

9. Program Funding Recommendations

Program funding recommendations are a function of the dimensional information, material and construction types, functional class of the individual assets, and current unit costing. Recommended funding for any asset group should include sufficient capital expenditures that would allow the replacement of infrastructure as the end of design life is approached, in addition to sufficient funding for maintenance, to ensure that the full life expectancy may be realized.

Program funding recommendations in this report do not include items related to development and growth; those should be considered as additional. Generally, that type of improvement or expansion to the system would be funded from a different source, such as Development Charges.

9.1. Road System

The estimated replacement value for the road system was **\$145.6 million** (2012\$). The estimate was based on the Asset Replacement Plan – Public Works, 2012 values. It included gravel, rural and urban roads only, and not bridges, culverts, crossing culverts, sidewalks, street lighting or underground infrastructure.

Based on the values contained in the Asset Replacement Plan for the road system, the estimated annual contribution for reconstruction would be **\$3.3 million** (2012\$). The Road Needs Study, 2012 estimated **\$4.9 million** (2012\$) would be required for identified reconstruction priorities over a 10-year period. In addition to the basic construction costs developed from the above per unit costs, various adjustment factors have also been implemented in the overall benchmark cost development (as per MTO standards). These include:

- basic construction factor (to account for small construction items),
- engineering factor (to account for engineering design and construction supervision),
- contingency factor (to allow for unforeseen costs), and
- terrain and soil type factor (to account for the various terrains and presence of rock).

Maintenance activities also play an important role in the lifecycle of a road. An estimated 50-year lifecycle for a road can only be a reality if maintenance and preservation treatments, including but not limited to, crack sealing and hot mix asphalt overlays, are delivered at the appropriate time. Inadequate maintenance and preservation will result in premature failure and increased lifecycle costs.

An analogy to typical house maintenance sometimes make road maintenance easier to understand. If a house does not have the roof replaced within the correct time frame, there will be damage to the house structure beneath the roof, and if this is not dealt with in a timely manner, it will result in further damage to the structure and living areas of the house. Similarly, roads require crack sealing and resurfacing at the appropriate time in order to maximize the life expectancy of the road asset. Maintenance and preservation extend the useful life of the road, reducing lifecycle costs.

9.1.1. Hot Mix Resurfacing

Roads require major maintenance throughout the lifecycle in order to optimize and maximize the asset life span. Roads require resurfacing at the appropriate interval, dependant on the class of road. Different agencies categorize the expense differently, usually dependant on the dollar value; however, resurfacing is essentially a maintenance activity.

Resurfacing schedules are dependent on traffic volumes and the percentage of commercial traffic. Higher traffic volumes and percentages of commercial traffic shorten the interval between resurfacings. Optimal resurfacing intervals will vary from ten to twenty years (or more) depending on the road function, classification, and quality of design and construction.

The Hot Mix Resurfacing recommendation in this report is based on the distribution of the Town's hot mix asphalt inventory, according to the Road Needs Study, 2012 (Table 4.3) and current GIS roads data. The estimated program value will be based on a 20-year interval, for hot mix roads.

Given a 20-year interval, the surface type information listed in Table 4.3, and unit costs based on current construction projects, the recommended funding for a hot mix resurfacing program is **\$1.64 million** per year on average, in order to maintain the road system at its current condition. This estimate is for the major resurfacing work only and does not include any estimated costs for other pavement preservation activities or programs. The Road Needs Study, 2012, estimated **\$6.9 million** (2012\$) would be required for identified resurfacing priorities over a 10-year period

Where road assets have been determined to be past their optimal life expectancy, or beyond a point in their lifecycle where resurfacing is appropriate, reconstruction may be necessary. Program funding will need to be reviewed to take current costs and recent construction into account.

9.1.2. Surface Treatment Resurfacing

Most agencies report that the average life of a surface treated road is seven years. Similar to the concept applied to the development of the hot mix resurfacing recommendations, the surface treated road network should be completely resurfaced every seven years, or approximately 14% of the surface treated road inventory every year.

At an estimated unit cost of \$2.80 per square meter, the annual recommended funding is **\$300,000** on average, exclusive of preparatory work. Program funding will need to be reviewed to take current costs and recent conversion to hot mix asphalt into account.

9.1.3. Gravel Road Resurfacing

Some standards for gravel road maintenance suggest placing approximately 75 mm of gravel on each gravel road section every three years. The Town typically places more gravel on its roads, over a longer period of time, without a formal program in place.

Without adequate regular maintenance, gravel roads within the road system can become a major maintenance problem, particularly in the latter part of winter and early spring. If the granular base is not replenished, the road structure will disappear through normal usage, and the remaining gravel typically becomes contaminated by other materials such as the native soil and winter sand.

Based on a 3-year cycle, the surface type information listed in Table 4.3, and unit costs based on current construction projects, the annual recommended funding is **\$600,500** on average. Program funding will need to be reviewed to take current costs and recent conversion to hot mix asphalt into account.

9.1.4. Crack Sealing

Crack sealing is a preservation activity that extends the life of a hot mix asphalt surface. A program estimate is provided based on crack sealing approximately 3 kms of roadway in one day. Based on a 5-

year cycle, the surface type information listed in Table 4.3, and current unit costs, the annual recommended funding is **\$70,000** on average.

9.2. Structures – Bridges and Culverts (> 3 meter span)

Similar to the road assets, structure assets and bridge structures in particular, there is an ongoing maintenance and preservation requirement to ensure the full service life of the asset is realized. Typically, a structure with an asphalt covered deck will require waterproofing and resurfacing every 15 to 20 years, and rehabilitation and resurfacing between 30 to 40 years.

The Town’s PSAB records include historic costs for each of the structure assets, which were estimated when the actual costs were not known. It is recommended that the annual funding be based on the total annual amortization amount for structures. The recommended funding for the structures asset group is **\$557,000** annually on average. A capital reserve for the structures inventory should be created if it does not already exist.

Program funding will need to be reviewed since the Town’s structures inventory has continued to deteriorate and some high priority structures have been replaced. A current municipal structure needs report is required to assist in determining current maintenance and rehabilitation needs as well as establishing current unit costs.

9.3. Structures – Road Crossing Culverts (< 3 meter span)

Funding recommendations for the road crossing culverts are taken directly from the Culvert Inventory & Assessment, 2012. The replacement schedule (Table 9.1) is an estimated timeframe for the replacement of the individual culverts examined in the report.

Table 9.1: Culvert Replacement Summary

	Time of Need						Total
	<1 yr	1-5 yrs	6-10 yrs	11-15 yrs	16-20 yrs	20+ yrs	
Culvert Replacements	0	2	2.5	14	8.5	19	46
Replacement Costs	\$-	\$175,400	\$136,900	\$1,116,200	\$526,100	\$1,070,200	\$3,024,800

Based on the above schedule and a 25-year service life, the recommended funding is **\$121,000** annually on average. Program funding should be reviewed regularly to update the report to reflect current conditions, current unit costs and additions to the inventory.

9.3.1. Maintenance and Rehabilitation

Similar to the road assets, road crossing culverts require maintenance and rehabilitation work to ensure the full service life of the asset is realized. The Culvert Inventory & Assessment, 2012 produced a list of rehabilitation activities and costs, prioritized by time of need (Table 9.2) over a 10-year period. The rehabilitation program detailed in the report does not include costs for recommended work considered to be part of a routine maintenance schedule, but does include 20% for engineering and approvals.

Table 9.2: Culvert Maintenance Summary

	Time of Need				Maintenance Costs			
	<1 yr	1-5 yrs	6-10 yrs	Total	Urgent	1-5 yrs	6-10 yrs	Total
No. of needs & associated costs	33	14	4	51	\$46,400	\$237,700	\$146,900	\$431,000

Program funding should be reviewed regularly to update the report to reflect current conditions, current unit costs and additions to the inventory.

9.4. Water Linear

The Town’s Drinking Water System Financial Plan, 2016-2021, is a long-term strategic plan developed to ensure the financial sustainability of the drinking water system. The preparation of a Financial Plan is a condition the Town is required to meet under the Safe Drinking Water Act, 2002.

The 6-year Water Financial Plan contains a section on reserve funds. The purpose of the reserve fund is to fund replacement and rehabilitation of water assets as well as larger non-growth related projects. Growth related projects are funded through the development charge process and does not impact current system users.

Based on the values and lifecycle assumptions within the Asset Replacement Plan – Water, 2012, the recommended funding is **\$430,000** (2012\$) annually on average.

The Water Financial Plan should be reviewed once the Asset Management Plan has been developed sufficiently, to ensure consistency between the Plans. Although asset management takes the entire lifecycle of the asset into consideration, assessments and condition modelling will assist in determining the required funding for replacement and rehabilitation of water assets.

9.5. Wastewater Linear

Based on the values and lifecycle assumptions within the Asset Replacement Plan – Wastewater, 2012, the recommended funding is **\$490,000** (2012\$) annually on average. This does not included the costs to maintain or rehabilitate the assets throughout their lifecycle.

9.5.1. Sewer Inspection

In order to determine maintenance and rehabilitation activities to ensure the full service life of the asset is realized, wastewater linear assets may be reviewed by visual inspection by remote controlled video (CCTV). The recommended funding for a four-year camera inspection program is approximately **\$70,000** annually on average. This does not include the sanitary forcemain linear assets or any preparatory work costs.

9.6. Stormwater Linear

Based on the values and lifecycle assumptions within the Asset Replacement Plan – Public Works, 2012, the recommended funding is **\$737,000** (2012\$) annually on average. This does not included the costs to maintain or rehabilitate the assets throughout their lifecycle.

9.6.1. Sewer Inspection

In order to determine maintenance and rehabilitation activities to ensure the full service life of the asset is realized, stormwater linear assets may be reviewed by visual inspection by remote controlled video (CCTV). The recommended funding for a four-year camera inspection program is approximately **\$75,880** annually on average. This does not include costs for any preparatory work.

9.7. Stormwater Management Facilities

The Town is currently conducting visual inspections of its stormwater management (SWM) facilities, as part of the development of the comprehensive stormwater master plan. The visual inspections will assist in determining required maintenance, and the costs associated with the required maintenance will be determined. A recommended funding amount cannot be produced at this time.

9.8. Fleet

Funding recommendations for the fleet asset group are based on historic costs in the Town's PSAB records. The estimated replacement value of the fleet asset group was **\$235,000** annually on average. This does not include the costs to maintain or rehabilitate the assets throughout their lifecycle. Fleet assets included in this amount were identified as 'A' category in the Town's PSAB records; pickup trucks, light-duty trucks and general purpose tractors. This does not include many of the larger, specialized fleet assets such as fire trucks and hydro excavating (Vactor) trucks. Future updates will include all fleet and related equipment assets.

9.9. Facilities

Funding recommendations for the fleet asset group are based on historic costs in the Town's PSAB records. The estimated recommended funding level for facility assets is **\$4.8 million** annually on average. This does not include the costs to maintain or rehabilitate the assets throughout their lifecycle.

Future updates will further refine the facility component asset groups as well as separate facilities from equipment (i.e. well, pump station, etc.). The above amount include assets

9.10. Parks

Funding recommendations for the facilities asset group are taken directly from the Asset Replacement Plan – Leisure Services, 2012. The recommended funding level for park assets is **\$300,000** (2012\$) annually on average. This does not include the costs to maintain or rehabilitate the assets throughout their lifecycle.

9.11. Transit

Funding recommendations for the facilities asset group are based on the current PSAB records. Since the transit assets are newer than the 2012 Asset Replacement Plans, there are no recommended annual amounts. Instead, the annual amortization was used. The recommended funding amount for the transit asset group is **\$75,200** annually on average. This does not include the costs to maintain or rehabilitate the assets throughout their lifecycle.