Transportation Data collection

- Travel Time Reliability (MTQ - Pr. Catherine Morency): probes (Communauto/INRIX), video, Bluetooth tests
- Pedestrian Data Collection
Proactive Methods for Road Safety Analysis

Accidents

Serious Conflicts

Slight Conflicts

Potential Conflicts

Undisturbed passages

Undisturbed passages
Interaction Severity Indicators

Side Conflict
Interaction Severity Indicators

Side Collision

![Side Collision Image]

![Graph showing Collision Probability and TTC over time]
Interaction Spatial Distribution

Traffic Conflicts
Pedestrian-Vehicle Interactions
The Data Challenges

- Lack of data
- "Big Data"
  - video data, 47+ million records for Bixi stations for 3 months...
  - opportunity to solve problems (road safety, real time monitoring, traveler information, fleet management…)
- Unused datasets: incidents, traffic cameras…
  - demonstrate what can be done

http://www.chelmsford.gov.uk/media/image/m/d/Monitor_wall_(o)_large.jpg
Project for Transportation Data Platform

Applications
- Network and Vehicle Monitoring
- Measures of Efficiency
- Adaptive Traffic Control
- Planning and Land Use
- Adaptive Incident Management
- Environmental Impacts
- Decision Tools
- Fleet Management
- City Logistics

Traveler Information
- Advanced Transit Operations
- Commercial Vehicle Operations
...

CIRRELT Physical Lab

Platform and Tools

Data Warehouse

Communications
- Internet, mobile,
- V2V (ad hoc), V2I

Access Control

Public Websites

Partners
- Montreal, MTQ, transit and freight companies...

Data Sources
- inter-operability

Datasets

Sensors
Project for Transportation Data Platform

**Datasets**

**Platform and Tools**
- Software for Data Processing and Analysis, Models
  - Data Formatting (inter-operability)
  - Data Cleanup and Quality Diagnosis
  - Data Processing and Analysis (e.g. Data Mining),
    - Visualization
    - Data Fusion
  - Smart Aggregation and Archiving
  - Geographical Information Systems

**Applications**
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- Measures of Efficiency
- Adaptive Traffic Control
- Planning and Land Use
- Traffic Management
- Adaptive Incident Management
- Environmental Impacts
- Decision Tools
- Traveler Information
- Advanced Transit Operations
- Dynamic Routing
- Commercial Vehicle Operations
- Maintenance Optimization
- Fleet Management
- City Logistics
- ...