are in poor to very poor condition having a PCI under 66. The majority of gravel roads (60%) have a PCI in the 66 to 75 range. East Ferris is able to complete minor maintenance on an ongoing basis with their Public Works crew and Operating Budget allocations. A major rehabilitation program is funded every 2 years with a $100,000 allocation in the Capital Budget. Over a 5 year cycle all of the gravel roads have been included in the major rehabilitation program. The general condition of gravel roads should be able to be maintained at the current level.

4. DESIRED LEVELS OF SERVICE

The development of the Asset Management Plan is driven by the municipality's current and desired levels of service for its infrastructure (ie. quality, quantity, functionality and reliability). The expenditure forecasts are highly dependent on the desired levels of service. If roads are not currently meeting the desired levels of service, then the costs to improve them will be greater than if the desire is to keep them at the current levels. The minimum level of service is dictated by meeting the regulatory requirements for Ontario municipalities.

A service level approach is taken to ensure long term infrastructure and financial sustainability is attainable. Service level desired outcomes can be scaled down if they are not deemed to be affordable. Council plans on engaging the community in discussions on desired service levels and to ensure asset investment decisions balance the funding for investment in new/upgraded assets with the investment in asset renewal.

The 2013 Asset Management Plan will concentrate on levels of service for roads and bridges. The balance of the infrastructure levels of service will be added as the Comprehensive Asset Management Plan is completed over the next 3 years.

MUNICIPALITY OF EAST FERRIS SAMPLE SERVICE LEVEL FOR ROADS					
Service Level Category	Service Level	Service Level Description	East Ferris 2013	Desired Target Service Level	Objectives /Comments
Quality	Pavement Condition Index	Sum of the severity and density of surface distresses as measured by the PCI			
		Paved Roads	89.5	86.0-90.0	To maintain at current level
		Surface Treated Roads	75.2	76.0-85.0	To improve over 10 year period
		Gravel Roads	70.2	66.0-75.0	To maintain at current level

External trends and issues could impact the municipality's ability to maintain standards at the expected levels. Downloading / uploading from Provincial or Federal governments, new regulations and standards that increase costs and extreme weather or other natural disasters are the most likely trends that could force municipal budgets to increase.

5. ASSET MANAGEMENT STRATEGIES

The asset management strategy is the set of planned actions that will enable the assets to provide the desired levels of service in a sustainable way, while managing risk at the lowest lifecycle cost. A good asset management strategy is a set of actions that, taken together, have the lowest total cost overall, and not necessarily the set of actions that each has the lowest cost individually. The Municipality of East Ferris would like to use an approach that can be managed and maintained by our own staff on an annual basis. In general the "keep it simple and manageable" philosophy has been used throughout this Asset Management Plan.

The costs associated with asset management rise exponentially as the asset moves through its life-cycle. Regularly scheduled maintenance is recognized as a critical approach to manage the costs of an asset management plan. East Ferris has a relatively aggressive annual maintenance program that is funded in the Operating Budget. On average over the 2011 to 2013 period the East Ferris Operating Budget actual expenditures averaged $507,000 annually which is 13% of operating expenses ($3,941,000 excluding transfer payments in 2013 Operating Budget) and 14% of the 2013 tax levy.
Renewal / rehabilitation activities are designed to extend the useful life of all assets and defer the need for significantly higher replacement costs. They are generally projects which cannot be funded in the Operating Budget and accordingly they are a significant component of the annual Capital Budget.

The Asset Management Plan includes a detailed description of the specific approach used by East Ferris.

Planned actions and policies can lower the costs or extend the useful life of assets. The Municipality of East Ferris actively pursues non-infrastructure solutions to ease the burden of the Asset Management Plan on its taxpayers.

6. FINANCING STRATEGY

Having a financial plan is critical for putting an asset management plan into action. The financing strategy described in the Asset Management Plan demonstrates the municipality's commitment towards integrating asset management planning with financial planning and budgeting and to make full use of all available infrastructure financing tools.

The sources of capital revenue include, but may not be limited to, the following:

1. Pay-As-You-Go Levy
2. Debentures or other long-term debt
3. Asset Management Sustainable Capital Funding Reserve Fund
4. Specific dedicated reserves set up for capital projects
5. Federal Gas Tax
6. Future Federal and Provincial Government Entitlement Grants
7. Federal and Provincial Government Application Based Grants
8. Development Charges if applicable in future

The annual Operating Budget includes a Capital Levy which includes a debt service component (ie. principal and interest payments), a pay-as-you-go component and a capital financial lease payments component. The pay-as-you go component is the balancing component and is calculated as follows:

Pay-As-You-Go Levy = Total Capital Levy - Debt Service Costs Principal - Debt Service Costs Interest – Capital Financial Lease Payments

The Asset Management Plan does assume an ongoing capital revenue source from the Federal Gas Tax program and a potential ongoing future Federal or Provincial Government entitlement grant.

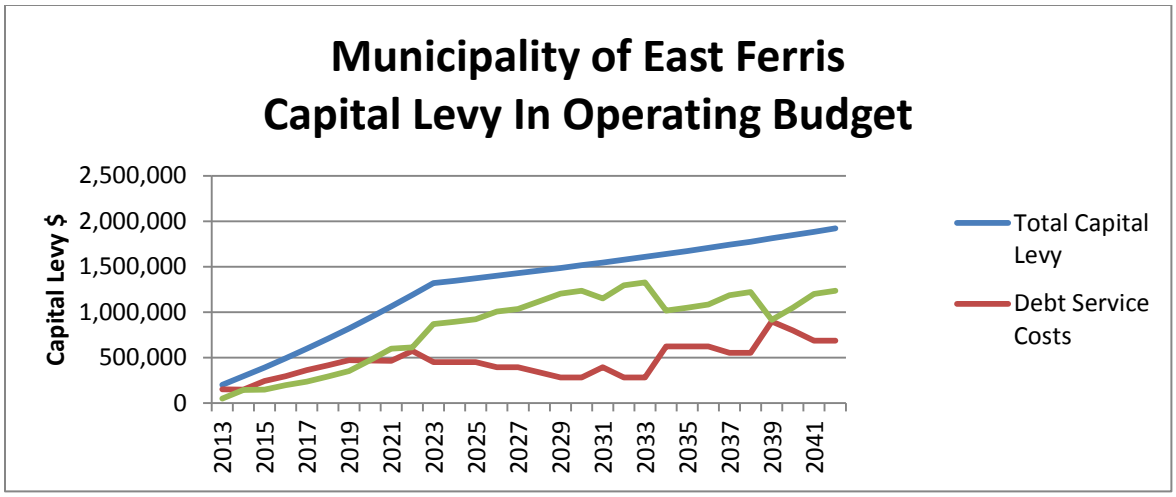
The Reserve Fund Policy adopted by Council in 2013 establishes the guidelines for use of reserve funds. East Ferris has an Asset Management Sustainable Capital Funding Reserve Fund totaling $615,000 which is being held to match any federal or provincial application based grants that may be approved at some point in the future. Since the likelihood of such grants is unknown, there are no plans in the Asset Management Plan to utilize reserve funds for funding capital programs.

East Ferris' Council had committed to developing a Long-Term Capital Funding and Financing Policy in 2012. This policy is scheduled to be completed and adopted by Council in tandem with the Asset Management Plan. The key data feeding this plan will come from the projected long-term capital expenditure requirements identified in the Asset Management Plan. The Long Term Capital Funding and Financing Policy will provide guidance in identifying the funding sources or financing requirements. The ultimate goal would be to reach a sustainable capital funding level so that long term financing would only be required for very large projects. The Long Term Capital Funding and Financing Policy will include a forecasting model that will show how and when that sustainable capital funding level is reached and maintained in future years. The sustainable capital funding amount is the average funding level required on a go forward basis based on the capital expenditure estimates for the following 25 to 30 year period. After it is reached it will only need to be indexed annually. The plan will include a strategy on how to move from the current capital funding levels to the sustainable capital funding levels identified in the Asset Management Plan. It will also include projections of the impact on taxpayers over the long term.

East Ferris is committed to working towards eliminating the infrastructure deficit and having a sustainable capital funding source available at some point in the future. To accomplish this goal will require increasing the total Capital Levy included in the Operating Budget by more than just an inflationary factor. This amount is calculated in accordance with the Long Term Capital Funding and Financing Policy. It is to be increased each year by the following amounts:

1. An inflation index applied to the previous year's total capital levy. The assumption used in Scenario 1 is 2%.
2. An amount equal to 1% of the previous year's municipal tax levy. The 1% tax levy increase shall be 1% on the previous year's budgeted tax levy excluding education.
3. An amount generated by "real assessment growth" by applying the previous year's municipal tax rates to the real assessment growth excluding market value increases. Scenario 1 assumes an annual growth of 1.0% per year
4. The amounts in 2 and 3 are added each year until the total capital revenue sources reach the average sustainable capital expenditure identified by the Asset Management Plan. The current projections assume these increases for a 10 year period.

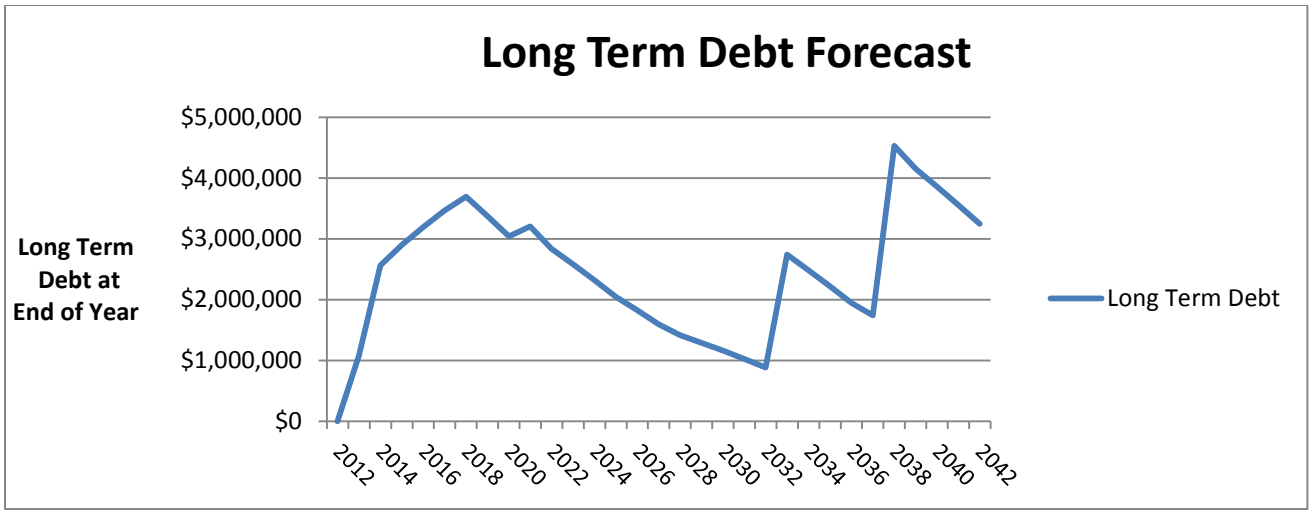
The following chart summarizes the projected growth of the total capital levy in the Operating Budget and the debt service and pay as you go components.



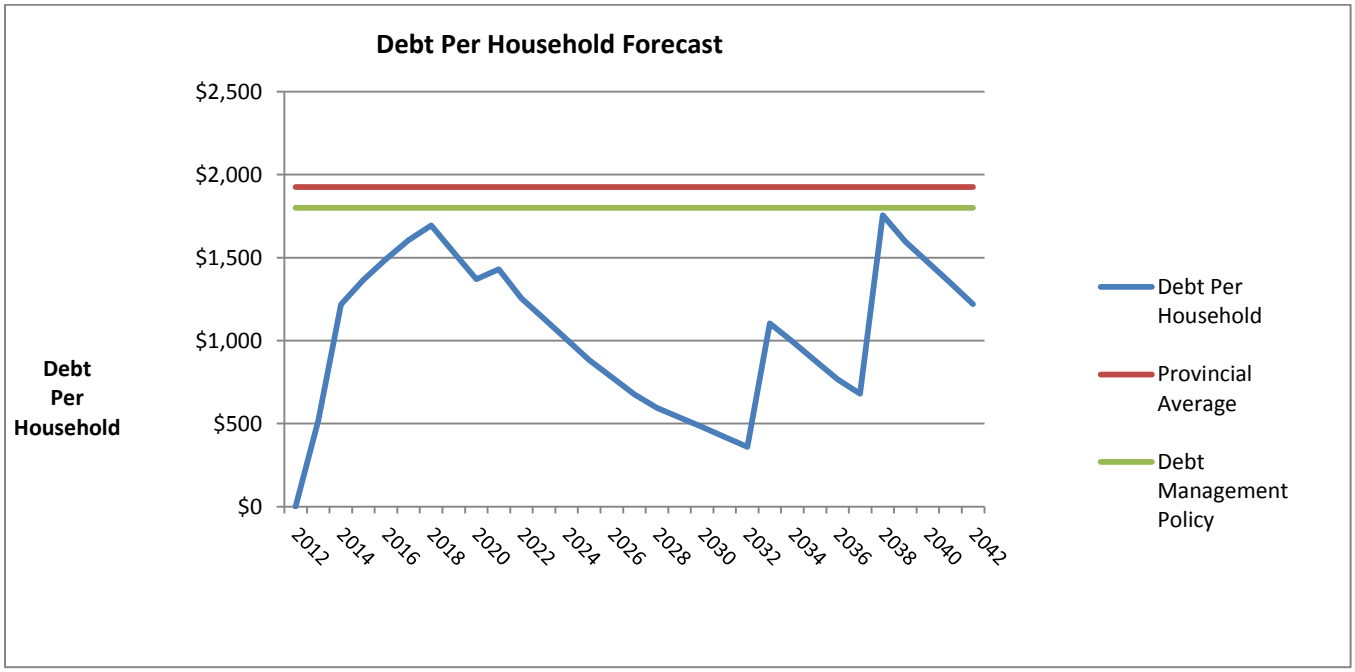
East Ferris Council had also committed to developing a Debt Management Policy in 2012. This policy is scheduled to be adopted by Council in tandem with the Asset Management Plan. The Council has accepted the need to utilize long term debt as a funding source as part of its commitment to make optimal use of the full range of budgeting and infrastructure financing tools. The purpose of the Municipality of East Ferris Debt Management Policy is to establish guidelines for issuance and management of long-term debt. Debt levels will rise, but at a manageable rate.

The first model described in more detail in the Financing Strategy assumes the following long term debt issues based on the expenditure forecast, the Long Term Capital Funding and Financing Policy goals and the Debt Management Policy goals.

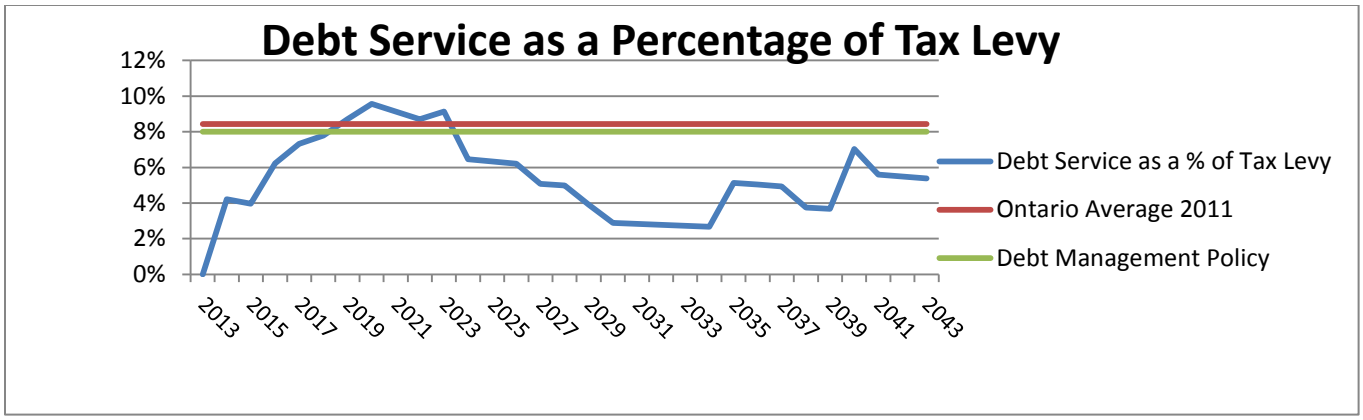
YEAR	DEBT AMOUNT ISSUED	TERM
2014	$1,600,000	25 YEARS
2015	$500,000	10 YEARS
2016	$500,000	15 YEARS
2017	$500,000	10 YEARS
2018	$500,000	10 YEARS
2021	$500,000	15 YEARS
2033	$2,000,000	15 YEARS
2038	$3,000,000	15 YEARS



Debt per household will increase but will stay under the provincial average and the target maximum level identified in the Debt Management Policy. Ongoing debt issuance will no longer be required when the municipality reaches the sustainable capital funding levels. Debt would then only be required infrequently for very large projects.



Debt service costs as a percentage of tax levy rise quickly over a 5 year period 2014 to 2019 as East Ferris uses this infrastructure funding tool to begin to reduce their infrastructure deficit. This measure exceeds the policy target level of 8% from 2019 to 2023 before it begins to decline. Debt service costs climb back up close to the target maximum following the large debt issues for large road reconstruction projects in 2033 and 2038.



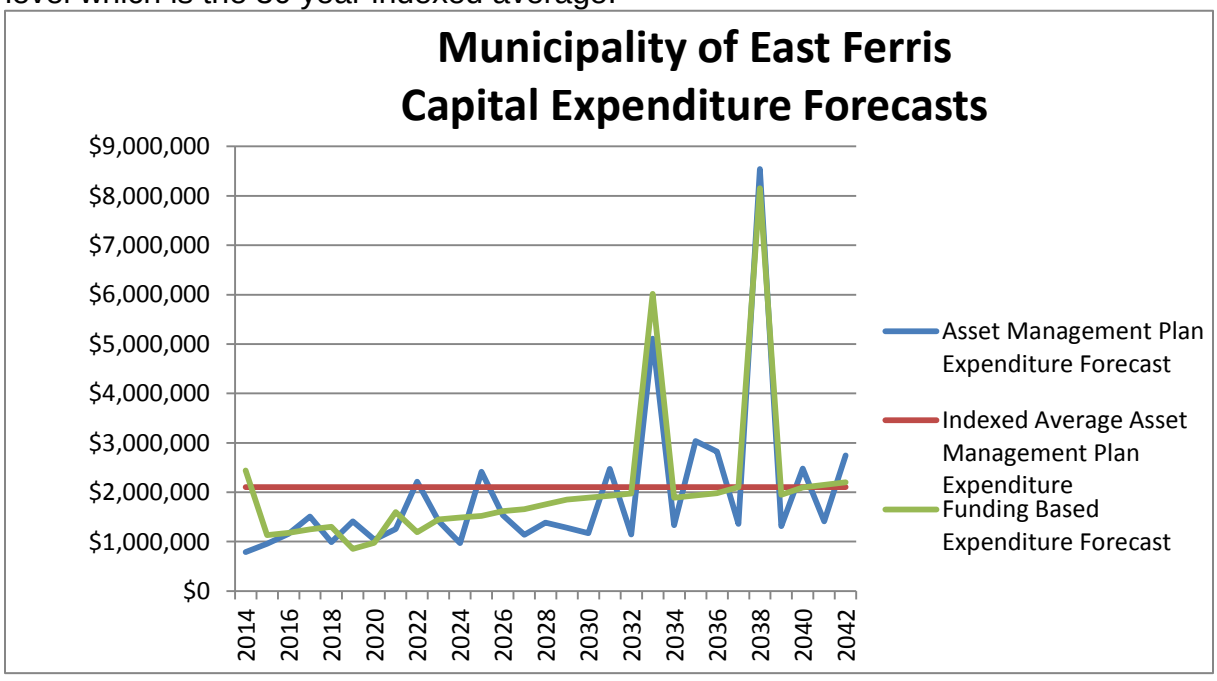
There are three long term capital expenditure forecasts to be prepared for each year of the 30 year plan.

1. LONG TERM CAPITAL EXPENDITURE (EQUALS FUNDING) FORECAST

   Capital expenditures are based on the total revenue forecast by the Long Term Capital Funding and Financing Policy. The expenditures are for what the municipality can afford to spend each year based on the policies.

2. ASSET MANAGEMENT PLAN EXPENDITURE FORECAST

   Capital expenditures are based on the Asset Management Plan. The expenditures are for what should be spent each year based on the plan. This forecast will allow the municipality to calculate a sustainable capital expenditure level which is the 30 year indexed average.



The red line represents the $2,104,508sustainable capital funding level or the target level based on the indexed average of the Asset Management Plan expenditures for the forecast period.

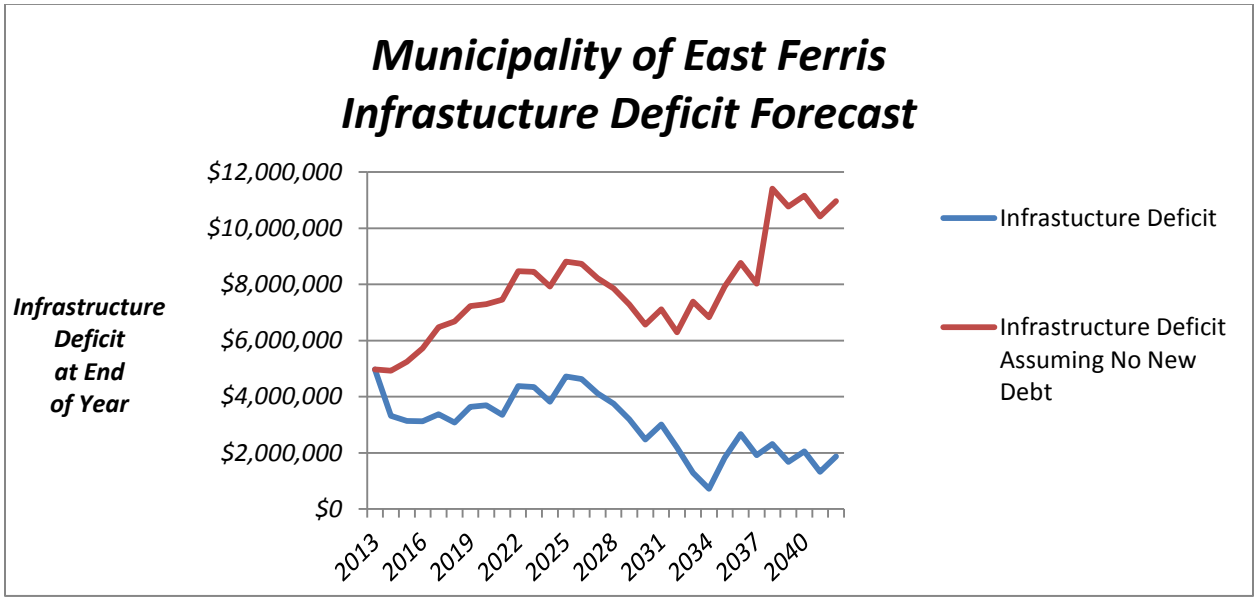
The blue line represents the forecasted Asset Management Plan expenditures for each year for the forecast period.

The green line represents the forecasted capital revenue sources. The funding level would reach $2,198,314 by the end of the forecast period and includes the following revenue sources:

Pay-As-You-Go Capital Levy	$1,307,589
Federal Gas Tax	$464,003
Provincial Entitlement Based Grants	$426,722

3. LONG TERM INFRASTRUCTURE DEFICIT FORECAST

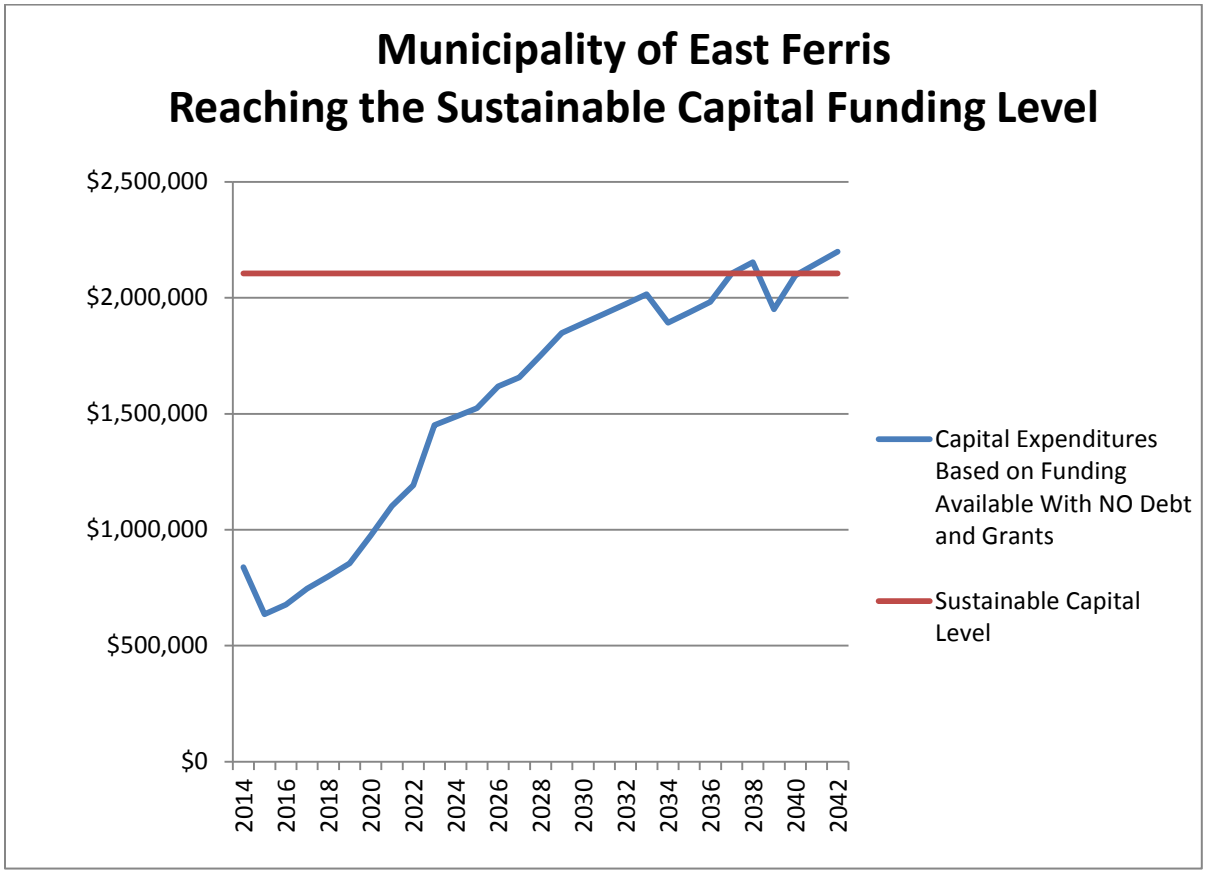
   The Asset Management Plan will identify the current infrastructure deficit which is the total investment that should be made now. The long term infrastructure deficit forecast utilizes the first two forecasts above to estimate what the deficit will be by the end of each year.



This graph demonstrates how dramatically the infrastructure deficit would rise if long term debt is not utilized as a capital funding source. The infrastructure deficit will remain at unacceptable levels and could not be totally eliminated during the 30 year period modelled in this scenario. This demonstrates the importance of federal and provincial partnerships to reduce infrastructures deficits while the municipality is building up its sustainable capital funding levels.

Ideally the infrastructure deficit should hover above and below the zero level so that excess capital levy funds could be transferred to the Asset Management Sustainable

Capital Funding Reserve Fund to be available during years that the expenditure levels are above the sustainable funding level. The infrastructure deficit would climb substantially in years that paved roads would have to be reconstructed. These projects would require federal and provincial partnerships to cushion the impact. The increase in 2033 and 2038 would be $2,000,000 and $3,000,000 greater if conditional grants of these amounts were not assumed.



The red line represents the $2,104,508 sustainable capital funding level or the target level based on the indexed average expenditures identified in the Asset Management Plan.

The blue line represents the forecasted capital revenue sources assuming no debt or conditional grants. The funding level would reach $2,198,314 by the end of the forecast period and includes the following revenue sources:

Pay-As-You-Go Capital Levy	$1,307,589
Federal Gas Tax	$464,003
Provincial Entitlement Based Grants	$426,722

The financing strategy described in the December, 2013 Asset Management Plan is based on the information available at this time with allowances for assets that will be added to the Comprehensive Asset Management Plan that will be developed over the next two to three years. The reliability of the Asset Management Plan Expenditure Forecast will improve during that period. The current financing strategy describes how the municipality can move towards a sustainable capital funding level. The assumptions used will change but the methodology is now in place to easily amend the financing strategy each year.

The financing strategy is also very dependent on being able to follow the municipality's policy guidelines in the Long Term Capital Funding and Financing Policy, the Debt Management Policy and the Reserve Fund Policy. External factors could dramatically impact the ability to reach the sustainable capital funding level. Decreasing Ontario Municipal Partnership funding from the Province, large increases in OPP policing costs and proposed capital levies by the Cassellholme East Nipissing District Home for the Aged are all expected to add significant pressures to the tax levy over the next few years.

The provincial and the federal governments have both recognized they have an obligation to help municipalities address infrastructure challenges. The quality of the financing strategy would improve if the provincial and federal partners established reliable annual entitlement based capital grants and more predictable application based capital grant programs.

East Ferris is in the same position as almost every municipality in North America. Infrastructure investment must increase. The annual capital levy paid by the taxpayer will need to increase. The financing strategy described assumes a real 1% increase each year for 10 years and also assumes that an additional 1% can be generated by real growth in the municipality for the ten year period. The municipality will continue to search for efficiencies or service level adjustments which could help offset the capital levy increases.

2 INTRODUCTION

In 2011 the Ministry of Infrastructure released a 10-year infrastructure plan, "*Building Together*". In 2012 the Ministry announced funding to assist municipalities in Ontario with the development of asset management plans. The East Ferris Asset Management Plan has been prepared in the format outlined in the document *Building Together – Guide for Municipal Asset Management Plans*. The following extract addresses what the Building Together strategy is designed to accomplish:

"A long-term, cooperative effort among all three orders of government will be required to address the challenges of current and emerging municipal infrastructure needs. The strategy will be guided by the following principles:

- *Municipalities are the stewards of the infrastructure they own. The province and the federal government have an obligation to help municipalities address infrastructure challenges.*
- *Comprehensive asset management plans should guide investment decisions.*
- *Those who benefit directly from municipal infrastructure should pay for the service, whenever feasible.*
- *Opportunities should be pursued to provide infrastructure more efficiently by forging partnerships with other communities or consolidating services where possible.*
- *Maintaining roads, bridges, water, wastewater and social housing should be a top priority.*
- *Some communities face unique challenges that require tailored solutions.*
- *Infrastructure Ontario and the private sector can help address municipal infrastructure challenges.*

As part of the strategy, policy activities in the following three areas will need to be discussed:

- *Making asset management planning and public reporting universal.*
- *Making optimal use of the full range of budgeting and infrastructure financing tools.*
- *Addressing the structural challenges that are confronting small municipalities."*

2.1 ASSET MANAGEMENT PLAN DEFINITIONS

There are many definitions of asset management planning. Here are a few examples:

Building Together: Guide for Municipal Asset Management Plans – Ontario Ministry of Infrastructure

Asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets. The objective is to maximize benefits, manage risks, and provide satisfactory levels of service to the public in a sustainable manner. Asset management requires a thorough understanding of the characteristics and condition of infrastructure assets, as well as the service levels expected from them. It also involves setting strategic priorities to optimize decision-making about when and how to proceed with investments. Finally, it requires the development of a financial plan, which is the most critical step in putting the plan into action.

Wikipedia

An Asset Management Plan (AMP) is a tactical plan for managing an organization's infrastructure and other assets to deliver an agreed standard of service. Typically, an Asset Management Plan will cover more than a single asset, taking a system approach - especially where a number of assets are co-dependent and are required to work together to deliver an agreed standard of service.

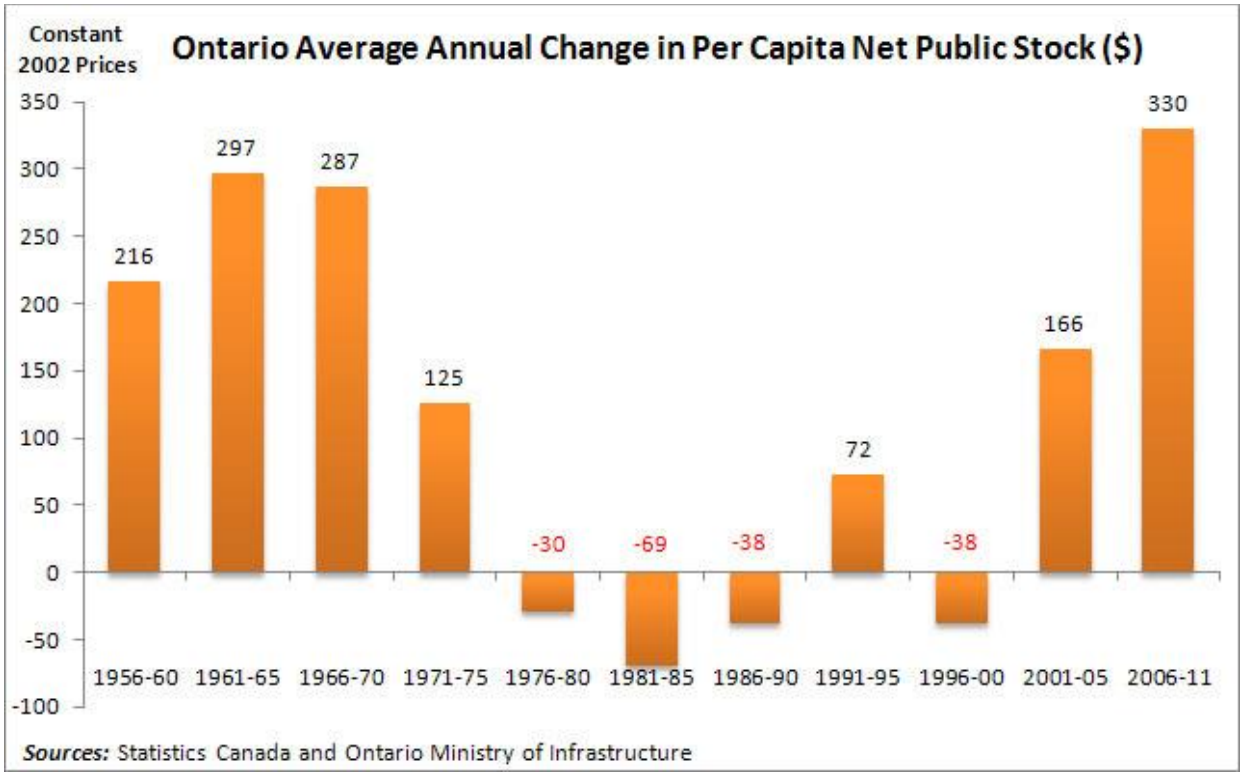
The International Infrastructure Management Manual

A plan developed for the management of one or more infrastructure assets that combines multi-disciplinary management techniques (including technical & financial) over the life cycle of the asset in the most cost effective manner to provide a specific level of service.

2.2 HISTORY OF ASSET MANAGEMENT IN CANADA

The need for an Asset Management Plan was not fully understood or recognized by federal, municipal or local government in Canada for decades. Much of the infrastructure had been built through the high growth years, in the twenty-five years following World War II, during which there was an immense expansion in the Canadian economy and unemployment remained very low. Through this period the infrastructure was relatively new and required little maintenance.

Era of visionary investment……Era of neglect……Era of renewal



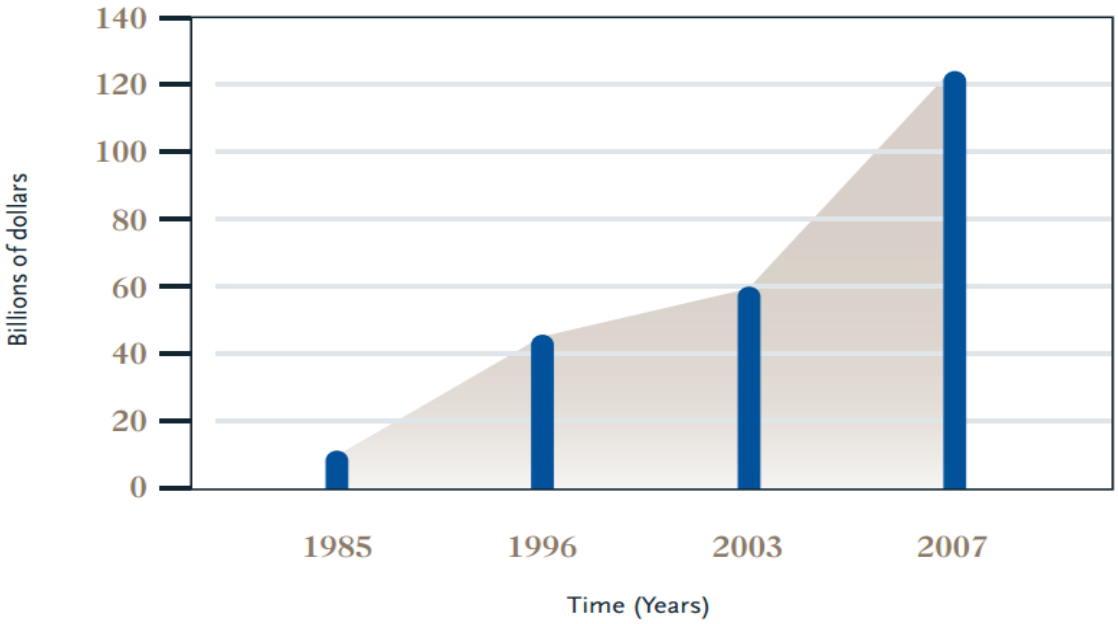
Infrastructure investment began to fall off through the mid1970s,1980's and 1990's as government tax dollars were directed towards publicly funded health care, education, the Canada Pension Plan and other welfare state costs. Canada experienced economic recession in the early 1980's and again in the early 1990's that led to massive government deficits and high unemployment. Aging infrastructure required more funding but the investments were not made. The term "infrastructure deficit" was born. This is the difference between the funding needed for maintenance, repair, rehabilitation, retrofitting and replacement of existing deteriorating infrastructure and the funding available from all sources, including taxes, government subsidies and grants and private sector contributions.

2007 FCM-MCGILL MUNICIPAL INFRASTRUCTURE SURVEY – DANGER AHEAD: THE LOOMING COLLAPSE OF CANADA'S MUNICIPAL INFRASTRUCTURE"

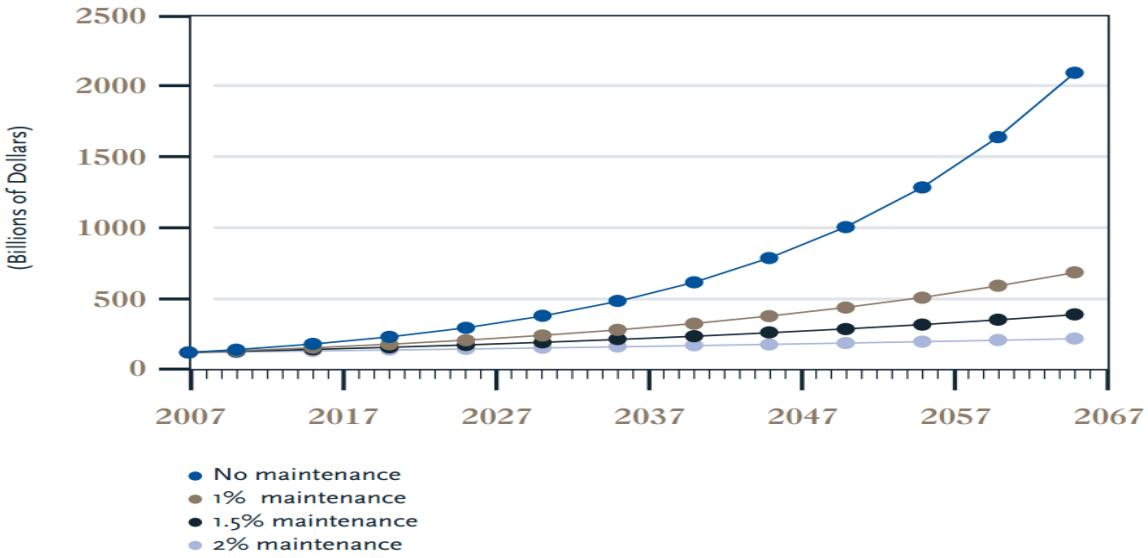
The Federation of Canadian Municipalities (FCM) and McGill University completed a number of surveys between 1985 and 2003 trying to address the infrastructure deficit. The "2007 FCM-McGill Municipal Infrastructure Survey – DANGER AHEAD: THE LOOMING COLLAPSE OF CANADA'S MUNICIPAL INFRASTRUCTURE" received wide exposure and media attention. The following summary is extracted from this report:

> *Canadian municipalities build, own and maintain most of the infrastructure that supports our economy and quality of life. Yet for the past 20 years, municipalities have been caught in a fiscal squeeze caused by growing responsibilities and reduced revenues. As a result, they were forced to defer needed investment, and municipal infrastructure continued to deteriorate, with the cost of fixing it climbing five-fold from an estimated $12 billion in 1985 to $60 billion in 2003. This cost is the municipal infrastructure deficit, and today it has reached $123 billion. The upward trend of the municipal infrastructure deficit over the past two decades points to a looming crisis for our cities and communities and ultimately for the country as a whole. The deficit continues to grow and compound as maintenance is delayed, assets reach the end of their service life, and repair and replacement costs skyrocket. When compared with earlier estimates, the $123-billion figure clearly shows the municipal infrastructure deficit is growing faster than previously thought. Across Canada, municipal infrastructure has reached the breaking point. Most was built between the 1950s and 1970s, and much of it is due for replacement. We can see the consequences in every community: potholes and crumbling bridges, water-treatment and transit systems that cannot keep up with demand, traffic gridlock, poor air quality and a lack of affordable housing. The infrastructure deficit affects all communities, from major cities to rural, remote and northern communities, where municipal governments lack essential infrastructure and do not have the tax base to develop it.*
>
> *Action is needed to eliminate this deficit and prepare for effective infrastructure management in the future.*
>
> *•Over the past 25 years, Canada's municipal infrastructure has fallen further and further into disrepair.*
> *•Municipalities are responsible for more than 50% of Canada's total infrastructure – up from 30% just forty years ago.*
> *•But municipalities have struggled to maintain this infrastructure due to a lack of funding.*
> *•This has led to years of deferred maintenance and a growing deficit in infrastructure investments.*
> *•Lack of a detailed inventory of all assets is also an issue.*
> *•This problem has been examined in a few past studies.*
> *•Rapid aging and escalating deterioration in certain categories of infrastructure are causing growth in the deficit to accelerate.*
>
> *•41% of Canadian infrastructure is 40 years old or less.*
> *•31% between 40 and 80 years.*
> *•28% more than 80 years old (Technology Road Map – TRM, 2003).*
> *•79% of life expectancy of Canada's infrastructure has been used up (2003).*

The following chart demonstrates the rapid growth of the infrastructure deficit.



The next chart depicts the how critical the level of infrastructure deficit is dependent on the level of maintenance.



THE PROVINCIAL-MUNICIPAL FISCAL AND SERVICE DELIVERY REVIEW

In 2008 the Province of Ontario, the Association of Municipalities Ontario (AMO) and the City of Toronto released "**The Provincial-Municipal Fiscal and Service Delivery Review**". The review included an **Infrastructure Table** that filed a report that included the following comments:

"Infrastructure is important to economic competitiveness and quality of life in every municipality and the province as a whole. Provincial and municipal governments invested heavily in infrastructure, especially in the 1950s and 1960s, in response to changing patterns of work and housing. That infrastructure is now, in many cases, reaching the end of its expected life.

Modeling carried out for the infrastructure working table estimated that it would take at least $5.9 billion a year for 10 years to close a gap between total infrastructure needs of roughly $9.8 billion and recent spending of about $3.9 billion a year. The gap includes a backlog of needed upkeep to bring systems into a state of good repair. After the backlog is cleared, the ongoing gap would be an estimated at $3.7 billion a year to meet ongoing costs to rehabilitate, replace and upgrade existing systems and build new ones to meet growth needs. A chart outlining the nature of the infrastructure need, and maps showing how the need varies across the province, appear as Appendix E.

Municipalities recognize the need to increase their investment in municipal infrastructure, in partnership with the provincial and federal governments.

While the agreement reached through this review process and the Province's infrastructure investments provide potential fiscal room for many municipalities, the size of the gap in general and the needs relating to roads and bridges in particular suggest that additional measures are needed. The infrastructure table set out a package of options for consideration in its report. The following points reflect the provincial and municipal consensus.

ASSET MANAGEMENT PLANS:

The infrastructure table's work to estimate the infrastructure gap showed why asset management plans are vitally important. Knowing more about the actual condition of assets is key to better planning. Asset management plans represent a more detailed approach to understanding how repairs, maintenance, upgrades and rehabilitation affect the usefulness of assets over time. The starting point is assessing the current age and condition of assets and then developing an investment plan for the life cycle of infrastructure assets. (The life cycle of an asset includes building it, running it and making repairs and upgrades as needed, and de-commissioning and disposal if necessary when its service life ends.) The goal of asset management planning is to ensure that infrastructure is in a condition to properly deliver the services for which it was built, while minimizing costs over the life cycle. Generally, the costs of developing asset management plans are repaid by the savings realized through timely decision-making.

Many municipalities are working on asset management plans in concert with their shift to accrual accounting for tangible capital assets in 2009. These plans provide a strong basis for the more strategic approach municipalities are taking to infrastructure investments, for example, through greater application of user-pay mechanisms and longer-term capital planning.

Participants in the review agreed that municipalities need to develop and share best practices in asset management planning.

ROADS AND BRIDGES:

The modeling work done for this review suggests why roads and bridges are of particular concern to municipalities. As noted, in the 1990s the previous provincial government downloaded 5,000 kilometers of highway and the related bridges to municipalities. The life cycle and growth costs and unmet maintenance needs of municipal roads and bridges are high, amounting to an estimated $2.8 billion a year over the next 10 years. This accounts for almost half the total estimated infrastructure gap. Moreover, there are limited means of funding this need.

Local property taxes are the main source of funding for local roads and bridges. Local roads, however, may carry people and goods through a community without stopping, incurring costs for the municipal government but not providing it with any revenue. Few roads and bridges lend themselves to recovering costs directly from users through user fees. In communities of low population density, investment needs are very high on a per-household basis.

The review partners have agreed to launch a joint provincial-municipal process to develop options regarding responsibilities and funding arrangements for roads and bridges. This will be based on established technical and functional criteria grounded in sound asset management principles.

The analysis will be launched quickly, with the goal of adding to currently available data to get a fuller picture of how roads and bridges are used, their condition and age, and other relevant factors. It might also point to opportunities to build greater capacity to manage these assets. As well, the process could help to establish more clearly what the federal role in supporting roads and bridges in Ontario should be, particularly with respect to the National Highway System.
Decisions on roads and bridges specifically would be made only after a joint provincial-municipal analysis was complete."

2.3 HISTORY OF ASSET MANAGEMENT IN EAST FERRIS

Until 2012 East Ferris had relied heavily on grant availability to determine the level of infrastructure investment over and above the amounts available in the operating budget allocations for Pay-As-You- Go. The municipality's reserve funds were used to provide the municipal share required under the grant programs. No long term debt was used. The capital program spending levels were based solely on what the Council felt they could afford, and not based on what was needed to maintain the infrastructure.

In 2009 the municipality undertook to complete a Roads Needs Study and an Accommodations Needs Study. The municipality concluded in 2011 that it wanted to begin development of an Asset Management Plan. As the first step, the 2012 Operating Budget included funds to develop a Reserve Fund Policy, a Long Term Capital Funding and Financing Policy and a Debt Management Policy. Council felt that these steps would allow them to make informed decisions before proceeding with a more aggressive infrastructure program which would require use of reserve funds and issuing of long term debt for the first time in recent history. Council decided to utilize reserve funds to fund roads and building projects. The level of discretionary reserve funds declined by 41%, dropping from $2,878,000 on December 31 2008 to $1,694,000 on December 31 2012. The municipality issued $1,200,000 in long term debt in 2012 for road projects and the 2013 Capital Budget assumed the issuance of $1,500,000 for a new administration building.

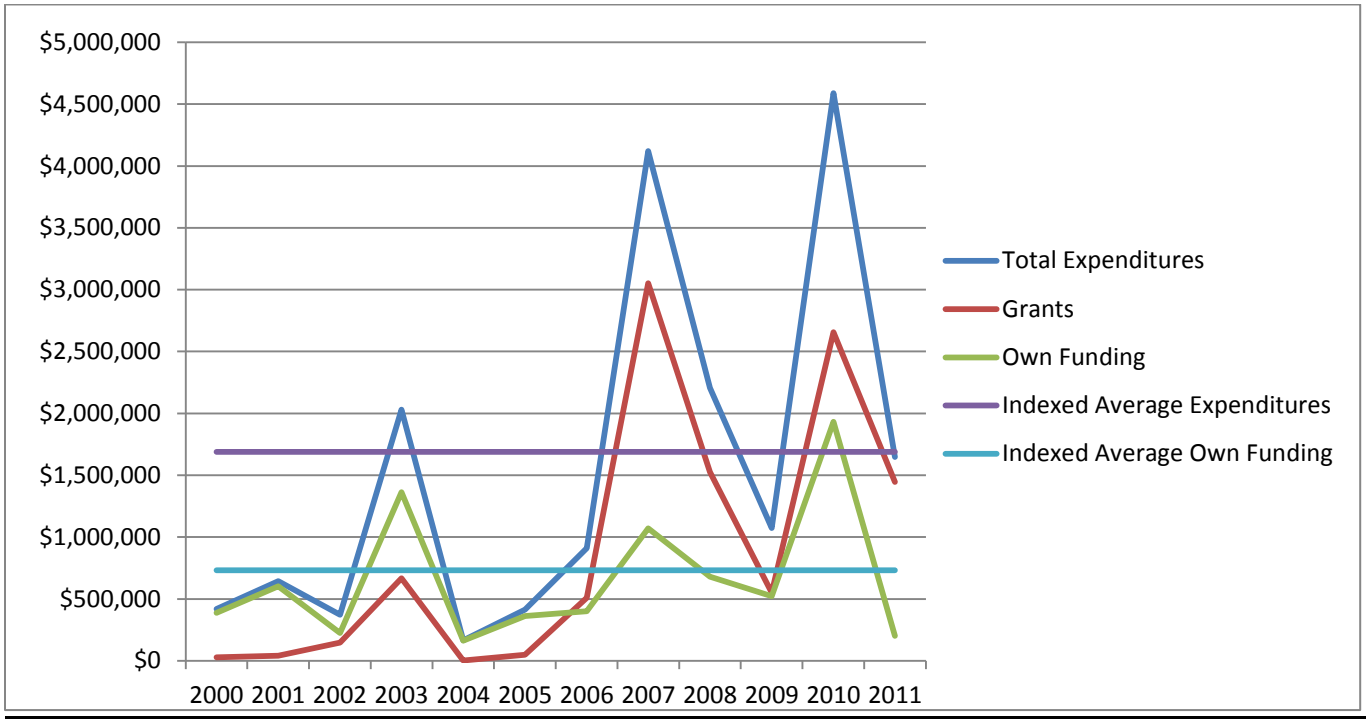
The capital expenditure levels fluctuated based on funding availability as demonstrated in the following tables compiled from the 2000 to 2011 Financial Information Returns.

MUNICIPALITY OF EAST FERRIS CAPITAL EXPENDITURES AND FUNDING SOURCES COMPILED FROM 2000 TO 2005 FINANCIAL INFORMATION RETURNS						
	2000	**2001**	**2002**	**2003**	**2004**	**2005**
General Government	17,417	544	1,664	7,854	36,178	57,340
Protection Services	16,195	17,275	16,241	54,705	16,394	54,790
Transportation Services	289,926	494,359	63,684	1,813,791	25,315	273,334
Recreation & Cultural Services	93,946	129,499	289,928	153,166	87,819	27,399
Planning		2,337				
TOTAL EXPENDITURES	**417,484**	**644,014**	**371,517**	**2,029,516**	**165,706**	**412,863**
Grants and Donations	28,846	40,404	146,784	666,285	2,309	50,000
Transfers From Reserve Funds	65,583	298,237	25,023	1,156,195	-	-
Operating Budget Pay As You Go	323,055	305,373	199,710	207,036	163,397	362,863
TOTAL FUNDING SOURCES	**417,484**	**644,014**	**371,517**	**2,029,516**	**165,706**	**412,863**

MUNICIPALITY OF EAST FERRIS CAPITAL EXPENDITURES AND FUNDING SOURCES COMPILED FROM 2006 TO 2011 FINANCIAL INFORMATION RETURNS						
	2006	**2007**	**2008**	**2009**	**2010**	**2011**
General Government	-	13,397	30,086	279,217	9,863	-
Protection Services	296,821	130,296	24,191	31,328	232,882	26,606
Transportation Services	484,169	3,860,683	1,966,026	391,788	25,930	742,202
Recreation & Cultural Services	130,262	117,407	172,556	371,073	4,319,418	879,049
Planning	-	-	13,660			
TOTAL EXPENDITURES	**911,252**	**4,121,783**	**2,206,519**	**1,073,406**	**4,588,093**	**1,647,857**
Grants and Donations	509,588	3,051,233	1,527,181	550,183	2,656,462	1,445,279
Transfers From Reserve Funds		726,422			**1,099,000	
Prior Year's Surplus					**629,288	
Operating Budget Pay As You Go	401,664	344,128	679,338	**523,223	**203,343	**202,578
TOTAL FUNDING SOURCES	**911,252**	**4,121,783**	**2,206,519**	**1,073,406**	**4,588,093**	**1,647,857**

Notes** The amounts have been restated to concur with reporting format for prior years

EAST FERRIS CAPITAL EXPENDITURES AND CAPITAL REVENUE SOURCES
2000 TO 2011



The peaks in the tables and graph clearly indicate the reliance on grants and reserve funds. The indexed average total capital expenditure level during this 12 year period, based on a 2% per year inflation factor, was $1,715,000 per year. The indexed average own purpose funding during this same period was only $656,000 and much of that has been funded from reserves which have been substantially depleted and can no longer be relied upon in the future. The pay-as-you-go funding has declined since it peaked in 2008 and bottomed out at $50,000 in 2012.

This demonstrates the difficulty East Ferris will have reaching a sustainable capital funding level on a go forward basis. The Financial Strategy in Section 6 will address the impact of maintaining the current service levels without federal or provincial partnerships. The Long Term Capital Funding and Financing Policy and Debt Management Policy described in the Financing Strategy in Section 6 will address what the forecast sustainable indexed average total capital expenditures should be in the future and how it will be funded. The strategy to reach the sustainable expenditure and funding levels will also be discussed along with the impact on the taxpayer.

2.4 OFFICIAL PLAN AND THE ECONOMIC STRATEGIC PLAN

The goals and objectives of the municipality of East Ferris are highly dependent on the infrastructure and how it supports economic activity and improves the quality of life for its citizens. Two existing policy documents that substantiate this dependency are the Official Plan and the Economic Strategic Plan.

2.4.1 OFFICIAL PLAN

“The goal of this Official Plan is to provide an appropriate decision-making framework for land use development within the Township of East Ferris over the Planning Period (1999-2018).”

The objectives of the Official Plan in accomplishing this goal include the following:

To ensure that the information based upon which policies are drafted is thorough and well analysed.

To "have regard for" the new Provincial Policy Statement issued under the authority of **Section 3** of the Planning Act, as it would apply to the Township of East Ferris, specifically:

2) To ensure that provision is made for adequate municipal infrastructure and public service facilities while recognizing and providing for on-site (private) water and sewage services where appropriate.

To ensure an adequate level of public consultation in the drafting of policies.

Section 3.0, Basis of the Plan, of the Official Plan includes the following excerpts:

3.1 Growth and Settlement

The Township has experienced a healthy growth rate of 1.6 %/year over the last 5 years (down from 2.6 %/year over the period 1971-1996). This Plan is based on a growth rate which will fluctuate between 1 % and 1.6 %/year over the 20 year Planning Period. At the maximum rate of growth, this will add 70-80 persons to the population per year or an increase from 4,292 to 5,882 by the year 2017.

3.2 Housing

Based on the projected population growth, the gross household formation will be in the order of 601 units @ 2.8 persons per household (1997-2002) and 2.6 persons per unit (2003-2017). Based on the existing housing stock accommodating 10 - 15% of the supply, the net housing demand will be 299-511 units or 15-25 housing starts per year.

3.4 Municipal Infrastructure and Public Service Facilities

Educational, fire, police, health care, waste disposal and roads are adequate for the foreseeable future and do not pose a limitation to future development. The Plan, however, seeks to ensure that the capacity or adequacy of these services will be monitored and that such services will be expanded or improved where required. The Township may use the Development Charges Act

as a means to finance growth-related capital expenditures in responding to the needs of new development.

Private road development is a significant issue in the Township. The Plan, while allowing for infill on existing private roads, does not allow for the extension of the existing private road network. Roads which are to be assumed must first be brought up to an acceptable standard of municipal construction before such roads will be assumed by the municipality.

The Plan also provides for the protection of transportation and infrastructure corridors and incorporates provision for snowmobile and recreational trails as part of these corridors.

OFFICIAL PLAN REVIEW 2013

The Municipality completed and submitted a comprehensive Official Plan Review to the Province in October 2013. The updated plan will cover the planning period from 2014 to 2034. It has the essentially the same focus on development to limit the impact on infrastructure. The growth rate during the 2006 to 2011 census years has declined slightly to an average rate of 0.65% per year. The growth projections are assumed to average 0.66% per year which would translate to an average of 20 new residential units per year and a projected population of between 5,000 and 5,250 by 2025. It is the policy of the Plan to provide for a sustainable development pattern in the hamlets while not necessitating new public services (water, sewer or new roads) and ensuring the protection of the environment.

2.4.2 ECONOMIC STRATEGIC PLAN

In 2003 the Township of East Ferris developed a long term strategic plan under the direction of Harriman and Associates in association with Saad Consulting. The plan entitled “Destination 2008 – Economic Strategic Plan” was developed with significant involvement from over 100 citizens, neighboring communities, councillors and staff.

Vision Statement for East Ferris
East Ferris is a progressive rural, residential community that offers a high standard and quality of life through effective and efficient management of its resources and amenities.

Mission Statement for East Ferris
The mission statement of East Ferris is to provide all of its citizens:
Quality municipal services with an acceptable tax structure,
A respect, sensitivity and appreciation for the environment
The best possible conditions for citizens to live, work and play
Leadership that is progressive in meeting the needs and vision of our community, and,
A government that serves with honesty and integrity.

To this end East Ferris will:
Set policies, develop standards and work with all citizens to best meet their needs.
Communicate and encourage feedback from all citizens and partners.

The plan identified 11 key issues:

Role in Regional Partnerships
Need for a Leisure Plan
Positive Impact of Natural Resources
Technological Needs
Education Services
Improved Internal Communications
Commercial Development Policy
Infrastructure Maintenance Program
Tourism/Marketing Program
Housing
Future Health Care Needs

The following excerpts address the infrastructure issues.

"Infrastructure is an area that impacts all aspects of East Ferris. The cost of maintaining the infrastructure is high, but is a necessary step in impacting the overall quality of life for an area. While citizens want to see the tax rate remain where it is, they also want to maintain a high level of infrastructure development.

Generally speaking, the roads in East Ferris are in good condition. There is a need to complete some upgrades to the secondary roads within the area. Highway 94, which goes through East Ferris, is the responsibility of the Province of Ontario.

One of the major motivators for people to move to the area is land that is accessible from private roads in the Township. There were some concerns expressed by current residents who access these private roads, that there is a need for works to be done on these roads. It would be prudent on the part of the Township to develop a committee comprised of citizens who utilize these private roads to develop a long term maintenance plan for these area roads.

Currently the Province of Ontario has a program in place that allows for a refund of a portion of the taxes paid in return for work performed on road maintenance. It would be to the Townships benefit to pursue such a program and to have the residents that are directly affected involved with the solution.

Recommendation #33
That East Ferris work towards the development of an infrastructure program that identifies the long term needs of the Township and the resources necessary to address these needs.

Recommendation #34
That East Ferris investigates the current Province of Ontario program that provides a tax rebate in return for work performed on road maintenance."

EAST FERRIS ECONOMIC DEVELOPMENT STRATEGY AND FACILITIES MASTER PLAN 2013 (DRAFT SEPTEMBER 2013)

In 2013 the Council awarded a contract to Karen Jones Consulting Inc. to lead in the creation of an updated Economic Development Strategy focusing efforts toward developing a strong understanding of the needs and opportunities that will contribute to continued growth and

community development. As part of the same project Saad Consulting was retained to lead the development of a Master Facilities Plan which examines the current state and use of the municipality's facilities.
This study utilized extensive consultations with the public and key community stakeholders through meetings and interviews.
One of the strategic priorities identified focused on "infrastructure and services" and based on comments during the consultations the report concludes the following:

"Overall, East Ferris has well-maintained infrastructure. With paved roads in solid condition throughout the community, dedicated crews committed to maintaining the area in all weather conditions and ongoing development, the community is in a positive position."

2.5 RELATION OF THIS THIS ASSET MANAGEMENT PLAN WITH OTHER KEY EAST FERRIS POLICY

The Asset Management Plan will become a key policy that will integrate with other policies and plans, in particular the following policies:

2.5.1 LONG TERM FINANCIAL PLAN

East Ferris is planning to develop a Long-Term Financial Plan to tie together all current and future policies that have a financial impact on the municipality (ie. Tax Policy, Reserve Fund Policy, Investment Policy, Procurement Policy, Debt Management Policy to mention a few). This plan will include the fundamental financial goals and objectives of the municipality. This Asset Management Plan includes a Financing Strategy in Section 6 that will eventually lead to the determination of the long-term sustainable capital funding level required for East Ferris. The impact of this long term sustainable capital funding level on the goals and objectives identified in the Long-Term Financial Plan will need to be assessed.

2.5.2 LONG TERM CAPITAL FUNDING AND FINANCING POLICY

East Ferris Council had committed to developing a Long Term Capital Funding and Financing Policy in 2012. This policy is scheduled to be adopted by Council in tandem with the Asset Management Plan. The key data feeding the implementation of this policy will come from the projected long term capital expenditure requirements identified in the Asset Management Plan. The Long Term Capital Funding and Financing Policy will determine the funding sources or financing requirements. The ultimate goal would be to reach a sustainable capital funding level so that financing will only be required for very large projects. The Long Term Capital Funding and Financing Policy will include a forecasting model that will show how and when that sustainable capital funding level is reached and maintained in future years. The sustainable capital funding level is the average funding level required on a go forward basis based on the capital expenditure estimates for the following 20 to 30 year period. After it is reached it will only need to be indexed annually. The plan will include a strategy on how to move from the current capital funding levels to the sustainable capital funding levels identified in the Asset Management Plan. It will also include projections on the impact on taxpayers over the long term. The Financing Strategy in Section 6 includes more details of the Long Term Capital Funding and Financing Policy.

2.5.3 DEBT MANAGEMENT POLICY

East Ferris Council had committed to developing a Debt Management Policy in 2012. This policy is scheduled to be adopted by Council in tandem with the Asset Management Plan. The Council has accepted the need to utilize long term debt as a funding source as part of its commitment to make optimal use of the full range of budgeting and infrastructure financing tools. The Financing Strategy in Section 6 includes more details of the Debt Management Policy.

2.5.4 RESERVE FUND POLICY

In September 2013 the Council adopted a Reserve Fund Policy which is a critical component of the Long Term Financial Plan and demonstrates that the municipality recognizes the need to protect the taxpayer from the risks of significant budget impacts arising from uncontrollable events and activities. Recognizing the need to increase capital spending to renew deteriorating infrastructure, Council decided to utilize reserve funds to fund roads and building projects. The level of discretionary reserve funds declined by 41% from $2,878,000 on December 31, 2008 to $1,694,000 on December 31, 2012. The policy will enhance the financial stability and flexibility of the municipality while clearly addressing the need for target levels of discretionary reserve funds. The policy identifies that discretionary reserve funds should total between $1,710,769 (ie.50% of the tax levy) and $2,710,500 (ie.$1,300 per household). East Ferris reserve funds are currently slightly below the minimum recommended. The policy also establishes separate goals, objectives and target levels for 5 categories of reserve funds. Based on the policy Council has redistributed the existing discretionary reserve funds into the following reserve funds as at December 31, 2012:

Tax Rate Stabilization Reserve Fund	$135,000
Operating Stabilization Reserve Funds	$275,000
Emergency Capital Reserve Fund	$615,000
Operating Budget Contingency Reserve Fund	$54,000
Asset Management Sustainable Capital Funding Reserve Fund	$615,000

The objective of the Emergency Capital Reserve Fund is to provide a source of funding for capital projects, or major capital equipment requirements, which are not included in approved capital budgets and cannot reasonably be funded by delaying a lower priority capital project. The policy target level for these unbudgeted emergency capital works is $727,000 which is 25% of the five-year indexed average capital expenditure levels. This reserve fund is required to cover emergency road, bridge, culvert or other unplanned costs that could arise from events such as high winds, heavy rainfall or spring runoff. It should not be used as a capital revenue source in developing the Long Term Capital Funding and Financing Plan.

The objective of the Asset Management Sustainable Capital Funding Reserve Fund is to stabilize peaks and valleys in sustainable capital funding requirements in accordance with the Asset Management Plan and the Long Term Capital Funding and Financing Policy. Since the sustainable capital funding requirements is the average funding requirement each year, the actual capital expenditures may be higher or lower than the funding. If the expenditures are lower, the funding not required would be placed in the Asset Management Sustainable Capital Funding Reserve Fund. If the expenditures are higher, the additional funding required would be transferred from the Asset Management Sustainable Capital Funding Reserve Fund.

It will take a number of years for the municipality to reach the sustainable capital funding levels. Like most municipalities, East Ferris does have an infrastructure funding deficit which means the needs exceed the funding or financing abilities. The magnitude of the deficit will not be

known until the Comprehensive Asset Management Plan encompassing **all** assets is completed. To allow Council some discretion to move critical projects forward, the initial target level for the Asset Management Sustainable Capital Funding Reserve Fund is set equal to the Emergency Capital Reserve Fund. There should not be a need for a target level once the sustainable capital funding levels are reached and the infrastructure deficit is eliminated. The Asset Management Sustainable Capital Funding Reserve Fund could be used to help reduce the infrastructure funding deficit, but it would be most effective in reducing the infrastructure deficit if it is used to top up capital grants from the Provincial and Federal governments which may be available in future years.

2.5.5 CAPITAL BUDGET AND FIVE YEAR CAPITAL FORECAST

East Ferris does approve a Capital Budget each year and in recent years the Council has been presented with a Five Year Capital Forecast. In the future the Capital Budget and Five Year Capital Forecast will be prepared after the Asset Management Plan is updated in the early fall. The Five Year Capital Forecast should include the projected capital project expenditures and the projected funding or financing sources for each year. The capital expenditures included in the updated Asset Management Plan that cannot be fit into the Five Year Capital Forecast will be disclosed so that the accumulated infrastructure deficit can be updated.

2.5.6 OPERATING BUDGET

The Operating Budget does include small capital allocations and significant allocations for repairs, maintenance and rehabilitation of assets in each department. The following chart summarizes the actual expenditures for the past 3 years:

MUNICIPALITY OF EAST FERRIS
OPERATING BUDGET ACTUAL EXPENDITURES
2011, 2012 and 2013 to NOVEMBER 13

ASSET CATEGORY	2011	2012	2013	Indexed 3 Year Average (2% Index)
Roads, Bridges, Culverts and Street Lighting (including own labour)	$366,759	$345,349	$370,077	$367,669
Buildings	$48,321	$78,357	$35,584	$45,302
Vehicles and Equipment	$82,766	$118,703	$78,552	$93,385
Improved Property	$16	$300	$387	$488
TOTAL	**$497,862**	**$542,709**	**$484,600**	**$506,844**

The Operating Budget also includes allocations for Pay-As-You-Go capital funding and debt service charges for infrastructure that has been financed over a long-term. The amount budgeted each year is based on the Long-Term Capital Funding and Financing Policy. The 2013 Operating Budget Capital Levy totals $200,000 as follows:

Debt Service Principal	$120,000
Debt Service Interest	$30,000
Total Debt Service Costs	$150,000
Pay-As-You-Go Capital Allocation	$50,000
Capital Financial Lease Payments	$0
TOTAL CAPITAL LEVY IN OPERATING BUDGET	$200,000

2.6 PURPOSE OF THE ASSET MANAGEMENT PLAN

The Municipality of East Ferris Asset Management Plan sets out how the infrastructure will be managed in the future to ensure that they are capable of providing that the desired levels of service needed to support the municipality's goals.

In November 2003, the National Guide for Sustainable Infrastructure published a Best Practice for Municipal Infrastructure Asset Management. This publication included a listing of seven questions which could be used as a framework for an asset management plan. They are as follows:
What do you have and where is it? (Inventory)
What is it worth? (Costs/replacement rates)
What is its condition and expected remaining service life? (Condition and Capability Analysis)
What is the level of service expectations, and what needs to be done? (Capital and Operating Plans)
When do you need to do it? (Capital and Operating Plans)
How much will it cost and what is the acceptable level of risk(s)? (Short and Long-Term Financial Plan)
How do you ensure long-term affordability? (Short and Long-Term Financial Plan)

This Asset Management Plan will address all of these questions.

2.7 ASSETS INCLUDED IN THE ASSET MANAGEMENT PLAN

This Asset Management Plan will include all of the infrastructure assets that the Municipality of East Ferris has direct control and responsibility over.
The municipality does not provide water or sanitary sewer services to its citizens, except for a very few residents in close proximity to the Municipality of Callander who receive these services directly from Callander.
Infrastructure owned and maintained by agencies, boards and commissions funded by East Ferris tax rates are not included in this plan. They manage and control their own assets and levy more than one area municipality. Accordingly this plan does not include the following:
District of Nipissing Social Services Administration Board (Social housing and ambulance assets)
Ontario Provincial Police
North Bay Mattawa Conservation Authority
Cassellhome East Nipissing District Home for the Aged
North Bay Parry Sound District Health Unit

The initial plan completed in December 2013 includes all components for roads, bridges and culverts. Other infrastructure, including improved land, buildings, machinery, equipment and vehicles, will include only the components of the plan currently available, with the balance of the

plan to be completed within 3 years as funding permits. The Comprehensive Asset Management Plan will eventually include the entire depreciable infrastructure assets of the Municipality of East Ferris reported in the annual audited Financial Report.

2.8 HOW MANY YEARS WILL THE ASSET MANAGEMENT PLAN COVER

The East Ferris Asset Management Plan will cover the entire life cycle of the roads, bridges and ditches assets (up to 30 years) and estimates for all other assets for at least a 10 year plan. The plan will be enhanced to cover 20 to 30 years for all assets by 2016 when the Comprehensive Asset Management Plan is completed.

2.9 HOW WAS THE ASSET MANAGEMENT PLAN DEVELOPED?

The East Ferris Asset Management Plan has been developed by an Asset Management Team which includes the Chief Administrative Officer John Fior, the Treasurer Jason Trottier and the Director of Public Works and Engineering Antoine Boucher, with co-ordination and support provided by Brian Rogers Municipal Financial Services.

The Mayor, Council and other staff have provided feedback during the development of the plan. This initial Asset Management Plan will be posted on the municipality's web site by May 31 and the public will be invited to a public meeting in the fall of 2014 prior to adoption of the updated plan by Council. This Asset Management Plan was reviewed by Council on December 19, 2013 and will be reviewed again prior to being posted on the web site in May 2014.

2.10 NEXT STEPS TO IMPROVE AND EVALUATE THE ASSET MANAGEMENT PLAN

This plan is the first step in the development of a Comprehensive Asset Management Plan for the Municipality of East Ferris. It will be reviewed and updated in the fall each year based on current engineering, financial and economic data available. The municipality will include an Operating Budget funding allocation each year to ensure continuous improvement to the Asset Management Plan. The quality of the plan and extent of enhancements will be somewhat dependent on future funding opportunities.

The timetable for the next three years is as follows:

MUNICIPALITY OF EAST FERRIS COMPREHENSIVE ASSET MANAGEMENT PLAN IMPLEMENTATION TIMETABLE			
YEAR	**INFRASTRUCTURE**	**IMPROVEMENTS**	**UPDATES**
2013	ROADS, BRIDGES, CULVERTS		
2014	ADD BUILDINGS AFTER BULDING CONDITION ASSESSMENT COMPLETED BY CONSULTANTS REVIEW ASSET MANAGEMENT SOFTWARE	Introduce Pavement Priority Number for roads Complete detailed culvert inventory and condition rating	Pavement Condition Index Bridge Condition Index Update traffic counts Update all Condition Assessment Reports Update Long Term Expenditure Forecasts
2015	ADD VEHICLES AND EQUIPMENT	Inventory and develop asset management strategy for road signs and street lights	Pavement Condition Index Bridge Condition Index
2016	ADD IMPROVED PROPERTY (Outdoor rinks, ball fields, soccer fields, tennis courts, playgrounds, boat ramps, docks)	Improve Geographic Information System	Pavement Condition Index Bridge Condition Index Update all Condition Assessment Reports Update Long Term Expenditure Forecasts

The recent announcement of additional capacity funding from the Small, Northern & Rural Municipal Infrastructure Fund in 2014 may allow East Ferris to accelerate the above implementation timetable.

The Treasurer will be responsible for coordinating the updates each year. An Asset Management Plan Update Template has been prepared to facilitate the annual updates.

3 STATE OF THE LOCAL INFRASTRUCTURE

3.1 WHAT IS THE STATE OF THE LOCAL INFRASTUCTURE?

This section of the Asset Management Plan summarizes the state of the Municipality of East Ferris infrastructure at a point in time. This allows the municipality to gauge the impact of the Asset Management Plan over a period of time by comparing the trends for the state of the infrastructure. The current state of the infrastructure is also critical in determining the current infrastructure deficit and the maintenance, rehabilitation or replacement program required on a go forward basis. The methodology for measuring the asset condition varies depending on the asset types. In order to ensure the plan can be managed cost effectively, some asset types are reviewed cyclically over a planned period of time.

3.2 STATE OF THE INFRASTUCTURE REVIEW SCHEDULE

MUNICIPALITY OF EAST FERRIS ASSET MANAGEMENT PLAN STATE OF THE INFRASTRUCTURE REVIEW SCHEDULE BY ASSET TYPES			
Asset Types	**Annual**	**Cyclical**	**Comments**
Roads	. Pavement Condition Index (inspection completed by Engineer)	. Traffic counts every 4 years . High Speed Inertial Profiler Contract every 4 years . Roads Needs Study contract every 10 years	. The Engineer is developing a Pavement Priority Number approach for implementation in 2014.
Bridges	. Bridge Condition Index (by Engineer) . Biennial Inspection Reports	. Contract awarded when additional investigation required per Inspection Report	. Structural Capacity Study of Bailey Bridge in 2014.
Culverts	. Culvert condition rating of road culverts with watercourse by Engineer	. Complete culvert inventory and condition rating of road culverts every 4 years	. Entrance culverts updated as constructed
Asset Types	**Annual**	**Cyclical**	**Comments**
Buildings			Last report filed in 2009. Updated report currently in

	Staff will review latest Condition Assessment Reports and will update based on their own review and quotes prior to Operating Budget.	Condition Assessment Update Contract considered every 4 years on a cyclical basis	progress. To be completed in 2014 including a 20-30 year expenditure forecast.
Vehicles and Equipment			To be completed in 2015 or earlier if funding is available
Improved Land			To be completed in 2016 or earlier if funding is available

3.3 ASSET CONSUMPTION RATIO

This ratio shows the financial statements accumulated depreciation book value of the tangible capital assets relative to their historical cost. This ratio is an indicator of the age condition of the assets and the potential replacement needs. A higher ratio may indicate significant replacement needs. This is a very high level indicator and should not be used in place of a more detailed condition assessment. It is most useful when used to compare East Ferris relative to the rest of the Province and to track local trends. BMA Management Consulting Inc. prepares a detailed comparative survey, on behalf of participating municipalities. The BMA Municipal Study 2012 covers 86 Ontario municipalities with populations ranging from 4,000 to 2.6 million including the five northern cities. East Ferris measures up relatively well against the northern cities and is under the BMA study group average and median.

BMA MUNICIPAL STUDY 2012 ASSET CONSUMPTION RATIO			
	2009	**2010**	**2011**
BMA Survey Average	35.7%	35.7%	32.4%
BMA Survey Median	35.6%	35.0%	33.6%
Sault Ste. Marie	36.2%	36.3%	36.4%
North Bay	43.3%	39.8%	39.0%
Timmins	51.0%	45.4%	46.1%
Greater Sudbury	50.9%	46.2%	46.5%
Thunder Bay	51.2%	53.3%	52.2%
East Ferris Calculated	25.3%	23.4%	25.3%

The following table prepared by East Ferris breaks down the asset consumption ratio by asset type. At first glance it suggests that the buildings are in the best relative condition and machinery, equipment and vehicles are in the worst condition.

EAST FERRIS ASSET CONSUMPTION RATIO BY ASSET TYPE DECEMBER 31, 2011				
Asset Type	**Original Historical Cost**	**Accumulated Depreciation**	**Net Book Value**	**ASSET CONSUMPTION RATIO Accumulated Depreciation as a % of Original Historical Cost**
Land Improvements	$607,991	$143,697	$464,294	23.6%
Roads and Bridges	$10,018,194	$3,079,307	$6,938,886	30.7%
Buildings	$9,109,325	$1,560,437	$7,548,888	17.1%
Machinery & Equip.	$714,983	$398,629	$316,354	55.8%
Vehicles	$1,103,340	$451,818	$651,522	41.0%
2011 Grand Total	**$22,265,443**	**$5,633,888**	**$16,631,554**	**25.3%**

A more detailed look (prepared by East Ferris) at the individual buildings demonstrates how easily the use of Asset Consumption Ratios can be misleading if not further analyzed. The Community Centre underwent a major rehabilitation project in 2011/2012 at a cost of over $5,000,000 and is a significant component of the historical cost of buildings. This breakdown does confirm that the Municipal Administration Building is nearing the end of its useful life. It was included for replacement in the approved 2013 Capital Budget at an estimated cost of $1,500,000

EAST FERRIS ASSET CONSUMPTION RATIO BUILDINGS DECEMBER 31, 2011				
Building	**Historical Cost**	**Accumulated Depreciation**	**Net Book Value**	**Asset Consumption Ratio**
Municipal Administration	$94,106	$71,521	$22,585	76.00%
Corbeil Park Hall	$96,935	$60,100	$36,835	62.00%
Public Works Garage	$165,327	$91,872	$73,455	55.57%
Community Centre	$7,928,987	$1,206,646	$6,722,340	15.22%
Astorville Fire Hall	$180,384	$41,127	$139,257	22.80%
Public Library	$330,841	$79,402	$251,439	24.00%
Other	$312,745	$9,769	$302,976	3.12%
Total Buildings	**$9,109,325**	**$1,560,437**	**$7,548,888**	**17.13%**

Detailed condition assessments on the balance of the asset types will be completed over the next 3 years. A detailed Buildings Condition Assessment Report is underway and is scheduled to be completed in 2014. This report will also be expanded to include a long-term expenditure forecast for all buildings.

3.4 REPLACEMENT COST FOR INSURANCE PURPOSES

The most recent Municipal Insurance Program through BFL Canada covers the period July 1, 2013 to July 1, 2014. The coverage insures against direct physical loss of, or damage to, property of every description and applies to all property owned or legally liable for. Details of coverage and conditions include:
Property insured against all risks of loss or damage including flood and earthquake
Replacement cost basis or loss settlement.
No coinsurance applies
New generation coverage (increase in the replacement cost of equipment when necessary to replace newer equipment, even if it has greater capacity, processing ability or efficiency)
Inflation protection
Vacant property included
Automatic coverage for additions, alterations and repairs
Inspections of boilers and refrigeration equipment
The overall coverage limit is $17,416,660 and assets destroyed would be replaced up to this amount regardless of the individual replacement cost coverage indicated in the policy. Vehicles are covered for full replacement cost by a separate policy.

East Ferris Municipal Insurance Program 2013/2014 Replacement Cost Coverage		
Building and Equipment	**Net Book Value**	**Replacement Cost Insurance Coverage**
Municipal Administration	$22,585	$547,000
OPP Building	$234,449	$3,141,000
Corbeil Park Hall	$36,835	$325,000
Public Works Garage	$73,455	$408,000
Community Centre	$6,722,340	$12,268,000
Astorville Fire Hall	$139,257	$307,000
Public Library	$251,439	$865,000
Equipment and Building Contents		$1,860,000

3.5 STATE OF THE CRITICAL INFRASTRUCTURE

The critical infrastructure for East Ferris, as outlined in the Ontario Building Together Guide for Municipal Asset Management Plans, includes roads, bridges and culverts. Accordingly the 2013 Asset Management Plan includes a more detailed condition assessment for these assets. A high level “report card” summarizes the current conditions of these assets.

3.5.1 ROAD PAVEMENT CONDITIONS

There are several recognized and well defined condition assessment methodologies for roads. The options considered and the options used by Easy Ferris are described in more detail in the Asset Management Strategies Section 5.3

The Municipality of East Ferris has chosen to use a recognized approach for roads that can be managed and maintained by its own staff on an annual basis. In general the “keep it simple and manageable” philosophy has been used throughout this Asset Management Plan. The municipality has an engineer and experienced roads supervisor who are capable of rating the roads using the Pavement Condition Index (PCI).

The Pavement Condition Index (PCI) rates the general condition of the surface of a road network. The PCI provides a numerical rating for the condition of road segments within the road network, where 0 is the worst possible condition and 100 is the best.
The following chart is used to summarize the report card condition rating only. A more detailed decision matrix with trigger points is described later in the plan.

MUNICIPALITY OF EAST FERRIS ROAD PAVEMENT CONDITION RATING SYSTEM			
REPORT CARD RATING	**PCI RANGE**	**GENERAL CONDITION**	**CONDITION DESCRIPTION**
A	86-100	Excellent	Very smooth
B	76-85	Good	Smooth with a few bumps or depressions
C	66-75	Fair	Comfortable with intermittent bumps or depressions
D	56-65	Poor	Uncomfortable with frequent bumps or depressions
F	0-55	Very Poor	Uncomfortable with constant bumps or depressions

The Director of Public Works and Engineering and his staff completed a review of the roads in 2013 to arrive a Pavement Condition Index for each road in the municipality. Based on this review, the roads in the municipality average in a fair to excellent condition. The following high level “report card” table summarizes the 2013 road pavement conditions based on the weighted average PCI per kilometer.

MUNICIPALITY OF EAST FERRIS
ROAD PAVEMENT CONDITION REPORT CARD
2013

ROAD SURFACE CATEGORY	RATING 2013	KILOMETERS IN CATEGORY	WEIGHTED AVERAGE PCI	COMMENTS
PAVED ROADS	A	28.7	89.5	In excellent condition with very smooth surfaces. See detail below for individual roads.
SURFACE TREATED ROADS	C	41.4	75.2	In fair condition. Comfortable with intermittent bumps or depressions. See detail below for individual roads.
GRAVEL ROADS	C	35.3	70.2	In fair condition. Comfortable with intermittent bumps or depressions. See detail below for individual roads.

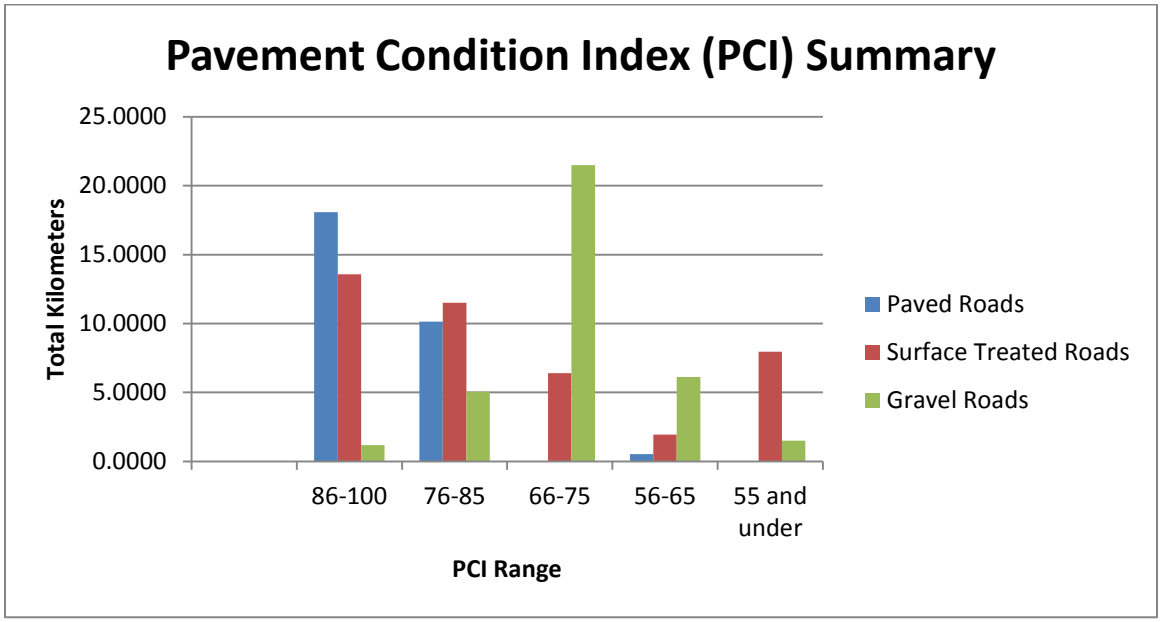
The following 3 tables summarize the PCI ratings for each road, by road surface category, in the municipality and highlight the roads that have a PCI less than 86 for paved roads, less than 76 for surface treated and less than 66 for gravel roads.

MUNICIPALITY OF EAST FERRIS 2013 PAVEMENT CONDITION INDEX PAVED ROADS		
Road Name	**Road Section Length (Km)**	**2013 Pavement Condition Index**
ASTORVILLE ROAD	3.3871	93
CHAMPAGNE ROAD	0.2017	94
CORBEIL ROAD	6.7201	95
DERLAND ROAD	6.3011	83
HILLSIDE ROAD	1.4992	76
LAKE NOSBONSING ROAD	3.9433	95
PARK ROAD	0.5360	97
PHILIP ROAD	0.2080	97
RIDGEMOUNT DRIVE	0.5357	60
SOUTH SHORE ROAD	2.0274	82
STEPPING STONE LANE	0.7000	95
TREADLIGHTLY RD	0.3000	84
VILLAGE ROAD – ASTORVILLE ROAD TO SOUTH SHORE ROAD	1.5840	97
VILLAGE ROAD – SOUTH SHORE ROAD TO CEMETERY	0.5208	94
VOYER ROAD	0.273	90
PAVED ROADS TOTAL KM	**28.7373**	
PAVED ROADS WEIGHTED AVERAGE		**89.5**

MUNICIPALITY OF EAST FERRIS 2013 PAVEMENT CONDITION INDEX SURFACE TREATED ROADS		
Road Name	**Road Section Length (Km)**	**2013 Pavement Condition Index**
ASTOR STREET NORTH	0.0839	38
ASTOR STREET SOUTH	0.3227	40
BIG MOOSE ROAD	2.9125	96
CATHERINE DRIVE	0.5848	74
CENTENNIAL CRESCENT	7.202	77
DENISE DRIVE	0.2609	58
DURRELL ROAD	.2090	71
DYMENT ROAD	0.2750	65
EGLINGTON ROAD NORTH	1.2380	70
GROULX ROAD – LAKE NOSBONSING ROAD TO EDMOND ROAD EAST	1.4155	59
GROULX ROAD – EDMOND ROAD EAST TO MUNICIPAL BOUNDARY	2.2972	82
GUILLEMETTE ROAD	2.6643	96
MACPHERSON DRIVE - CENTENNIAL CRES TO ONE MILE ROAD	0.8049	78
MACPHERSON DRIVE-ONE MILE ROAD TO END	4.5112	54
MEADOW DRIVE	0.5964	67
MIRIMISHI ROAD	1.3789	24
NOSBONSING PARK ROAD	0.1689	96
QUAE QUAE ROAD	7.4311	96
SOUTH SHORE ROAD	3.7746	68
TAILLEFER ROAD	0.4009	95
TRAPPERS COURT	0.0931	38
VILLAGE ROAD	1.2000	76
WAUKEEGAN ROAD	1.5641	37
SURFACE TREATED TOTAL KM	**41.3910**	
SURFACE TREATED WEIGHTED AVERAGE		**75.2**

MUNICIPALITY OF EAST FERRIS 2013 PAVEMENT CONDITION INDEX - GRAVEL ROADS		
Road Name	**Road Section Length (Km)**	**Pavement Condition Index**
BAYVIEW ROAD	0.0669	74
BELECQUE ROAD	0.3329	68
BERTHA ROAD	1.9064	66
BLANCHE ROAD	0.7401	88
BOOTH ROAD	1.3082	50
CARRIERE ROAD	0.5294	72
CEDAR BAY ROAD	0.6222	66
DEGAGNE ROAD	0.2058	50
DUBE ROAD	0.5353	80
DUGAS ROAD	0.7437	75
EGLINGTON ROAD SOUTH	0.5900	67
FAY ROAD	0.5298	75
HILLCREST ROAD	2.0030	60
HURTUBISE ROAD	1.0760	68
JOHNSON ROAD	2.7012	71
KNUTSON COURT	0.2000	82
LAUNDON LANE	0.1120	88
LAVIGNE ROAD – CORBEIL TO OULLETTE	2.0455	57
LAVIGNE ROAD – OULLETTE TO END	1.6313	68
LEROUX ROAD	0.2596	75
MARINA ROAD	0.0492	72
MOUNTAIN ROAD	0.5646	70
NOSBONSING PARK ROAD	5.0326	75
OUELLETTE ROAD – BIG MOOSE TO QUAE QUAE	2.0647	81
OUELLETTE ROAD – QUAE QUAE TO LAVIGNE	2.0500	76
PARGETER DRIVE	0.6457	74
PERRON CRESCENT	0.3203	86
ROGER ROAD	0.2097	85
SCOTTSFIELD ROAD	0.5521	75
SOUTH BAY LANE	0.1263	67
TAILLEFER ROAD	1.6200	73
VOYER ROAD	1.9102	70
EDMOND ROAD	1.8939	65
EDMOND ROAD WEST	0.1698	56
GRAVEL TOTAL KM	**35.3485**	
GRAVEL WEIGHTED AVERAGE		**70.2**

KILOMETERS OF ROADS IN EACH PCI RANGE BY SURFACE TYPE



NUMBER OF YEARS SINCE LAST REHABILITATION FOR PAVED AND SURFACE TREATED ROADS			
Year of Last Rehabilitation	**Years Since Last Rehabilitation**	**Total Paved Road Kilometers Rehabilitated**	**Total Surface Treated Road Kilometers Rehabilitated**
2012	1	0.74400	13.57855
2011	2	0.50624	4.97462
2010	3		
2009	4	6.30114	
2008	5		2.29724
2007	6	10.58190	
2006	7	2.02736	
2005	8		
2004	9	0.70000	
2003	10	7.04104	7.20201
2002 and prior	Over 10	0.83567	13.33854
	TOTAL	**28.73735**	**41.39096**
Weighted Average Age		6.8 years	7.4 years

The paved roads are generally in excellent condition with very smooth surfaces and a weighted average PCI of 89.5. Considerable effort has been put into paved road rehabilitation over the past 10 years and the methods of rehabilitation have had long lasting benefits. Major rehabilitation projects for 83% of the paved roads were undertaken with the assistance of grants in 2003 (7.04km), 2007(10.58km) and 2009(6.3km). The impact of the rehabilitation shows with 98% of the paved roads in good to excellent condition having a PCI higher than 75. Only 2% of paved roads are in poor to very poor condition having a PCI of lower than 66. The conditions will deteriorate somewhat over the next few years. There will be expenditure spikes when these roads require top coating or other minor rehabilitation approximately 10 years after the major rehabilitation. There will be major expenditure spikes when these roads require reconstruction 30 years after the major rehabilitation projects.

The surface treated roads are generally in fair condition, comfortable with intermittent bumps or depressions, and a weighted average PCI of 75.2. Only 61% of the surface treated roads are in good to excellent condition, having a PCI higher than 75. Meanwhile 24% are in poor to very poor condition, having a PCI of lower than 66. In 2011 and 2012 the municipality used reserve funds and debt to complete major rehabilitation of 18.5km (45%) of the surface treated roads. Unfortunately 50% (20.5 km) of the surface treated roads have not had a major rehabilitation for 10 years or more and should be completed immediately. The East Ferris strategy will be to do a major rehabilitation at least every 8 years on these roads. The condition of surface treated roads will likely deteriorate over the next few years (ie. weighted average PCI for surface treated roads will drop) unless additional funding is allocated. East Ferris has recently applied for a grant under the Small, Rural and Northern Municipal Infrastructure Fund to do a major rehabilitation on 13.9km of surface treated roads (Macpherson Drive, Centennial Crescent and Mirimishi Road). The municipality learned in December 2013 that this application will not be approved. The project will accordingly be scaled back.

Gravel roads are in fair condition with a weighted average PCI of 70.2. Only 18% of the gravel roads are in good to excellent condition having a PCI higher than 75 while 22% are in poor to very poor condition having a PCI under 66. The majority of gravel roads (60%) have a PCI in the 66 to 75 range. East Ferris is able to complete minor maintenance on an ongoing basis with their Public Works crew and Operating Budget allocations. A major rehabilitation program is funded every 2 years with a $100,000 allocation in the Capital Budget. Over a 5 year cycle all of the gravel roads have been included in the major rehabilitation program. The general condition of gravel roads should be able to be maintained at the current level.

The detailed database for the roads inventory includes the following:

Column No.	Description	Column No.	Description	Column No.	Description
1	Road Section ID	14	Number of Lanes	27	MTO Maintenance Class
2	Road Name	15	Platform Width	28	Truck %
3	From Street Name	16	Surface Width	29	10 Year Growth Factor
4	To Street Name	17	Shoulder Type	30	Last Major Rehabilitation Event
5	Surface Type	18	Shoulder Width	31	Year of Last Major Rehab Event
6	Road Section Length	19	Load Restrictions	32	Road Inspection Date
7	2009 Surface Condition Rating	20	AADT Count Year	33	Road Inspection Completed
8	2013 Surface Condition Rating	21	AADT Count	34	2009 Recommended Improvement
9	2013 Pavement Condition Index	22	Forecast AADT	35	2009 Time of Recommended Improvement
10	Terrain	23	Forecast Year	36	Ward
11	Drainage Conditions	24	Speed Limit KM Per Hour		
12	Roadside Environment	25	Speed Limit Posted		
13	Existing Design Class	26	AADT Limit for Maintenance Class		

This detailed database has been uploaded into the Municipal DataWorks system presently managed by OGRA and is periodically updated.

3.5.2 BRIDGE CONDITIONS

The Ontario Structure Inspection Manual (OSIM) includes the following definition for a bridge: “A structure which provides a roadway or walkway for passage of vehicles, pedestrians or cyclists across an obstruction, gap or facility and is greater than or equal to 3m in span”. The Municipality of East Ferris has two bridges within its boundaries and one bridge shared with the neighboring Township of Chisholm.

Bridge Condition Index (BCI)

The BCI rating is a planning tool that helps the Municipality schedule maintenance and upkeep. The BCI is not used to rate or indicate the safety of a bridge.

The result is organized into ranges from 0 to 100. Immediate action is taken to address any safety concerns.

Municipality of East Ferris Bridge Condition Rating System			
BCI Range	**Rating**	**Bridge Condition**	**Maintenance Scheduled**
90-100	A	EXCELLENT	Maintenance work is not usually required within the next five years.
80-90	B	VERY GOOD	
70-80	C	GOOD	Maintenance work is usually scheduled within the next five years.
60-70	D	FAIR	
UNDER 60	F	POOR	Maintenance work is usually scheduled within approximately one year.

MUNICIPALITY OF EAST FERRIS BRIDGE CONDITION REPORT CARD 2013				
BRIDGE	**CURRENT VALUE**	**REPLACEMENT COST**	**2013 BRIDGE CONDITION INDEX**	**RATING**
Wasi River Bridge (Groulx Road)	$147,172	$205,623	71.6	C
Bailey Bridge (Edmond West)	$36,797	$69,051	53.3	D
South Shore Bridge (Costs shared with Chisholm shown at 50%)	$176,000	$181,800	96.8	A
BRIDGES WEIGHTED AVERAGE			**78.9**	**C GOOD**

The Wasi River Bridge (Groulx Road) is in “good” condition and some work will need to be scheduled in the next 5 years. It will be improved to a very good to excellent rating with relatively minor repairs during that period.
Bailey Bridge (Edmond West) is in poor condition. A structural capacity study is scheduled for completion in 2014 to determine the repairs required.
Repairs to the South Shore Bridge (Costs shared with Chisholm) were completed in 2013. The current value and replacement cost shown are 50% of the total costs.

3.5.3 CULVERT CONDITIONS

The Municipality of East Ferris will perform a detailed inspection of each culvert in accordance with the MTO Municipal Culvert Appraisal Manual and the Ontario Structure Inspection Manual to determine the functionality and the remaining service years. The inspection includes (if applicable) but is not limited to the following factors:

- Depth of material/sediment in culvert
- Condition of marker posts for road crossing culverts
- Condition of headwalls
- Condition of guide rails/barriers
- Condition of slopes adjacent to culvert openings
- Condition of culvert material
- Condition of culvert ends
- Structural condition of culvert
- Inspect approach roadway including sags and pavement cracking

The detailed review and analysis allows the municipality to determine an overall condition rating for each culvert as follows:

Municipality of East Ferris Culvert Condition Rating System			
Condition Rating	**Rating Description**	**Report Card Rating**	**Time of Improvement**
5	Very Good	A	Routine Maintenance
4	Good	B	Rehabilitation 6 - 10 years
3	Fair	C	Rehabilitation 1 - 5 years
2	Poor	D	Rehabilitation 1 year
1	Very Poor	E	Replacement within 1 year

MUNICIPALITY OF EAST FERRIS CULVERT CONDITION REPORT CARD 2013			
CULVERT CLASS	**RATING**	**WEIGHTED AVERAGE CONDITION RATING**	**COMMENTS**
ROAD CROSSING CULVERTS OVER 1.2m DIA.	B	Not available	Rating based on Engineer's knowledge of culverts A detailed inventory and condition rating is planned for 2014 and updated yearly
ROAD CULVERTS UNDER 1.2m DIA.	B	Not available	Rating based on Engineer's knowledge of culverts A detailed inventory and condition rating will be considered for 2014 and condition reassessed as road work is scheduled
ENTRANCE CULVERTS	C	Not available	Condition ratings not maintained for entrance culverts. Replacement is considered for future years based on complaints and budget for rehabilitation/replacement of 30 entrance culverts per year in Operating Budget
CULVERTS WEIGHTED AVERAGE	**B**	**Not available**	**Culverts are generally in good condition**

Based on Engineer's knowledge of culverts they are generally in good condition

A detailed inventory and condition rating will be considered for 2014 and condition reassessed as road work is scheduled.

4 DESIRED LEVELS OF SERVICE

4.1 WHY ARE THE LEVELS OF SERVICE IMPORTANT?

While the introduction of an asset management plan explains in a general way how the goals of the municipality rely on infrastructure, the levels of service section is much more detailed. This section defines levels of service through performance measures, targets and timeframes to achieve the targets if they are not already being achieved.

The development of the Asset Management Plan is driven by the municipality's current and desired levels of service for its infrastructure (ie. quality, quantity, functionality and reliability). The expenditure forecasts are highly dependent on the desired levels of service. If roads are not currently meeting the desired levels of service, then the costs to improve them will be greater than if the desire is to keep them at the current levels. The minimum level of service is dictated by meeting the regulatory requirements for Ontario municipalities.

A service level approach is taken to ensure long term infrastructure and financial sustainability is attainable. Service level desired outcomes can be scaled down if they are not deemed to be affordable. Council plans on engaging the community in discussions on desired service levels and to ensure asset investment decisions balance the funding for investment in new/upgraded assets with the investment in asset renewal.

The 2013 Asset Management Plan will concentrate on levels of service for roads and bridges. The balance of the infrastructure levels of service will be added as the Comprehensive Asset Management Plan is completed over the next 3 years.

4.2 ONTARIO REGULATION 239/02-MINIMUM MAINTENACE STANDARDS FOR MUNICIPAL HIGHWAYS

Minimum maintenance standards were developed to provide municipalities with a defense against liability from actions arising with regard to levels of care on roads and bridges. Ontario Regulation 239/02, which came into force on November 1, 2002, contains the minimum maintenance standards. This regulation has been amended several times with the most recent being Ontario Regulation 47/13.

The Director of Public Works and Engineering is developing a Minimum Maintenance Standard for the Municipality of East Ferris for consideration by Council. This standard will demonstrate how the municipality complies with Ontario Regulation 239/02 as amended.

4.3 EXTERNAL TRENDS OR ISSUES THAT MAY AFFECT EXPECTED LEVELS OF SERVICE OR THE MUNICIPALITY'S ABILITY TO MEET THEM

Downloading / Uploading from Provincial or Federal Government

The current financial position of the Government of Canada and Province of Ontario may lead to additional downloading pressures in the next few years. The municipality recognizes the need to share in the pain of budget cuts is strong, but is also hopeful that both levels of government understand the need for local government to address their infrastructure deficits. Downloading that leads to additional costs or reduced revenues will impact the municipality's ability to meet the infrastructure needs identified in the Asset Management Plan based on expected levels of service. The Municipality of East Ferris recognizes and appreciates the uploading of social program costs arising from the Provincial Municipal Fiscal and Service Delivery Review but is concerned about the planned reduction in the Ontario Municipal Partnership Fund allocations. The OMPF reductions announced in November 2013 will limit the municipalities ability to implement the Asset Management Plan Financial Strategy in 2014 to 2016. The same will hold true if the announced revisions to Ontario Provincial Policing billing formulae are introduced.

Small rural municipalities in Northern Ontario do not have sufficient fiscal capabilities to maintain infrastructure without some funding from other government sources. Large projects, in particular, are not feasible without partnerships with the Federal and/or Provincial governments. The level of funding in the future will impact the municipality's ability to meet the infrastructure needs identified in the Asset Management Plan and reduce the infrastructure deficit. Long term planning is extremely difficult to implement without reliable entitlement based government funding. To facilitate long term planning the long term forecasts may need to be structured recognizing that large projects cannot proceed without government partnerships.

New Regulations and Standards That Increase Costs

The Asset Management Plan assumes that the current regulations and standards that dictate our infrastructure maintenance, purchases and construction costs will not be changed. Any changes could impact the municipality's ability to meet the infrastructure needs identified in the Asset Management Plan and increase or reduce the infrastructure deficit.

Extreme Weather or Other Natural Disasters

Temperatures, rainfall, droughts, high-intensity winds, hurricanes and severe flooding events all are increasing and projected to continue as the world's climate warms, according to the National Climate Assessment 2009 report. The National Climate Assessment (NCA) is a large-scale national project that is conducted under the auspices of the Global Change Research Act of 1990 and is one of the many activities of the US Global Change Research Program, a program which coordinates and integrates federal research on changes in the global environment and their implications for society. The overarching goal of the NCA process is to enhance the ability of the U.S. to anticipate, mitigate, and adapt to changes in the global environment. The report describes already observed changes, the current status of the climate, and anticipated trends for the future.

Severe weather could have a significant impact on the municipality's ability to meet the infrastructure needs identified in the Asset Management Plan. East Ferris has experienced flood and wind damage in recent years that has required the reallocation of capital funds from planned maintenance/rehabilitation to the emergency repairs. East Ferris has now adopted a Reserve Fund Policy which includes an Emergency Capital Reserve Fund to help deal with these events in the future.

4.4 MUNICIPAL PERFORMANCE MEASURES PROGRAM (MPMP)

MPMP is a performance measurement and reporting system that promotes local government transparency and accountability. It also provides municipalities with useful data to make informed municipal service level decisions while optimizing available resources.

All Ontario municipalities are required to report MPMP efficiency and effectiveness measures for services provided by their municipality. Thirteen service areas are included in the 2012 program.

Municipalities are required to report MPMP results to the Province through the Financial Information Return by May 31st following each reporting year. Municipalities must also publish results for local taxpayers by September 30th using a format of their own choosing. Municipalities may use the optional templates provided by the Ministry for local reporting.

The measures which are most relative to this Asset Management Plan are the following measures:

MUNICIPAL PERFORMANCE MEASURES PROGRAM FOR 2011				
Performance Measure	**East Ferris**	**Northern Ontario Average**	**Northern Ontario Median**	**Provincial Average**
Percentage of paved lane km. where the condition is rated as good to very good.	60.0%	58.4%	83.3%	69.0
Percentage of bridges and culverts where the condition is rated as good to very good.	97.6%	72.8%	92.8%	89.0%
Operating costs for unpaved (loose top) roads per lane kilometer	$6,751	$1,788	$1,749	$2,934
Operating costs for paved (hard top) roads per lane km	$2,540	$3,844	$2,532	$4,002

The higher Operating costs for unpaved (loose top) roads per lane kilometer confirms that East Ferris puts more effort in maintenance of roads, in particular gravel roads, and is confident that this approach reduces the need for higher cost rehabilitation or replacement based on current levels of service. Gravel roads are generally low traffic volume and speed and would be considered for service upgrade to surface treated or pavement. Design speed criteria dictates the service level.

The Operating costs for paved (hard top) roads per lane km are lower than the averages. Paved roads are generally in good to very good condition and the maintenance costs are all completed by Public Works crews.

The municipality will be doing a more detailed review of the Financial Information Return operating cost allocations to ensure they are consistent with the reporting of other municipalities. The MPMP data reported in the 2013 Financial Information Return will be reviewed in more detail to ensure consistency with this Asset Management Plan

4.5 LEVELS OF SERVICE SUMMARY FOR ROADS, BRIDGES AND CULVERTS

MUNICIPALITY OF EAST FERRIS SERVICE LEVEL SUMMARY FOR ROADS, BRIDGES AND CULVERTS					
Service Level Category	Service Level	Service Level Description	East Ferris 2011	Desired Target Service Level	Objectives /Comments
Quality	Road Condition	% of roads in good to very good condition (MPMP)	60.0%	70.0%	To bring up to Provincial average within 10 years
	Bridge and Culvert Condition	Percentage of bridges and culverts where the condition is rated as good to very good	97.6%	85.0%	To maintain above Provincial average
	Pavement Condition Index	Sum of the severity and density of surface distresses as measured by the PCI			
		Paved Roads	89.5	86 - 90	To maintain at current level
		Surface Treated Roads	75.2	76-85	To improve over 10 year period
		Gravel Roads	70.2	66-75	To maintain at current level
Customer	Temporary Load Restrictions	Percent of total road system with a spring load restriction	100%	70%	To reduce over 10 years
	Permanent Load Restrictions	Percent of total road system with a year round truck restriction	0%	0%	To maintain at current level
Financial	Paved Road Maintenance Cost	Paved maintenance includes frost heave/base/utility cut repair, cold mix patching, hot mix patching, shoulder maintenance, surface maintenance, surface sweeping, and surface flushing. Surface maintenance activities include crack sealing, spray patching, micro surfacing and slurry seal. Includes direct overhead (MPMP)	$2,540	$4,000	To increase level of maintenance in Operating Budget to Provincial Average
	Unpaved Road Maintenance Cost	Unpaved maintenance includes dust suppression, loose top grading, loose top gravelling, spot base repair and wash-out repair. Includes direct overhead (MPMP)	$6.751	$6,800	To maintain at current high level of maintenance in Operating Budget

This service level summary is preliminary only and will be updated after further review in 2014.

5 ASSET MANAGEMENT STRATEGIES

5.1 GENERAL APPROACH TO ASSET MANAGEMENT

The asset management strategy is the set of planned actions that will enable the assets to provide the desired levels of service in a sustainable way, while managing risk at the lowest lifecycle cost.
A good asset management strategy is a set of actions that, taken together, have the lowest total cost overall, and not necessarily the set of actions that each has the lowest cost individually.
The Municipality of East Ferris would like to use an approach that can be managed and maintained by our own staff on an annual basis. In general the "keep it simple and manageable" philosophy has been used throughout this Asset Management Plan.
The costs associated with asset management rise exponentially as the asset moves through its life-cycle.
The following table extracted from the "Cambridge State of the Infrastructure Report 2007" illustrates these phases and how they relate to the City's Operating and Capital Budgets.

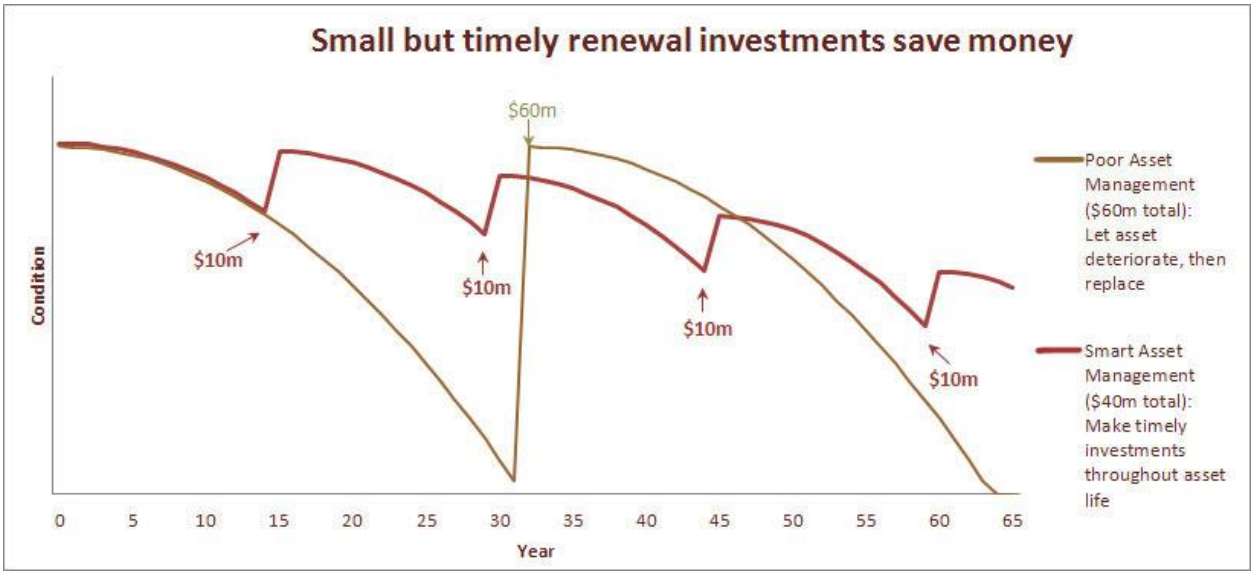
Asset Age	What Needs to be Done	Definition	Cost of What Needs to Be Done
0-25% of asset life	Minor Maintenance	Planned activities such as Pavement Crack Sealing, Bridge Joint Cleaning, Street Light Bulb replacements, and Street sweeping	0.5% of the asset reconstruction or replacement cost on an annual basis
25-50% of asset life	Major Maintenance	Maintenance and repair activities, generally unplanned; however, they can be anticipated and would generally be accounted for with the City's annual operating budget. These would include such events as pothole repair, replacement of damaged signs and streetlights, and Bridge Bearing maintenance	2% of the asset reconstruction or replacement cost on an annual basis
50-75% of asset life	Rehabilitation	Major activity required to upgrade or rehabilitate the system so that it can continue to provide service for an additional time period. Cost-effective pavement management planning identifies rehabilitation to the pavement surface so no pavement structural condition is ever below this point.	25% of the asset reconstruction or replacement cost one time during the period.
75-100% of asset life	Replacement	Some assets will reach the end of their structural and/or service useful life and require replacement. Experience in other communities has shown that the expected life of an asset will vary greatly depending upon a number of environmental factors.	100% of the asset reconstruction or replacement cost one time when infrastructure fails.

The initial cost for the asset is Minor Maintenance, which annually represents a cost of 1x or 0.5% (1x divided by 200x) of the reconstruction or replacement cost. This annual cost will continue for the first 25% of the asset's life.

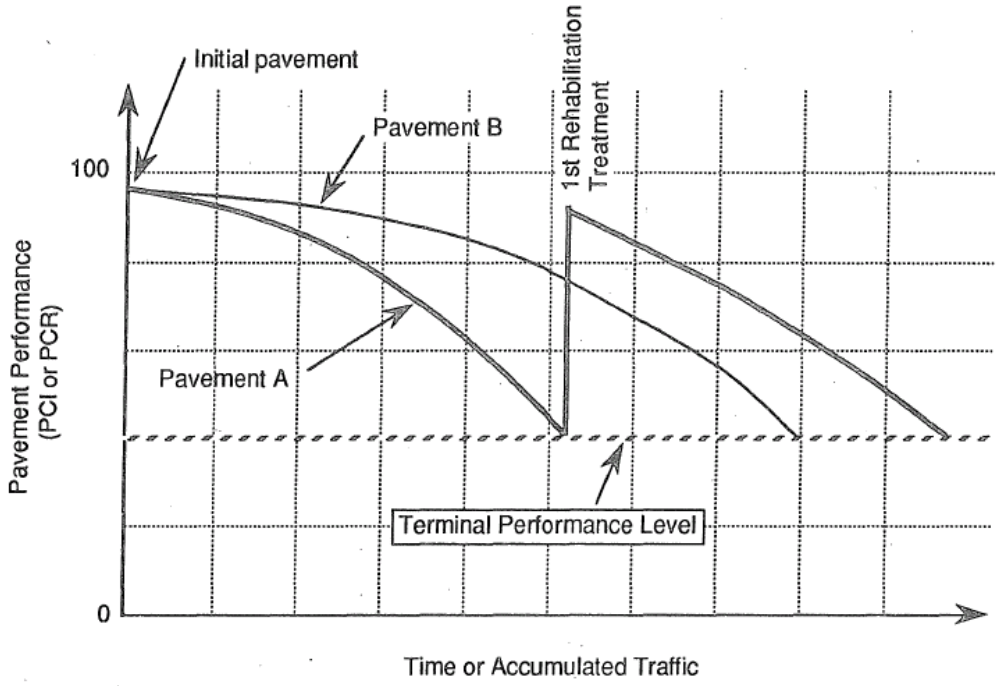
The next phase in the asset's life has a cost that will include Minor Maintenance, but the effort required to complete this maintenance will increase, additional types of maintenance will be required, and unscheduled or emergency maintenance activities will be added to the annual cost. This cost is represented as 4x or 2% (4x divided by 200x) of the asset's replacement cost, and this annual operating cost will continue through the next two phases, until the asset is eventually replaced.

The last two phases, represented by 50x and 200x, are one-time capital costs, which will occur at some point within 50 to 75% and 75 to 100% of the asset's life, respectively. The assumptions being made within this report are that the replacement cost represents 200 times the initial annual minor maintenance cost and that rehabilitation can be performed on the asset at 50% of the full replacement cost. NOTE: it is also assumed that only half of the assets will be rehabilitated, with the other half actually being replaced for a variety of reasons, such as a requirement for larger capacity. This results in a figure of one quarter of the 200x (or 50x) for rehabilitation costs since only half of the assets will be rehabilitated.

The Province's "Building Together - Guide for Municipal Asset Management Plans" includes a figure that further demonstrates how costs savings can be achieved with a "smart" Asset Management Plan that includes regular maintenance and rehabilitation.



The following chart demonstrates the same principal for roadways.



5.2 MAINTENANCE APPROACH TO ASSET MANAGEMENT

Regularly scheduled maintenance is recognized as a critical approach to manage the costs of an asset management plan. East Ferris has a relatively aggressive annual maintenance program that is funded in the Operating Budget. On average over the 2011 to 2013 the East Ferris Operating Budget actual expenditures averaged $507,000 annually which is 13% of operating expenses ($3,941,000 excluding transfer payments in 2013 Operating Budget) and 14% of the 2013 tax levy ($3,600,000. See 3 year summary in Section 2.5.6 on page 30).

Much of the work is undertaken by the Public Works crew supplemented with contracts awarded each year. The following sections summarize the annual roads maintenance programs as described by the Director of Public Works and Engineering.

5.2.1 ROADS

Paved Roads

During winter, paved roads are plowed, sanded and/or salted to maintain a center bare to fully bear condition.

The paved roads in the Municipality of East Ferris consist primarily of the arterial and collector roads classified as Class 3 and 4. These roads have a useful life of 25 years. There are three (3) types of paved roads in East Ferris; double 80mm hot mix, single 40mm hot mix on 150 expended foam and single 40mm hot mix. These roads have a superior road base composed of a minimum 150mm granular ‘A’ lift on top of a minimum of 450mm granular ‘B’.

Intersection sweeping is required each spring. These roads may require cold mix maintenance generally late spring. Since 2008 the Municipality has implemented a crack sealing program for paved roads only. Mostly due to the salt use, paved roads require line painting every year. At times it may be necessary to repaint the centerline and both side lines.

Paved roads have a wider base and wider shoulders. In the course of the last 10 years, shoulder maintenance was mostly done using reclaimed asphalt product (RAP). This material was found to bind much better than gravel reducing washouts and maintenance needs. Since its implementation, the shoulder gravelling needs for gravel roads has been reduced significantly.

Usually, ditching, cross culvert replacement, base repair and local improvement on paved road is part of the Capital Budget program. However, it is necessary at times to provide these works as part of the maintenance program with the use of an excavator.

Surface Treated Roads

During winter, surface treated roads are plowed and sanded to maintain a snow covered road condition.

The surface treated roads in the Municipality of East Ferris are primarily collectors and local roads classified as Class 4 and 5. These roads have a useful life of 8 to 10 years. In theory, these roads require resurfacing once every 5 years. Surface treated roads require a double surface treatment upon construction with a third coat the following year. There are three (3) types of surface treated roads in East Ferris; Class 2 – HF 150 emulsion, Class 1 stone - CSR2P emulsion on CIPR, Class 1 stone with CSR2P emulsion on reinforced geo-textile. These roads have a medium road base composed of approximately 150mm granular ‘A’ lift on top of 300mm granular ‘B’.

In general, these roads require sweeping each spring and cold mix maintenance on a year around basis.

Surface treated roads have a narrower base with very little shoulders. These roads have softer shoulders and more prone to edge break. For this reason, the good practice has been to widen the treated area to the entire road surface reducing road edge cracking and minimizing washout. Since this method reduces significantly the need for shoulder maintenance, the Municipality will consider the alternative of shoulder spraying of existing surface treated road in the future.

Usually, ditching, cross culvert replacement, base repair and local improvement on surface treated roads is part of the capital works program. However ditching, cross culvert replacement, base repair and local improvement maintenance is more frequent on surface treated roads than on paved roads. This work usually requires an excavator on wheels or a gradall to minimize the damage to the existing road.

Surface treated roads are also considered for the brushing program to maximize sun exposure and improve sight line.

Gravel Roads

During winter, gravel roads are plowed and sanded to maintain a snow covered road condition.

The gravel roads in the Municipality of East Ferris are local and secondary roads classified as Class 4, 5 and 6. The Municipality of East Ferris has established a gravel resurfacing program based on a rotation where the road network is divided in three (3) sections. They are comprised of the North end (Trout Lake), the Center (Nosbonsing) and the South end (Astorville). The gravel roads within each section receive a gravel lift of 25mm to 50mm once in a 5 year period.

Since 2004, the Municipality has switched to quarry stone for its resurfacing program. This stone provides a much better physical property due to its angularity preventing rolling and increasing binding to the road surface. Although more expensive than pit run material, this aggregate stays on the road longer and reduces the need of grading. Prior to gravel resurfacing, the Municipality removes shoulder build-up called 'berms' to allow positive drainage and prevent water from being trapped within the travelled portion of the road surface.

To reduce dust during the summer months, the Municipality applies a dust control late spring on all gravel roads. The two main dust control products are calcium and magnesium. The particularity of dust control is that it holds moisture which binds the fines to create a firm long-lasting surface. This treatment improves road safety by preventing dust and reduces grading frequency.

Another key element is to maintain good drainage by providing proper ditching. A well-drained road provides firm shoulders, reduces frost heaves and potholes. Ditching is usually carried out during the summer months.

Gravel roads are part of a brushing program to increase sight lines and minimize shading which allows for more sun exposure and stronger road shoulders.

These roads require regular grading maintenance on a year around basis. During the rainy season, spring and fall, these roads are usually saturated and therefore prone to washboard and pothole. This is the period where gravel roads may require weekly grading maintenance. During the summer months and after the dust control application, grading frequency may be reduced to once or twice monthly.

5.2.2 BRIDGES

Maintenance recommendations are reported in the biennial bridge inspection report. The report identifies deficiencies, recommendation for additional investigations and recommended maintenance.

The operational program includes the maintenance as identified. Furthermore, routine inspection is done on Municipal bridges identifying other maintenance needs which are scheduled in accordance to their priority throughout the year and fall under the Operating Budget.

Bridge deficiencies consisting of more expensive items are identified in the OSIM reports on a "now", "1 to 5 years" and "5 years or more". Such work is identified in the Capital Budget program accordingly.

5.2.3 CULVERTS

Culverts are separated in categories, including road culverts larger than 1.2m in diameter, smaller road culverts up to 1.2m in diameter and driveway entrance culverts. Entrance culverts are maintained by the Public Works department and replaced when needed under the Operating Budget. In average the Municipality of East Ferris replaces up to 30 failing culverts per year. This program also included a few road culverts that were identified for replacement the prior year.

In general, larger road culverts are replaced as part of a road reconstruction and are part of the Capital Budget for that given year.

5.2.4 OPERATING BUDGET EXPENDITURES FOR ROADS, BRIDGES AND CULVERTS

The East Ferris Operating Budget includes significant allocations for the annual maintenance of assets. The 2011 to 2013 actual costs in the Operating Budget are as follows:

MUNICIPALITY OF EAST FERRIS
OPERATING BUDGET EXPENDITURES FOR ROADS, BRIDGES AND CULVERTS
2011 TO 2013

Road, Bridge & Culvert Activity	2011	2012	2013	Indexed 3 Year Average Assuming 2% Index
Bridges and Culverts	$42,503	$44,418	$61,419	$50,310
Ditching - Equipment Rental	$9,193		$4,456	$4,672
Cold Mix Asphalt - Potholes	$14,241	$8,270	$4,535	$9,260
Shoulder Maintenance Patching - Gravel	$3,372	$4,993	$3,152	$3,917
Washout Patching - Gravel		$2,639	$2,624	$1,772
Gravel Roads Resurfacing - Gravel	$2,400		$1,916	$1,470
Surface Treatment - Crack Sealing	$19,542			$6,774
Public Works Crew Labour	$275,508	$285,029	$291,975	$289,494
TOTAL OPERATING BUDGET EXPENDITURES	**$366,759**	**$343,349**	**$370,077**	**$367,669**

5.3 RENEWAL /REHABILITATION APPROACH TO ASSET MANAGEMENT

Renewal / rehabilitation activities are designed to extend the useful life of all assets and defer the need for significantly higher replacement costs. They are generally projects which cannot be funded in the Operating Budget and accordingly they are a significant component of the annual Capital Budget.

5.3.1 SPECIFIC APPROACH FOR ROADWAYS

There are several recognized and well defined condition methodologies for roads. They included the Pavement Condition index (PCI), Pavement Quality Index (PQI) and Structural Adequacy Index (SAI) to mention a few.

The Municipality of East Ferris has chosen to use an approach that can be managed and maintained by our own staff on an annual basis. In general the “keep it simple and manageable” philosophy has been used throughout this Asset Management Plan. The municipality has an engineer and experienced roads supervisor who are capable of rating the roads using the Pavement Condition Index. The methodology described in this section of the Asset Management Plan is what works best for a municipality with relatively limited resources.

East Ferris uses the following factors to develop an indexed 30-year life cycle maintenance / rehabilitation / reconstruction plan for each section of roadway:

A. Current Pavement Condition Index

B. Pavement Condition Index Trends

C. Roadway Class

D. Traffic Volumes

E. Recommended PCI Trigger Values for Rehabilitation Strategies

F. Pavement Priority Number (PPN Approach)

G. Rehabilitation Alternatives

H. Segmenting the Road System

A. Current Pavement Condition Index

The Pavement Condition Index (PCI) rates the general condition of the surface of a road network. The PCI provides a numerical rating for the condition of road segments within the road network, where 0 is the worst possible condition and 100 is the best.
The PCI measures two conditions:

1. Distress Manifestations Index (DMI). The type, extent and severity of pavement surface distresses (typically cracks and rutting). East Ferris uses the following distress factors:

DISTRESS FACTORS		
Paved Roads	**Surface Treated Roads**	**Gravel Roads**
Ravelling & Coarse Aggregate Loss Flushing Rippling and Shoving Wheel Track Rutting Longitudinal Wheel Track Cracking Centerline Cracking Pavement Edge Cracking Transverse Cracking Longitudinal Meandering or Midlane Random	Cover Aggregate Loss Streaking Flushing Potholing Pavement Edge Break Rippling and Shoving Wheel Track Rutting Distortion Longitudinal Cracking Transverse Cracking Pavement Edge Cracking Alligator Cracking	Loose Gravel Dust Potholes Breakup Washboard Rutting Flat/Reverse Crown Distortion

The Distress Manifestations Index (DMI), is obtained based on the type, extent and severity of pavement surface distresses (typically cracks and rutting).The DMI is a mathematical calculation utilizing the weight, severity and density of each distress.

2. Ride Comfort Rating (RCR). The smoothness and ride comfort of the road are averaged over the section of road being evaluated. The RCR is a subjective value assigned by an experienced rater (or International Roughness Index if measured mechanically).

The DMI and RCR data is recorded on the MTO Flexible Pavement Condition Evaluation Form in accordance with the road surface.

The PCI is a subjective method of evaluation based on inspection and observation. Knowledgeable and experienced public works officials drive the road network and evaluate its condition in a systematic way. The observations are entered into a database for evaluation and use. The PCI is a mathematical combination of the RCR and the DMI.

The PCI will be conducted annually so that changes in road condition can be evaluated. The PCI tells public works officials:

- The current condition of the road network
- The rate of deterioration of the road network over time

A PCI is used to:

- Identify immediate maintenance and rehabilitation needs
- Monitor pavement condition over time
- Develop a network preventive maintenance strategy
- Develop road maintenance budgets
- Evaluate pavement materials and designs

While the PCI is based on subjective observations, the index itself must be both objective and systematic to be of value. In order to develop a PCI, the road network needs to be divided into manageable segments. Sections with relatively uniform pavement structures, design and traffic volumes will have similar performance characteristics.

The following chart is used to summarize the report card condition rating only. A more detailed decision matrix with trigger points is described later in the plan.

MUNICIPALITY OF EAST FERRIS ROAD PAVEMENT CONDITION RATING SYSTEM			
REPORT CARD RATING	**PCI RANGE**	**GENERAL CONDITION**	**CONDITION DESCRIPTION**
A	86-100	Excellent	Very smooth
B	76-85	Good	Smooth with a few bumps or depressions
C	66-75	Fair	Comfortable with intermittent bumps or depressions
D	56-65	Poor	Uncomfortable with frequent bumps or depressions
F	0-55	Very Poor	Uncomfortable with constant bumps or depressions

B. Pavement Condition Index Trends

In the future the trends in the PCI will be reviewed to help determine the best short-term / long-term maintenance or rehabilitation plan for each road.

C. Roadway Class

Road class is a key factor considered to help determine the best short-term / long-term maintenance or rehabilitation plan for each road.

The Municipality of East Ferris has 105.5 km of roadway that can be classified and segmented in many different ways. For the purpose of this Asset Management Plan the following classifications have been used:

SURFACE FINISH	
Asphalt	28.4 km
Surface Treatment	44.9 km
Gravel	32.2 km
TOTAL	105.5 km

The municipality also uses the Province of Ontario highway classification system which utilizes traffic volumes and posted speed limits to classify roads on a scale of 1 to 6.

For the purpose of the Provincial regulations every highway under the jurisdiction of the municipality and assumed for maintenance purposes is classified in the classes from one to six based on the speed limit and average annual daily traffic (A.A.D.T.)

The Province of Ontario highway classification system classification of highways normally requires an experienced person in this process to ensure legal conformity should the results be challenged in court. East Ferris is planning on completing traffic counts and updating the classification in the summer 2014 under the guidance of their Engineer.

Based on the most recent review the majority of the municipal roads are in classes 3 to 5 as shown in the following chart:

MUNICIPALITY OF EAST FERRIS PROVINCE OF ONTARIO HIGHWAY CLASSIFICATION SYSTEM				
Highway Classification	**Asphalt**	**Surface Treated**	**Gravel**	**Total**
Class 1	---	---	---	
Class 2	---	---	---	
Class 3	10.5			**10.5**
Class 4	14.0	26.2	7.1	**47.3**
Class 5	3.7	15.2	24.5	**43.4**
Class 6	0.2	3.5	0.6	**4.3**
Totals by Surface Type	**28.4**	**44.9**	**32.2**	**105.5**

There are also two provincial 2 lane highways within municipal boundaries that are not included in this asset plan:

Hwy 17 Class 2 – 12.0 km

Hwy 94 Class 2 – 9.2 km

D. Traffic Volumes

Traffic volumes are a key factor considered to help determine the best short-term / long-term maintenance or rehabilitation plan for each road. An updated traffic count review is planned for 2014. The following table summarizes the traffic volume found in the 2009 Roads Needs Study completed by Wills Consulting Engineers:

TRAFFIC VOLUME BY ROAD SURFACE TYPE		
Surface Type	**Traffic Volume**	**Total Kilometres**
Gravel	0-49	0.96
	50-199	12.93
	200-399	7.46
	400-1,000	11.19
	1,000+	0.00
TOTAL GRAVEL		**32.54**
Surface Treatment (LCB)	0-49	4.23
	50-199	2.20
	200-399	3.26
	400-1,000	28.75
	1,000+	7.20
TOTAL SURFACE TREATMENT		**45.64**
Paved (HCB)	0-49	0.00
	50-199	2.40
	200-399	0.91
	400-1,000	3.00
	1,000+	20.35
TOTAL PAVED		**26.66**
GRAND TOTAL		**104.84**

E. Recommended PCI Trigger Values for Rehabilitation Strategies

Timing for Improvement	Freeway	Arterial	Collector	Local
Adequate	>85	>85	>80	>80
6 to 10 years	76 to 85	76 to 85	71 to 80	66 to 80
1 to 5 years	66 to 75	56 to 75	51 to 70	46 to 65
NOW Rehabilitate	60 to 65	50 to 55	45 to 50	40 to 45
NOW Reconstruct	<60	<50	<45	<40

The above decision matrix provides specific guidelines for the improvements required for various road classifications. Using the PCI can help identify trigger points for preventive maintenance that can stop a road deteriorating to the point that it needs expensive rehabilitation. As a rule of thumb, the higher the PCI, the better condition the road is in. The PCI decision matrix is a guideline and should be used in conjunction with the personal observations of the road inspectors. The municipality can adjust the matrix to provide alternative trigger points for rehabilitation or reconstruction. Specific maintenance and rehabilitation actions should always be based on the actual distress of the pavement itself.

F. Pavement Priority Number (PPN Approach)

The Engineer is developing a PPN approach for implementation in 2014.

PPN = PCI – It – Ie – Iw – Ip
Where
It = traffic factor
Ie = economic factor
Iw = width factor
Ip = profile factor

The adjustment factors and their weights will be customized to fit the East Ferris roads.

G. Rehabilitation Alternatives

ASHALT ROADWAYS

The municipality recognizes long-term benefits of a pavement preservation program to extend the useful life of the pavement and delay the need for rehabilitation or replacement. A good program will result in much lower life-cycle costs, improved safety and service levels for the citizens. The following maintenance and rehabilitation techniques are considered to extend the useful life of an asphalt roadway:

- Asphalt rejuvenators
- Crack sealing
- Chip sealing
- Slurry sealing or Micro surfacing
- Overlay
- Grind and overlay
- Cold-in-place recycling
- Hot-in-place recycling
- Spring weight restriction By-Law

The strategies used and the timing of the work varies depending on the class of road, the location of the road, the amount of work and the availability and expertise of local contractors.

The relatively small size of the municipality often means the above options need to be deferred until there is sufficient work to attract a reasonable bid from a contractor. The geographic location also limits the availability of materials required for some of the techniques listed above.

SURFACE TREATED ROADWAYS

The municipality recognizes long-term benefits of a surface treated roads preservation program to extend the useful life of the roadway and delay the need for rehabilitation or replacement. A good program will result in much lower life-cycle costs, improved safety and service levels for the citizens. The following maintenance and rehabilitation techniques are used to extend the useful life of a surface treated roadway:

- Cold Mix
- Asphalt rejuvenators
- Single surface treatment overlay
- Spring weight restriction By-Law

GRAVEL ROADWAYS

The municipality recognizes long-term benefits of a gravel road maintenance program to extend the useful life of the roadway and delay the need for rehabilitation or replacement. A good program will result in much lower life-cycle costs, improved safety and service levels for the citizens. The following maintenance and rehabilitation techniques are used to extend the useful life of a gravel roadway:

- Annual grading program
- Routine shaping
- Annual spot gravel
- Dust control
- Shoulder maintenance
- Ditch maintenance
- Spring weight restriction By-Law

H. Segmenting the Road System

There are numerous referencing methods to segment the roadway system. The basic methods considered included linear referencing, dynamic sectioning, coordinate based, intersection to intersection nodes and 911 addresses. Roads can be further segmented using road surface types, road classifications, traffic volume or geometry.

In keeping with the general “keep it simple and manageable” philosophy East Ferris has chosen to include each road as one segment (or more if it includes more than one surface type (ie. asphalt, treatment or gravel)). Roads longer than 3km have been reviewed and broken in to segments at the discretion of the Engineer. Since much of the road rehabilitation is contracted out, the cost effectiveness of larger sections has been factored into the segment lengths used.

Major rehabilitation projects are considered following detailed engineering reviews conducted if the Pavement Condition Index falls below the trigger point.

5.3.2 SPECIFIC APPROACH FOR BRIDGES

The municipality uses the following maintenance and rehabilitation techniques to extend the useful life of a bridge:

- Seal or replace leaking joints
- Deck sealants, membranes and overlays
- Cathotic protection
- Electrochemical chloride extraction
- Concrete repairs and overlays
- Painting
- Retrofit critical members
- Install scour countermeasures
- Cleaning

The Ontario Structure Inspection Manual (OSIM) includes the following definition for a bridge: “A structure which provides a roadway or walkway for passage of vehicles, pedestrians or cyclists across an obstruction, gap or facility and is greater than or equal to 3m in span”. The Municipality of East Ferris has two bridges within its boundaries and one bridge shared with the neighboring Township of Chisholm.

Bridge Condition Index (BCI)

All bridges have a natural life span. To keep bridges in a safe condition, maintenance and upkeep are scheduled based on inspection results, age, location and the type of bridge. The Municipality strategically schedules bridge maintenance to ensure that repairs and upkeep are done at the most optimal time. This allows the Municipality to ensure that bridges are safe for their entire lifespan, and that the money for repairs is wisely spent.

In addition to regular and yearly inspections, every bridge in Ontario must undergo a rigorous inspection every two years by a trained inspector who is either a professional engineer or under their direction. The inspector reviews and rates each bridge component. These ratings are used in determining the bridge’s current value.

The BCI rating is a planning tool that helps the Municipality schedule maintenance and upkeep. The BCI is not used to rate or indicate the safety of a bridge.

The result is organized into ranges from 0 to 100. Immediate action is taken to address any safety concerns.

Municipality of East Ferris Bridge Condition Rating System			
BCI Range	**Rating**	**Bridge Condition**	**Maintenance Scheduled**
90-100	A	EXCELLENT	Maintenance work is not usually required within the next five years.
80-89	B	VERY GOOD	
70-79	C	GOOD	Maintenance work is usually scheduled within the next five years.
60-69	D	FAIR	
UNDER 60	F	POOR	Maintenance work is usually scheduled within approximately one year.

To calculate the BCI rating, the current value is divided by the replacement cost of the bridge. The replacement value is based on the cost to reconstruct a new bridge.

$$BCI = \frac{\text{Current Value}}{\text{Replacement Cost}} \times 100$$

The BCI for the East Ferris Wasi River Bridge last inspected in 2012 is 71.6 calculated as follows:

$$BCI = \frac{\$147,172}{\$205,623} \times 100 = 71.6$$

Major rehabilitation projects are considered following detailed engineering reviews conducted if the Bride Condition Index falls below the trigger point.

Bridge Sufficiency Index (BSI)

The Engineer is developing a Bridge Sufficiency Index (BSI) approach for implementation in 2014.

BSI = BCI – It – Ie – Iw – Ip

Where

It = Importance Factor for Traffic (based on AADT truck traffic)
Ie = Importance Factor for Traffic Economic Impacts (based on detour and usage)
Iw = Importance Factor for Bridge Width (based on lanes, shoulders, sidewalks)
Ip = Importance Factor for Bridge Profile (sight distances, alignment, grade, clearance to water

The adjustment factors and their weights will be customized to fit the East Ferris bridges.

5.3.3 SPECIFIC APPROACH FOR CULVERTS

The Municipality of East Ferris will perform a detailed inspection of each culvert in accordance with the MTO Municipal Culvert Appraisal Manual and the Ontario Structure Inspection Manual to determine the functionality and the remaining service years. The inspection includes (if applicable) but is not limited to the following factors:

- Depth of material/sediment in culvert
- Condition of marker posts for road crossing culverts
- Condition of headwalls
- Condition of guide rails/barriers
- Condition of slopes adjacent to culvert openings
- Condition of culvert material
- Condition of culvert ends
- Structural condition of culvert
- Inspect approach roadway including sags and pavement cracking

The detailed review and analysis allows the municipality to determine an overall condition rating for each culvert as follows:

Municipality of East Ferris Culvert Condition Rating System			
Condition Rating	**Rating Description**	**Report Card Rating**	**Time of Improvement**
5	Very Good	A	Routine Maintenance
4	Good	B	Rehabilitation 6 - 10 years
3	Fair	C	Rehabilitation 1 - 5 years
2	Poor	D	Rehabilitation 1 year
1	Very Poor	E	Replacement within 1 year

Culvert rehabilitation is typically much faster, less expensive, and easier than removing and replacing the old culvert, particularly where there are deep fills or where trenching would cause extensive traffic disruptions. Generally, deteriorated culverts are rehabilitated by inserting a rigid-wall or flexible liner pipe that is held in place by either grout (rigid wall liner) or a pressure and heat based curing process (flexible liner). The following two (2) methods are current rehabilitation/replacement techniques used for deteriorated culverts.

1. Trenchless slip lining
2. Open trench excavation

Prior to deciding whether to replace or rehabilitate the culvert, a determination of the structural integrity of the host pipe must be made. If the existing pipe is incapable of sustaining design loads, it should be replaced rather than repaired.

5.3.4 SPECIFIC APPROACH FOR BUILDINGS

Building Condition Reports are conducted by experts contracted by the municipality on a cyclical basis. If a building has a significant list of urgent repairs that cannot be funded from Operating Budget allocations over a number of years then a rehabilitation project is scheduled. Replacement or rehabilitation of major components such as roof, hvac systems and exterior siding are planned over the useful life of the building component. A more detailed asset management strategy for buildings will be completed in 2014.

5.3.5 SPECIFIC APPROACH FOR VEHICLES AND EQUIPMENT

Most maintenance requirements, including major overhauls, are included in the annual Operating Budget. When a vehicle or piece of equipment reaches the end of its useful life, the option to complete a major overhaul to extend its useful life may be considered if it is feasible and cost effective. Only major overhauls costing over $10,000 are considered as rehabilitations and included in the Capital Budget. A more detailed asset management strategy for vehicles and equipment will be completed before the end of 2015.

5.3.6 SPECIFIC APPROACH FOR IMPROVED PROPERTY

This section will be included in the Comprehensive Asset Management Plan before the end of 2016.

5.4 REPLACEMENT ACTIVITIES APPROACH TO ASSET MANAGEMENT

When maintenance and renewal/rehabilitation approaches are not feasible or cost effective, and an asset has reached the end of its useful life, then the asset may need to be replaced or reconstructed.

The Asset Management Plan is designed to avoid this option for roads and therefore is assumed not to be required in the 30 year forecast unless the base has been seriously eroded.

Bridges and culverts are replaced when the rehabilitation options are not cost effective, feasible or the existing pipe is incapable of sustaining design loads.

5.5 NON-INFRASTRUCTURE SOLUTIONS APPROACH TO ASSET MANAGEMENT

Planned actions and policies can lower the costs or extend the useful life of assets. The Municipality of East Ferris actively pursues non-infrastructure solutions to ease the burden of the Asset Management Plan on its taxpayers. The following are examples of this approach:

- Overweight vehicles are not given permission to use municipal roads. If they do so and cause damage the municipality considers legal options.
- Infrastructure damaged by accidents or public mischief are referred to the drivers insurance company and/or the Ontario Provincial Police.
- Entrance Permit holdbacks allow the municipality to recover costs of road or culvert damage.
- Spring half-load policy for all roads and signs are posted at each entrance to the municipality.
- Official Plan aims to encourage development in areas with roadways that can handle added traffic.
- Replacement cost insurance on assets
- Process optimization is utilized to reduce costs, increase efficiencies and find new cost efficient methods to extend the useful life of assets.
- Integrated planning to optimize lifecycle costs. The year before a road rehabilitation is scheduled the Public Works Department will repair or replace culverts that would likely need to be addressed during the life expectancy of the road rehabilitation.

5.6 DISPOSAL OF ASSETS

Once an asset reaches the end of its useful life or is no longer required it may need to be disposed. The municipality's Procurement By-Law 2274 includes the following section 6.1 dealing with the disposal of surplus goods including all assets.

6.1 DISPOSAL OF SURPLUS GOODS

6.1.1 Where any *goods* are surplus, obsolete or not repairable, they shall be declared surplus by the *Department Manager*.

6.1.2 When no other use can be found for these items in other Departments, they shall be disposed of through public auction, *tender* or written *quotation*, whichever is in the best interest of the *Township*.

6.1.3 Where the item declared as surplus has a market value of less than $100.00, the *Department Manager* may, to the benefit of the *Township*, dispose of the item in a manner other than the ones listed above.

5.7 EXPANSION ACTIVITIES

The Municipal road network is comprised of six (6) six surface types varying from gravel roads to paved surfaces. The road surface type is dependent of the traffic count for individual road segments. The lower traffic count segments are comprised of gravel roads, where the highest traffic count segments are the fully paved road surfaces. In general the Annual Average Daily Traffic (A.A.D.T.) will increase with population growth.

The Municipality has completed and submitted a comprehensive Official Plan Review to the Province in October 2013. The updated plan will cover the planning period from 2014 to 2034. It has the essentially the same focus on development to limit the impact on infrastructure. The growth projections are assumed to average 0.66% per year which would translate to an average of 20 new residential units per year and a projected population of between 5,000 and 5,250 by 2025. It is the policy of the Plan to provide for a sustainable development pattern in the hamlets while not necessitating new public services (water, sewer or new roads) and ensuring the protection of the environment.

The population growth factor has a direct influence on traffic growth for the road network. Traffic count data may increase based on this factor resulting in higher road classification for some of the network. Based on the rate of the population growth identified above, it is likely that for some segments, the existing surface type will no longer be adequate for future traffic and would therefore require local improvement.

Since 2003 the Municipality has increased its road network with subdivision development. New roads must be constructed as per our Municipal Standard. Upon final acceptance, such roads are integrated and transferred into our road network. It is anticipated that subdivision development will continue in the Municipality of East Ferris and is another factor that will continue to increase our road network.

Furthermore, with over forty (40) private roads there is always the potential of assuming such roads in the future. Private roads are presently not maintained by the Municipality, nor are they considered part of our road network. Each year however, constituents approach the Municipality with a keen interest to transfer their private road to our existing network. In general, private roads consist of a gravel surface varying from laneways to two lane roads. Based on geometric design and structural capacity, private roads do not presently meet our design standards. In the future, Council may be in support of adding some private roads to our existing network. Prior to assuming any private roads, the Municipality would require an agreement identifying the design standards where the process would be similar to the subdivision development.

5.8 PROCUREMENT METHODS

The Municipality of East Ferris adopted By-Law No. 2274, being a By-law to govern procurement policies and procedures for goods, services and construction on 26th day of February, 2009. The Council deemed it desirable to have a By-law to provide for fair, transparent and accountable purchasing and tendering procedures for the purchase of goods, services or construction and thereby protecting Council, vendors and staff involved in the process by providing clear direction and accountability.

The purposes, goals and objectives of this By-law and of each of the methods of procurement authorized are:

a) To encourage competition among suppliers;
b) To maximize savings for the taxpayers of *East Ferris*;
c) To procure by purchase, rental or lease the required quality and quantity of *goods*, *services* or *construction* including professional and consulting *services* in a timely and cost effective manner;
d) To ensure service and product delivery, quality, efficiency and effectiveness;
e) To ensure fairness among bidders;
f) To ensure openness, accountability and transparency while protecting the financial best interest of the municipality;
g) To have regard to the accessibility of persons with disabilities to the *goods*, *services* and *construction* purchased by the *municipality*;
h) To attempt to reduce the amount of solid waste requiring disposal through the purchase of environmentally responsible *goods* and *services*.

The municipality frequently works together with other area municipalities to pool infrastructure projects and resources.

AFP models are considered when they are deemed appropriate.

A design build approach was used for the South Shore Bridge deck rehabilitation project.

Engineering design and inspection is usually completed in-house by the Director of Engineering and Public Works. He also often acts as the contractor and tenders are sublet. These same functions are completed for neighboring municipalities on a fee for service contract basis.

6 FINANCING STRATEGY – LONG TERM CAPITAL FUNDING AND FINANCING POLICY

Having a financial plan is critical for putting an asset management plan into action. The financing strategy described in this section demonstrates the municipality's commitment towards integrating asset management planning with financial planning
and budgeting and to making full use of all available infrastructure financing tools.

6.1 LONG TERM CAPITAL FUNDING AND FINANCING POLICY

East Ferris Council had committed to developing a Long-Term Capital Funding and Financing Policy in 2012. This policy is scheduled to be completed and adopted by Council in tandem with the Asset Management Plan. The key data feeding this plan will come from the projected long-term capital expenditure requirements identified in the Asset Management Plan.

The Long Term Capital Funding and Financing Policy will provide guidance in identifying the funding sources or financing requirements. The ultimate goal would be to reach a sustainable capital funding level so that financing will only be required for very large projects. The Long Term Capital Funding and Financing Policy will include a forecasting model that will show how and when that sustainable capital funding level is reached and maintained in future years. The sustainable capital funding amount is the average funding level required on a go forward basis based on the capital expenditure estimates for the following 25 to 30 year period. After it is reached it will only need to be indexed annually. The plan will include a strategy on how to move from the current capital funding levels to the sustainable capital funding levels identified in the Asset Management Plan. It will also include projections of the impact on taxpayers over the long term.

The purpose of the Municipality of East Ferris Long Term Capital Funding and Financing Policy is to establish guidelines for funding of capital expenditures.

The guiding principles of the Long Term Capital Funding and Financing Policy are:

- Funding of "routine maintenance" and "major maintenance" should be included in the Operating Budget.
- Funding of capital expenditures should include a "pay-as-you-go" component in the Operating Budget.
- Funding of capital expenditures should include issuance of long-term debt only if it is in accordance with the East Ferris Debt Management Policy. Debt service costs (principal and interest payments) must be included in the Operating Budget.
- The "Capital Levy" in the Operating Budget (pay-as-you-go funding plus debt service costs) must be managed and maintained at acceptable levels.

- The Capital Levy for capital expenditures should move toward the “sustainable funding level” identified in the East Ferris Comprehensive Asset Management Plan.
- Funding of capital expenditures should only include conditional application based grants and other capital revenue sources if there is a reasonable expectation that they are secured OR if a critical capital project was not likely to proceed without it.
- Funding of capital expenditures should only include transfers from reserve funds if they are in accordance with the East Ferris Reserve Fund Policy.

The goals and objectives of the Long Term Capital Funding and Financing Policy include:

- To ensure that capital funding and policy decisions are consistent with the goals of the Long Term Financial Plan.
- To provide maximum annual funding for capital projects.
- To reduce the risks to the taxpayer of significant fluctuations in the Operating Budget capital levy.
- To stabilize peaks and valleys in sustainable capital funding requirements in accordance with the Asset Management Plan and the Debt Management Policy.
- To provide for the effects of inflation through annual adjustments.
- To gradually increase the level of funding for capital projects to a sustainable level.
- To maintain the state of the infrastructure in acceptable conditions and able to provide acceptable levels of service.
- To ensure that the Policy continues to reflect the Municipality’s needs and its citizens’ capabilities.
- To ensure that debt service costs don’t impair the ability of the municipality to levy “pay-as-you-go”.
- To increase and maintain the “pay-as-you-go” component of the Total Capital Levy at greater than 50% of the total.

The implementation of the Long Term Capital Funding and Financing Policy will require a gradual increase in the capital level which will be accomplished in part by establishing target levels and as follows:

1. Include an inflation index applied to the previous year’s total capital levy.
2. Increase the capital levy each year by an amount equal to 1% of the previous year’s municipal tax levy.
3. Increase the capital levy each year by an amount generated by “real assessment growth” by applying the previous year’s municipal tax rates to the real assessment growth excluding market value increases.
4. The amounts in 2. and 3. will be added each year until the total capital levy reaches the average sustainable capital expenditure identified by the Asset Management Plan.

These target levels will be reviewed at least once every 4 years at the beginning of the term of Council.

6.2 DEBT MANAGEMENT POLICY

East Ferris Council had committed to developing a Debt Management Policy in 2012. This policy is scheduled to be adopted by Council in tandem with the Asset Management Plan. The Council has accepted the need to utilize long term debt as a funding source as part of its commitment to make optimal use of the full range of budgeting and infrastructure financing tools.

The purpose of the Municipality of East Ferris Debt Management Policy is to establish guidelines for issuance and management of long-term debt.

The guiding principles of the Debt Management Policy are:

- Long-term debt management is an integral part of long term financial planning.
- Long-term debt is required to facilitate an effective Comprehensive Asset Management Plan.
- The impact of long-term debt service costs (principal and interest payments) on taxpayers must be managed and maintained at acceptable levels.

The goals and objectives of the Debt Management Policy include,

- To ensure that debt management is consistent with the goals of the Long Term Financial Plan.
- To reduce the risks to the taxpayer of significant fluctuations in debt service costs.
- To provide a source of funding for capital projects, or major capital equipment requirements, which cannot be reasonably funded by any other revenue source.
- To stabilize peaks and valleys in sustainable capital funding requirements in accordance with the Asset Management Plan and the Long Term Capital Funding and Financing Policy.
- Debt will be managed to ensure the best possible credit rating, and if possible, maintain at levels comparable to other Ontario Municipalities.
- The timing, type, and term of Debt will be determined with a view to minimizing long-term cost.
- The term of Debt will be limited to the term of the useful life of the particular asset, but no greater than 30 years.
- To ensure that debt service costs don't impair the ability of the municipality to levy "pay-as-you-go" to fund a significant component of sustainable capital funding

The implementation of the Debt Management Policy will be accomplished in part by establishing target levels as follows:

- Net debt per household not to exceed $1,800 (average for all Ontario municipalities was $1,925 per household as at December 31, 2011)
- Debt Service costs not to exceed 8% of tax levy (average for all Ontario municipalities was 8.43% at December 31, 2011)
- Debt service costs not to exceed 50% of the Capital Levy in the Operating Budget

These target levels will be reviewed at least once every 4 years at the beginning of the term of Council.

6.3 LONG TERM CAPITAL EXPENDITURE FORECASTS

There are three long term capital expenditure forecasts to be prepared for each year of the 30 year plan.

2. LONG TERM CAPITAL EXPENDITURE (EQUALS FUNDING) FORECAST
   Capital expenditures are based on the total revenue forecast by the Long Term Capital Funding and Financing Policy. The expenditures are for what the municipality can afford to spend each year based on the policy.

3. ASSET MANAGEMENT PLAN EXPENDITURE FORECAST
   Capital expenditures are based on the Asset Management Plan described earlier in Sections 1 to 5. The expenditures are for what should be spent each year based on the plan. This forecast will allow the municipality to calculate a sustainable capital expenditure level which is the 30 year indexed average.

4. LONG TERM INFRASTRUCTURE DEFICIT FORECAST
   The Asset Management Plan will identify the current infrastructure deficit which is the total investment that should be made now. The long term infrastructure deficit forecast utilizes two forecasts above to estimate what the deficit will be by the end of each year.

6.3.1 LONG TERM CAPITAL EXPENDITURE (EQUALS FUNDING) FORECAST

The Long Term Capital Expenditure (Equals Funding) Forecast is developed based on the Long Term Capital Funding and Financing Policy described earlier in Section 6.1 and the Debt Management Policy Described in Section 6.2.

The policies are used to forecast the total funding or financing available for capital purposes each year. Capital expenditure limits are then set to equal the forecast funding or financing levels.

The municipality's asset management consultant, Brian Rogers, has developed a Long Term Capital Funding and Financing Tool that allows the Treasurer to model a long term forecast utilizing the three long term capital expenditure forecasts described in this section and the goals and objectives of the Long Term Capital Funding and Financing Policy and the Debt Management Policy. The policies recognize the need to increase the level of capital investment until it reaches the sustainable level required.
The following chart summarizes the revenue sources for the first scenario developed using the Long Term Capital Funding and Financing Tool. It will be fined tuned as the Comprehensive Asset Management Plan is developed and improved over the next few years.

MUNICIPALITY OF EAST FERRIS
LONG TERM CAPITAL EXPENDITURE (EQUALS FUNDING) FORECAST
WHAT THE MUNICIPALITY CAN AFFORD TO SPEND

Year	Capital Levy in Operating Budget			Debenture Issues	Dev. Charge	Federal Gas Tax	Provincial Entitlement Based Grants	Application Based Grants	Transfer from Reserves	Other Capital Revenue Sources	Total Revenue
	Total Capital Levy	Total Debt Service Costs	Pay As You Go Levy								
	[A]	[B]	[C1]= [A-B]	[C2]	[C3]	[C4]	[C5]	[C6]	[C7]	[C8]	[C8] = [C1+C2+ C3+C4+ C5+C6+ C7+C8]
2013	200,000	150,000	50,000	0	0	373,753	0	0	0	0	423,753
2014	275,991	148,620	127,371	1,600,000	0	711,842	0	0	0	0	2,439,213
2015	356,381	242,489	113,892	500,000	0	271,842	250,000	0	0	0	1,135,734
2016	441,373	296,635	144,738	500,000	0	277,279	255,000	0	0	0	1,177,017
2017	531,180	327,649	203,531	500,000	0	282,824	260,100	0	0	0	1,246,456
2018	626,022	381,516	244,507	500,000	0	288,481	265,302	0	0	0	1,298,290
2019	726,130	435,505	290,626	0	0	294,251	270,608	0	0	0	855,484
2020	831,744	432,351	399,394	0	0	300,136	276,020	0	0	0	975,549
2021	943,114	429,145	513,969	500,000	0	306,138	281,541	0	0	0	1,601,648
2022	1,060,500	467,744	592,756	0	0	312,261	287,171	0	0	0	1,192,189
2023	1,184,175	344,538	839,637	0	0	318,506	292,915	0	0	0	1,451,058
2024	1,207,858	344,538	863,321	0	0	324,876	298,773	0	0	0	1,486,970
2025	1,232,015	344,538	887,478	0	0	331,374	304,749	0	0	0	1,523,600
2026	1,256,656	287,456	969,200	0	0	338,001	310,844	0	0	0	1,618,045
2027	1,281,789	287,456	994,333	0	0	344,761	317,060	0	0	0	1,656,155
2028	1,307,425	230,374	1,077,051	0	0	351,657	323,402	0	0	0	1,752,109
2029	1,333,573	173,292	1,160,281	0	0	358,690	329,870	0	0	0	1,848,841
2030	1,360,245	173,292	1,186,953	0	0	365,864	336,467	0	0	0	1,889,283
2031	1,387,450	173,292	1,214,157	0	0	373,181	343,196	0	0	0	1,930,535
2032	1,415,199	173,292	1,241,906	0	0	380,644	350,060	0	0	0	1,972,611
2033	1,443,503	173,292	1,270,210	2,000,000	0	388,257	357,062	2,000,000	0	0	6,015,529
2034	1,472,373	340,304	1,132,068	0	0	396,022	364,203	0	0	0	1,892,293
2035	1,501,820	340,304	1,161,516	0	0	403,943	371,487	0	0	0	1,936,945
2036	1,531,856	340,304	1,191,552	0	0	412,022	378,917	0	0	0	1,982,490
2037	1,562,494	264,061	1,298,432	0	0	420,262	386,495	0	0	0	2,105,189
2038	1,593,743	264,061	1,329,682	3,000,000	0	428,667	394,225	3,000,000	0	0	8,152,574
2039	1,625,618	514,580	1,111,039	0	0	437,241	402,109	0	0	0	1,950,389
2040	1,658,131	417,531	1,240,600	0	0	445,986	410,151	0	0	0	2,096,737
2041	1,691,293	417,531	1,273,763	0	0	454,905	418,355	0	0	0	2,147,023
2042	1,725,119	417,531	1,307,589	0	0	464,003	426,722	0	0	0	2,198,314

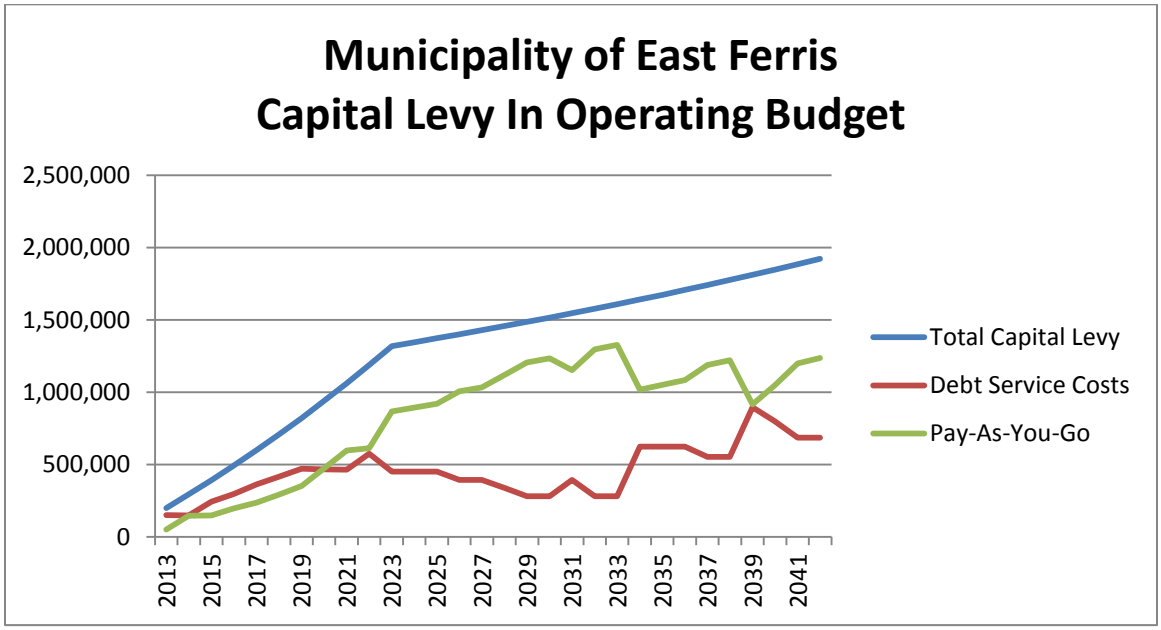
Column [A] is the Total Capital Levy included in the tax levy. This amount is calculated in accordance with the Long Term Capital Funding and Financing Policy. It is increased each year by the following amounts:

1. An inflation index applied to the previous year's total capital levy. The assumption used in Scenario 1 is 2%.
2. An amount equal to 1% of the previous year's municipal tax levy. The 1% tax levy increase shall be 1% on the previous year's budgeted tax levy excluding education.
3. An amount generated by "real assessment growth" by applying the previous year's municipal tax rates to the real assessment growth excluding market value increases. Scenario 1 assumes an annual growth of 1.0% per year
4. The amounts in 2. And 3. Are added each year until the total capital revenue sources reach the average sustainable capital expenditure identified by the Asset Management Plan.

Column [B] is the total debt service costs (principal and interest) based on the current debt repayment schedule plus the debt service repayment schedules for each new long term debt incurred in the future in Column [C2].

Column [C1] is the net capital levy calculated as Column [A] less Column [B] and is the forecasted pay-as-you-go amount available in each budget year.

The following chart summarizes the projected growth of the total capital levy in the Operating Budget and the debt service and pay as you go components of the total capital levy.



Column [C2] is the forecasted new debt amount to be issued in the year and is a variable determined by the Treasurer each year based on the Asset Management Plan Expenditure forecast and the objectives and implementation plans outlined in the Debt Management Policy and Long Term Capital Funding and Financing Policy.

Column [C3] is the forecasted development charges available for growth related projects. Currently East Ferris has not adopted a development charges by-law and has no substantial forecasted growth related costs identified in this Asset Management Plan.

Column [C4] is the forecasted Federal Gas Tax available, primarily for roads projects, based on the current agreement with the Association of Municipalities of Ontario. The forecast assumes use of carry-forward amounts in 2014 and an inflation adjustment each year starting in 2016.

Column [C5] is an allowance for a potential Provincial base entitlement funding for infrastructure starting in 2015. It also assumes an inflation adjustment each year starting in 2016.

Column [C6] is an allowance for conditional application based grants which are only included if there is a reasonable expectation that they are secured OR if a critical capital project was not likely to proceed without it. In this scenario it is included in 2033 and 2038 for major road reconstruction projects. Without these grants the infrastructure deficit would increase back up to unacceptable levels or debt would rise above the Debt Management Policy targets.

Column [C7] is a placeholder for potential use of reserve funds based on the East Ferris Reserve Fund Policy. Based on the current policy the only reserve fund available for planned capital expenditures is the $615,000 in the Asset Management Sustainable Capital Funding Reserve Fund. This amount is recommended to pay towards the municipal funding required as federal or provincial funding is awarded in future years. This amount will only be added if application based grants are approved.

Column [C8] is a placeholder for potential future funding from other sources not currently identified in the plan.

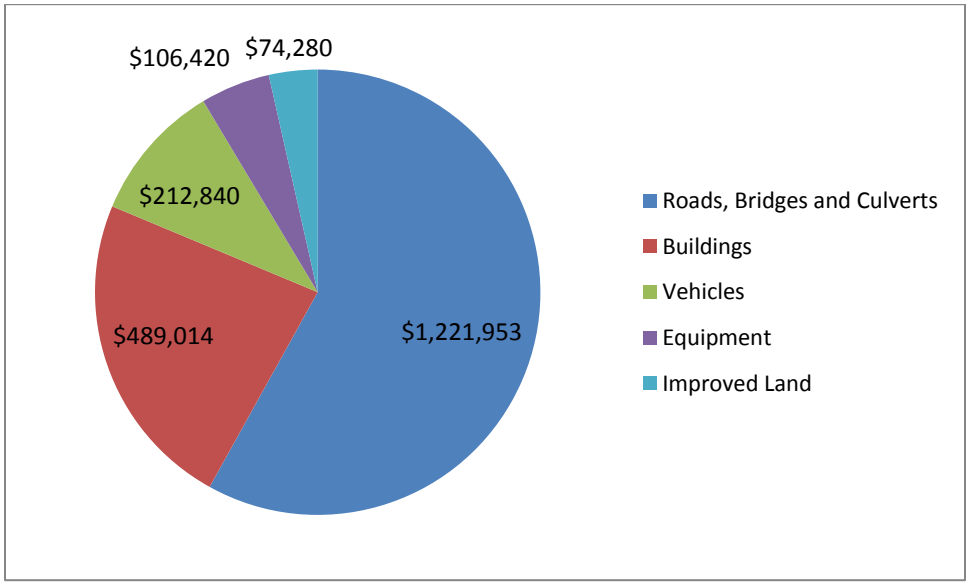
6.3.2 ASSET MANAGEMENT PLAN EXPENDITURE FORECAST

The Asset Management Plan expenditures are the levels that should be spent each year based on the plan.
This Asset Management Plan has identified expenditure forecast for roads, bridges and culverts for the next 30 years. The expenditure forecasts for buildings, vehicles & equipment and improved property will be finalized as the Comprehensive Asset Management Plan is completed over the next 3 years. **Until that time rough estimates have been added for the purposes of testing the financial strategy model only.**

MUNICIPALITY OF EAST FERRIS ASSET MANAGEMENT PLAN EXPENDITURE FORECAST						
Year	**Roads, Bridges and Culverts**	**Buildings *****	**Vehicles *****	**Equipment *****	**Improved Land *****	**TOTAL**
Infrastructure Deficit	$1,819,774	$2,500,000	$300,000	$150,000	$200,000	$4,969,774
2014	$215,479	$300,000	$150,000	$75,000	$50,000	$790,479
2015	$368,566	$306,000	$153,000	$76,500	$51,000	$955,066
2016	$561,270	$312,120	$156,060	$78,030	$52,020	$1,159,500
2017	$894,889	$318,362	$159,181	$79,591	$53,060	$1,505,084
2018	$370,428	$324,730	$162,365	$81,182	$54,122	$992,826
2019	$778,373	$331,224	$165,612	$82,806	$55,204	$1,413,219
2020	$394,460	$337,849	$168,924	$84,462	$56,308	$1,042,003
2021	$595,811	$344,606	$172,303	$86,151	$57,434	$1,256,305
2022	$1,537,885	$351,498	$175,749	$87,874	$58,583	$2,211,590
2023	$731,667	$358,528	$179,264	$89,632	$59,755	$1,418,845
2024	$268,650	$365,698	$182,849	$91,425	$60,950	$969,572
2025	$1,701,606	$373,012	$186,506	$93,253	$62,169	$2,416,546
2026	$806,343	$380,473	$190,236	$95,118	$63,412	$1,535,582
2027	$397,411	$388,082	$194,041	$97,020	$64,680	$1,141,235
2028	$626,733	$395,844	$197,922	$98,961	$65,974	$1,385,434
2029	$510,894	$403,761	$201,880	$100,940	$67,293	$1,284,769
2030	$381,789	$411,836	$205,918	$102,959	$68,639	$1,171,141
2031	$1,669,435	$420,072	$210,036	$105,018	$70,012	$2,474,574
2032	$326,760	$428,474	$214,237	$107,118	$71,412	$1,148,001
2033	$4,274,273	$437,043	$218,522	$109,261	$72,841	$5,111,940
2034	$476,535	$445,784	$222,892	$111,446	$74,297	$1,330,955
2035	$2,165,029	$454,700	$227,350	$113,675	$75,783	$3,036,537
2036	$1,935,063	$463,794	$231,897	$115,948	$77,299	$2,824,001
2037	$452,336	$473,070	$236,535	$118,267	$78,845	$1,359,053
2038	$7,618,490	$482,531	$241,266	$120,633	$80,422	$8,543,341
2039	$373,388	$492,182	$246,091	$123,045	$82,030	$1,316,736
2040	$1,515,312	$502,025	$251,013	$125,506	$83,671	$2,477,527
2041	$429,445	$512,066	$256,033	$128,016	$85,344	$1,410,904
2042	$1,741,993	$522,307	$261,154	$130,577	$87,051	$2,743,082
AVERAGE	$1,221,953	$489,014	$212,840	$106,420	$74,280	$2,104,507

*** Rough estimates only. To be updated as Comprehensive Asset Management Plan is completed over the next few years

ASSET MANAGEMENT PLAN EXPENDITURES
30 YEAR AVERAGE BY ASSET TYPE
INDEXED AVERAGE $2,104,507



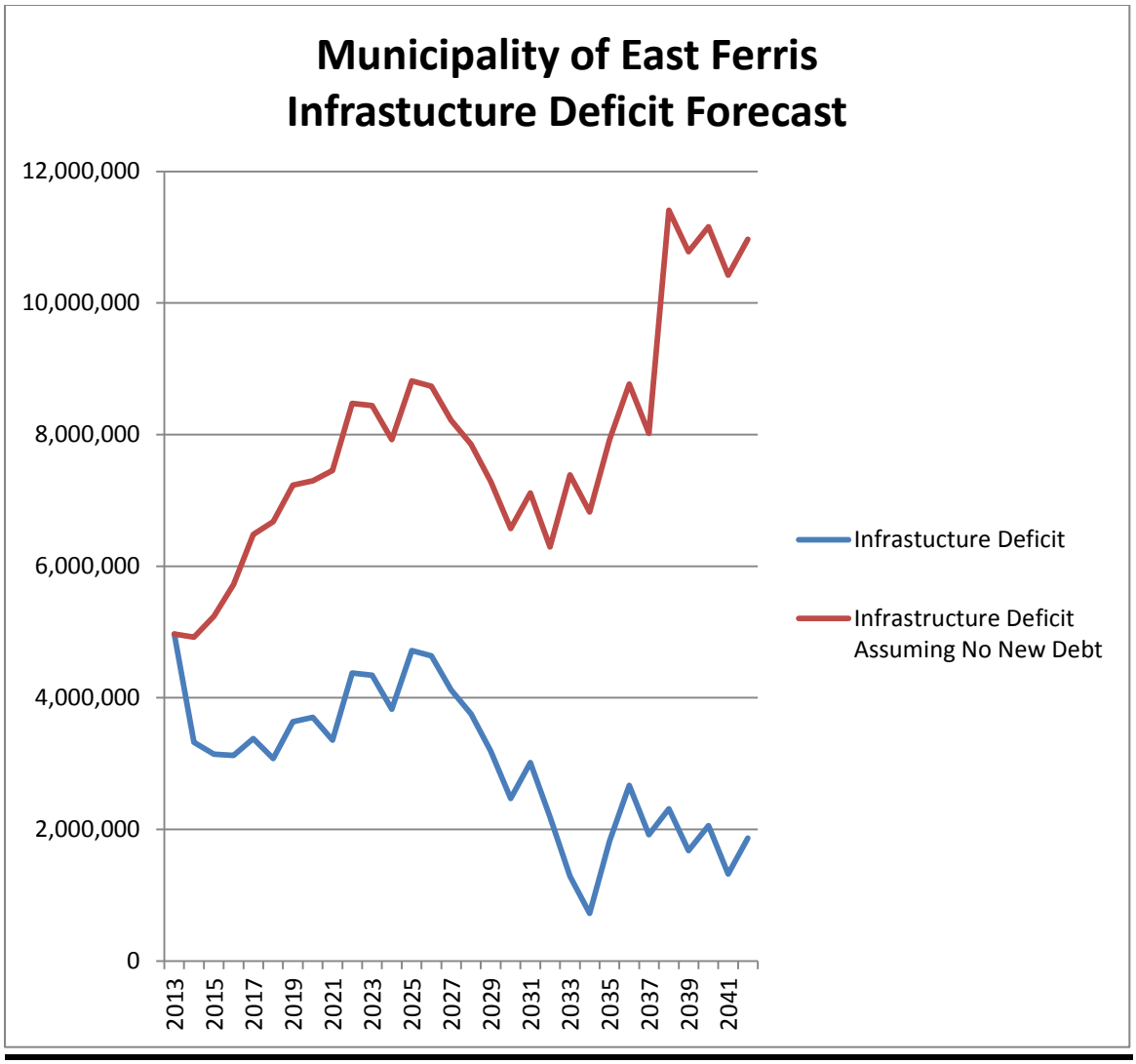
6.3.3 LONG TERM INFRASTRUCTURE DEFICIT FORECAST

The Asset Management Plan will identify the current infrastructure deficit which is the total investment that should be made this year based on the current condition of the assets. The long term infrastructure deficit forecast utilizes the two forecasts above to determine the trend.

INFRASTRUCTURE DEFICIT =PRIOR YEAR'S INFRASTRUCTURE DEFICIT
PLUS ASSET MANAGEMENT PLAN EXPENDITURES
LESS CAPITAL FUNDING POLICY EXPENDITURES

The opening infrastructure deficit for roads, bridges and culverts is the total amount required to fund all of the projects that should be completed immediately if funding was available. The deficits for other asset categories are rough estimates only and have been added for the purposes of testing the financial strategy model.

MUNICIPALITY OF EAST FERRIS INFRASTRUCTURE DEFICIT FORECAST				
Year	**Opening Infrastructure Deficit**	**Long Term Capital Expenditure(Equals Funding) Forecast**	**Asset Management Plan Expenditure Forecast**	**Closing Infrastructure Deficit**
2013				4,969,774
2014	4,969,774	2,439,213	790,479	3,321,041
2015	3,321,041	1,135,734	955,066	3,140,373
2016	3,140,373	1,177,017	1,159,500	3,122,856
2017	3,122,856	1,246,456	1,505,084	3,381,484
2018	3,381,484	1,298,290	992,826	3,076,021
2019	3,076,021	855,484	1,413,219	3,633,755
2020	3,633,755	975,549	1,042,003	3,700,210
2021	3,700,210	1,601,648	1,256,305	3,354,867
2022	3,354,867	1,192,189	2,211,590	4,374,268
2023	4,374,268	1,451,058	1,418,845	4,342,054
2024	4,342,054	1,486,970	969,572	3,824,656
2025	3,824,656	1,523,600	2,416,546	4,717,602
2026	4,717,602	1,618,045	1,535,582	4,635,139
2027	4,635,139	1,656,155	1,141,235	4,120,219
2028	4,120,219	1,752,109	1,385,434	3,753,544
2029	3,753,544	1,848,841	1,284,769	3,189,472
2030	3,189,472	1,889,283	1,171,141	2,471,330
2031	2,471,330	1,930,535	2,474,574	3,015,369
2032	3,015,369	1,972,611	1,148,001	2,190,760
2033	2,190,760	6,015,529	5,111,940	1,287,170
2034	1,287,170	1,892,293	1,330,955	725,831
2035	725,831	1,936,945	3,036,537	1,825,423
2036	1,825,423	1,982,490	2,824,001	2,666,934
2037	2,666,934	2,105,189	1,359,053	1,920,797
2038	1,920,797	8,152,574	8,543,341	2,311,564
2039	2,311,564	1,950,389	1,316,736	1,677,912
2040	1,677,912	2,096,737	2,477,527	2,058,701
2041	2,058,701	2,147,023	1,410,904	1,322,583
2042	1,322,583	2,198,314	2,743,082	1,867,351



This chart demonstrates how dramatically the infrastructure deficit will rise if long term debt is not utilized as a capital funding source.

Based on the assumptions used in the first scenario described above the infrastructure deficit would remain at unacceptable levels and could not be totally eliminated during the 30 year period modelled in this scenario. This demonstrates the importance of federal and provincial partnerships to reduce infrastructures deficits while the municipality is building up its sustainable capital funding levels. Ideally the infrastructure deficit should hover above and below the zero level so that excess capital levy funds could be transferred to the Asset Management Sustainable Capital Funding Reserve Fund. The infrastructure deficit would climb substantially in years that reconstruct paved roads would have to be reconstructed. These projects would require federal and provincial partnerships to cushion the impact.

6.4 LONG TERM CAPITAL FUNDING IMPLEMENTATION PLAN TO REACH SUSTAINABLE CAPITAL FUNDING LEVELS

The implementation of the Long Term Capital Funding and Financing Policy will require a Long Term Capital Funding Implementation Plan to increase capital funding to the sustainable capital funding level identified in the Asset Management Plan. **This section describes in more detail the first scenario developed using the Long Term Capital Funding and Financing Tool. It will be fined tuned as the Comprehensive Asset Management Plan is developed and improved over the next few years.**

1. The Operating Budget shall include a capital levy with the following components:
    - Pay-As-You-Go Levy
    - Debt Service Costs-Principal
    - Debt Service Costs-Interest
    - Capital Financial Lease Payments

1. The capital levy (total of the components in 1. above) shall increase each year by the following amounts:
    - Inflation rate index applied to previous year's capital levy. This inflation rate is assumed to be 2% ;plus
    - A 1% tax levy increase each year until the sustainable funding level is reached. The first scenario described assumes this increase is applied for 10 straight years; plus
    - The tax levy increase generated by "real assessment growth" each year until the sustainable funding level is reached. The first scenario described assumes this increase is 1% growth applied for 10 straight years.

2. The Pay-As-You-Go Levy is the balancing component and is calculated as follows:

    Pay-As-You-Go Levy = Total Capital Levy - Debt Service Costs Principal - Debt Service Costs Interest – Capital Financial Lease Payments

    The pay-as-you-go Levy under scenario 1 will not begin to increase substantially over the first 7 years of this plan. That is because long term debt is used to help control the infrastructure deficit. For the first 7 years the debt service cost component of the capital levy is the larger component. The policy goal of having the pay-as-you-go component as the larger one is not reached until year 8.

3. Funding of capital expenditures should only include issuance of long-term debt if it is in accordance with the East Ferris Debt Management Policy. Debt can provide a source of funding for capital projects, or major capital equipment requirements, which cannot be reasonably funded by any other revenue source. Debt is also used to stabilize peaks and valleys in sustainable capital funding requirements in accordance with the Asset Management Plan and the Long Term Capital Funding and Financing Plan. The Debt Management Policy includes goals, objectives and target levels designed to manage

debt levels to reduce the risks to the taxpayer of significant fluctuations in debt service costs.

Scenario 1 assumes the following long term debt issues based on the expenditure forecast, the Long Term Capital Funding and Financing Policy goals and the Debt Management Policy goals.

YEAR	DEBT AMOUNT ISSUED	TERM
2014	$1,600,000	25 YEARS
2015	$500,000	10 YEARS
2016	$500,000	15 YEARS
2017	$500,000	10 YEARS
2018	$500,000	10 YEARS
2021	$500,000	15 YEARS
2033	$2,000,000	15 YEARS
2038	$3,000,000	15 YEARS

4. Funding of capital expenditures should only include transfers from reserve funds if they are in accordance with the East Ferris Reserve Fund Policy. The Emergency Capital Reserve Fund should be used only for emergency capital projects which are not included in approved Capital Budgets and cannot be reasonably funded by delaying a lower priority capital Project. The Asset Management Sustainable Capital Funding Reserve Fund is used to manage the peaks and valleys in years when the expenditure levels identified in the Asset Management Plan are more or less than the sustainable capital funding levels. The initial target level will be equal to the Discretionary Capital Reserve Fund target until the municipality reaches the sustainable capital funding level identified in the Long Term Capital Funding and Financing Plan. The municipality will plan to manage the use of this reserve fund carefully to reduce the infrastructure deficit. In particular it would be most likely used to match grants from the province or federal governments.

   Scenario 1 assumes no use of reserves. The $615,000 in the Asset Management Sustainable Capital Funding Reserve Fund will be used to provide the municipality's share required when grants from the province or federal governments are confirmed.

5. Funding of capital expenditures should only include grants and other capital revenue sources if there is a reasonable expectation that they are secured OR if a critical capital project was not likely to proceed without it. A critical capital project is one that should proceed but is too large to fund without partnerships with the provincial or federal governments.

   Scenario 1 includes the forecasted Federal Gas Tax available, primarily for roads projects, based on the current agreement with the Association of Municipalities of Ontario. The forecast assumes use of carry-forward amounts in 2014 and an inflation adjustment or 2% each year starting in 2016. This model also includes a $250,000 allowance for a potential Provincial base entitlement funding for infrastructure starting in 2015, adjusted annually by 2%. In this scenario the only allowance for conditional grants is included in 2033 ($2,000,000) and 2038 ($3,000,000) for major road reconstruction projects. Without these grants the infrastructure deficit would increase back up to unacceptable levels or debt would rise above the Debt Management Policy targets.

6. Interim financing costs may be applied to the capital project up to the month that it is funded.

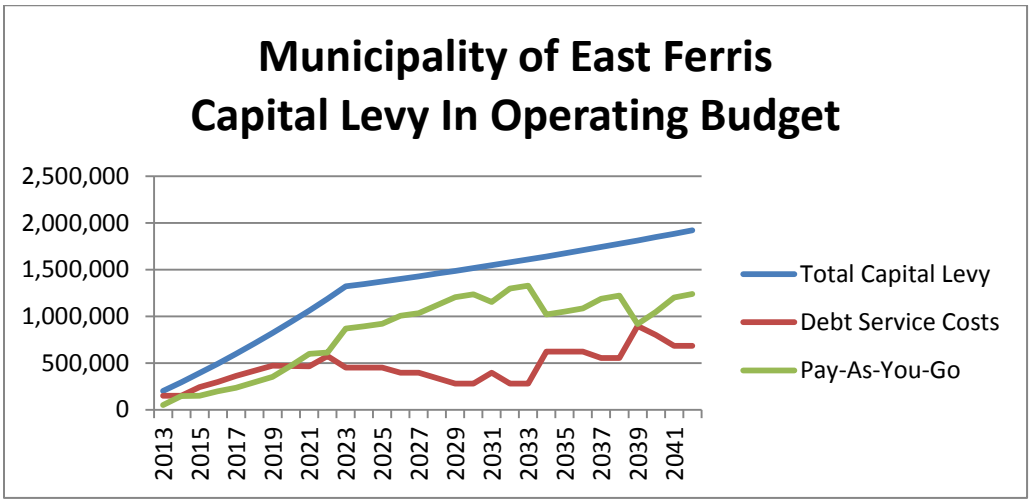
7. That capital expenditure limits in the annual Capital Budgets will be set equal to the capital revenue sources generated by the policy until the sustainable funding levels are reached. The sources of capital revenue include but may not be limited to the following:

    1. Pay-As-You-Go Levy
    2. Debentures or other long-term debt
    3. Asset Management Sustainable Capital Funding Reserve Fund
    4. Specific dedicated reserves set up for capital projects
    5. Federal Gas Tax
    6. Future Federal and Provincial Government Entitlement Grants
    7. Federal and Provincial Government Application Based Grants
    8. Development Charges if applicable in future

The Long Term Capital Funding Implementation Plan Scenario 1 results are as follows:

1. The total capital levy in the Operating Budget will increase by the inflation rate index, the 1% of tax levy factor and the 1.0% real assessment growth factor for 10 years, after which only the inflation rate index is applied. The impact on taxpayers, all other revenues and expenditure factors being equal, will be 1% a year for each of the next 10 years. Real assessment growth benefits will not be available unless they exceed 1% in a given year.

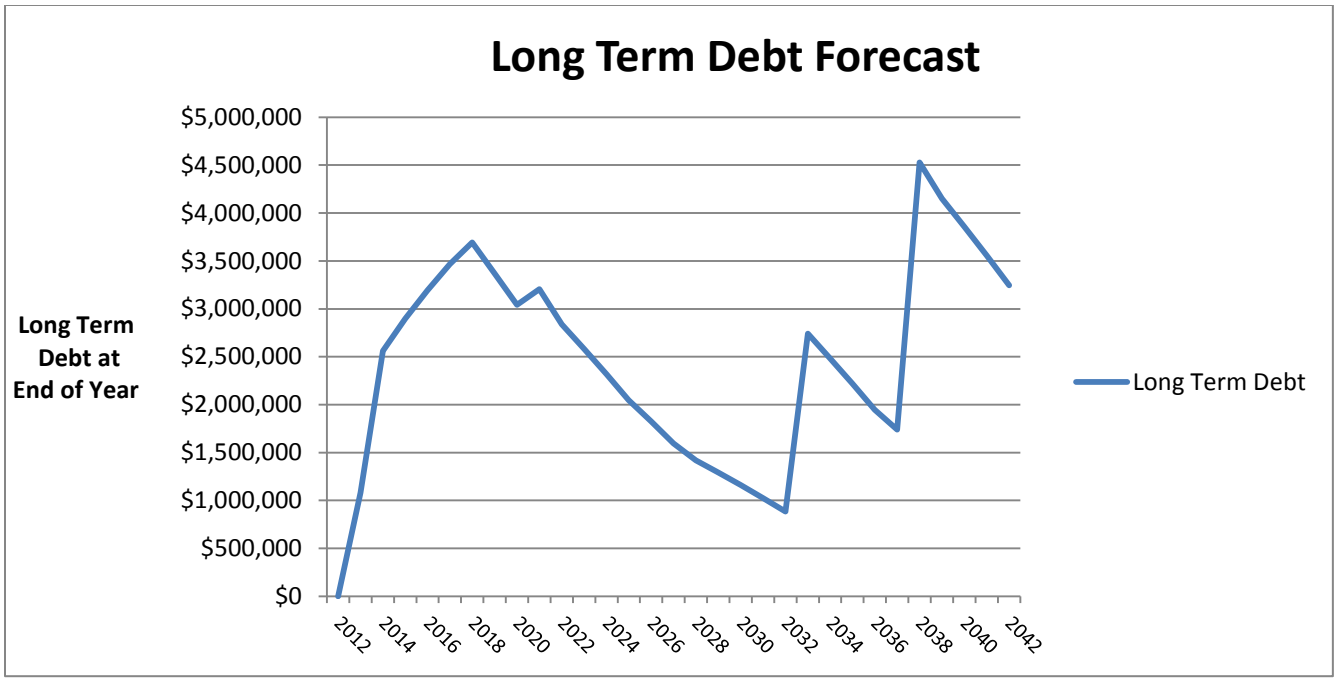
2. The goal is to have the pay-as-you-go component of the total tax levy to be greater than the debt service component. This goal is reached in 7 years.



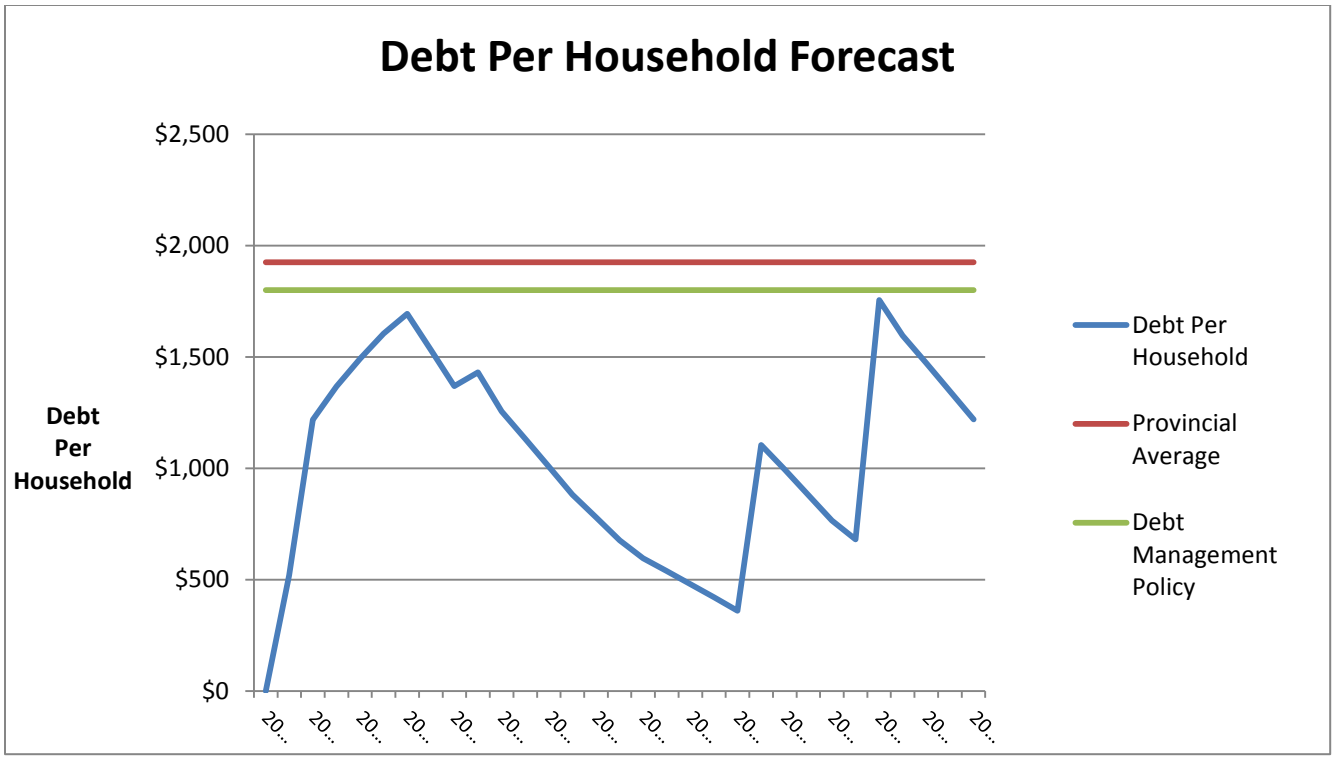
3. The goals of the Debt Management Policy are generally satisfied. The impact on debenture debt levels, debt per household and debt service costs as a percentage of the tax levy are summarized below in the chart and three graphs that follow it. The debt per household would increase substantially but would not exceed the policy target maximum of $1,800. The debt service cost as a

percentage of tax levy does climb above the policy target maximum of 8% after large debt issues, but will trend back down afterwards. The only impact on the taxpayer is as described in 1. above.

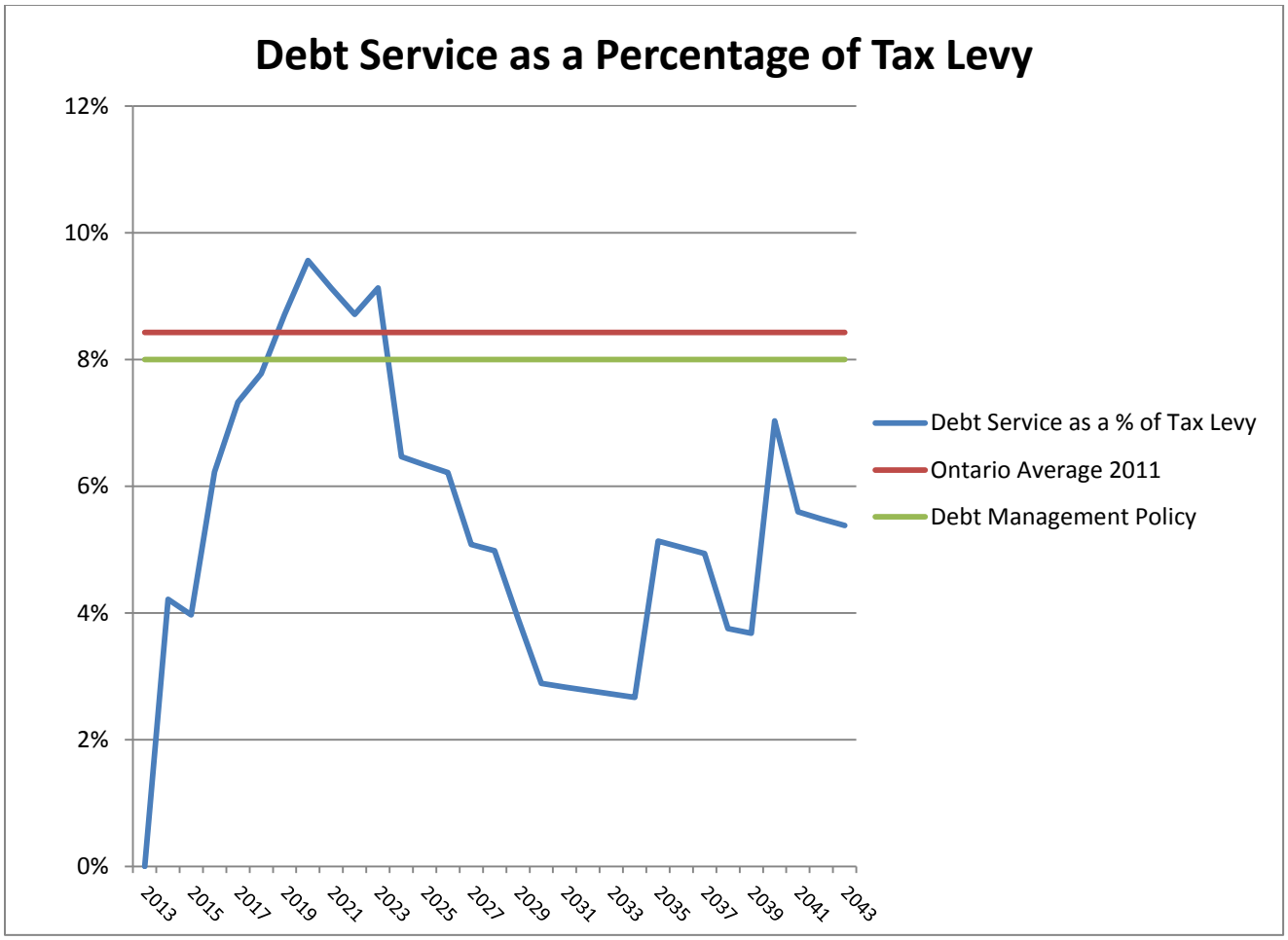
MUNICIPALITY OF EAST FERRIS LONG TERM DEBT FORECAST									
Year	**Opening Long Term Debt**	**Long Term Debt Issued**	**Principal Payments On Long Term Debt**	**Closing Long Term Debt**	**Number of Households**	**Debt Per Household**	**Debt Service Costs**	**Tax Levy**	**Debt Service Costs as a % of Tax Levy**
2014	1,080,000	1,600,000	120,000	2,560,000	2,101	1,218	148,620	3,743,508	4.0%
2015	2,560,000	500,000	160,267	2,899,733	2,121	1,367	242,489	3,893,248	6.2%
2016	2,899,733	500,000	205,911	3,193,822	2,141	1,492	296,635	4,048,978	7.3%
2017	3,193,822	500,000	226,402	3,467,420	2,161	1,605	327,649	4,210,937	7.8%
2018	3,467,420	500,000	274,004	3,693,416	2,181	1,693	381,516	4,379,375	8.7%
2019	3,693,416	0	322,922	3,370,494	2,201	1,531	435,505	4,554,550	9.6%
2020	3,370,494	0	329,017	3,041,477	2,221	1,369	432,351	4,736,732	9.1%
2021	3,041,477	500,000	335,300	3,206,177	2,241	1,431	429,145	4,926,201	8.7%
2022	3,206,177	0	368,354	2,837,823	2,261	1,255	467,744	5,123,249	9.1%
2023	2,837,823	0	255,865	2,581,958	2,281	1,132	344,538	5,328,179	6.5%
2024	2,581,958	0	263,608	2,318,351	2,301	1,008	344,538	5,434,743	6.3%
2025	2,318,351	0	271,588	2,046,762	2,321	882	344,538	5,543,438	6.2%
2026	2,046,762	0	222,024	1,824,739	2,341	779	287,456	5,654,306	5.1%
2027	1,824,739	0	228,929	1,595,809	2,361	676	287,456	5,767,393	5.0%
2028	1,595,809	0	178,263	1,417,547	2,381	595	230,374	5,882,740	3.9%
2029	1,417,547	0	126,247	1,291,299	2,401	538	173,292	6,000,395	2.9%
2030	1,291,299	0	130,639	1,160,660	2,421	479	173,292	6,120,403	2.8%
2031	1,160,660	0	135,184	1,025,476	2,441	420	173,292	6,242,811	2.8%
2032	1,025,476	0	139,888	885,588	2,461	360	173,292	6,367,667	2.7%
2033	885,588	2,000,000	144,756	2,740,832	2,481	1,105	173,292	6,495,021	2.7%
2034	2,740,832	0	256,113	2,484,719	2,501	993	340,304	6,624,921	5.1%
2035	2,484,719	0	264,681	2,220,038	2,521	881	340,304	6,757,420	5.0%
2036	2,220,038	0	273,537	1,946,501	2,541	766	340,304	6,892,568	4.9%
2037	1,946,501	0	205,305	1,741,196	2,561	680	264,061	7,030,419	3.8%
2038	1,741,196	3,000,000	212,220	4,528,976	2,581	1,755	264,061	7,171,028	3.7%
2039	4,528,976	0	378,848	4,150,128	2,601	1,596	514,580	7,314,448	7.0%
2040	4,150,128	0	292,609	3,857,519	2,621	1,472	417,531	7,460,737	5.6%
2041	3,857,519	0	301,840	3,555,678	2,641	1,346	417,531	7,609,952	5.5%
2042	3,555,678	0	311,362	3,244,316	2,661	1,219	417,531	7,762,151	5.4%



Long term debt will have increased dramatically between 2012 and 2018. The Debt Management Policy maximum target levels for debt per household and debt service costs as a % of tax levy will be reached and exceeded during that period as is demonstrated in the following two graphs. In this scenario the use of debt is then avoided to allow room to assume the large debt issues required to finance large projects in later years. This is viewed as prudent planning which is now possible with the preparation of a long term capital expenditure forecast generated by a Comprehensive Asset Management Plan.



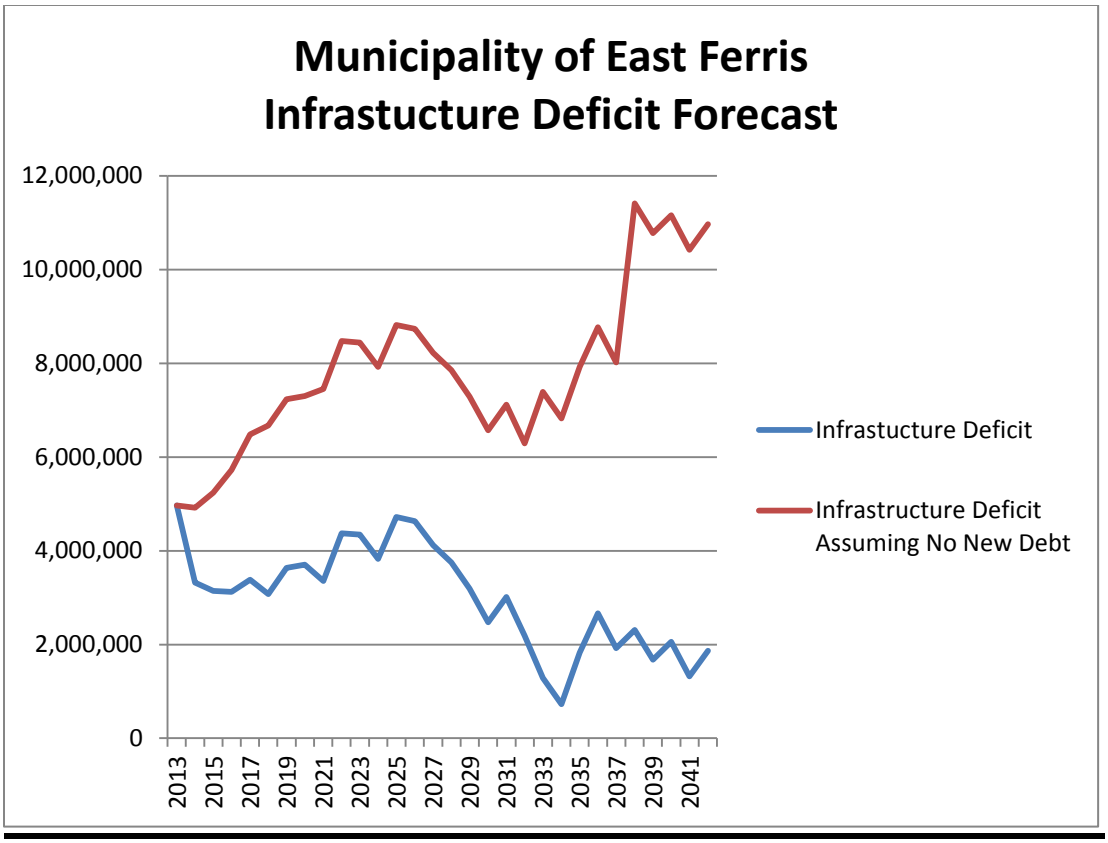
Debt per household rises quickly over a 5 year period 2013 to 2018 as East Ferris uses this infrastructure funding tool to begin to reduce their infrastructure deficit. Debt per household can rise very quickly for a small municipality and must be managed carefully to avoid overburdening debt levels. New debt is then avoided to allow capacity for the major road reconstruction projects in 2033 and 2038 which will bring the debt per household back to the policy target maximums. Even with the aggressive use of debt between 2013 and 2018 the municipality's infrastructure deficit experiences only a slight decline. Partnerships with the federal and provincial governments would be required to eliminate these infrastructure deficits. Debt is assumed for 50% funding for the major road reconstruction projects. Federal and provincial grants are assumed for the remaining 50%.



Debt service costs as a % of tax levy rise quickly over a 5 year period 2014 to 2019 as East Ferris uses this infrastructure funding tool to begin to reduce their infrastructure deficit. This measure exceeds the policy target level of 8% from 2019 to 2023 before it begins to decline. Debt service costs climb back up close to the target maximum following the large debt issues for 2033 and 2038 projects.

The Long Term Capital Funding and Financing Policy establishes the guidelines for the capital levy in the Operating Budget. Since the capital levy is the sum of debt service costs and pay-as-you-go, the growth of the pay-as-you-go capital revenue source is reduced as debt service costs increase. Debt issuance must be controlled to ensure there is some growth in the pay-as-you-go finding component.

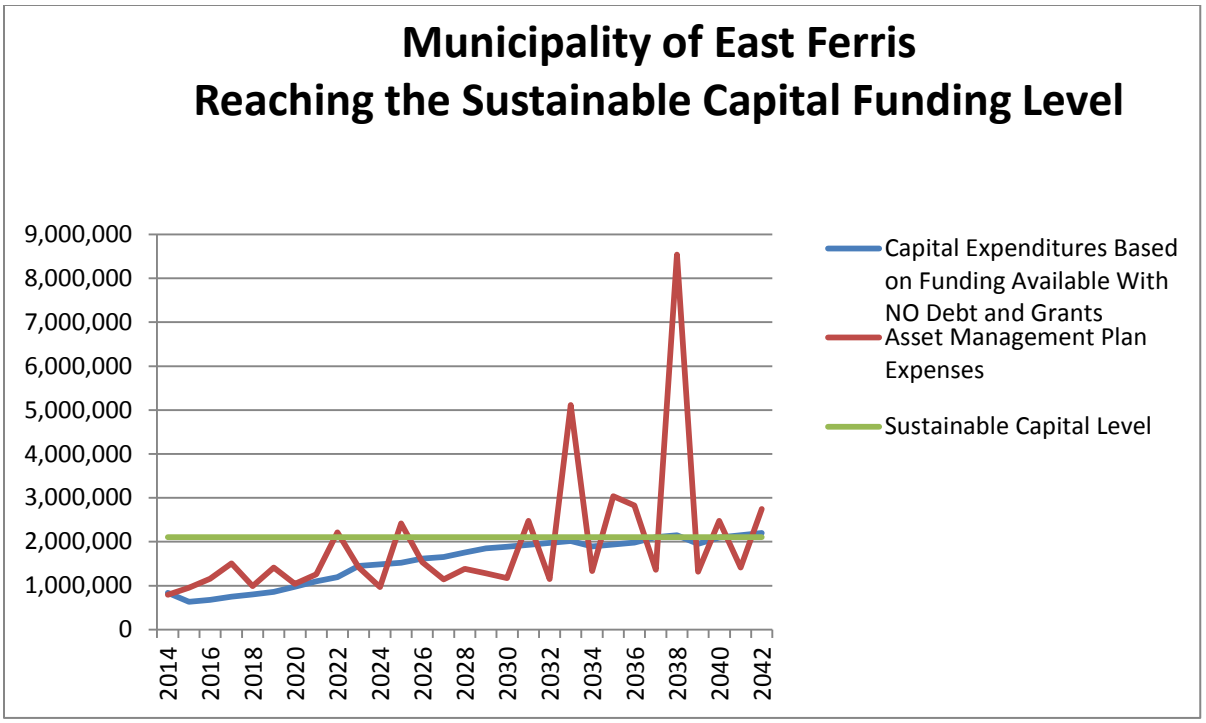
4. Based on the assumptions used in the first scenario described above the infrastructure deficit would remain at unacceptable levels and could not be totally eliminated during the 30 year period modelled in this scenario. This demonstrates the importance of federal and provincial partnerships to reduce infrastructures deficits while the municipality is building up its sustainable capital funding levels.



This graph demonstrates how dramatically the infrastructure deficit would rise if long term debt is not utilized as a capital funding source.

Ideally the infrastructure deficit should hover above and below the zero level so that excess capital levy funds could be transferred to the Asset Management Sustainable Capital Funding Reserve Fund to be available during years that expenditure levels are above the sustainable funding level. The infrastructure deficit would climb substantially in years that paved roads would have to be reconstructed. These projects would require federal and provincial partnerships to cushion the impact. The increase in 2033 and 2038 would be $2,000,000 and $3,000,000 greater if conditional grants of these amounts were not assumed.

5. Based on the assumptions in scenario 1 it will take a full 30 years to reach the sustainable capital funding levels at which time long term debt and conditional grants may not be required except for the very large projects.



The green line represents the $2,104,508 sustainable capital funding level or the target level based on the indexed average of the Asset Management Plan expenditures for the forecast period.

The red line represents the forecasted Asset Management Plan expenditures for each year for the forecast period.

The blue line represents the forecasted capital revenue sources assuming no debt or conditional grants. The funding level would reach $2,198,314 by the end of the forecast period and includes the following revenue sources:

Pay-As-You-Go Capital Levy	$1,307,589
Federal Gas Tax	$464,003
Provincial Entitlement Based Grants	$426,722

6.5 FINANCIAL STRATEGY CONCLUDING REMARKS

The financing strategy described in the December 2013 Asset Management Plan is based on the information available at the time with allowances for assets that will be added to the Comprehensive Asset Management Plan that will be developed over the next two to three years. The reliability of the Asset Management Plan Expenditure Forecast will improve during that period. The current financing strategy describes how the municipality can move towards a sustainable capital funding level. The assumptions used will change but the methodology is now in place to easily amend the financing strategy each year.

The financing strategy is also very dependent on being able to follow the municipality's policy guidelines in the Long Term Capital Funding and Financing Policy, the Debt Management Policy and the Reserve Fund Policy. External factors could dramatically impact the ability to reach the sustainable capital funding level. Decreasing Ontario Municipal Partnership funding from the Province, large increases in OPP policing costs and proposed capital levies by the Cassellholme East Nipissing District Home for the Aged are all expected to add significant pressures to the tax levy over the next few years.

The provincial and the federal governments have both recognized they have an obligation to help municipalities address infrastructure challenges. The quality of the financing strategy would improve if the provincial and federal partners established reliable annual entitlement based capital grants and more predictable application based capital grant programs.

East Ferris is in the same position as almost every municipality in North America. Infrastructure investment must increase. The annual capital levy paid by the taxpayer will need to increase. The financing strategy described assumes a real 1% increase each year for 10 years and also assumes that an additional 1% can be generated by real growth in the municipality for the ten year period. The municipality will continue to search for efficiencies or service level adjustments which could help offset the capital levy increases.