

CITY OF BELLEVILLE
Pat McNulty, Manager of Transportation & Fleet Services
Environmental & Operational Services
Report No. MT&FS-2015-32
November 16, 2015

To: Mayor and Members of Council

Subject: Routine Road Maintenance Programs

Recommendation:

“THAT the Manager of Transportation & Fleet Services Report No. MT&FS-2015-32 re Routine Road Maintenance Program, be received as information.”

Strategic Plan Alignment:

The City of Belleville’s Strategic Plan identifies nine strategic themes. This report aligns with the “Infrastructure” strategic theme to “Develop asset management strategies and programs to resolve delivery shortfalls and protect our investment in existing infrastructure”.

Background:

The Environmental and Operational Services Department was requested by City Council to enhance the level of service through the development of a Comprehensive Routine Road Maintenance Program, undertake a review of the City’s Routine Road Patrol to ensure consistence for the entire City, and expand the Road Maintenance Program to include additions of Crack Sealing, Shave and Pave, and other resurfacing options to the already existing maintenance program.

The City’s complete road infrastructure system spans a total of approximately 418 km within a mixed urban and rural setting. The road network includes surfaces ranging from gravel to hot mix paved (asphalt) to Portland Cement Concrete. The City has approximately 0.4 km of gravel roads, 119 km of surface treated roads, 298 km of hot mix asphalt paved roads, and 1 km of concrete roads. A Roads Need Study was

completed in 2015 with many suggestions related to pavement management and pavement preservation strategies.

Financial/Analysis:

Routine Patrol - Our Road Patrol Program was established in 2010. This provides a defense for liability claims by meeting the Minimum Maintenance Standards and increases our level of service to residents. Staff developed a 10 day cycle for road patrol. Schedule 1 outlines our road patrol schedule and maps. As per regulations, Class 1 roads must be patrolled 3 times per week, while Class 5 roads only need to be patrolled once every 30 days. We exceed these requirements for Class 5 roads. After reviewing our system, management feels that an increase in frequency of routine patrol is unnecessary until the length of road network increases significantly. However, for ease of documenting, and timely repair, management suggests introducing a Road Patrol Software Program to increase our level of service for repairs. This will be a capital budget item brought forward in 2017.

Pavement Preservation – The 2015 Roads Need Study included many suggestions such as crack sealing, slurry seal, Reclamite® Rejuvenating Emulsion, and micro-sealing. These pavement preservation techniques are not routinely practiced within the City; however these techniques are highly cost effective and can increase the life expectancy of a road. As shown in Illustration 1, the cost of pavement preservation is far less than rehabilitation.

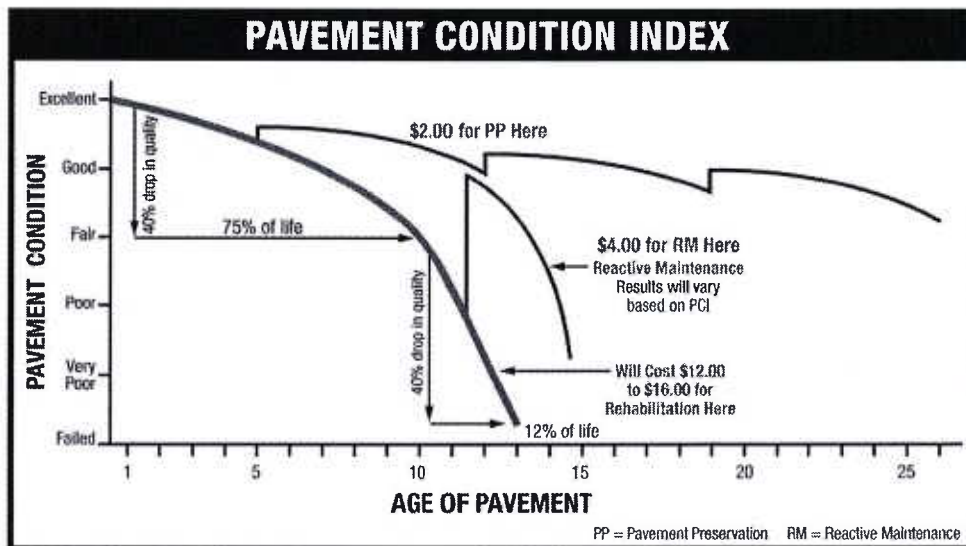


Illustration 1 – Chart showing Pavement Preservation Costing vs Rehabilitation

Slurry Sealing, Micro-sealing and Surface Treatment (Rural) strategies fall within capital improvements and should be included as part of Capital Budget discussions yearly. Staff will need to review the best maintenance options for the City with our Engineering and Development Services Department before a recommendation is made. Crack Sealing, and Reclamite are maintenance items and should be brought forward in future Operating Budgets. Reclamite is a new product being used for pavement preservation; many municipalities have been using it for a number of years with success. Management recommends reviewing and comparing different trials at neighboring municipalities in 2016. Following comparisons of similar sized municipalities in eastern Ontario management suggests budgeting \$60,000 for crack sealing. Table 1 demonstrates the current unit prices of various products for pavement preservation.

	Ideal Time	Unit Price
Crack Sealing	3 - 5 year	1.35 per m
Slurry Seal	5 - 10 year	2.75 sq m
Reclamite	4 - 5 year	1.80 sq m
Micro Sealing	5 - 10 year	6.00 sq m
Surface treatment	5 - 7 years	3.00 sq m

Table 1 – Unit costing and suggested budget

Another part of a pavement preservation management program is a Hot Mix Overlay; which is placing a layer of hot mix over existing pavement. Thin overlays are at least 40mm thick if conventional asphalt is used but thinner overlays can be laid with specialized mixes. Commonly known as "Shave and Pave", the process involves the contractor milling and replacing up to 80mm of asphalt, repairing catch basins and maintenance hole tops, and repairing curbs where necessary. \$1,000,000.00 has been approved in the 2016 Capital Budget for this program.

Shoulder Maintenance Budget - Shoulder maintenance of any roadway is key to maintaining a good drainage and increasing the life of a road and its base. A separate operating budget has never been created for shoulder maintenance. Historically funds for this activity have been taken from the Road Patching Budget, which is unjust to the accuracy of that budget and takes away from road patching activities. Management recommends budgeting \$40,000 for shoulder maintenance.

Contract Work – Asphalt – There is currently an operating budget of \$40,000 for Contract Work - Road Patching. This is for patch repairs too large to be completed by City forces. Overlaying some of our City roads that are in very

poor condition, either from too many pot holes or asphalt deterioration, will extend the life of the road by 4-5 years. At the present time some of this type of work is done in-house by spreading asphalt with trucks and grading it with the grader, but this is not ideal for getting the finished surface as smooth as required. Management recommends an operating budget increase to \$150,000 for Contract Work – Asphalt, so this asphalt can be placed using an asphalt spreader giving the repair a smooth consistent surface for residents to drive on.

Staffing – With the development of new Road Maintenance Programs, there becomes an increased need for those programs to be properly managed and monitored. Management recommends a Road Supervisor/Project Manager position be created within Environmental and Operational Services to draft, coordinate, and manage these many contracts. Transportation Services is extremely busy with already assigned projects and responsibilities; this Road Supervisor/Project Manager would be beneficial to the success of the Road Maintenance Program and maintaining the highest level of services to residents of the City of Belleville. This position would participate in administering contracts and special projects, such as capital initiatives. During the winter season, this position would also be assigned to night shift to help supervise staff in our winter operations.

Operations Manual - With the many external factors influencing our operations (i.e., regulations, aging infrastructure, City growth, personnel changes, increased number of service requests), a consistent method of providing services would be helpful to the department. A standard response is essential to providing the most cost-effective services in a timely manner. The Operations Manual functions as a training document, a public awareness document, a description of the level of services provided, and a document that can be utilized during emergency or special situations. Staff is compiling information to create an Operations Manual for Transportation Services. While an Operations Manual is essential to providing services, the Manual should not be so rigid that flexibility, innovation, and efficiency are restricted; but give a good description of what services are provided and set benchmarks and performance standards to work to or improve upon. The Operations Manual will be completed by the end of 2015.

Conclusion:

The City's Road Maintenance Programs moving forward would include such programs as Crack Sealing, Shave and Pave, Road Resurfacing and other resurfacing options to the already existing maintenance programs. Management feels at this time that the existing Road Patrol Program is working and that the additional road maintenance programs and operating issues requested in the 2016 Capital and Operating Budgets

will address the concerns Council had about the road maintenance improvements and provide a consistent level of service for all areas of the City.

Respectfully submitted,



Pat McNulty C.E.T.
Manager of Transportation & Fleet Services
Environmental & Operational Services

Attachments

Schedule 1 - 2015 Road Patrol Program Document

2015



BELLEVILLE
on the Bay of Quinte

city.belleville.on.ca

**Environmental and Operational Services
Department**

Road Patroller

-

Duties/Routes

Written Instruction to complete Routine Road Patrol Duties

Purpose:

To inspect and record data pertaining to Municipal Highways, to identify areas that require corrective action or no action. This is also to keep the City of Belleville in compliance with O. Reg 239/02 Minimum Maintenance Standards.

Procedure to complete task:

1. Ensure you have your hard hat, safety vest, measuring wheel, tape measure, work boots, inspection sheets, camera and a pen before you leave. Also please ensure you have a radio/communication device to keep in contact with supervisor.
2. To ensure compliance with routine patrolling the City of Belleville's road system has been set up in to a 10 Day cycle to for routine patrolling. The City has been divided up in to sections and sections have been assigned to certain days. See schedule for certain days, and see chart for streets and sections to be patrolled.
3. Please print your name and date neatly at the top of each sheet.
4. Please record all deficiencies and note locations on the inspection sheets. If a deficiency is found and is deemed an emergency contact your supervisor.

*** After the first day, please sit down and discuss how everything is being recorded with your supervisor to ensure we are collecting the data properly**

Day 1	Day 2	Day 3	Day 4	Day 5
Bell Blvd (1/2) Wallbridge Loyalist (1/2) Dundas St (2) Old Highway 2 (2) BayBridge Rd(2) Millenium Prkwy (3) N. Front Street (2) Sidney Street (2/3) Urban Area #3	Church St (3/4) Cannifton Prkwy (2) Pinnacle St (3) College St (2/3) Airport Prkwy (3) N Park St (3) Station St (3) Urban Area #1	Bridge St E (3) Victoira Ave (3/4) Bleeker Ave (3) Front St (3) Urban Area #2	Bell Blvd (1/2) Wallbridge Loyalist (1/2) Dundas St (2) Old Highway 2 (2) BayBridge Rd(2) N. Front Street (2) Urban Area #6	Rural Roads Area #2 East of Hwy 37
Day 6	Day 7	Day 8	Day 9	Day 10
Bell Blvd (1/2) Wallbridge Loyalist (1/2) Dundas St (2) Old Highway 2 (2) BayBridge Rd(2) Millenium Prkwy (3) N. Front Street (2) Sidney St (2/3) Bridge St E (3) Victoira Ave (3/4) Bleeker Ave (3) Station St (3) Urban Area #5	Coleman St (3) Cannifton Prkwy (3) Adam St (3) College St (3) Farley Ave (3) Herchimer Ave (3) Airport Prkwy 3) Sidney St (2/3) Rural Roads Area #1	Moira St W (3) Palmer Rd (3) Millenium Prky (3) Bridge Street W Urban Area #4 Rural Roads Area #4	Bell Blvd (1/2) Wallbridge Loyalist (1/2) Dundas St (2) Old Highway 2 (2) BayBridge Rd(2) N. Front St (2) Sidney St (2/3) Pinnacle St (3) College St (2/3) Urban Area #7	Rural Roads Area #3 West of Hwy 37

**AREA
1**

**AREA
2**

**AREA
5**

**AREA
7**

**AREA
6**

**AREA
4**

**AREA
3**

ROAD PATROL MAP

INDEX

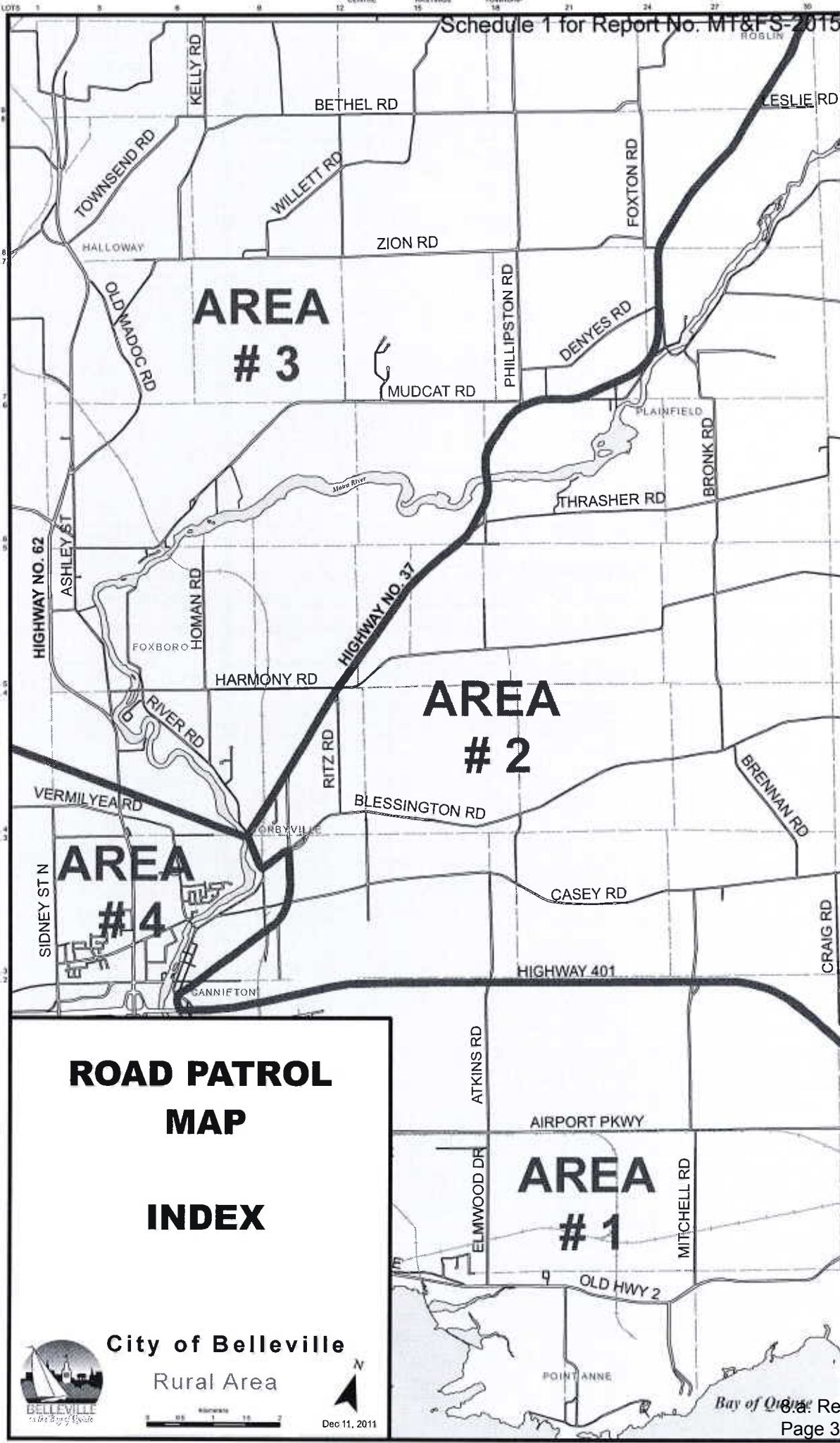


City of Belleville
Urban Area



DEC 11, 2011

Bay of Quinte



**ROAD PATROL
MAP
INDEX**



City of Belleville
Rural Area



Dec 11, 2011