Asset Intensive Services

Local Efficiency Group (LEG)

2020 SERVICE DELIVERY REVIEW

Townships of Admaston/Bromley, Greater Madawaska, Horton, McNab/Braeside and Whitewater Region
Towns of Arnprior and Renfrew

Supplemental Report C - November 2020

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Appendix

1 Asset Intensive Services – Cluster C

1.1 Cluster Scope and Profile

Cluster C includes asset intensive services (i.e. Public Works) provided by the municipalities in the Local Efficiency Group (LEG). Based on feedback from the LEG municipalities on which service areas are most relevant for this review (i.e. provided the best options for sharing), the Cluster C review focuses on four service areas, namely:

- Service 1 – Roads & Winter Control;
- Service 2 – Waste & Recycling;
- Service 3 – Asset Management & Engineering; and,
- Service 4 – Fleet & Equipment.

Other services delivered by Public Works, such as drinking water and wastewater, were not included in this review.

Each service area has its own set of requirements, challenges and staffing resources available. See Appendix with summary tables for each of the service areas. The review of Cluster C operations identifies similarities and differences of asset intensive services across the seven municipalities, as well as efficiency and sharing opportunities amongst the LEG group. There may be opportunities to sell, buy or share services to create more efficient and budget friendly operations, while also maintaining a desired level of service (i.e. minimum standards and other requirements).

1.1.1 Service 1 - Roads and Winter Control

Roads and winter control services are provided by all municipalities, which generally meet or exceed the minimum maintenance standards in Ontario. Depending on the severity of road defects or depth of snow accumulation, as well as the class of highway, road maintenance operations must be dealt with in a timely manner. Each municipality has varying degrees of resources and processes for responding to such events, which will be assessed in detail for efficiency and cost saving opportunities. The following municipalities have expressed interest in sharing (buy/sell/create together) this service:

- McNab/Braeside;
- Admaston/Bromley;
- Horton;
- Renfrew; and,
- Greater Madawaska.

Across all seven LEG municipalities, the total road network is estimated to be comprised of 736.5 km (45%) paved, 280.4 km (17%) surface treated, and 633.6 km (38%) gravel, for a total of 1,650.5 km. The total budget for road maintenance operations is approximately $3,160,179 per year (averaged over the past five years), however this excludes salaries and some of the typical contracted services. Resources include one General Manager of Operations, six Public Works Managers/Directors/Supervisors, two road supervisors, four lead hands, and twenty-eight operators / skilled labourers.

Legislative Framework:

Public Transportation and Highway Improvements Act, 1990

- Standards for Bridges (O.Reg. 427/10).

Municipal Act, 2001

The Municipal Act outlines the authority of municipalities; specifically here, the following regulation falls under the Act:

- Minimum Maintenance Standards for Municipal Highways (O.Reg. 239/02).

Road Access Act, 1990

This Act states that persons cannot close an access or common roadway.

1.1.2 Service 2 - Waste and Recycling

Effective and efficient waste and recycling services are essential for the management of landfill functions and customer service. Incoming waste needs to be assessed for acceptability and proper placement of waste. Maintaining respective recycling operations, determining waste specific stockpile areas, and improving waste diversion rates are essential components of this service delivery, and these operations vary depending on the municipality. The following municipalities have expressed interest in sharing (buy/sell/create together) this service:

- Admaston / Bromley;
- Whitewater Region; and,
- Arnprior.

Five out of seven of the LEG municipalities provide curbside pickup for the collection of waste and recyclables, while two out of seven have no curbside collection services in place. All seven municipalities provide residents the opportunity to properly dispose household hazardous waste (HHW), however this is typically only offered for a few months during any given year. None of the LEG municipalities currently have a green bin program in place.

The total budget for waste management services is approximately $2,472,799 per year (averaged over the past five years). Resources include four full-time landfill/facilities attendants, twelve part-time landfill attendants, one program administrator, one environmental engineering officer, and one environmental services superintendent.

Legislative Framework

Environmental Protection Act, 1990

This Act provides the framework to addresses sources of pollution by creating the authority to create regulations that protect and conserve the natural environment. In relation to solid waste management the following regulations were created under the Act:

- General – Waste Management (R.R.O. 1990, Reg. 347) defines and states exemptions of waste, provides standards for waste disposal sites, and outlines waste practices;
- Amendment to General – Waste Management (O.Reg. 217/08) that establishes requirements for landfill gas collection;
- *Industrial, Commercial and Institutional Source Separation Programs* (O.Reg. 103/94) which details what must be included in a source separation program and how those apply to different industries like shopping centers, office and multi-unit buildings, restaurants, and hospitals;
- Land*fi*ll Sites (O.Reg. 232/98) which outline landfill design standards, ownership, operations, and financial and closure planning;

- *Recycling and Composting of Municipal Waste* (O.Reg. 101/94) provides an outline of systems required in municipalities which are: blue box waste management, leaf and yard waste, and exemptions;
- Waste Management Projects (O.Reg. 101/07);
- *Waste Audits and Waste Reduction Work Plans* (O.Reg. 102/94);
- Packaging Audits and Packaging *Reduction Work* Plans (O.Reg. 104/94);
- *Waste Audits and Waste Reduction Work Plans* (O.Reg. 102/94); and,
- *Registrations Under Part II.2 of the Act* – Waste Management Systems (O.Reg. 351/12).

Waste-Free Ontario Act, 2016

This Act establishes the regulatory body: Resource Productivity and Recovery Authority. They oversee the blue box, municipal hazardous or special waste, and waste electrical equipment programs.

Environmental Assessment Act, 1990

This Act establishes a planning and approval process for a variety projects with a specific section for municipal waste disposal.

Planning Act, 1990

The Planning Act is a piece of legislation that describes the process for land use planning.

Guidance Documents

Professional Engineers Ontario (PEO) released the Solid Waste Management Guideline in 2017 as a guiding document of best practices for engineers and the public.

Emerging Issue

In the draft Blue Box regulations the following years are suggested (still draft and open for comment) for municipalities to transition to full Extended Producer Responsibility (EPR).

Transition by 2023	Transition by 2025
Arnprior	Admaston/Bromley
McNab/Braeside	Greater Madawaska
	Horton
	Renfrew
	Whitewater

1.1.3 Service 3 - Asset Management and Engineering

A new regulation in Ontario (O.Reg. 588/17) requires municipalities to have an asset management plan for core infrastructure by July 2021 and for all municipally owned assets by July 2023 with a financial plan to support levels of service by 2024. Asset Management Plans are intended to serve as a comprehensive reference guide for Council, managers and staff for when infrastructure asset investment decisions are made. A review of infrastructure funding applications, asset management software, and availability of expert staff will determine the review lens for performance efficiency. The following municipalities have expressed interest in sharing (buy/sell/create together) for this service:

- Whitewater;
- Horton;
- Greater Madawaska;
- McNab/Braeside;
- Admaston/Bromley; and,
- Renfrew.

The table below provides a summary of software programs being utilized, the most recent AMP updates, and applications for funding:

		Admaston/ Bromley	Arnprior	Horton	Greater Madawaska	McNab/ Braeside	Renfrew	Whitewater
		AB	AP	HT	GM	MB	RF	WW
Asset Management	IT Platforms		CityWide - PSD	MESH - Roads	Spreadsheet			CityWide - PSD
	Current Status of Program	Reviewing AMP and updating for 2021 Looking for AM software Interested in collaboration	Working towards LOS and Lifecycle for 2021	Reviewing AMP and updating for 2021 Looking for AM software. Interested in collaboration	Reviewing AMP and updating for 2021 Looking for AM software. Interested in collaboration	Reviewing AMP and updating for 2021 Looking for AM software. Interested in collaboration	Current project on track for 2021 deadlines. Interested in collaboration	Have the tools, have not used them yet Limited data, no lifecycle, no LOS. Interested in collaboration
	Most Recent Plan or Studies	2019 StreetScan 2018 AMP 2013 Roads Study	2017 AMP	2017 AMP	2019 AMP	2013 AMP	2014 AMP 2020 AMP update ongoing	2019 Energy Audits, 2020 Fire Hall and PW Depot Condition

	Admaston/ Bromley	Arnprior	Horton	Greater Madawaska	McNab/ Braeside	Renfrew	Whitewater
	AB	AP	HT	GM	MB	RF	WW
							Assessment 2014 AMP
Asset Management Planning and Updates	Applied for FCM funding		FCM Funding App for 2021 required update and software	Applied for FCM funding	Applying for FCM funding Working with "AMP it up" for software	FCM Funding App, Current project to update AMP	Will need to update for June 2021 deadline

The known resources that play an active role in asset management include two CAO/Clerks one General Manager of Operations, five Public Works Directors/Supervisors/Managers, one Facilities Manager, five Senior Managers, one Engineering Officer, five Treasurers, one Engineering Technician, and one Coordinator.

On the engineering side, there are only two known staff members with a P.Eng., designation (Renfrew and McNab/Braeside).

Legislative Framework

Infrastructure for Jobs and Prosperity Act, 2015

- Asset Management Planning for Municipal Infrastructure (O.Reg. 588/17).

1.1.4 Service 4 - Fleet and Equipment

Fleet and equipment is used to maintain a level of care for specific services, and some fleet/equipment is only used on a seasonal basis. A review of equipment conditions and remaining lifespan is important to plan for upcoming replacement and repair costs. Each municipality has varying degrees of resources and processes for responding to repair/maintenance tasks, which will be assessed in detail for efficiency and cost saving opportunities. The following municipalities have expressed interest in sharing their equipment or resources:

- Horton;
- Greater Madawaska;
- Arnprior;
- Whitewater;
- Renfrew;
- Admaston/Bromley; and,
- McNab/Braeside.

Across all seven LEG municipalities, there is estimated to be approximately 144 vehicles and equipment in the Public Works Department. Based on the data we received, we estimate approximately 35% of those vehicles/equipment are in use beyond their prescribed lifespan, which varies from 10-30 years depending on the vehicle/equipment and the municipality.

The total budget for vehicle/equipment maintenance is approximately $1,103,699 per year (averaged over the past five years).

There are three full-time mechanics, one part-time mechanic assistant, one maintenance technician and two operators who help with fleet/equipment repairs and maintenance. Four out of seven of the LEG municipalities rely quite heavily on local mechanic shops or dealerships.

1.2 Performance Efficiency Review Lenses

The service reviews for Cluster C have employed a number of performance lenses to identify improvement opportunities for LEG municipalities. These performance lenses include the following:

1. Cost Efficiencies;
   - Lower cost;
   - Mitigate cost increases in the future;
   - Cost avoidance;
2. Operational Levels of Service;
   - Shared resources (staff and equipment);
   - Shift resources to areas of higher need (or expectation);
3. Asset Management and Engineering;
   - How to prioritize capital and operational investments to deliver service;

- Shared resources; and,
- Process streamlining that secures measurable reductions in service delivery timelines.

2 "As-Is" Current State and Recommendations

2.1 Roads and Winter Control

2.1.1 "As-Is" - Admaston/Bromley

2.1.1.1 Service Description and Objectives

The Township of Admaston/Bromley (Admaston/Bromley) currently provides road services that exceed the minimum maintenance standards in Ontario. Public Works is responsible for the maintenance of 41.5 km of paved, 99.5 km of surface treated and 191 km of gravel roads for a total of 332 km of roads in the Township. Roads wear out and must be rehabilitated or replaced at predetermined intervals, and failure to properly maintain and rehabilitate system components at the appropriate time results in increasing costs and the risk of full replacement. Admaston/Bromley currently has a Road Management Plan that provides a road system inventory, which includes road condition, geometric elements and surface type. It also identifies the road sections in need of improvement, and a ten year maintenance and construction program for the road system.

2.1.1.2 Service Delivery Output, Workflow and Resources Required

Admaston/Bromley currently maintains 17.4 km of boundary roads, with some agreements with abutting municipalities. A map has been provided that shows the current condition of all roads in 2013, most of which appear to be in fair to good condition. A Street Scan from 2018 was also provided, which shows similar road conditions. The current resources available for road operations include a Public Works Superintendent, two lead hands, and three machine operators.

2.1.1.3 Revenues, Expenses and Funding Sources

A substantial portion of Admaston/Bromley's annual budget is typically allocated to the road system for the purpose of maintenance and capital construction improvements. The current replacement value of the township road system is on the order of $132 million, which represents a significant investment that is to be maintained into the future.

The following table displays the budgeted expenditures and actual expenditures in recent years on road maintenance, which includes roadside maintenance, hard top cold patching, gravel maintenance, winter control and traffic, excluding salaries. This data was assembled by Dillon from the financial statements provided in Data Request #1.

Road Maintenance - Admaston/Bromley		
Year	Budgeted Expenditures ($)	Actual Expenditures ($)
2015	634,100	606,112
2016	641,900	659,057
2017	686,300	746,058
2018	696,300	689,563
2019	839,800	774,944

2.1.2 "As-Is" - Arnprior

2.1.2.1 Service Description and Objectives

The Town of Arnprior (Arnprior) currently provides road services that exceed the minimum maintenance standards in Ontario. Arnprior's total road network is 53.5 km, and approximately 60% of those roads were rated good or very good in 2014. However, given the date of the latest conditions assessments, these roads have likely deteriorated. All of Arnprior's winter maintenance operations are done in house, and they currently do some road maintenance for County roads, including winter control. Arnprior has indicated that their infrastructure assets are well maintained, but would like to leverage technology (public works patrol/work order/maintenance).

2.1.2.2 Service Delivery Output, Workflow and Resources Required

Current resources responsible for road maintenance operations include a roads and services supervisor, a lead hand, a maintenance technician and five skilled labourers. Arnprior has indicated they have strong skills/experience with their current staff. However, their staff is at capacity and they were having challenges filling the Public Works supervisor position until recently. The team manages to get through the winter months with their current resources, but it can be difficult during the summer with multiple subdivisions on the go. Arnprior has been replacing and upgrading roads on a fairly regular basis, and are planning on replacing some roads in dire need shortly.

Arnprior currently has a boundary road agreement with Ottawa (Herrick Drive), but there does not seem to be any other road agreements with neighbouring LEG municipalities.

Services requiring a tri axle and grading machine are contracted out by Arnprior, in addition to sweeping and pavement markings.

2.1.2.3 Revenues, Expenses and Funding Sources

Arnprior utilizes their capital expenditure reserve fund to help pay for road replacements and maintenance. Development charges are also leveraged to assist with costly repairs.

Arnprior's total quantity of repairs required in 2017 was 176,036 square meters, and the cost to make those repairs was $9,722,604. Their most recent analysis shows that an annual allocation of approximately $1,900,000 will allow the Town to improve the road network's current level of service from an average PI of 0.69 to an average PI of 0.75.

The following table summarizes the road and winter control expenses from 2015-2019, which includes asphalt restoration and maintenance, gravel, asphalt patch & spray, and winter control, excluding salaries. Pavement markings and sweeping have been excluded, as these are contracted by most LEG municipalities. This data was assembled by Dillon from the financial statements provided in Data Request #1.

Road Maintenance - Arnprior		
Year	Budgeted Expenditures ($)	Actual Expenditures ($)
2015	603,020	650,320
2016	646,600	719,442
2017	951,100	1,051,997
2018	958,100	793,615
2019	927,100	917,102

The table below provides winter maintenance and paved road maintenance expenses per lane km (excluding salaries), which was provided by Arnprior:

Roads Maintenance per Lane km - Arnprior		
Year	Winter Maintenance Expenses/Lane km ($)	Paved Road Expenses/Lane km ($)
2016	7,649	744
2017	7,728	1,057
2018	6,477	1,077
2019	7,653	754

2.1.3 "As-Is" - Horton

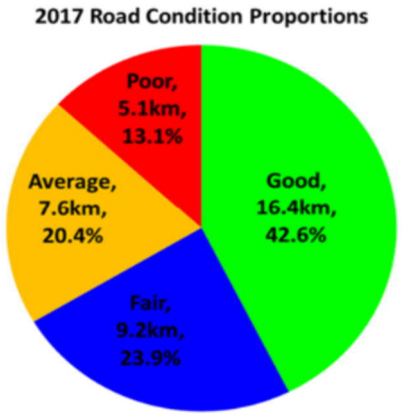
2.1.3.1 Service Description and Objectives

The Township of Horton (Horton) currently provides road services that exceed the minimum maintenance standards in Ontario. Their road network consists of 28.4 km of paved, 8.5 km of surface treated, and 66.8 km of gravel, for a total of 103.7 km. Horton's road maintenance activities include regular inspections, maintenance, or more significant repair activities associated with unexpected events. Horton has a strong desire to share their road services with other municipalities, but indicated that boundary road agreements can be a challenging situation.

2.1.3.2 Service Delivery Output, Workflow and Resources Required

Projections indicate that significant reconstruction and rehabilitation will be required over the next 10 years to address future road conditions and growth in the municipality. If Horton were to do nothing, it would leave the municipality with 70% of its roads in a severely compromised state by 2027. Maintenance activities for Horton's roads are undertaken by house staff, using the Township's own equipment. There are currently only three full-time drivers/operator staff to take care of road operations. During extreme weather conditions, it can put a lot of additional pressure on staff. However, there was recently a new truck purchased that will alleviate some pressure. Additionally, the road supervisor has offered to provide some assistance with a small plow during extreme weather conditions. The road supervisor also completes patrol of the road network three times in the winter and once in the summer.

Despite their limited staff, Horton appears to be maintaining their roads at reasonable conditions. The following pie-chart shows the road condition proportions in 2017, which improved from 2013:



Horton currently has partnerships with McNab/Braeside, Whitewater and Admaston/Bromley for boundary roads. However, Horton has indicated that road agreements can be challenging in getting council members on board, as well as some neighbouring municipalities.

Horton's contracted road services include street sweeping, catch basin cleanouts and crack sealing.

2.1.3.3 Revenues, Expenses and Funding Sources

Horton is currently having challenges receiving grants and funding for road upgrades. They are currently looking at $20,000 per year to bring someone in on an on-call basis (5-10 hours a week). Given the current state of the road network, an amortized capital investment in the order of $930,000 per year for the next 10 year capital planning period would be required in order to meet the needs of the roads system. Sustainable funding in the order of $575,000 per year is required to maintain the system at the desired service level of 6.0.

The following table shows a comparison between the budgeted amount and the actual amount spent in recent years, which includes roadside maintenance (paved and unpaved), grading & dust control and winter maintenance, excluding salaries. This data was assembled by Dillon from the financial statements provided in Data Request #1.

Road Maintenance - Horton		
Year	Budgeted Expenditures ($)	Actual Expenditures ($)
2015	103,000	84,417
2016	108,500	92,186
2017	109,000	99,713
2018	110,000	127,343
2019	121,400	111,486

The table below provides winter maintenance and paved road maintenance expenses per lane km (excluding salaries), which was provided by Horton:

Roads Maintenance per Lane km - Horton		
Year	Winter Maintenance Expenses / Lane km ($)	Paved Road Expenses / Lane km ($)
2015	191	105
2016	184	163
2017	248	190
2018	254	597
2019	255	337

2.1.4 "As-Is" - Greater Madawaska

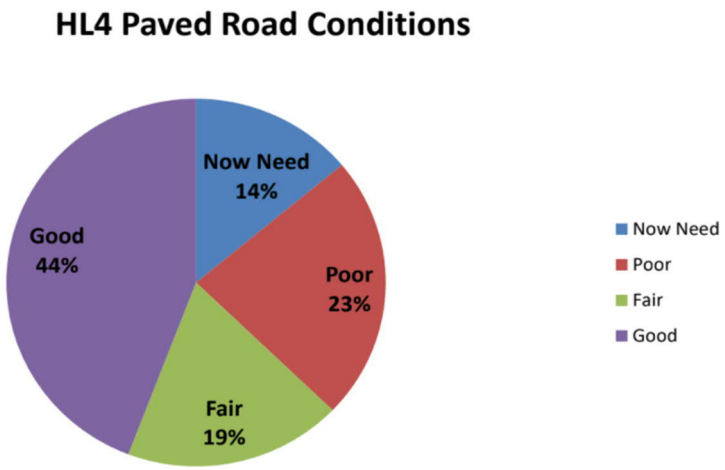
2.1.4.1 Service Description and Objectives

The Township of Greater Madawaska (Greater Madawaska) has a large land mass with many miles of roads to maintain in accordance with the provincial Minimum Maintenance Standards, which they are currently meeting and sometimes exceeding. Greater Madawaska's road network consists of 56.7 km of paved, 36.8 km of surface treated, and 139.8 km of gravel, for a total of 233.3 km. The timing of road repairs and snow clearing is critical, and this has been challenging for Greater Madawaska during some winter months. Greater Madawaska has a strong interest in sharing their road services with other municipalities, particularly with boundary roads and winter control operations.

2.1.4.2 Service Delivery Output, Workflow and Resources Required

With the upcoming Highway 417 expansion, Greater Madawaska will likely need additional resources to complete this project and maintain other roads in a timely manner. Currently, their road staff consists of one Public Works Supervisor, five Public Works Heavy Equipment Operators, and one Mechanic. Based on conversations with Public Works staff, Greater Madawaska seems to be at capacity with these resources. Greater Madawaska recently purchased additional plow trucks, as too many hours were being spent on a per truck basis. Greater Madawaska has strong relationships with some municipalities and has boundary road agreements with Admaston/Bromley and McNab/Braeside, which will be key in coming to other sharing agreements in the near future.

With help from the road agreements in place, Greater Madawaska appears to be maintaining their paved roads in reasonable condition. Below is a chart showing a breakdown of asphalt road conditions in 2019:



Greater Madawaska's contracted road services include catch basin cleaning and line painting.

2.1.4.3 Revenues, Expenses and Funding Sources

Greater Madawaska's road operations are currently funded through taxation, OMPF funding, and some grants.

The following table shows a comparison between the budgeted amount and the actual amount spent in recent years on road maintenance activities, which includes brushing, hard top patching, loose top patching, loose top maintenance, dust control, gravel pits, roadside rehabilitation, and winter control operations, excluding salaries. This data was assembled by Dillon from the financial statements provided in Data Request #1.

Roads Maintenance – Greater Madawaska		
Year	Budgeted Expenditures ($)	Actual Expenditures ($)
2015	235,500	172,203
2016	237,000	271,053
2017	282,000	292,512
2018	343,500	248,979
2019	351,000	248,979

The table below provides winter maintenance and paved road maintenance expenses per lane km (excluding salaries), which was provided by Greater Madawaska:

Roads Maintenance per Lane km – Greater Madawaska		
Year	Winter Maintenance Expenses / Lane km ($)	Paved Road Expenses/ Lane km ($)
2015	113	181
2016	303	205
2017	303	434
2018	437	325
2019	238	164

2.1.5 "As-Is" - McNab/Braeside

2.1.5.1 Service Description and Objectives

McNab/Braeside generally meets or exceeds the minimum maintenance standards for Ontario, but it can be difficult during some winter months. The Township is currently responsible for 187 km of roads, which includes approximately 136 km of paved roads and 51 km of gravel roads. McNab/Braeside currently utilizes an online based software to input the paved road condition assessments, as well as an asset management program (Street Logic) for paved roads. However, there is a desire to improve the frequency of these road assessments so that the data is updated on a more regular basis.

2.1.5.2 Service Delivery Output, Workflow and Resources Required

McNab/Braeside currently has internal sharing staff and equipment. The resources available for road maintenance and winter control include a Public Works and Property Manager, a lead hand contractor, six truck drivers/equipment operators, and a road supervisor. They have indicated that they have enough resources to maintain reasonable road conditions, but they are at full capacity, particularly during the heavy winter months.

McNab/Braeside currently has a road maintenance agreement with the Township of Horton and with the Township of Greater Madawaska. There are opportunities for additional boundary road agreements between municipalities, which can be explored in the "as should be" recommendations, and would include plowing agreements and road maintenance operations.

Contracted services include street sweeping, line painting, catch basin cleaning, brushing on roadways, and some ditch work. All grading is done in-house.

2.1.5.3 Revenues, Expenses and Funding Sources

McNab/Braeside has been receiving various capital grant funding over the years, which includes (but not limited to) Ontario's Community Infrastructure Funding (OCIF), aggregate reserve funding, and tax revenue contributions. Other revenue streams include sales of surplus equipment, entrance fees, culvert installations, and other miscellaneous fees and charges.

The table below provides financial information on road maintenance, which includes hard top patching, shoulder maintenance, loose top patching, grading, gravel resurfacing, and winter maintenance, excluding salaries. Sweeping/flushing has not been included, as most other LEG municipalities contract that service. This data was assembled by Dillon from the financial statements provided in Data Request #1.

Roads Maintenance – McNab/Braeside		
Year	Budgeted Expenditures ($)	Actual Expenditures ($)
2015	173,250	167,392
2016	196,750	205,699
2017	214,674	198,250
2018	204,250	206,855
2019	206,250	192,703

The table below provides winter maintenance and paved road maintenance expenses per lane km (excluding salaries), which was provided by McNab/Braeside:

Roads Maintenance per Lane km – McNab/Braeside		
Year	Winter Maintenance Expenses / Lane km ($)	Paved Road Expenses / Lane km ($)
2015	306	95
2016	333	105
2017	569	134
2018	475	139
2019	434	129

2.1.6 "As-Is" - Renfrew

2.1.6.1 Service Description and Objectives

The Town of Renfrew (Renfrew) provides road and winter control services that exceed the provincial minimum maintenance standards in areas such as snow accumulation, ice formation, potholes, cracks, surface discontinuities, etc. The Town of Renfrew (Renfrew) is an old community with aging infrastructure, and they are responsible for maintaining 65km of paved roads. However, many of their paved roads have been recently replaced. Renfrew has expressed interest in improving performance and longevity of their roads, but it is sometimes difficult to commit to high replacement costs when they may not see the benefit for some time.

2.1.6.2 Service Delivery Output, Workflow and Resources Required

Renfrew has a total of thirteen employees that work for Public Works. Specific to road maintenance operations, there appears to be a director of Public Works, a machine operator, a skilled operator and water and wastewater technicians (quantity is unknown). The water and wastewater technicians help operate snow plows when needed, and the machine operator only operates trucks when needed. Renfrew has indicated they are at full capacity during the winter months, but have more time available during the summer months. Renfrew currently has agreements for County roads within the municipality, as well as summer maintenance agreements with the County of Renfrew. Regular condition assessments are conducted every two years, and the average road rating is approximately 6.0 (fair condition). Contracted services include crack sealing and line painting.

2.1.6.3 Revenues, Expenses and Funding Sources

Renfrew currently receives funding through the OCIF program, however they have indicated this might be rescinded in the coming years. Other funding sources and revenue streams for roads include MTO connecting link (Highway 60 and Highway 132), federal gas tax and transfers from reserves. The table below shows a comparison between the budgeted amount and the actual amount spent in recent years on road maintenance operations, which includes patching & washouts, gravelled street resurfacing, paved street

resurfacing, and winter control (snow plowing, snow removal, sanding, and snow fences), excluding salaries. This data was assembled by Dillon from the financial statements provided in Data Request #1.

Roads Maintenance - Renfrew		
Year	Budgeted Expenditures ($)	Actual Expenditures ($)
2015	532,200	420,458
2016	559,350	755,289
2017	623,780	519,093
2018	595,380	512,158
2019	619,790	568,801

The table below provides winter maintenance and paved road maintenance expenses per lane km (excluding salaries), which was calculated by Dillon:

Roads Maintenance per Lane km - Renfrew		
Year	Winter Maintenance Expenses / Lane km ($)	Paved Road Expenses / Lane km ($)
2015	2,858	357
2016	5,163	633
2017	3,362	625
2018	3,435	482
2019	3,545	817

2.1.7 "As-Is" - Whitewater

2.1.7.1 Service Description and Objectives

The Whitewater Region (Whitewater) currently maintains a large network of rural and urban roads, which requires many resources and expenditures to maintain. There is approximately 221.4 km of paved roads, 135.6 km of surface treated (low class) roads, and 132 km of gravel roads, which totals to 489 km. The Township currently provides road services that meet the minimum maintenance standards in Ontario, but would like to see this improved. There are currently no condition ratings available for paved and gravel roads, with the latest update performed in 2014. However, Whitewater is currently compiling data and reassessing roads for 2020.

2.1.7.2 Service Delivery Output, Workflow and Resources Required

Whitewater has a total of twelve employees involved with road repairs/maintenance and winter control operations, although one of those employees is a mechanic. These employees appear to be at full capacity, and more resources are needed to complete data analysis and maintain road conditions. In the last three years, a review of road services has not been completed. To offset some resource capacity issues, Whitewater currently maintains boundary roads with Laurentian Valley (Cemetery Rd and Snake River Line), Horton (Orin Rd) and Admaston/Bromley (Snake River Line - Waterview to County Rd 8). Line painting is currently done with the County, and they also have a partnership in Pembroke & Area Airport.

2.1.7.3 Revenues, Expenses and Funding Sources

Whitewater currently generates revenue through equipment rentals, aggregate licenses, entrance permits, transfer from reserves, and other miscellaneous costs.

With such a large network of rural and urban roads, Whitewater has been forced to spend 40% of their overall budget on roads.

The table below provides financial information on road construction/maintenance, which includes cold mix asphalt, salt, sand, gravel, and dust control. This data was assembled by Dillon from the financial statements provided in Data Request #1.

Roads Maintenance - Whitewater		
Year	Budgeted Expenditures ($)	Actual Expenditures ($)
2015	460,000	350,583
2016	398,000	510,750
2017	494,000	443,839
2018	463,000	557,892
2019	475,000	515,797

The table below provides winter maintenance and paved road maintenance expenses per lane km (excluding salaries), which was provided by Whitewater:

Roads Maintenance per Lane km - Whitewater		
Year	Winter Maintenance Expenses / Lane km ($)	Paved Road Expenses / Lane km ($)
2016	490	330
2017	617	604
2018	657	548
2019	662	512
2020	264	337

For winter control activities, Whitewater spent 412 hours in 2018 and 388 hours in 2019.

In terms of machine hours and labour, Whitewater spent 4944 hours in 2018 and 4656 hours in 2019 with twelve employees.

2.1.8 Roads & Winter Control Recommendations

2.1.8.1 RECOMMENDATION 1: Reduce the rate of salt application on roads by 15%

Background:

The research team from Ryerson conducted a study during the 2018-2019 winter season on the Ryerson University campus. They created and sprayed an in-house liquid brine solution to de-ice 20 locations across Ryerson's downtown campus. The team found that on average, anti-icing with brine requires 25% less NaCl than conventional rock salt.

Analysis and Benefits:

The amount of salt being used will depend on the season and how many winter events there are, so it's the rate of salt application that can be reduced here. Salt purchases seem to be one of the heavier winter maintenance expenses across the LEG municipalities, and a 15% reduction would result in significant savings. For example, Whitewater has been spending an average of $126,950 per year on salt over the last five years. A 15% salt reduction would therefore result in an average savings of $22,403 per year. These savings would be even higher for Renfrew or Arnprior, as they have a higher percentage of urban areas and are using much higher salt quantities. Furthermore, salt reduction will result in less chloride levels in Ontario's urban and rural waterways, thus creating less pollution and healthier water environments for fish, frogs and mussels!

The numbers below show the current salt application rates over an entire season:

Salt/Sand Quantities (tonnes) / Lane Km / Season							
	Admaston/Bromley (Salt & Sand)	Arnprior (Salt Only)	Horton (Salt & Sand)	Greater Madawaska (Salt & Sand)	McNab/ Braeside (Salt & Sand)	Renfrew (Salt Only)	Whitewater (Salt & Sand)
2018/2019	2.12	17.17	2.36	1.31	2.17	17.25	16.00

To estimate the salt application rate per winter event, the numbers above have been divided by ten in the table below:

Salt/Sand Quantities (tonnes) / Lane Km / Winter Event							
	Admaston/ Bromley	Arnprior	Horton	Greater Madawaska	McNab/Braeside	Renfrew	Whitewater
2018/2019	0.212	1.717	0.236	0.131	0.217	1.725	1.60

The table below provides the salt application rate targets for other major cities, who are considered advanced in winter control operations. Please note that these numbers are average targets, and the appropriate salt rate will depend on the road, the accumulation amount and the temperature.

Salt/Sand/Brine Quantities (tonnes) Per Lane km		
Burlington (Salt Only)	Markham (Salt, Sand and Brine)	Oakville (Salt and Sand)
0.095	0.22	0.110

Proposed Action Plan:

1. The first step in reducing salt rate applications is to educate staff (operators and supervisors). If staff is not aware of the cost and environmental impacts of salt applications, it will be difficult to change their actions. The Ontario Good Roads Association (OGRA) provides a two-day workshop training program, and the Canadian Salt Institute has a manual on appropriate use of salt. These are just a couple examples of many other educational programs that exist.
   Timeline: Do Now! The winter season is approaching quickly and there is no reason to wait here.
2. The second step is to monitor the computerized equipment spreaders. This will provide a baseline for the actual salt rates being used, as the numbers provided above are only estimates. Efforts to reduce salt application can then be measured against this baseline, and the target 15% reduction can be measured and achieved.
   Timeline: Winter season of 2020.

3. Continue to reduce the salt application rate if a 15% reduction provides adequate ice maintenance. It is important to note that a 15% salt reduction is a conservative place to start. The last thing we want is for roads to be maintained twice due to inadequate salt rate applications. If road conditions are maintained at a reasonable level with the initial 15% reduction, efforts should be made to further reduce this number until the minimum required salt application rate is found.
   Timeline: Winter seasons of 2021/2022.

In addition to the cost savings from reducing salt quantities, the current salt supplier for LEG municipalities (K+S Windsor Salt) has agreed to lower their salt prices, as it was discovered that the County of Renfrew was getting better pricing than the LEG Group service area. K+S Windsor Salt has therefore agreed to lower their salt prices to the following:

2020-2021: $100.50 / tonne

2021-2022: $103.50 / tonne

2022-2023: $106.65 / tonne

2023-2024: $109.80 / tonne

2024-2025: $113.10 / tonne

2.1.8.2 RECOMMENDATION 2: Convert rural paved roads with AADT<200 to gravel roads at the end of lifespan, at least temporarily

Background:

Approximately 76 percent of the road system in Canada has been classified as rural local roads that carry low traffic volumes. Many of the LEG municipalities have been spending large capital investments to completely rehabilitate asphalt roads at the end of their lifespan. Oftentimes, these funds are not available when needed, and the road rehabilitation is deferred to a later date, causing frequent and costly maintenance operations to extend the lifespan of heavily deteriorated asphalt roads.

Analysis and Benefits:

Although complete road rehabilitation is necessary for the majority of asphalt roads (particularly in urban areas), there are opportunities within the rural dominant LEG municipalities (Greater Madawaska, Whitewater, Admaston/Bromley, McNab/Braeside) to convert paved roads with low traffic (AADT<200) to gravel roads at the end of their lifespan, at least temporarily. This may be challenging to get residents on board with this, but keep in mind that roads with AADT<200 are often used by agricultural industries to access homes and recreational areas, so there wouldn't be many residents using these roads. Design speeds of 50km/hr or less are recommended for one-lane, two-way roads in the interest of meeting safety and design standards.

Converting a paved road to a gravel road would likely provide less maintenance costs than a surface treated road, as surface treated roads are difficult to patch once they begin to deteriorate. However, it is important to note that gravel roads will still require capital investments over the years to replace gravel that is lost through plowing and erosion, as well as grading and calcium costs, but there are stabilization techniques to minimize the amount of maintenance, such as the addition of water and compaction. Converting to gravel roads on a temporary basis may be more suitable for LEG municipalities with concerns about long-term maintenance, as

additional gravel would likely need to be added at some point during the converted gravel road's lifespan. This will at least buy some time until funds are available for a larger investment.

Proposed Action Plan:

1. Conduct traffic studies to determine which rural paved roads are suitable to convert to gravel at the end of lifespan. LEG municipalities looking for a more conservative approach should target AADT<150 as a starting point, and those looking for a more aggressive approach should target AADT<200-250. Admaston/Bromley is currently targeting AADT<200, which is mentioned in their asset management plan. Other LEG municipalities should begin to incorporate this initiative into their asset management plan at this stage.
   Timeline: Do Now!
2. Evaluate the paved road conditions for roads that meet the AADT target. Roads in poor condition nearing the end of lifespan should then be planned for conversion. This may include reducing design speeds to 50 km/hr.
   Timeline: 6 months to 1 year
3. Inform and educate the public about planned road conversions. Early and effective communication is key here. If residents understand the reasons for converting paved roads to gravel, they will be less likely to complain.
   Timeline: 1 years
4. Convert suitable paved roads to gravel and apply stabilization techniques.
   Timeline: 1.5 years

2.1.8.3 RECOMMENDATION 3: Explore and engage in additional boundary road agreements

Background:

There is a total of approximately 1,650.5 kilometers of roads to maintain across the LEG municipalities, with 11 Public Works garages. Most LEG municipalities have at least one boundary road agreement in place with a neighbouring municipality (formal or informal). Our understanding is that these agreements have been successful with a 50% maintenance cost share. However, there is a fairly high percentage of boundary roads with no agreement in place.

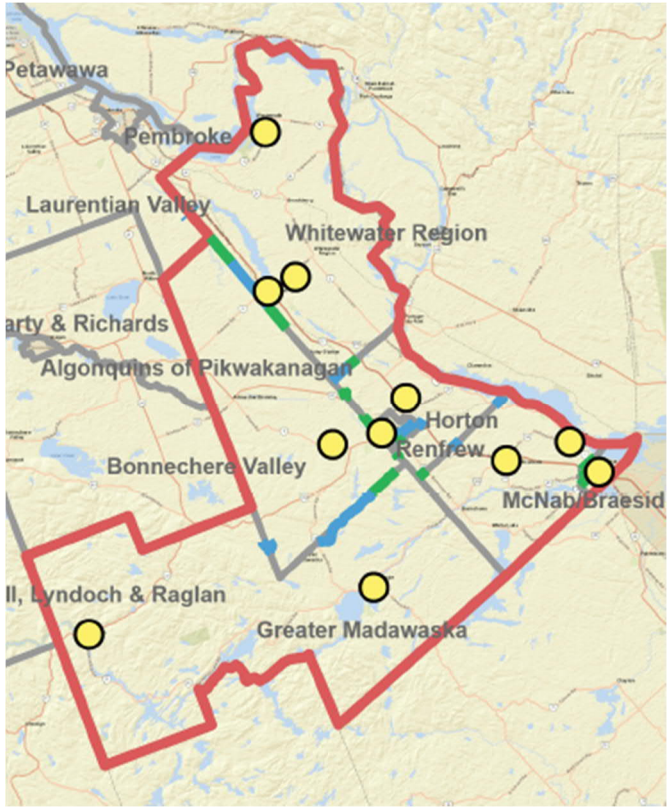
Legend

LEG Boundary:

Existing Road Agreements:

Proposed Road Agreements:

Public Works Garages:



Analysis and Benefits:

The road agreements in place have helped create more efficient routing among LEG municipalities and have helped reduce overtime hours, so why not engage in additional road agreements? Road agreements should be based on proximity to public works garages and efforts to reduce overtime hours. There may be other factors to consider, however these are two recommended guiding principles in coming to future road agreements. We realize not all overtime hours are spent on road maintenance activities, however we believe a 25% reduction is realistic with additional road agreements.

From 2017-2020, Greater Madawaska spent an average of $38,251 on overtime expenses for roads (all year). If those overtime hours were reduced by just 25%, it would result in cost savings of approximately $9,563 per year (average).

From 2017-2019, Renfrew spent an average of $30,260 on overtime expenses for snow plowing and snow removal. If those overtime hours were reduced by 25%, it would result in cost savings of approximately $7,565 per year (average).

Admaston/Bromley spent $41,057 on overtime costs in 2019, and a 25% reduction would result in cost savings of approximately $10,264.

Please note that road proximity to fleet garages is equally (if not more) important than reducing overtime. We realize it is difficult to identify the existing and potential road agreements from the map provided above, however we have provided a list of potential road agreements to consider in an attempt to create more efficient routing and reduce overtime.

Pucker St. (Inglis to Vaile Rd) – Potential formal agreement between Greater Madawaska and Admaston/Bromley. This could be maintained by Admaston/Bromley, as their garage appears to be closer and Greater Madawaska seems to be spending more on overtime. We heard from Greater Madawaska that it can be very hard to maintain roads that are far away.

Blackburn Rd. – Potential formal agreement between Admaston/Bromley and Horton.

Riverview Dr. – Potential agreement between Renfrew and Admaston/Bromley. This may be on Admaston/Bromley's side, but that doesn't mean a road agreement can't occur.

Maloney Rd. (not a boundary road) – Potential agreement between Renfrew and Horton. This road is near the outskirts of Renfrew, which connects to a County road (Bruce St, which the County already maintains). This road appears to be fairly close to Horton's garage.

McBride Rd. – Potential agreement between Renfrew, Admaston/Bromley and Horton.

Behm Line (Patterson to Fox Siding Rd) – Potential formal agreement between Admaston/Bromley and Whitewater.

Snake River Line (Waterview Rd to Stoqua Creek Rd) – Potential formal agreement between Admaston/Bromley and Whitewater.

Part of Division St. (majority of this street appears to be owned by the County) – Potential agreement between Arnprior and McNab/Braeside.

White Lake Rd. (Moorhead Cres. To Bev Shaw Parkway) – Potential agreement between Arnprior and McNab/Braeside.

Russell Dr. (Campbell Dr. and Trans Canada Hwy) – Potential agreement between Arnprior and McNab/Braeside.

It is important to note that Greater Madawaska does not have many boundary roads with other LEG municipalities, but they have a long way to travel to arrive at some roads near the outskirts. Please consider these non-boundary roads and put forth efforts to reduce their overtime hours. Admaston/Bromley also has a long road network to maintain, and efforts should be made to help them with road maintenance activities as well.

Proposed Action Plan:

1. Organize and conduct meetings with neighbouring municipalities to discuss the feasibility of some potential road agreements. Who can get to the road in less time? Who is spending more on overtime?
   Timeline: Do Now (Within 3 months); and,
2. Decide on formal or informal road agreements and develop documentation for these agreements (if necessary). Does a 50% maintenance cost share make sense? Who will maintain the road?
   Timeline: 6 months.

2.2 Waste and Recycling

2.2.1 "As-Is" - Admaston/Bromley

2.2.1.1 Service Description and Objectives

The Township of Admaston/Bromley has in place a waste management by-law to regulate the disposing of refuse and collection of recycling materials at waste disposal sites within the township. Currently, the township does not provide curbside collection services for waste or recycling.

2.2.1.2 Service Delivery Output, Workflow and Resources Required

Waste

Admaston/Bromley residents can drop off their waste at the one landfill site or the two transfer sites. There is no curbside collection of waste within the Township. Ratepayers with a landfill courtesy card may drop off their bagged household waste at no charge. The Osceola Waste site accepts commercial/industrial waste and tipping fees are based upon the type of vehicle that enters the landfill to drop off the waste.

Recycling

The Township has a two-stream recycling program in place and residents can drop off their recycling at the Osceola landfill site or the two transfer stations (Douglas and Stone Road) at no charge. The two-stream recycling program is split into fibre and commingled and residents can confirm what materials are included in each stream by accessing the Township's website.

Household Hazardous Waste Depot

The Township of Admaston-Bromley has an agreement with the Town of Renfrew for a household hazardous waste (HHW) depot, located at the Renfrew landfill site at 376 Bruce Street. The HHW depot is open from May 23rd to August 29th and can be used by Admaston/Bromley residents.

Electronic Waste

Admaston-Bromley residents can drop off electronic waste (including computers, printers and televisions) free of charge at either the Osceola or Stone Road Waste Sites during regular operating hours (posted on the Township's website).

Organics and Yard Waste

Currently, the Township of Admaston/Bromley does not provide collection of household organic waste (e.g., food waste, soiled paper products etc.).

Waste Disposal Site

The Township of Admaston/Bromley has one landfill and two transfer stations for Township residents. Each disposal site accepts all solid, non-hazardous waste.

- Osceola Landfill;
- Douglas transfer station; and,
- Stone Road station transfer station.

Administration

Waste management services fall under the responsibility of the Public Works Superintendent in the Township of Admaston-Bromley - with three part-time waste site attendant. This role is responsible for maintaining the waste disposal site in an orderly and acceptable condition in compliance with the Ontario Ministry of Environment guidelines.

2.2.1.3 Revenues, Expenses and Funding Sources

Waste Management Services

Waste management services include expenditures associated with landfill maintenance at the three waste disposal sites (Douglas Transfer Site, Osceola landfill site and the Stone Road transfer site) as well as wages, well-testing at the landfill sites and the amortization of waste management vehicles equipment and buildings.

*Note: Waste management vehicles are those trucks that are responsible for transporting material from the two transfer stations to the landfill site.

The table below provides information on waste management expenditures (budgeted) vs. waste management expenditures (actuals) in the Township of Admaston-Bromley.

Waste Management Services – Admaston/Bromley		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	266,725	286,143
2016	258,290	269,528
2017	293,310	273,923
2018	248,790	252,712
2019	324,000	308,775

2.2.2 "As-Is" - Arnprior

2.2.2.1 Service Description and Objectives

The Town of Arnprior currently operates a system for the collection, removal and disposal of residential waste, leaf and yard waste and collection and processing of recyclable materials. Collection services are provided for residential dwellings, multi-residential buildings and small non-residential establishments (businesses). Garbage is collected on a weekly basis (Wednesday) and recyclables are collected on a weekly alternating basis (containers one week, fibres alternating week) every other week on either Monday, Tuesday, Thursday or Friday (based upon collection location). Leaf and yard waste is collected on a bi-annual basis in the spring and the fall.

An Integrated Waste Management Plan and Waste Recycling Strategy was developed in 2011. The objective of the plan was to guide the Town on how to optimize its waste management program, increase waste diversion rates, maximize the lifespan of the waste disposal site, and realize additional programs to further reduce the municipality's total waste output.

2.2.2.2 Service Delivery Output, Workflow and Resources Required

Waste

The Town of Arnprior provides curbside garbage collection to all households and small town-centre commercial properties within the Town limits. Curbside collection is available to all residents at the same level of service. Residents are permitted to set out a maximum of two bags each week but can purchase additional tags which allow them to put out additional garbage bags. The tags can be purchased at a cost of $3 per tag.

Commercial and multi-residential users can opt-out of the service and receive a rebate of their garbage fees on their tax bill. Users that opt-out of garbage pickup are still required to pay recycling fees. Curbside collection is undertaken by a private contractor who transports the waste to the Town's Waste Disposal Site. However, residents may deliver their garbage to the Waste Disposal Site themselves. A landfill voucher must be purchased from the Town Hall prior to entry into the landfill and the voucher cost varies based on the required tipping fees. Only one free landfill voucher is available per Arnprior residence per year.

Recycling

The Town of Arnprior's curbside collection and processing of blue box recyclables is provided by a private contractor. The contractor provides curbside collection to households and to some businesses within the Town. Recyclables are collected in alternating weeks (one week containers, one week fibres) and are taken to the contractor's recycling facility for processing. Processing involves sorting, packaging, and marketing to material reclamation facilities. Currently, the contract in place with the Town includes the cost of

curbside collection and hauling to the recycling facility. The Town now pays tipping fees to a processing facility, separate from the contract for collection of recyclables.

The Town provides residents with two blue boxes and makes additional boxes available for at the cost of $7.00 per box. – Blue box recyclables are not accepted at the Arnprior Waste Disposal Site.

Household Hazardous Waste Depot

The Town of Arnprior provides a household hazardous waste (HHW) depot located at the Renfrew landfill site at 376 Bruce Street. The HHW depot is open from May 23rd to August 29th and can be used by Admaston/Bromley residents.

Electronic Waste

Electronic waste (e-waste) is accepted at the Arnprior Waste Disposal Site at no charge.

Organics and Yard Waste

Arnprior currently offers curbside collection of leaf and yard waste twice per year in the spring and fall. Leaf and yard waste must be in biodegradable paper bags and are taken to the Arnprior Waste Disposal Site. Additional leaf and yard waste and small brush are accepted directly at the site free of charge. Large brush with a diameter greater than 1.5 inches, is also accepted, subject to a tipping fee. This material is mulched on site and is used as landfill cover. However, the Town does not provide collection of household organic waste (e.g., food waste, soiled paper products etc.).

Waste Disposal Site

The Town of Arnprior operates one waste disposal site located at 658 River Road. The waste disposal site is open to both Arnprior and Mc-Nab Braeside* residents. The Arnprior Waste Disposal Site accepts all solid, non-hazardous waste, including construction and demolition waste and bulky items. Currently, there are no weigh scales at the Arnprior Waste Disposal Site.

*Residents of the neighbouring Township, McNab-Braeside, are permitted to use the Arnprior Waste Disposal Site at twice the tipping fee.

Administration

Waste and recycling services fall under the direction of the General Manager of Operations.

The Town's waste management program is overseen by a program administrator who is responsible for the promotion and education of waste management initiatives, data collection and analysis, including waste audits, as well as annual reporting.

2.2.2.3 Revenues, Expenses and Funding Sources

Environmental Services

Environmental services include the Town's waste management program which includes weekly garbage pickup as well as a recycling program. The municipality generates revenue through the sale of blue bins, landfill site charges and the sale of scrap metal from the landfill. Recycling expenditures include the costs for both the waste and recyclable curb-side pickup within the municipality (contracted) as well as advertising and education/promotional materials regarding waste management and recycling initiatives across the municipality.

The table below provides information on waste management expenditures (budgeted) vs. waste management expenditures (actuals)

Environmental Services - Arnprior		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	774,050	744,058
2016	756,350	743,194
2017	782,350	823,716
2018	788,250	782,041
2019	837,150	885,612

2.2.3 "As-Is" - Horton

2.2.3.1 Service Description and Objectives

Horton Township currently operates a system for the collection and disposal of residential waste and collection and processing of recyclable materials. All collection services for residents are contracted. Waste is collected on a weekly basis (Monday/Tuesday) and recyclables are collected every other week (Monday/Tuesday). In 2011, an Integrated Waste Recycling Strategy was put in place between the Townships of McNab/Braeside and Horton.

2.2.3.2 Service Delivery Output, Workflow and Resources Required

Waste

Horton Township provides curbside waste collection to all households and small town-centre commercial properties within the Town limits. Waste must be placed in standard size garbage bags (77 L or less) weighing no more than 50 lbs - with a weekly limit of two bags per household. Additional bags require tags and tags are available for $2.00 each. Alternatively, additional waste bags can be taken to the landfill at a $2.00 per bag rate.

Recycling

Horton's curbside collection and processing of blue box recyclables is provided by a private contractor. Recyclables are collected in two streams (fibres and containers) on a bi-weekly basis and taken to the recycling facility for processing. Currently, the contract in place includes the costs associated with curbside collection and hauling to the recycling facility. However, there are no tipping fees or rebates involved. Horton Township does not have a limit on how many recycling boxes residents can place curbside.

Household Hazardous Waste Depot

Horton Township provides a household hazardous waste (HHW) depot located at the Renfrew landfill site at 376 Bruce Street. The HHW depot is open from May 23rd to August 29th and can be used by Admaston/Bromley residents.

Electronic Waste

Electronic waste (e-waste) is accepted at Horton's waste disposal site. There is no charge for this service.

Organics and Yard Waste

Horton Township does not currently offer curbside collection of leaf and yard waste or household organics (e.g., food waste, soiled paper products etc.). Rather, residents are responsible for bringing their own leaf and yard waste to the landfill site - with no tipping fee charged.

Waste Disposal Site

The Horton landfill site is located at 2082 Eady Road in Renfrew Ontario. The waste disposal site is open to only Horton residents. The landfill site accepts all solid, non-hazardous waste.

Administration

Waste and recycling services fall under the direction of the Public Works Manager in Horton Township and is staffed by two landfill attendants (one full time, one part-time). The full-time landfill attendant is responsible for routine landfill functions and assists with corporate facility maintenance including: assessing and screening incoming waste for acceptability as well as operating equipment and maintaining the landfill site per the Environmental Compliance Approval. While the part-time position fulfills many of the same responsibilities and provides overall support to the full-time attendant.

2.2.3.3 Revenues, Expenses and Funding Sources

Environmental Services

The Township's waste management program which includes curb-side pickup for garbage and recycling. The municipality generates revenue through initiatives including the sale of blue bins and landfill site charges (tipping fees). Recycling expenditures include the costs for waste and recyclable curb-side pickup within the municipality (contracted) education/promotional materials and landfill equipment.

The table below provides information on waste management expenditures (budgeted) vs. waste management expenditures (actuals).

Environmental Services - Horton		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	234,558	234,558
2016	238,530	238,530
2017	218,657	216,664
2018	221,079	221,079
2019	217,974	217,974

2.2.4 "As-Is" - Greater Madawaska

2.2.4.1 Service Description and Objectives

The Township of Greater Madawaska has in place a Waste Disposal by-law as well as a Waste Recycling Strategy to regulate the disposing of garbage and collection of recycling materials at waste disposal sites within the Township of Greater Madawaska. Currently, the Township does not provide curb-side collection services for waste or recycling.

2.2.4.2 Service Delivery Output, Workflow and Resources Required

Waste

Greater Madawaksa residents can drop off their waste at one landfill site (Mount St. Patrick). There is no curb-side collection of waste within the Township but residents with a landfill courtesy card may drop off their bagged household waste at no charge. The Township is serviced by three transfer stations (Griffith Site, Norway Lake and Mount St. Patrick).

Recycling

All transfer stations within the Township of Greater Madawasksa accept separated recycling (containers and mixed fibres) at no cost as long as residents show their landfill courtesy card.

Household Hazardous Waste

The Household Hazardous Waste Depot (HHWD) for the Township is located at the Renfrew landfill (376 Bruce Street) site and is open to Greater Madawaska residents. The HHW depot is open from mid-May to mid-August and can be used by all Greater Madawaska residents free of charge.

Electronic Waste

Greater Madawasks residents can drop off electronic waste (including computers, printers and televisions) free of charge at any of the waste disposal sites (not including Black Donald).

Organics and Yard Waste

The Township of Greater Madawaska does not offer curbside collection of leaf and yard waste or household organics (e.g., food waste, soiled paper products etc.). Rather, residents are responsible for bringing their own leaf and yard waste and household organics to any one of the three sites (Griffith, Norway Lake and Mount Saint Patrick) at no charge.

Waste Disposal Site

Greater Madawaksa has two landfill sites (Mount St. Patrick and Black Donald*) and three transfer stations (Griffith Site, Norway Lake and Mount St. Patrick).

*The Black Donald site is not open to the public.

The Mount St. Patrick site operates as a waste disposal site and includes a waste and recycling transfer station. While the Norway Lake site has operated solely as a waste and recycling transfer station since 2002. In 2010, the Township completed construction of the Griffith waste and recycling transfer station. Prior to 2010, the Griffith site was operated as a waste site.

Administration

Waste management services fall under the responsibility of the Facilities Manager in the Township of Greater Madawaska and this position is supported by three part-time landfill attendants whose responsibilities include carrying out routine landfill functions, assisting with corporate facility maintenance, assessing and screening incoming waste for acceptability, and maintaining the landfill site per the Environmental Compliance Approval.

2.2.4.3 Revenues, Expenses and Funding Sources

Environmental Services

For the purposes of reporting, 'environmental service' expenditures are presented in the financial statements for each of the Township's waste sites. These include expenditures associated with the Black Donald waste site, Norway Lake waste site, Griffith waste site, Mount. St. Patrick waste site and the Matawachan waste site (closed in 2016) and can include telephone and utilities, insurance fees, compaction services, employment costs (salaries) and engineering fees. Other expenditures for 'environmental services' includes costs associated with public education programs, waste management safety equipment and equipment including a truck and trailer used for delivering waste material to transfer stations.

The table below provides information on environmental service expenditures (budgeted vs. actuals) for the Township of Greater Madawaska.

Environmental Services – Greater Madawaska		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	386,300	348,885
2016	356,750	344,735
2017	361,800	323,336
2018	380.460	388,057
2019	395,460	408,729

2.2.5 "As-Is" - McNab/Braeside

2.2.5.1 Service Description and Objectives

The Township of McNab/Braeside currently operates a system for the collection, removal and disposal of residential waste, and collection and processing of recyclable materials. Collection services are provided for residential dwellings, and non-residential establishments (businesses). Garbage is collected on a weekly basis and recyclables on a dual stream alternating week collection of commingled containers (glass/metal/plastic) and paper fibres (paper/cardboard).

In 2011, an Integrated Waste Recycling Strategy was put in place between the Townships of McNab/Braeside and Horton. The strategy develops and outlines a detailed plan to increase the efficiency and effectiveness of the Township's waste management systems by implementing best practices and maximizing the amount of waste material that is diverted from entering the landfill.

2.2.5.2 Service Delivery Output, Workflow and Resources Required

Waste

The Township of McNab/Braeside provides weekly curbside garbage pickup to all households Township policy allows a maximum of two regular sized green garbage bags or equivalent containers of 67 litres each week. Additional regular sized garbage bags placed at curbside for pickup require a yellow tag (cost of $ 2.00 each) that must be attached to each bag.

Annually, garbage levies are included on each tax bill and are based on the total costs associated with the landfill site, recycling collection, waste collection and future closure of the site. The Township provides one free voucher by household each year for household garbage and can be used throughout the calendar year (expires at the end of December). The voucher provides each household the equivalent of a "free bulk day" for an additional 200kg of household waste.

Recycling

The Township recycling collection program is an alternating week dual stream collection of paper fibres (paper/cardboard) and commingled containers (glass/metal/plastic). Currently, the contract in place with the Township includes the costs associated with curbside collection and processing and there are no tipping fees or rebates involved. There is no limit on how many blue boxes can be placed at the curb and residents can purchase additional blue boxes at a cost of $8.00. For convenience, residents may also choose to haul their recyclables to the McNab/Braeside waste disposal site should they wish to do so.

Household Hazardous Waste

Residents of McNab/Braeside upon showing a resident's identification card can drop off their household hazardous waste (HHW) from May 23 - August 29, 2020 at the Renfrew Landfill Site, located at 376 Bruce Street during regular hours.

Electronic Waste

A depot has been established at the landfill site located at 573 Calabogie Road to collect and recycle e-waste items as part of the Township's waste diversion plan. E-waste items include monitors, computer towers, and other computer accessories, printers, cell phones, televisions, radios, video games and batteries. This service is only made available for the residents of McNab/Braeside at no charge.

Organics and Yard Waste

Currently, the Township does not offer curbside collection of leaf and yard or household organics (e.g., food scraps, soiled paper products). However, residents may bring leaf and yard waste to the landfill site at no charge.

Waste Disposal Site

The landfill Site is located at 573 Calabogie Road. The waste disposal site is open to McNab/Braeside residents.

Administration

Waste and recycling services fall under the direction of Public Works. The Township's waste management program is supported by three part-time landfill attendants whose responsibilities include routine landfill functions and assisting with corporate facility maintenance. Additional functions include: assessing and screening incoming waste for acceptability, operating equipment and maintaining the landfill site per the Environmental Compliance Approval.

2.2.5.3 Revenues, Expenses and Funding Sources

Environmental Services

Environmental services include the Township's waste management program which includes weekly garbage pickup as well as a recycling program. The municipality generates revenue through the sale of blue bins, landfill site charges and the sale of scrap metal from the landfill. Recycling expenditures include the costs for both the waste and recyclable curb-side pickup within the municipality (contracted) as well as advertising and education/promotional materials regarding waste management and recycling initiatives across the municipality.

The table illustrates recycling revenues generated by the municipality and a comparison between recycling services (budgeted) vs. recycling services (actual).

Environmental Services – McNab/Braeside		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	774,050	744,058
2016	756,350	743,194
2017	782,350	823,716
2018	788,250	782,041
2019	837,150	885,612

2.2.6 "As-Is" - Renfrew

2.2.6.1 Service Description and Objectives

The Town of Renfrew has a waste management system by-law that prescribes the collection and processing/disposal of garbage, ashes, refuse, leaf and yard waste and recyclable materials. The Town provides curbside pick-up for household solid waste (garbage) throughout the municipality. The Town has recently signed a three year Recycling Collection Material with a private contractor with local processing through Emterra Environmental. The collection of waste within Renfrew is done on a weekly basis while recyclables are collected on an alternating weekly basis of commingled and fibres.

2.2.6.2 Service Delivery Output, Workflow and Resources Required

Waste

Renfrew provides curbside waste collection to all households and small town-centre commercial properties within the Town limits with a weekly limit of two bags per household and four bags for commercial properties. Additional bags require tags at a cost of $2.00 each.

Recycling

Renfrew's curbside collection and processing of blue box recyclables is provided by a private contractor. Two stream recyclables are collected on a weekly basis (alternating between containers and fibres) and are taken to a recycling facility for processing. Currently, the contract in place with the Town includes the costs associated with curbside collection, as well as hauling and processing at the recycling facility with no tipping fees or rebates involved.

The Town provides blue boxes to residents at a cost of $10/box. There is no limit on the number of blue boxes residents can put out for curbside pickup. For industrial and commercial customers there is a limit of 8 blue boxes.

Household Hazardous Waste

Residents of Renfrew can drop off their household hazardous waste (HHW) from May 23 - August 29, 2020 at the Renfrew Landfill Site, located at 376 Bruce Street during regular hours.

Electronic Waste

Renfrew residents can drop off electronic waste (including computers, printers and televisions) free of charge at the Renfrew landfill site.

Organic Waste and Yard Waste

The Town of Renfrew provides residents with a leaf and yard waste removal service for three weeks in the spring and fall of each year. The number of leaf and yard waste items put out during the regular collection period is unlimited; and Renfrew residents may also deliver their leaves and grass to the municipal landfill site free of charge. Currently, there is no diversion program in place for household organics (e.g., food scraps, soiled paper products).

Landfill Site

The Renfrew Landfill site is located at 376 Bruce Street and only waste generated in the Town of Renfrew is accepted at the site. The disposal site accepts all solid non-hazardous waste. There are scales at the Renfrew waste disposal site.

Administration

Waste and recycling services fall under the direction of the Director of Development and Works in the Town of Renfrew. The Town's waste management program is supported by three employees which consist of an environmental engineering officer and two landfill staff.

The environmental engineering officer is a full-time position under the direct supervision of the Director of Development and Works. The role is responsible for providing support to supervisors and staff relating to operations matters, with emphasis on the Town's environmental engineering programs and environmental compliance.

Additionally, there are two full-time landfill operators. One of these positions is an equipment operator who is responsible for working with customers, spotting trucks, directing users, handling, sorting, managing, compacting and covering materials received at the landfill. The second position is a scale attendant who directs and processes client transactions at the landfill and also completes activities including: scale operation and maintenance, reporting, sorting materials and maintaining depot bins.

2.2.6.3 Revenues, Expenses and Funding Sources

For the purposes of reporting, 'environmental services' are presented across 3 main categories in the Town's financial statements.

- Landfill Site (Expenditures + Revenues);
- Collections (which includes household hazardous waste disposal); and,
- Recycling.

'Landfill site' include expenditures associated with contracted services, promotional and advertising costs and equipment costs. Revenue is generated from tipping fees, cost recoveries as well as other miscellaneous revenue. (Reference table#1)

'Collections' include expenditures associated with waste management collection, landfill expenses, salaries as well as household hazardous waste disposal. Revenue is generated in this area from cost recoveries as well as other fees and charges. (Reference table#2)

'Recycling' includes expenditures associated with contracted services, salaries and other promotional activities. Revenue is generated from cost recoveries and other fees and charges. (Reference Table #3)

Landfill Site – Renfrew – Table #1		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	74,560	(50,231)
2016	67,420	17,172
2017	114,695	86,645
2018	104,470	57,342
2019	42,140	32,311

Collections – Renfrew – Table #2		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	(222,610)	(220,755)
2016	(225,070)	(222,913)
2017	(216,890)	(214,490)
2018	(213,440)	(210,643)
2019	(229,570)	(229,545)

Recycling – Renfrew – Table #3		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	(142,520)	(137,248)
2016	(141,900)	(135,738)
2017	(143,800)	(87,693)
2018	(89,710)	(68,360)
2019	(96,900)	(128,282)

2.2.7 "As-Is" - Whitewater

2.2.7.1 Service Description and Objectives

Waste Management and Recycling for the Township of Whitewater includes the administration of a curb-side waste and blue box collection program as well as waste site operations. The Township owns three (3) landfill sites with both the former Westmeath landfill and the Cobden Landfill closed, the Ross Landfill Site serves as the Township's long-term, centralized waste disposal facility.

2.2.7.2 Service Delivery Output, Workflow and Resources Required

Waste

Whitewater provides curbside waste collection to all households and small township-centre commercial properties within the Township limits with a weekly limit of two bags per household and four bags for commercial properties. Additional bags require tags at a cost of $2.00 each.

Recycling

Whitewater provides curbside collection of recyclables and this service is provided by a private contractor. Two stream recyclables are collected on a weekly basis (alternating between containers and fibres) and are taken to a recycling facility for processing.

Recyclable materials collected within Whitewater are brought to the Upper Ottawa Waste Recovery Center (UOWRC) for processing.

Household Hazardous Waste

Household Hazardous Waste is not accepted at the landfill site used by Whitewater (Ross Landfill site). Each spring and fall a special one day event is held where residents can bring these items to the Ross Mineview Works Garage, located at 2271 Mineview Road, for drop off.

Electronic Waste

Whitewater residents can drop off electronic waste (including computers, printers and televisions) free of charge at the Ross Landfill site. Refrigerated appliances such as freezers, fridge, air conditioner, water cooler and dehumidifier are $25 per unit.

Organic Waste and Yard Waste

Whitewater provides for the stockpiling of clean leaf, yard and brush as well as separated clean lumber at the Ross Landfill site. Currently, there is no diversion program in place for household organics (e.g., food scraps, soiled paper products).

Landfill Site

Whitewater owns 3 landfills - Former Westmeath, Cobden and the Ross landfill. However, only the Ross landfill landsite is in operation and is at approximately 55% capacity. Whitewater does not share its landfill with any members of the LEG or any other neighbouring municipalities.

Administration

Waste and recycling services in the Whitewater fall under the Director of Public Works and there are four personnel for waste and recycling in the Whitewater.

An environmental services superintendent is responsible for the effective coordination of all environmental services operations that includes municipal waste management services, contract administration and management of drinking water and wastewater treatment systems. There is also one full-time landfill/facility operator and two part-time landfill attendants. Their responsibilities include: performing routine landfill functions and assisting with corporate facility maintenance as well as assessing and screening incoming waste for acceptability, operating equipment and maintaining the landfill site per the Environmental Compliance Approval.

2.2.7.3 Revenues, Expenses and Funding Sources

Recycling

The municipality generates revenue through the sale of blue bins and other recycling initiatives. Recycling expenditures include the costs for curbside recycling pickup within the municipality (contracted) as well as advertising and trucking expenses.

The table below provides information on recycling services - with a comparison between recycling services (budgeted) vs. recycling services (actual).

Recycling Services - Whitewater		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	195,802	160,835
2016	199,500	166,609
2017	192,273	156,428
2018	185,523	147,256
2019	184,000	229,132

Please note there was a new contractor hired in 2019 after the previous contractor went out of business.

Waste Management

The municipality generates revenue for waste management that includes tipping fees, tire funding and the sale of electronic waste. Waste management expenditures include the costs for curbside waste pickup within the municipality (contracted) as well as trucking expenses and household hazardous waste removal.

The table below provides information on budgeted expenditures vs. actual expenditures for waste management services.

Waste Management - Whitewater		
Year	Expenditures ($ Budgeted)	Expenditures ($ Actual)
2015	168,516	199,933
2016	178,694	205,707
2017	168,257	177,913
2018	160,150	168,741
2019	151,500	249,764

2.2.8 Waste & Recycling Recommendations

An opportunity was identified to consider sharing of environmental monitoring at landfills. The idea was to have an in-house engineer deliver the monitoring service across the seven municipalities. The Ontario Ministry of the Environment, Conservation and Parks (MECP) would accept monitoring completed by municipalities internally, and they require reports to be prepared by P.Eng.'s/P.Geos.

As a comparison to other municipalities, the city of Hamilton performs the required monitoring for seven municipal landfill sites, and sends the lab results to a consulting firm to prepare the annual report. Sault Ste. Marie takes a similar approach, where they collect samples themselves, but have a consulting firm write the monitoring reports.

However, upon further review, there doesn't appear to be a cost saving opportunity here for LEG municipalities. The salary costs for an in-house environmental engineer would likely be higher than the costs to outsource monitoring services, and the benefits from an outside expertise would be lost (i.e. familiarity with Regulator's concerns). There is an opportunity to consider a "bulk procurement" of consulting services, but we understand that pricing is already quite competitive for this work, so cost efficiencies might not be achieved.

2.2.8.1 RECOMMENDATION 1: Creating a LEG 'community of practice' for waste management

Background:

It is widely recognized that reducing the amount of waste that municipalities generate is by far the most effective way to diminish the flow of garbage into landfills. In order to be most effective, municipalities must incorporate the 3Rs - Reduce, Reuse, and Recycle – within their communities. By adopting a community-based approach, neighbouring municipalities can effectively share,

promote and highlight enhancements for waste management initiatives thereby allowing local governments a greater opportunity to identify areas for collaboration and best practices.

Analysis and Benefits:

Communities of practice or groups of individuals that come together to achieve both individual and group goals are becoming more and more common today as our desire to stay connected and share information continues to grow. For instance, establishing communities of practice in the business world have resulted in improved connections between individuals, increased knowledge sharing and improved communications and organizational development.

In local government, the same benefits can be realized. Communities of practice can deliver results at the grassroots level to enhance local initiatives such as waste management practices. Specifically, if LEG municipalities established a community of practice that met on a quarterly/bi-annual basis to discuss and share waste management ideas and explore areas for collaboration they could also potentially achieve the following additional benefits:

- Enhanced Project Management
  The ability to streamline communications and capture tacit knowledge about waste management initiatives that could be applied in future projects/initiatives within the municipality.
- **Creating Stronger Governance**
  Cross-jurisdictional governing bodies at the local level may be in a better position to collaborate and share documents relating to new legislation and requirements as they relate to waste management.
- Strengthening Case Management
  Full and part-time employees employed across the LEG could better share information and coordinate services for waste management initiatives.

- Employee Training
  The transfer of knowledge from experienced employees to new hires – helping new employees learn policies, programs and processes that are unique to waste management and can be potentially shared across the LEG.
- **Increased Citizen Participation**
  Providing citizens with the ability to better engage with each other, local stakeholders and their local government on initiatives related to waste management.

Proposed Action Plan:

- The first step for establishing a community of practice for waste management is for LEG members to meet and consider the following:

1. What are our objectives?
   Determine the goals and objectives the community of practice for waste management hopes to achieve. In other words, what is the purpose of creating this community of practice?
2. Establish a corporate infrastructure
   Create a Terms of Reference that identifies the overall mandate of the group and who will represent each of the LEG municipalities; in order to provide clarity on how the community of practice will function and what is expected of each individual.
3. Be aware of the experience and knowledge each member brings to the table.
   Determine what each member brings to the group and consider identifying what core knowledge or experience they are able to share with the other members beforehand – in order to ensure that a wide range of experience is represented.
4. Hold an introductory meeting for all members / establish a Chair.

Arrange a meeting (online or offline) wherein all members meet and begin discussing the goals and objectives of the community of practice. At the introductory meeting, establish a forward agenda to identify key areas of focus for the upcoming year.

5. Use social media platforms and online forums to keep in touch.
   Consider using social media sites, such as Facebook, LinkedIn, and Twitter, as well as online forums, to help promote and educate citizens, key stakeholders about the work of the group.

Timeline: Do Now! Target first half of 2021.

2.2.8.2 RECOMMENDATION 2. LEG municipalities should consider carrying out residual waste composition studies in order to better understand the amount of organic material that is entering the waste stream and increase landfill diversion rates for organic material.

Background:

When food and organic wastes are sent to landfill, opportunities are lost to both preserve valuable resources that could be used to support healthy soils and to reduce GHG emissions. On a macro level in Canada over $31 billion worth of food is wasted annually with Ontarians alone generating nearly 3.6 million tonnes of food and organic waste!

Doubling the current diversion rate for food and organic waste would lead to a reduction of 1.1 Mt of GHGs - which is equivalent to removing approximately 260,000 cars from Ontario roads each year! Across Ontario and in our municipalities, efforts to divert food and organic waste through green bin programs, community composting efforts and leaf and yard waste have led to some progress for increasing diversion rates across Ontario.

However, approximately 60% of Ontario's food and organic waste is still sent to landfills. If local municipalities (like the LEG) can better ascertain how much organic material is entering their waste stream, they could be better placed to determine what organic initiatives/programs might best fit their individual needs at the local level.

Analysis and Benefits

Ontario's Food and Organic Waste Policy Statement supports the provincial vision of a circular economy. Waste reduction and resource recovery of food and organic waste will help improve environmental outcomes, reduce greenhouse gas emissions and recover valuable nutrients thus contributing to the objective of building a circular economy.

In line with Ontario's Food and Organic Waste Policy, an agency of the Government of Canada (Ontario Trillium Foundation (OTF)) partnered with Sustain Ontario to produce a report entitled: 'Reducing Household Food Waste: A Municipal-Regional Toolkit". Key findings from the report included:

- The need for more waste studies, behavioural surveys and social marketing research in order to understand consumer behaviour and better standardise organics measures across the province; and,
- The largest barrier to reducing food waste remains the lack of knowledge about why individuals waste food, and what is entering the waste stream.

A waste study will help determine the amounts and types of waste being discarded and where they came from.

For the LEG, waste studies could involve taking a representative sample – of the waste being thrown away and sorting, weighing and recording the different quantities and amount of avoidable organics (edible food that was thrown away) and unavoidable organics (not edible food – banana skins, coffee grinds etc.) that are entering the waste stream.

The results of these studies will provide LEG municipalities with greater clarity about what is being sent to the landfill, and how to begin reducing the amount of organic waste being created at the local level.

It is important to note that waste composition studies and food waste campaigns food waste campaigns will differ depending on local needs and circumstances. One of the biggest barriers to carrying out food waste composition studies are that municipal budgets are not generally sufficient to cover the costs associated with a detailed study. Therefore, LEG municipalities should consider developing strategies to look for new and innovative ways to acquire funding from across different organizations and sources.

Proposed Action Plan:

1. As a first step, LEG communities should consider utilizing 'best practices' from across environmental agencies, organizations, local governments and determining what procedures and practices they might be able to implement in order to better reduce wasteful household organic waste. An example of one of these 'best practices' is:
   Adapted from the Environmental Protection Agency (EPA): "Too Good to Waste Implementation Guide and Toolkit" is designed for community organizations and local governments, interested in reducing wasteful household food management practices. The Implementation Guide is designed to teach local governments and community organizations how to implement local campaigns in their community using the Toolkit. The Toolkit provides behavior change and outreach tools designed to assist local governments to implement strategies to reduce wasted food in their homes.
   Timeline: Do Now! (First half of 2021)
2. One of the biggest barriers to carrying out food waste composition studies are municipal budgets are not generally sufficient to cover the costs associated with a detailed study. Therefore, LEG municipalities should consider developing strategies to look for

new and innovative ways to acquire funding from across different organizations and sources. Some of these sources could include:

The Green Municipal Fund
The Federation of Canadian Municipalities (FCM) offers grants and loans for projects that are spearheaded by municipalities and are initiated through a collaborative relationship between a municipality and an organization/partner. The fund can provide up to $175,000 for plans and feasibility studies and $350,000 for pilot projects.

Green People Fund
This fund is offered by the Ontario Trillium Foundation – with a priority to help people reduce their impact on the environment. Funders are required to: help people connect to the environment and understand their impact; take deliberate actions to benefit the environment; and develop mechanisms to promote responsible stewardship.
Timeline: Do soon. (Fiscal year 2021/22)

2.2.8.3 RECOMMENDATION 3: LEG municipalities with wastewater treatment plants should consider initiating a biosolids management analysis in order to assess current processes and identify opportunities that may exist for beneficial use.

Background:

Biosolids are a product of sewage and wastewater treatment plants that can be used as a natural fertilizer as well as a conditioner to recover contaminated or unusable soil. As sewage moves through wastewater treatment facilities, solids are extracted from liquids for further treatment. These solids are then dewatered to produce a dry, dark, nutrient-rich material called biosolid cake that closely

resembles damp organic soil. If managed properly, biosolids are rich in nutrients that are essential for plant growth. Across the LEG municipalities, Arnprior, Renfrew and Whitewater all operate municipal wastewater treatment facilities.

Analysis and Benefits:

Identifying and adopting best practices in a biosolids management program should be a high priority for municipal governments that operate wastewater treatment plants (such as: Arnprior, Renfrew and Whitewater) and generate residual solids. By implementing best practices and implementing biosolids management analysis these LEG municipalities can improve their chances of realizing key environmental and financial benefits that include:

Environmental benefits:

- Provides a nutrient rich soil conditioner that improves soil quality;
- Facilitates plant growth; and,
- Supports the three Rs program: reduce, reuse, and recycle!

Economic benefits:

- Reduces the need for farmers to purchase expensive fertilizers every year as biosolid application can benefit soil conditions for up to 5 years; and,
- Extends the life of our landfills – saving space and money!

Biosolids management programs will vary from municipality to municipality depending on size and regulations. However, biosolids management programs must be developed, implemented, and maintained with due regard for the health and safety of workers, the public and the environment, particularly when considering options for biosolids end use.

It is important to note that best practices have been developed and codified over the course of the last 10 years to help guide municipal management of biosolid. LEG members should consider consulting this guidance and any others (where applicable) before initiating their own biosolids management analysis. Some of the guidance includes:

- The Canadian Council of the Ministers of the Environment (CCME)

CCME developed a guidance document entitled: The Beneficial Use of Municipal Biosolids, Municipal Sludge and Treated Septage'. This guidance document outlines the beneficial use and sound management of municipal biosolids, municipal sludge and treated septage and contains information to manage these three categories of wastewater residuals in an environmentally beneficial and sustainable manner.

- **National Research Council & the Federation of Canadian Municipalities (FCM)**

The Biosolids and Management Program is a guidance and best practice document that identifies 13 elements that are part of successful biosolids programs. The document also provides a framework for undertaking the planning of biosolids programs, giving advice on technologies and end uses and methods for involving the public and key stakeholders in the planning exercise.

Proposed Action Plan:

The National Research Council (NRC) and the Federation of Canadian Municipalities have highlighted the important components of a quality management system for biosolids. These components are:

- Considering quality at each stage of the biosolids program—not just at the end;
- Committing to a cycle of continuous improvement;
- Involving the public in open communication about the program and its performance; and,
- Developing and using a proper documentation and reporting system.

Against this backdrop they have outlined a four-stage approach to developing and implementing a quality management program for biosolids.

Moving forward, LEG municipalities with municipal wastewater treatment plants (Arnprior, Renfrew and Whitewater) should consider this approach when developing their own unique biosolids management program/analysis.

1. Plan — STATE clearly what you PLAN to achieve. LEG members (Arnprior, Renfrew and Whitewater) should develop a vision for the program that defines the goals and objectives and the roles and responsibilities of the various staff.

Timeline: Do soon - 2020/21

2. Do — DO what you need to do to achieve your plan. Train staff and develop standard (and emergency) operating procedures to improve the quality of the product and achieve compliance.

Timeline: Do soon - 2020/21

3. Check — CHECK that you are doing what you said you were going to do. Monitor activities, processes and the final product, maintain records and report to the various interested parties including management, elected officials, and the public and regulatory agencies.

Timeline: Do later – Second half of 2021/22

4. Review — REVIEW to see if what your municipality is doing is achieving your plan. Review and evaluate results against objectives and implement any corrective actions that are necessary to achieve what was planned.

Timeline: Ongoing.

2.2.8.4 RECOMMENDATION 4: LEG municipalities should explore ways to provide residents more opportunities throughout the year to dispose of household hazardous waste (HHW).

Background:

It is important to dispose of garbage properly, especially those household hazardous waste (HHW) products that have poisonous, combustible, explosive or flammable properties. Keeping hazardous materials out of landfill sites protects groundwater, conserves resources through recycling and saves landfill capacity. Household Hazardous Waste (HHW) includes a broad range of materials such as:

- Materials from manufacturing (for example, waste acids, contaminated sludges and chemicals);
- Biomedical wastes from hospitals and other health care facilities;
- Waste solvents;
- Waste pesticides;

- Polychlorinated biphenyls (PCBs);
- Industrial lubricants and oils containing heavy metals;
- Perchloroethylene (perc) waste from dry cleaners; and,
- Discarded batteries.

Analysis and Benefits:

Currently many LEG municipality residents can drop off their household hazardous waste free of charge at the Renfrew Landfill Site, located at 376 Bruce Street from May 23rd to August 29th (3 months a year).

Whitewater residents can drop off their household hazardous waste twice a year (each spring and fall) at a location within their municipality as HHW is not accepted at the landfill site used by the Township of Whitewater (Ross Landfill site).

As a best practice, key components of successful household hazardous waste programs incorporate

- Ease of drop off and convenience throughout the year; and,
- Effective advertising/communication to residents.

Programs that ensure these components are in place help to keep communities safe as potentially hazardous materials are removed from people's homes, no longer presenting hazards to children and pets. These programs also provide a responsible means of disposal for residents, which safeguards the environment, including our waterways.

Proposed Action Plan:

LEG municipalities should consider new and innovative ways to improve access and effectively communicate to residents about household hazardous waste. Steps to improve the current system could include:

1. Providing Greater Access

LEG municipalities should analyze and determine the costs associated with staggering drop-off dates throughout the course of the year at the Renfrew landfill site to provide greater access to residents to drop off their household hazardous waste.

Timeline: Do Now (Winter 2021)

2. Making it Mobile

LEG municipalities should pilot mobile household hazardous waste days on multiple event days and locations to provide residents the opportunity to drop off their household hazardous waste and determine if such measures provide greater effectiveness for the removal of HHW.

Timeline: Do Soon (Spring - Summer of 2021).

3. Linking event days with social media / Phone App.

Explore new and innovative ways to effectively advertise and communicate to residents about where, what and how they can drop off their household hazardous waste. Measures including targeted advertising campaigns and even implementing a phone app to better promote current measures to dispose of HHW should be considered.

Timeline: Do Later (Last quarter of 2021 -beginning of 2022)

2.3 Asset Management and Engineering

2.3.1 "As-Is" - Admaston/Bromley

2.3.1.1 Service Description and Objectives

Admaston/Bromley's Asset Management Plan provides guidance on investment in capital works. It delivers a planned approach to the long-term management of assets, by providing a framework for optimizing future expenditures that match the community's desired levels of service, and will enable the most cost efficient allocation of resources. The goal of the Asset Management Plan is to provide for investment in the Township's capital assets which match minimum service standards while providing a long-term plan for the allocation of the Township's scarce resources in order to address its aging and deteriorating infrastructure.

Admaston/Bromley has indicated they would like better coordination in asset management activities, as well as county wide or shared Asset Management Plan alignment.

2.3.1.2 Service Delivery Output, Workflow and Resources Required

With information provided from various sources, Admaston/Bromley has determined the following objectives will be used to achieve their goals (not all included):

- Adopting maintenance policies for equipment in good condition that repair small problems before they become larger and to extend the life of the asset;
- Selecting replacement options that will provide the best long term solution for equipment in poor condition;
- Adopting preservation strategies for roads in good condition that repair small problems before they become larger and to extend the life of the asset; and,

- Selecting options that will provide the best long term solution for roads in poor condition.

Some of the targets being used to achieve these goals include deferring maintenance for paved roads with AADT<200 and converting to gravel at end of life, updating pavement evaluations on a 4 year cycle, and implementing a preservation strategy by capping rehabilitated roads 3 to 4 years after resurfacing to extend the life of the asset.

On the engineering side, Admaston/Bromley does not currently have any engineers (P.Eng.) on staff. They rely on MOE standards, OPSDs and OPSS for smaller projects, and utilize consulting firms for larger projects.

2.3.2 "As-Is" - Arnprior

2.3.2.1 Service Description and Objectives

Arnprior has placed asset management as a strategic priority. The present Asset Management Plan (AMP) report, along with the asset management tools delivered to the Town, will assist staff in making the most cost-effective decisions with regards to rehabilitation or replacement of their infrastructure. It will also ensure that the limited funds made available for infrastructure renewal are spent wisely, and that staff decisions are supported by sound technical data and analysis. Arnprior has indicated they are committed to updating their Asset Management Plan annually to reflect current conditions.

2.3.2.2 Service Delivery Output, Workflow and Resources Required

Arnprior has indicated that the asset management operations are shared between public works staff and finance staff. There are currently three staff members responsible for asset management operations, which include the general manager of operations, an engineering officer and a deputy treasurer. With these limited resources in place, as well as recent resignations in civil and facilities departments, it has created a lot of stress on the asset management team.

Although the latest Asset management Plan suggests it will be updated on an annual basis, there doesn't appear to be a more recent update since 2017. Arnprior is currently in the midst of implementing CityWide asset management software, which should assist with asset inventory and condition ratings, but will certainly not resolve all of their resourcing issues.

On the engineering side, Arnprior had a civil engineer in 2016 to assist with tendering and design reviews. Since the departure, they have not had any engineers on staff. They rely on MOE standards, OPSS and OPSDs for smaller projects, and utilize consulting firms for larger projects. In order to establish standardized protocols for their municipality, Arnprior is planning on implementing a Development Standards Manual in the near future.

2.3.3 "As-Is" - Horton

2.3.3.1 Service Description and Objectives

Horton's core service infrastructure is aging and deteriorating, while at the same time there is demand for improvements to service. In order to develop management techniques to preserve and extend the service life of its infrastructure assets, while in turn providing a specific level of service, the Township commissioned the preparation of an Asset Management Plan in 2013 and has continued to update the plan in 2017 so that it covers the period up to 2027. Horton considers asset management to be a high priority, and would like to improve this service delivery, particularly in asset inventory updates and specific asset criteria.

2.3.3.2 Service Delivery Output, Workflow and Resources Required

Horton's available resources for asset management operations include the Public Works Manager, the CAO/Clerk, the Treasurer, and the Fire Chief. Horton has developed asset management strategies for roads, stormwater, and municipal facility assets. Generally, Horton's asset management strategies include actions or policies that can lower costs or extend asset life. Horton has indicated they can obtain improved efficiencies through integrated infrastructure and efficient land use planning decisions, which relies upon the coordination of municipal capital activities with other stakeholders to ensure that capital activity is not duplicated. Horton also has

an asset hierarchy system, which provides a base for planning renewal, maintenance and rehabilitation. This structure allows the Municipality to focus its limited resources on assets that have been identified as critical assets (high consequence of failure).

In terms of asset management software, Horton is utilizing MESH for road patrolling and deficiencies, and ACE AVL for fleet/equipment maintenance. The MESH software communicates with CityWide, and does not require a lot of training (approximately sixteen hours).

On the engineering side, Horton does not currently have any engineers (P.Eng.) on staff. They rely on MOE standards, OPSDs and OPSS for smaller projects, and utilize consulting firms for larger projects.

2.3.4 "As-Is" - Greater Madawaska

2.3.4.1 Service Description and Objectives

Greater Madawaska is a small, rural municipality with approximately fifty percent of the ratepayers being seasonal residents, which creates unique challenges and some advantages when creating an Asset Management Plan. Some of the challenges the municipality faces include a large rural road network with a low population density, and aging fleet of vehicles and equipment with costly replacements expected in the future. Greater Madawaska is seeking implementation of a realistic asset management plan to ensure infrastructure is properly maintained and operational in order to meet the service requirements and to ensure maintenance/repairs/rehabilitation is completed at the lowest cost and in a timely manner.

2.3.4.2 Service Delivery Output, Workflow and Resources Required

Asset Management is an ongoing process that requires continuous updates, which will require continuous flow of data to ensure the Asset Management Plan is up to date with the current service level standards. They currently have a CAO, a Facilities Manager and a Public Works Supervisor who assist with asset management operations. Despite limited resources, Greater Madawaska mentioned

that their AMP is updated on an annual basis. Greater Madawaska has expressed a desire to have better alignment between municipalities, which may require a specialist or a coordinator to integrate the needs across all municipalities and take control of high level management. Greater Madawaska does not currently use any software to facilitate any asset management operations.

Our understanding is that Greater Madawaska does not currently have any engineers (P.Eng) on staff. They rely on MOE standards, OPSDs and OPSS for smaller projects, and utilize consulting firms for larger projects.

2.3.5 "As-Is" - McNab/Braeside

2.3.4.3 Service Description and Objectives

An Asset Management Plan is prepared to develop management techniques to preserve and extend the service life of its infrastructure assets, while providing a specific level of service for those assets. McNab/Braeside currently has their assets tracked through excel spreadsheets, which are in the same format as those used in Renfrew. They use an accounting software, however not all assets have been uploaded. The accounting software can be used to track assets and depreciation without manual entry and link to accounting. McNab/Braeside has expressed interest in changing or sharing their asset management operations, and have specifically mentioned moving away from the excel sheets they currently use, and create links with accounting for more effective infrastructure asset management.

2.3.4.4 Service Delivery Output, Workflow and Resources Required

McNab/Braeside is fairly new to asset management operations, and have expressed a desire to improve. As mentioned, McNab/Braeside is currently tracking their assets through an excel spreadsheet. They also use an accounting software to track assets and depreciation without manual, and link this to accounting. A StreetScan program is also used for paved road conditions. It appears they were in the midst of updating their Asset Management Plan in 2019, which outlines a five-year update of paved road conditions completed in 2018, bringing the ratings to "good".

In terms of available resources, the Director of Public Works and the Treasurer take on most of the asset management responsibilities, and it has been difficult to continuously perform tasks such as condition assessments, updating mapping, level of service required, etc.

McNab/Braeside has expressed interest in sharing their asset management operations with other municipalities, and would likely benefit from having personnel with strong backgrounds in that area.

On the engineering side, McNab/Braeside currently has one engineer (P.Eng.) on staff (Director of Public Works), which can put a lot of pressure on design reviews and tender preparation. Without a Development Standards Manual in place, they rely heavily on MOE standards, OPSDs and OPSS for smaller projects, and utilize consulting firms for larger projects.

2.3.4.5 Revenues, Expenses and Funding Sources

A review of finances in recent years did not reveal anything specific towards asset management, however they have had several grants for road construction in recent years, which include the Federal Gas Tax program funding, Ontario's Community Infrastructure Funding, aggregate extraction funding, and tax revenue contributions. It is clear from the 2019 Asset Management Plan that they have spent a fairly large amount of money in recent years on road replacements and repairs, in order to meet the minimum maintenance standards.

2.3.5 "As-Is" - Renfrew

2.3.5.1 Service Description and Objectives

Renfrew currently has a ten year capital forecast, and they have indicated that their long range planning has been key for effective management. However, Renfrew has a lot of aging infrastructure, with replacement and repair costs that will need to be prioritized in the coming years. Furthermore, some of their asset information is old and may have some inaccuracies. Their Asset Management

Plan was last done in 2014, and there is a desire to create an updated version in 2020. This will require guidance on best practices from other municipalities on ways to improve the effectiveness of aging infrastructure assets.

2.3.5.2 Service Delivery Output, Workflow and Resources Required

Renfrew currently does not have a CAO and has five Senior Managers that lead municipal staff, which can lead to conflicting direction and decision making. They are also one of three municipalities in the County where municipal council does not report to County council. They have indicated they have the staffing available to provide services, however the effective management of staffing resources may need to be improved. Renfrew currently has only one staff member responsible for asset management operations. The position is an engineering technician, whose main responsibility is to update GIS information. Renfrew has expressed a desire to improve their asset management operations and hire additional engineers, as there is currently only one professional engineer. Additional resources are needed to assist with engineering reviews and designs, as well as asset management operations (prioritizing infrastructure assets, updating condition assessments, financial planning, etc.). Renfrew is also using Esri Arcmap software to assist with asset management, however it is not being used effectively and requires additional training.

On the engineering side, Renfrew has only one engineer (P.Eng.) on staff. The Director of Development & Public Works specifically mentioned a lack of resources available for design reviews and developing tenders. They have relied on MOE standards, OPSDs and OPSS for smaller projects, and we are assuming they utilize consulting firms for larger projects (like most LEG municipalities).

2.3.6 "As-Is" - Whitewater

2.3.6.1 Service Description and Objectives

Whitewater's core service infrastructure is aging and deteriorating, while at the same time there is demand for improvements to service. Their Asset Management Plan (AMP) is prepared to develop management techniques to preserve and extend the service life of its infrastructure assets, while providing a specific level of service for those assets. It is intended to serve as a comprehensive reference guide for council, managers and staff, for when infrastructure asset investment decisions are made. It is also a long-term financial planning document that allows municipal infrastructure financing to be analyzed for their impact on future levels of service. It is our understanding that the Whitewater Region has a lack of asset management expertise and engineering staff to effectively deliver management techniques and to prioritize infrastructure assets.

2.3.6.2 Service Delivery Output, Workflow and Resources Required

Whitewater currently utilizes Public Sector Digest and Esri ArcMap to assist with their asset management operations. The Township currently has three projects in the design phase and two projects that are under construction. There are currently no active infrastructure funding programs. The current resources available for asset management operations include the Manager of Public Works, a Treasurer, and a Coordinator. The coordinator was hired on a six month contract, which will end shortly.

Despite the current roles that assist with asset management, there are no engineers on staff, and there is a desire to bring in personnel with strong background(s) and interest in asset management, who will ultimately take control of most day to day operations. Specifically, Whitewater has expressed interest in improving their mapping and updating inventories.

On the engineering side, Whitewater does not currently have any engineers (P.Eng.) on staff. Without a Development Standards Manual in place, we are assuming they rely on MOE standards, OPSDs and OPSS for smaller projects, and utilize consulting firms for larger projects.

2.3.7 Asset Management & Engineering Recommendations

2.3.7.1 RECOMMENDATION 1: Create a shared Development Standards Manual

Background:

Engineering was not a strong topic of discussion among LEG municipalities, however we did hear a lack of engineering resources available for design reviews and developing tender documents. There are only two staff members with a P.Eng designation, and LEG municipalities have been relying heavily on MOE standards, Ontario Provincial Standards Drawings, and Ontario Provincial Standard Specifications.

Analysis and Benefits:

A Development Standards Manual helps streamline the development process, and provides specific design criteria and guidelines, which include sewer and servicing sizes, standard cross sections, minimum and maximum grades, watermain commissioning requirements, standard drawings and specifications. It allows municipalities to enforce some of their preferred standards in construction. For example, standard municipal cross sections can be created to show the preferred location and depth of sanitary sewers, storm sewers, watermain, utilities, etc. Furthermore, a Development Manual can include process flow charts for planning activities such as a Plan of Subdivision, Official Plan Amendment, Zoning By-Law Amendment, Minor Variance, Consent, Site Plan Control, etc. Ultimately, it facilitates the review process for the developer, the consultant and the municipality, and there is less ambiguity in municipal design requirements with a manual in place.

Most of the bigger development projects seem to be shopped out to a consulting firm, and the cost for engineering reviews is put on the developer, so there may not be much benefit on the financial side. However, a Development Manual should create more efficiency for planning and design reviews, and it modernizes the municipal approach to land development projects. Some cities with a Development Manual in place include Windsor, Chatham, London, Toronto, Kitchener, etc.

Depending on the preferred development standards across LEG municipalities, a shared Development Manual can be created for multiple municipalities. Arnprior is currently working on a Development Standards Manual with a consultant, but the status of this is unknown at the moment.

Proposed Action Plan:

1. LEG municipalities should meet to discuss their preferred development standards, and decide on one or multiple groups for a shared Development Standards Manual.
   Timeline: 4 months

2. Develop an RFP (or RFPs) for consultants to bid on creating a shared Development Standards Manual. Once a consultant is awarded the project, the process of developing the manual usually takes 1-2 years for it to be finalized.
   Timeline: 2 years

2.3.7.2 RECOMMENDATION 2: Procure the services of a shared asset management coordinator or analyst

Background:

Most LEG municipalities are fairly new to asset management, and a lack of resources was identified to effectively manage their assets. The known resources that play a role in asset management include 2 CAOs/Clerks, one General Manager of Operations, five Public Works Directors/Supervisors/Managers, one Facilities Manager, five Senior Managers, one Engineering Technician, five Treasurers, one Engineering Officer and one Coordinator.

Analysis and Benefits:

Asset management is a team sport requiring broad support across the organization. The roles of current asset management staff should be defined to stipulate responsibilities and strategy within the Township, and additional technical support should be hired to alleviate the resourcing issues experienced from LEG municipalities. The additional support can be shared positions such as an asset management coordinator or analyst, who can perform tasks such as condition assessments, updating asset inventory and GIS mapping. The level of effort per municipality will vary depending on asset inventory, so efforts should be made to form groups with similar assets. For example, Arnprior and Renfrew have more underground pipe networks to maintain, so the level of effort might be similar for those two municipalities. Arnprior also had an asset management coordinator resign recently, and have been overwhelmed with responsibilities lately. Therefore, a new shared coordinator position for only two municipalities (Renfrew and Arnprior) will allow more effort and focus to be put forth.

For the remaining LEG municipalities, the level of effort required from a shared asset management coordinator (or analyst) should be similar, and a coordinator position could be shared among the remaining five.

A shared asset management coordinator should generate efficiencies over time, as familiarity would be developed with life cycles, GIS mapping and specific asset criteria.

The cost agreement for a shared position should be based on a time spent per municipality basis, and this may require the coordinator to track their time if it is not split evenly. A specific manager position could also be appointed to hold the shared coordinator accountable, if this is a concern.

Proposed Action Plan:

1. LEG municipalities should meet to discuss which groups will work best for a shared asset management coordinator position. Our suggestion is a shared position for Arnprior and Renfrew, and another shared position for the remaining five municipalities.
   Timeline: 3 months
2. Post a job for a shared asset management coordinator (or analyst) position, conduct interviews and hire the person with the best fit.
   Timeline: 6 months

2.3.7.3 RECOMMENDATION 3: Implement similar asset management software and tool

Background:

Many LEG municipalities are just starting to implement asset management software, or are considering implementing software to assist with GIS mapping, level of service required, financial planning and lifecycle analysis. This includes MESH, CityWide, Cityworks ACE AVL, and Fleet Maintenance Pro.

Analysis and Benefits:

Asset management software can be great to assist with the tasks mentioned above, however software alone will not solve all the asset management issues.

Cityworks and CityWide can be implemented to facilitate linkage of works to assets, to maintain a comprehensive log of work associated with individual assets, and to broaden the asset database. It also allows staff to remotely input asset condition information efficiently. Fleet Maintenance Pro and ACE AVL is software being implemented by Renfrew and Horton, which assists with fleet maintenance tracking. MESH is great for road patrolling and winter maintenance.

The point here is to make efforts to implement similar asset management software and tools across the LEG municipalities, as training efforts can then be combined, and it will be much easier to help each other out. We understand that some municipalities have already implemented software, and do not want to restart with a new program. Therefore, this applies more to the LEG municipalities without any software in place. Basic software training will then need to be provided to key staff, and conversations with Horton indicate this may only require 16 hours.

A common asset data register should also be implemented to define which asset attributes will be collected for which assets. The register should indicate what level of data quality is required, and who is responsible for the data. This will require a review of asset databases and data attributes.

Proposed Action Plan:

1. LEG municipalities should meet and discuss current asset management software being used, as well as the pros and cons for each software. Efforts should be made to find a common platform for those considering implementing new software.
   Timeline: 3 months
2. Based on the discussions, implement the chosen asset management software(s). Combine training efforts in person or virtually.
   Timeline: 8 months

2.4 Fleet and Equipment

2.4.1 "As-Is" - Admaston/Bromley

2.4.1.1 Service Description and Objectives

Admaston/Bromley has 11 out of 15 vehicles/equipment that were purchased within the last ten years. They place a high value on maintaining their equipment to appropriate standards, and need good equipment conditions to respond to the needs of the community and provide levels of service expected by the community. Admaston/Bromley would like to adopt maintenance policies for equipment in good condition that repair small problems before they become larger. They would also like to select replacement options that will provide the best long term solution for equipment in poor condition. Sharing or buying infrequently used equipment with other municipalities has therefore been placed as a high priority.

2.4.1.2 Service Delivery Output, Workflow and Resources Required

Admaston/Bromley road equipment and vehicles used over the summer months include a loader, graders, trucks, trailers, backhoe, excavator, sweeper, etc. Eleven out of fifteen of their vehicles/equipment have been replaced within the last 10 years. Additionally, Admaston/Bromley has recently started to rent some specialized equipment. There does not appear to be a mechanic on staff to assist with equipment and fleet maintenance operations. The lack of maintenance staff is likely shortening the lifespan of many vehicles and equipment, thus creating frequent and high replacement costs.

2.4.1.3 Revenues, Expenses and Funding Sources

Admaston/Bromley currently has a collection of fleet and equipment with a replacement cost of $2.88 million. The Township has established a 10 year capital plan for facilities, equipment and vehicles with a replacement policy that ensures annual investment to sufficiently maintain these assets.

The Township currently has a stream of revenue coming from sales of equipment and land, as well as transfers from reserves. The following table shows a comparison between the budgeted amount and the actual amount spent in recent years on vehicle and equipment repairs and maintenance:

Fleet and Equipment Maintenance		
Year	Budget ($)	Expenses ($)
2015	31,000	26,864
2016	30,500	26,204
2017	30,500	29,686
2018	30,500	31,091
2019	30,500	27,945

2.4.2 "As-Is" - Arnprior

2.4.2.1 Service Description and Objectives

Arnprior's fleet and equipment is used to maintain a level of care for specific services, and some fleet/equipment is only used on a seasonal basis. A review of equipment conditions and remaining lifespan is important to plan for upcoming replacement and repair costs. Their internal fleet management is currently shared between parks & rec and public works, however they are finding it challenging to share fleet vehicles between municipalities, as everyone needs their full fleet to respond to winter control events at the same time. However, Arnprior has indicated they are interested in sharing their specialized equipment to create efficiencies and costs savings across the LEG municipalities.

2.4.2.2 Service Delivery Output, Workflow and Resources Required

Arnprior currently has a total of 105 vehicles and equipment, with many of these coming to the end of their prescribed lifespan shortly. It appears there is only one maintenance technician to assist with repairs and maintenance, and as a result, Arnprior relies heavily on the local mechanic shops and dealerships in Ottawa.

In an attempt to save maintenance/repair costs, Arnprior targeted a 15 year life expectancy for most of their vehicles in 2013. However, there were a lot of expenses incurred during the last few years, and the equipment and vehicles were forced out of service prior to the end of their prescribed useful life due to safety concerns, excessive repair costs, or a combination of the two. Therefore, in 2019, Council decided to change vehicle life expectancy to ten years, and they have seen substantial maintenance cost savings so far in 2020. This will be discussed further in the recommendations, as Arnprior will be used as a benchmark.

2.4.2.3 Revenues, Expenses and Funding Sources

Arnprior has spent an average of $154,165/year over the past few years on their local mechanic shops and dealerships in Ottawa, which is a substantial amount when compared to the yearly cost of a full-time mechanic. The replacement cost for all 105 vehicles and equipment was valued at $7,937,655 in 2017, while the cost of repairs required for 69 of their vehicles and equipment was $2,933,663.

The following table shows a comparison between the budgeted amount and the actual amount spent in recent years on vehicle and equipment repairs and maintenance, which includes labour, benefits, gas, oil, lubricants, licenses, parts, rentals, and contracted services.

Vehicle/Equipment Maintenance - Arnprior		
Year	Budget ($)	Expenses ($)
2015	178,650	215,645
2016	229,800	248,470
2017	237,500	314,187
2018	249,000	319,851
2019	264,000	305,951

2.4.3 "As-Is" - Horton

2.4.3.1 Service Description and Objectives

Fleet and equipment assets are an integral component in the Township's ability to respond to the needs of the community and provide the levels of service that are both expected by ratepayers and mandated by legislation. Horton has indicated that most of their fleet is new and upgraded, however their tanker needs replacement and their rescue vehicle needs to be upgraded.

Horton's desired level of service for fleet and equipment includes the following:

- Suitable material for staff to perform their duties effectively.
- Effective maintenance programs to ensure that equipment lifespans are maximized.
- Plan maintenance/rehabilitation activities to reduce unnecessary breakdowns, minimize vehicle/equipment downtime, and optimize shop performance. Major maintenance and rehabilitation activities should occur at the 50% life remaining threshold.
- Ensure vehicles are funded appropriately through their life and replaced at the end of their economic life.
- Manage the equipment and fleet reserves appropriately to ensure sustainability of the departments they support.

2.4.3.2 Service Delivery Output, Workflow and Resources Required

Horton currently has a total of fourteen fleet vehicles and equipment, which include ¾ ton work trucks, tandom trailers, graders, loaders, backhoes, etc. The remaining equipment assets under management include: brushing equipment, computer equipment, office equipment, kitchen equipment and emergency generators. In 2017, their fleet vehicles had an overall condition rating of 5.0 with 5.0 years of service remaining. This represents an overall condition of fair, verging on poor. Equipment in 2017 was noted to have an average condition rating of 6.4 (fair), with an average remaining lifespan of 8.4 years. In 2020, Horton has indicated that 17% of their fleet is beyond their expected lifespan.

In terms of resources for fleet/equipment maintenance, Horton does not have a designated mechanic, however they do have an operator who helps out when available. For the most part, the local mechanic shop is used for repairs and maintenance when needed. This has been a challenge for Horton, as it has been difficult to deal with breakdowns when they occur, and vehicle reliability is greatly reduced near the end of its lifespan.

2.4.3.3 Revenues, Expenses and Funding Sources

Revenue streams for fleet vehicles and equipment mostly come from reserve transfers and sales of equipment. However, they rely on the maintenance budget to cover required expenses.

In 2017, the value of all equipment totaled to $289,040.The ten year capital plan for equipment indicates approximately $37,500 per year in planned expenditures.

The following table shows a comparison between the budgeted amount and the actual amount spent in recent years on vehicles and equipment repairs/maintenance, which includes their trucks, excavator, grader, backhoe/loader and trailer/mower:

Vehicle/Equipment Maintenance - Horton		
Year	Budget ($)	Expenses ($)
2015	41,000	64,163
2016	41,500	50,301
2017	40,500	51,810
2018	42,500	54,777
2019	43,500	47,117

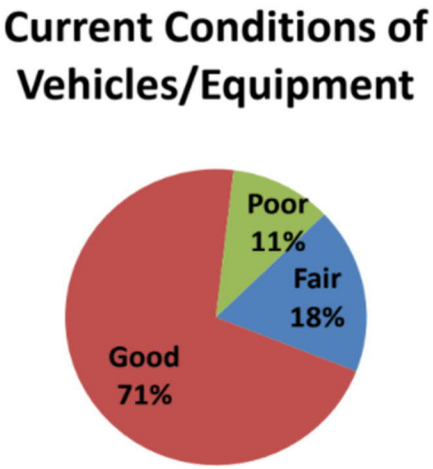
2.4.4 "As-Is" - Greater Madawaska

2.4.4.1 Service Description and Objectives

Fleet and equipment assets are an integral component in the Township's ability to respond to the needs of the community and provide the levels of service that are both expected by ratepayers and mandated by legislation. Generally, vehicles and equipment are replaced as required based on the condition and service life expectancy. Depending on the asset class, the current life expectancy of the Township's fleet and equipment assets range from eight to thirty years. Greater Madawaska has expressed a strong interest in sharing specialized equipment.

2.4.4.2 Service Delivery Output, Workflow and Resources Required

The below figure shows the overall condition ratings for all of Greater Madawaska's current vehicles and equipment:



Greater Madawaska currently has a mechanic, a facilities manager and a Public Works Supervisor who play an active role in fleet/equipment repair/maintenance operations.

Greater Madawaska's fleet garage/shed is at full capacity. The local mechanic shop is utilized at times when the mechanic cannot perform the repair, which is usually due to the limited equipment available. Due to the fact that Greater Madawaska is a small, rural municipality with limited resources, Council and staff may want to accept opportunities that coordinate resources with other local municipalities or the County of Renfrew. This may include shared services, contract negotiations, joint service boards, etc.

2.4.4.3 Revenues, Expenses and Funding Sources

Greater Madawaska's funding/revenue sources come from the capital budget in the asset management plan for vehicle replacements. With a large rural road network to maintain with aging fleet vehicles and equipment, Greater Madawaska is expected to have costly replacements in the future. A long range financial plan is provided within Greater Madawaska's Asset Management Plan, which indicates how future equipment will be funded.

The following table below shows a comparison between the budgeted amount and the actual amount spent in recent years on vehicle and equipment maintenance and repairs.

Vehicle/Equipment Maintenance – Greater Madawaska		
Year	Budget ($)	Expenses ($)
2015	288,800	272,202
2016	309,800	270,220
2017	302,400	340,022
2018	351,100	415,957
2019	355,100	417,523

2.4.5 "As-Is" - McNab/Braeside

2.4.5.1 Service Description and Objectives

Public Works vehicles and equipment are used to meet the mandatory legislative requirements of Ontario's Minimum Maintenance Standards. These standards ensure overall road safety for the users of the road networks. McNab/Braeside's vehicles and equipment need to be available as needed to support the required maintenance activities, which include winter control and summer maintenance. A review of equipment conditions and remaining lifespan is important to plan for upcoming replacement and repair costs. This is in line with McNab/Braeside's desire to buy/or share specialized equipment rather than paying for contracted services or high replacement costs. However, this poses a challenge with the maintenance and repair operations, and whether or not it will be available when needed.

2.4.5.2 Service Delivery Output, Workflow and Resources Required

Currently, McNab/Braeside shares their tanker with the fire and roads department, and there have been positive signs that sharing equipment can work with other municipalities or the County. For example, there was a truck breakdown in the past for winter control, and the County was able to lend a spare for McNab/Braeside, and McNab/Braeside completed the maintenance on the truck. Although it appears McNab/Braeside is currently able to service to the Minimum Maintenance Standards, their resources are at capacity, and any additional growth would require additional equipment/investment. They do not currently have a mechanic to assist with maintenance operations, and have been using external mechanics or the local mechanic shop, which can be expensive.

As mentioned above, McNab/Braeside has expressed interest in sharing or buying specialized equipment. However, there is concern that other municipalities may not be interested in what they have, aside from their portable steamer.

2.4.5.3 Revenues, Expenses and Funding Sources

Funding for vehicles and equipment are derived from 20% taxation funding and 80% Roads Vehicles and Equipment Capital Reserve. This approach is necessary as reserve funding is set aside based on historical cost, not replacement cost.

There have been many miscellaneous equipment and vehicle costs across various services over the years, however the table below focuses on repair and maintenance tasks for fleet/equipment used for road operations, excluding any transfers to capital funds:

Vehicle/Equipment Maintenance – McNab/Braeside		
Year	Budget ($)	Expenses ($)
2015	172,894	165,153
2016	168,819	168,374
2017	175,123	170,490
2018	161,144	195,319
2019	182,593	226,711

2.4.6 "As-Is" - Renfrew

2.4.6.1 Service Description and Objectives

The Town of Renfrew (Renfrew) had a number of vehicles that were coming to the end of their lifespan, but have been replacing aged vehicles on a regular basis. Currently, Renfrew shares equipment with neighbouring municipalities during emergencies, and have indicated they have redundancies with their equipment, meaning there are likely sharing opportunities during emergencies. Infrequently used equipment such as graders are often borrowed from other municipalities when needed. Renfrew has also expressed interest in buying back-up Public Works equipment.

2.4.6.2 Service Delivery Output, Workflow and Resources Required

Renfrew currently has a full-time mechanic, a skilled operator (overlap with Parks & Recreation), and a part-time mechanic assistant who play an active role in fleet and equipment repairs and maintenance operations. Other employees include machine and skilled operators, but they are not actively involved with maintenance operations. It appears Renfrew has the staff available for most of their equipment and maintenance operations. However, there are times during busy months where their maintenance resources are at full capacity. Contracted services such as line painting and asphalt patching have helped alleviate some pressure.

2.4.6.3 Revenues, Expenses and Funding Sources

Renfrew spent approximately $63,500 on their main mechanic in 2019, and an additional $29.50/hour for their mechanic assistant when needed.

Renfrew has a long list of vehicles and equipment, which makes it difficult to quantify maintenance and repair expenses. Therefore, the table below has been simplified to show vehicle and equipment maintenance for road operations during the winter.

Vehicle/Equipment Maintenance (Roads) – Renfrew		
Year	Budget ($)	Expenses ($)
2015	102,500	64,497
2016	115,800	115,742
2017	119,700	104,869
2018	122,100	92,083
2019	124,670	118,999

2.4.7 "As-Is" - Whitewater

2.4.7.1 Service Description and Objectives

The Whitewater Region has a number of aging vehicles that are coming to the end of their lifespan, and need to be maintained on a regular basis. Fleet and equipment is used to maintain a certain level of care for specific services. Depending on the equipment, it may only need to be used on a seasonal basis, such as snow plowing equipment during the winter months. Whitewater currently has 100% of their fleet vehicles and equipment available for use, and have expressed interest in selling or sharing some of their fleet, equipment and yards to optimize routes and cut costs across municipalities.

2.4.7.2 Service Delivery Output, Workflow and Resources Required

Whitewater has indicated that they have newer fleet and equipment available. 63% of fleet vehicles and 82% of equipment were newly purchased in the last ten years. However, there is an ongoing threat of equipment breakdowns that will require continual maintenance. Whitewater currently has one full-time mechanic who maintains and repairs the Township's fleet of vehicles and heavy equipment. Some of the responsibilities include the following:

- Maintains the Township's fleet of vehicles and equipment affecting repairs as necessary to ensure its continued availability and cost-effective operation;
- Oversees the routine maintenance, servicing and repair of vehicles and equipment, including engines, clutches, transmissions, drive shafts, etc.;
- Ensures routine vehicle and equipment maintenance is performed by appropriate staff and reports all occurrences of lack of routine maintenance to the appropriate supervisor; and,
- Assists in performing winter and summer maintenance road operations as directed.

Due to a lack of staff and the amount of ongoing maintenance, Whitewater is currently outsourcing some of the vehicle/equipment maintenance work. They are looking at hiring a new mechanic, and have considered selling or sharing some of their specialized equipment, including excavators and line painting equipment.

2.4.7.3 Revenues, Expenses and Funding Sources

The following tables show a comparison between the budgeted amount and actual amount spent in recent years on fleet and equipment repairs/maintenance (specific to roads):

Road Equipment Repairs - Whitewater		
Year	Budget ($)	Expenses ($)
2015	180,000	159,218
2016	160,000	230,287
2017	180,000	265,784
2018	200,000	221,610
2019	225,000	224,294

2.4.8 Fleet & Equipment Recommendations

2.4.8.1 RECOMMENDATION 1: Reduce vehicle/equipment lifecycle expectancy to 10 years

Background:

Based on the data we received, we estimate approximately 33% of vehicles/equipment are in use beyond their prescribed lifespan, which varies from 10-30 years depending on the vehicle/equipment and the municipality. Repair/maintenance costs have been very high over the past few years of to use mechanics and/or local mechanic shops. This led us to investigate lifecycle targets and how that has an impact on maintenance/repair costs.

Analysis and Benefits:

Fleet vehicle/equipment maintenance costs across the LEG municipalities have been increasing steadily over the years due to inflation, safety concerns and excessive repair costs. However, recent data suggests that Arnprior has been able to significantly reduce maintenance costs by reducing their lifecycle expectancy, and will be used as an example here.

Arnprior had initially targeted a 15 year life expectancy for most vehicles and equipment. Unfortunately, they found that the vehicles/equipment were being forced out of service prior to the end of their prescribed life due to safety concerns, excessive repair costs or a combination of the two. From 2017-2019, Arnprior's average maintenance cost per year was $313,330.

In 2019, Council decided to change their life expectancy to ten years, and they have seen substantial maintenance cost savings so far in 2020. Up to the end of august, maintenance/repair costs have been $135,538. If we project that number to the end of the year, they are on pace to spend approximately $203,307 for the entire year, which is a savings of $110,023 per year! Although this is only one year of data, it's certainly a good indication that reducing lifecycle expectancy to ten years can help avoid a lot of unnecessary maintenance/repair costs. This would also put less stress and less hours on the mechanics, as well as less money spent on local mechanic shops. Furthermore, this will also increase the reliability of the vehicle/equipment, allowing LEG municipalities to perform services with more confidence. Lastly, reducing lifecycle expectancy will salvage more value when selling the vehicle/equipment, although the depreciation cost is certainly higher over the first few years. Please note that the dollar amount in savings will likely not apply to all LEG municipalities, as Arnprior appears to have more vehicles/equipment than other municipalities. However, we believe a 30-35% fleet maintenance cost reduction can be expected by lowering lifecycle replacements.

Based on this data and a review of other municipal vehicle/equipment lifecycle targets outside of LEG we believe a 10-year life expectancy (avg.) should be targeted for all LEG municipalities. However, consideration should still be given to the condition of the vehicle or equipment prior to replacement. Common sense will need to be applied here.

Proposed Action Plan:

1. Determine the fleet vehicles/equipment still in service beyond 10 years.
   Timeline: Do Now!

2. Based on available funds, replace the most problematic vehicles/equipment that are beyond the 10 year target.
   Timeline: 6 months

3. Update the Asset Management Plan to reflect the reduced lifecycle targets. Eventually, it will be easier to find funds to replace vehicles and equipment on a more regular basis.
   Timeline: 1-2 years

2.4.8.2 RECOMMENDATION 2: Share infrequently used specialized equipment with other LEG municipalities

Background:

Across all seven LEG municipalities, there is estimated to be approximately 144 vehicles and equipment in the Public Works Department. Many LEG municipalities have contracted services for grading, line painting, catch basin cleaning, sweeping, crack sealing, etc. These are typically services that require infrequently used specialized equipment, and many municipalities have expressed interest in sharing some of their specialized equipment in hopes of creating efficiency and cost saving opportunities.

Analysis and Benefits:

Contracted services can be costly across the LEG municipalities. With lower charge-out rates for the same equipment available in other municipalities, it makes sense to utilize sharing opportunities as much as possible. For example, McNab/Braeside spent a total of $9,008 in 2018 for contracted hard top patching. If they were to utilize Arnprior's asphalt hot box for cold patching at $43.00/hr for 60 hours throughout the year (see list below), that would result in $6,428 in savings/yr.

The following LEG municipalities have provided a preliminary list of specialized equipment they are willing to share, including the charge-out rate:

Horton	
Vehicle/Equipment for Sharing	Charge-Out Rate
Tandem Axle Dump Truck	$80/hr plus operator
Grader	$87/hr plus operator
Excavator with Ditching/Trenching Bucket and Brush Head	$82/hr plus operator
Half Ton	$28/hr plus operator
Chipper Rental	$45.50/hr plus operator
Loader/Backhoe	$50/hr plus operator
Water Truck	$80/hr plus operator

Renfrew	
Vehicle/Equipment for Sharing	Charge-Out Rate
Water Valve Exerciser Trailer	$45/hr
Sewer Camera	$20/hr
Traffic Counter	$50/hr plus staff to download and provide report
4 Inch Pump	$250/Day

Greater Madawaska	
Vehicle/Equipment for Sharing	Charge-Out Rate
Culvert Steamers (2)	$70/hr plus operator and half ton

Arnprior	
Vehicle/Equipment for Sharing	Charge-Out Rate
Asphalt Hot Box for Cold Patching	$43/hr plus operator
Water Valve Exerciser Trailer	$43.10/hr plus operator
Sewer Camera (manual push type for service pipes)	$19.80/hr plus operator
Majikist Pipe Thawer	$19.80/hr plus operator
Culvert Steamer	$19.80/hr plus operator

Whitewater	
Vehicle/Equipment for Sharing	Charge-Out Rate
Water Tanks (2)	$106.90/hr
Tow Behind Air Compressor	$18.45/hr
Flail Mower	$80.00/hr

Admaston/Bromley	
Vehicle/Equipment for Sharing	Charge-Out Rate
Grader Rental	$80/hr (minimum ½ hour charge)
Backhoe Rental	$75.00/hr
Chipper Rental with Truck and Driver	$55.00/hr
Excavator Rental with Operator	$100.00/hr
Excavator Rental with Brush Head and Operator	$180.00/hr

A couple municipalities have indicated they would consider sharing additional equipment should there be a need, but the list above provides the equipment that is only used periodically.

Sharing this equipment (particularly with neighbouring municipalities) will likely create some efficiency over time, in addition to the cost savings. Best practice would be for the sharing municipality to send their own operator. That way, if damage occurs, there is no question as to who broke what.

Proposed Action Plan:

1. Finalize specialized equipment list available for sharing with charge-out rates.
   Timeline: 2 months
2. Create a shared google spreadsheet among LEG municipalities, create a tab for each municipality, and insert finalized list.
   Timeline: 3 months
3. Each LEG municipality should update the shared spreadsheet on a bi-annual basis and start utilizing specialized equipment from other municipalities when needed.
   Timeline: 3-6 months

2.4.8.3 RECOMMENDATION 3: Procure the services of shared mechanic positions

Background:

Most LEG municipalities mentioned it has been difficult to keep up with repairs and maintenance with their current resources. There are three full-time mechanics, one part-time mechanic assistant, one maintenance technician and two operators who help with fleet/equipment repairs and maintenance. Four out of seven of the LEG municipalities rely quite heavily on local mechanic shops or dealerships, and others are using the mechanic shop periodically when their mechanic(s) are unavailable.

Analysis and Benefits:

For those who don't currently have a mechanic, we heard that the initial cost of hiring a mechanic can be quite high, as you have to purchase equipment such as a hoist and a scanner. However, the cost of using mechanic shops is very high compared to the cost of a mechanic, ignoring the initial equipment costs. Renfrew spent about $63,500 for their main mechanic in 2019, while Arnprior has spent an average of $154,165/year over the past few years on mechanic shops and dealerships in Ottawa. To be fair, Arnprior has

spent less on mechanic shops since lowering their expected fleet life expectancy to 10 years, so the actual mechanic shop expenses may be closer to $108,000/year (estimated 30% reduction) moving forward. If LEG municipalities were to procure the services of shared mechanics, the initial equipment costs could be shared, or a central garage location could be utilized that is already equipped with a hoist, scanner and other necessary equipment. Renfrew is planning on constructing a municipal garage on Lisgar Avenue, so there is an opportunity here to accommodate at least one shared mechanic position. We recommend that other LEG municipalities share existing or planned fleet garages to accommodate an additional shared mechanic position, as there is a lot of interest among LEG municipalities. As the numbers show, there is a cost saving opportunity here, especially for those currently using mechanic shops on a regular basis. The cost sharing agreement for a shared mechanic is recommended to be on a time spent basis per municipality.

Proposed Action Plan:

1. Determine capacity of existing garage locations to accommodate at least one shared mechanic position. Logistically, this will work better if the garage is at a central location.
   Timeline: 3 months
2. Discuss planned garage construction projects among the LEG group. Renfrew is already considering accommodation for their future garage on Lisgar St.
   Timeline: 4 months

3. Hire additional mechanic(s) to share between LEG municipalities.
   Timeline: 6 months if there are existing garages with capacity. 1-2 years if it is necessary to wait for construction of new garage(s).

2.5 Transformational Recommendation

Consolidate Public Works management across the LEG municipalities with a new position for Public Works Director with a direct report from each LEG municipality and one new water/wastewater coordinator.

Background:

Resourcing issues across the four Cluster C services (roads and winter control, waste and recycling, asset management and engineering, fleet and equipment) seem to be a common theme. There is currently one General Manager of Operations, six Public Works Managers/Directors, one Public Works Supervisor, and one Facilities Manager across all seven LEG municipalities. Greater Madawaska expressed interest in purchasing time of a Public Works Manager if another municipality had excess capacity.

Analysis and Benefits:

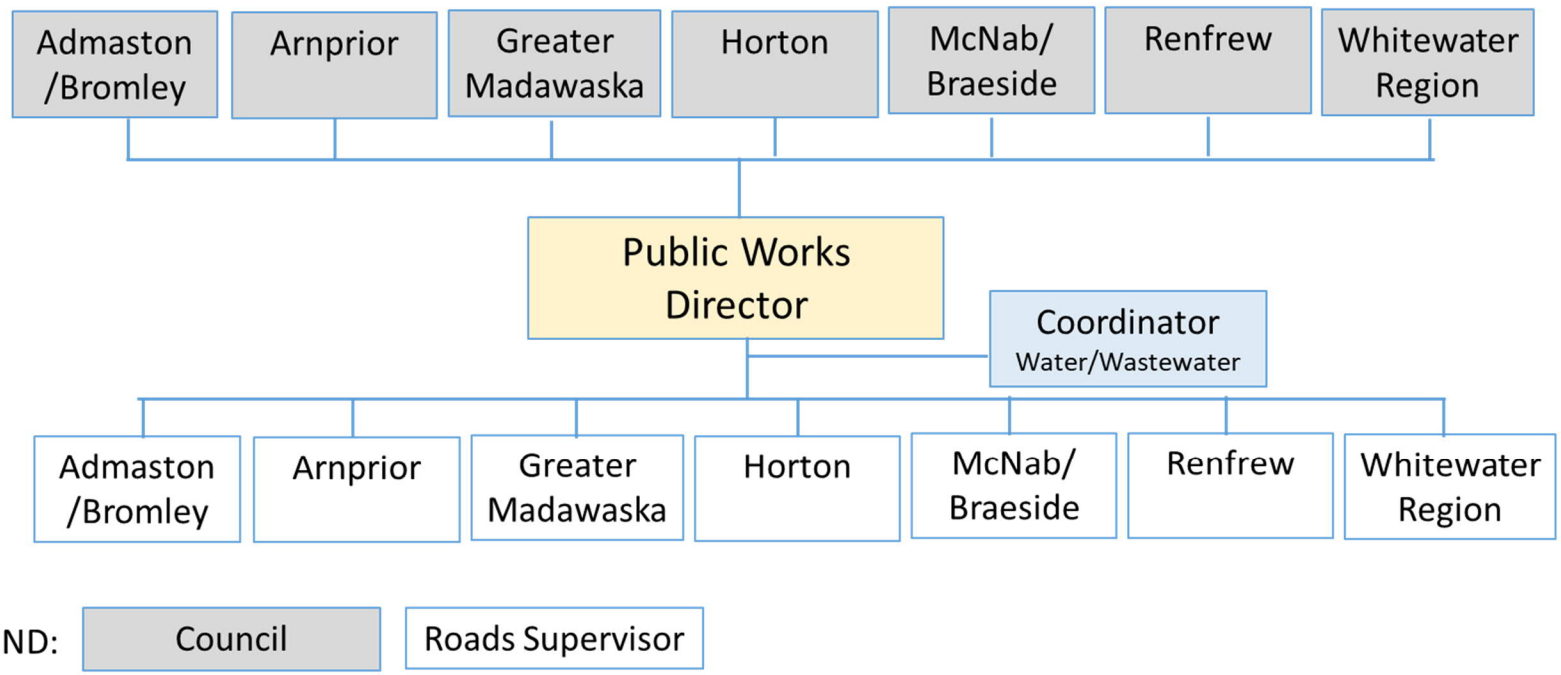
The consolidation of Public Works management across the LEG municipalities can enhance borderless service delivery.

Consideration of LEG as a composite municipality serving population of 40,000 suggests that one senior Public Works Director could be responsible for all LEG municipalities, with a direct report from each municipality. In addition, a new role for the water/wastewater coordinator would be established as a direct report to the Public Works Director. This recommendation (S5) builds on an earlier recommendation (S1) and extends the transformation beyond half LEG municipalities to oversight of all seven. With a greater responsibility (based in area and population served), the new role would require someone with experience in managing a larger municipality.

The model could establish that the Public Works Director be staffed at one municipality (office space, IT connectivity, HR benefits, etc.) and the salary would be shared proportionally amongst the LEG municipalities. An agreement would define how much time each municipality gets from the Director (i.e. hours/week) and how much time is to be allotted to developing sharing opportunities. The Public Works Director would report to each of the LEG Councils. A key component of the job description would be a consistent voice to the County and streamline point of contact from the County. The Public Works Director would be knowledgeable of each municipality's operations and consider opportunities across the LEG in borderless service delivery, including joint purchasing which takes advantage of economies of scale.

A Shared Public Works Manager should help alleviate resourcing/capacity issues with current staff, particularly in asset management. If shared coordinators/analysts are assigned to various municipalities (see asset management recommendations), a shared Public Works Manager could oversee their work, and hold them accountable for their deliveries. Waste & recycling and road operations would also benefit from a shared position, as the implementation of some tactical recommendations will require high-level management.

There is currently a vacancy in a Public Works Manager position with Greater Madawaska, so a shared position could potentially spend a higher percentage of time with them (e.g. 25%). However, an agreement will need to be made between the seven municipalities based on the level of effort required. Logistically, it would make sense for the shared position to have a permanent office space at a central location among the LEG municipalities, such as Renfrew. However, such accommodations would need to be discussed with Renfrew. Other LEG municipalities would be encouraged to offer a temporary office space for a shared Public Works Manager, as the position will need to travel and collaborate with all LEG municipalities.



By consolidating the leadership of Public Works into one position, the LEG municipalities will share in the marginal additional cost to hire more seasoned Public Works Director who can monitor and measure the benefits of borderless services and identify opportunities for continuous improvement. Facilitating the sharing of equipment, staffing resources and sharing of vehicles could result in lower capital costs and maintenance costs.

Proposed Action Plan:

1. LEG municipalities should meet and discuss the need and level of effort required for each LEG municipality. Office accommodations should also be discussed.
   Timeline: 3 months
2. Hire a shared Public Works Director and implement cost sharing agreement.
   Timeline: 4 month

APPENDIX: "AS-IS" TABLES FOR PUBLIC WORKS

TABLE 1: Roads Operation Review Summary								
Parameter	AB	AP	HT	GM	MB	RF	WW	TOTAL
ORGANIZATION STRUCTURE	• 1 Public Works Superintendent • 2 Lead Hands • 3 Machine Operators	• 1 General Manager of Operations • 1 Roads and Services Supervisor • 1 Lead Hand • Five Skilled Labourers	• 1 Public Works Manager • 3 Full-Time Drivers/Operators	• 1 Public Works Supervisor • 5 Public Works Heavy Equipment Operators	• 1 Public Works and Property Manager • 1 Lead Hand Contractor • 6 Truck Drivers/Equipment Operators • 1 Road Supervisor	A total of 13 Employees including: • 1 Director of Public Works • 1 Machine Operator • 1 Skilled Operator • Water and Wastewater Technicians	• 1 Public Works Manager • 12 Employees including one mechanic • 4 operators (estimated)	• 1 General Manager of Operations • 6 Public Works Managers/Directors/Supervisors • 2 Road Supervisors • 4 Lead Hands • 28 operators/skilled labourers (approx.)
2018/2019 ROAD SALT/SAND QUANTITIES (TONNES/LANE KM/WINTER EVENT)	Unknown	1.717	0.236	0.131	0.217	1.725	1.600	Average: 0.938
ROAD LENGTHS / SYSTEM CHARACTERISTICS	Asphalt: 41.5 kms Surface Treated: 99.5 kms Gravel: 191 kms Total: 332 kms	Total: 53.5 kms (assumed asphalt)	Asphalt: 28.4 kms Surface Treated: 8.5 kms Gravel: 66.8 kms Total: 103.7 kms	Asphalt: 56.7 kms Surface Treated: 36.8 kms Gravel: 139.8 kms Total: 233.3 kms	Paved: 270 kms Gravel: 104 kms Total: 374 kms	Total: 65 kms (assumed asphalt)	Asphalt: 221.4 kms Surface Treated (low class): 135.6 kms Gravel: 132 kms Total: 489 kms	Asphalt: 736.5 kms Surface Treated: 280.4 kms Gravel: 633.6 kms Total: 1650.5 kms
ROAD MAINTENANCE (ACTUAL COSTS FOR ROAD MAINTENANCE)[1]	2015 - $ 606,112 2016 - $ 659,057 2017 - $ 746,058 2018 - $ 689,563 2019 - $ 774,944	2015 - $ 650,320 2016 - $ 719,442 2017 - $ 1,051,997 2018 - $ 793,615 2019 - $ 917,102	2015 - $ 84,417 2016 - $ 92,186 2017 - $ 99,713 2018 - $ 127,343 2019 - $ 111,486	2015 - $ 172,203 2016 - $ 271,053 2017 - $ 292,512 2018 - $ 248,979 2019 - $ 248,979	2015 - $ 167,392 2016 - $ 205,699 2017 - $ 198,250 2018 - $ 206,855 2019 - $ 192,703	2015 - $ 420,458 2016 - $ 755,289 2017 - $ 519,093 2018 - $ 512,158 2019 - $ 874,657	2015 - $ 350,583 2016 - $ 510,750 2017 - $ 443,839 2018 - $ 557,892 2019 - $ 515,797	2015 - $ 2,451,485 2016 - $ 3,213,476 2017 - $ 3,351,462 2018 - $ 3,136,405 2019 - $ 3,635,668
MAINTENANCE PER LANE (ACTUAL FOR PAVED ROAD MAINTENANCE PER LANE KM)[2]	2015 - - 2016 - - 2017 - - 2018 - - 2019 - -	2015 - 2016 - $ 744 2017 - $ 1,057 2018 - $ 1,077 2019 - $ 754	2015 - $ 105 2016 - $ 163 2017 - $ 190 2018 - $ 597 2019 - $ 337	2015 - $ 181 2016 - $ 205 2017 - $ 434 2018 - $ 325 2019 - $ 164	2015 - $ 95 2016 - $ 105 2017 - $ 134 2018 - $ 139 2019 - $ 129	2015 - $ 357 2016 - $ 633 2017 - $ 625 2018 - $ 482 2019 - $ 817	2015 - 2016 - $ 330 2017 - $ 604 2018 - $ 548 2019 - $ 512	Average 2015 - $ 185 Average 2016 - $ 363 Average 2017 - $ 507 Average 2018 - $ 528 Average 2019 - $ 452
WINTER MAINTENANCE (ACTUAL FOR WINTER ROAD MAINTENANCE PER LANE KM)[3]	2015 - - 2016 - - 2017 - - 2018 - - 2019 - -	2015 - 2016 - $ 7,649 2017 - $ 7,728 2018 - $ 6,477 2019 - $ 7,653	2015 - $ 191 2016 - $ 184 2017 - $ 248 2018 - $ 254 2019 - $ 255	2015 - $ 113 2016 - $ 303 2017 - $ 303 2018 - $ 437 2019 - $ 238	2015 - $ 306 2016 - $ 333 2017 - $ 569 2018 - $ 475 2019 - $ 434	2015 - $ 2,858 2016 - $ 5,163 2017 - $ 3,362 2018 - $ 3,435 2019 - $ 3,545	2015 - 2016 - $ 490 2017 - $ 617 2018 - $ 657 2019 - $ 662	Average 2015 - $ 867 Average 2016 - $ 2,354 Average 2017 - $ 2,138 Average 2018 - $ 1,956 Average 2019 - $ 2,131
SERVICE DELIVERY OUTPUT, WORKFLOW AND RESOURCES REQUIRED.	• Maintains 17.4 km boundary roads • Current Replacement Value of $132 Million • Maintenance activities will start to be major factor • Most appear to be in fair to good condition	• Boundary road agreement with Ottawa (Herrick Drive) • Staff is at capacity •Replacing and upgrading roads regular basis, with replacement needs shortly • tri-axle and grading machine are contracted out • 60% roads were good in 2014	• Significant reconstruction and rehabilition wil be required over the 10 years to address future road conditions and growth • Patrol of road network completed three times in the winter and once in the summer • 42.6% Good, 23.9% Fair, 20.4% Average, 13.1% Poort	• Upcoming Hwy 417 expansion will require additional resources to complete and maintain other roads • Staff is at capacity • 44% Good, 14% Now Need , 23% Poor, 14% Fair, in 2019	• Contracted services include street sweeping, line painting, catchbasin cleaning, brushing on roadways, and some ditch work. • Grading is done in-house • Enough resources to maintain reasonable road conditions • Full capacity, particulary during heavy winter months	• Full Capacity during winter months • More availability during summer months • Average road rating is in fair condition • Contracted services include crack sealing and line painting	• Full capacity, need more resources to complte data analysis • Road services have not been completed with the last 3 years	

[1] Best efforts were made to provide a fair comparison for road maintenance expenditures across all seven municipalities, however there is varying levels of information available from each municipality, and these numbers should only be considered estimates. Salaries and typical contracted services have been excluded.

[2] Paved road maintenance per lane km was provided by each municipality. The intention was to include maintenance costs associated with hard top patching and paved resurfacing, and to exclude salaries. However, not all municipalities have confirmed this.

[3] Winter road maintenance per lane km was provided by each municipalty. Variability in cost per lane km is expected due to different distribution of road classes, which dictate different maintenance standards.

TABLE 2: Waste & Recycling Operation Review Summary													
PARAMETER		AB	AP	HT	GM	MB	RF			WW		TOTALS
							Landfill	Collections	Recycling	Recycling	Waste Mgt	
FINANCIALS (ACTUAL COSTS PER YEAR)	2015	$ 286,143	$ 744,058	$ 234,558	$ 348,885	$ 744,058	$ (50,231)	$ (220,755)	$137,248	$160,835	$199,933	$ 2,584,732
	2016	$ 269,528	$ 743,194	$ 238,530	$ 344,735	$ 743,194	$ 17,172	$ (222,913)	$135,738	$166,609	$205,707	$ 2,641,494
	2017	$ 273,923	$ 823,716	$ 216,664	$ 323,336	$ 823,716	$ 86,645	$ (214,490)	$ 87,693	$156,428	$177,913	$ 2,755,544
	2018	$ 252,712	$ 782,041	$ 221,079	$ 388,057	$ 782,041	$ 57,342	$ (210,643)	$ 68,360	$147,256	$168,741	$ 2,656,986
	2019	$ 308,775	$ 885,612	$ 217,974	$ 408,729	$ 885,612	$ 32,311	$ (229,545)	$128,282	$229,132	$249,764	$ 3,116,646
ORGANIZATION STRUCTURE (MAINTENANCE)		• 3 Part-Time Waste Site Attendant	• 1 Program Administrator	• 1 Full-Time Landfill Attendant • 1 Part-Time Landfill Attendant	• 3 Part-Time Landfill Attendants	• 3 Part-Time Landfill Attendants	• 1 Environmental Engineering Officer • 2 Landfill Staff			• 1 Environmental Services Superintendent • 1 Full-Time Landfill/Facilities Operator • 2 Part-Time Landfill Attendants		• 4 Full-Time Landfill/Facilities Attendants • 12 Part-Time Landfill Attendants • 1 Program Administrator • 1 Environmental Engineering Officer • 1 Environmental Services Superintendent
CURBSIDE PICKUP? (YES/NO)		No	Yes	Yes	No	Yes	Yes			Yes		5 municipalities offer curbside pick-up

TABLE 3: Engineering and Asset Management Operation Review Summary								
Parameter	AB	AP	HT	GM	MB	RF	WW	TOTALS
ORGANIZATION STRUCTURE	• 1 Public Works Superintendent • 1 Treasurer	• 1 General Manager of Operations • 1 Engineering Officer • 1 Deputy Treasurer	• 1 Public Works Manager • 1 CAO/Clerk • 1 Treasurer	• 1 CAO • 1 Facilities Manager • 1 Public Works Supervisor	• 1 Director of Public Works • 1 Treasurer	• 5 Senior Managers • 1 Engineering Technician	• 1 Manager of Public Works • 1 Treasurer • 1 Coordinator	• 1 General Manager of Operations • 5 Public Works Directors/Supervisors/Managers • 1 Facilities Manager • 5 Senior Managers • 1 Engineering Technician • 5 Treasurers •1 Engineering Officer -1 Coordinator
P.Eng on Staff	None	None	None	None	One	One	None	2 P.Eng. on staff
IT PLATFORM		CityWide - PSD	MESH - Roads	Spreadsheet			CityWide - PSD	
CURRENT STATUS OF PROGRAM	•Reviewing AMP and updating for 2021 • Looking at AM software • Interested for collaboration	• Working towards LOS and lifecycle for 2021	•Reviewing AMP and updating for 2021 • Looking at AM software • Interested for collaboration	•Reviewing AMP and updating for 2021 • Looking at AM software • Interested for collaboration	•Reviewing AMP and updating for 2021 • Looking at AM software • Interested for collaboration	• Current project on track for 2021 deadlines	• Have the tools, have not used them yet • Limited data, no lifecycle, no LOS	
MOST RECENT PLAN OR STUDY	• 2019 StreetScan, 2018 AMP, 2013 Roads Study	•2017 AMP	•2017 AMP	• 2019 AMP	• 2013 AMP	• 2014 AMP, 2020 AMP update ongoing	• 2019 Energy Audits, 2020 Fire Hall and PW Depot Condition Assessment, 2014 AMP	
ASSET MANAGEMENT PLANNING AND UPDATES	• Applying for FCM funding		• FCM Funding App for 2021 required update and software	• Applied for FCM Funding	• Applying for FCM funding. Working with "AMP it up" for software	• FCM Funding App, Current project to update AMP	• Will need to update for June 2021 deadline	

TABLE 4: Fleet - Vehicle/Equipment Maintenance Operation Review Summary									
Year		AB	AP	HT	GM	MB	RF	WW	Totals
FINANCIAL (ACTUAL COST PER YEAR)	2015 2016 2017 2018 2019	$ 26,864 $ 26,204 $ 29,686 $ 31,091 $ 27,945	$ 215,645 $ 248,470 $ 314,187 $ 319,851 $ 305,951	$ 64,163 $ 50,301 $ 51,810 $ 54,777 $ 47,117	$ 272,202 $ 270,220 $ 340,022 $ 415,957 $ 417,523	$ 165,153 $ 168,374 $ 170,490 $ 195,319 $ 226,711	$ 64,497 $ 115,742 $ 104,869 $ 92,083 $ 118,999	$ 159,218 $ 230,287 $ 265,784 $ 221,610 $ 224,294	2015 - $ 967,742.00 2016 - $ 1,109,598.00 2017 - $ 1,276,848.00 2018 - $ 1,330,688.00 2019 - $ 1,368,540.00
ORGANIZATION STRUCTURE (MAINTENANCE)		• No Mechanic on Staff •Rely on Local Mechanic Shops	• One Maintenance Technician • Rely Heavily on Local Mechanic Shops/Dealerships	• One Operator who helps when available • Rely on Local Mechanic Shops	• One Mechanic that is responsible for repairs/maintenance • Local Mechanic Shop is used when needed	• Use External Mechanics or Local Mechanic Shops	• One Full-Time Mechanic • One Skilled Operator • One Part-Time Mechanic Assistant	• One Full-Time Mechanic • Outsource some Maintenance Work	• 3 Full-Time Mechanics • 1 Part-Time Mechanic Assistant • 1 Maintenance Technician • 2 Operators who help when available • 4 municipalities rely on mechanic shop
# VEHICLES/ EQUIPMENT (PUBLIC WORKS)		15	31	14	26	13	24	15	138
% OF FLEET IN USE BEYOND EXPECTED LIFE (2020)		27%	57%	17%	-	10%	-	27%	33%