

Report to Council

Date: 7/14/2025
From: Chad Kean, Manager of Public Works
Re: Recycled Asphalt Pavement (RAP) Initiative – Pilot Project

RECOMMENDATION

THAT the Council of the Corporation of the Village of Merrickville-Wolford accept this report for information.

BACKGROUND

The Centre for Pavement and Transportation Technology (CPATT) at the University of Waterloo, in collaboration with Good Roads (formerly Ontario Good Roads Association), is leading a 5-year research initiative sponsored by the Natural Sciences and Engineering Research Council (NSERC) of Canada. The goal is to develop sustainable, cost-effective solutions for low-volume gravel roads across Canada.

Reclaimed Asphalt Pavement (RAP) stockpiles continue to grow nationwide. While a significant portion of RAP is recycled into new asphalt concrete, which is a well-established practice, there remains a large surplus. This project explores the underutilized potential of using RAP to improve the performance and sustainability of gravel (unpaved) roads, a practice that has received limited study to date.

Integrating RAP into gravel road construction offers several benefits: reduced reliance on virgin materials, conservation of natural resources, possible lower dust generation, and enhanced rural recycling efforts.

Through advanced pavement materials engineering and detailed material characterization, the research team will establish best practices for incorporating RAP into low-volume roads (LVRs). To support this effort, the project seeks partnerships with local municipalities to construct and monitor pilot road sections. Ideally, these would be full reconstruction projects to enable comprehensive instrumentation and monitoring by the National Research Council (NRC). The initial goal of project areas would include three ~300-meter test sections along the same alignment: one control section using traditional construction methods and two experimental sections using engineered RAP-natural aggregate blends of different proportions.

RAP used in each pilot will be sourced locally, aligning with the project's goal of empowering municipalities with practical, scalable solutions to improve the durability and reduce the maintenance burden of gravel roads. Ultimately, the project aims to reduce the life-cycle cost and improve structural and functional performances of unpaved roads across Canada.

ANALYSIS

The Village of Merrickville-Wolford have commenced discussions with a project lead from the University of Waterloo within the Department of Civil and Environmental Engineering to partner with the Centre for Pavement and Transportation Technology (CPATT), Good Roads, and the Natural Sciences and Engineering Research Council (NSERC) for a pilot project using RAP.

This is intended to be incorporated into upcoming tenders for the capital projects in 2025 (Bolton or Pioneer roads) as well as included into the 2026 projects for construction of gravel roads.

The 2026 roads are not yet decided upon, as this will work in association with the Rural Road Scoring Matrix and required work.

BUDGET/LEGAL IMPLICATIONS

No direct costs are associated with this partnership for a pilot project, other than staff time and effort.

As there will be specifications and details of the areas of reconstruction using RAP in the forthcoming tenders, it may introduce competitive bids from contractors who currently have stockpiles of RAP to use in lieu of traditional granular materials.

CONCLUSION

Staff are providing this information to Council and will update once tenders have been advertised and bids received.

Submitted by:

Chad Kean, Manager of Public Works

Approved by:

Darlene Plumley, CAO