

# **The Corporation of the City of Kawartha Lakes**

## **Council Report**

**Report Number RD2018-001**

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**Date:** March 20, 2018  
**Time:** 2:00 p.m.  
**Place:** Council Chambers

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**Ward Community Identifier:** All

**Subject:** Potential to Utilize City Owned Pits for the Provision of Gravel for City Wide Gravel Resurfacing

**Author Name and Title:** David Lembke, Acting West Maintenance Area Manager

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### **Recommendation(s):**

**That** Report RD2018-001, **Potential to Utilize City Owned Pits for the Provision of Gravel for City Wide Gravel Resurfacing**, be received; and

**That** Staff be directed to maintain pit operation practices to provide aggregate for operational needs and to supply gravel to the capital gravel program where deemed feasible by the Director of Public Works.

**Department Head:**\_\_\_\_\_

**Financial/Legal/HR/Other:**\_\_\_\_\_

**Chief Administrative Officer:**\_\_\_\_\_

## **Background:**

At the Council Meeting of October 24, 2017 Council adopted the following resolution:

### **Council Resolution Number CR2017-932**

**RESOLVED THAT** staff be directed to investigate options for using City owned pits for the provision of gravel for gravel resurfacing of roads with a report back to Council by end of Q1 2018.

This report addresses that direction.

## **Rationale:**

### **Current Crushing Program**

As a result of a two (2) year aggregate resource investigation, for City owned gravel pits (undertaken in 2012 and 2013), it was determined there are a number of excellent opportunities for aggregate extraction within City owned pits. The review identified an opportunity to supply the City with aggregate materials and at the same time build modest financial reserves for future rehabilitation (through prescribed payment of royalties). It was recommended in the investigation reports that caution be utilized in starting this process too aggressively, with the first step being to supply maintenance gravel only. The investigation recommended capital gravel resurfacing would continue to be managed by contracted services using third party gravel sources.

In alignment with the investigation recommendations, to date the focus has been on the production of granular 'A' for maintenance activities such as spot gravelling, spot shouldering, road and shoulder wash out rehabilitation, base repair and backfill for culvert repairs.

Staff initially recommended an annual production of at least 20,000 tonnes of 'A' gravel for maintenance purposes with the production funded through the operating budget. Since Council Report PW 2015-001 was received in January 2015, Public Works has completed annual crushing programs to produce maintenance gravel at selected City owned pits with great success.

The Maintenance Gravel Production is summarized in Table 1.

Table 1

Maintenance Gravel Crushing					
Year	Gravel Pit	Material Type	Crushing Cost / Tonne	Quantity (Tonnes)	Total Contracted Cost
2015	Manvers	5/8 Granular 'A'	\$2.97	15,000	\$44,550
2016	Manvers	5/8 Granular 'A'	\$2.92	22,500	\$65,700
2017	Manvers	5/8 Granular 'A'	\$3.49	14,000	\$48,860
2017	Taylor	5/8 Granular 'A'	\$4.20	11,900	\$49,980
<b>Total Crushing</b>				<b>63,400</b>	<b>\$209,090</b>

The current crushing program is based on information collected from the 2012 and 2013 investigations. Staff also utilize Aerial Survey Technology to complete a site/operating plan for the pits with the most potential for cost effective gravel production. Manvers, Kerr/Logan, and Taylor Pits were identified as having the greatest potential and the most cost effective production. Potential for production exists at all City owned pits, but not in the quantities, or as cost effective and readily available as the three (3) pits noted above. Samples were obtained daily by a third party during crushing activities and were submitted to a CCIL Certified Laboratory for analytical testing. All results met OPSS 1010 Material Specifications.

Table 2 summarizes the estimated granular 'A' quantities remaining to date at the three (3) most active and cost effective sites, Manvers, Kerr/Logan, and Taylor Pits, based on the 2013 Investigations.

Table 2

Estimated Gravel Reserves (Granular 'A')		
Gravel Pit	License	Available Product*
Manvers	A (<95,000 Tonnes / yr)	1,531,000 Tonnes**
Taylor	B (<20,000 Tonnes / yr)	127,000 Tonnes
Kerr/Logan	A/B (<320,000 Tonnes / yr)	457,000 Tonnes

\*Estimate based on 2013 investigation less material used.

\*\* Manvers pit not fully investigated and may be in excess of this amount.

Since 2015, the following quantities of Granular A from the above mentioned pits, has been utilized for gravel resurfacing, shoulder maintenance, base repair, and culvert backfill projects City wide;

- Manvers – 43,536 tonnes,
- Taylor – 7,710 tonnes,
- Kerr/Logan – 16,366 tonnes.

The remaining City owned pits, although currently not being utilized for the production of Granular A, are being utilized for other aggregate materials that are used in maintenance activities. These materials include, but are not limited to Type 1 Granular B, SSM, drainage stone, and sand for sand bagging. The following aggregate quantities have been utilized from each pit since 2015:

- Hartley Pit – 106 tonnes
- Eldon Pit – 100 tonnes
- Cameron Road Pit – 2,890 tonnes
- Mark Road Pit – 78 tonnes

It should also be noted that with the new Excess Soil Management legislation currently proposed by the MOECC, which is under review and development and is expected to become law by January 1<sup>st</sup>, 2020, we as a municipality will be considered as an excess soil generator. What this means is that the City may be required to register ALL infrastructure projects online, in order to monitor excess soil both from the source (i.e. road construction, culvert replacement, ditching activities, water and sewer line installation) as well as monitor the quantity and quality of material to the receiver site (both private or municipal owned) for quantities lower than 2000 m<sup>3</sup>. In cases where soil quantities greater than 2000 m<sup>3</sup> are generated, the City will be required to generate an Environmental Soil Management Plan. In both instances, soils would need to be field screened and be submitted for chemical analysis, to determine the soil quality in order for the soils to be disposed of at Ministry approved receiver sites.

In order to comply with the new proposed legislation, and to handle excess soils in a responsible and cost effective way, the existing City owned gravel pits could be ideal soil receiver sites as they all contain a large surface area and will require topsoil for rehabilitation in the future. Once the legislation is passed, further review would be necessary to confirm they meet the requirements of applicable provincial agencies. As some pit locations do not contain the quantities of topsoil required for rehabilitation, using the pits as topsoil receiving sites would offset the need to purchase topsoil from a contractor.

## Current Gravel Resurfacing Program

The current gravel resurfacing program is managed by the Engineering – Technical Services group, with input and consultation from Public Works – Roads.

Since 2006, the gravel program which includes supply, load, haul, and application has been completed through the tendering process. The costs to date have remained reasonable due to the abundance of privately owned aggregate resources within the City, and the utilization of affordable, qualified local contractors. A summary of the program over the last three (3) years is outlined within the table below.

Table 3

Gravel Resurfacing Program				
Year	Material Type	Tender Quantity (Tonnes)	Material Cost/Tonne	Avg. Cost to Haul
2015	Granular A	74,430	\$ 6.20	\$3.63
2016	Granular A	77,710	\$ 6.40	\$3.65
2017	Granular A	101,510	\$ 6.70	\$3.59

It should be noted that the costs identified in Table 3 includes haul and placement cost whereas Table 1 includes just the cost to produce the aggregate. When the haul and placement costs are removed, the costs for the core aggregate are very similar. There is likely a combination of reasons for the minimal variance in cost between contracted gravel and the use of City gravel pits. Considerations such as a current abundance of local aggregate pits, producers wanting to profit from the sale of their product as opposed to using City supplied material, producers wanting to ensure continuous operations of their facilities, volume of operations and comparable operational efficiency.

Since 2015, the Manvers Pit has provided gravel for the gravel resurfacing program for most roads located within approximately a 20 km radius of the pit location. Each year the trucking was contracted out and a provisional price was included for hauling in the winning tender.

Table 4 compares the cost to supply, haul, and apply granular 'A' by a contractor in 2017 versus if we had supplied the gravel from the City owned Manvers Pit and had contracted hauling and application.

Table 4

Gravel Application Comparison			
Road Name	Approximate Distance From Manvers Pit	*Cost Per Tonne (Contracted)	Cost Per Tonne (CKL Source)
Post Road, Manvers	20	\$9.03	\$8.80
Wrenhaven Road, Fenelon	50	\$9.87	\$13.45
Taylor Road, Coboconk/Carden	75	\$11.55	\$16.55
Pinery Road, Sturgeon Point/Burnt River	100	\$12.53	\$21.20

\*Cost to haul from contractor source not CKL source

As can be observed from Table 4, the largest factor in the cost of gravel applied from City pits is the distance from the pit to the end use (haulage cost). At this point in time, it is not feasible to use City pits to supply aggregate for the capital gravel resurfacing program. As time progresses and local aggregate resources are exhausted, then at such a time, it would be more cost effective to produce the gravel from City owned pits for the gravel resurfacing program and the hauling and placement of gravel be tendered.

Staff remain confident that the current approach to support operational needs within a 20 km radius of our pits that have production capability is the most appropriate use of City owned pits at this time.

### Other Alternatives Considered:

No other alternatives were considered for this report.

The City owned pits are a valuable resource for the City and will prove to be beneficial assets as aggregate resource availability reduces in the City. Staff will continue to review and monitor city-owned pits, and provide future recommendations when appropriate, and provide performance updates to Council.

### Financial/Operation Impacts:

As noted above, the City could produce gravel from City owned pits at a lower supplied cost than a local aggregate supplier. However, due to the large geographical footprint of the City of Kawartha Lakes, the haulage costs greatly outweigh the cost savings of in-house production in many cases. It may be practical to use gravel on roads within close proximity to the active City owned pits, but should be noted that prices increase significantly outside of an approximate 20 km radius.

Furthermore, Public Works Roads Operations do not possess the personnel or equipment resources that would be required to meet the haulage demands of the full Gravel Resurfacing Program.

### **Relationship of Recommendation(s) To The 2016-2019 Strategic Plan:**

Gravel Resurfacing on Specified Municipal Roads, aligns with the Corporate Strategic Goals "A Vibrant and Growing Economy", "An Exceptional Quality of Life", and "A Healthy Environment".

Capital Gravel Resurfacing directly aligns with these strategic goals by:

- Enabling efficient infrastructure and asset management;
- Update and execute Municipal Master Plans by implementing improvements to the road network
- Strategic Priority of creating connections within the community and externally by expanding and enhancing active transportation systems.

### **Consultations:**

Manager West B – Public Works  
Manager, East – Public Works  
Senior Engineering Technician - Public Works  
Supervisor - Public Works

### **Attachments:**

Appendix A – PW 2015-001 Update on City owned Gravel Pit Operations



Appendix A  
PW2015-001 Update

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**Department Head:** Bryan Robinson