



**THE CORPORATION OF THE TOWN OF AMHERSTBURG**  
**OFFICE OF ENGINEERING & INFRASTRUCTURE SERVICES**

*MISSION STATEMENT: Committed to delivering cost-effective and efficient services for the residents of the Town of Amherstburg with a view to improve and enhance their quality of life.*

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<b>Author's Phone: 519 736-3664 ext. 2312</b>	<b>Date to Council: February 21, 2023</b>
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**To: Mayor and Members of Town Council**

**Subject: Gravel Roads Conversion**

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**1. RECOMMENDATION:**

It is recommended that:

1. The report from the Manager of Roads and Fleet regarding the Gravel Roads Conversion **BE RECEIVED for 2023 Budget information.**

**2. BACKGROUND:**

On January 9, 2023, Amherstburg Council received a delegation requesting that consideration be given to upgrading North Side Road between Concession 5 North and Concession 6 North from gravel to Tar and Chip.

Council passed the following Resolution:

1. The delegation **BE RECEIVED**; and,
2. Administration **BE DIRECTED** to contact the Police Department regarding speeding concerns and to provide Council with a detailed report regarding the condition of North Side Road and the cost to tar and chip said road. This information is to be provided to Council during budget deliberations in 2023.

**3. DISCUSSION:**

North Road Side Road between Concession 5 North and Concession 6 North has a mix of surface treated and gravel road. There is 300 metres of paved road and 1,070 metres

of gravel road on that section of North Side Road. The cost to convert the gravel road to tar and chip would cost approximately \$198,000 over two years:

Year 1	<ul style="list-style-type: none"> <li>• 1975 tonnes of Granular A @ \$32 per tonne for hauling, grading and compacting =\$63,000</li> <li>• Double Lift of Tar and Chip - \$82,000</li> </ul>
Year 2	<ul style="list-style-type: none"> <li>• Single lift of Tar and Chip over 1300 m of road - \$53,000</li> </ul>
<b>Total Cost</b>	<b>\$198,000</b>

The Town has 32.8 km of gravel roads and 35.9 km of surface treated roads (tar and chip) as reported in the 2021 Roads Needs Study completed by Golders Associates.

Current Maintenance Levels:

Prior to 2018, the Town would attempt to use the stone budget to spread stone on all of the roads each year. This practice did not replace the stone that was lost from dust and roll off from traffic. As a result, the gravel roads had depressed which caused berms along the roads. This caused water to be trapped at the surface resulting in major wheel ruts and potholes.

Since 2018, the Town has placed gravel on roads on a “more stone less often” basis. Meaning the Town will place the majority of the stone on selected roads on a rotation. The Town is through the first round of the five year plan for gravel roads. Now, the plan is to reduce the time between rotation schedules. The plan is to move to a four year rotation plan. Under a five year rotation, the Roads Division was able to apply stone on approximately 6 km of roads. Now, with a 4 year rotation, it will be closer to 8 km of gravel roads that will see stone placed annually. The 2023 Public Works – Roads Maintenance Stone Cost Centre is recommending an increase of \$30,000 for additional stone for gravel road maintenance.

In addition to the gravel stone budget, the Public Works budget includes \$17,000 for dust control. The dust control consists of liquid brine that is applied to the gravel roads in the early summer and provides dust control throughout the summer months. The dust control also provides strength to the road by causing the ground to dry out and causing the stone to stiffen. In rainy summers, the Town may require additional dust control due to the brine being removed by excessive water.

During the fall, winter and spring, the Roads Division has difficulty maintaining the roads due to the wet weather and lack of warm weather to dry the roads. In addition, if the region experiences a warming winter, the gravel roads will continue to experience maintenance issues due to the gravel roads being soft. In cold winters, the gravel roads will stiffen due to frost in the ground.

## Gravel Road Conversion to Tar and Chip

In order to create a new tar and chip road, the road would require the application, grading and compaction of additional stone to increase the base and provide better surface to start from. In addition, the contractor will need to apply two lifts of tar and chip in the first year and a final third lift in the following year. The three lifts of surface treatment is standard practice for new or reconstructed tar and chip roads. The third lift is very important to ensure the longevity and structure of the road.

Therefore, to convert a 1 km stretch of gravel road to tar and chip it would require:

- Additional gravel stone base – 1,9750 tonne per km @ 1km length @ \$32.00 = \$63,000 which includes trucking/grading and compacting cost
- A double lift of tar and chip year 1 and single lift year 2 @ 1 km for 2023 is estimated at \$41,000 x 3 applications (2 lifts this year and 1 lift in 2024) = \$123,000
- Total Cost for 1 km of gravel road conversion to tar and chip is \$186,000.

Therefore, it will cost the Town \$6,100,800 to convert all 32.8 km of the gravel roads to tar and chip. If Council considers a Gravel Road to Tar and Chip Conversion Program, the following budget items would either increase or decrease:

- Road Maintenance – Stone – this budget would decrease in the future when the town gets closer to completing the full gravel road conversion. The annual stone budget would have to continue until the majority of the gravel roads are converted to Tar and Chip. Therefore, the Administration is not recommending any reduction to the Gravel Stone Budget at this time.
- Road Maintenance – Dust Control – this budget would decrease annually by the distance of Gravel Road Conversion completed in the prior year. For this report, the Dust Control budget would be reduced by \$550.
- Capital Budget – Tar and Chip – this budget would increase to include North Side Road into the annual maintenance program. The program must plan for the additional lift of tar and chip in 10 years. The maintenance program also includes a scratch coat of asphalt to provide strength and reduce the wheel ruts and damaged areas. For this report, the Tar and Chip budget would be increased by \$15,000.
- Fleet Reserve – Grader Replacement – this budget could decrease annually to eliminate the future need of a grader. The Fleet Reserve could be decreased by \$25,000.

A Roads Needs Study provides the methodology for determining the order in which roads are maintained and improved by the Town. If Council implements a Gravel Road Conversion Program, Administration would recommend hiring a consulting firm to complete a study similar to a Roads Needs Study to review traffic counts and connectivity to the area and region. There could be other gravel roads that may be considered a higher priority for this program than North Side Road between Concession 5 North and Concession 6 North when these factors are considered.

Also, it should be noted that, the *Municipal Act* provides the ability for a project to be undertaken as a local improvement. If residents on a gravel road wish to have their road

tar and chipped, they could pursue this option outside of a Town funded Gravel Road Conversion program.

#### **4. RISK ANALYSIS:**

If Council chooses to move forward with a Gravel Road Conversion program, Administration would recommend that a consulting firm be hired to review the traffic data and road conditions to prioritize the roads that should be completed first. This would provide a rationale on which roads should move forward each year. All of the gravel roads are Class 5 roads under the Ontario Minimum Maintenance Standards. A review of the data contained in the Town's Service Request Manager system reveals there have been 15 complaints over the past five years regarding gravel roads. All of the complaints were during the spring, fall and winter seasons. The following is the breakdown of the complaints received to Public Works from the Town's Service Request Manager:

<b>Year</b>	<b>Number of Complaints</b>
2022	6
2021	1
2020	4
2019	1
2018	3

Windsor Police has provided information regarding the accidents on North Side Road between Concession 5 North and Concession 6 North from 2018, when Windsor Police began providing policing services for the Town. There was one accident over the 5 years. The accident involved two vehicles at the intersection of North Side Road and Concession 5 North.

In addition to the accident information, Windsor Police reviewed the complaints generated through their online Road Watch and Traffic Complaints platform for North Side Road. Since 2018, there has been two complaints generated by residents for North Side Road:

<b>Year</b>	<b>Number of Complaints</b>	<b>Location</b>
2022	1	Near Concession 3 N
2021	0	
2020	1	Near Concession 8 N
2019	0	
2018	0	

#### **5. FINANCIAL MATTERS:**

The estimated cost of converting North Side Road from Concession 5 North to Concession 6 North to tar and chip would be approximately \$198,000. The Town would have to increase the Tar and Chip life cycle budget by \$15,000 annually to ensure future maintenance is completed on a 10 year return. There could be potential budget

reductions to future operational budgets as gravel roads are converted to tar and chip. The total cost to convert all gravel roads to tar and chip would be \$6,100,800.

6. **CONSULTATIONS:**

There were no consultations.

7. **CONCLUSION:**

The estimated cost to convert North Side Road between Concession 5 North and Concession 6 North to tar and chip is approximately \$198,000. Administration is not recommending that Council consider converting gravel roads to tar and chip at this time.



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Eric Chamberlain  
**Manager of Roads and Fleet**

## Report Approval Details

Document Title:	Gravel Roads Conversion.docx
Attachments:	
Final Approval Date:	Feb 15, 2023

This report and all of its attachments were approved and signed as outlined below:



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