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| Asset Management Plan | October 9  2018 |
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# Executive Summary

In 2012 the Ministry of Infrastructure published the *Building Together: Guide for Municipal Asset Management Plans.* The Provincecommitted, through Building Together, to work with municipalities and the federal government to establish a municipal infrastructure strategy*.* In the guide the province stated that;

The goals of the municipal infrastructure strategy include: making good asset management planning universal; moving toward optimal use of a full range of infrastructure financing tools; and addressing the structural challenges facing small communities.’

The strategy was guided by the following principles:

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

In 2013 the Township of O’Connor contracted with Genivar Inc. to develop an Asset Management Plan that would meet the format outlined in the Ministry’s guide and comply with requirements of the Federal Gas Tax Fund that is currently administered by the Association of Municipalities in Ontario (AMO). The Asset Management Plan is a workable document that evaluates the current performance and characteristics of the assets, provides recommended levels of service and provides a basic financial strategy based on this information.

The Asset Management Plan for the Township of O’Connor and has been organized as follows:

1. Introduction;
2. State of Local Infrastructure;
3. Expected Levels of Service;
4. Asset Management Strategy; and
5. Financing Strategy.

The “state of local infrastructure” chapter provides an overview of the capital assets owned by the Township. This includes detailed information on asset inventory, including asset attributes, accounting valuations, replacement costs, useful life, age and asset condition. This information provides the foundation for other sections of the asset management plan.

The “expected levels of service” chapter discusses the current and expected level of service that has been established by the Township of O’Connor. When determining the level of service, various factors were considered which included but were not limited to legislative requirements, technical requirements and citizen requirements.

The “asset management strategy” provides a long term operating and capital forecast for asset related costs, indicating the requirements for maintaining, rehabilitating, replacing/disposing and expanding assets. The goal of the asset management strategy is to move the Township towards a sustainable asset management position over the forecast period.

The “financing strategy” identifies a funding plan for the asset management strategy, including a review of historical results and recommendations with respect to the required amounts and types of funding (revenue) annually. Also, any infrastructure funding deficits/shortfalls are identified, and recommendations are made regarding potential approaches to reduce and mitigate the shortfall over the forecast period.

Overall, this asset management plan is a living document that is used by the Township for capital planning, level of service and financial decision making. It is tied to various existing reports including the Annual Budget, Five (5) Year Road Plan and Official Plan.

# Introduction

## Overview

The Township of O’Connor is a small rural Ontario municipality that is located approximately 40km west of the nearest urban centre, the City of Thunder Bay. Comprised mainly of residential and farm properties with little Commercial/Industrial classes. The Township is home to a population of 663 residents and 272 residential units as per the 2016 Census.

The Township’s road infrastructure assets consist of:

* + Three (3) bridges,
  + Seven (7) major structural culverts,
  + 273 minor culverts, and
  + Approximately 140 lane km of roadway.

Township buildings include:

* + Municipal Office
  + Community Centre
  + Rink Shack
  + Municipal Garage
  + Annex Building (Storage)
  + Fire Hall
  + Fire Department Cold Storage

Township equipment and vehicle assets include

* + 2008 Volvo Grader
  + 2014 4x4 Backhoe/Loader
  + Roll-off Metal Recycling Bins
  + 1990 Compactor Garbage Truck
  + 2017 Chev 4x4 Light Duty Truck
  + 2004 Tandem International Truck
  + 1993 Tandem Ford Truck
  + 1987 Fire Tanker
  + 1999 Fire Pumper Truck
  + 2017 Club Cadet Side by Side
  + 2000 Fire Response Rescue Van

The Township does not own or operate water and waste water facilities as all residential units are serviced by private septic fields and drilled or dug wells.

The asset management plan is the Township’s business strategy that effectively and efficiently allocates available funds amongst valid and competing asset needs. It links expectations for service delivery, asset conditions, performance, and availability with management and investment strategies. The asset management plan identifies the recommended needs of the assets to perform at the level of service expected.

## Plan Development

The Township’s Asset Management Plan was developed by;

* + Compiling a complete listing of capital assets including attributes such as size/material type, useful life, age, accounting valuation and current valuation.
  + Establishing current valuation and where required, using applicable inflationary indices.
  + Assessment of current condition of the assets, based on a combination of existing reports, inspections and an asset age analysis.
  + Assess the risk of asset failure for each asset, based on determining the probability of each asset failing, as well as the consequence of the asset failing. This risk analysis identifies priority projects rehabilitation and/or replacement.
  + Determine and document current levels of service, as well as expected levels of service, based on discussions with Council and staff.
  + Prepare an asset management strategy (i.e. operating and capital forecast) based on the asset inventory, identified priorities, forecast scenarios, and level of service analysis discussed above.
  + Determine a financing strategy to support asset management strategy, thus determining how the operating and capital related expenditure forecast will be funded over the period.

## Maintaining the Asset Management Plan

The Asset Management Plan is updated as the capital needs and priorities of the Township change. When updating the plan, the state of local infrastructure, expected levels of service, asset management strategy and financing strategy are considered. This plan covers a 10-year period and is updated annually. Focus is concentrated on the first 5 years of plan to ensure accurate capital planning in the short term.

## 1.4 Plan Integration

The Township’s budget process outlines the total operating and capital requirements of the Township and the asset management plan focuses on specific asset related requirements. The Asset Management Plan is a valuable tool when capital assets are discussed during annual budget deliberations and the process provides an opportunity for an annual review of the Plan.

Further integration into other financial/planning documents assist in ensuring the ongoing accuracy of the asset management plan. The plan has been developed to incorporate the Township’s Five (5) Year Road Plan, a planning document that is used by Council and Staff to determine future road related infrastructure projects, the Township’s policy for Tangible Capital Assets, the Procurement By-law and the Township’s Official Plan.

# State of Local Infrastructure

## Inventory of Assets

All assets’ key inventory information, such as description, age and size are stored in a database and is updated on an ongoing basis when new information is available through inspection that may or may not result in rehabilitation or replacement.

Schedule “A” and “B” - Tangible Capital Asset Continuity Schedules breakdown the Township’s asset inventory and valuation for the following categories:

General Infrastructure

* Land and Land Improvements
* Buildings
* Vehicles
* Machinery and Equipment
* Computers and Software

Road Infrastructure

* Land and Land Improvements
* Roads
* Bridges and Culverts
* Buildings
* Licenced Vehicles
* Machinery and Equipment
* Computers/Software

## 2.2 Asset’s Current Year Value

Land owned by the Township of O’Connor is included in the Township’s asset inventory. Historical cost, where available, were used and deflated market value when not available. Land is not depreciated, because it is considered to have an infinite useful life. This makes land unique among all asset types where it is the only asset that does not depreciate.

The current year value of each asset is recorded in the Tangible Capital Asset Continuity Schedules, General - Schedule “A” and Infrastructure – Schedule “B”. The Schedules tracks historical cost of assets, accumulated amortization and net book value at each year end. The Schedule is update when assets are replaced or rehabilitated with actual dollar values. Straight line depreciation is used to calculate amortization.

## 2.3 Asset Condition

All assets have a natural service life span. To keep the assets in a safe and usable condition, regular maintenance is scheduled based on inspection results, and service conditions. Schedule “C” of this plan outlines the cost, description, accumulated depreciate, yearend netbook value and current condition rating of each assets.

### 2.3.1 Land Improvements

Land improvements refer to existing septic and well systems as well as sites that include the recreation area (ball diamond, outdoor ice rink) cemetery, helipad and one fire hydrant located in the Township.

These land improvements are maintained on an ongoing basis. The helipad is inspected by ORNGE to ensure that the pad is in good repair for emergency helicopter and personnel.

### 2.3.2 Buildings

All municipal buildings were initially inspected by Genivar Inc. with input from municipal staff when the Township’s Asset Management Plan was first being developed in 2013. Information and condition of each building was recorded and kept in individual binders that included details of the inspections and photographs.

Building are annually inspected by Council and Staff during the Township Inspection and any deficiencies and repair recommendations are noted. Also monthly health and safety meetings held with the Township’s Health and Safety Representative and road employees also address any municipal garage building issues.

The following condition rating for buildings are used:

|  |  |  |
| --- | --- | --- |
| **Rating** | **Condition** | **Time of Improvement** |
| 1 | Poor | 1 year |
| 2 | Fair | 1 – 5 years |
| 3 | Good | 6 – 10 years |
| 4 | Excellent | Routine Maintenance |

**Municipal Office**

The Municipal Office is a new slab on grade building, in good condition. Built in 2010, it is at the beginning of its life cycle and in new condition. The structure has a front entrance canopy, many windows, a shingled roof and vinyl siding. In order to maintain wheelchair accessibility, gravel fill and grading should be done on an ongoing basis to the front and rear concrete pads which are beginning to chip at the edges.

**Community Centre**

The Community Centre is a 1940’s split level structure in good condition. It has an upgraded kitchen area, on the main level and has been retrofitted with new kitchen equipment on the basement level. Renovations took place in 2014. A platform lift was also installed making the main floor and basement accessible. The exterior of the building has vinyl siding with metal roofing, pressure treated barrier free entrance ramps, metal exterior stairs and a 3-sided basement entry with a shingled roof. The exterior ramp railings do not meet the Ontario Building Code requirements and an upgrade is recommended.

**Rink Shack**

The rink shack is a small, one storey, wood frame building used to shelter and warm skaters during the winter months. The structure is in good condition, having wood wall cladding, asphalt shingle roof, a pressure treated exterior walkway and an exterior ramp. The interior is finished with oriented strand board walls and ceiling, complete with thick rubber belt covered floors, all in good condition.

**Municipal Garage**

The municipal garage is a wood structure with steel, combined with a shop B addition, and the main garage is in fair condition. Both sections have metal roof and metal wall cladding, soffit, and well graded parking areas. The building is a mechanics garage and is used to maintain the Township vehicles and equipment, heating supply and emergency generator. The main bay area has a concrete pad floor and concrete foundation and is in need of a few repairs.

The Shop B portion of the garage is in very rough shape and has structurally deteriorating wood footings and large interior and perimeter cracks on the slab. The ceiling panels are sagging and in poor condition. A structural study is recommended for walls, roof and floor in this area to determine whether it should be demolished. A building code review is recommended to determine the fire separation requirements to maintain occupant safety.

**Annex Building**

The Annex building is used for storage and is in poor condition. Dating back to 1920’s, the back roof section has been repaired numerous times and the fascia is rotting. The wood structure is deteriorating, the upper section wood floor slopes, the windows are double pane, stuffed with insulation and the only man door needs to be replaced. The initial inspection preformed by Genivar Inc, when assessing the buildings, recommended that a structural study be completed on this building and/or that the rear addition be demolished. The building is being used to store a surplus of community furniture, signs, barricades, etc. and the storage space is definitely required. If the rear addition is removed, a new door can be added to the rear, new siding, cladding and fascia added to the building and the life expectancy may be upgraded to at least 20 years.

Exterior finishes are metal wall cladding, masonry chimney and metal roofs with wood soffit and fascia. The newer section has two overhead doors, a concrete floor and concrete curb in fair condition.

Two thirds of the building is overgrown with saplings and vegetation and the grade will need to be improved to provide proper drainage away from the building.

**Fire Hall**

The fire hall is a steel framed, concrete slab structure in good condition. This building houses emergency fire rescue vehicles and the volunteer fire crew supplies. There is a wood stair to a mezzanine storage area, a main floor training area, washroom and utility room within the southeast corner. Two large overhead doors, three man doors, metal wall cladding and metal roof enclose the area and are all in good condition. The building requires very little maintenance.

**Fire Department Cold Storage Building**

The Fire Hall cold storage is a newer wood framed single storey structure with open trusses, gravel floor and concrete foundation, in good condition. Maintenance required on and around this building is limited.

### 2.3.3 Equipment and Vehicles

All municipal equipment and vehicles were initially inspected by Genivar Inc. with input from municipal staff when the Township’s Asset Management Plan was first being developed 2013. Ongoing annual inspections, repairs and maintenance are performed, and condition ratings are updated accordingly.

The following condition rating for Equipment and Vehicles are used:

|  |  |  |  |
| --- | --- | --- | --- |
| **Rating** | **Condition** | **Time of Improvement** |  |
| 1 | Poor | 1 year |  |
| 2 | Fair | 1 – 5 years |  |
| 3 | Good | 6 – 10 years |  |
| 4 | Excellent | Routine Maintenance |  |

**2008 Volvo Grader (Condition Rating 3)**

Road maintenance equipment: grader nominal 240 h.p. with 14’ moldboard, front pusher blade and wing. This piece of equipment has multiple duties from snow clearing to road maintenance and repair. Overall, it is in good condition with a new motor installed in 2016 and a new transmission in 2021. Regular maintenance/replacement items may include cutting edges, hydraulic hoses, fittings, pumps, filters, and hydraulic oil. It should be pressure washed as required. With regular maintenance, preventative maintenance and inspections this vehicle should be in service for another 9 years. Average monthly usage is only 55 hours.

**2014 4x4 Backhoe/Loader (Condition Rating 3)**

Road maintenance equipment: 2014 Backhoe/loader 4x4. This piece of equipment has multiple duties from snow clearing to road and culvert maintenance and repair. Overall, it is in good condition. General maintenance required. Regular maintenance/replacement items may include cutting edges, hydraulic hoses, fittings, pumps, filters, and hydraulic oil.

With regular maintenance, this vehicle should be in service for another 18 years. Average monthly usage is only 40 hours.

**Roll-off Metal Recycling Bins (Condition Rating 3)**

These multiple compartment bins are in overall good structural condition with an estimated remaining life of 19 years. Rust on some areas showing and holes patched in 2021.

**1990 Compactor Garbage Truck (Condition Rating 1)**

This vehicle is not road worthy and is only used at the landfill location as a garbage compactor to reduce the volume of garbage deposited into the landfill pit. As it sits, this vehicle is in poor condition; but for the purpose it serves, it is in fair condition. Repairs to hydraulic system and re-wiring to reduce down time are required. Given the age and condition of the equipment, major costly repairs are not advisable. There is extensive rust and corrosion showing on the operating sections at the rear of the compactor. The availability of replacement parts for some specialized equipment will be expensive due to the age of the vehicle.

**2017 Chev 4x4 Light Duty Truck (Condition Rating 4)**

This is a Roads utility vehicle. This vehicle is used daily by township staff. This vehicle has a five-person extended cab. This vehicle is in fair condition with minor scrapes and dents related to everyday use. Bodywork is required and is budgeted for 2018. Regular maintenance/replacement items may include oil changes, air filters, and tires. Tires changed in 2017. With regular and preventative maintenance and inspections, this vehicle should be in service for another 4 years.

**2004 Tandem International Truck (Condition Rating 2)**

Plow truck with tandem rear axle, combination sander and dump box. This piece of equipment has multiple duties from snow clearing to road maintenance and repair. Vehicle is equipped with a standard 2-person cab. Vehicle is equipped with an air brake system. The cab and chassis are International with the dump box/sander supplied by Viking-Cives. In 2016 the vehicle engine was rebuilt, the transmission had worked done to it and a new hydraulic pump was installed in 2020. Overall, the truck is in fair shape. There are minor rust signs on the cab, no holes. The side salt/sand spreading unit is showing signs of wear and corrosion due to the salt. Minor oil leaks are visible. Dump box is in good shape.

General maintenance of attached equipment is required. Regular maintenance /replacement items may include cutting edges, hydraulic hoses, fittings, pumps, filters, hydraulic oil, and engine oil. With regular maintenance and inspections, this vehicle should be in service for another 7 years. Due to the technologies used, specialized tools and training may be necessary for the maintenance and repair of this equipment.

**1993 Tandem Ford Truck (Condition Rating 2)**

Plow truck with tandem rear axle, combination sander and dump box. This piece of equipment has multiple duties from snow clearing to road maintenance and repair. Vehicle is equipped with a standard 2 person cab. Vehicle is equipped with an air brake system. The cab and chassis are Ford with the dump box/sander supplied by Michel Gohier Ltd. Overall, the truck is in fair condition. There are visible rust signs on the cab with holes in the inner fenders. Minor oil leaks are visible. The dump box is in good shape. The Cab and Chassis are showing signs of wear due to the age of the vehicle. General maintenance of attached equipment is required. Regular maintenance/replacement items may include cutting edges, hydraulic hoses, fittings, pumps, filters, hydraulic oil, and engine oil.

The sander/dump box, which was replaced in 2012 can, at a later date, be transferred to another vehicle if required. With regular maintenance, preventative maintenance and inspections this vehicle should be in service for another 2-4 years. The unit is in fair shape. Due to the age of the vehicle, any major repair costs may exceed the value of the vehicle.

**1987 Fire Tanker (Condition Rating 2)**

Water tanker truck is for the Fire Department’s use. Vehicle is equipped with a standard 2 person cab, and an air braking system. This vehicle is used by the fire department to shuttle water to emergency incidents and carries auxiliary equipment to an emergency scene. The vehicle is in fair shape. The average monthly usage is based on the number of emergency calls responded to and the amount used at training sessions.

General and preventative maintenance is required. There are minor oil leaks that should be monitored. The body is in good shape with only minimal surface rust showing. There is a difference of 1¾” elevation at the rear axle, with the driver’s side lower. The overload springs are contacting the stops on both sides.

With regular maintenance, preventative maintenance and inspections, this vehicle should be in service for another 4 years. The unit is in fair shape with but the number of operating hours are usually higher than normal for emergency vehicles. Due to the age of the vehicle, any major repair costs may exceed the value of the vehicle, and parts become difficult to find.

**1999 Fire Pumper (Condition Rating 2)**

This Fire Department Pumper Truck has a diesel engine with an automatic transmission. This vehicle is equipped with a standard 3 person cab, and an air brake system. The cab and chassis are Freightliner with the fire apparatus supplied and installed by Becker Fire Equipment. It has a pump – 1250 GPM. This vehicle is the Fire Department’s main emergency vehicle responding to house, vehicle, wild land fires and other emergency situations. Overall, this vehicle is in fair condition with no major issues. No visible body deterioration, only minor engine oil leaks.

There is a difference of 1¼” elevation at the rear axle, with the driver’s side lower. The driver’s side is contacting the overload springs with the passenger side above the stops. Rear springs may need to be inspected or the load repositioned to even the distribution. With regular maintenance, preventative maintenance and inspections, this vehicle should be in service for another 4 years. The limited use of the vehicle means a longer life, but also means that regular inspection and maintenance should be performed to ensure the reliability of the equipment.

**2017 Club Cadet Side by Side (Condition Rating 4)**

Fire Department Side by Side was purchased in 2017. The unit seats four people, is in excellent condition and has been retrofitted to be used for grass fire suppression.

**2000 Fire Response Rescue (Condition Rating 2)**

This is a Fire Department Rescue/utility vehicle; it has a diesel engine with an automatic transmission. Vehicle is equipped with a standard 2 person cab. The vehicle is equipped with a hydraulic brake system. The cab and chassis are Ford with the apparatus supplied and installed by Paul Demers Inc. This vehicle was an ambulance and has been converted for use in the Fire service. This vehicle is the Fire Department’s rescue/utility vehicle responding to emergency calls. It is in fair shape, and the average monthly usage is low with extended periods of non-road running use.

With regular maintenance, preventative maintenance and inspections, this vehicle should be in service for another 4 years. The limited use of the vehicle means a longer life, but also means that regular inspection and maintenance should be performed to ensure the reliability of the equipment. Major repair costs may exceed the total value of the vehicle. The mileage showing on the odometer seems low for this old “ambulance service” vehicle. It is possible that the odometer turned over or has been replaced.

### 2.3.4 Roads, Bridges and Culverts

Roads are inspected every three years or when required so that the Township is aware of changing conditions and can plan maintenance and rehabilitation with confidence. Inspections are carried out in late spring or in summer conditions to allow for the effects of frost heaving to dissipate, and to allow the road to stabilize.

Gravel road surfaced conditions change quickly. Heavy rains, heavy local traffic, or recent maintenance activities can significantly change many of the gravel road surface characteristics. The Township has adopted the Gravel Road Surface Condition Index provided by the Transportation Centre at the University of Wisconsin-Madison which rates a gravel surface road between 1 to 5, with 1 being very poor and 5 being in excellent condition. The guideline is summarized in the following table.

|  |  |  |
| --- | --- | --- |
| **Gravel Road Surface Condition Index** | | |
| **RCR** | **Visible Distress** | **General Condition/treatment measures** |
| 5  Excellent | - No distress.  - Dust Controlled.  - Excellent surface condition and  ride. | * New Construction or total reconstruction. * Excellent Drainage. * Little or no maintenance needed. |
| Good | * - Dust under dry conditions. * - Moderate loose aggregate. * - Slight washboarding | * - Recently regraded. * - Good crown and drainage * throughout. * - Adequate gravel for traffic. * - Routine grading and dust * control may be required. |
| 3  Fair | * - Good Crown (3”- 6”). * - Adequate ditches on more than 50% of * roadway. * - Gravel layer mostly adequate but * additional aggregate may be need in * some locations to correct washboarding * or isolated potholes and ruts. * - Some culvert cleaning needed. * Moderate washboarding (1” – 2” deep) * over 10% - 25% of the area. * - Moderate dust, partial obstruction of * vision. * - None or slight rutting (less than 1” deep). * - An occasional small pothole (less than * 2” deep). * - Some loose aggregate (2” deep). | * - Show traffic effects. * - Regarding (reworking * required). * - Needs some ditch * improvement and culvert * maintenance. * - Some areas may need * additional gravel. |
| 2  Poor | * - Little or no roadway crown (less * than 3”). * - Adequate ditches on less than 50% of * roadway. * - Portions of the ditches may be filled, * overgrown and/or show erosion. * - some areas (25%) with little or no * aggregate. * - Culverts partially full of debris. * - Moderate to severe washboarding * (over 3” deep) over 25% of area. * - Moderate rutting (1” – 3”), over 10%-25% * of area. * - Moderate potholes (2” – 4”) over * 10% - 25% of area. * - Many areas (over 25%) with little or no * aggregate. | - Travel at slow speeds (less  than 40 kph) is required.  - Needs additional new  aggregate.  - Major ditch construction  and culvert maintenance  also required. |
| 1  Very Poor | - No roadway crown or road is bowl  shaped with extensive ponding.  - Little if any ditching.  - Filled or damaged culverts.  - Severe rutting (over 3” deep),  over 25% of the area.  - Severe potholes (over 4” deep),  over 25% of area.  - Many areas (over 25%) with little  or no aggregate. | - Travel is difficult and road  May be closed at times.  - Needs complete rebuilding  and/or new culverts. |

According to the Ontario Regulation 104/97, every public bridge in Ontario must undergo an inspection every two years by a trained inspector who is either a professional engineer or under the direction of one. The inspector reviews and rates each bridge component. Then, the bridge’s current condition index is determined.

The current condition of the bridges and large structural culverts are established with the Bridge Condition Index (BCI) as per the Ontario Structure Inspection Manual (OSIM). The BCI is a planning tool which assists with the scheduling of maintenance and upkeep. The BCI result is organized into ranges from 0 to 100. A higher number indicates a better overall condition. The BCI is a basic economic indication of the general percentage of the current value of an asset to its replacement cost. The current values are determined by the condition of each element required to be inspected and rated.

The BCI is provided by engineers that inspect the bridge structures every second year. The Ministry Transportation Ontario’s (MTO) guidelines for BCI are summarized in the table below:

|  |  |  |
| --- | --- | --- |
| **BCI** | **Condition** | **Significant Maintenance Work Required** |
| 71 – 100 | Good | Not usually required within the next five years |
| 60 – 70 | Fair | Usually scheduled within the next five years |
| 0 – 59 | Poor | Usually scheduled within approximately one year |

Culvert inspection is undertaken every three years by Township employees. A visual inspection is performed for each culvert and it is rated as follows:

|  |  |  |
| --- | --- | --- |
| **Rating** | **Condition** | **Time of Improvement** |
| 1 | Poor | Replacement within 1 year |
| 2 | Fair | Rehabilitation 1 - 5 years |
| 3 | Good | Rehabilitation 6 - 10 years |
| 4 | Very Good | Routine Maintenance |

### 2.3.5 Asset needs

Performance deficiencies and recommended work are identified in Schedule “C”. Estimated cost for recommended work take into account inflation rates according to the “Bank of Canada” (www.bankofcanada.ca). Canada’s current inflation is 2.2% (April 2018).

Maintenance is defined as work that is required and funded through the Township’s annual budget and may, where appropriate, be completed by Township road employees. These expenditures are not considered capital expenditure.

It must be recognized that the recommended work given as the remedial measure for a particular distress manifestation is not necessarily the ultimate remedy, nor will the treatment necessarily correct the cause or causes of the distress effectively. The recommended work may only slow distress deterioration.

The work recommended for roads and culverts are based on visual inspection by Township employees and using the tools provided in the BCI findings and the Gravel Road Condition Index. These estimates include material and labour.

* Road reconstruction (Base, Granular, grading, and rolling) $34,000/km
* Road rehabilitation (Granular, grading, and rolling) $22,000/km
* Adding granular and grade (Light layer of granular) $12,000/km
* 450 mm culvert $175/m
* 600 mm culvert $205/m
* 900 mm culvert $250/m
* 1200 mm culvert $380/m
* 1800 mm culvert $600/m
* 2000 mm culvert $700/m
* 2400 mm culvert $900/m

# Expected Level of Service

Current service levels when compared to expected level of service becomes the driving force behind Council decisions on when and how assets will be rehabilitated, replaced or retired. There are several factors that impact level of service provided by the Township. These include:

* Legislative requirements;
* Strategic planning goals and objectives;
* Safety of users;
* Resident Expectations;
* Council and Staff expectations; and
* Financial or resource constraints.

The safety and well being of the residents of O’Connor are a priority to Council and staff. It is imperative that all assets perform at their optimal condition rating and provide a service level that is expected. The following table outlines the level of service for each asset.

|  |  |  |
| --- | --- | --- |
| **Expected Level of Service** | | |
| **Service** | **Level of Service** | **Comments** |
| Roads | Graveled road level of services is to maintain a gravel road surface condition index of 4 and 5 as defined in section 2.3.3. Prioritized by visual inspection and resident complaints. | Roads are monitored on an ongoing basis by visual inspections by road staff. Condition and safety issues are addressed when they arise. Complaints received by residents are considered when maintenance and rehabilitation are required. Public safety is a priority when rating the assets. |
| Bridges | Bridge level of service is to maintain a BCI of 60 to 100 where 60 to 70 indicate a condition of fair and 71 to 100 indicate a condition of good. | Bridge inspections and major structural culverts are undertaken every two years by a qualified engineer. The inspection determines routine maintenance, rehabilitation or replacement requirements. A BCI of less than 60 indicates prioritization. Public safety is a priority when rating the assets. |
| Culverts | Culvert level of service is to maintain a 3 or 4 condition rating where 3 is good condition and 4 is very good condition. | Culverts are inspected every three years or when required. Inspection determines routine maintenance, rehabilitation or replacement. Condition ratings of 1 or 2 indicate a need to prioritize the asset for rehabilitation or replacement. Public safety is a priority when rating the assets. |
| Buildings Equipment and Vehicles | Buildings, equipment and machinery have a condition index of 1 to 4 with one being poor and 5 being in excellent condition. | Annual inspections are performed that are in line with legislative requirements and Council direction. Public safety is a priority when rating the assets. |

# Asset Management Strategy

## 4.1 Non-Infrastructure Solutions

Non-infrastructure solutions can produce lower, more sustainable costs in maintaining existing assets. Non-infrastructure solutions include solutions that do not include the physical repairs of the assets. It is an organizational approach that will aid in the future by lowering cost, having organized data, saving time, and therefore resulting in efficiency. Inspection reports should identify the maintenance work required, within a timeframe for the work, and an opinion of probable cost. To extend the service life of an asset, the Township should use the information acquired from the inspections to update their financial plan accordingly and ensure that the plan is implemented.

Municipal staff utilizes Microsoft Access to track asset inventory additions and deletions, current value and amortization. It is important to keep the database up to date or the Township increases the risk of having inconsistent and inaccurate information produced when making decisions on what infrastructure needs to be replaced or rehabilitated.

## 4.2 Maintenance Activities

Regular maintenance is essential to managing municipal assets. The expected level of service often relies on maintenance activities. Inspectors, whether they be engineers or Township employees, identify the needs for maintenance work and the required timeframe. They also identify whether or not immediate action should be taken to address any safety concerns. Regular maintenance can add significant life to assets and save the Township money. Routine maintenance and minor repair work to an element can be normally performed without professional engineering direction.

The following is the recommended inspection schedule for each asset type:

|  |  |
| --- | --- |
| **Type** | **Schedule** |
| Bridges | Every 2 years |
| Structural Culverts | Every 2 years |
| Roads & Culverts | Every 3 years |
| Buildings & Helipad | Every 5 years |
| Equipment & Vehicle | Every year |

### 4.2.1 Bridges and Structures

Preventative actions can have substantial impacts on the life and preservationof the assets. Sand and debris trap moisture and when removed from the structure, it can prevent damages to significant elements. Bridge maintenance may include:

* + Repairing impact damage or deterioration.
  + Ensuring deck drainage is free of debris.
  + Tightening railing systems to posts.
  + Regularly removing debris and sand from joints and bearings.
  + Removing obstructions restricting water flow.

Correcting bumps and depressions occurring at the approaches. Visual inspections are carried out in late spring and summer and every two years a detailed inspection by an engineer is done. The information regarding the characteristics, value, and condition of assets are updated after every inspection

### 4.2.2 Roads

The major objectives for maintaining gravel surfaces are to provide a smooth, safe riding surface free from defects, eliminate hazards to traffic, and protect the investment in the road surface. The maintenance may include;

* + Placing signage and/or markers at soft wet areas, such as frost boils that move under traffic until the problem is rectified.
  + Removing rocks greater than 50 mm in diameter that heaved to the surface by frost action or grading.
  + Maintaining a crown with a cross fall of approximately 2%.
  + Removing gravel windrows in excess of 100 mm at the outside edge of the road or at intersections.
  + Applying calcium chloride annually for dust control.
  + Gravel application were required.

### 4.2.3 Culverts

The major objective for culvert maintenance is to ensure the flow of surface water running in natural streams or collected on the high side of the right-of-way, or running down the ditch line, under roads or driveway entrances. The maintenance may include:

* + Removing obstructions restricting the flow of water through culverts.
  + Repairing damaged embankments at culvert inlets or outlets.
  + Clearing ditch lines from vegetation growth and obstructions.
  + Clearly marking culverts that require maintenance to identify their location.

### 4.2.4 Buildings

Regular maintenance schedule to ensure that all buildings are in good condition.

### 4.2.5 Land Improvements

The helipad is in good condition. The main gravel pad has a stable base of compacted granular with a perimeter ring of marker pylons. The majority of the pylons are in good condition and solar lighting has been installed on each pylon. Foliage in this area, located on the municipal property is well maintained and cut back. Recent inspections by ORNGE found that surface and lighting conditions are fair and no major issues were found.

## 4.3 Renewal/Rehabilitation Activities

Rehabilitation of the assets is necessary when the levels of service do not conform to the standards. Significant repairs designed to extend the life of the asset are determined at every inspection. It is essential to schedule the regular inspections to monitor the asset’s conditions.

The rehabilitation activities determined from the field inspection are provided below. The work recommended will improve the asset’s rating and help ensure that the asset provides the desired level of service.

Rehabilitation over replacement is advantageous when there are only few components that need repair. Occasionally, the number of repairs is too extensive and rehabilitation is deemed unfeasible. This judgement is different for every case and sometimes replacement is the more cost effective alternative when considering future repairs.

Consideration is made when planning rehabilitation or replacement of assets that are connected. For example if a series of culverts require replacement, road resurfacing will not be done until the replacements are installed.

### 4.3.1 Bridges and Structures

The Township of O’Connor hires an engineering firm to perform a Bridge Study every second year as per Ontario Regulation 104/97. The trained inspector or professional engineer reviews and rates each bridge component and the current condition index is determined

### 4.3.2 Roads

Recommended work suggested for gravel roads are short-term and is based on observations made by the Township’s Leadhand. General rehabilitation activities may include:

* Correcting the causes of water lying on the surface of the road
* Repairing potholes in excess of 100mm in depth
* Correcting washboard conditions (corrugations)

### 4.3.3 Culverts

The major objective for culvert maintenance is to ensure the flow of surface water running in natural streams or collected on the high side of the right-of-way, or running down the ditch line, under roads or driveway entrances. The maintenance may include ditching at culvert mouth to remove debris and or aggregate buildup, bank stabilization and minor repairs to culvert ends.

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### 4.3.4 Buildings

Genivar Inc performed an inspection on all the municipal buildings in 2013. Each building was evaluated with renewal/rehabilitation activities outlined and prioritized. Annual inspections are done by Council and municipal staff during the Township Inspection and through Health and Safety meetings with road employees for the Township’s roads buildings

### 4.3.5 Land Improvements

Maintenance on wells and septic systems are done when required. Maintenance to the ball diamond includes the upkeep of the two wood framed dugouts. The cemetery requires very little maintenance with exception of gravel and grading of driveway when required.

The Helipad is inspected by ORNGE and any deficiencies found are addressed right away. Regular maintenance includes grass cutting and brushing, when required, and snowplowing in the winter months. Helipad cones are monitored to ensure that emergency lighting, solar powered, are in good condition and replaced if required.

The Township has one fire hydrant, located on Highway 590, that is considered a dry hydrant as it is non-pressurized hydrants. This hydrant is used occasionally. Water for fire suppression is acquired via the aqueduct located in the village of Kakabeka.

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# 5.1 Financial Strategy

Municipal infrastructure has historically been funding with property tax dollars and grants, however with the increased obligations downloaded by the provincial government, such as policing, social services and land ambulance, municipalities are relying more and more on conditional grants provided by both federal and provincial levels of government.

## 5.1 Municipal Property Tax Base

A 1% increase of the Township’s residential tax rate represents approximately $8,000.00. Total unfunded deprecation of assets totaled $79,874.00 in 2020 alone and brought the total amount to $3,117,902.00. Fully funding a financial strategy to address the funding gap would be impractical and would be detrimental to the residents of O’Connor Township.

The Federal Gas Tax Funding has established a Base Amount for each municipality that represents municipal own funds that should be spent on infrastructure. The Association of Ontario Municipalities (AMO) has determined this Base Amount as the historical total capital expenditures of a municipality funded by own source revenues during the years 2000 to 2004 . This amount ideally should represent the real/sustainable internal infrastructure funding capacity of a municipality during those five years that we establish as a benchmark. The methodology to calculate the base amount considers the five years (2000 to 2004) before the original Gas Tax Agreement signed in 2005. Included in the Township’s calculation was the purchase of the 2004 Tandem International Truck, a one-time purchase that inflated the Township’s calculated base amount.

The Township of O’Connor strives to meet the determined amount of funds as indicated as the Township’s Base Amount, not factoring in the purchase of the 2004 Tandem International truck, by ensuring that capital infrastructure expenditures are included in the annual budget process in the form of capital projects and/or equipment purchases.

## 5.2 Federal and Provincial Conditional Grants

Costs to maintain the Township’s current infrastructure cannot be sustained through municipal property taxes only. Funding provided through the Federal Gas Tax and the Ontario Community Infrastructure Fund formula-based funding, which provide municipalities with a sustainable source of infrastructure funding, is critical to maintaining the Township’s level of service. As funding has been allocated at $50,000 per year for the Township of O’Connor, prioritization of capital asset projects is required in order to optimize infrastructure funding as it becomes available through other federal and provincial sources.

## 5.3 Reserve Accounts

With the growing demand on tax payer dollars to fund provincially mandated programs, reserve funding is becoming harder and harder to achieve. Saving for asset rehabilitation or replacement is by far the lowest overall cost to the ratepayer, however asset priorities need to be addressed on an annual basis leaving allocation of reserve funds less of a priority. Where possible expenditures not realized in the annual budget are placed in a reserve fund.

## 5.4 Long-Term Debt Financing

Financing asset replacement has the lowest impact short-term on tax rates, however the cost of borrowing money is the highest overall cost and has a long-term impact on tax rates. It is common practice to finance the purchase of road and fire department machinery and vehicles as the loans are typically 10 years. Financing larger projects with higher costs have in the past been financed with debentures, however the cost of the asset is inflated due to the cost of borrowing as the term of the loan is considerably longer

## 5.5 Partnerships

Partnerships are a good opportunity for larger municipalities, however in a small municipality like the Township of O’Connor, which is a bedroom community with very little commercial and industrial assessment, there is no opportunity to form partnerships to help offset the expenses associated with asset rehabilitation or replacement.

**SCHEDULE “A”**

Schedule of Continuity – General

**SCHEDULE “B”**

Schedule of Continuity – Infrastructure

**SCHEDULE “C”**

Asset Condition Rating Schedules