

Township of Chapple

Asset Management Plan



Prepared By:



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Saulteaux Consulting and Engineering would like to thank Crupi Consulting Group for their assistance in the preparation of this Asset Management Plan:



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1.0 Executive Summary

Saulteaux Consulting and Engineering (SCE) has prepared this Asset Management Plan (AMP) for the Township of Chapple. In preparing the plan, SCE worked with Crupi Consulting Group (CCG). SCE undertook the inspections of Municipal Buildings, Recreation, Water, Waste Water, Electrical, Roads, Bridges, and Vehicle inspections. CCG undertook the financial analysis, and life cycle costing process.

This AMP provides an overview of the estimated future expenditures related to municipal assets over the period of the next ten (10) years. This document will help the Township to undertake an ongoing process to budget for the expenditures necessary to maintain the service levels that have been outlined in the Township's Official Plan. Additionally, the plan identifies assets which require urgent attention in order to bring them to standard, and further identifies a recommended timeframe to undertake necessary maintenance, rehabilitation, and in some cases replacement of assets. The financial plan (Section 6.0) of this plan, outlines a recommended strategy for the Township to finance the necessary work while limiting the tax burden, and maintaining a fiscally responsible, sustainable approach to asset management.

Included in the plan are recommendations regarding the maintenance of each asset. If identified maintenance is completed, and ongoing maintenance is undertaken, this will extend the lifecycle of assets, giving the Township a much more manageable budgeting process.

All assumptions regarding levels of service are listed within the plan, the financial plan is developed with the understanding that the Township intends to maintain existing levels of service, and that any future development would be undertaken as per the Official Plan.

2.0 Introduction

This asset management plan has been developed for the Township of Chapple to assist the Township in making informed choices regarding future investment. This plan helps to define priorities for future spending, identifies estimated maintenance costs for existing assets, and defines a financing strategy. The goal of this process is to provide the Township with the information required to ensure that it can develop a financing strategy to maintain satisfactory levels of service, and undertake required investments in the future.

Additionally, this process reviews the lifecycle cost of each asset including construction, ongoing maintenance, and disposal. Consideration has been given to ensuring that services are maintained in an environmentally sustainable manner, as per the Township's Official Plan. A key feature of this plan is that it will provide the Township with a prioritized listing of infrastructure needs. This listing of priorities will help the Township to identify projects to undertake in the coming years, with a clear focus on the most urgent priorities, projects that will require investment within the next three years.

This plan is designed to cover the lifecycle of each asset, and is intended as a living document to be amended, as required, or when new tangible assets are added to the Asset Listing.

For the purposes of completing this project, Saulteaux Consulting and Engineering (SCE) has worked with Crupi Consulting Group (CCG). SCE undertook the inspections of Municipal Buildings, Recreation, Water, Waste Water, Electrical, Roads, Bridges, and Vehicle inspections. CCG undertook the financial analysis, and life cycle costing process.

2.1 Asset Listing

The following assets are included in the plan:

Table 2.1 – Asset Listing

Asset Name	Asset No.	Ext. No.	Asset Code	Quantity	Units
Municipal Office	100000	01	A1A	235.52	SQ. M
Public Works Building	100000	01	A2B	503.57	SQ. M
Small Garage	100100	01	A2B	170.20	SQ. M
Mortuary	100200	01	A3Z	30.88	SQ. M
Museum	100300	01	A3F	596.52	SQ. M
Recreation Centre/Hall	100400	01	A6A	1383.30	SQ. M
Shed Single Stall	100500	01	A2B	29.58	SQ. M
Deck	100600	01	A6Z	17.54	SQ. M
Pavilion	100700	01	A6H	29.04	SQ. M
Riverview Park Pavilion	100800	01	A6H	38.44	SQ. M
Rink	100900	01	A6H	822.16	SQ. M
Rink Shack	101000	01	A6E	18.12	SQ. M
Rink Shack Pumphouse	101100	01	A5A	5.01	SQ. M
Lighthouse	101200	01	A6Z	14.52	SQ. M
Fire Hall	101300	01	A3H	192.18	SQ. M
Sports field Canteen	101400	01	A6G	109.00	SQ. M
Covered Picnic Area	101500	01	A6H	63.42	SQ. M
Landfill Building	101600	01	A5D	18.76	SQ. M
Equipment Storage	101700	01	A6H	27.54	SQ. M
St. Paul's Heritage Place Church	101800	01	A3I	93.56	SQ. M
North Rink	101900	01	A6H	822.16	SQ. M
North Rink Shack	102000	01	A6E	18.12	SQ. M
North Fire Hall	102100	01	A3H	95.50	SQ. M
Water Treatment Plant Building	102200	01	A5A	199.8	SQ. M
Playground	200000	01	C5D	468.00	SQ. M
Sport field Recreation Area	200100	01	A6H	27000	SQ. M
5 Stall RV Park	200400	01	A6Z	1150	SQ. M
Docks	200500	01	C0C	157.17	SQ. M
Boat Launch	200600	01	C0C	40	SQ. M
Water Treatment System	400000	01	B1C	1	EA
Well #1	400000	01	B1F	1	EA
Well #2	400200	01	B1F	1	EA
Well #3	400300	01	B1F	1	EA
Well #4	400400	01	B1F	1	EA
Well #5	400500	01	B1F	1	EA
Well #6	400600	01	B1F	1	EA
200mmØ Watermain	400700	01	B1B	937.5	M
150mmØ Watermain	400800	01	B1B	1890	M
Shenston Dum	450000	01	B4B	1	EA
Lagoon	450200	01	B2E	1	EA
Sewage Life Station	450300	01	B2H	1	EA
200mmØ Sanitary Sewer	450400	01	B2A	1824	M
Street Lights	500000	01	B3C	27	EA
Brigham Road North	600100	01	D1B	0.8	KM
Brigham Road South	600200	01	D1B	0.4	KM
Westover Road	600300	01	D1B	5.2	KM

Asset Name	Asset No.	Ext. No.	Asset Code	Quantity	Units
Westover Road	600300	02	D1B	3.2	KM
Playford Road	600400	01	D1B	1.5	KM
J. Wilson Road	600500	01	D1B	1.3	KM
Sturgeon Creek Road	600600	01	D1B	5.0	KM
Angus Road South	600700	01	D1B	3.4	KM
Angus Road North	600800	01	D1B	4.9	KM
Gibson Road	600900	01	D1B	1.6	KM
Irvine Road	601000	01	D1B	1.6	KM
Moulton Road	601100	01	D1B	2.9	KM
Hart Road	601200	01	D1B	2.8	KM
Mather Road West	601400	01	D1B	9.9	KM
Mather Road East	601500	01	D1B	9.9	KM
Olson Road	601600	01	D1B	2.6	KM
Hunsperger Road	601700	01	D1B	1.6	KM
McNally Road	601800	01	D1B	2.4	KM
Elliot Road	601900	01	D1B	1.6	KM
R. Wilson Road	602000	01	D1B	2.6	KM
Cates Road	602100	01	D1B	4.3	KM
French Road	602200	01	D1B	0.8	KM
Korpi Road	602300	01	D1B	6.9	KM
Curtis Pit Road	602400	01	D1B	0.6	KM
Lampi Road	602500	01	D1B	4.8	KM
Boundary Lake Road	602600	01	D1B	3.8	KM
Maki Road	602700	01	D1B	2.0	KM
Heatwole Road	602800	01	D1B	1.8	KM
Gallinger Road	602900	01	D1B	4.1	KM
Marrs Road	603100	01	D1B	6.0	KM
Teeple Road	603200	01	D1B	5.1	KM
Hayes Road	603300	01	D1B	2.6	KM
Church Road	603400	01	D1B	2.4	KM
Barwick Road	603500	01	D1D	0.3	KM
Barwick Road	603500	02	D1B	3.3	KM
Barwick Road	603500	03	D1C	1.1	KM
Barwick Road	603500	04	D1B	19.1	KM
Atkinson Road	603600	01	D1B	1.4	KM
Vanheyst Road	603700	01	D1B	1.8	KM
Tait Road	603800	01	D1B	11.4	KM
Huziak Road	603900	01	D1B	4.8	KM
Woolsey Road	604000	01	D1B	3.2	KM
Development Road	604100	01	D1B	9.6	KM
Oien Road	604200	01	D1B	1.3	KM
Hele Road	604300	01	D1B	6.5	KM
McCulloch Road	604400	01	D1B	1.8	KM
Fehr Road	604500	01	D1B	4.9	KM
Bolen Road North	604600	01	D1B	6.9	KM
Bolen Road South	604600	02	D1B	0.6	KM
Steiner Road	604700	01	D1B	2.4	KM
Taylor Road	604800	01	D1B	2.0	KM
Clink Road	604900	01	D1B	0.8	KM
Caul Road	605000	01	D1A	0.8	KM
Morley-Chapple Road	605100	01	D1B	8.9	KM
Prison Farm Road	605200	01	D1B	1.1	KM
Ceder Yard Road	605300	01	D1B	0.4	KM
Ceder Yard Road	605300	02	D1D	0.1	KM

Asset Name	Asset No.	Ext. No.	Asset Code	Quantity	Units
Morley-Chapple Road	605100	01	D1B	8.9	KM
Prison Farm Road	605200	01	D1B	1.1	KM
Ceder Yard Road	605300	01	D1B	0.4	KM
Ceder Yard Road	605300	02	D1D	0.1	KM
Queen Street	605400	01	D1D	0.8	KM
Mill Road	605500	01	D1B	0.3	KM
Agnes Street	605600	01	D1D	0.4	KM
Alley Way	605700	01	D1D	0.3	KM
Cawston Avenue	605800	01	D1D	0.2	KM
Nighswander Road	605900	01	D1B	1.0	KM
Main Street	606000	01	D1D	0.7	KM
Hillbilly Road	606100	01	D1B	1.8	KM
Walking Bridge	800000	01	D2B	20.79	SQ. M
Barwick Rd Bridge (Barron Bridge)	800100	01	D2A	204.43	SQ. M
McCulloch Road Bridge	800200	01	D2A	181.90	SQ. M
Hele Road Bridge (Woolsley Bridge)	800300	01	D2A	151.46	SQ. M
Mather Rd Bridge #1 (Hilliard Bridge)	800400	01	D2A	80.41	SQ. M
Mather Rd Bridge #2 (Hickey Bridge)	800500	01	D2A	67.55	SQ. M
Angus Bridge #1 (Nanson Bridge)	800600	01	D2A	79.52	SQ. M
Angus Bridge #2 (Zimmerman Bridge)	800700	01	D2A	78.69	SQ. M
Sturgeon Creek Bridge (Ahrens Bridge)	800800	01	D2A	186.84	SQ. M
Angus Rd N Bridge #1 (Hart Bridge)	800900	01	D2A	80.84	SQ. M
Angus Rd N Bridge #2 (Irvine Bridge)	801000	01	D2A	79.9	SQ. M
Fire Rescue Vehicle 5-6	901000	01	E1Z	1	EA
Fire Truck 5-3	901100	01	E1A	1	EA
Fire Truck 5-4	901200	01	E1A	1	EA
Fire Truck 5-2	901300	01	E1B	1	EA
Link-Belt Backhoe	902000	01	E8B	1	EA
Volvo Strongco Grader	902100	01	E8K	1	EA
Dodge Ram 3500 Flatbed	902200	01	E6C	1	EA
John Deere F915	902300	01	E8L	1	EA
Case 721F	902400	01	E8L	1	EA
Cat 140M Grader	902500	01	E8K	1	EA
John Deere 2350 Tractor	902600	01	E8L	1	EA
Peterbuilt Tandem Truck	902700	01	E8B	1	EA
Midland Belly Dump Trailer	902800	01	E8N	1	EA
Ford F150 XLT	902900	01	E6C	1	EA
Chapple Tandem Dump Truck	903000	01	E8Q	1	EA
John Deere 644B Loader	903100	01	E8I	1	EA
John Deere 450 Dozer	903200	01	E7E	1	EA

3.0 State of Local Infrastructure

This section outlines the following:

- Asset types (Roads, Buildings, Equipment, Bridges, Water, Waste Water, Solid Waste and Vehicles).
- Identification of maintenance, repair, remediation, and replacement costs for assets.
- Age of assets, including age of assets as a portion of expected life.
- Condition of assets, as per standard engineering practices. Roads, vehicles, buildings, and recreation equipment were inspected for this process, and the most recent bridge inspection reports were analyzed by a Professional Engineer.

As the asset management planning process is intended to be ongoing, and the condition of assets, especially those requiring immediate repair, can impact the budget process, it is recommended that the tables included herein be updated with current information, as it becomes available. Data will be updated as identified in Municipal policy which complies with Provincial requirements (i.e. as required inspections are undertaken, at regular intervals).

3.1 Asset Types

Table 3.1 – Listing of Asset Codes in Township of Chapple

MUNICIPAL ASSET MANAGEMENT PLAN				
ASSET CODES				
Category	Class	Subclass	Asset Code	Units
Buildings	Administrative	Office	A1A	SQ.M
Buildings	Operative	Garage (Municipal)	A2B	SQ.M
Building	Institutional	Museum	A3F	SQ.M
Buildings	Institutional	Fire Station	A3H	SQ.M
Building	Institutional	Church/Chapel	A3I	SQ.M
Building	Institutional	Other	A3Z	SQ.M
Building	Utility	Water Supply/Treatment	A5A	SQ.M
Building	Utility	Solid Waste Disposal	A5D	SQ.M
Building	Recreational	Community Centre/Hall/Culture Centre	A6A	SQ.M
Building	Recreational	Club House/Youth Centre/Senior Centre/Drop-In Centre	A6E	SQ.M
Building	Recreational	Kitchen Shelter	A5G	SQ.M
Buildings	Recreational	Shelter/Hut	A6H	SQ.M
Building	Recreational	Other	A6Z	SQ.M
Utility	Water Supply & Distribution System	Water Mains	B1B	M
Utility	Water Supply & Distribution System	Water Treatment System	B1C	EA
Utility	Water Supply & Distribution System	Community Wells	B1F	EA
Utility	Waste Collection & Disposal System	Sanitary Main	B2A	M
Utility	Waste Collection & Disposal System	Lagoon	B2E	EA
Utility	Waste Collection & Disposal System	Liftstation	B2H	EA
Utility	Electrical Power Supply & Dist. Sys	Street Lights	B3C	EA
Utility	Solid Waste Collection & Disposal	Landfill Site	B4B	EA

MUNICIPAL ASSET MANAGEMENT PLAN				
ASSET CODES				
Category	Class	Subclass	Asset Code	Units
Grounds	Ports	WHARF - Rec	C0C	SQ.M
Grounds	Playgrounds	Outdoor Hockey	C5D	SQ.M
Transportation	Roads	Earth Roads	D1A	KM
Transportation	Roads	Gravel Roads	D1B	KM
Transportation	Roads	Surface Treated Roads	D1C	KM
Transportation	Roads	Paved Roads	D1D	KM
Transportation	Bridges	Vehicular Bridges	D2A	SQ.M
Transportation	Bridges	Pedestrian Bridge	D2B	SQ.M
Vehicles	Fire	Mini-Pumper	E1A	EA.
Vehicles	Fire	Triple Combination Pumper	E1B	EA.
Vehicles	Fire	Other	E1Z	EA.
Vehicles	Municipal	Truck 1/2 Ton	E6C	EA.
Vehicles	Commercial	Bulldozer Other	E7E	EA.
Vehicles	Commercial	Bulldozer	E8B	EA.
Vehicles	Commercial	Front End Loader	E8I	EA.
Vehicles	Commercial	Grader	E8K	EA.
Vehicles	Commercial	Miscellaneous	E8L	EA.
Vehicles	Commercial	Trailer	E8N	EA.
Vehicles	Commercial	Truck, Dump	E8Q	EA.

Note: Quantity and extent of assets are identified in Table 2.1.

3.2 Total Maintenance, Remediation, Rehabilitation, and Replacement Costs

Asset Name	Asset Number	Asset Ext.	Year of Construction	Totals (\$)
Municipal Office	100000	01	1980	13,500
Public Works Building	100000	01	1980	11,100
Small Garage	100100	01	2000	350
Mortuary	100200	01	1994	1,300
Museum	100300	01	2000	8,750
Recreation Centre/Hall	100400	01	1940	37,000
Shed Single Stall	100500	01	1980	6,400
Deck	100600	01	1994	3,800
Pavilion	100700	01	1999	2,600
Riverview Park Pavilion	100800	01	1970	2,250
Rink	100900	01	2008	-
Rink Shack	101000	01	1970	3,100
Rink Shack Pumphouse	101100	01	1970	525
Lighthouse	101200	01	1999	2,050
Fire Hall	101300	01	1990	3,400
Sports field Canteen	101400	01	1995	5,550
Covered Picnic Area	101500	01	1997	1,000
Landfill Building	101600	01	1997	200
Equipment Storage	101700	01	1970	400
St. Paul's Heritage Place Church	101800	01	1901	16,800
North Rink	101900	01	2003	500
North Rink Shack	102000	01	1970	6,800
North Fire Hall	102100	01	1990	1,400

Asset Name	Asset Number	Asset Ext.	Year of Construction	Totals (\$)
Water Treatment Plant Building	102200	01	1993	15,100
Playground	200000	01	2003	100
Sport field Recreation Area	200100	01	1950	14,250
5 Stall RV Park	200400	01	1986	-
Docks	200500	01	2013	-
Boat Launch	200600	01	1994	-
Water Treatment System	400000	01	1993	93,500
Well #1	400000	01	1993	-
Well #2	400200	01	1993	-
Well #3	400300	01	1993	-
Well #4	400400	01	1993	500
Well #5	400500	01	1993	-
Well #6	400600	01	1993	3,500
200mmØ Watermain	400700	01	1993	-
150mmØ Watermain	400800	01	1993	-
Shenston Dump	450000	01	1989	-
Lagoon	450200	01	1989	124,000
Sewage Life Station	450300	01	1989	12,000
200mmØ Sanitary Sewer	450400	01	1989	-
Street Lights	500000	01	2008	-
Brigham Road North	600100	01	Township to advise	2,000
Brigham Road South	600200	01	Township to advise	1,000
Westover Road	600300	01	Township to advise	5,000
Westover Road	600300	02	Township to advise	3,000
Playford Road	600400	01	Township to advise	2,000
J. Wilson Road	600500	01	Township to advise	3,000
Sturgeon Creek Road	600600	01	Township to advise	2,000
Angus Road South	600700	01	Township to advise	2,000
Angus Road North	600800	01	Township to advise	8,000
Gibson Road	600900	01	Township to advise	2,000
Irvine Road	601000	01	Township to advise	3,000
Moulton Road	601100	01	Township to advise	3,000
Hart Road	601200	01	Township to advise	5,000
Mather Road West	601400	01	Township to advise	6,000
Mather Road East	601500	01	Township to advise	8,000
Olson Road	601600	01	Township to advise	2,000
Hunsperger Road	601700	01	Township to advise	4,000
McNally Road	601800	01	Township to advise	2,000
Elliot Road	601900	01	Township to advise	2,000
R. Wilson Road	602000	01	Township to advise	7,000
Cates Road	602100	01	Township to advise	2,000
French Road	602200	01	Township to advise	2,000
Korpi Road	602300	01	Township to advise	508,000
Curtis Pit Road	602400	01	Township to advise	2,000
Lampi Road	602500	01	Township to advise	5,000
Boundary Lake Road	602600	01	Township to advise	20,000
Maki Road	602700	01	Township to advise	5,000

Asset Name	Asset Number	Asset Ext.	Year of Construction	Totals (\$)
Heatwole Road	602800	01	Township to advise	6,000
Gallinger Road	602900	01	Township to advise	14,000
Marrs Road	603100	01	Township to advise	26,000
Teeple Road	603200	01	Township to advise	2,000
Hayes Road	603300	01	Township to advise	2,000
Church Road	603400	01	Township to advise	3,000
Barwick Road	603500	01	Township to advise	2,000
Barwick Road	603500	02	Township to advise	2,000
Barwick Road	603500	03	Township to advise	3,000
Barwick Road	603500	04	Township to advise	5,000
Atkinson Road	603600	01	Township to advise	1,000
Vanheyst Road	603700	01	Township to advise	2,000
Tait Road	603800	01	Township to advise	17,000
Huziak Road	603900	01	Township to advise	3,000
Woolsey Road	604000	01	Township to advise	3,000
Development Road	604100	01	Township to advise	5,000
Oien Road	604200	01	Township to advise	1,000
Hele Road	604300	01	Township to advise	5,000
McCulloch Road	604400	01	Township to advise	3,000
Fehr Road	604500	01	Township to advise	6,000
Bolen Road North	604600	01	Township to advise	5,000
Bolen Road South	604600	02	Township to advise	1,000
Steiner Road	604700	01	Township to advise	2,000
Taylor Road	604800	01	Township to advise	2,000
Clink Road	604900	01	Township to advise	1,000
Caul Road	605000	01	Township to advise	1,000
Morley-Chapple Road	605100	01	Township to advise	6,000
Prison Farm Road	605200	01	Township to advise	8,000
Ceder Yard Road	605300	01	Township to advise	1,000
Ceder Yard Road	605300	02	Township to advise	9,000
Queen Street	605400	01	Township to advise	11,000
Mill Road	605500	01	Township to advise	1,000
Agnes Street	605600	01	Township to advise	2,000
Alley Way	605700	01	Township to advise	2,000
Cawston Avenue	605800	01	Township to advise	1,000
Nighswander Road	605900	01	Township to advise	2,000
Main Street	606000	01	Township to advise	3,000
Hillbilly Road	606100	01	Township to advise	1,000
Walking Bridge	800000	01	2008	850
Barwick Road Bridge	800100	01	2010	20,000
McCulloch Road Bridge	800200	01	1966	1,000,800
Hele Road Bridge	800300	01	1960	1,041,800
Mather Road East Bridge #1	800400	01	1969	78,000
Mather Road East Bridge #2	800500	01	1967	371,200
Angus Road Bridge #1	800600	01	1968	16,500
Angus Road Bridge #2	800700	01	1974	25,600
Sturgeon Creek Bridge	800800	01	1955	888,200

Asset Name	Asset Number	Asset Ext.	Year of Construction	Totals (\$)
Angus Road North Bridge #1	800900	01	1970	36,000
Angus Road North Bridge #2	801000	01	1970	90,000
Fire Rescue Vehicle 5-6	901000	01	2006	-
Fire Truck 5-3	901100	01	1989	-
Fire Truck 5-4	901200	01	1995	-
Fire Truck 5-2	901300	01	2000	-
Link-Belt Backhoe	902000	01	1999	-
Volvo Strongco Grader	902100	01	1999	-
Dodge Ram 3500 Flatbed	902200	01	1995	-
John Deere F915	902300	01	2007	-
Case 721F	902400	01	2015	-
Cat 140M Grader	902500	01	2008	-
John Deere 2350 Tractor	902600	01	1986	700
Peterbuilt Tandem Truck	902700	01	2017	-
Midland Belly Dump Trailer	902800	01	2014	-
Ford F150 XLT	902900	01	2013	-
Chapple Tandem Dump Truck	903000	01	2005	-
John Deere 644B Loader	903100	01	1981	2,550
John Deere 450 Dozer	903200	01	1993	50
Totals:				4,741,375

The above table reflects maintenance, remediation, rehabilitation, and replacement costs. Ongoing maintenance items are not reflected beyond their initial occurrence; however they are listed in the financial plan, under Section 6.0 of the Asset Management Plan.

3.3 Asset Condition, Asset Age Distribution

Table 3.3.1 Buildings & Recreation

Asset Name	General Condition	Year Constructed	Estimated Remaining Life (Years)
Municipal Office	7	1980	22
Public Works Building	7	1980	22
Small Garage	8	2000	30
Mortuary	7	1994	26
Museum	7	2000	28
Recreation Centre/Hall	7	1940	25
Shed Single Stall	6	1980	20
Deck	6	1994	15
Pavilion	7	1999	23
Riverview Park Pavilion	8	1970	20
Rink	8	2008	22
Rink Shack	6	1970	15
Rink Shack Pumphouse	7	1970	22
Lighthouse	8	1999	22
Fire Hall	7	1990	25
Sports field Canteen	7	1995	22
Covered Picnic Area	6	1997	20
Landfill Building	7	1997	25
Equipment Storage	7	1970	20
St. Paul's Heritage Place Church	7	1901	22
North Rink	6	2003	20
North Rink Shack	5	1970	15
North Fire Hall	7	1990	22
Water Treatment Plant Building	7	1993	25
Playground	9	2003	22
Sport field Recreation Area	7	1950	40
5 Stall RV Park	9	1986	40
Docks	8	2013	15
Boat Launch	8	1994	22

Table 3.3.2 Water, Sewer, Solid Waste & Electrical

Asset Name	General Condition	Year Constructed	Estimated Remaining Life (Years)
Water Treatment System	7	1993	10
Well #1	7	1993	10
Well #2	7	1993	10
Well #3	7	1993	10
Well #4	7	1993	10
Well #5	7	1993	10
Well #6	0	1993	10
200mmø Watermain	7	1993	30
150mmø Watermain	7	1993	30
Shenston Dump	4	1989	17
Lagoon	7	1989	17
Sewage Life Station	7	1989	17
200mmø Sanitary Sewer	7	1989	30
Street Lights	9	2008	22

Table 3.3.3 Roads

Asset Name	Pavement Condition Rating	Estimated Surface Age	Possible Remedial Treatments
Brigham Road North	70	10	Grading, brushing, signage.
Brigham Road South	72	10	Install speed limit sign.
Westover Road	68	10	Grading, brushing, signage.
Westover Road	72	10	Signage, brushing.
Playford Road	88	10	Grading, brushing, signage.
J. Wilson Road	62	10	Grading, brushing, signage.
Sturgeon Creek Road	85	10	Grading, brushing, signage.
Angus Road South	86	10	Grading, brushing, signage.
Angus Road North	74	10	Grading, brushing, signage.
Gibson Road	72	10	Grading, signage, brushing.
Irvine Road	84	10	Grading, brushing, signage.
Moulton Road	85	10	Grading, signage, brushing.
Hart Road	67	10	Grading, signage, brushing.
Mather Road West	89	10	Shaping, signage, brushing.
Mather Road East	86	10	Grading, signage, brushing.
Olson Road	63	10	Grading, signage, brushing.
Hunsperger Road	70	10	Grading, signage, brushing.
McNally Road	71	10	Signage, brushing.
Elliot Road	75	10	Signage, brushing.
R. Wilson Road	70	10	Signage, brushing, Allowance for spot improvement.
Cates Road	77	10	Signage, brushing.
French Road	74	10	Signage, brushing, ditching
Korpi Road	80	10	Crash protection, ditching, embankments, guardrails
Curtis Pit Road	70	10	Grading, signage.
Lampi Road	68	10	Grading, signage
Boundary Lake Road	58	10	Grading, shaping, signage, brushing & ditching
Maki Road	50	10	Shaping, signage brushing, ditching.
Heatwole Road	82	10	Shaping signage, brushing
Gallinger Road South	63	10	Shaping, signage.
Marrs Road	60	10	Brushing, signage, & ditching.
Teeple Road	78	10	Brushing.
Hayes Road	79	10	Shaping, signage, brushing.
Church Road	74	10	Shaping, signage, brushing.
Barwick Road	81	10	Seal cracks
Barwick Road	80	10	Shaping, brushing
Barwick Road	79	10	Surface patching, brushing
Barwick Road	77	10	Shaping, brushing
Atkinson Road	85	10	Brushing
Vanheyst Road	73	10	Shaping, signage, brushing.
Tait Road	57	10	Allowance for major spot improvement, shaping, signage, brushing.
Huziak Road	72	10	Shaping, signage, brushing.
Woolsey Road	79	10	Shaping, signage, brushing.
Development Road	82	10	Shaping, signage, brushing.
Oien Road	65	10	Grading, shaping, signage, brushing.
Hele Road	69	10	Shaping, signage, brushing.
McCulloch Road	67	10	Shaping, signage, brushing
Fehr Road East	60	10	Shaping, signage, brushing.
Bolen Road North	68	10	Spot repair, shaping signage, & brushing.
Bolen Road South	57	10	Shaping & brushing
Steiner Road	66	10	Shaping, signage & brushing

Asset Name	Pavement Condition Rating	Estimated Surface Age	Possible Remedial Treatments
Taylor Road	64	10	Shaping, signage & brushing
Clink Road	63	10	Shaping, signage & brushing
Caul Road	N/A	10	Proper signage
Morley-Chapple Road	72	10	Signage & brushing
Prison Farm Road	70	10	Shaping, signage, brushing & ditching.
Ceder Yard Road	75	10	Signage
Ceder Yard Road	60	10	Patching
Queen Street	77	10	Patching, signage
Mill Road	63	10	Shaping, signage & brushing
Agnes Street	80	10	Patch & seal
Alley Way	79	10	Patching & signage
Cawston Avenue	77	10	Patch & seal
Nighswander Road	70	10	Patch & seal, signage and brushing
Main Street	80	10	Patch & seal
Hillbilly Road	66	10	Shaping

Table 3.3.4 Bridges

Asset Name	Useful Life (Years)	Year of Construction	Action
Walking Bridge	22	2008	
Barwick Road Bridge	35	2010	
McCulloch Road Bridge	15	1966	
Hele Road Bridge	10	1960	
Mather Road East Bridge #1	20	1969	
Mather Road East Bridge #2	5	1967	
Angus Road Bridge #1	20	1968	
Angus Road Bridge #2	20	1974	
Sturgeon Creek Bridge	5	1955	
Angus Road North Bridge #1	20	1970	
Angus Road North Bridge #2	10	1970	

Table 3.3.5 Vehicles

Asset Name	General Condition	Year Constructed	Estimated Remaining Life (Years)
Fire Rescue Vehicle 5-6	9	2006	15
Fire Truck 5-3	7	1989	5
Fire Truck 5-4	8	1995	8
Fire Truck 5-2	9	2000	15
Link-Belt Backhoe	7	1999	10
Volvo Strongco Grader	7	1999	10
Dodge Ram 3500 Flatbed	7	1995	10
John Deere F915	7	2007	5
Case 721F	8	2015	30
Cat 140M Grader	7	2008	20
John Deere 2350 Tractor	7	1986	5
Peterbuilt Tandem Truck	9	2017	25
Midland Belly Dump Trailer	9	2014	20
Ford F150 XLT	8	2013	15
Chapple Tandem Dump Truck	7	2005	10
John Deere 644B Loader	7	1981	6

Asset Name	General Condition	Year Constructed	Estimated Remaining Life (Years)
John Deere 450 Dozer	7	1993	10
Fire Truck 5-1	10	2021	20
Ford F150 Truck	10	2018	10

Notes and Assumptions:

1. Estimated life value assumes that identified maintenance is completed, and regular ongoing maintenance is performed. Estimated remaining life for vehicles in good condition is assumed to be ten (10) years.
2. Building Condition rating scale is as follows:
 - 0 = Closed
 - 1 – 3 = Poor
 - 4 – 6 = Fair
 - 7 – 9 = Good
 - 10 = New
3. Roads use Pavement Condition Rating value from 0-100.

4.0 Desired Levels of Service

For the purposes of this AMP, it is assumed that all assets owned by the municipality will continue to be used for their existing purpose, at the existing level of service. All defined maintenance items are indicated based upon this assumption.

This assumption was developed based upon the following from the Township's Official Plan document, adopted September 2013:

"The Township is committed to actively seeking and encouraging new development that maintains and improves the quality of life, the health of existing businesses and diversifies the economy. "

Furthermore, The Township of Chapple Official Plan document has outlined levels of service regarding roads in Section 6.1:

"Safe and efficient movement of people and goods within the Township and to and from adjacent municipalities is encouraged by this Plan. The road system should safely serve the Township but should not be developed to a standard or extended beyond which would result in a burden to the residents and taxpayers of the Township. The roads in the Township as shown on all schedules to this Plan include provincial highways and Township roads."

Regarding reported speed limits. Please note the speed limits reported on our inspection sheets is the speed limit either posted or specified by the Township staff. It is not an endorsement of the limit as this would involve geometric, sight line, road width, etc. considerations which are beyond the scope of the AMP.

4.1 Assumptions & Performance Measures

1. It is assumed that all roads will be maintained and rehabilitated as required to continue to offer the existing level of service. It is further assumed that the Official Plan will apply when an increase to a level of service is warranted, and that any increase in level of service will be offset by a corresponding increase in tax revenue. Our inspections include some deferred estimated cost such as road widening for roads which are only currently used as agricultural access which have been termed as a "deferred improvement" only justifiable should additional residential development occur to warrant the works. Our inspections also include recommendations to post signs on roads, or in some cases trails, advising "road is un-

maintained and to be used at own risk". Estimated annual daily traffic ranges are appended to this report. It is important to note that the surface age is unknown and is assumed to be 10 years, this is used to calculate the estimated surface value of roads.

While the Township can control development within its boundaries, activities occurring in surrounding areas can impact levels of use. If an increase in traffic volume creates increased maintenance costs that cannot be offset by tax revenue, the Township should re-visit its financial plan to:

- Determine the best means to cover the cost to maintain the existing level of service during the period of increased use, using the options outlined in the financial plan.

Or

- If it is not feasible to cover the cost to maintain the existing level of service, the Township could consider reducing the level of service. By reducing the level of service, the Township may deter the factors leading to increased use of the asset.

2. It is assumed that all bridges will continue to serve the same function as they currently do. Therefore, it is assumed that they will be maintained, rehabilitated, and replaced to perform the same function, and handle the same traffic volumes and loads as they are currently designed to do. It is further assumed that the Official Plan will apply when an increase to a level of service occurs, and that any increase in level of service will be offset by a corresponding increase in tax revenue. Estimated annual daily traffic ranges are appended to this report (see traffic numbers for associated road).

While the Township can control development within its boundaries, activities occurring in surrounding areas can impact levels of use. If an increase in traffic volume creates increased maintenance costs that cannot be offset by tax revenue, the Township should re-visit its financial plan to:

- Determine the best means to cover the cost to maintain the existing level of service during the period of increased use, using the options outlined in the financial plan.

Or

- If it is not feasible to cover the cost to maintain the existing level of service, the Township could consider reducing the level of service. By reducing the level of service, the Township may deter the factors leading to increased use of the asset.

3. It is assumed that all buildings will continue to be used for their current purpose for the duration of the plan. If a change in service is required, it is assumed that any increase in level of service, or operating requirements will be offset by a corresponding increase in tax revenue. It is recommended that the Township follow up on all maintenance items identified in the inspection reports appended to the plan to ensure that all buildings can operate at their present level of service, and conform to code requirements. See the asset reports for a detailed listing of maintenance needs, and a description of the building.

If new buildings are required, it is assumed that the costs to construct new structures would be offset by a corresponding increase in tax revenue, or by using a debt financing solution, as outlined in the Financial Plan.

4. Given the relatively static population trends in the Township, it is assumed that all recreation equipment will continue to be used for its current purpose, at a similar level of use, for the duration of the plan. If a change in service is required, it is assumed that any increase in level of service, or operating requirements will be offset by a corresponding increase in tax revenue. It is recommended that the Township continue to undertake regular maintenance to ensure that the equipment remains in good working order, and is safe to use.
5. It is assumed that all vehicles will continue to be used for their current purpose for the duration of the plan. It is recommended that the Township follow up on all maintenance items identified in the inspection reports appended to the plan to ensure that all vehicles can operate at their present level of service. It should be noted that while many of the vehicles are older, they are in good condition, and it is anticipated that with proper maintenance, the vehicles should last for the duration of the plan.

Note: Detailed inspection reports regarding each asset are appended to this report. Descriptions of each asset are available under the General Description heading contained within each asset report.

4.2 State of Local Infrastructure and Levels of Service

This section provides an analysis of the Municipality's assets and the current service levels provided by those assets.

O. Reg 588/17 requires that for each asset category included in the asset management plan, the following information must be identified:

- Summary of the assets;
- Replacement cost of the assets;
- Average age of the assets (it is noted that the Regulation specifically requires average age to be determined by assessing the age of asset components);
- Information available on condition of assets; and
- Approach to condition assessments (based on recognized and generally accepted good engineering practices where appropriate).

Asset management plans must identify the current levels of service being provided for each asset category. For core municipal infrastructure assets, both the qualitative descriptions pertaining to community levels of service, and metrics pertaining to technical levels or service, are prescribed by O. Reg 588/17. For all other infrastructure assets, each municipality will need to establish its own measures for levels of service.

Asset management plans must also include a 10-year forecast identifying the proposed levels of service for each asset category. The proposed levels of service will be defined using the qualitative descriptions and technical metrics that the municipality uses to define current levels of service. The rest of Section 4 addresses the requirements identified above, with a focus on each individual asset category.

4.3 Roads & Related

4.3.1 State of Local Infrastructure

The Township of Chapple currently owns and manages 469.94 total kilometres of roads with a 2021 replacement cost totalling approximately \$160,337,200.00. The replacement cost has been estimated based on the unit costs identified in the Lifecycle Management Strategy section of this report (Section 7.0). The road network consists of roads with various surface types, including gravel, pavement, and earth. These assets reside in urban and rural roadside environments.

90% of the road network length is gravel. The next most common surface type is earth roads at 9% of the road network length – these roads have very minimal traffic and are not accessed regularly. Asphalt roads only account

for 1% of the road network length and exist solely in the Barwick Village area. In the context of roadside environment, over 95% of the network is rural.

Figure 4-1 provides an illustration of Chapple’s road network, showing surface type with corresponding repair and replacement costs.

Table 4-1

Road Network Replacement Value (2021)			
Surface Type	Quantity (kms)	Per/km Replacement Cost	Full Replacement Cost
Asphalt	6.6	\$ 225,000.00	\$ 1,485,000.00
Earth	41.4	\$ 160,000.00	\$ 6,624,000.00
Gravel	421.9	\$ 380,000.00	\$ 160,337,200.00
Road Network Repair Value (2021)			
Surface Type	Quantity (kms)	Per/km Repair Cost	Full Repair Cost
Asphalt	6.6	\$ 2,500.00	\$ 16,500.00
Earth	41.4	\$ 1,500.00	\$ 62,100.00
Gravel	421.9	\$ 18,000.00	\$ 7,594,920.00
*Repair and replacement costs do not include curbs, gutters, culverts, bridges, brushing/trimming, or any other necessary environmental or infrastructure			

4.3.2 Condition

Assessed physical condition, rather than age provides a more accurate estimate of an asset’s remaining service life.

90% of the Township of Chapple’s road network consists of gravel roads. The condition of gravel roads can deteriorate rapidly and is less costly to improve through lifecycle activities such as routine grading and re-gravelling every few years. Because of this, lifecycle activities for gravel roads are currently funded through the operating budget.

The condition of the asphalt and gravel roads was assessed by the Public Works Department in 2021. The department used a Pavement Condition Index (PCI) as the measure of condition. PCI is measured on a scale of 0-100, with 100 being a perfect condition and 0 indicating an asset that has failed.





To better communicate the condition of the road network, these numeric condition ratings have been segmented into qualitative condition states. Table 4-2 summarizes the various physical condition ratings and the condition state they represent for road assets.

4-2: Road Conditions Assessment Calculator		
Measurement	Condition Rating	PCI
1	Very Poor	0-29
2	Poor	30-49
3	Fair	50-69
4	Good	70-89
5	Very Good	90-100

4-3: Roads Summary			
Surface Type	Length (lane-km)	Average Condition (PCI)	Condition Rating
Gravel	421.9	74	Good
Asphalt	6.6	77	Good
Earth	41.4	46	Poor
TOTAL	469.9	65.67	Fair
*Roads have two lanes with the exception of Off-Lake Road and Barwick Townline Road			

Table 4-3 examines the average condition of the road network by surface type. The average condition is weighted based on kilometres. The PCI ratings used in this plan are from 2021. The Municipality should develop a strategy to update the road condition values annually to reflect expected deterioration and any improvements that have been made that year. Every three to five years, a road needs study should be completed where the condition of roads is assessed directly and evaluated to identify short- and medium-term needs.

As illustrated in Table 4-3, Gravel and Asphalt roads are in a **Good** condition state. The overall average PCI for the entire road network is currently 65.67 - Fair condition state.

Table 4-4: Road Condition State with Respect to Pavement Condition Index		
Condition (PCI)	Condition Description	Picture
90-100	Very Good	
70-89	Good	
50-69	Fair	
30-49	Poor	
0-29	Very poor	N/A

4.3.3 Current Levels of Service – Roads & Related

The levels of service currently provided by the Township of Chapple’s road network are, in part, a result of the state of local infrastructure identified above. A levels of service analysis defines the current levels of service and enables the Municipality to periodically evaluate these service level objectives.

Road assets have prescribed levels of service reporting requirements under O. Reg. 588/17. These requirements include levels of service reporting at two different levels, i.e., community levels of service and technical levels of service. Community levels of service objectives describe service levels in terms that customers understand and reflect customers’ expectations with respect to the scope and quality of the road network. Technical levels of service describe the scope and quality of the Municipality’s roads through performance measures that can be quantified

and evaluated. These performance measures can be used to assess how effectively a municipality is achieving its established targets.

Road users are often particularly concerned with roads that are in Poor and Very Poor condition. To address these concerns, the information on condition conveyed through the average PCI performance measure required by O. Reg. 588/17 will be supplemented by reporting the total kilometre length of roads in Poor condition or worse.

Table 4-5 presents the current level of service for roads. It includes the requirements mandated by O. Reg 588/17. Figure 4-4 and Figure 4-5 provide a spatial illustration of the condition of the Municipality’s road network.

4-5: Community Levels of Service – Roads & Related	
Service Attribute	Community Levels of Service
Scope	Table 4-1 depicts the road network by surface type
Quality	Table 4-4 details how road PCI is separated into qualitative condition states

4.3.4 Proposed Levels of Service – Roads & Related

Table 4-6 presents the proposed technical levels of service for the Township of Chapple’s road network, identified through consultation with the municipality’s Public Works Department.

4-6: Roads Summary			
Surface Type	Length (lane-km)	Current Performance (Average Condition PCI)	Proposed Performance (Average Condition PCI)
Gravel	421.9	74	75
Asphalt	6.6	77	80
Earth	41.4	46	50
TOTAL	469.9	65.67	68.33
*Roads have two lanes except for Off-Lake Road and Barwick Townline Road			

4.4 Bridges and Culverts

4.4.1 State of Local Infrastructure

The Municipality currently owns and manages 10 bridges and 1 major culvert, with an estimated replacement cost of \$10,436,300.00.

Table 4-7 provides a summary of the number, age, and replacement cost for the current bridge and major culvert inventory. The average age of the municipality's bridges and culverts is almost 41 years, with bridges averaging 44.7 years. The municipality's major culvert was completed in 2021.

Table 4-7: Bridge and Culvert Infrastructure Summary			
Type	Quantity	Average Age	Replacement Cost
Bridges	10	44.7	\$10,190,000.00
Culverts	1	1	\$276,300.00
TOTAL	11	40.73	\$10,436,300.00
*Replacement costs are calculated based on \$6,500/m2 * Span* 8.2 (assumed deck width) * 1.3 unless the actual construction cost is known			

4.4.2 Condition

The Township of Chapple's 2021 Structure Inspection Appraisal Report, completed by K. Smart & Associates Ltd, assessed the condition of the bridge and culvert inventory, assigning a Bridge Condition Index (BCI) to each asset. A BCI score is provided on a numeric scale of 0-100 and is a measure of the overall condition of the structure based on an evaluation of individual components.

Like road assets, to better communicate the condition of the bridge and culvert inventory, the numeric condition ratings have been segmented into qualitative condition states, as summarized in Table 4-8.

Table 4-8: Bridge and Culvert Condition States Defined with Respect to the Bridge Construction Index





Condition (BCI)	Condition Description	Picture
93-100	Excellent	
70-92	Good	
65-70	Fair	
30-49	Poor	
0-29	Very poor	N/A

Table 4-9 indicates bridges and culverts are both, on average, in a **Good to Excellent** condition state. The overall average BCI for the entire bridge and culvert inventory is 85.24 representing a Good to Excellent condition state. Two bridges are in **Poor** condition, meaning their BCI are less than 80. The 2021 Structure Inspection Appraisal Report has recommendations for rehabilitation or replacement projects for these structures.

Table 4-9: Bridge and Culvert Condition Analysis				
Type	Quantity	Average BCI	Number in Poor Condition	Average Condition State
Bridge	10	83.76	2	Good to Excellent
Culvert	1	100	0	Excellent
TOTAL	11		2	

4.4.3 Current and Proposed Levels of Service – Bridges & Culverts

The level of service currently provided by the Municipality’s bridge and culvert inventory is, in part a result of the state of local infrastructure identified above. A levels of service analysis defines the current levels of service and enables the Municipality to periodically evaluate these service level objectives.

Bridge and culvert assets have prescribed levels of service reporting requirements under O. Reg 588/17. These requirements include levels of service reporting at two levels – community levels of service and technical levels of service. Community levels of service objectives describe service levels in terms that customers understand and reflect customers’ expectations with respect to the scope and quality of the bridge and culvert inventory. Technical levels of service describe the scope and quality of the Municipality’s bridges and culverts through performance measures that can be quantified and evaluated. These performance measures can be used to assess how effectively a municipality is achieving its established targets.

Table 4-10 provides a summary of this information for all major bridge and culvert assets, completed by K. Smart Associates Ltd. in the Township’s 2021 Structure Inspection Appraisal Report. The Municipality plans to address the identified renewal needs over time, gradually increasing the overall condition of the inventory and following the proposed recommendations in the report.

Table 4-10: Current and Proposed Levels of Service – Bridges & Culverts

Structure Name	Approx. Year of Construction	Estimated Replacement Cost	Estimated Remaining Lifespan (Years)	BCI	Condition
Ahrens Bridge	2019	\$1,621,600.00	73	100.0	Excellent
Barron Bridge	2010	\$1,348,400.00	64	98.6	Excellent
Hart Bridge	1970	\$660,000.00	24	69.5	Fair
Hickey Bridge	1967	\$550,000.00	21	67.9	Poor
Hilliard Bridge	1969	\$675,000.00	23	87.0	Fair to Poor
Irvine Bridge	1970	\$675,000.00	24	79.7	Poor
McCulloch Bridge	1966	\$1,500,000.00	20	77.1	Fair
Nanson Bridge	1968	\$660,000.00	22	92.6	Good to Fair
Off Lake Culvert	2021	\$276,300.00	35	100.0	Excellent
Woolsey Bridge	1960	\$1,650,000.00	14	92.0	Fair
Zimmerman Bridge	1974	\$850,000.00	28	73.2	Good to Fair

*Replacement costs are calculated based on \$6,500/m2 *Span* 8.2 (assumed deck width) * 1.3 unless the actual construction cost is known.
*Remaining lifespan assumes that a bridge has an expected lifespan of 75 years, and a culvert has an expected lifespan of 35 years.

4.5 Water and Wastewater Network

4.5.1 State of Local Infrastructure

The Municipality currently owns and manages a water treatment and distribution system comprised of a water and wastewater treatment facility, sewers and watermains. The 2022 replacement cost of the system is approximately \$9,090,000.00.

Table 4-11 provides the current performance and replacement cost of the various types of assets.

Table 4-11 Water Network Infrastructure Summary				
System/Type	Good (No Deficiencies)	Fair (Has Deficiencies)	Poor (Requires Treatment/Spending)	Replacement Cost (2022\$)
Water Treatment	\$1,101,000.000	\$238,000.00	\$1,541,000.00	\$2,880,000.00
Wastewater Treatment	\$175,000.00	\$515,000.00	\$200,000.00	\$890,000.00
Sewers	\$1,440,000.00	\$860,000.00	\$0.00	\$2,300,000.00
Watermains	\$2,220,000.00	\$800,000.00	\$0.00	\$3,020,000.00
Total	\$4,936,000.00	\$2,413,000.00	\$1,741,000.00	\$9,090,000.00

4.5.2 Condition

The Township of Chapple’s water and wastewater network was assessed in 2022 by the Ontario Clean Water Agency (OCWA), assigning a Performance Rating to each asset. Table 4-12 provides a description of the performance ratings as provided by OCWA.

Table 4-12 Asset Performance Rating Descriptions		
Performance Category	Description	State of Asset
Good	Asset performance meets or exceeds its objectives/requirements	No deficiencies
Fair	Asset performance is nearing the point where it will not meet its objectives/requirements	Has deficiencies
Poor	Asset performance is not meeting its objectives/requirements	Requires treatment (spending)

**Table 4-13
Current Asset Performance Category**

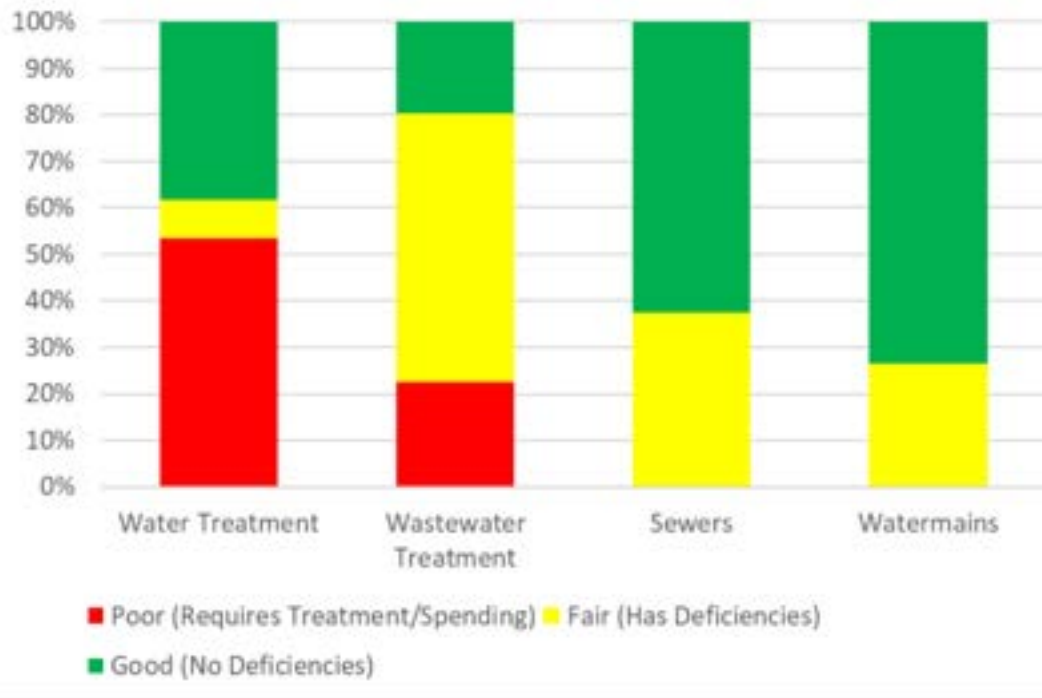


Table 4-13 indicates that Chapple’s water network is, on average, in a Good to Fair condition state. The 2022 Asset Management Plan for Water and Wastewater Systems, developed by the Ontario Clean Water Agency for the Township of Chapple, contains recommendations for rehabilitation or replacement projects for these assets.

4.5.3 Current and Proposed Levels of Service – Water and Wastewater Network

The level of service currently provided by the Municipality’s water and wastewater network is, in part a result of the state of local infrastructure identified above. A levels of service analysis defines the current levels of service and enables the Municipality to periodically evaluate these service level objectives.

Water and wastewater networks have prescribed levels of service reporting requirements under O. Reg 588/17. These requirements include levels of service reporting at two levels – community levels of service and technical levels of service. Community levels of service objectives describe service levels in terms that customers understand and reflect customers’ expectations with respect to the scope and quality of the water and wastewater systems. Technical levels of service describe the scope and quality of the Municipality’s water and wastewater network through performance measures that can be quantified and evaluated. These performance measures can be used to assess how effectively a municipality is achieving its established targets.

The 2022 Asset Management Plan for Water and Wastewater Systems provides detailed summaries of this information for water and wastewater assets. The Municipality plans to address the identified renewal needs over time, gradually increasing the overall condition of the inventory and following the proposed recommendations provided by OCWA.

5.0 Asset Management Strategy

The asset management strategy is a set of planned actions that will allow the Township of Chapple to ensure that its assets offer the desired levels of service, for a sustainable cost, while managing risk.

This section summarizes the following:

- Non-infrastructure solutions.
- Maintenance activities.
- Renewal / Rehabilitation activities.
- Replacement activities.
- Disposal activities.
- Expansion activities.

5.1 Non-Infrastructure Solutions

Non-infrastructure solutions are actions or policies that can lower costs or extend asset life. The Township of Chapple has identified many of these solutions in their official plan which was approved in 2013, and is intended to last for a period of 20 years.

Included in the Basis for the plan is the following:

- The Township of Chapple is characterized primarily by rural residential development and agriculturally based activities. The rural character of the Township will be maintained over the lifetime of this Plan.
- Private water and sewage will continue to be the primary source of lot servicing in the Township. As a result, developments that require communal or full municipal services will be considered only with an amendment to this Plan. Any application to extend services from an adjacent municipality will be considered only with an amendment to the Official Plan.
- Much of the Township's existing non-residential development occurs along Highway 11/71. This Plan recognizes the Highway 11/71 corridor as the continued focus of primary economic development in the Township.
- The municipality presently provides an adequate level of services to allow for sufficient growth over the lifetime of this Plan. Development in the Township will occur on the basis of the existing level of municipal services.

Additionally, Section 6.0 of the plan indicates a mechanism for demand management, and a mechanism for directing development to limit the burden on existing road assets.

It is recommended that the Township of Chapple continue to undertake land use planning, undertake development in accordance with the Official Plan, and continue with the fiscally sound methodology outlined in the Official Plan. Doing so will help manage demand, and ensure that the Township develops in such a way that has a sustainable plan to cover the costs needed to maintain levels of service.

5.2 Maintenance Activities

A detailed list of maintenance activities for each asset is appended to this report. It is recommended that the Township undertake the identified maintenance within the timeframe identified in each asset report.

Some significant maintenance activities that were identified during the inspection process include (these include critical health and safety issues and building code issues):

1. Install rated door, and closer at mechanical room in Municipal Office.
2. Provide second exit from second floor in Municipal Office.
3. Install fire dampers in ductwork at mechanical room in Municipal Office.
4. Install rate drywall on underside stairs at storage room in the Public Works Building.
5. Provide gas detection system in garage in the Public Works Building.
6. Re-set several floor boards in main level open area in the Museum.
7. Provide emergency exit signs in the Museum.
8. Cut off exposed guardrail anchor bolts and cap on the Lighthouse.
9. Finish off drywall in mechanical room in the Fire Hall.
10. Install rated door complete with closer to mechanical room in Fire Hall.
11. Relocate combustible material away from wood stove in Landfill Building.
12. Install door to electrical room in North Rink Shack.
13. Reattach grounding wire conduit to building in North Fire Hall.
14. Provide Epoxy seal on floor at generator and fuel tank in Water Treatment Plant Building.
15. Remove stored materials from diesel generator room in Water Treatment Plant Building.
16. Provide stop and speed limit signs to roads as required.
17. Install blind hill sign on Playford Road, Tait Road

18. Install Curve Signs on Woolsey Road, Cedar Yard Road.
19. Provide and install "Use road at own Risk sign" on Caul Road.

5.3 Renewal / Rehabilitation Activities

A detailed list of maintenance activities for each asset is appended to this report. It is recommended that the Township undertake the identified maintenance within the timeframe identified in each asset report. Renewal / Rehabilitation costs are identified within each asset report.

It should be noted that it is recommended that all roads be rehabilitated as described in the individual asset reports within a period of ten (10) years, as identified. It is recommended to:

- Add an additional four inches of granular "A" to the entire length of Marr Road.
- Add an additional four inches of granular "A" (0.8km to end) on Vanheyst Road.
- Add an additional four inches of granular "A" to the entire length of Bolen Road South.
- Resurface road (0-0.6km) on Nighswander Road.
- Repair east retaining wall (wing wall) on Angus Road North Bridge #2.

5.4 Replacement Activities

A detailed list of maintenance activities for each asset is appended to this report. It is recommended that the Township undertake the identified maintenance within the timeframe identified in each asset report. When required, replacement costs are identified within each asset report. It is recommended that the Township replace the following assets as identified in the asset reports.

- Replace 20 meters of pavement (West of Main Street) on Cedar Yard Road
- Replace 20 meters of pavement (in two locations) on Queen Street.
- Replace 5 meter section of curb on Hele Road Bridge
- Replace bent steel upright posts on Mather Road East Bridge #1
- Replace rotted retaining wall/abutment pile/post on Mather Road East Bridge #1
- Replace one 10x8 creosote-treated timber curb member on Mather Road East Bridge #2
- Replace and relevel one 12x12 creosote-treated support on Mather Road East Bridge #2
- Replace all retaining wall end piles (4) on Angus Road Bridge #2.
- Replace curb supports (timbers) on Sturgeon Creek Bridge.
- Replace two (2) guard rail boards on Sturgeon Creek Bridge.

5.5 Disposal Activities

It is recommended that the Township dispose of assets in accordance with their procurement policy, if the asset has potential value (e.g. used vehicle, building). Otherwise, the Township should dispose of assets in accordance with environmental regulations as required. Disposal of assets should occur in accordance with the Official Plan.

5.6 Expansion Activities

Expansion activities should occur in accordance with the Official Plan, which utilizes a fiscally responsible approach to development focussed on the Highway 11/71 corridor, which limits financial exposure.

6.0 Financial Plan

6.1 General overview of financial plan requirements

In order for an AMP to be effectively put into action, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Township of Chapple to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service and projected growth requirements.

The following pyramid depicts the various cost elements and resulting funding levels that should be incorporated into AMP's that are based on best practices.



This report develops such a financial plan by presenting several scenarios for consideration and culminating with final recommendations. As outlined below, the scenarios presented model different combinations of the following components:

- a) The financial requirements for:
- Existing assets
 - Existing service levels

- Requirements of contemplated changes in service levels (none identified for this plan)
- Requirements of anticipated growth (none identified for this plan)

b) Use of traditional sources of municipal funds:

- Tax levies
- User fees
- Reserves
- Debt
- Development charges (not applicable)

c) Use of non-traditional sources of municipal funds:

- Reallocated budgets (not required for this AMP)
- Partnerships (not applicable)
- Procurement methods (no changes recommended)

d) Use of other orders of government funds:

- Federal gas tax
- Grants

If the financial plan component of an AMP results in a funding shortfall, the Province requires the inclusion of a specific plan as to how the impact of the shortfall will be managed. In determining the legitimacy of a funding shortfall, the Province may evaluate a municipality's approach to the following:

a) In order to reduce financial requirements, consideration has been given to revising service levels downward.

b) All asset management and financial strategies have been considered. For example:

- If a zero debt policy is in place, is it warranted? If not, the use of debt should be considered.
- Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered.
- Our organization recently attended the Ontario Good Roads Association meeting in which both the Premier and Minister of Infrastructure encouraged the carrying of a maximum of 11% debt load by municipalities. This is now considered prudent as it multi-generational. Thus a 10-year plan to finance a bridge would be viewed quite favourably by both Provincial and Federal funding agencies.

This AMP includes recommendations that avoid long-term funding deficits

6.2 Financial information relating to the Township of Chapple's AMP

6.2.1 Funding objective

We have developed scenarios that would enable the Township of Chapple to achieve full funding within 10 years for the following assets:

a) Tax funded assets – Road network, Bridges & Culverts, Facilities, Water & Wastewater, Equipment, Other

For each scenario developed we have included strategies, where applicable, regarding the use of tax revenues, grant revenues, reserves and debt financing. It should be noted that in developing these scenarios it was projected that the percentage of total taxation revenue allocated to capital projects will remain consistent with prior year's allocations. In years prior to 2016 approximately 32% of total taxation revenue was allocated to capital projects and this was the percentage that was used for all projected taxation revenue dedicated to capital throughout this financial plan. It should be noted that the level of taxation revenue that the Township is able to dedicate to capital is quite exceptional as, for example, the City of Thunder Bay is only able to allocate approximately 10% of its budget to capital.

6.2.2 Tax funded assets

6.2.2.1 Current funding position

Tables 1 and 2 outline, by asset category, the Township of Chapple's annual asset investment requirements, projected funding positions and funding changes projected and required to achieve full funding on assets funded by taxes.

Table 1: Summaries of Projected Annual Infrastructure Requirements and Projected Annual Funding

2016 Summary of Projected Annual Infrastructure Requirements and Projected Annual Funding

Asset Category	Projected 2013 Investment Required	Taxes	Gas Tax	Other	Total	2013 Projected Annual Surplus
Roads	\$101,100	\$238,234	\$42,912	\$ -	\$281,146	\$180,046
Bridges & Culverts	\$11,000	\$11,000	\$ -	\$ -	\$11,000	\$ -
Facilities	\$53,900	\$53,900	\$ -	\$ -	\$53,900	\$ -
Water & Wastewater	\$6,000	\$6,000	\$ -	\$ -	\$6,000	\$ -
Equipment	\$7,500	\$7,500	\$ -	\$ -	\$7,500	\$ -
Other	\$2,000	\$2,000	\$ -	\$ -	\$2,000	\$ -
Total	\$181,500	\$318,634	\$42,912	\$ -	\$361,546	\$180,046

Years 1 to 5 Summary of Projected Annual Infrastructure Requirements and Projected Annual Funding

Asset Category	Projected Year 1 - 5 Investment Required	Taxes	Gas Tax	Other	Total	Year 1 - 5 Projected Annual Deficit
Roads	\$256,029	\$214,945	\$42,912	\$ -	\$257,857	\$1,828
Bridges & Culverts	\$31,850	\$31,850	\$ -	\$ -	\$31,850	\$ -
Facilities	\$35,630	\$35,630	\$ -	\$ -	\$35,630	\$ -
Water & Wastewater	\$51,700	\$51,700	\$ -	\$ -	\$51,700	\$ -
Equipment	\$7,500	\$7,500	\$ -	\$ -	\$7,500	\$ -
Other	\$2,000	\$2,000	\$ -	\$ -	\$2,000	\$ -
Total	\$382,709	\$343,625	\$42,912	\$ -	\$307,546	\$1,828

Years 6 to 10 Summary of Projected Annual Infrastructure Requirements and Projected Annual Funding

Asset Category	Projected Year 6 - 10 Investment Required	Taxes	Gas Tax	Other	Total	Year 6 - 10 Projected Annual Surplus
Roads	\$68,000	\$334,363	\$42,912	\$ -	\$377,275	\$309,275
Bridges & Culverts	\$11,000	\$11,000	\$ -	\$ -	\$11,000	\$ -
Facilities	\$14,000	\$14,000	\$ -	\$ -	\$14,000	\$ -
Water & Wastewater	\$6,000	\$6,000	\$ -	\$ -	\$6,000	\$ -
Equipment	\$7,500	\$7,500	\$ -	\$ -	\$7,500	\$ -
Other	\$2,000	\$2,000	\$ -	\$ -	\$2,000	\$ -
Total	\$106,500	\$374,863	\$42,912	\$ -	\$417,775	\$309,275

6.2.2.2 Recommendations for full funding

The annual investment requirement for roads, bridges/culverts, facilities, water and wastewater, equipment, other deferred maintenance and ongoing maintenance, and the annual revenue allocated to these assets are:

Table 2: Summary of Annual Investment Requirements and Annual Revenue Allocated

	Annual Investment Requirement	Annual Revenue Allocated	Annual Surplus (Deficit)
<i>2016</i>	\$181,500	\$361,546	\$180,046
<i>Years 1 to 5</i>	\$382,709	\$386,537	\$1,828
<i>Years 6 to 10</i>	\$106,500	\$417,775	\$309,275

Therefore, the cumulative annual surplus for capital investments is projected to be \$1,735,561. These infrastructure categories are projected to be funded via taxation revenue and Gas Tax at 100% of the townships long-term requirements assuming no additional capital spending other than the maintenance costs projected.

The Township of Chapple budgeted for annual tax revenues of \$955,086 in 2015. Planned funding would require an increase in tax revenue corresponding to the projected annual inflation rate.

We recommend that over the next 10 years an annual tax increase corresponding to the annual inflation rate be implemented in order to achieve the required total tax revenue.

This involves full funding being achieved over 10 years by:

- a) Increasing tax revenues by the annual inflation rate each year for the next 10 years solely for the purpose of full funding to the 6 asset categories covered by this AMP.
- b) Allocating 100% of the gas tax revenue (currently \$42,912) to the roads category.
- c) Applying for grant funding as required.

It should be noted that several major capital outlays will be required in the next 5 years in order to achieve all of the requirements outlined in the AMP. These major capital items consist of:

- a) The Water Treatment System requires \$93,500 in improvements which include a new backup pump, new Scada system, and new confined space equipment.
- b) The Lagoon requires \$124,000 in improvements which include a new discharge line.
- c) Tait Road will require \$203,450 in repairs and improvements including widening, additional gravel, and rock blasting
- d) Marr Road will require \$102,300 in repairs and improvements including widening and ditching.

In performing our projections these expenditures were not assigned to any particular year within the next 5 years. Instead these expenditures were projected in equal annual amounts throughout the next 5 years as it was not possible for us to project specifically which year the Township will perform these major repairs. This method ensures that all the expenditures are recorded within the projections. However, it does fail to indicate that these large expenditures will not be incurred in smaller annual amounts but will instead be incurred in larger less reliable expenditure amounts. The overall affect by the end of the 5 year and 10 year projections will be the same, however the actual expenditures will not be incurred as smoothly as these projections indicate.

Although this option achieves full funding on an annual basis in 10 years and provides financial sustainability over the period modeled (to 2050), the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Prioritizing these and future projects will require the age based data to be replaced by condition based data.

6.3 Use of Reserves

6.3.1 Available Reserves

Reserves play a critical role in long-term financial planning. The benefits of having reserves available for infrastructure planning include:

- The ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors.
- Financing one-time or short-term investments.
- Accumulating the funding for significant future infrastructure investments.
- Managing the use of debt.
- Normalizing infrastructure funding requirements.

By reserve type, table 7 outlines the details of the reserves available to the Township of Chaple per the 2015 financial statements

Table 7: Summary of Reserves Available

Reserve Type	Balance
<u>Reserve Funds</u>	
Capital	\$463,005
<u>Deferred Revenue</u>	
Gas Tax	\$138,407

There is considerable debate in the municipal sector as to the appropriate level of reserves that a municipality should have on hand. There is no clear guideline that has gained wide acceptance. Factors that municipalities should take into account when determining their capital reserve requirements include:

- Breadth of services provided
- Age and condition of infrastructure
- Use and level of debt
- Economic conditions and outlook
- Internal reserve and debt policies

6.4 Summary of financial Plan

Table 10 illustrates the expected annual capital investments, revenues, reserve allocations and debt financing required under the recommended financial plan.

Table 10: Summary of Annual Capital Transactions Under the Financial Plan

Summary of 2016 Capital Transactions Under the Financial Plan

Asset Category	2016 Annual Investment Required	2016 Projected Taxation Revenue	2016 Projected Gas Tax	2016 Projected Grant Revenue	2016 Surplus (Deficit)	2016 Projected Reserve Allocations	2016 Debt Financing	2016 Adjusted Surplus (Deficit)
Roads	\$101,100	\$238,234	\$42,912	\$ -	\$180,046	\$ -	\$ -	\$180,046
Bridges & Culverts	\$11,000	\$ 11,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facilities	\$53,900	\$53,900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water & Wastewater	\$6,000	\$6,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Equipment	\$7,500	\$7,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$2,000	\$2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$181,500	\$318,634	\$42,912	\$ -	\$180,046	\$ -	\$ -	\$180,046

Summary of Year 1 to 5 Annual Capital Transactions Under the Financial Plan

Asset Category	Year 1 - 5 Annual Investment Required	Year 1 - 5 Projected Annual Taxation Revenue	Year 1 - 5 Projected Annual Gas Tax	Year 1 - 5 Projected Annual Grant Revenue	Year 1 - 5 Annual Surplus (Deficit)	Year 1 - 5 Projected Annual Reserve Allocations	Year 1 - 5 Annual Debt Financing	Year 1 - 5 Adjusted Annual Surplus (Deficit)
Roads	\$256,029	\$214,945	\$42,912	\$ -	\$1,828	\$ -	\$ -	\$ 1,828
Bridges & Culverts	\$31,850	\$31,850	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facilities	\$35,630	\$35,630	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water & Wastewater	\$51,700	\$51,700	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Equipment	\$7,500	\$7,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$2,000	\$2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$508,649	\$343,625	\$42,912	\$ -	\$1,828	\$ -	\$ -	\$1,828

Summary of Year 6 to 10 Annual Capital Transactions Under the Financial Plan

Asset Category	Year 6 - 10 Annual Investment Required	Year 6 - 10 Projected Annual Taxation Revenue	Year 6 - 10 Projected Annual Gas Tax	Year 6 - 10 Projected Annual Grant Revenue	Year 6 - 10 Annual Surplus (Deficit)	Year 6 - 10 Projected Annual Reserve Allocations	Year 6 - 10 Annual Debt Financing	Year 6 - 10 Adjusted Annual Surplus (Deficit)
Roads	\$68,000	\$334,363	\$42,912	\$ -	\$309,275	\$ -	\$ -	\$309,275
Bridges & Culverts	\$11,000	\$11,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facilities	\$14,000	\$14,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water & Wastewater	\$6,000	\$6,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Equipment	\$7,500	\$7,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$2,000	\$2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$106,500	\$374,863	\$42,912	\$ -	\$309,275	\$ -	\$ -	\$309,275

The recommended plan will result in the Township of Chapple being able to complete all recommended investments in the capital assets as outlined by the AMP. The financial plan will result in the township annually increasing its tax rate by the annual inflation rate over the next 10 years. It is assumed that Gas Tax revenue will remain constant at \$42,912 over the next 10 years as there is no indication from the information reviewed that these revenues will significantly increase.

It should be noted that in preparing this financial plan several projections and estimates were required and it is possible that actual future results could differ materially from the projections and estimates that were utilized in preparing the above financial plan.

7.0 Lifecycle Management Strategy

7.1 Introduction

This section details the lifecycle management strategies required to achieve the proposed levels of service outlined in Section 4.0. A lifecycle management strategy identifies the recommended lifecycle activities required to achieve the levels of service discussed in Section 4.0. Within the context of this Asset Management Plan, lifecycle activities are the specified actions that can be performed on an asset to ensure it is performing at an appropriate level and/or to extend its service life. These actions can be carried out on a planned schedule in a prescriptive manner, or through a dynamic approach where the lifecycle activities are only carried out when specified conditions are met.

O. Reg 588/17 requires that all potential lifecycle activity options be presented, with the aim of analyzing these options in search of identifying the set of lifecycle activities that can be undertaken at the lowest cost to maintain current levels of service or to provide proposed levels of service. Asset management plans must include a 10-year capital plan that forecasts the lifecycle activities resulting from the lifecycle management strategy.

What follows are the lifecycle management strategies for all assets contained within this Asset Management Plan, with each section focusing on an individual asset class.

7.1.1 Population and Economic Activity – Impact on Lifecycle Management

As of the 2021 Census, the Municipality had a population of 763. This represents a change of 18.7% from its 2016 population of 643. This population growth, though minimal, may result in incremental service demands that could impact levels of service in the future.

Climate change and severe weather events, including flooding and drought conditions experienced in 2021 and 2022, may have negative impacts on specific core assets, putting them under more stress, and likely shortening their service lives. As a result, assets may need more frequent repair, maintenance, and replacement in the future, which could impact the lifecycle activities detailed in Section 7.

7.2 Roads and Roads Related

7.2.1 Lifecycle Activities

This section will detail the lifecycle activities as identified through discussions with the municipality’s Public Works department. The lifecycle activities that the Municipality currently employs in the management of its roads include patching, grading, gravel resurfacing, surface treatment, dust layer, ditching and brushing.

Table 7-1 details the maintenance treatments associated with undertaking these lifecycle activities, by road surface type.

Table 7-1 Road Lifecycle Activity Costs by Surface Type (per km)			
Surface Type	Quantity (kms)	Maintenance Treatment	Reconstruction Treatment
Asphalt	6.6	Patching	-Fill potholes with cold mix, add asphalt on paved and surface treated areas
Earth	41.4	Gravel Resurfacing	-Haul ‘A’ Gravel onto roads and grade
Gravel	421.9	Gravel Resurfacing/Dust Layer/Grading/Ditching/Brushing/Surface Treatment	-Haul ‘A’ gravel onto roads and grade -Add layer of calcium chloride onto gravel roads -Maintain ditches to allow for water to flow away from roads -Brushing/cutting overgrown vegetation around roads to keep visual clearance and maintain ditches
*Assets like sidewalks, streetlights, and signs have a simple lifecycle – they are simply replaced if they are found not to be delivering the desired level of service.			

Figure 7-2 provides a 10-year forecast of expenditures for lifecycle activities and costs for all the municipality’s roads, based on lifecycle costs from 2021. As stated in Section 4, 90% of Chapple’s road network consists of gravel roads. The condition of gravel roads can deteriorate rapidly and is less costly to improve through these lifecycle activities, such as routine grading and gravelling. As a result, most lifecycle activities for roads are funded through the municipality’s operating budget, rather than the capital budget. The forecast illustrates the average annual expenditures, and the projected 10-year costs.

Table 7-2 Annual Average Lifecycle Cost (per km)			
Surface Type/ Lifecycle Activity	Quantity (kms)	Average Annual Lifecycle Cost (\$2021)	10-year Forecast
Asphalt			
Patching	6.6	\$3,650.00	\$36,500.00
Gravel			
Gravel Resurfacing	421.9	\$172,375.00	\$1,723,750.00
Dust Layer	421.9	\$85,075.00	\$850,750.00
Grading	421.9	\$47,200.00	\$472,000.00
Ditching	421.9	\$11,765.00	\$117,650.00
Brushing	421.9	\$18,150.00	\$181,500.00
Surface Treatment	421.9	\$5,150.00	\$51,500.00
TOTAL		\$343,365.00	\$3,433,650.00
*Lifecycle costs and forecasted costs are represented in 2021 dollars and do not account for inflation or price changes over time			

7.3 Bridges and Culverts

7.3.1 Managing Bridges and Culverts

O. Reg 104/97 requires that structural bridges and culverts be inspected every two years by professional engineers. The Township of Chapple plans to manage bridges and culverts by completing the work recommended in the inspection reports. By following the engineering recommendations, the municipality believes it can continue to operate the bridges safely on an ongoing basis.

7.3.2 Lifecycle Activities

This section identifies a generalized lifecycle model for bridges and culverts. Minor rehabilitation, major rehabilitation, and reconstruction have been included in the general lifecycle model.

In the 2021 OSIM report, lifecycle activities with a total cost of \$7,350,500.00 were identified that needed to be done over the next ten years. Table 7-3 shows the distribution of the costs of the projects over the ten-year forecast period as recommended in the report.

Table 7-3	
List of Repair and Rehabilitation Work Recommended in 2021 OSIM Report	
Timeframe	Total Cost
Urgent	\$0.00
Years 1 – 5	\$1,978,000.00
Years 6 – 10	\$5,372,500.00
Total	\$7,350,500.00

7.4 Water and Wastewater Network

7.4.1 Managing the Network

By-Law 1675, dated July 24, 2018, authorized the Township of Chapple to enter into a 10-year agreement with the Ontario Clean Water Agency (OCWA). OCWA provides management, operation, and maintenance services in respect to the Municipality's water and wastewater treatment and lagoon facilities. O. Reg. 170/03 made under the *Safe Drinking Water Act (2002)*, requires that the owner of a drinking water system prepare an annual report on the operation of the system and quality of its water. The Township of Chapple manages its water network by completing the work recommended in these annual and monthly reports provided by OCWA and made publicly available on the municipality's website. In 2022, OCWA developed an Asset Management Plan for Water and Wastewater Systems for the Township of Chapple. By following the recommendations provided by OCWA, the municipality believes it can continue to operate the water network safely on an ongoing basis.

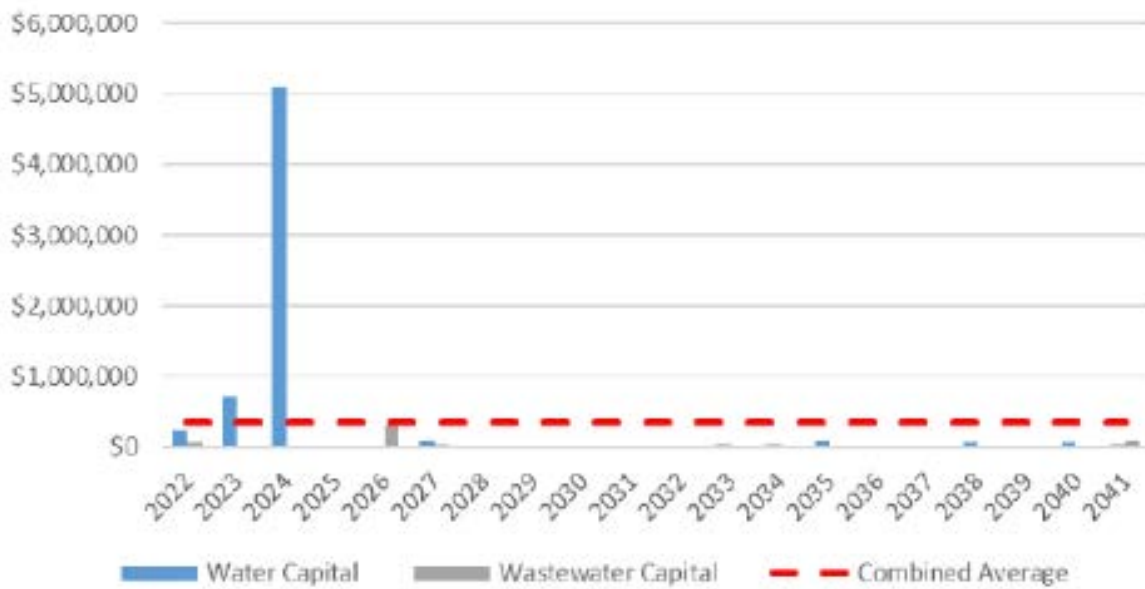
7.4.2 Lifecycle Activities

This section will detail the lifecycle activities for Chapple's Water and Wastewater Network as identified by the Ontario Clean Water Agency. The lifecycle activities that the Municipality currently employs in the management of its water network is detailed in the publicly available monthly and annual reports submitted by the Ontario Clean Water Agency, as well as the *2022 Asset Management Plan for Water and Wastewater Systems*. These reports also provide details of all non-routine maintenance, capital project forecasting and estimated costs.

In the most recent report provided by OCWA, lifecycle activities with a total cost of approximately \$325,000.00 per year are needed over the next 20 years to achieve asset performance expectations for the water and wastewater systems. This average annual spending needs include an estimated \$5,500,000.00 for a large project associated with the new well supply. The average annual spending need is approximately \$80,000.00 per year for the water and wastewater systems when the \$5,500,000.00 is isolated from the analysis.

In the 2022 Asset Management Plan for Water and Wastewater Systems, lifecycle activities were identified that needed to be completed over a 20-year period. Table 7-4 provides a summary of the anticipated annual spending for these lifecycle activities.

**Table 7-4
Annual Spending Forecast/Lifecycle Costs - Water and Wastewater Systems**

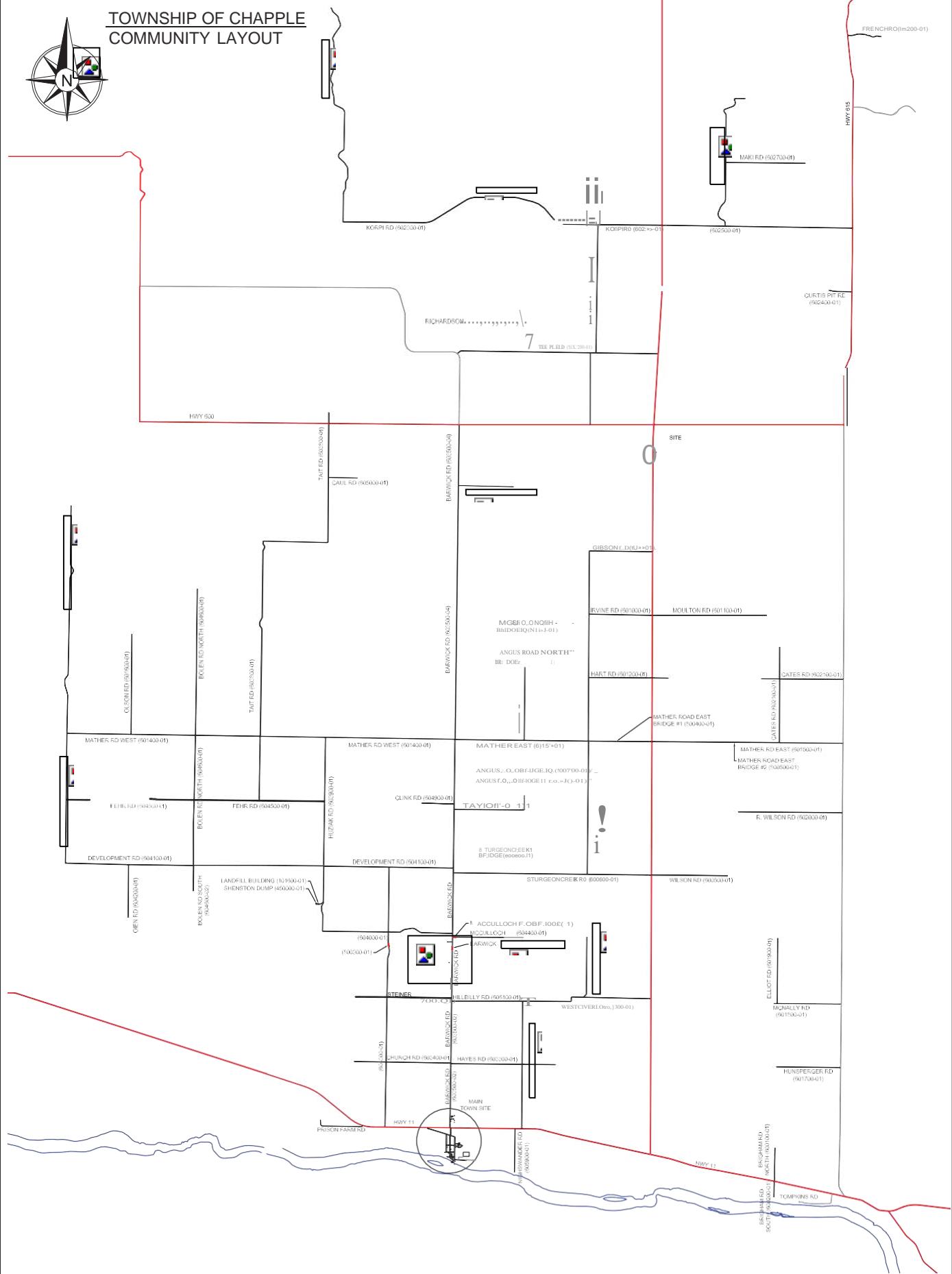


CHAPPLE
Maintenance and Upgrade Summary

Asset Name	Asset Number	Asset Ext.	Year of Construction	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Totals
FIRE TRUCK 5-3	901100	01	1989												\$ -
FIRE TRUCK 5-4	901200	01	1995												\$ -
FIRE TRUCK 5-2	901300	01	2000												\$ -
LINK-BELT BACKHOE	902000	01	1999												\$ -
VOLVO STRONGCO GRADER	902100	01	1999												\$ -
DODGE RAM 3500 FLATBED	902200	01	1995												\$ -
JOHN DEERE F915	902300	01	2007												\$ -
Case 721F	902400	01	2015												\$ -
Cat 140M Grader	902500	01	2008												\$ -
JOHN DEERE 2350TRACTOR	902600	01	1986		\$ 700.00										\$ 700.00
PETERBUILT TANDEM TRUCK	902700	01	2017												\$ -
MIDLAND BELLY DUMP TRAILER	902800	01	2014												\$ -
FORD F150 XLT	902900	01	2013												\$ -
CHAPPLE TANDEM DUMP TRUCK	903000	01	2005												\$ -
John Deere 644B Loader	903100	01	1981	\$ 50.00	\$ 2,500.00										\$ 2,550.00
John Deere 450 Dozer	903200	01	1993	\$ 50.00											\$ 50.00
Totals:				\$ 80,350.00	\$ 2,946,360.00	\$ 46,100.00	\$ 5,000.00	\$ -	\$ 505,000.00	\$ -	\$ -	\$ -	\$ -	\$ 1,900,000.00	\$ 5,485,410.00



TOWNSHIP OF CHAPPLE COMMUNITY LAYOUT



PROJECT:
TOWNSHIP OF CHAPPLE - MUNICIPAL
ASSET MANAGEMENT PLAN

PREPARED BY:
SAULTEAUX CONSULTING & ENGINEERING
SITE 206-207 RR#2
FORT FRANCES, ONTARIO
P9A3M3
1-807-274-7114



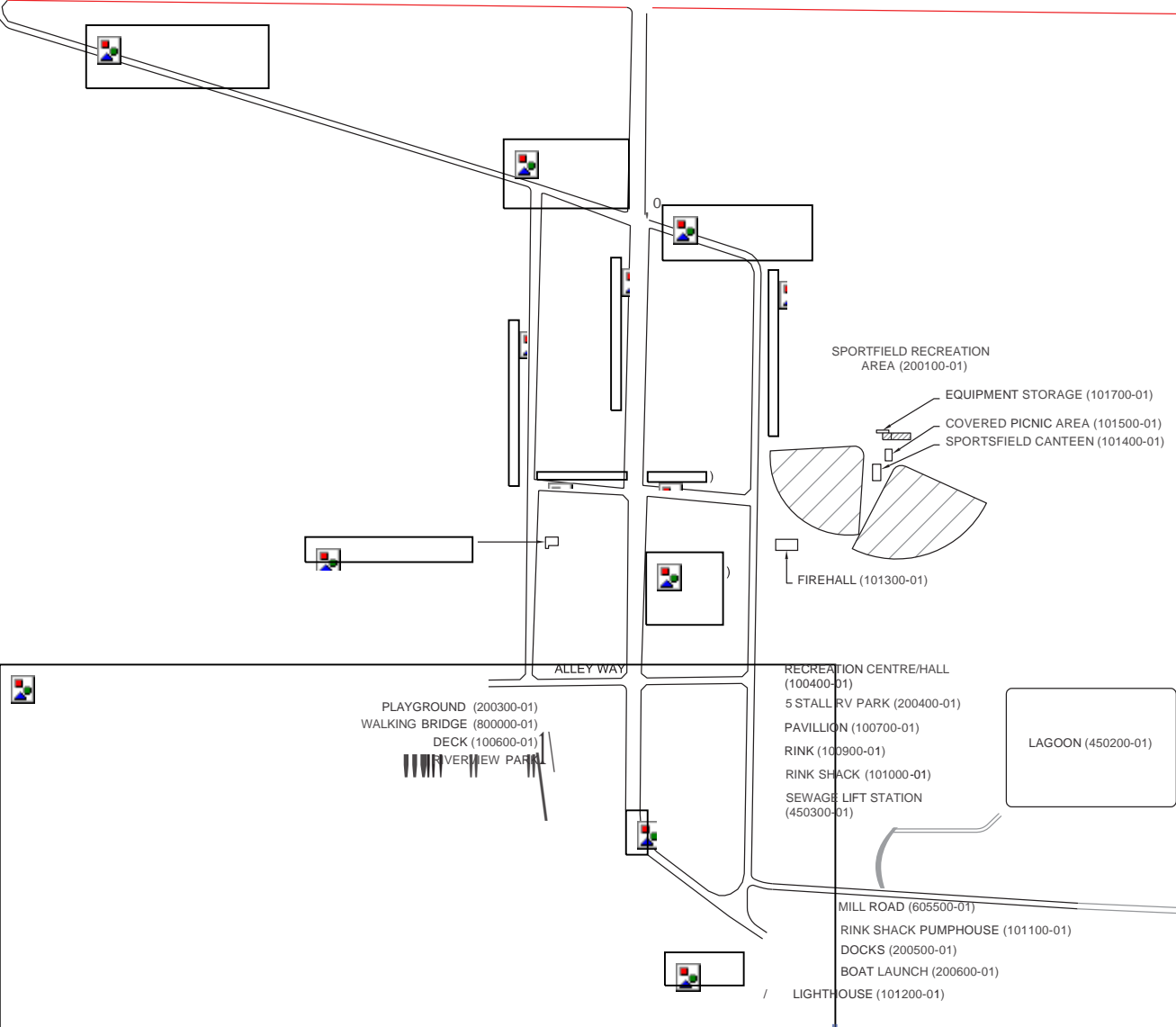


**TOWNSHIP OF CHAPPLE
MAIN TOWNSITE**

- WELL #1 (401000-01)
- MUNICIPAL OFFICE (100000-01)
- PUBLIC WORKS BUILDING (100000-02)
- WELL #2 (402000-01)
- SHED SINGLE STALL (100500-01)
- WATER TREATMENT PLANT BUILDING (102200-01)
- WATER TREATMENT SYSTEM (400000-01)
- SMALL GARAGE (100100-01)
- WELL #6 (406000-01)
- WELL #3 (403000-01)
- WELL #5 (405000-01)
- WELL #4 (404000-01)

HIGHWAY 11

HIGHWAY 11



NORTH FIRE HALL PROPERTY

NORTH RINK (101900-01)
NORTH RINK SHACK (102000-01)
NORTHFIRE HALL (102100-01)

1:1

SH

LEGEND	
PROPOSED	DESCRIPTION
	PROVINCIAL HIGHWAY
	NON-TOWNSHIP ROAD
	TOWNSHIP ROAD
	SHORELINE
	STREETLIGHTS

PROJECT:
TOWNSHIP OF CHAPPLE - MUNICIPAL
ASSET MANAGEMENT PLAN

PREPARED BY:
SAULTEAUX CONSULTING & ENGINEERING
SITE 206-207 RR#2
FORT FRANCES ONTARIO
P9A 3M3
1-807-274-7114