



2015 ASSET MANAGEMENT PLAN AMENDMENT REPORT

The Township of North Frontenac's Asset Management Plan, as adopted by By-law #115-13 on December 16th, 2013, identified Key Assumptions regarding Data Verification and Condition Assessment Policies. On a go-forward basis, the Township will continue to enhance, update and provide further verification of asset condition assessments.

On October 10th, 2013, the Ministry of Rural Affairs notified the Township that we were eligible for funding in the amount of \$24,377.72 under the Small, Rural and Northern Municipal Infrastructure Fund – Capacity Funding program. Staff recommended to Council and they approved that the funds should be used to undertake a Gravel Roads Evaluation Study. Gravel roads are integral to the road network accounting for a significant portion, approximately 45%, of the total road inventory; and, as such, gravel roads are recognized as a valuable Township asset requiring appropriate life-cycle management practices. The objective of the study is to review of the Township's existing gravel road network, and assess its physical condition as well as to confirm various road attributes, and classify the roads based on their relative importance to the municipality. The study will generate an Overall Score of condition rating and obtain a position ranking for each gravel road and ultimately revealing those road sections most in need of rehabilitation or reconstruction. Then, similar to the long-term capital plan already established for the Township's hard-surfaced roads, a Gravel Roads Rehabilitation component can be incorporated into our comprehensive Asset Management Plan. The study had to be completed by December 31, 2014.

The Gravel Roads Evaluation Study has now been completed and is included as an attachment to this report. The following represents a summary of the key findings and recommendations from the study:

- The Township's gravel road infrastructure system spans a total of approximately 158 km. These roads provide access for many purposes such as: recreational infrastructure or seasonal homes, permanent residences, farms, primary resources (gravel pits, forestry), and landfill or waste collection sites.
- The physical conditions of the roads were assessed according to the Inventory Manual for Municipal Roads inspection methodology, similar to that undertaken for the Township's hard-surfaced roads. This includes assessment of road

surface conditions, drainage, geometrics, structural adequacy and maintenance demands. An overall Condition Rating (score out of 100) for each road was developed. Note, the higher the Condition Rating the better the road.

- In order to classify gravel roads according to the level of importance of the road to the municipality and its users, Wills and the PWM developed a Gravel Road Classification Matrix, assigning an importance rating (out of 75) for each road. Note, a higher rating implies a higher relative importance of the road to the municipality.
- Prioritization and recommendations for planned capital improvements have been developed based on the condition rating (CR) and Gravel Road Classification Level (GRCL) for each road. Those roads considered high in importance and relatively poor condition receiving priority, over lower importance roads in fair to good condition. A total length of approximately 44.7 km of road out of 158 were identified as having a Structural Need in the “NOW,” 1-5, and 6-10 year periods. An additional length of 55.6 km of road have inadequate surface widths. Generally, provided no operational or safety concerns are identified, roads with surface width deficiencies are typically addressed/considered at the next full reconstruction cycle. The average surface condition rating of all roads is 6.6/10 while the average structural adequacy rating is 14.6/20. A total cost of \$ 950k has been identified to address current gravel roads needs across the Township, to various levels of improvement.
- Implementation/continuation of a road and roadside preventative maintenance program is strongly recommended. This will help to decrease or slow the typical degradation rates of the roads and to maintain system adequacy. A concerted effort and funding for regular road maintenance can reduce the annual resurfacing/reconstruction requirements by prolonging the useful service life of a road. A gravel road resurfacing budget has been estimated at \$316,000 per year.
- Wills also conducted a preliminary speed review of these gravel roads in accordance with Transportation Association of Canada’s (TAC) Canadian Guidelines for Establishing Posted Speed Limits. Two primary observations were made:
 - i. the majority of the gravel roads within the Township have operating speeds much less than 80 km/h based on driver comfort,
 - ii. applying TAC’s methodology for determining posted speeds would result in a recommended speed limit of 60 km/h for the gravel road network (last 700m of South Road being an exception at 50 km/h).

The Gravel Roads Evaluation Study provides a complete overview of the Township’s gravel road network in a comprehensive format. In addition to the report document Wills has provided a detailed spreadsheet containing all the road attributes. This file is called

the North Frontenac Roads Database and is also attached to this report. Excerpts from this spreadsheet are simplified somewhat for inclusion in the body of the report. This database is a working file that will enable staff to update and modify the work plan, as part of our annual TCA Capital Replacement Schedule review, as new information is forthcoming or conditions change, such as; material and contract costs, new or increased recreational uses, change in the number of permanent versus seasonal properties, etc.

We are very pleased with the outcome of this study and it should be noted that the concept for this type of study is fairly unique in that most road studies only evaluate the physical conditions of the road using established engineering principles to obtain the Condition Rating. We asked that this study go further and incorporate a classification matrix that could be used to prioritize the roadways based on functionality which Wills has titled the Gravel Road Classification Matrix. Therefore when these two ratings are combined the recommendations for roadway rehabilitation are based on both the condition and hierarchy of the roadway.

As noted in the report there are significant cost implications in moving forward with the recommendations in the study, \$950K over the next 10 years for the deficient roadways which would be considered as a Capital improvement and likely contracted out. There is also more than \$300K a year in on-going maintenance, which is more than 3 times our current maintenance level (approximately \$90K for material). The cost estimates for on-going maintenance are based on the work being carried out in-house by Township resources, so if the program was to triple our workload additional resources will be required, or if contracted out, the costs for annual maintenance will also increase.

In order to implement the recommended Speed Limit changes, Council must pass a by-law designated new speed limits on certain roads or road sections. The budget for Safety Devices/Signs will also have to be increased to purchase of all the signs required for the speed limit changes.

On January 26th, 2015, Council approved Resolution #57-15, which approved the addition of the \$950k over the next 10 years for the deficient gravel roadways, to address current gravel roads needs across the Township, to various levels of improvement over the next 10 years as part of the Township's Asset Management Plan Tangible Capital Asset (TCA) Replacement Schedules.

The TCA Replacement Schedules were updated and have been included for submission to the Province as an Amendment to enhance the Township of North Frontenac's original Asset Management Plan. This Amendment along with the Gravel Road Study and 10 Year TCA Replacement Schedules will be posted to the Township website immediately.