

Peterborough Integrated Traffic Signal Control and Bus Traffic Signal Priority System

LEA were retained by the City of Peterborough to provide planning, procurement and installation of an Integrated Traffic Signal Control (TSC) System featuring a Bus Traffic Signal Priority Sub-system.

The system allows all traffic control signals to communicate with a central computer so that changes in traffic patterns can be managed quickly. The Bus Signal Priority System will be integrated to improve the efficiency and performance of the transit system by providing buses with automated priority privileges. This project also included a review of the City's complementary infrastructure and work flow processes and the development of a long term strategic plan for an integrated Traffic Management System to guide the City's ITS planning as well as the expansion of these component pilot systems.

The Peterborough transit priority implementation uses optical detection equipment for detecting transit vehicles at select intersections. When a vehicle requests priority, the system alters the intersection signal timings and relays the request to one of two types of traffic signal controllers, providing the vehicle with priority treatment. The enhanced transit priority algorithm has several parameters that enable the traffic system user to minimize the on-street impacts due to transit priority treatment. The optical detection equipment allows the system to distinguish between transit and emergency vehicles, as well as providing different detection zones for each type of vehicle. A virtual LAN hybrid communication network based on a fibre optic trunkline links the optical sensors, controllers, and traffic signal control system.



Benefits/Outcomes:

- Improved mobility and transportation and transit efficiency through the optimization of traffic control signals.
- Increased operational and regulatory efficiencies for system users and public agencies.
- Reduced environmental impacts by reducing emissions from vehicular use.
- Improved traveler information and data collection for more effective policy planning and operational management.
- Improved safety and reduction in number of collisions.
- Improved travel times and schedule adherence for the bus fleet.

PROJECT SUMMARY

Client:
City of Peterborough,
with funding support from
Transport Canada

Location:
City of Peterborough,
Ontario, Canada

Services Provided:
Design and Deployment of an
Integrated Traffic Signal Control
(TSC) and Bus Traffic Signal
Priority (TSP) System