ENG 02-08

REPORT

TO: MAYOR AND MEMBERS OF COUNCIL

FROM: ENGINEERING SERVICES,
ARTHUR GLAB, MANAGER OF ENGINEERING SERVICES

DATE: JANUARY 21, 2008

RE: ROAD "E" CONDITION EVALUATION

AIM:

To inform Council on the Road "E" condition assessment.

BACKGROUND:

Following request from residents on Road "E", Council instructed Administration to review the condition of the road pavement and assess alternative road improvement alternatives.

COMMENTS:

The Engineering and Public Works staff visited the site and visually assessed the road condition. It appears that road pavement is severely rutted and uneven, regardless of the Public Works regular road maintenance schedule, all resulting from the poor sub-grade and base.

The road is bordered by agricultural lands on the North and The Lloyd Drain channel on the south. It is built on the remnants of the former marsh and was originally constructed at the time of land reclamation, prior to 1927, as a farm access trail. The road structure consists of a mixture of the old wetland organic materials with clay, overlaid with a poor quality granular material varying in depth from 0.1 m to 0.3m (4 in to 12 in).

The Road 'E' past maintenance performed by Public Works has included grading and patching road surface depressions. Annual maintenance expenditures have ranged from approximately $2,000 to nearly $10,000 over that past five years. In addition, portions of the drain's north bank were stabilized by constructing a concrete block retaining wall, to help mitigate continuous sloughing of the drain bank.

The engineering firm of Golder Associates, geotechnical and soil consultants concluded, based on their knowledge of the site soil substrata from the 2004 dyke and road study, following the May 21, 2004 storm area assessment study by Todgham & Case Engineers, that the road could be rebuilt by excavating the existing road base and placing a new layer of 0.30 m (12 in) of a good quality granular material, preferably overlaid with a top layer of "surface treatment" of asphalt. The cost of the Road "E" partial reconstruction from Pelee Drive to Road 19 is estimated at $480,000, which includes replacement of 0.3m road base, placement of new good quality granular base and surface treatment. Should reconstruction proceed, staff would propose that the road be "surface treated" and not overlaid with asphalt, because failures of such surfaces are much less expensive to repair and allow easier maintenance than a more rigid asphalt overlay.

Their suggested roadway design was based on a low traffic volumes and very limited (10 per day) number of heavy truck trips, all at low speed not exceeding 40 km/h. Such traffic volumes would not make this road a priority for upgrade in the foreseeable future.

Administration does not recommend this expenditure at this time, particularly in view of continued uncertainty over the future of senior government actions as a result of the 'Sustainability Management Study for Southeast Leamington', prepared by Baird and Associates and coordinated by ERCA.

Heavy vehicles should not be permitted except those which support the permitted agricultural and related uses.

CONCLUSION:

Based on the long term road condition observations, continuous uneven settlement of the existing road sub-grade is inevitable. The most cost effective strategy is to continue annual maintenance by Public Works. It is practically impossible to prevent the road sub-grade instability from reflecting on the pavement surface, without very expensive deep excavation and replacement. Traffic volumes do not justify making this a priority at this time or in the foreseeable future.

Unauthorized heavy equipment and vehicular traffic, with exclusion of occasional farm related equipment and vehicles, should be prohibited from using this road as per the traffic bylaw, and enforced as such.

RECOMMENDATION:

That council report Eng 02-08 be received by Council for information, and that the use of the road by unauthorized heavy vehicles be prohibited and enforced.

Respectfully Submitted,

John Tofflemire,
Director of
Community Services

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Arthur Glab, P. Eng
Manager of Engineering Services

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