CORPORATION OF THE COUNTY OF HURON

ASSET MANAGEMENT PLAN

NOVEMBER 2016

This document is available in alternate formats upon request.

INTRODUCTION

The County of Huron is an upper tier municipal corporation. Huron County, Ontario's West Coast is located along the shores of Lake Huron. The County has a current population of approximately 57,579 people, 27,358 households (per 2013 Municipal Directory) and covers an area of 3,402 square kilometers. This rural community is the most agriculturally productive county in Ontario, and is a leader in numerous areas of agricultural technology and innovation.

The AMP Team used The "Asset Inventory and Valuation and Asset Management Plan for Road/Bridge Network Infrastructure Building Structures, Vehicle Fleet and Equipment." (This report was presented to County's Committee of the Whole on June 17, 2008, and was moved and seconded to be received). Dillon Consulting Limited (Dillon**),** in association with ASi Technologies Inc. and KPMG, was engaged by the County to develop an inventory of the County's tangible capital assets in accordance with the Canadian Institute of Chartered Accountants Public Sector Accounting Board Section 3150 (PS 3150). The mandate also required the Dillon Team to perform a historical valuation to these same assets as well as calculate the amortized value of the assets. In addition, the County of Huron required the development of an Asset Management Plan for the short and long-term rehabilitation, reconstruction and replacement of these same tangible capital assets.

In order for Council to continue to provide an adequate level of service to their residents, it is essential to have a plan to ensure sustainability of those assets. The County currently builds upon and continually updates original Dillon plan and Property and Housing Services building condition assessments. The County's formal plan is in place for the maintenance, renewal and replacement of all its assets.

What is new for the 2016 Plan?

The County's asset management plan has been revisited and updated for:

- current replacement and net book values,
- condition assessments for the assets
- development of a condition rating methodology for County Property Services
- inclusion of asset maintenance expenses to start the transition towards awareness of full lifecycle costing of asset management
- listing the critical needs for the departments directly in the body of the plan rather than in supporting documents

- making the transition to identify infrastructure deficits/needs on a modified condition based model (note – a modified condition based model is one that incorporates replacement based on condition rating for assets near end of life within a 5-10 year time horizon, but also having to rely on expected useful life of an asset not expected to be replaced in the near term)

- identification of current capacity of County staff resources available for annual bridge replacement program

What are the future plans for the Asset Management Plan?

This plan is an ever evolving document and will be reviewed and enhanced in the years to come with the timing and enhancements based on the availability of staff resources.

Some specific enhancements will include:

- enhancing the financing strategies based on a 10 year cycle and once that is complete, over the full lifecycle cost of the County's infrastructure

- Link the plan to the County's strategic plan and potential link to a multi-year budget

- Further refinement of the condition ratings for Property Services, Homes for the Aged, Public Works Yards and Social Housing

- Identification and inclusion of asset classes currently not included in the plan, such as IT infrastructure, storm sewers, and small driveway culverts etc.

EXECUTIVE SUMMARY

The infrastructure assets reviewed in this project include:

- 775 kilometers of paved roads and associated storm sewers;
- 472 bridge and culvert structures; 90 bridges; 115 culverts greater than 3 meters; 248 culverts less than 3 meters; and an estimated 8,934 entrance way steel culverts.
- 4 public works yards
- Housing Services of 16 apartments (including Countyview) and 84 family units
- Property Services of 15 building structures
- 2 Homes for the Aged
- The County's fleet of vehicles and other heavy machinery and equipment.
- Emergency Services fleet of vehicles.

The current estimated replacement value of the County's assets based on current service levels is **$1,162,417,501**. The majority of this falls under the Public Works departments with their infrastructure accounting for approximately 88% of all County assets.

On a per household basis, this represents approximately $42,500 in assets being supported in the County.

Asset expenditure needs over the **next 10 years** are **$137,498,000**, with the requirements being frontloaded in the first 5 years.

Strategies will have to be developed to mitigate the immediate needs and long term needs of the County. Strategies will include, increasing the levy, utilizing reserves, reliance on funding from senior levels of government and utilizing debt.

There is a significant amount of work that is still required to move this plan forward, involving implementing an asset management software program, identifying and measuring additional asset categories that should be included in the plan (ie IT infrastructure), regular building condition assessments, refinement of building condition ratings and more detailed analysis of the conditions and replacement costs of the County's bridge and culvert structures.

ROADS INFRASTRUCTURE

Roads Infrastructure

What does the County own?

The County of Huron has 33 County Roads with a total of 775 paved lane kilometers. The road infrastructure assessments are carried out in the Public Works department. Roads are broken down into two components: Surface and Base.

What is it worth?

Before managing an asset, it is important to know the value to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $620.6 million.

To estimate a value for the road network for 2016, the 2013 were inflated to current using inflator figures provided by MFOA. For 2017, Public Works staff will undertake a more detailed review of the current replacement value of the road network. It is important to note that the value of the roads will required to be updated for the value of ditching, driveway culverts, and guiderails. This has not been previously factored in.

Table: Roads Replacement Value:

Asset Type	**Total KM**	**Current Replacement Cost**	**% of Total**
Road Surface	775	$168,682,831	27%
Road Base	775	$451,949,157	73%
TOTAL		**$620,631,988**	100%

What condition is it in?

Condition assessment rating was carried out on the Roads asset network, in consultation with Public Works Department using the PCI (paving condition index) to identify the level of service considered acceptable by staff.

Due to the limitation of current staff resources and time constraints, the current PCI values were not updated for the entire road network, rather, were limited to the road segments in the poorest shape requiring rehab over the next 10 years.

Replacements are based on optimal timing for the cost benefit of rehabilitation vs reconstruction, and also proximity of other road segments requiring paving to maximize the economies of scale for paving contracts. The identified range for optimal rehabilitation is a PCI rating of 6-7.

The results of the detailed condition assessment of the targeted Assets scheduled for rehabilitation in the next 10 years are summarized below. This represents a total of 319 km's of roads of the total 775 km's.

Road Condition Ratings	**PCI**
2016 Current - PCI	7.49
Year of Rehab - PCI	5.97
2017 Projects - PCI	5.40
Target	6-7

The PCI condition rating relates to the condition of the overall road structures and is a rating out of 10. When the rating is between 0 and 3 the item needs to be reconstructed. The **PCI *(Pavement Condition Index)*** rating is a combination of the RCR ***(Ride Comfort Rating)*** and DMI ***(Distress Manifestation Index)***. The RCR can be gathered through a subjective method (drive through at posted speed). The DMI is calculated by combining the density and severity of all distresses. The PCI rating was reported on a scale from 0 to 10 with 10 being a road in perfect condition.

The rating system is as follows:

Excellent: 9– 10 No evident defects

Good: 7 – 8 Slight decline

Fair: 5– 6 Decline asset apparent

Poor: 3– 4 severe decline or failure

What do we need to do?

The table below illustrates the requirements of the road rehabilitation requirements over the next 10 years. Based on current condition ratings and optimal timing for rehab, there is a spike in requirements over the next 5 years and it levels out for years 6-10.

Table: addressing asset needs:

Assets	**Needs 1-5 yrs**	**Needs 6-10 yrs**
Surface	$40,433,148	$31,934,800
Base	$0	$0
TOTAL	**$40,433,148**	**$31,934,800**

List of priority Road projects based on optimal timing for rehabilitation:

Table: Priority Projects for Road Rehabilitation

County Rd. No	**KM**	**PCI**	**Comments**
31	6.2	4.8	from East Limit of Saltford to 300 m west CR 1
1	6.5	5.6	from CR 25 to Hawkins Road
34	5.4	3.7	from CR 28 to Short Line (only reflects 50%/other half assumed by Wellington)
11	14.8	6	from Highway 23 to Perth Line 17
32	4.12	7	from CR 12 to Perth Boundary: This Road has failed early

Gas Tax Agreement incrementality requirement annual threshold – $2,232,399.20.

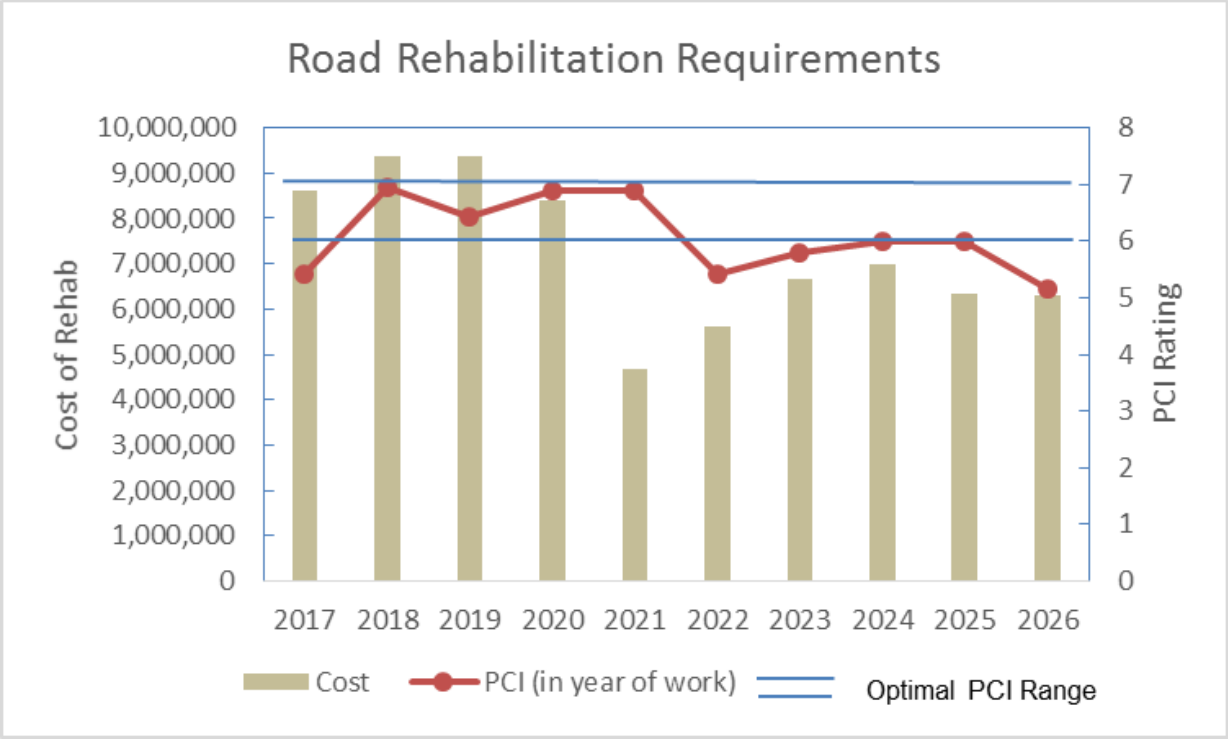
When do we need to do it?

One criterion critical to rating the roads structure for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced. While the useful life of an asset is suitable for accounting purposes, Public Works will base asset replacement and pavement resurfacing on PCI ratings.

Table: Asset Useful Life in Years

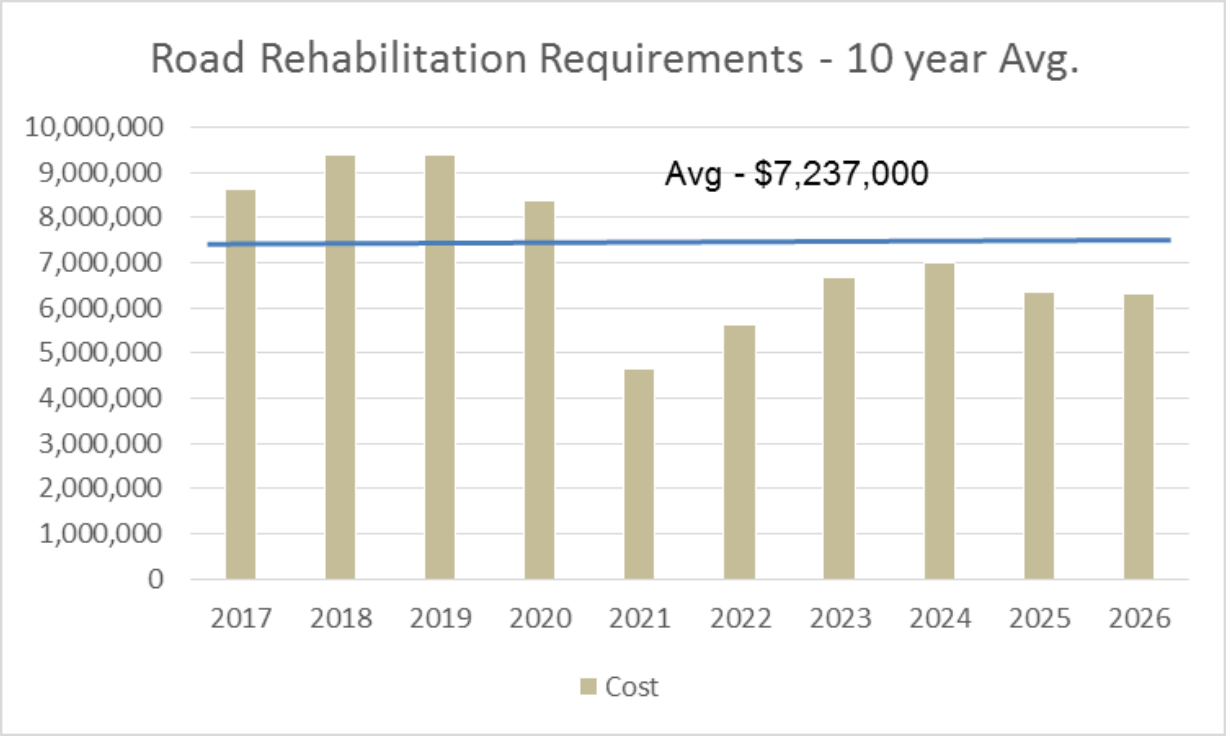
Asset Type	Useful Life
Roads Surface	22
Roads Base	75

Rehabilitation requirements for the next 10 years are illustrated in the following chart which shows the 10 year requirements for cost and also highlights the PCI rating in the year of rehab. The optimal PCI for rehab is within a rating of 6-7.



How much money do we need?

This scenario is used to analyze and determine how much money is required on a yearly basis to replace all assets as they become in need of replacement. The following graph illustrates the results of our analysis for the Public Works Department.



How do we reach sustainability?

The analysis revealed that the average yearly revenue required is $7,237,000 to ensure that the level of service is maintained at today's level over the next 10 years. The previous graph also indicates that at that rate of funding the network needs are expected to be somewhat variable over the next ten years. Costs are front loaded in years 2017-2020 based on location and optimal timing to ensure economies of scale and cost-benefit of rehabilitation. Grouping paving projects in close proximity of each other will ensure more competitive pricing through the tender process.

While the depreciation of road assets is approximately $5,470,000 in our financial statements, Public Works is only raising approximately 4,990,000 through the levy.

Currently there is an estimated uncommitted Public Works reserve balance of $5,150,000 which could be utilized for roads/bridges/public works yards.

The following table highlights the comparison of current replacement value of the Road network with the historical cost of the original construction value and the remaining net book value set up in the County's financial statements. It is important to note that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Table: Roads Replacement Current Value vs Historical Cost

Asset Type	**Current 2016**	**Historical Cost**	**Net Book Value**
Surface	$168,682,831	$132,618,539	$59,949,516
Base	$451,949,157	$291,436,715	$2,589,608
Total	**$620,631,988**	**$424,055,254**	**$62,539,124**

It is important to note that the road base is essentially fully depreciated for accounting purposes. With a prudent asphalt management plan, despite the base being close to the end of its estimated useful life, the life of the base can be extended out much longer if the asphalt is replaced at the right time (ie PCI above 6), where minimal work is required to maintain it (the base) at acceptable service levels. At a PCI of 5, the base is already damaged and this is the most valuable piece of our infrastructure. This is critical for the long term sustainability of our road network.

What are we spending on roads maintenance?

An important consideration of asset management is the on-going maintenance related expenditures that are being incurred in order to maintain the County's assets. As assets deteriorate, it becomes more expense to maintain those assets, therefore it is important for staff to assess condition ratings to ensure the optimal timing of asset replacement.

Road surface repair costs including ditching and drainage for the past 3 years are as follows:

2013: $996,400

2014: $881,900

2015: $908,200

As we move forward, a portion of these costs could be attributed to the capital planning for the ditching and driveway culverts. More work is required on this as we move forward.

Desired Levels of Service

Key Performance Indicators

Key Indicator:

Pavement Condition Index (PCI), Ride Comfort Rating (RCR), and Distress Manifestation Index (DMI)

Issue:

As roads age, they begin to deteriorate due to exposure to environmental elements such as UV damage, freeze/thaw cycles, vehicle load stresses, and oxidization. As the roads age, they become more brittle and less flexible, creating shrinkage cracks, visual defects, wheel rutting, and potholes.

Allowing the road surface to deteriorate allows the elements to seep into the road base, shortening the life of the road base. The road base is much more expensive to repair.

Potential Impact:

Potential impacts of deteriorating roads include safety hazards, increased number of accidents, increased maintenance costs, load restrictions, poor drainage, increased liability, and increased costs of repairs. Wear and tear on vehicles and reduced fuel economy contributing to greenhouse gas emissions.

Current Controls:

Twice weekly, patrols are carried out to monitor road conditions. If issues are detected, they are repaired immediately, or seasonally, when the Asphalt Foreman will inspect and perform test to determine PCI, DMI, and RCR. Roads have a fairly predictable life span of 18 – 22 years, and during this time, PCI evaluation is completed every 1-2 years, or more often as needs arise.

Preventative Maintenance is also carried out, and if key indicators such as repetitive occurrences of pothole repairs, or crack sealing, can indicate an underlying issue that is further investigated by staff and/or an engineering consultant.

Roads are built and maintained to established standards, such as Ontario Provincial Standards, Transportation Association of Canada Standards, the Ontario Traffic Manuals, Canadian Highway & Bridge Design Code, and Ontario Structure Inspection Manual. Regular inspections are carried out to meet established thresholds. **The established PCI threshold is 6.0.**

Legislation is also in place as a legal framework for road and bridge maintenance. The Public Works department ensures that these requirements are met, such as road construction and maintenance conditions to meet Minimum Maintenance Standards (MMS), as well as the Highway Traffic Act.

In addition to this, requests are received on a regular basis from tax payers, businesses, and agricultural entities for such services as seasonal road maintenance, roadside tree trimming,

grass cutting, weed spraying, and garbage and debris clean-up. These requests are integrated into the regular preventative maintenance schedule to accommodate the needs of our constituents.

Action plan:

Continue with preventative maintenance and inspection. As asphalt has a fairly predictable life cycle due to the impacts of environmental elements, preventative maintenance and rehabilitation is planned and budgeted accordingly.

BRIDGE and CULVERTS > 3 meters INFRASTRUCTURE

Bridge and Culverts > 3 meters Infrastructure

What does the County own?

The County of Huron has a total of 90 bridges and 115 culverts >3 meters. All asset field assessments are carried out in the Public Works department by internal staff and external engineering firms. These two assets are being grouped together as they are currently being rated and inspected by external engineering firms every 2 years as per legislative requirements.

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $232 million.

The current estimates have been derived from the original PSAB values set up for accounting purposes and extrapolated with inflation. Please note that these values are being reviewed along with the firm completing the condition ratings into 2017 to ensure the replacement estimates are sufficient. Based on this review, there could be some significant changes in replacement values for these structures.

The following table lists the total estimated replacement value of the County's more significant structures.

Table: Bridges and Culverts >3 m Replacement Value

Structure	**Estimated Replacement Cost**
Bridges	$180,244,215
Culverts >3 m	$51,671,809
Total	**$231,916,024**

What condition is it in?

Condition assessment rating was carried out on the Bridge and Culvert >3 m infrastructure network, through certified bridge inspectors as a contracted service using the BCI to identify

the level of service each bridge is currently at. The following results were obtained: The bridges and culverts >3 m are in average condition. The BCI has been further broken down to compare the current 2015/2016 BCI's for the structures that require some rehab work in the next 1-5 years and the next 6-10 years.

Table: Bridge / Culvert >3m Average Condition Rating

Structure (also grouped by timing of needs)	**2016 Average Rating**
Total Bridges	63
Bridge needs (1-5 yrs)	55
Bridge needs (6-10 yrs)	58
Bridge needs (11 +)	66
Total Culverts >3 m	57
Culvert needs (1-5 yrs)	50
Culvert needs (6-10 yrs)	45
Culvert needs (11 +)	62
Total BCI of all Bridge/Culvert >3 m	60

As seen by this table, the bridge/culvert >3 rehab work that is being recommended in the next 10 years are on structures that are very close to the poor range in the year where work is required.

The distribution of the bridges amongst the BCI condition scale is as follows:

Table: Structure Condition Rating

BCI Scale	# of Structures	% of Total
Bridges		
Average	35	17%
Excellent	33	16%
Poor	21	10%
Severe	1	0%
Total Bridges	**90**	**44%**
Culverts > 3 m		
Average	33	16%
Excellent	31	15%
Poor	50	24%
Severe	1	0%
Total Culvert >3 m	**115**	**56%**
Total Bridges/Culverts >3m	**205**	**100%**

The condition rating relates to the condition of the overall bridge structure and is a rating out of 100. This rating scale is designed to encourage preventative maintenance, so a rating of 50 or less (poor) actually indicates rehabilitation or preventative maintenance should take place in

the near future to maintain structure and obtain the asset lifespan, but does not indicate structural deficiencies. When the rating is between 0 and 30 the item needs significant remediation or to be replaced. The rating system is as follows:

Excellent:	71 and over - No evident defects
Average:	50 – 70 - Slight decline
Poor:	30 – 50 - Rehabilitation or preventative maintenance required
Severe:	0– 30 - Severe decline or failure

The decision to repair or replace is based on the return on investment for the project. A comparison on cost to replace and number of years it is expected to last vs. the cost of remediation and the number of years the structures life will be extended. This is balanced by availability of funding and resources.

What do we need to do?

The following table presents the estimated needs for the next 10 years along with the average current 2015/2016 BCI ratings. These ratings will decline as we approach the year required for replacement/rehabilitation.

Table: Addressing Asset Needs

Years	**BCI**	**Estimated Funding Requirement**
Bridges		
(1-5)	55	$4,921,000
(6-10)	58	$8,173,000
Total Bridges	57	$13,094,000
Culverts > 3m		
(1-5)	50	$4,470,500
(6-10)	45	$5,057,000
Total Culverts >3 m	49	$9,527,500

Years	BCI	Estimated Funding Requirement
Total Bridges/Culverts >3m	52	$22,621,500

The next table provides a more simplified summary of the needs over the next 10 years for bridges and culverts >3 meters.

Table: Addressing Asset Needs – Summarized

Structure	Years 1-5	Years 6-10
Bridge	$4,921,000	$8,173,000
Culverts >3 m	$4,470,500	$5,057,000
Grand Total	$9,391,500	$13,230,000

List of priority 2017 Bridge projects based on optimal timing for rehabilitation and/or replacement:

Tables: 2017 Bridge Projects

Bridge/Culvert > 3	Type of Work	BCI	Cost Estimate
83-15.7 - Ausable 2 Bridge	Replacement	2015- BCI 41	$2,141,350
31-26.3 - Jervis Bridge	Rehabilitation	2015- BCI 53	$404,681
16-20.0 - Cunningham Bridge	Rehabilitation	2016-BCI 74	$90,487

When do we need to do it?

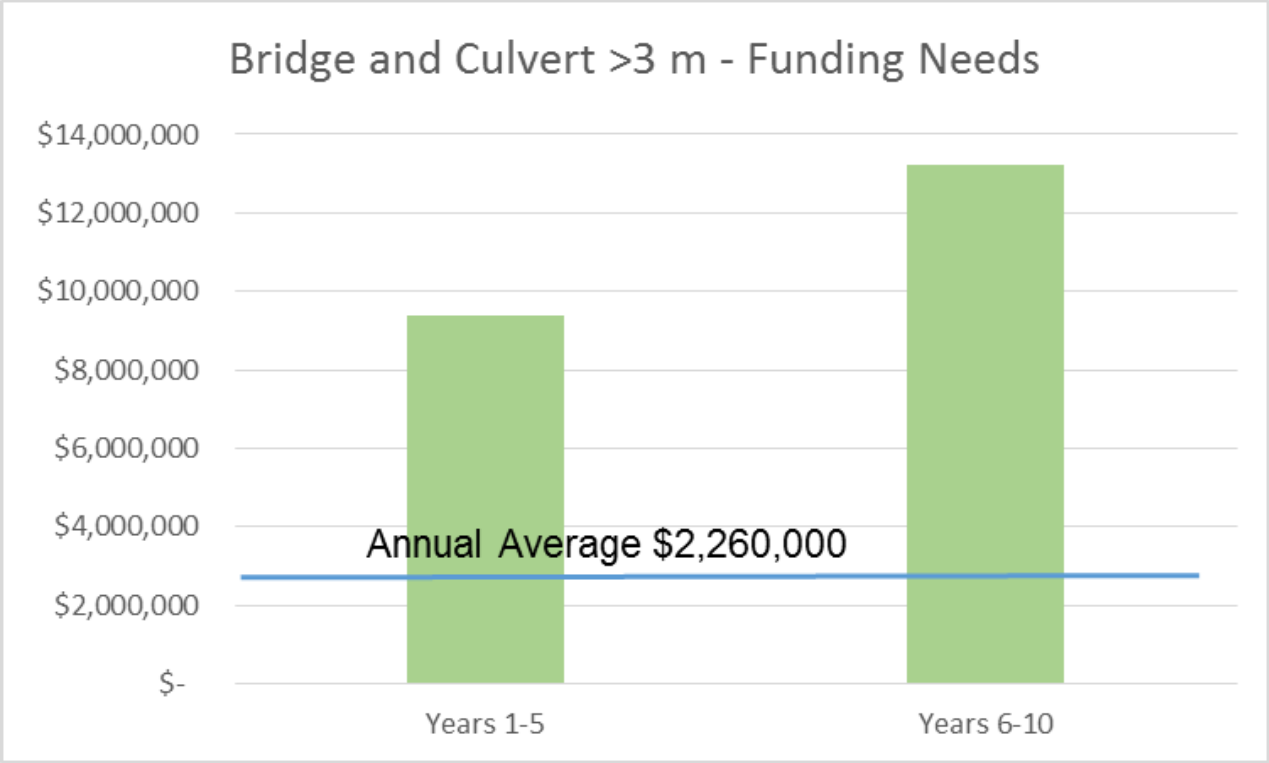
One criterion critical to rating the Bridge infrastructure for the purposes of developing the AMP is the service life of the structure and its elements, along with the OSIM engineering reports. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced. While the useful life of an asset is suitable for accounting purposes, Public Works will base asset replacement and major bridge rehabs on BCI ratings.

Table: Asset Useful Life in Years

Asset Type	**Useful Life**
Bridge Surface	22
Bridge Substructure	50
Bridge Superstructure	75
Bridge Safety	50
Culverts	75

How much money do we need?

This scenario is used to analyze and determine how much money is required on a yearly basis to replace all assets as they become in need of replacement. The following graph illustrates the results of our analysis for the Public Works Department.



The requirements over the next 10 years are estimated to be $22,621,500, with an average annual requirement of $2,260,000.

Note: There are a number of bridges and culverts that fall outside of the next 10 year period that are reaching the end of their estimated useful life based on when they were constructed. A more detailed analysis in 2017 will be required to assess the longer term impact of the funding requirements for the rehabilitation and replacement of these structures.

Of concern is the short time period when a significant amount of our structures that were constructed in the 1940's and 1950's will reach their end of estimated useful life. Due to the large number and limited staff resources to manage the projects, and availability of qualified construction firms, the work will have to be spread over a number of years.

How do we reach sustainability?

The analysis revealed that the average yearly revenue required is $2,260,000 to ensure that the level of service is maintained at today's level, over the next 10 years. The above graph also indicates that at that rate of funding the network needs are expected to be somewhat variable over the next ten years, with a greater amount required in years 6-10.

The following table highlights the comparison of current replacement value of the Bridge and Culvert >3 m network with the historical cost of the original construction value and the remaining net book value set up in the County's financial statements. It is important to note

that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Table: Bridges and Culvert >3 m Replacement Current Value vs Historical Cost

Asset Type	**Current 2016**	**Historical Cost**	**Net Book Value**
Bridges	$180,244,215	$42,320,567	$21,684,364
Culverts >3 m	$51,671,809	$6,539,015	$3,525,763
Total	**$231,916,024**	**$48,859,582**	**$25,210,127**

As you can see from this table, the historical cost of the assets are significantly less than current estimated replacement cost. The depreciation that we are raising in the levy are based on the historical values, and thus we are not raising anywhere near the amounts required to sustain our assets moving forward.

The County is raising a total of approximately $744,000 in funds (depreciation) through the budget process which falls far short of our annual requirements. There is currently a total of $1,800,000 set aside in the Public Works reserve for aging bridges.

The sustainability of bridges and culverts > 3 m will be assessed in total for the Public Works department.

What are we spending on bridge and culvert maintenance?

An important consideration of asset management is the on-going maintenance related expenditures that are being incurred in order to maintain the County's assets. As assets deteriorate, it becomes more expense to maintain those assets, therefore it is important for staff to assess condition ratings to ensure the optimal timing of asset replacement. Below are the bridge and culvert > 3 m's related maintenance costs for last year.

2015 - $217,000

Desired Levels of Service

Key Performance Indicators

Key Indicator:

Bridge Condition Index (BCI)

Issue:

As bridges age, they begin to deteriorate due to exposure to environmental elements such as extended water exposure, freeze/thaw cycles, vehicle load stresses, and corrosion/oxidization. Cumulative damage leads to more expensive repairs and rehabilitation if not properly maintained.

Potential Impact:

Potential impacts of deteriorating bridges include road/bridge closures, load restrictions, safety hazards, and increased number of accidents, increased maintenance costs, increased exposure to liability, and increased costs of repairs.

Current Controls:

Annual bridge cleaning and inspection is carried out on each County bridge. The bridges are pressure washed, and assessed for loose concrete. Inspections include examinations of the parapet walls, railings, expansion joints and seals, caulking, guide rail components, catch basins and drainage, bridge bearings, and various other bridge components.

Annual maintenance is carried out by Public Works personnel on small components that can be completed to bring the bridge back to standards, including caulking and patching to ensure that all components are functioning correctly. Preventative maintenance such as tree trimming around the bridge to ensure moisture evaporates from sun exposure, reducing moisture damage.

If repairs are not able to be completed in the current year, they are added to the list of maintenance and rehabilitation projects in the following year or the multi-year plan, and budgeted for accordingly.

Bridges are built and maintained to established standards, such as Ontario Provincial Standards, Transportation Association of Canada Standards, Ontario Traffic Manuals, Canadian Highway & Bridge Design Code, and Ontario Structure Inspection Manual. Regular inspections are carried out to meet established thresholds. The Ontario Structure Inspection Manual (OSIM) inspections are carried out every two years through external engineering firms, and bridges are rated for their conditions. **Our BCI threshold is 50.**

Culverts with 3m-6m spans are built and maintained to established standards, such as Canadian Highway and Bridge Design Code, and inspected per the Ontario Structure Inspection Manual. Regular inspections are carried out to meet established thresholds. The BCI threshold is 50. Ontario Structure Inspection Manual (OSIM) inspections are carried out every two years through external engineering firms, and the culverts are rated for their conditions.

In addition to this, comments and requests are received on a regular basis from tax payers, businesses, and agricultural entities for such issues as bridge repair traffic restrictions, project delays, and detour routes. These comments and requests are integrated into future plans for bridge projects and maintenance activities to accommodate the needs of our constituents.

Action plan:

Continue with preventative maintenance and inspection. Annual inspections and preventative maintenance are key to ensure that small issues are rectified before they develop into major problems that are much more costly to correct. Regular rehabilitation is normally required every 18-22 years, and rehabilitation is planned and budgeted accordingly.

MINOR CULVERTS (<3 meters and driveway) INFRASTRUCTURE

Minor Culvert Infrastructure

What does the County own?

The County of Huron has: 248 Culverts less than 3 meters (CULVERT<3m) and approximately 8,934 driveway culverts.

All asset field assessments are carried out in the Public Works department by internal staff. The results of the detailed inventory assessment of the targeted structures are summarized below. Culverts < 3m have been separated from the culverts > 3 m due to the fact that they are inspected by County staff rather than by external engineering firms.

It is important to note that more work will be required to access the full number of driveway culverts across the County road network. This work will be ongoing into 2017. The figure in the table below is an estimate estimated by the GIS department, consisting of both rural and urban entrances.

Table: Minor Culvert Inventory

Structure	**Quantity**
Culverts <3 meter	248
Driveway culverts	8934

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the culverts<3 m of $131.9 million and $27 million for the driveway culverts/entranceways.

Table: Minor Culvert Replacement Value

Structure	**Value**
Culverts <3 meter	$131,913,321
Driveway culverts	$27,001,440

Structure	Value
Total	$158,914,761

What condition is it in?

Only culverts >3m are rated by engineers, culverts <3m are inspected by staff on a semi-regular basis. These personnel are trained in culvert inspection by the OGRA, and there is at least one certified employee on each patrol.

A comprehensive listing of all minor culverts with a condition rating currently does not exist for the purposes of the asset management plan.

This is one significant gap that we have identified where we will require additional work to identify the condition of the County's minor culvert structures. This will be initiated in 2017 and beyond.

What do we need to do?

Staff have identified a culvert <3 m that is required to be rehabilitated in 2017 due to a failing crown. Culvert 18-3.1 on Cutline will require $1,400,000 in work for 2017 to line existing culvert and to bore a second overflow.

When do we need to do it?

One criterion critical to rating the Culverts structure for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced.

Table: Asset Useful Life in Years

Asset Type	Useful Life
CULVERT<3m	75
Driveway Culverts	75

How much money do we need?

We currently do not have a value of the needs for the minor culvert infrastructure above and beyond the $1,400,000 identified for 2017. This will be worked on through 2017 as we further develop our asset management systems.

Simplistically, if we were to calculate the average per year required over the estimated useful life of the minor culverts, the County would require an average investment of $2,018,000 per year to maintain the current number of minor culvert structures.

How do we reach sustainability?

The life cycle analysis revealed that the average yearly revenue required is $2,118,000 to ensure that the level of service is maintained at today's level, over the life of the minor culvert structures.

The funding that is currently being raised through the budget process is approximately $305,000. This falls far short of the amount of funding that will be required to replace these assets as they reach the end of the useful life.

The following table highlights the comparison of current replacement value of the Culvert <3 m and Driveway Culvert network with the historical cost of the original construction value and the remaining net book value set up in the County's financial statements. It is important to note that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Please note that up to this point, driveway culverts were not set up in our financial statements as assets through the PSAB process. When installed, they are paid for by the property owner and then the County assumes future replacement costs.

Table: Bridges and Culvert >3 m Replacement Current Value vs Historical Cost

Asset Type	**Current 2016**	**Historical Cost**	**Net Book Value**
Culverts <3 m	$131,913,321	$25,113,404	$12,124,534
Driveway culverts	$27,001,440	$0	$0
Total	**$158,914,761**	**$25,113,404**	**$12,124,534**

What are we spending on minor culvert maintenance?

We currently do not have sufficient information to be able to assess the expenditures for minor culverts as they are aggregated with the culverts > 3 years in our job costing system.

Desired Levels of Service

Key Performance Indicators

Key Indicator:

To be developed 2017-2018.

Issue:

As the culverts age, they begin to deteriorate due to exposure to environmental elements such as extended salt and water exposure, freeze/thaw cycles, and corrosion/oxidization. As concrete culverts age and defects appear, the structures have more potential for expensive repairs and rehabilitation if not properly maintained.

Potential Impact:

Potential impacts of deteriorating culverts include road closures, load restrictions, safety hazards, accidents, increased maintenance costs, liability, and increased costs of repairs.

Current Controls:

Small culverts with 1m-3m spans are inspected by staff on an as-needed basis. Maintenance can be carried out by Public Works staff on small components that can be completed to bring the culvert back to design standards.

In addition to this, comments and requests are received on a regular basis from tax payers, businesses, and agricultural entities for such issues as structure repair work, traffic restrictions, project delays, and detour routes. These comments and requests are integrated into future plans for culvert projects and maintenance activities to accommodate the needs of our constituents.

Action plan:

Continue with preventative maintenance and enhance the inspection program. Annual inspections and preventative maintenance are key to ensure that small issues are rectified before they develop into major problems that are much more costly to correct. Regular rehabilitation is normally required every 18-22 years, and rehabilitation is planned and budgeted accordingly.

PUBLIC WORKS BUILDINGS INFRASTRUCTURE

Public Works Buildings Infrastructure

What does the County own?

The County of Huron has: 4 Public Works patrol yards. Within the patrol yards include salt and sand storage buildings, office/maintenance buildings. The assets are located within the Public Works Buildings network. All asset field assessments are carried out in the Public Works department. The results of the detailed inventory assessment of the targeted structures are summarized below.

List of Public Works Patrol Yards

- Auburn
- Wingham
- Wroxeter
- Zurich

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $13.4 million.

Table: Public Works Patrol Yard Replacement Value

Yard	**Value**	**% of Total**
AUBURN WORKS YARD	$5,615,120	42%
WINGHAM WORKS YARD	$2,109,200	16%
WROXETER WORKS YARD	$3,293,000	25%
ZURICH WORKS YARD	$2,420,000	18%
TOTAL	**$13,437,320**	100%

What condition is it in?

We currently do not have a sufficient comprehensive condition rating system for the Public Works yards that we can report in confidence to Council and the public.

As part of the plan to move forward, it is being recommended that we engage an engineer to assess the condition ratings of the yards every 5 years.

The following table provides a simplistic view of remaining useful life of the patrol yards based on a weighted average of the individual structures at each yard.

Table: Remaining Useful Life of Patrol Yards

Patrol Yard	**% of Remaining Useful Life**
Auburn	66%
Wingham	end of life
Wroxeter	50%
Zurich	82%

What do we need to do?

Table: Replacement Needs for next 8 years

Patrol Yard	**Needs 1-5 yrs**	**Needs 6-8 yrs**	**Total**
Auburn	$456,400	$8,500	$464,900
Wingham	$2,280,500	$15,000	$2,295,500
Wroxeter	$199,500	$27,000	$226,500
Zurich	$300,000	$15,000	$315,000
TOTAL	**$3,236,400**	**$65,500**	**$3,301,900**

One property to be reviewed moving forward is the vacant Varna Pit. This property known as the Varna Pit has served the County a number of functions including a former gravel pit and more recently material storage. The site currently contains a water body and areas that have naturalized including a young hardwood forest.

It is recommended that this property be further rehabilitated and become part of the green infrastructure of the County for public use. Funding is required to initiate and support this transition.

When do we need to do it?

One criterion critical to rating the Public Works Buildings structure for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced.

Table: Asset Useful Life in Years

Asset Type	**Useful Life**
Building works 30yr	30
Building works 60yr	60
Building Equipment	5
Building Exterior	20
Building Interior	20
Building Mechanical	20
Building Electrical	20
Building Site	22

How much money do we need?

This scenario is used to analyze and determine how much money is required on a yearly basis to replace all assets as they become in need of replacement. The following graph illustrates the results of our analysis for the Public Works Department.

Table: Total of Expenditures by Year

Years	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
TOTALS:	$106,500	$3,030,400	$50,000	$48,000	$1,500	$15,000	$45,500	$5,000

As seen by the table above, 2018 is the peak year based on the staff analysis over the next 8 year period. This is due to the replacement of a number of key structures and site work at the Wingham patrol yard totaling $2,280,000. Zurich is also requiring the fuel tanks to be replaced and this is also being requested for 2018.

How do we reach sustainability?

Staff are projecting an estimated total of $3,301,900 in expenditures over the next 8 years. The bulk of the expense is due to the replacement of the key structures at the Wingham patrol yard.

The current funding being raised each year through the budget process for the Public Works buildings is approx. $33,000 per year. This current level of funding falls far short of our estimated requirements in the next 8 years, thus additional funding is required.

The following table highlights the comparison of current replacement value of the Public Works Patrol Yards with the historical cost of the original construction value and the remaining net book value set up in the County's financial statements. It is important to note that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Table: Patrol Yard Replacement Current Value vs Historical Cost

Asset Type	**Current 2016**	**Historical Cost**	**Net Book Value**
Auburn	$5,615,120	$2,220,347	$1,409,718
Wingham	$2,109,200	$235,727	$85,740
Wroxeter	$3,293,000	$1,028,313	$475,269
Zurich	$2,420,000	$2,098,770	$1,812,780
Total	**$13,437,320**	**$5,583,157**	**$3,783,507**

There is currently a total of $900,000 set aside in the Public Works reserve for the Wingham Patrol Yard replacement plus $200,000 for an office addition at Auburn. These funds could be used to manage the funding requirements upcoming for 2018. Additional funding sources will be required for this, whether raised through the levy, reserves or through debt financing.

The sustainability for Public Works will be assessed together as a whole rather than individually.

Desired Levels of Service

Key Performance Indicators

Key Indicator:

Building condition

Issue:

As buildings age, they are subject to deterioration due to exposure to climate, and through usage.

Potential Impact:

If a building declines into poor condition, there may be health and safety issues. Failure to respond to issues may lead to increased damage and more expensive repairs. The building condition will worsen at an accelerated pace if preventative maintenance steps are not taken.

Current Controls:

Inspections are carried out semi-annually. Issues identified are rectified, with smaller repairs being performed by County personnel, while larger issues are addressed by third party providers as needed. Any larger items or items that are coming to the end of their life cycle are often identified several years in advance, such as roofing replacement, and budgeted and scheduled accordingly.

Action plan:

Continue to carry out semi-annual inspections and perform preventative maintenance as required.

PUBLIC WORKS – SUMMARY OF FINANCING REQUIREMENTS and SUSTAINABILITY

The following table begins to identify the funding that is currently available for Public Works – Roads/Bridges and Culverts/Patrol Yards.

Table: 2016 Current Funding for Public Works

Year	Levy (All PW Capital)	Reserves	Gas Tax	OCIF	Total
2016	$6,073,980	$1,308,522	$1,796,828	$690,600	$9,869,930
Note: 2015 Capital Surplus carryforward		$1,032,522			

The total available funding in 2016 is $9,869,930, which includes a transfer from reserves of $1.3 million. Ongoing draws from reserves are not sustainable over the long term, however can be used to smooth out the increases over a number of years.

Table: Current reserve balances for Public Works

Reserve	Amount
Aging Bridges	$1,800,000
Wingham Shop	$900,000
Office Addition	$200,000
Clinton Rd Swap	$475,000
Uncommitted	$5,148,666
TOTAL	**$8,523,666**
Balance does not factor in 2016 capital surplus	

The Public Works requirements over the next 10 years are listed in the following table as identified by staff.

Table: Summary of Public Works Needs

Structure	Years 1-5	Years 6-10	TOTAL
Road	$40,433,148	$31,934,800	$72,367,948
Bridges and Culverts >3m	$9,391,500	$13,230,000	$22,621,500
Culverts < 3 m and Driveway	$1,400,000	$0	$1,400,000
Patrol Yards	$3,236,400	$65,500	$3,301,900
TOTAL	**$54,461,048**	**$45,230,300**	**$99,691,348**
Average			$9,969,135

Therefore, on average over the next 10 years, Public Works will require an estimated capital budget of $9,969,135. It is important to note that this does not factor in the contributions required for the assets that fall outside of the 10 year review period that would be required if using a life cycle funding model.

For the next 10 years sustainability can be reached under the following assumptions in the following table:

- Capital budget increase of 2% through the levy each year above 2016 levels which is a reasonable increase inline with inflation
- OCIF and Gas tax are increasing over the next several years
- Reduce reliance on reserves as they will be required for future bridge and culvert replacement

Table: Sources of Public Works Capital Funding (not just for Roads)

Year	Levy (All PW Capital)	Reserves	Gas Tax	OCIF	Total
2016	$6,073,980	$1,308,522	$1,796,828	$690,600	$9,869,930
2017	$6,195,460	$838,056	$1,796,828	$1,138,791	$9,969,135
2018	$6,319,369	$159,844	$1,882,391	$1,607,531	$9,969,135
2019	$6,445,756		$1,882,391	$2,419,803	$10,747,951
2018 Gas tax - estimate as agreement is only to 2018					
Note: 2015 Capital Surplus carryforward		$1,032,522			

Therefore, in the short term, we have the financial resources to meet our immediate needs, however, over the long term staff currently cannot confidently provide Council with what our needs will be based on condition assessments.

Estimates can be provided based on the annual requirements that should be set aside based on an estimated useful life, however, that too is not realistic as the useful lives of many of the County's structures are closer to the end of their useful life than the beginning. The greatest challenges will be with the County's bridges and culverts as many of these structures will be at the end of their useful lives in around 2030-2050.

Long term sustainability will be reviewed and enhanced as we move forward into 2017. It is essential that staff develop a long term plan and asset management systems to ensure we have the financial capabilities to meeting the upcoming infrastructure requirements.

Funding will have to be achieved by a combination of levy, reserve, external funding and debt. The needs will be too great to rely on the levy alone. Also, service levels will have to be assessed with Council to determine the service levels of the bridges and culverts (close, load limits etc).

FLEET

Fleet

What does the County own?

The County of Huron has: 43 vehicles and equipment at a 5 years cycle, 25 vehicles at a 10 years cycle and 31 vehicles at a 15 years cycle. The assets are located within the Fleet network. All asset field assessments are carried out in the Public Works department. The results of the detailed inventory assessment of the targeted structures are summarized below.

Note: Current values do not include the 4 additional ploughs that are being purchased in 2017 as this is a change from a contracted service beginning in 2018.

County's inventory of Fleet infrastructure in accordance with best practices and current legislation.

Table: Fleet Inventory by Type

Asset Type	Asset Component	Quantity
Fleet 5 year	Trucks, Vans, Mowers, etc.	43
Fleet 10 year	Tandem Trucks, Tractors, Forklifts, etc.	25
Fleet 15 year	Graders, Backhoes, Large Loaders, etc.	31
TOTAL		99

Note – The 5, 10 and 15 years classes are based on PSAB Tangible Capital Asset reporting, the actual replacement cycle may vary for each type of equipment/vehicle for anywhere from 3 to 30 years.

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $9.2 million.

Table: Fleet Replacement Value

Asset Type	Quantity	2016 Replacement Cost	% of Total
Fleet 5 year	43	$1,237,500	13%
Fleet 10 year	25	$4,002,932	44%
Fleet 15 year	31	$3,943,900	43%
TOTAL	99	**$9,184,332**	**100%**

What condition is it in?

Condition assessment rating was carried out on the Fleet asset network, in consultation with Public Works Department, to identify the level of service considered acceptable by staff. The overall result is that the County's Fleet is in a Fair condition. The results of the detailed condition assessment of the targeted assets are summarized below in the table.

Table: Fleet Condition Rating

Asset Type	Condition Rating	Condition Description
Fleet 5 year	68	Fair
Fleet 10 year	57	Fair
Fleet 15 year	60	Fair
Total	63	Fair

The following table highlights the number of the Fleet vehicles and equipment within each condition rating category.

Table: Condition of Fleet Equipment

Condition Rating	# of Fleet Units
Poor	31
Fair	17
Good	38
Excellent	8
Total	94

The condition rating relates to the age and usage of the overall vehicles or devices group and is a rating out of 100. When the rating is between 30 and 50 the item needs to be replaced. The rating system is as follows:

Excellent: 91 – 100 - No evident defects

Good: 70 – 90 - Slight decline

Fair: 51 – 69 - Decline asset apparent

Poor: 30 – 50 - Severe decline or failure

What do we need to do?

Table: Addressing Asset Needs

Assets	Needs 1-5 yrs	Needs 6-10 yrs
Fleet 5 year	$939,000	$772,500
Fleet 10 year	$4,572,932	$590,000

Assets	Needs 1-5 yrs	Needs 6-10 yrs
Fleet 15 year	$1,415,000	$1,350,000
TOTAL	**$6,926,932**	**$2,712,500**

2017 priority projects include replacement of 4 tandem plow sanders.

Note: 2018 includes the purchase of an additional 4 new tandem trucks ($1,160,000) to replace current contractor plow/sanders above and beyond what is being replaced in 2017.

When do we need to do it?

One criterion critical to rating the fleet structure for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced.

Fleet maintenance costs over the last 2 years are as follows:

2014 - $1,236,233

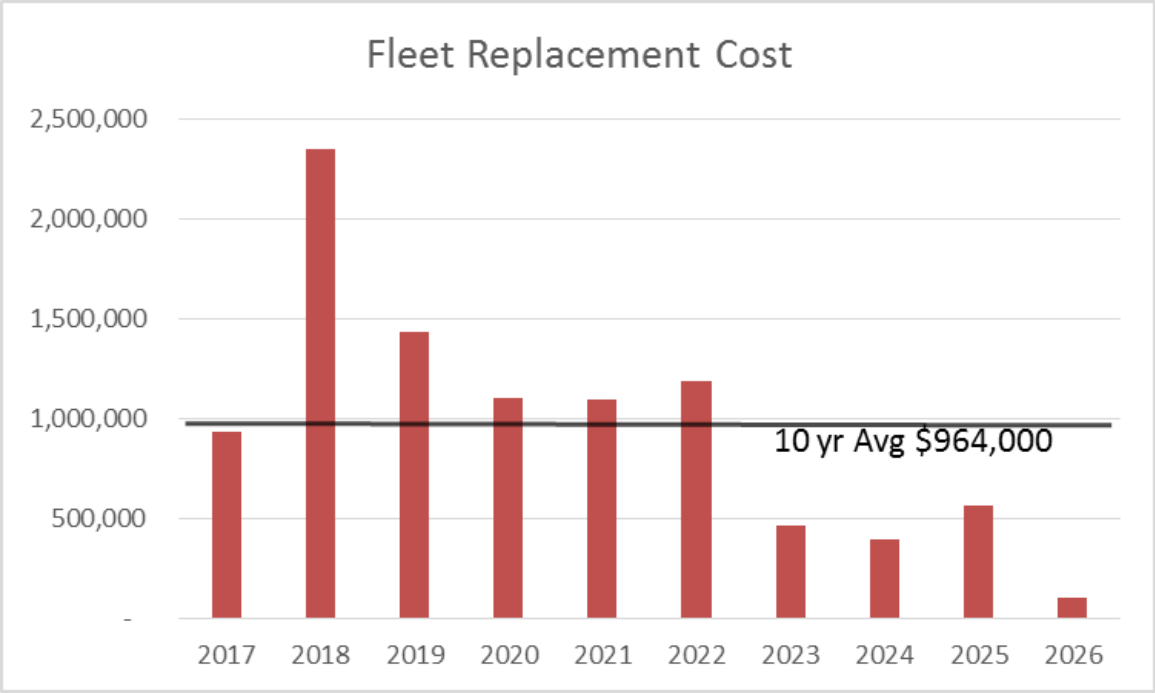
2015 - $879,967

Note: Fleet maintenance cost figures currently include fuel related expenses in addition to maintenance.

How much money do we need?

This scenario is used to analyze and determine how much money is required on a yearly basis to replace all assets as they become in need of replacement. The following graph illustrates the results of our analysis for the Public Works Fleet Department.

Note: There are 4 new tandem ploughs are being purchased in 2018 as a result of a service delivery review of the cost benefit of contracted vs in-house snow plough services not currently included in the existing fleet program.



How do we reach sustainability?

The analysis revealed that the average yearly revenue required is $964,000 to ensure that the level of service is maintained at today's level, over the next 10 years. The above graph also indicates that at that rate of funding the network needs are expected to be greater in the next 5 years, primarily due to the addition of 4 new plow/sander units.

With the current Fleet reserve at approximately $4.2 million, and current funding being raised through the budget process, there are sufficient funds available to manage the Fleet replacements over the next 10 year cycle. The purchase of the 4 additional plows has a significant impact, however, the reserve balance is able to cover the initial cash flow requirement.

Table: Reserve Sustainability

Year	Replacement Cost	Funding	Reserve Usage	Reserve Balance
2017	$935,932	$780,000	$155,932	$4,127,259
2018	$2,353,500	$780,000	$1,573,500	$2,553,759
2019	$1,433,000	$780,000	$653,000	$1,900,759

Year	Replacement Cost	Funding	Reserve Usage	Reserve Balance
2020	$1,106,000	$780,000	$326,000	$1,574,759
2021	$1,098,500	$780,000	$318,500	$1,256,259
2022	$1,191,000	$780,000	$411,000	$845,259
2023	$461,000	$780,000	$ (319,000)	$1,164,259
2024	$392,500	$780,000	$ (387,500)	$1,551,759
2025	$566,000	$780,000	$ (214,000)	$1,765,759
2026	$102,000	$780,000	$ (678,000)	$2,443,759

The following table highlights the comparison of current replacement value of the fleet equipment with the historical cost of the original purchase value and the remaining net book value set up in the County's financial statements. It is important to note that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Table: Fleet Replacement Current Value vs Historical Cost

Asset Type	Quantity	Current 2016	Historical Cost	Net Book Value
Fleet 5 year	43	$1,237,500	$1,206,554	$396,457
Fleet 10 year	25	$4,002,932	$3,576,111	$1,363,748
Fleet 15 year	31	$3,943,900	$2,698,566	$1,133,646

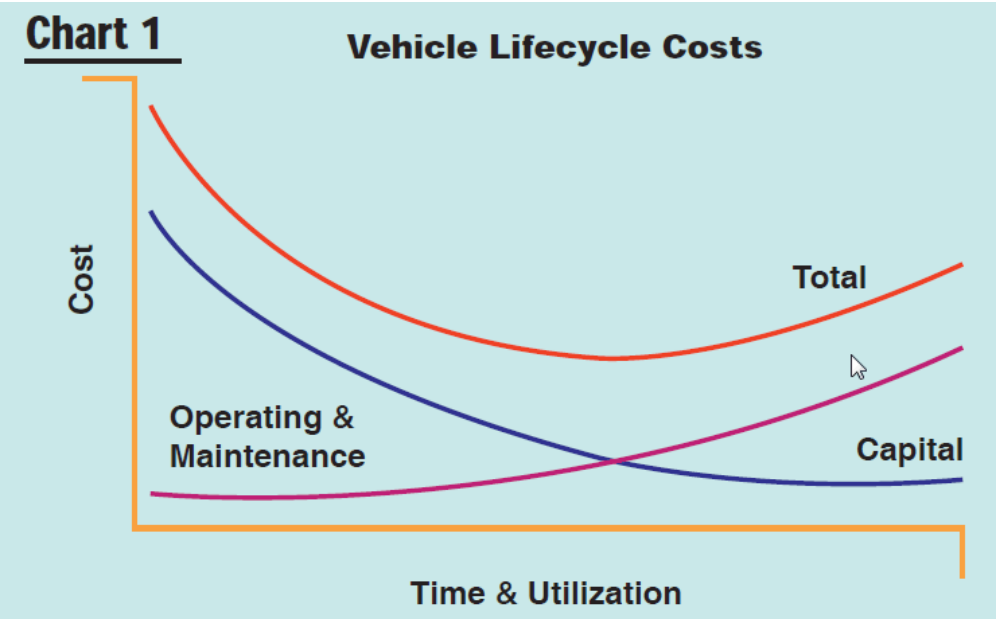
Asset Type	Quantity	Current 2016	Historical Cost	Net Book Value
Total	**99**	**$9,184,332**	**$7,481,231**	**$2,893,851**

Desired Levels of Service

Huron County currently has assets totaling over eight (8) million dollars in licensed and un-licensed equipment. This equipment includes a fleet of 13 tandem trucks, three graders, four one ton trucks, four front end loaders, three tractors, 22 pickups/crew cab pickups, also various specialty equipment for the fleet department and others within the County.

While fleet preventative maintenance is important, effective equipment management should go well beyond fixing a break down. A program is in place that preserves the value of equipment investments, minimizes the incidents of unscheduled repairs, and collect, analyzes, and reports necessary data so that informed and intelligent asset management decisions can be made.

Reliable vehicles and equipment in good working order are essential to ensure roads are maintained in a timely and professional manner. When to replace a vehicle is one of the most significant decisions facing fleet managers. Without a viable and comprehensive replacement program, management is not able to replace equipment when needed at the optimum replacement time as illustrated below in Chart 1.



Over time, vehicle capital costs decline, while vehicle operating costs increase. The combination of these two cost functions produces a U-shaped total cost curve. Ideally, vehicles should be replaced around the time that annual operating costs begin to outweigh annual capital costs – that is, when the total cost curve begins to turn upward. As illustrated by the graph, deferring replacement of vehicles and equipment beyond a certain point actually causes total vehicle costs to rise, making a fleet more costly to own and operate.

A fleet replacement plan can accomplish the following:

1. Less equipment downtime and lower operating/maintenance costs by eliminating high cost intensive vehicles.
2. An assurance that vehicles are rotated out in a planned schedule.
3. Modernize the fleet for peak performance in both technical and employee safety areas.
4. Allows you to document future year funding requirements.

We project that by using our equipment replacement schedule and asset plan that it will bring credibility to the replacement process for prioritizing vehicle replacement funds.

PROPERTY SERVICES INFRASTRUCTURE

Property Services Infrastructure

What does the County own?

The County of Huron has: 3 historical buildings, 4 office buildings, 2 storage buildings, 4 ambulance buildings, 1 transformer building, and 1 pump house building. The assets are located within the Property Services network. All asset field assessments are carried out in the Property Services department.

The results of the detailed inventory assessment of the targeted structures are summarized below.

Table: List of Types of Buildings in Property Services

Building Type	**Quantity**
Historical Buildings	3
Office Buildings	4
Transformer Building	1
Storage Buildings	2
Ambulance Stations	4
Pump House	1
TOTAL	**15**

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $47.8 million.

Building Type	Replacement Value	% of Total
Historical Buildings	$29,302,684	61%
Office Buildings	$14,941,732	31%
Transformer Building	$50,000	0%
Storage Buildings	$848,796	2%
Ambulance Buildings	$2,087,893	4%
Pump House Building	$618,400	1%
TOTAL	**$47,849,505**	**100%**

Note: The Courthouse is included under historical buildings.

What condition is it in?

Condition assessment rating was carried out on the Property Services asset network, in consultation with Property Services department, to identify the level of service considered acceptable by staff. Staff attempted to develop a Facility Condition Rating that would make sense to use for the County's facilities. The rating was developed based on current capital needs relative to the replacement value of the building.

It is important to note that the ratings do not attempt to quantify whether or not the space is functional and efficient.

The following table summarizes the facility ratings:

Table: Condition Rating of Building Structures

Building Structure	Facility Condition Rating
Court House, Goderich	Good
Land Registry Building, Goderich	Good

Building Structure	Facility Condition Rating
Storage Building, Clinton	Good
Tuckersmith Ambulance Station, Clinton	Good
Goderich Ambulance Station, Goderich	Good
Exeter Ambulance Station, Exeter	Good
Pumphouse and Water Reservoir	Good
Huron County Museum, Goderich	Fair
Assessment Office, Goderich	Fair
Jacob Memorial Building, Clinton	Fair
Health & Library Building, Clinton	Fair
Wingham Ambulance Station, Wingham	Fair
Huron County Gaol, Goderich	Poor
Airport Storage Building, Goderich	Poor
Transformer Building, Clinton	Vacant - tear down

What do we need to do?

Additional work is required to assess the long term needs on an individual building structure basis, and this work will continue into 2017. Looking at Property Services as a whole, the capital needs are relatively consistent on an annual basis and are limited by the availability of staff resources to manage the projects.

Table: Property Services Asset Needs

Asset Needs	Years 1-5	Years 6-10	Total
Property Services	$4,676,350	$5,163,069	$9,839,419
Annual Average		$983,942	

Key priorities for 2017 and beyond are:

Courthouse – north elevator refurbishment

HLC – replace chiller

Multiple sites – energy efficiency projects, and upgrading FA monitoring equipment

When do we need to do it?

One criterion critical to rating the Property services assets for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced.

Table: Asset useful life in years

Asset Type	Useful Life
Building	60
Building Electrical	20
Building Equipment	5
Building Exterior	20
Building Interior	20
Building Mechanical	20
Building Site	22

How much money do we need?

As indicated in the previous table, total expenditures needs over the next 10 years are estimated to be $9,839,419.

Table: Property Services Asset Needs

Asset Needs	Years 1-5	Years 6-10	Total
Property Services	$4,676,350	$5,163,069	$9,839,419
Annual Average		$983,942	

Again, more work is required to provide a more detailed building by building analysis as we move forward for the purposes of this plan.

Maintenance and repairs for the past 2 years for property services are as follows:

2014 - $171,700

2015 - $192,000

How do we reach sustainability?

The analysis revealed that the average yearly revenue required is $984,000 to ensure that the level of service is maintained at today's level, over the next 10 years. The rate of funding the network needs are expected to be somewhat constant over the next ten years.

At the end of 2015 capital reserves for facilities were at approximately $5,853,400, and for the ambulance base reserve they were at $1,354,900.

Current funding in the Property Services budget is $698,900.

Table: Property Services – Sustainability

Property Services - Sustainability	Dollars
Current funding	$698,900

Property Services - Sustainability	Dollars
Required funding	$984,000
Annual shortfall	$285,100

For 2017, the estimated required work is $898,600 which represents a current shortfall of $199,700. This shortfall (current and 10 year average) can be managed into the future with a combination of small levy increases and reserve uses to mitigate the transition to the required annual funding amount.

Also, as buildings reach the end of their useful life, certain structures may not be replaced, therefore, this will be decisions Council will be required to make moving forward. For example, the Gaol has a significant replacement value, but would it ever be or could it ever be replaced?

The following table highlights the comparison of current replacement value of the fleet equipment with the historical cost of the original purchase value and the remaining net book value set up in the County's financial statements. It is important to note that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Table: Property Services Current Value vs Historical Cost

Building Type	Current Value	Historical Cost	Net Book Value
Historical Buildings	$29,302,684	$8,405,684	$4,887,421
Office Buildings	$14,941,732	$5,079,904	$2,556,319
Transformer Building	$50,000	$48,546	$9,169
Storage Buildings	$848,796	$293,504	$200,065
Ambulance Buildings	$2,087,893	$1,470,740	$1,159,370
Pump House Building	$618,400	$961,803	$710,423
TOTAL	**$47,849,505**	**$16,260,181**	**$9,522,767**

Desired Levels of Service

Key Indicator

Response time regarding requests for work

Issue

Calls for work are assessed regarding the level of urgency. The clients who request work include external (MAG, Service Ontario, and MPAC) and internal (the Departments within the Corporation) should receive confirmation of receipt of their work order request within 24 hours, and be provided with an anticipated response time.

Potential Impact

Failure to assess and respond to problems may lead to increased damages if the maintenance concern is not identified within a timely manner. Also, a lack of a timely response to clients may lead to decreased client satisfaction.

Current Controls

The internal clients complete and submit an electronic Property Services Request form. Each PSR is received by the Maintenance Coordinator for Housing and Property Services and the County's Maintenance Technicians and Building Custodians are also able to view the PSR. The work is assigned, and this information is input; once the work is finished, the PSR is marked complete.

The external clients call or email their requests for maintenance service to the Maintenance Coordinator. An electronic work order is created through the Property Services Request form, and the protocols listed above for internal clients also then apply.

Action plan

The Maintenance Coordinator is to continually monitor the status of all PSR's that are incomplete. The continuous monitoring of all incomplete PSR's will help to ensure that work does not remain unfinished or "fall through the cracks".

Key Indicator: *Funding*

Issue - The funding mechanism relies on rental revenue from the County's three external tenants to provide the resources to maintain services for these properties; the remainder of funding required is from the County. There are no additional provincial or federal funds received for Property Services on a regular basis.

It is possible that occasional grant money is made available through agencies such as Heritage Canada, or one-time funding opportunities through the grant process for projects with specific eligibility criteria.

Potential Impact

A decrease in funding would result in a loss of services or maintenance repairs and capital projects.

Current Controls

All work, both operational and capital, is monitored for efficiencies and cost controls.

The budget is monitored by the internal mechanisms of the County's Treasury Department and the Housing and Property Services Division.

Action plan

The 2014 budget reflects the operational and capital requirements to adequately maintain services and complete the more urgent capital upgrades. The capital work is selected based on recommendations from the building condition assessments along with the practical knowledge of the staff involved.

Key Indicator: *Depreciation*

Issue

As the buildings begin to age, the required upkeep is expected to increase to maintain levels of service.

Potential Impact

Although the expected life spans are quite high, in practicality, buildings such as the JMB are currently 60 years old and will require increasing maintenance work to keep the building functional (ie, a HVAC system may have frequent temperature control issues).

Current Controls

By remaining diligent in completing the required repairs, the respective building life spans should be met.

Action plan

The concept of building replacement may be a consideration in the future if the required repairs increase substantially for any building.

Key Indicator: *Capital*

Issue

The Building Condition Assessments completed in 2011 indicate a much more substantial requirement for capital repairs than what the County has historically provided for the capital works budget.

Potential Impact

Many projects, in future years, will have to be deferred as the average capital allocation is substantially lower than the cost of the recommended repairs within the Building Condition Assessments.

Current Controls

A thorough analysis of the capital requirements is undertaken by Housing and Property Services to determine which capital projects are able to be funded each year.

Action plan

It is anticipated that the process of completing the County's Asset Management Plan will result in a system within the County that recognizes the need for substantial capital repairs and works toward providing the funding allocations to enable the work to be completed.

Key Indicator: *Preventative Maintenance*

Issue

The role of preventative maintenance plays an important part in the longevity of a building and the cost efficiencies of a building.

Potential Impact

By monitoring building systems, providing a consistent, regular preventative maintenance program will significantly aid in reducing building costs. The cost savings will be realized through fewer system failures over time and the decreased need to replace components and systems.

Current Controls

The role of Preventative Maintenance Technician has develops and implements a preventative maintenance program to ensure the components within the building envelope operate as efficiently as possible, leading to fewer repairs and replacements.

Action plan

The preventative maintenance software allows for work necessary for completion to be tracked and monitored.

Key Indicator: *Energy Savings*

Issue

As energy costs increase, the need to reduce usage is recognized.

Potential Impact

Utility costs have increased substantially and are predicted to continue in this manner.

Current Controls

Building occupants are encouraged to reduce energy costs by keeping windows closed when heat or a/c is on, turning off lights, etc.

Low flush toilets and aerators have been installed, and some energy efficient lighting.

Action plan

The legislated Green Energy Act, O/Reg 397/11 requires all municipalities to have in place energy conservation and demand management plans and Huron County is in compliance with this legislation.

Management Strategies – Property Services

Strategic and Corporate Goals

Infrastructure levels of service are influenced and guided by the County's strategic planning initiative. It is anticipated that the County's strategic plan will provide direction regarding the allocation of resources and the prioritization of how municipal tax dollars will be spent in the future.

Expected Asset Performance

As the buildings continue to ago, the required upkeep is expected to increase to maintain levels of service. The County has an annual allocation for capital projects, with an increase year of approximately 2% spending each year.

The Building Condition Assessment indicates higher costs than are available within the annual capital budget for Property Services. This shortfall may eventually lead to component failures or decreased marketability of the properties. These buildings are substantial capital assets for the County, and the continued upkeep is vital to maintaining, or exceeding the life expectancy of the buildings.

Energy Savings

As energy costs increase, the need to reduce utility consumption is recognized. The *Green Energy Act, O/Reg 397/11* requires all municipalities to have in place energy conservation and demand management plans. The County is compliant with this request. Property Services recognizes the need for continuous energy upgrades, and targets capital and operating projects annually that will provide energy savings.

HOUSING SERVICES INFRASTRUCTURE

Housing Services Infrastructure

What does the County own?

The County of Huron has: 16 Apartments buildings and 84 Family units. These consist of detached dwellings, row townhouses and semi-detached townhouses. The assets are located within the Housing Services network. All asset field assessments are carried out in the Housing and Property Services division. The results of the detailed inventory assessment of the targeted structures are summarized below.

Table: Housing Services building types

Building Type	**Quantity**
Apartments	15
Residential Family Units	84
Countyview	1
TOTAL	**100**

The residential family units are further broken down into components.

Table: Family Unit types

Family Units	**Quantity**
Single	36
Duplex	38
Row	10

Family Units	Quantity
Total	84

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $56.9 million.

Table: Housing Services Replacement Value

Building Type	Replacement Value	% of Total
Apartments	$35,191,836	62%
Residential Family Units	$15,932,375	28%
Countyview	$5,808,500	10%
TOTAL	**$56,932,711**	**100%**

What condition is it in?

Condition assessment rating was carried out on the Housing Services asset network, in consultation with Social and Property Services department, to identify the level of service considered acceptable by staff.

Staff attempted to develop a Facility Condition Rating that would make sense to use for the County's Housing units. The rating was developed based on current capital needs relative to the replacement value of the building. Please refer to the following table.

Table: Condition Rating of Housing Structures

Condition Rating	Value	# of Structures
Good	$26,859,389	55
Fair	$26,988,944	43
Poor	$3,084,378	2
TOTAL	**$56,932,711**	**100**

Conditions ratings further refined:

Table: Condition Rating of housing structures by type

Condition	Apartment	Duplex	Row	Single	Total
Good	7	20	10	18	55
Fair	7	18		18	43
Poor	2				2
Total	16	38	10	36	100

More work with respect to refining the condition rating will continue as we move forward into 2017.

What do we need to do?

Additional work is required to assess the long term needs on an individual housing structure basis, and this work will continue into 2017. Looking at Housing Services as a whole, the capital needs are relatively consistent on an annual basis and are limited by the availability of staff resources to manage the projects.

Table: Housing Services asset needs

Asset Needs	Years 1-5	Years 6-10	Total
Housing Services	$3,965,479	$4,378,209	$8,343,687
Annual Average		$834,369	

Priority projects for 2017 and beyond are:

85 West Street – Elevator upgrade

Brussels and Zurich – Building Automation system

Various Buildings – attic improvements

James St – standby generator

A fully accessbible ground floor unit – either 85 West or Exeter

When do we need to do it?

One criterion critical to rating the Housing Services assets for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced.

Table: Asset useful life in years

Asset Type	Useful Life
Building	60
Building Electrical	20
Building Equipment	5
Building Exterior	20
Building Interior	20
Building Mechanical	20
Building Site	22

Asset Type	Useful Life
Apartments	50
Residential Family Units	30

How much money do we need?

This scenario is used to analyze and determine how much money is required on a yearly basis to replace all assets as they become in need of replacement. The following graph illustrates the results of our analysis for the Housing Services department.

Table: Housing Services asset needs

Asset Needs	Years 1-5	Years 6-10	Total
Housing Services	$3,965,479	$4,378,209	$8,343,687
Annual Average		$834,369	

Repairs and maintenance costs for Housing Services over the last 2 years are as follows:

2014 - $274,300

2015 - $298,800

How do we reach sustainability?

The analysis revealed that the average yearly revenue required is $834,400 to ensure that the level of service is maintained at today's level, over the next 10 years. The current funding that is being raised through the County levy for Housing Services is $640,000.

It can be assumed that at some point, despite the ongoing rehabilitation of our social housing stock, that the units will have to be torn down and reconstructed. Many units see greater damage and wear than what would normally be expected from a residential deterioration curve. With approximately $56.7 million in housing units, our current reserve balances fall far short of what will be required in the future. At end of 2015, the reserve balance for Housing is $618,000.

Table: Housing Services Sustainability

Housing Services - Sustainability	Dollars
Current funding	$640,000
Required funding - 10 year average	$834,400
Annual shortfall	$194,400

This 10 year average is based on a phased in capital plan with annual increases in-line with inflation. For 2017, required work is estimated to be $762,000, therefore, an increase in the levy of $122,000 is required. The small reserve balance could be leveraged to assist in mitigating the impact via a multi-year phase in.

The following table highlights the comparison of current replacement value of the fleet equipment with the historical cost of the original purchase value and the remaining net book value set up in the County's financial statements. It is important to note that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Table: Housing Services Current Value vs Historical Cost

Building Type	Current Value	Historical Cost	Net Book Value
Apartments	$35,191,836	$11,543,982	$8,302,244
Residential Family Units	$15,932,375	$5,691,975	$2,780,677
Countyview	$5,808,500	$5,014,010	$4,637,959
TOTAL	**$56,932,711**	**$22,249,967**	**$15,720,880**

Desired Levels of Service

Key Indicator: *Response time to requests for work*

Issue

Calls for work are assessed regarding/based on level of urgency. The clients who request work include social housing tenants.

All tenants should receive confirmation of receipt of work order request within 24 hours, and be provided with an anticipated response time.

Potential Impact

Failure to assess and respond to problems may lead to increased damages if the maintenance concern is not identified within a timely manner. Also, a lack of a timely response to tenants may lead to decreased tenant satisfaction.

Current Controls

The tenants call the office and speak directly with the Maintenance Coordinator. The Maintenance Coordinator creates a work order in the property management software and advises the Maintenance Technician of the work to be completed via a phone call or faxes the work order to the site. When the work is completed, the Maintenance Technician indicates the completion information on the work order and faxes back to the office.

Action Plan

The Maintenance Coordinator is to continually monitor the status of all work orders that are incomplete. The continuous monitoring of all incomplete work orders will help to ensure that work does not remain unfinished or “fall through the cracks”.

Key Indicator: *Funding*

Issue

A variety of housing programs are currently running and funded through different mechanisms. The Huron County Housing Corporation and the five non-profits and one Housing Services cooperative are partially funded through provincial and federal dollars, however, a significant portion is provided by the County. The range of programs within the Investment in Affordable Housing program are cost shared between provincial and federal funding, with administration funding provided.

Potential Impact

A decrease in provincial or federal funding for the Housing Corporation would require an increased investment from the County to continue to meet basic levels of service and maintain service levels.

Current Controls

All work, both operational and capital, is monitored for efficiencies and cost controls.

The programs funded through outside sources have reporting mechanisms in place to provide the Ministry of Housing with program disbursements.

The budget is monitored by the internal mechanisms of the County’s Treasury Department and the Housing and Property Services Division.

Action Plan

The 2016 budget reflects the operational and capital requirements to adequately maintain services and complete the more urgent capital upgrades. The capital work is selected based on recommendations from the building condition assessments along with the practical knowledge of the staff involved within capital works.

We continue to maximize additional program funding dollars to offer as many services as possible.

Key Indicator: *Depreciation*

Issue

As the buildings begin to age, the required upkeep is expected to increase to maintain levels of service.

Potential Impact

The expected life spans of the family units are now at approximately 30 years. Many of these single family homes were constructed in the late 1940s and early 1950s, and of basic construction. Over the years, these modest homes have had substantial wear and tear.

The apartment buildings have a predicted life span of approximately 50 years; however, they are beginning to show signs of age and future upkeep is essential.

It is important to note that under the *Housing Services Act, 2011,* Housing levels must remain identical, which means if a unit is removed from the Housing Services stock for any reason, it must be replaced. For example, it is not permissible to sell off a single family home and not replace it with another family unit.

Current Controls

By remaining diligent in completing the required repairs, the building respective life spans should be met.

Action Plan

The concept of building replacement may be a consideration in the future if the required repairs increase substantially for any building.

Social Housing, as a sector, has begun to identify regeneration as an identified solution; however, funding allocations are based on our size and the annual funding provided under the Affordable Housing Program – Rental Build Component is limited, and would necessitate “trading” funding for multiple years with other Service Manager areas to enable sufficient funding at one time for a new rental build.

Key Indicator: *Capital*

Issue

The Building Condition Assessments completed in 2011 indicate a much more substantial requirement for capital repairs than what the County has historically provided for the capital works budget.

Potential Impact

Many projects, in future years, will have to be deferred as the average capital allocation is substantially lower than the cost of the recommended repairs within the Building Condition Assessments.

Current Controls

A thorough analysis of the capital requirements is undertaken by Housing and Property Services to determine which capital projects are able to be funded each year.

Action Plan

It is anticipated that the process of completing the Asset Management Plan will result in a system within the County that recognizes the need for substantial capital repairs and works toward providing the funding allocations to enable the work to be completed.

Key Indicator: *Preventative Maintenance*

Issue

The role of preventative maintenance plays an important part in the longevity of a building and the cost efficiencies of a building.

Potential Impact

By monitoring building systems, providing a consistent, regular preventative maintenance program will significantly aid in reducing building costs. The cost savings will be realized through fewer system failures over time and the decreased need to replace components and systems.

Current Controls

The role of Preventative Maintenance Technician develops and implements a preventative maintenance program to ensure the components within the building envelope operate as efficiently as possible, leading to fewer repairs and replacements.

Key Indicator: *Energy Savings*

Issue

As energy costs increase, the need to reduce usage is recognized

Potential Impact

Utility costs have increased substantially and are predicted to continue in this manner.

Current Controls

Tenants are encouraged to reduce energy costs by keeping windows closed when heat or a/c is on, turning off lights, etc.

Low flush toilets and aerators have been installed, and some energy efficient lighting.

Action Plan

The legislated Green Energy Act, O/Reg 397/11 requires all municipalities to have in place energy conservation and demand management plans and Huron County is in compliance with this legislation.

Management Strategies – Housing Services

Legislative Requirements

The apartment buildings, detached houses and duplex units managed under the Huron County Housing Corporation are directly influenced by many legislative and regulatory requirements which prevent levels of service from declining below a certain standard, and ensures the total number of Social Housing units does not decrease.

Strategic and Corporate Goals

Infrastructure levels of service are influenced and guided by the County's strategic planning initiative. It is anticipated that the County's strategic plan will provide direction regarding the allocation of resources and the prioritization of how municipal tax dollars will be spent in the future.

Expected Asset Performance

As the buildings begin to age, the required upkeep is expected to increase to maintain levels of service. The detached houses, duplex units and row housing have an expected life span now at approximately 30 years. Many of these houses were constructed in the late 1940s and early 1950s, and are of basic construction. Although upgrades have been completed over the years, such as new windows, bathrooms, kitchens, toilets and insulation, these modest properties have had substantial wear and tear. Any strategic planning involving the County's buildings should include social housing properties. These are substantial asset for the County, and the regeneration of these properties is vital to maintaining, or exceeding life expectancy of the buildings, and retaining legislated service level numbers.

Housing and Homelessness Plan

The Ministry of Housing, under the *Housing Services Act, 2011*, required all service managers to develop a long-term 10 year Housing and Homelessness Plan. The Plan assists in establishing priorities for housing and homelessness services based on targeted consultations and research. Based on a projected need forecast, the Plan makes several recommendations that address homelessness and affordable housing options, and has a strong emphasis on a mixed approach to housing needs. Budget impact will depend greatly on the direction and recommendations of the Housing and Homelessness's Steering Committee and the ongoing and potentially shifting needs of the County. The impact of these recommendations will be brought to County Council as required.

Availability of Finances

Availability of finances will be a key component in maintaining desired levels of service. Housing Services receives provincial and federal grants each year. A review of the funding levels for the five year time frame 2013 – 2017, indicates that the federal/provincial grants provided to the County will decrease by 5.3%. This will require an increased investment from the County to meet basic levels of service.

Energy Savings

As energy costs increase, the need to reduce utility consumption is recognized. The *Green Energy Act, O/Reg 397/11* requires all municipalities to have in place energy conservation and demand management plans. The County is compliant with this request. Housing Services recognizes the need for continuous energy upgrades, and targets capital and operating projects annually that will provide energy savings.

HOMES FOR THE AGED INFRASTRUCTURE

Homes for the Aged Infrastructure

What does the County own?

The County of Huron has 2 Homes for the Aged:

- Huronview Home for the Aged with 120 beds and 20 apartments

- Huronlea Home for the Aged with 64 beds and 20 apartments

All asset field assessments are carried out in the Homes for the Aged staff. The results of the detailed inventory assessment of the targeted structures are summarized below.

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $28.1 million.

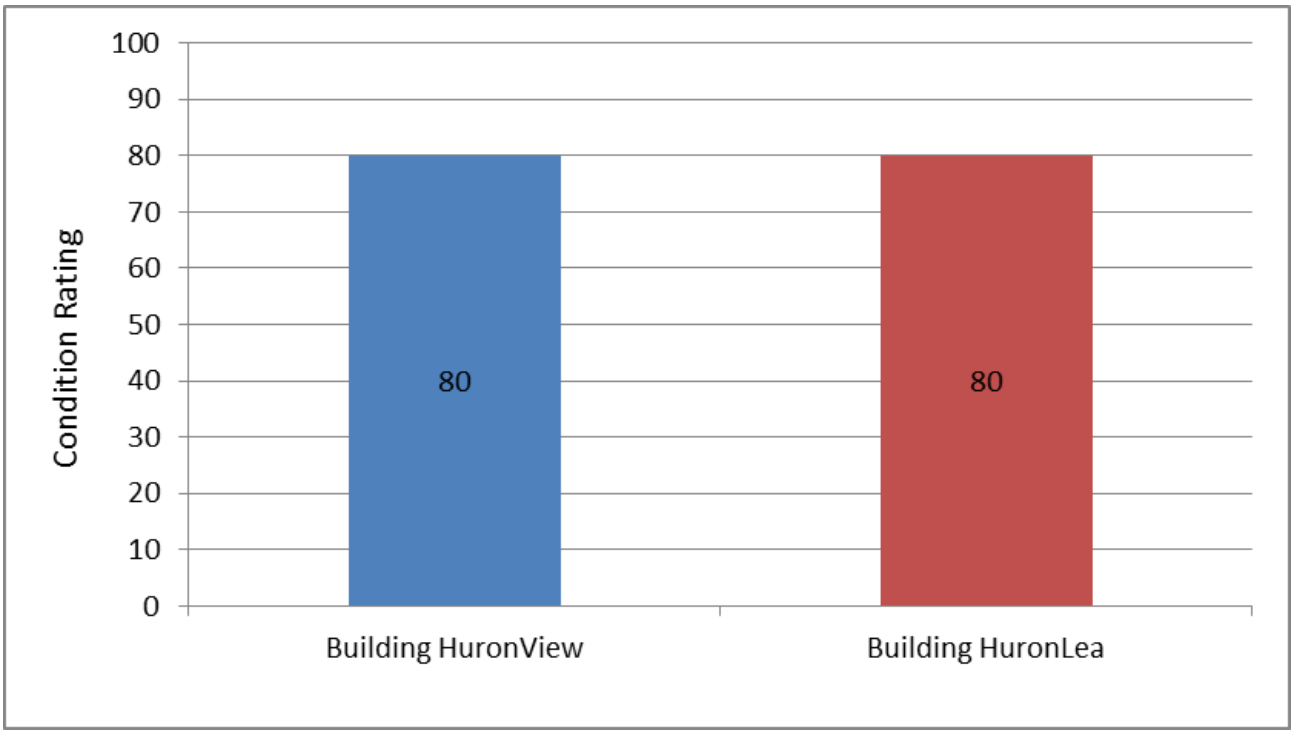
Table: Homes for the Aged Replacement Value

Asset Type	**Square Foot**	**2016 Replacement Cost**	**% of Total**
Huronview and Heartland	81,000	$16,431,000	58%
Huronlea and Highland	58,000	$11,700,900	42%
Total		$28,131,900	100%

What condition is it in?

Condition assessment rating was carried out on the Homes for the Aged asset network, in consultation with Homes for the Aged Department, to identify the level of service considered acceptable by staff. The following results were obtained: Huronview and Huronlea are in good condition. The results of the detailed condition assessment of the targeted Assets are summarized below in the graph.

Note: The condition rating below is from the 2013 Asset Management Plan. This is to be revisited in 2017 as there was insufficient time in 2016 to properly review and update the condition rating.



The condition rating relates to the age and maintenance of the overall buildings and is a rating out of 100. When the rating is between 30 and 50 the item needs to be replaced. The rating system is as follows:

Excellent:	91 – 100 - No evident defects
Good:	70 – 90 - Slight decline
Fair:	51 – 69 - Decline asset apparent
Poor:	30 – 50 - Severe decline or failure

What do we need to do?

Table: Homes for the Aged Asset Needs

Assets	Needs 1-5 yrs	Needs 6-10 yrs
Huronview and Heartland	$1,833,850	$969,250
Huronlea and Highland	$1,370,600	$938,000
Total	$3,204,450	$1,907,250

Priority projects for the Homes for the Aged:

- building mechanical and life safety system upgrades (HVAC and sprinkler system)
- parking lot, walking path and lighting upgrades for health and safety of staff and residents
- flooring replacement for health and safety of staff and residents
- sewage well station upgrades: While a critical project for the Huronview complex, it is not being forwarded to the 2017 budget deliberations due to the cost of the project, available budget dollars as the other key priorities related to the direct health and safety of the residents are taking precedence.

When do we need to do it?

One criterion critical to rating the Homes for the Aged assets for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced.

Table: Homes for the Aged Useful life

Asset Type - Homes for the Aged	Useful Life
Building	60
Electrical	20
Equipment	5

Asset Type - Homes for the Aged	Useful Life
Exterior	20
Interior	20
Mechanical	20
Site	22

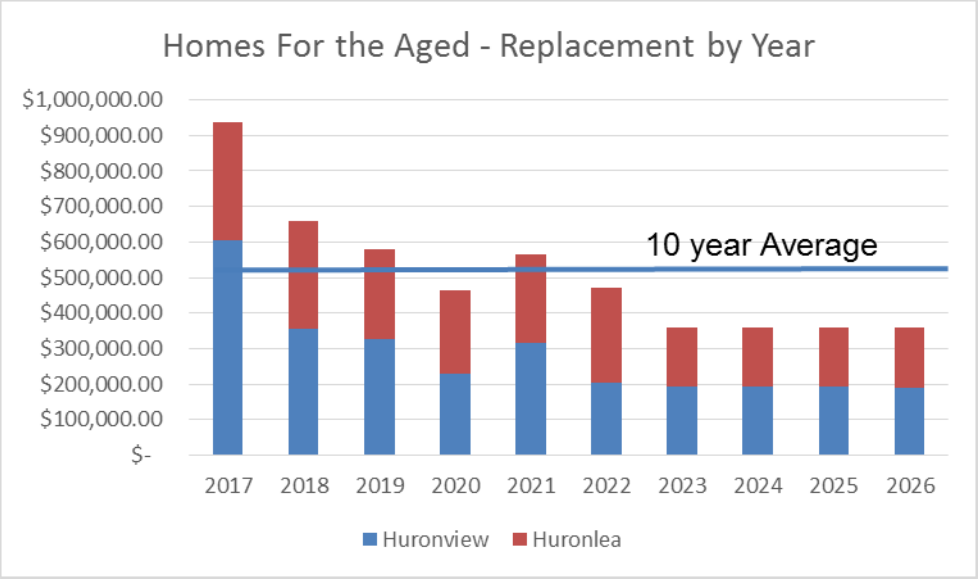
Building and equipment repairs for the Homes over the past 2 years are as follows:

2014: $164,900

2015: $195,800

How much money do we need?

This scenario is used to analyze and determine how much money is required on a yearly basis to replace all assets as they become in need of replacement. The following graph illustrates the results of our analysis for the Homes for the Aged Department.



How do we reach sustainability?

The analysis revealed that the average yearly revenue required is $511,170 to ensure that the level of service is maintained at today's level, over the next 10 years. The above graph also

indicates that at that rate of funding the network needs are expected to increase in the short term and then level out for the remainder of the 10 year period.

Based on current levels of depreciation being raised through the levy of $741,000, there should be sufficient funds to manage the current replacement cycle of minor building components, providing that projects are deferred into future years to manage the peak. It is important to note, that the current replacement amounts do not account for the future replacement of each Home.

To maintain the existing service levels and rebuild the Homes based on a 60 year life under a pay as you go scenario, the County would be required to set aside $713,000 per year (2017-2052) to ensure sufficient funds are available. This amount would be different under a debt financing scenario. The current reserve balance for the Homes is at $2.44 million.

The following table highlights the comparison of current replacement value of the Homes for the Aged with the historical cost of the original purchase value and the remaining net book value set up in the County's financial statements.

Table: Homes Replacement Current Value vs Historical Cost

Asset Type	**Current 2016**	**Historical Cost**	**Net Book Value**
Huronview and Heartland	$16,431,000	$13,404,684	$8,188,415
Huronlea and Highland	$11,700,900	$7,632,828	$4,675,131
Total	**$28,131,900**	**$21,037,512**	**$12,863,546**

It is important to note that the County cannot rely solely on depreciation alone to fund its future capital replacement. Inflationary pressures continue to drive future replacement costs higher that what is being reflected in our statements. The net book value is an accounting figure for what value remains for an asset as it depreciates over its estimated useful life.

Desired Levels of Service

Homes / Management Strategies

The Homes for the Aged have addressed infrastructure renewal strategies in their 10 year capital plan. The County of Huron's strategic planning initiative could impact the Homes direction in this regard. Should the Homes be required to continue to operate in their original facilities, according to the County's strategic planning initiative, necessary capital and operational measures will continue as outlined in the desired level of service and 10 year capital / operational plan the Homes have developed.

As the MOHLTC regulations change so does the demands on operational and capital improvements to the Homes. As these can be unforeseen budgetary pressures it is vital all departments at the Homes maximize purchasing efficiencies. As part of the budget planning process for the Homes it is recognized there will be upward pressure on various budget lines, at present and in the future, with consumables such as utility costs, resident care products and technology advancements being volatile commodities on the open market.

The Homes continue to address this with partnerships such as Complete Purchasing Services buying group which helps to ensure competitive pricing for a wide variety of products used at the Homes. Other costs saving initiatives are being examined on a regular basis to maximize efficiencies and enhance our purchasing powers, such as the competitive Request for Proposal process in accordance with the County of Huron procurement policy for capital projects.

Huron County Homes for the Aged have been maintained in excellent condition and are well situated to continue to meet the desired levels of service for the foreseeable future with the continued commitment the County of Huron has provided.

The County of Huron is currently responsible for the operation and maintenance of 2 Homes for the Aged which also contains 40 seniors' apartments:

Huronview Home for the Aged - 77722A London Rd. Clinton Ont. - 120 Long Term Care beds and 20 seniors' apartments

Huronlea Home for the Aged - 820 Turnberry St. S. Brussels, Ont. – 64 Long Term Care beds and 20 seniors apartments

Both Homes, built in 1992, have been well maintained and are now at an age when ongoing capital expenditures will be necessary to continue their excellent level of service to the community.

The Homes receive funding from the Ministry of Health and Long - Term Care (MOHLTC) and are governed by the Long- Term Care Homes Act – 2007 which legislates the operational standards the Homes must maintain. The County contributes the additional funds necessary to operate the Homes at a standard the community wishes to maintain.

The Homes have developed a 10 year Operational Plan to forecast approximated operational and capital requirements for the future, with adjustments for inflation.

The following capital assets are tracked to maintain the desired level of service:

HURONVIEW:

Parking Lot Pavement:

The front, apartment, staff parking lots and rear fire access lane was repaved in 2001 and has been well maintained. It will require re-paving in 2017 which is indicated as a capital forecast in the 10 year plan. The staff parking lot was re-paved in September of 2016.

Shingled Roof:

The roof underwent a phased replacement from 2009 to 2011 and is in excellent condition. Troughs and fascia are also in good condition. Its estimated replacement date is beyond the 10 year capital replacement plan.

Fire sprinkler system:

The fire sprinkler system, though well maintained, requires considerable updates to the piping throughout the Home. This has been addressed in the 10 year capital replacement plan with major sections of the piping recommended for replacement over 2014 to 2017 to meet the Homes desired level of service.

Main Chiller:

The main chiller unit was replaced in 2012 and is fully operational with no issues to report. The approximate replacement date for this chiller is 25 to 28 years and is beyond the 10 year capital replacement plan.

Heating Boilers:

Huronview has 3 original equipment hot water heating boilers which have been well maintained and one has undergone an emergency re-fitting to be fully functional for the 2013 – 2014 winter seasons. A phased replacement of the other two boilers has been addressed in the 10 year capital plan for 2017 and 2026.

Domestic Hot Water Boilers:

The original equipment High Temp and Low Temp domestic hot water boilers were replace in 2012 with high efficiency units and are fully operational. Replacement will be addressed in mechanical upgrades but is beyond the 10 year capital replacement plan.

Diesel Generator:

The diesel generator is original equipment, has been well maintained and is fully operational. Replacement for this unit is beyond the 10 year capital replacement plan.

Upgrades to the generator were completed in September 2016.

Fire Alarm System:

The fire alarm system including smoke and heat sensor equipment was updated over 2010 to 2012 and has been well maintained. The 3 panel replacement dates are beyond the 10 year capital replacement plan.

Building Automation System (BAS):

This system is a vital component to the heating and ventilation systems at the Home and allows the Homes maintenance staff to monitor, make adjustments and troubleshoot heating and cooling issues. It has been well maintained but is original equipment, is antiquated, and requires updating in order to maintain the desired level of service. This has been addressed in the 10 year capital replacement plan for 2014 to replace the systems computer modules and update the BAS software for the Home

Heartland Apartment Chiller:

In 2012 we installed a 5 ton chiller unit to temper humidity issues in the Heartland apartment corridors. This unit is fully operational and its replacement is beyond the 10 year capital replacement plan.

Commercial Washers:

Huronview laundry department has 2- 60lb Unimac commercial washing units which were replaced 2009 to 2011,are fully operational, are well maintained and their replacement is beyond the 10 year capital replacement plan.

Commercial Dryers:

Huronview laundry department has 3 – 75lb- commercial gas dryers which were replaced 2009 to 2011, are fully operational, are well maintained and their replacement is beyond the 10 year capital replacement plan.

Resident Call Bell System:

This system was replaced 2010 – 2011, is fully operational, well maintained and will require a major upgrade by 2021 which is addressed in the 10 year capital replacement plan.

Security Locks / Resident Wander Guard System:

In compliance with MOHLTC regulated requirements the Home underwent substantive changes to its door locks and egress security systems including an Elpas Wandering Resident System. The system warns staff should a Resident be attempting unauthorized egress from the Home. A major system upgrade will be required in 2019 in order to maintain the legislated and otherwise desired level of service for the Homes Residents.

Building Humidifier System:

In 2012 the Home installed a Nortec, ultra-high efficiency, state of the art building humidifier system. As this is new and developing technology there were some engineering issues through the winter of 2011 – 2012. The engineers from Nortec have solved the issues to date and the system will undergo a thorough test through the 2012-2013 winter seasons. Its replacement is beyond the 10 year capital replacement plan.

Sewage Well Station:

This project has been identified as a key priority and is on the list of future projects subject to future availability of funding. The London Road sewage well was built in 1992 and serves several large public facilities including the Huron County Health Unit & Library Complex, Huronview Homes for the Aged, County View Seniors' Apartments, and Jacob Memorial Building, which houses the Social & Property Services Department. Upgrading the London Road sewage well will enable the continued use of these buildings - housing vital public services to the County.

HURONLEA:

Parking Lot Pavement:

The front, apartment, staff parking lots and rear fire access lane was repaved in 2001 and has been well maintained. It will require re-paving in 2017 which is indicated as a capital forecast in the 10 year plan.

Shingled Roof:

The roof underwent a phased replacement from 2010 to 2011 and is in excellent condition. Troughs and fascia are also in good condition. Its estimated replacement date is beyond the 10 year capital replacement plan.

Fire sprinkler system:

The fire sprinkler system, though well maintained, requires considerable updates to the piping throughout the Home. This has been addressed in the 10 year capital replacement plan with major sections of the piping recommended for replacement over 2014 to 2018 to meet the Homes desired level of service.

Main Chiller:

The main chiller unit is original equipment and retrofitted with a new stage 2 compressors in 2012 and is fully operational with no issues to report. The approximate replacement date will be beyond the 10 year capital replacement plan.

Heating Boilers:

Huronlea has 2 original hot water heating boilers which have been well maintained and replacement of one unit has been addressed in the 10 year capital plan for 2020.

Domestic Hot Water Boilers:

The original equipment High Temp and Low Temp domestic hot water boilers were replaced in 2011 with high efficiency units and are fully operational. Replacement will be addressed in mechanical upgrades but is beyond the 10 year capital replacement plan.

Diesel Generator:

The diesel generator is original equipment, has been well maintained and is fully operational. Replacement for this unit is scheduled for 2022. Upgrades to the generator were completed in December 2015.

Fire Alarm System:

The fire alarm system including smoke and heat sensor equipment was updated over 2010 to 2012 and has been well maintained. The 2 panel replacement dates are beyond the 10 year capital replacement plan.

Building Automation System (BAS):

This system is a vital component to the heating and ventilation systems at the Home and allows the Homes maintenance staff to monitor, make adjustments and troubleshoot heating and cooling issues. It has been well maintained but is original equipment, is antiquated, and requires updating in order to maintain the desired level of service. This has been addressed in the 10 year capital replacement plan for 2014 to replace the systems computer modules and update the BAS software for the Home.

Highland Apartment Chiller:

In 2012 we installed a 5 ton chiller unit to temper humidity issues in the Highland apartment corridors. This unit is fully operational and its replacement is beyond the 10 year capital replacement plan.

Resident Call Bell System:

This system was replaced 2010 – 2011, is fully operational, well maintained and will require a major upgrade by 2021 which is addressed in the 10 year capital replacement plan.

Security Locks / Resident Wander Guard System:

In compliance with MOHLTC regulated requirements the Home underwent substantive changes to its door locks and egress security systems including an Elpas Wandering Resident System. The system warns staff should a Resident be attempting unauthorized egress from the Home. A major system upgrade will be required in 2019 in order to maintain the legislated and otherwise desired level of service for the Homes Residents.

Building Humidifier System:

The system is original equipment and will require complete replacement in 2015. Its replacement is scheduled in the 10 year capital replacement plan.

Both Huronview and Huronlea Homes have historically had excellent support from the County of Huron which has enabled the Home to be maintained at a high level of operational efficiency and a continued commitment by the County will ensure this desired level of service will continue for years to come.

EMERGENCY SERVICES

Emergency Services

What does the County own?

The County of Huron in 2016 has: 11 Ambulances, 3 Rapid Response units, 2 Command Vehicles, 1 Emergency Support Trailer, 15 Defibrillators, 18 Stretchers, 12 Stairchairs and 13 Autopulse. The assets are located within the Emergency Services network. All asset field assessments are carried out in the Emergency Services department. The results of the detailed inventory assessment of the targeted structures are summarized below.

Table: Emergency Services Fleet inventory

Asset Type	**Asset Component**	**Quantity**
Ambulances	Vehicle	11
Rapid Response Units	Vehicle	3
Command Vehicles	Vehicle	2
Defibrillators	Vehicle Equipment	15
Autopulse	Vehicle Equipment	13
Stretchers	Vehicle Equipment	18
Stairchair	Vehicle Equipment	12
EM Trailer	Vehicle Equipment	1

Asset Type	Asset Component	Quantity
Total		**75**

The current estimated useful life of the EMS fleet and equipment is based on a 6 year replacement cycle.

What is it worth?

Before managing an asset, it is important to know the value of the asset to determine if the maintenance dollars spent are justified to protect the asset. Based on the asset valuation process carried out as part of this assignment, the AMP Team, in consultation with staff calculated an approximation of the total estimated value of the assets of $2.96 million.

Table: EMS Fleet Replacement Value

Asset Type	Quantity	2016 Replacement Cost	% of Total
Ambulances	11	$1,650,000	56%
Rapid Response Units	3	$255,000	9%
Command Vehicles	2	$70,000	2%
Defibrillators	15	$525,000	18%
Auto pulse	13	$208,000	7%
Stretchers	18	$198,000	7%
Stair chair	12	$42,000	1%
EM Trailer	1	$15,000	1%
TOTAL		**$2,963,000**	**100%**

What condition is it in?

Condition assessment rating was carried out on the Emergency Services asset network, in consultation with Emergency Services Department, to identify the level of service considered acceptable by staff. The following results were obtained: the autopulse units are in poor condition, ambulances are in fair condition, defibrillators are in fair condition, rapid response units are in poor condition, stretchers are in poor condition, stairchair are in poor condition, trailer is in good condition and command vehicles are in good condition.

The results of the detailed condition assessment of the targeted Assets are summarized below in the table.

Table: EMS Fleet Condition Rating

Asset Type	**Average Condition Rating**	**Rating Description**
Ambulances	67	Fair
Rapid Response Units	23	Poor
Command Vehicles	80	Good
Defibrillators	64	Fair
Auto pulse	46	Poor
Stretchers	49	Poor
Stair chair	47	Poor
EM Trailer	70	Good

The following table highlights the number of the EMS Fleet vehicles and equipment within each condition rating category.

Table: Summary of EMS Fleet by Condition rating

Condition Rating	# of Fleet Units
Poor	44
Fair	1
Good	11
Excellent	19
Total	**75**

The condition rating relates to the age and usage of the overall vehicles or devices group and is a rating out of 100. When the rating is between 30 and 50 the item needs to be replaced. The rating system is as follows:

Excellent: 91 – 100 - No evident defects

Good: 70 – 90 - Slight decline

Fair: 51 – 69 - Decline asset apparent

Poor: 30 – 50 - Severe decline or failure

What do we need to do?

Table: EMS Asset Needs

Assets	Needs 1-5 yrs	Needs 6-10 yrs
Ambulances	$1,350,000	$1,350,000
Rapid Response Units	$240,000	$240,000
Command Vehicles	$70,000	$70,000

Assets	Needs 1-5 yrs	Needs 6-10 yrs
Defibrillators	$455,000	$420,000
Autopulse	$176,000	$176,000
Stretchers	$107,000	$137,000
Stairchair	$31,500	$35,000
EM Trailer		$15,000
Total	**$2,429,500**	**$2,443,000**

EMS Fleet and Equipment repairs (including fuel) over the past 2 years are as follows:

2014: $333,592

2015: $292,348

When do we need to do it?

One criterion critical to rating the Emergency Services assets for the purposes of developing the AMP is the service life of the structure and its elements. As assets age, infrastructure managers must use experience and judgment to decide when maintenance is no longer cost effective thereby requiring that the structure be replaced.

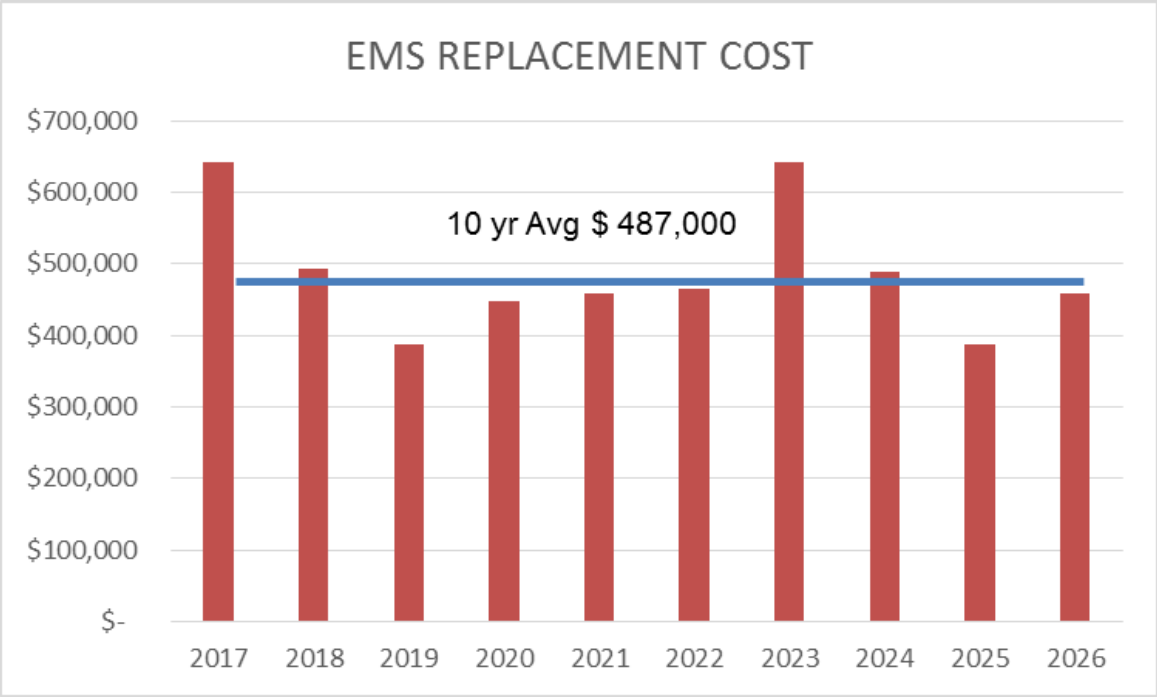
Table: EMS asset useful life

Asset Type	Useful Life
Ambulances	6
Rapid Response Units	6
Command Vehicles	6
Defibrillators	6
Autopulse	6
Stretchers	6

Asset Type	Useful Life
Stairchair	6

How much money do we need?

This scenario is used to analyze and determine how much money is required on a yearly basis to replace all assets as they become in need of replacement. The following graph illustrates the results of our analysis for the Emergency Services Department.



How do we reach sustainability?

The analysis revealed that the average yearly revenue required is $487,000 to ensure that the level of service is maintained at today's level, over the next 10 years. Due to the short term nature of the EMS Fleet, the above graph also indicates that at that rate of funding the network needs are expected to be somewhat constant over the next ten years.

Based on the 2016 deprecation of $417,000 being raised in the levy, there will be additional levy requirements required through the lifecycle of the EMS Fleet, although relatively small in nature relative to some of the County's other infrastructure. These minor shortfalls can easily be made up with levy in a pay as you go approach.

The tables below shows the values at 2013 net book value, which is the historical cost less depreciation. The table also shows the 2013 current value cost to replace. The table illustrates the variance between net book value and current 2013 cost. This explains the reason for Emergency Services requiring more funding than just raising deprecation to replace assets at current value.

Table: EMS Fleet Replacement Current Value vs Historical Cost

Asset Type	**Current 2016**	**Historical Cost**	**Net Book Value**
Ambulances	$1,650,000	$1,670,205	$872,813
Rapid Response Units	$255,000	$382,986	$26,107
Command Vehicles	$70,000	$59,883	$21,380
Defibrillators	$525,000	$671,876	$250,355
Auto pulse	$208,000	$212,248	$41,359
Stretchers	$198,000	$135,684	$1,253
Stair chair	$42,000	$26,150	$5,882
EM Trailer	$15,000	$15,000	$0
TOTAL	**$2,963,000**	**$3,174,032**	**$1,219,149**

Desired Levels of Service

The ambulances in our department cost approximately $150,000.00 each and we have increased the life cycle from 60 to 72 months. These units are used for the transport of patients who are sick and injured. At this time we do not believe that there needs to be more than eight transport ambulances with three spares to meet the needs of the fleet. Should the call volume increase or the response time needs decrease, then there will need to be an adjustment to the fleet compliments.

There are three rapid response units in our fleet which includes one spare. These vehicles are used for first response and help ensure our response time meets County Council decision to ensure a 40% commitment to meeting the 8 minute response for all CTAS 1 returns. As well, there is a Council decision to ensure a 65% commitment to meeting the 17 minute response

for all CTAS 2 and a 50% commitment to meeting the 17 minute response for all CTAS 3 responses. There is also a Council decision to ensure a 65% commitment to meeting the 30 minute response for all CTAS 4 calls and finally, there is a Council decision to ensure a 50% commitment to meeting the 30 minute response for all CTAS 5 calls. This obligation indicates that the current vehicle commitment can meet our obligation as determined by County Council.

The Command vehicles are also able to be used as first response vehicles as they carry sufficient equipment to render care until an RRU or ambulance arrives on scene. These vehicles are also used to decrease costs for travel by departmental administrative staff in their normal duties. These units are also the command units at an incident, thus freeing up a transport unit should it be required.

There are 15 defibrillators for use in the ambulances and RRUs. These units are used to provide a controlled shock to the heart muscle in order to revert the heart to functioning rhythm. These devices are part of the chain of survival and we have had numerous saves in Huron County as a result of the efforts to meet the pre hospital cardiac needs of our citizens.

We have 13 autopulses in our system for providing cardiac compressions during a cardiac arrest. The ability of the unit to do compressions ensures that the patient is receiving the appropriate compressions over the length of the arrest and ensures that the paramedic is safe during the transport of cardiac arrest patients. Keeping health and safety in mind, this ensures paramedics are able to wear their seatbelts in the back of the vehicle rather than standing up trying to do CPR.

Key Performance Indicators

Key Indicator:

Call Volume

Issue:

Increases to the various categories will cause change requirements to the deployment plan and positioning of resources.

Total call Volume (Code 1 – 4 + 8)

2008 – 7,203

2009 – 8,134

2010 – 9,433

2011 – 11,613

2012 – 12,378

2013 – 9,955

2014 – 13,407

2015 – 11,279

Potential Impact:

There is a need to ensure that we have ample vehicles available to meet the needs as assigned by the Central Ambulance Communications Centre (CACC). If the vehicles are not in the area of increasing call volume then either the vehicles positioning needs to be reassigned or there needs to be an increase in the vehicles available.

Current Controls:

The assignment of calls is controlled by the Dispatch. (CACC). CACC's operational policies are controlled by the EHSB (Province) with some input from operators; however, final decision rests with the CACC. The local deployment strategy assists both parties in meeting these objectives.

Action plan:

The call volume is continually monitored through both the Ambulance Dispatching Report System (ADRS) and Huron County's electronic Patient Call Report (EPCR) to ensure that the call volume increases are assessed and rationalized for spikes in call volume.

Key Indicator:

Response Times

Issue:

The standard for response times in Huron County is 8 minutes for CTAS 1; 17 minutes for CTAS 2; 17 minutes for CTAS 3; 30 minutes for CTAS 4 and 30 minutes for a CTAS 5. This changed in 2011 from the previous 90th percentile for Huron County of 17 minutes 22 seconds for all responses.

Potential Impact:

Increased high priority calls from hospitals (Code 4 response) results in that unit being committed and unable to respond to other calls while en-route. This creates a need for increased vehicles as the originally assigned unit on a code 4 cannot be diverted even if they drive by a second code 4.

Current Controls:

The assignment of calls is controlled by the Dispatch. (CACC). The local service monitors the response time and takes appropriate steps to ensure that the response times meet the agreement and adjusts their actions based on the results.

Action plan:

Should call volume increase or we are unable to meet the agreed upon response times, an adjustment to both the location of vehicles and/or the number of vehicles available is

determined and appropriate approvals are obtained to make these changes occur.

Asset Failure:

What is the likelihood of a major asset failure and what would be the impact to the service and the County? As an example, what happens when we delay purchasing and what is recommended to mitigate the deficiency? (i.e. – vehicle out of service due to usability resulting in increased response times, with an inferior patient outcome due to the delay in patient contact and care being rendered.

Action Plan:

To ensure appropriate redundancy is built in to reduce the likelihood of a major asset being totally unserviceable, it is important to have ample backup vehicles to replace the said unit and the ability to have the asset serviced in a timely fashion. As an example, if an engine was damaged and needed to be replaced, we would need our maintenance facility to be able to have the engine repaired and the vehicle back on the road in short order. This requires preferred servicing as well as having ample spare units available to replace the frontline vehicle. Further, an agreement with peripheral services to ensure that if necessary a spare can be obtained on short notice.

The impact on the service would be an increased response time and/or calls not serviced in the time limits established within the standards and approved by Council. The impact on the County would be that there citizens are not receiving appropriate care as provided in the provincially published timelines and could result in litigation and increased concerns being raised.

FINANCIAL ANALYSIS and SUSTAINABILITY

The County has a significant amount of infrastructure under its control, with current estimates of replacement value at approximately $1.17 billion. Our current tax base (weighted assessment) is $7.57 billion. This represents a significant burden on our tax base to manage and maintain such a significant level of infrastructure – 15 cents on the dollar of weighted assessment. Looking at it per household, Huron County supports approx. $42,500 in infrastructure per household.

The following table provides the replacement value details by department and asset type.

Table: County of Huron Asset Replacement Value

Department	Asset Type	Total Qty	Current Replacement Cost	% of Total
Public Works	Road Surface	775 km	$168,682,831	14.42%
Public Works	Road Base	775 km	$451,949,157	38.63%
Public Works	Bridges	90	$180,244,215	15.41%
Public Works	Culverts >3 m	115	$51,671,809	4.42%
Public Works	Culverts <3 meter	248	$131,913,321	11.28%
Public Works	Driveway culverts	8,934	$27,001,440	2.31%
Public Works	Auburn Patrol Yard	1	$5,615,120	0.48%
Public Works	Wingham Patrol Yard	1	$2,109,200	0.18%
Public Works	Wroxeter Patrol Yard	1	$3,293,000	0.28%
Public Works	Zurich Patrol Yard	1	$2,420,000	0.21%
Public Works	Fleet 5 year	43	$1,237,500	0.11%
Public Works	Fleet 10 year	25	$4,002,932	0.34%
Public Works	Fleet 15 year	31	$3,943,900	0.34%
Property Services	Historical Buildings	3	$29,302,684	2.50%

Department	Asset Type	Total Qty	Current Replacement Cost	% of Total
Property Services	Office Buildings	4	$14,941,732	1.28%
Property Services	Transformer Building	1	$50,000	0.00%
Property Services	Storage Buildings	2	$848,796	0.07%
Property Services	Ambulance Stations	4	$2,087,893	0.18%
Property Services	Pump House	1	$618,400	0.05%
Housing Services	Apartments	15	$35,191,836	3.01%
Housing Services	Residential Family Units	84	$15,932,375	1.36%
Housing Services	Countyview	1	$5,808,500	0.50%
Homes for the Aged	Huronview and Heartland	1	$16,431,000	1.40%
Homes for the Aged	Huronlea and Highland	1	$11,700,900	1.00%
EMS	Ambulances	11	$1,650,000	0.14%
EMS	Rapid Response Units	3	$255,000	0.02%
EMS	Command Vehicles	2	$70,000	0.01%
EMS	Defibrillators	15	$525,000	0.04%
EMS	Auto pulse	13	$208,000	0.02%
EMS	Stretchers	18	$198,000	0.02%

Department	Asset Type	Total Qty	Current Replacement Cost	% of Total
EMS	Stair chair	12	$42,000	0.00%
EMS	EM Trailer	1	$15,000	0.00%
TOTAL			**$1,169,961,541**	**100%**
Historical Cost			**$570,640,288**	

The most significant assets fall under the Public Works department with approximately 88% of the estimated replacement value. It is important to note that the historical cost of the assets are less ½ of the value of what it would cost to replace them today.

However, it is important to note, that not all of the existing assets would be replaced today, or at the same service level. As the County moves forward with its asset management planning, decisions will have to be made on the existing levels of service. For example, are their certain bridges that could be closed with minimal impact to traffic patterns?

As seen by the historical costs, when raising funds for infrastructure, you need more than the levy raised from deprecation to keep up with the needs of the County and to keep the level of service at the standards the County feels confident with. Current deprecation alone does not cover our future replacement needs.

The next table calculates what it would cost be year if we were to base the annual replacement on the estimated useful life of the assets.

Table: County of Huron - Asset Replacement Value per Year

Department	Asset Type	Estimated Service Life	Current Replacement Cost	Repl. Cost/Year
Public Works	Road Surface	22	$168,682,831	$7,667,401
Public Works	Road Base	75	$451,949,157	$6,025,989
Public Works	Bridges	75	$180,244,215	$2,403,256
Public Works	Culverts >3 m	75	$51,671,809	$688,957

Department	Asset Type	Estimated Service Life	Current Replacement Cost	Repl. Cost/Year
Public Works	Culverts <3 meter	75	$131,913,321	$1,758,844
Public Works	Driveway culverts	40	$27,001,440	$675,036
Public Works	Auburn Patrol Yard	60	$5,615,120	$93,585
Public Works	Wingham Patrol Yard	60	$2,109,200	$35,153
Public Works	Wroxeter Patrol Yard	60	$3,293,000	$54,883
Public Works	Zurich Patrol Yard	60	$2,420,000	$40,333
Public Works	Fleet 5 year	5	$1,237,500	$247,500
Public Works	Fleet 10 year	10	$4,002,932	$400,293
Public Works	Fleet 15 year	15	$3,943,900	$262,927
Property Services	Historical Buildings	60	$29,302,684	$488,378
Property Services	Office Buildings	40	$14,941,732	$373,543
Property Services	Transformer Building	60	$50,000	$833
Property Services	Storage Buildings	60	$848,796	$14,147
Property Services	Ambulance Stations	60	$2,087,893	$34,798
Property Services	Pump House	20	$618,400	$30,920

Department	Asset Type	Estimated Service Life	Current Replacement Cost	Repl. Cost/Year
Housing Services	Apartments	50	$35,191,836	$703,837
Housing Services	Residential Family Units	30	$15,932,375	$531,079
Housing Services	Countyview	50	$5,808,500	$116,170
Homes for the Aged	Huronview and Heartland	60	$16,431,000	$273,850
Homes for the Aged	Huronlea and Highland	60	$11,700,900	$195,015
EMS	Ambulances	6	$1,650,000	$275,000
EMS	Rapid Response Units	6	$255,000	$42,500
EMS	Command Vehicles	6	$70,000	$11,667
EMS	Defibrillators	6	$525,000	$87,500
EMS	Auto pulse	6	$208,000	$34,667
EMS	Stretchers	6	$198,000	$33,000
EMS	Stair chair	6	$42,000	$7,000
EMS	EM Trailer	6	$15,000	$2,500
TOTAL			**$1,169,961,541**	**$23,610,563**

As seem by this table, if we were to replace all assets we have today, at the same standard or level of service, the County would require to fund approximately $23.6 million per year to set aside for future replacement. As previously indicated, not all of the assets above may be replaced to their current service level.

Also, it is important to note the importance of our asphalt management program with its impact on the road base. The road base represents such a significant portion of the County's assets

(39%), that to replace it would create a significant burden to the ratepayer. Ensuring that the current paving program remains adequately funded, the work required for the base should be minimal into the future.

Moreover, knowing that the bulk of the bridge and culvert network were constructed during the 1940's and 1950's, a significant amount of work will be required through 2030's-2050's. Therefore, just looking at an annual amount based on the lifecycle cost doesn't make sense as we have not been setting aside any significant amount of funding for bridge replacement up to this point in time and to start now based on the figures above would not get us to where we need to be.

Therefore, we will see a significant peak in needs shortly outside of the next 10 year replacement cycle. This peak will have to be managed by a combination of levy, debt, reserves and service level review. The upcoming bridge and culvert work will also have a significant impact on County staffing resources as we are currently limited to the number of capital projects being managed effectively by staff.

The table below shows the County's consolidated needs for the next ten years. This is an estimated forecast amount, as desired level of services can change; driven by the needs of the community, and or changes in legislation, or changes due to unforeseen circumstances.

Table: Estimated Capital Needs (1-10 years)

Department	**Asset Type**	**Needs 1-5 yrs**	**Needs 6-10 yrs**
Public Works	Road Surface	$40,433,148	$31,934,800
Public Works	Road Base	$0	$0
Public Works	Bridges and Culverts >3m	$9,391,500	$13,230,000
Public Works	Culverts <3 m and Driveway	$1,400,000	$0
Public Works	Patrol Yards	$3,236,400	$65,500
Public Works	Fleet 5 year	$939,000	$772,500
Public Works	Fleet 10 year	$4,572,932	$590,000
Public Works	Fleet 15 year	$1,415,000	$1,350,000
Property Services	Property Services	$4,676,350	$5,163,069
Housing Services	Housing Services	$3,965,479	$4,378,209

Department	Asset Type	Needs 1-5 yrs	Needs 6-10 yrs
Homes for the Aged	Huronview and Heartland	$1,833,850	$969,250
Homes for the Aged	Huronlea and Highland	$1,370,600	$938,000
EMS	Ambulances	$1,350,000	$1,350,000
EMS	Rapid Response Units	$240,000	$240,000
EMS	Command Vehicles	$70,000	$70,000
EMS	Defibrillators	$455,000	$420,000
EMS	Auto pulse	$176,000	$176,000
EMS	Stretchers	$107,000	$137,000
EMS	Stair chair	$31,500	$35,000
EMS	EM Trailer	$0	$15,000
TOTAL		**$75,663,759**	**$61,834,328**
Average per year		$15,132,752	$12,366,866
Total 10 year average			$13,749,809

The needs over the next 10 years are frontloaded with greater replacement needs in the next 5 years as compared to the following 5 years.

It is important to note that this estimates do not include any amounts to be set aside for the future replacement of our assets based on a lifecycle deterioration analysis. This remains outstanding and will be further developed and refined as we move forward into 2017/2018 with the implementation of the asset management software. Currently our plans are excel based and modelling future impacts are very time consuming and tedious and are beyond the current resources of staff to be able to manage effectively.

The County of Huron staff used several different resources to build the 10 year asset plan for the consolidated financial portion of the asset management plan. The County staff worked together to build a consolidated plan, but the plan is still in the preliminary stages, so this is a

starting point. The asset management plan committee aims to see the plan implemented into asset software to be able to fully benefit from the plan.

As asset conditions change throughout the asset life cycle, the plan can be updated, making financial analyses more uniformed for staff. Utilizing asset management software makes yearly updates more efficient and accurate for providing reports and modelling to Council, Ministry, and the Public. This remains outstanding and is one of the top priorities moving forward to address.

The table below looks at a potential scenario which can be used to address the County's asset needs in the short term. Leveraging reserves and small levy increases (2%), the County should be able to adequately fund the short term needs of the County. Under this scenario, sufficient funds would be available given the ongoing supports of Gas Tax and OCIF, and would also assist in replenishing and building up reserves to address the looming bridge and culvert replacements.

It is the current unknowns of the bridge and culvert program that will create the significant challenge beyond this time frame.

Table: Sources of Capital Funding (illustrative example only)

Year	Levy (All Capital)	Reserves	Gas Tax	OCIF	Total
2016	$9,420,880	$1,308,522	$1,796,828	$690,600	$13,216,830
2017	$9,609,298	$2,587,835	$1,796,828	$1,138,791	$15,132,752
2018	$9,801,484	$1,841,346	$1,882,391	$1,607,531	$15,132,752
2019	$9,997,513	$833,045	$1,882,391	$2,419,803	$15,132,752
2020	$10,197,463	$633,094	$1,882,391	$2,419,803	$15,132,752
2021	$10,401,413	$429,145	$1,882,391	$2,419,803	$15,132,752
2022	$10,609,441	($2,544,769)	$1,882,391	$2,419,803	$12,366,866
2023	$10,821,630	($2,756,958)	$1,882,391	$2,419,803	$12,366,866
2024	$11,038,062	($2,973,390)	$1,882,391	$2,419,803	$12,366,866
2025	$11,258,824	($3,194,152)	$1,882,391	$2,419,803	$12,366,866
2026	$11,484,000	($3,419,328)	$1,882,391	$2,419,803	$12,366,866

Assumptions used in the above table:

- this is not being recommended by staff, it just illustrative of one scenario that could address our short term funding needs

- 2% capital funding increase per year on the levy

- Gas Tax and OCIF remain consistent from 2019 onward (current agreements 2018/2019)

- no provisions built in for lifecycle costing beyond the 10 year plan

- have not identified the needs, bridges in particular, beyond the 10 years

- additional funds being set aside within reserves (yrs 6-10) will assist the bridge rehabilitation strategy along with debt financing considerations

- capital reserves are sufficient to assist with the phase in of our funding needs as we build up our annual capital budgets to required limits.

The next table looks at what our potential debt capacity could be given current limits as established by the Ministry of Municipal Affairs. It is important to note that the repayment of debt will also drive up our current levy. Based on current interest rates, a 1% increase in the levy would support approx. $6.6 million in debt. The table also shows our current approved debt capacity limit and also shows limits (@ 10%) on what has been identified through initial research as a comfort zone for some cities in Ontario.

Table: Debt Financing Capacity over 30 years

Debt Limits	**Interest Rate**	**Debt Capacity (approx.)**	**Annual Principle & Interest**
1% on Levy ($360,000)	3.50%	$6,600,000	$360,000
25% Repayment Limit (own source revenue)	3.50%	$215,000,000	$11,700,000
	5%	$180,000,000	$11,700,000
10% Repayment Limit (own source revenue)	3.50%	$85,000,000	$4,700,000

Debt Limits	Interest Rate	Debt Capacity (approx.)	Annual Principle & Interest
	5%	$71,000,000	$4,700,000
10% on Levy	3.50%	$66,000,000	$3,600,000
	5%	$55,000,000	$3,600,000

Currently the County does not carry any debt, however, it is an important consideration in moving forward to address the pending peak for the County's bridge and culvert program, and potentially a consolidated County administration building. Debt alone will not solve our pending asset management deficits, it will have to be an integral part of a four pronged approach – senior government funding, reserves, debt and County levy.

Significant challenges remain for the County in addressing our needs moving forward, however, staff require time and resources to truly assess what the needs are going to be 10-30 years down the road. This includes asset management software, ongoing building condition assessments, and also allocating a portion of the current gas tax funding to support our asset management needs.