

Resurfacing Highway 401 west of Highway 4 to Union Road

Total Project Management assignment from the MTO which involved resurfacing of 10.2 km of Highway 401 from 3.2 km west of Highway 4 westerly to 0.8 km west of Union Road and upgrading the speed change lanes at the Union Road Interchange.

This project was completed as the Total Project Management assignment from the MTO with LEA as a prime consultant. The project included Highway Engineering, Pre-Engineering Survey and Field Investigation, Geotechnical and Pavement, Structural Engineering, Environmental Planning and Electrical Engineering.

The project scope included crossfall and superelevation correction, resurfacing of Union Road between ramp terminals, lengthening the speed change lanes at Union Road Interchange to a 120 km/h design standard, widening of the Union Road ramps to standard width within the existing embankment and provision of fully paved shoulders. Also included was structural rehabilitation of County Road 15A Underpass, County Road 119 Underpass, Dodd's Creek Eastbound and Westbound Overpass. The structure approaches at County Road 119 and County Road 15A were resurfaced to provide a smooth transition from the existing road surface to match the new structure profile. Existing clearances were maintained under structures. Highway profiles under structures were splined to provide a smooth transition to the resurfaced highway.

An extensive construction staging strategy was developed to accommodate a temporary detour and a 1.5m safety clearance requirement between the traveled lanes and the construction zone during construction. Highway 401 westbound and eastbound road pavement was widened on both sides within the existing embankment. Traffic was reduced to a single lane to accommodate construction of widening and consecutive overlays. Construction staging for the rehabilitation of the four structures was carried out in advance of highway



resurfacing. In order to accommodate construction staging, traffic was reduced to a single lane over the structure. At County Road 15A Underpass structure traffic was maintained as a single lane on half of the bridge and was controlled with temporary traffic signal lights. At approaches to the Dodd's Creek structure the existing partially paved shoulders were removed and the existing shoulders widened to accommodate a temporary detour. The project also included repair of all transverse cracks, incorporation of rumble strips, removal of curb and gutter at bullnoses of speed change lanes, drainage improvements including placement of rip-rap at two large concrete culverts at Baird Creek and Mill Road to mitigate erosion, some ditching and embankment slopes regrading. As part of the proposed improvement guiderails and other roadside safety features were upgraded to current standards in accordance with PCC guidelines. Other improvements involved replacement of fence in local areas, reconstruction of four existing median turnarounds to upgrade with paved lanes and tapers, partial illumination at the exit ramps of the Union Road Interchange and temporary traffic signals at County Road 15A. Utility companies were contacted to review and verify utility locations.

The Environmental component included the contacts with MNR and MOE to review the environmental mitigation measures. The

environmental assessment to identified specific environmental effects of this project and the appropriate measures that were required to mitigate the anticipated impacts. This project followed the class of Group "B" E.A. in compliance with the requirements of the Provincial Highways Class Environmental Assessment projects.

PROJECT SUMMARY

Client:
**Ministry of Transportation,
Southwest Region**

Location:
London, Ontario

Services Provided:
**Total Project Management,
Highway Engineering,
Structural Engineering,
Detailed Design and Contract
Preparation.**

Cost:
\$ 11 Million

Date of Completion:
1998 - 1999