Research Van

ECO-DRIVE Project

2017

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Presentation Outline

- ECO-DRIVE Study Corridor (Hunt Club Ottawa)
- Description of Equipment
- Data Storage and Backup
- Overview of Laser Gun Data
- Overview of GPS data
- Overview of Video Camera Information

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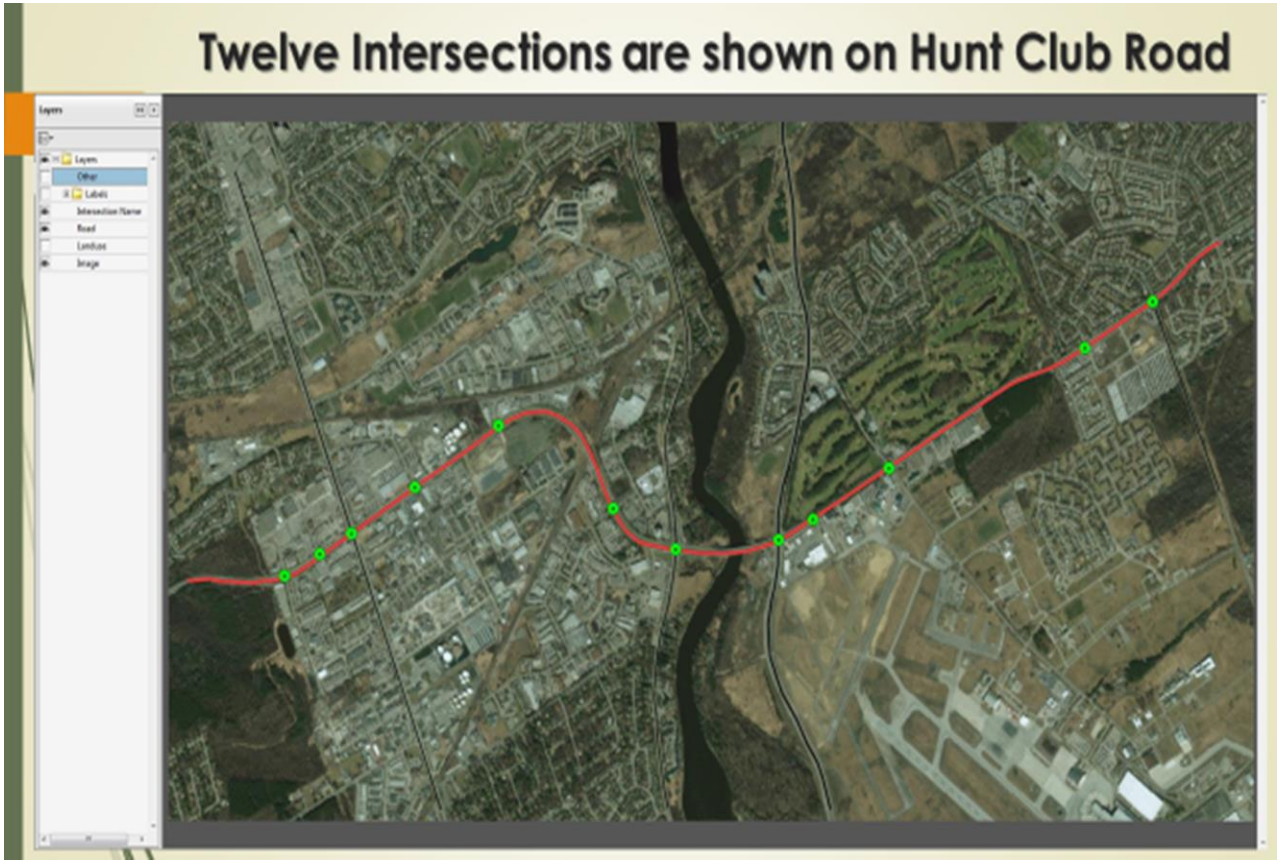
ECO-DRIVE Route

Hunt Club Road Corridor



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Description of Equipment

- Laser Guns
  - Two laser guns were mounted within the research van: one at the front of the vehicle and one at the rear
- GPS Systems
  - GPS antenna mounted on the roof of research van, and attached via cables to GPS receiver located inside the van
- Video Cameras
  - A video cameras were mounted within the research van

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Description of Equipment

Images depicting how the various research equipment was installed.

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Data Storage

- Laser Guns
  - Data obtained during travel was recorded onto a separate SD card for each laser gun
  - Data from both SD cards was consolidated onto one larger SD card, then transferred to two hard drives at the end of each day via a laptop computer
- GPS Systems
  - Data obtained during travel was recorded onto a PC card for GPS receiver
  - Data from PC card was consolidated onto one larger SD card, then transferred to hard drive at the end of each day via a laptop computer
- Video Cameras
  - Videos recorded using the front camera were stored on SD card.
  - Videos from the camera were transferred to hard drives at the end of each day via a laptop computer

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Overview of Laser Gun Data

- Laser guns were set to measure distance
  - Allowed for the headways between the closest vehicles ahead of and behind the research van to be measured
- Laser gun data marked with a time stamp
  - This will allow for the duration at which vehicles were in close proximity to the research van to be determined
- Average distances and durations can be analyzed to determine representative driver behaviour conditions
  - Data can be analyzed separately for each segment of the route.

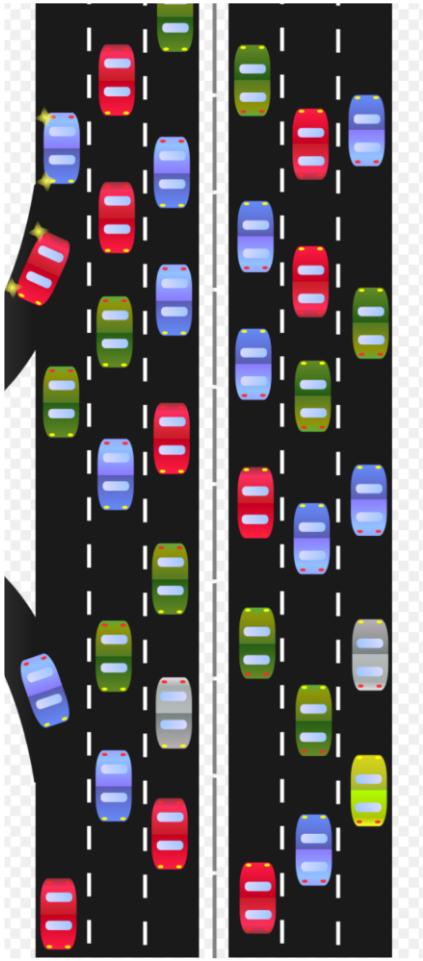

Illustration of vehicle traffic on a divided highway. (Source: Wikipedia)

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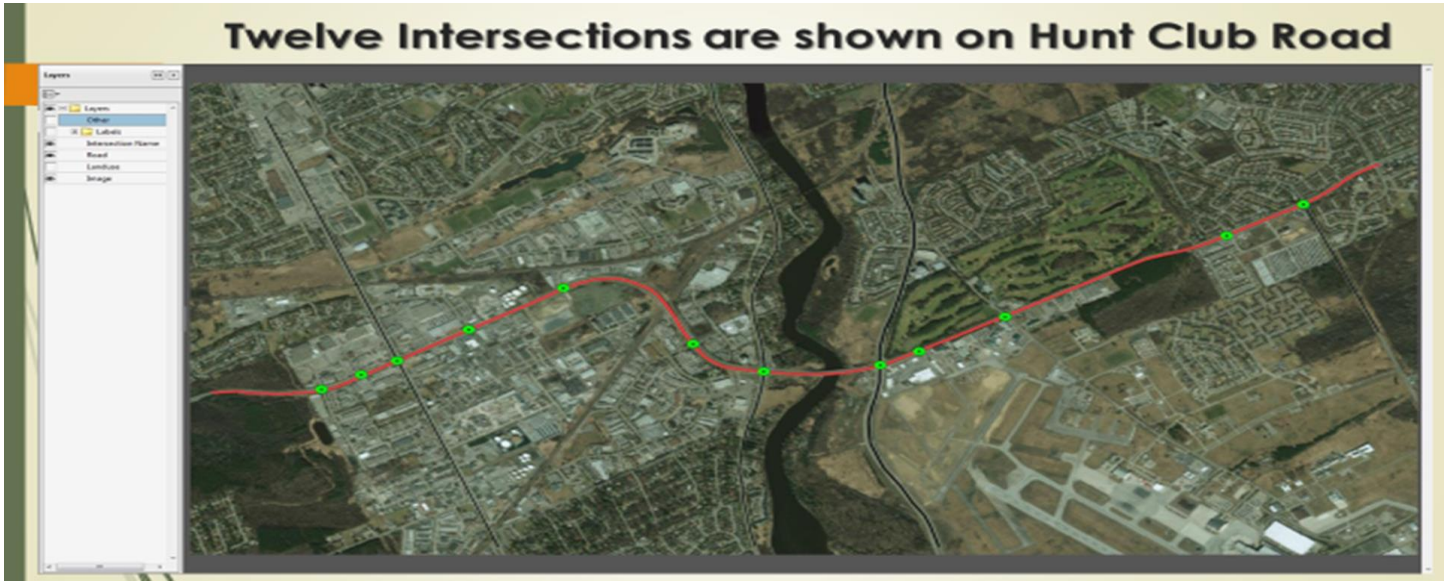
Overview of GPS Data



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- GPS data allows for the exact route to be modelled, and for the location and corresponding operating speed of the research van to be determined.
- GPS data is marked with a time stamp, which can be used to link laser gun data and video information to specific segments along the route
  - For example, can match obtained data to known locations of the roadway.

Video Camera Information

- Front camera provide a reference to data obtained from the two laser guns
  - Can use videos to determine the cause of various readings (i.e. presence of signalized intersection or construction zones)

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