

Revisions:		Pages: 5 Effective Date: October 13, 2021 Report No.: PWE 30-2021
------------	---	---

Gravel Road Conversion Policy

Contents

The Municipality of Middlesex Centre (hereafter the “Municipality”), is committed to promoting public safety and providing an adequate transportation network for its residents. The Municipality’s [Official Plan](#), and Councils 2021-2026 [Strategic Plan](#) identifies that all infrastructure, including roads, that meet the needs of present and future residents and businesses in an efficient, environmentally-sensitive, cost effective and timely manner. By establishing a process by which gravel roads are identified for upgrades to the travelling surface, the Municipality is fulfilling an important part of this goal.

Purpose

The purpose of this Policy is to provide Council, municipal staff, and residents a consistent process in identifying the gravel roads for consideration for upgrades to the travelling surface being a Low Class Bituminous (LCB) traveling surface of a minimum width of 7.0m and 0.5m shoulders and contribute to the continuous improvement of operations and maintenance.

Scope

This Policy applies to all gravel roads assumed and maintained under the jurisdiction of the Municipality of Middlesex Centre.

It is a resource which can be referred to and utilized as guiding principles to:

- Providing a proactive and streamlined approach to identifying Gravel Roads for upgraded travelling surfaces;
- Improving delivery of services; and
- Adopting procedures to maximize the available funds for the betterment of the municipality and its residents.

Definitions

Average Annual Daily Traffic (AADT) means the average twenty-four hour, two way traffic under normal conditions.

Gravel Road(s) means a road surface that is not paved or surface treated.

High Class Bituminous (HCB) Paved Surface(s) means a surface with a wearing layer or layers of asphalt.

Low Class Bituminous (LCB) Paved Surface(s) means a surface with a wearing layer or layers of asphalt emulsion and chip, commonly referred to as tar and chip.

Platform Surface Width means the horizontal distance measured from top of ditch slope on one side of the road to the top of ditch slope on the opposite side.

Policy means this Gravel Road Conversion Policy.

Priority Index (PI) means the classification determined by the considerations under the procedure section. The index classifies upgrading Gravel Roads as high, medium or low priority.

Highway Classification means the class based on speed limit and average daily traffic counts, in accordance with the [Minimum Maintenance Standards](#) for Municipal Highways (239/02), as amended under the *Municipal Act, 2001*, as amended.

Roadway means the roadway as defined in subsection 1 (1) of the *Highway Traffic Act, 1990*, as amended. Roadways evaluated under this policy will be done so on a block by block basis

Local Improvement means the improvement of a roadway in accordance with the *Local Improvement Act (R.S.O. 1990, C. L.26)*

Roles & Responsibilities

The Director of Public Works and Engineering or designate is responsible for ensuring the application and the implementation of this Policy.

Procedure

The Municipality may upgrade gravel roads based on the following considerations:

- a) Priority - Where the Gravel Road has been allotted as a high priority, as

determined in accordance with Section 1.1 of this Policy.

- b) Financial - Where an analysis of the capital costs, operational costs and the life cycle cost indicate a long term financial savings to the Municipality or where there is a significant saving to the Municipality by combining/splitting the upgrading of adjacent Roadways.
- c) Traffic Threshold – Where the Gravel Road meets the minimum vehicular volume of 300 AADT.
- d) Truck volume Threshold– Where the Roadway is experiencing high truck volumes (15% of traffic) not related to seasonal work (crop harvesting, or construction related).
- e) Risk Management - Where the non-standard conditions of the Roadway is correctable by upgrading to a surface treated road or paved surface and upgrading is determined to reduce liability issues.
- f) Operational benefits – Where there is a benefit by the reduction of operational and seasonal maintenance activities. Examples of operational benefits are; gravel roads located in isolation requiring significant travel time, roads that experience consistent erosion or are washed out frequently.
- g) Where the Roadway is included in a capital improvement plan.
- h) A petition is received from residents under the [local improvement act](#) and approved by Council in accordance with the act.

1.1 Gravel Roads for conversion consideration outside of the examples above will be identified and prioritized using the calculation below.

- i) Use the following the formula to calculate the Priority Index

$$PI = TF + FC + MF + DW$$

Where,

PI = Priority Index

TF = Traffic Factor

FC = Functional Classification Factor (Add 2 points for school route)

MF= Maintenance Factor (Add 5 points for Roadways requiring additional maintenance)

DW = Driveway Factor

- j) The Priority Index determines priority classification.

Priority Index (PI)	
0-9	Low
10-19	Medium
20 and over	High

- k) The Traffic Factor is determined by AADT.

AADT Range	Traffic Factor (TF)
0-60	2
61-150	4
151-200	6
201-250	8
251-300	10

- l) The Function Classification Factor (FC) is determined by average number of trucks.

Classification	Average Heavy Truck Criteria	FC Points Rating
Heavy Truck	10% of traffic Volume	5
	7% of Traffic Volume	3
	5% of traffic Volume	2
	3% of traffic volume	1

- m) Each Gravel Road rated by Public Works and Engineering as requiring additional maintenance is given an additional 5 points. Additional maintenance is any work that exceeds the following routine maintenance:

Routine Maintenance	Frequency
Regrade & reshape roads	twice every spring and every fall
Dust suppressant	once a year
Winter maintenance grading	Once a season
New gravel addition	Once every two years

*Grading is weather dependent and frequency may increase or decrease based on rain events through the spring and fall, the above is an average of a typical year.

- n) The Driveway Factor (DW) is determined by the number of commercial or residential driveways abutting the subject Roadway per kilometer.

Number of driveways	Driveway Factor (DW)
0-3	0
4-6	2
7-9	4
10 and over	6

- o) Despite given a priority rating under this section of the Policy, not all Gravel Roads will be considered for upgrading, unless the priority rating is equal to or greater than 20..

All Gravel Roads within the Municipality shall be reviewed and prioritized concurrently with the Municipalities Road Needs Study, available budget, capital construction cost and effort, and strategic connecting link

The Municipality will review the capital costs associated with improving gravel roads to a desired minimum surface width with appropriate drainage required to support conversion to hard surface. The life cycle costs of each proposed upgrade will also be reviewed. The following are alternate surface improvements to upgrading Gravel Roads and their respective life cycle:

Type of Treatment	Life cycle
LCB-Surface Treatment	Approximately 7-8 years
HCB-Asphalt Paving	Approximately 15-20 years

Conversion of Gravel Roads shall be subject to funding availability and approval by Council through the annual capital budget process.

With conversions of gravel roads it is important to note that there is the possibility of undesirable impacts arising from the conversion of gravel road to hard surface such as;

- Increased vehicle speed
- Increased cut through traffic
- Increased level of service required due to Minimum Maintenance Standards for pothole sizes on paved surfaces
- Increase in heavy trucks