



Implementation Update Integrated Intelligent Transportation Systems (ITS) Technology

**Presentation to
Transportation Services Committee**

Reference Agenda Item D4

Steve Kemp/Rajeev Roy

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Intelligent Transportation Systems (ITS) - Update

Overview

- ❑ What is ITS?
- ❑ ITS Success Stories
- ❑ Benefits for York Region
- ❑ Integration
- ❑ What's next?

What is ITS?

Intelligent Transportation Systems

The use of technology to facilitate the movement of people and goods safely and efficiently on all modes of travel.



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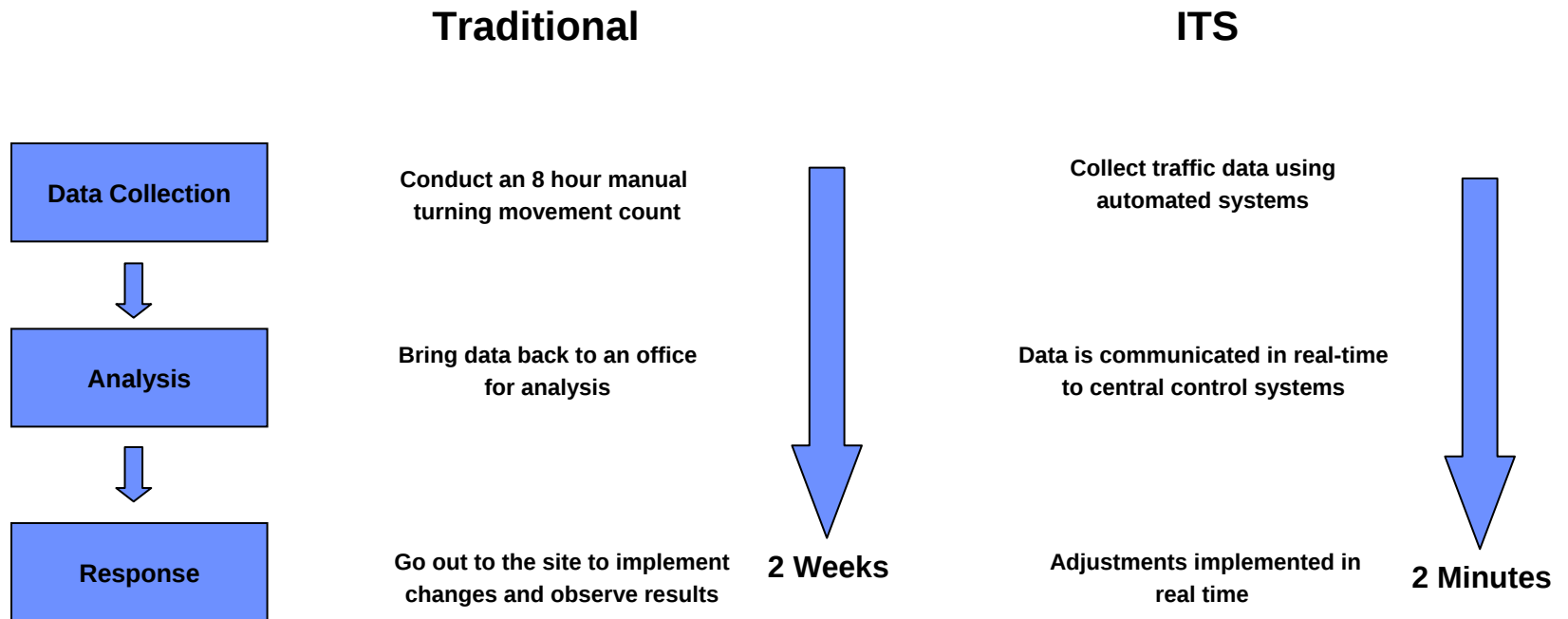
What Is ITS?

**To be “Outstanding on the Street”
you need to be
“Out Standing on the Street”**

What Is ITS?



Example: Retiming of traffic signals



What is ITS?

An important piece of our Transportation Master Plan

Reduce Need to Travel

Alternative Modes

Public Transit

Optimize Roads



What is ITS?

An important piece of our Transportation Master Plan

1. Reduce need to travel

Land use planning
Transit oriented development
Travel demand management

2. Alternative modes

Cycling and pedestrians
Parking management/policies
Collaboration and partnering
Marketing and education

3. Transit

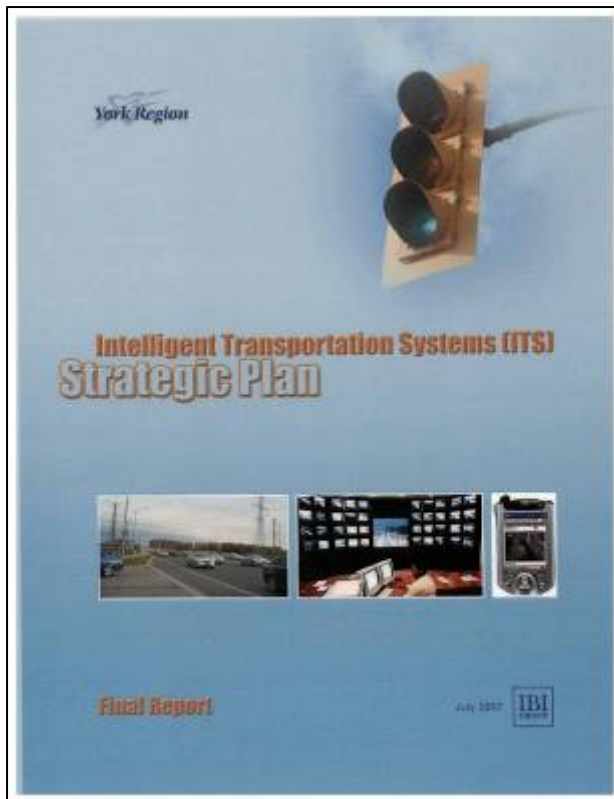
Funding
ITS applications

4. Roads

Optimize road network
Integrated ITS Strategy
Goods movement
Environmental protection



ITS Success - Strategic Plan



ITS Success - Transit

- Real-time bus arrival time VMS at viva stations
- Transit signal priority at signalized intersections
- Web and telephone based traveller information systems
- CCTV monitoring for security



ITS Success - Traffic

- Centralized Traffic Control System (CTCS)
- CCTV Monitoring at critical intersections



ITS Success - Roads

- Automated Vehicle Location (AVL) on winter maintenance fleet
- Road Weather Information Systems (RWIS)



ITS Success – Other Jurisdictions

- COMPASS – Ministry of Transportation – Ontario
- RESCU – City of Toronto
- Adaptive Traffic Signal Control Systems – United Kingdom
- Intelligent Border Crossings - Windsor

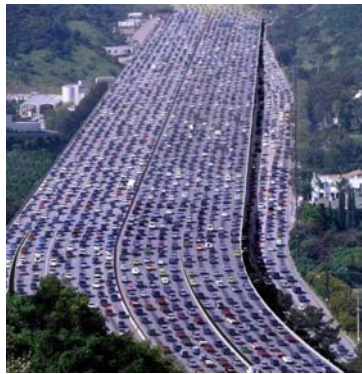
ITS Benefits – Safety

- Improving the efficiency of our road system improves safety
 - Less driver frustration and aggressive behaviour
 - Reduced stress due to traffic delays and unexpected congestion
 - Predictable trip times means fewer people “running late”
- Use of closed circuit television cameras and other traffic data collection technologies can quickly identify collision locations and improve emergency response times
- Informed road users can avoid congested locations and reduce collisions
- ITS Technology can facilitate enforcement (e.g. Red Light Cameras and Automated Speed Enforcement)

ITS Benefits – Quality of Life

- Multi-modal trip planning tools will give our tech savy population access to information
- Users will be able to choose the most appropriate travel mode and route for their trip based on real time information
- ITS can help us to build a balanced transportation system that supports all modes

ITS Benefits – Quality of Life



ITS Benefits - Economic

Traffic gridlock stalling economic activity in the GTA: study

The Canadian Press and 680News staff 2009-11-10 09:25

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TORONTO - A new international study found that traffic congestion is delaying deliveries, pushing up the cost of food and affecting productivity in the Toronto area.

A report by the Organization for Economic Co-operation and Development (OECD) said traffic congestion in the Toronto area costs the country \$3.3-billion in lost productivity a year.

The OECD said the problems are the result of urban sprawl and decades of underinvestment in public transit by Ottawa.

Transit service in the region has not kept pace with population growth and 70 per cent of commuters depend on vehicles, one of the highest rates in the organization's 30 member countries.

The result is air pollution, some of the longest commutes among OECD countries, and "a direct hit on productivity."

They suggest toll lanes, local fuel and parking taxes, a congestion charge in the city centre and some fees on major routes in the area to cut down on the congestion.

A report by the Organization for Economic Co-operation and Development says traffic problems cost the Canadian economy \$3.3-billion dollars in productivity every year.

ITS Benefits - Economic

ITS Investments in smarter roads – \$100,000 per lane kilometre – 10% decrease in travel time and delay.



Investments in road infrastructure - \$1.5M per lane kilometre – from 2 lanes per direction to 3 lanes per direction – 33% decrease in travel time and delay.

A 1% reduction in travel time and delay can be achieved through a \$45K per kilometre investment in road construction.
The same percentage reductions can be achieved through ITS at a cost of \$15K.

Integration – ITS for Transit, Traffic and Roads

- Opportunity to leverage ITS experience with YRT/VIVA to other modes
 - automated vehicle location systems
 - video systems
 - traveller information systems
 - communication systems
- Overall management and operation of a multi-modal transportation system
- Control Centre integration

Goal:

Improve the customer service experience for all road users

Integration – Managing Road Disruptions

Establish a system to track and manage planned road restrictions on the Regional Road System.



What's Next?

Traffic cameras are used to detect disruption to traffic flow at critical points on the Regional Road system. When a disruption is detected, operators notify the appropriate emergency service providers as well as road users of any necessary actions. Our current system is comprised of 7 York Region traffic cameras. For information from the traffic cameras operated by the City of Toronto and the Ontario Ministry of Transportation, please select the links in the [Related Links](#) section.

Live traffic camera view

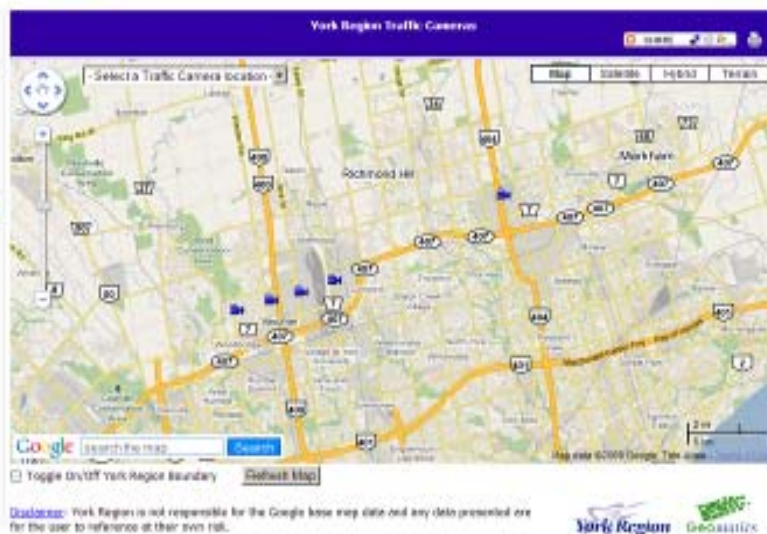
Select a camera by clicking on a camera icon on the map. A live view from that camera location will be displayed here. The traffic images are updated every minute.

Which way is the camera facing?
To determine which direction the camera is facing, compare the live view with the reference views which display when your mouse rolls over the link below the traffic condition maps.

Please note that the companion maps are static and are not updated.

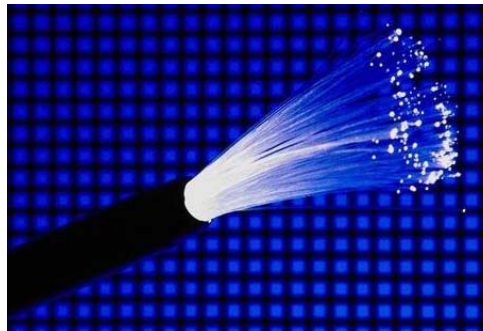
Related Links

- [York Region Road closures](#)
- [MTRC Traffic cameras](#)
- [City of Toronto Traffic Cameras](#)
- [York Regional Police Collision Info](#)
- [York Region Transit](#)
- [Metrolinx](#)
- [TTC Canada Website](#)
- [Smart Commute](#)



Web Based Traveller Information System

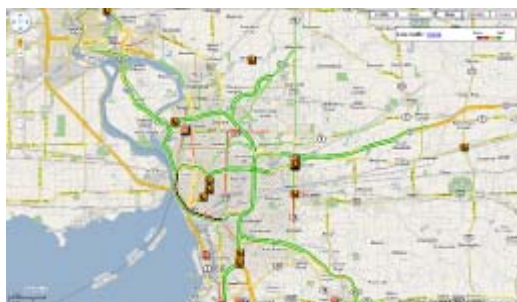
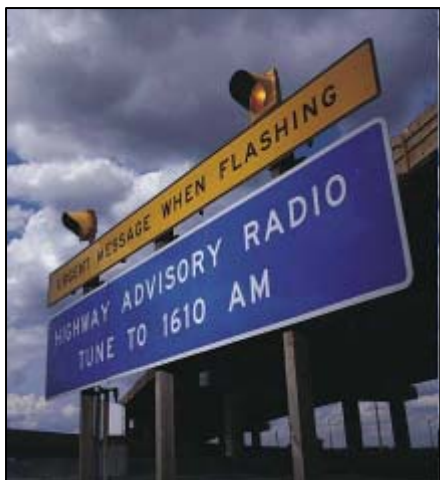
What's Next?



What's Next?



What's Next?



Conclusions

ITS will not ...

- ❑ eliminate traffic congestion

ITS will ...

- ❑ Improve the customer service experience for all users by
 - ❑ Making the transportation system safer and more reliable
 - ❑ Providing customers with accurate information about their trips
 - ❑ Providing staff with accurate information about the transportation system