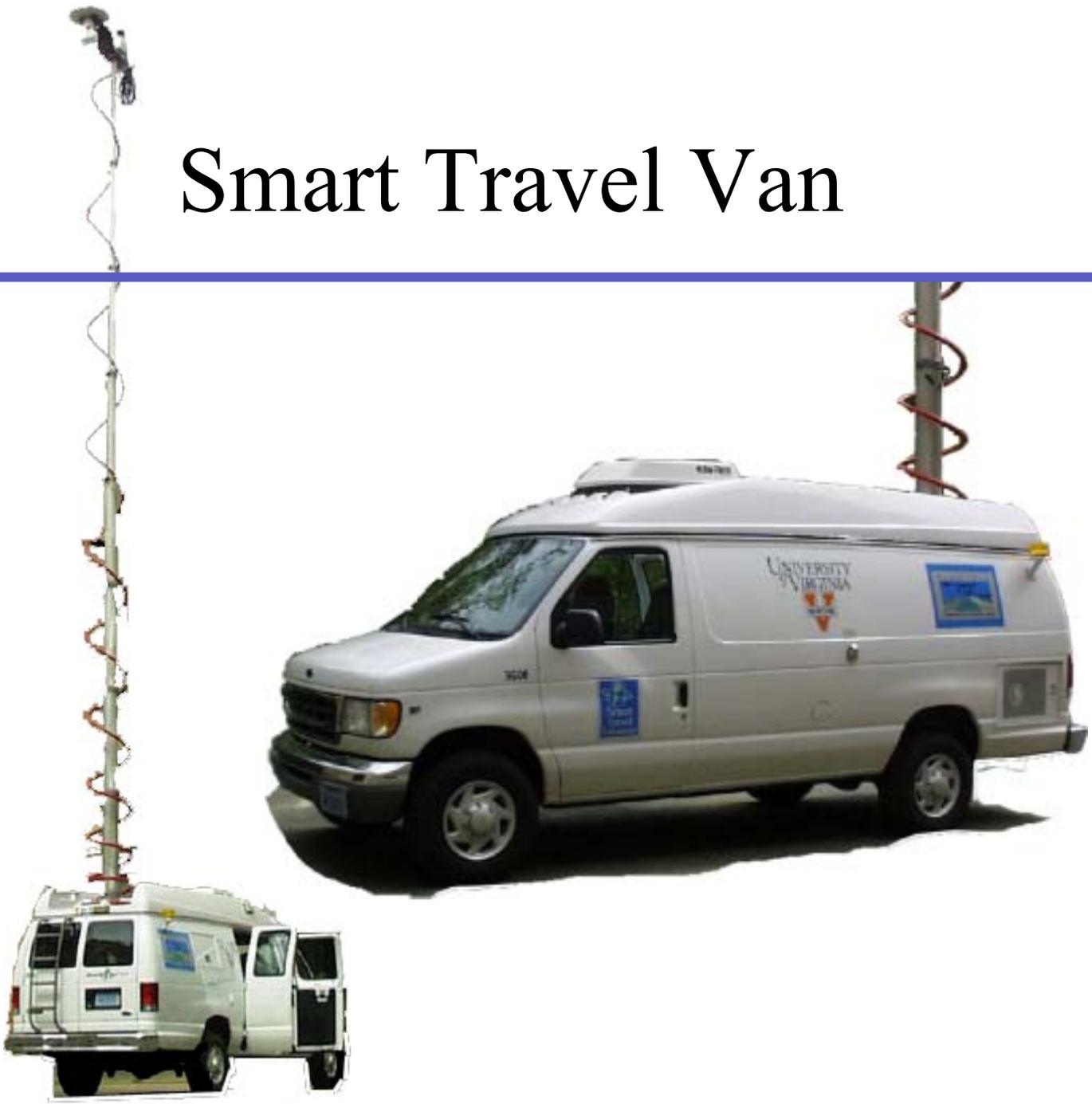


Smart Travel Van



Brian L. Smith

University of
Virginia

Presentation Overview

- Why the Smart Travel Van?
- Design Concept
- Technical Description
- Research Support

Smart Travel Laboratory



Data Collection Needs

- VDOT Smart Traffic Center & Signal System detectors provide the laboratory with a large amount of traffic data.
- But ... we have no control over where and how the data is collected.
- Many research projects require this control.
- *There is a need for a portable, flexible traffic data collection system.*

Design Requirements

- Portable
- Flexible
- User-friendly
- Reasonable Cost
 - Integrate existing components
 - “We” do the work

Technical Overview



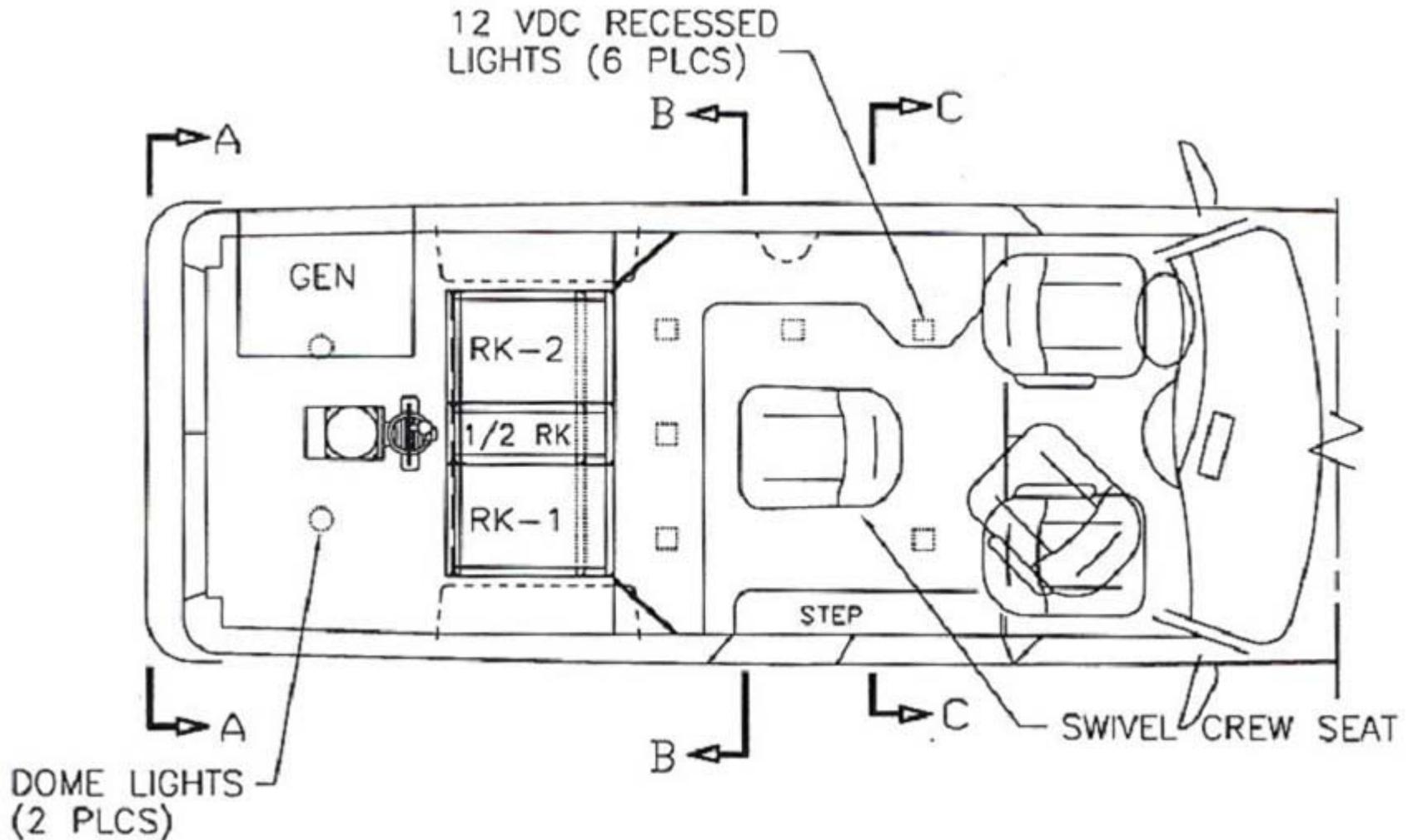
- Vehicle
- Mast
- Sensor Array
- Computer equipment

Vehicle

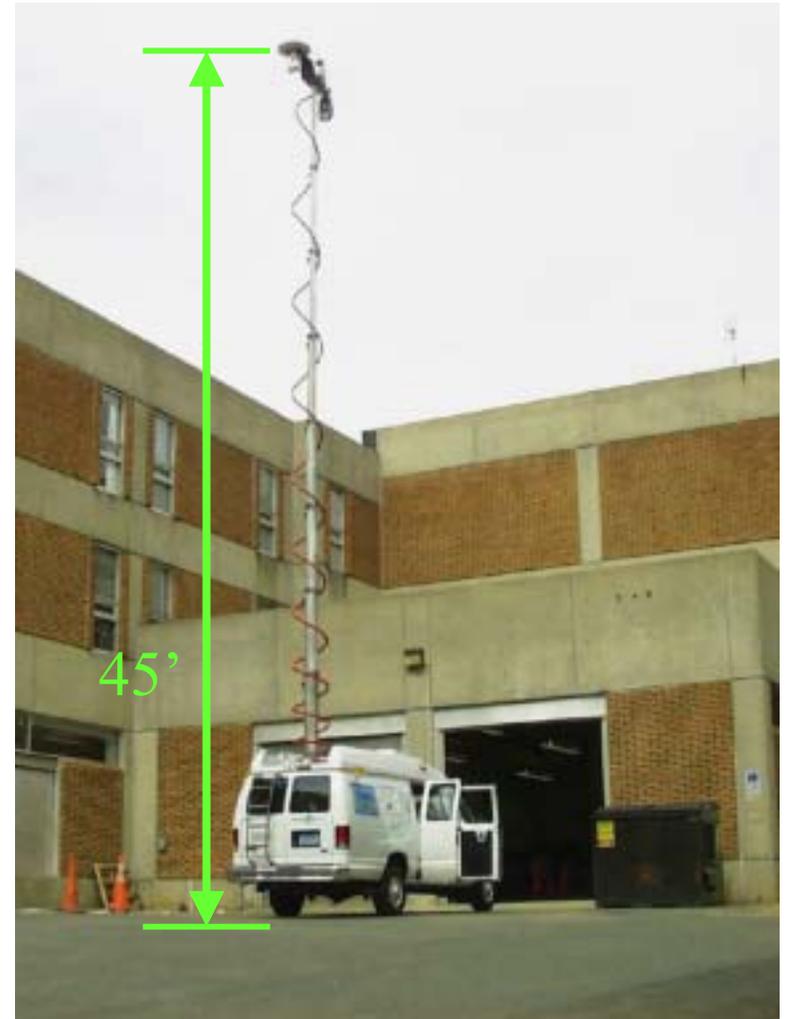
- V-10 Ford Super Cargo Van.
- 19” equipment racks.
- Telescoping mast.
- Hydraulic leveling system.
- Generator and power distribution system.



Top Interior View



Telescoping Mast



Sensor Array

Sensor/antenna
array

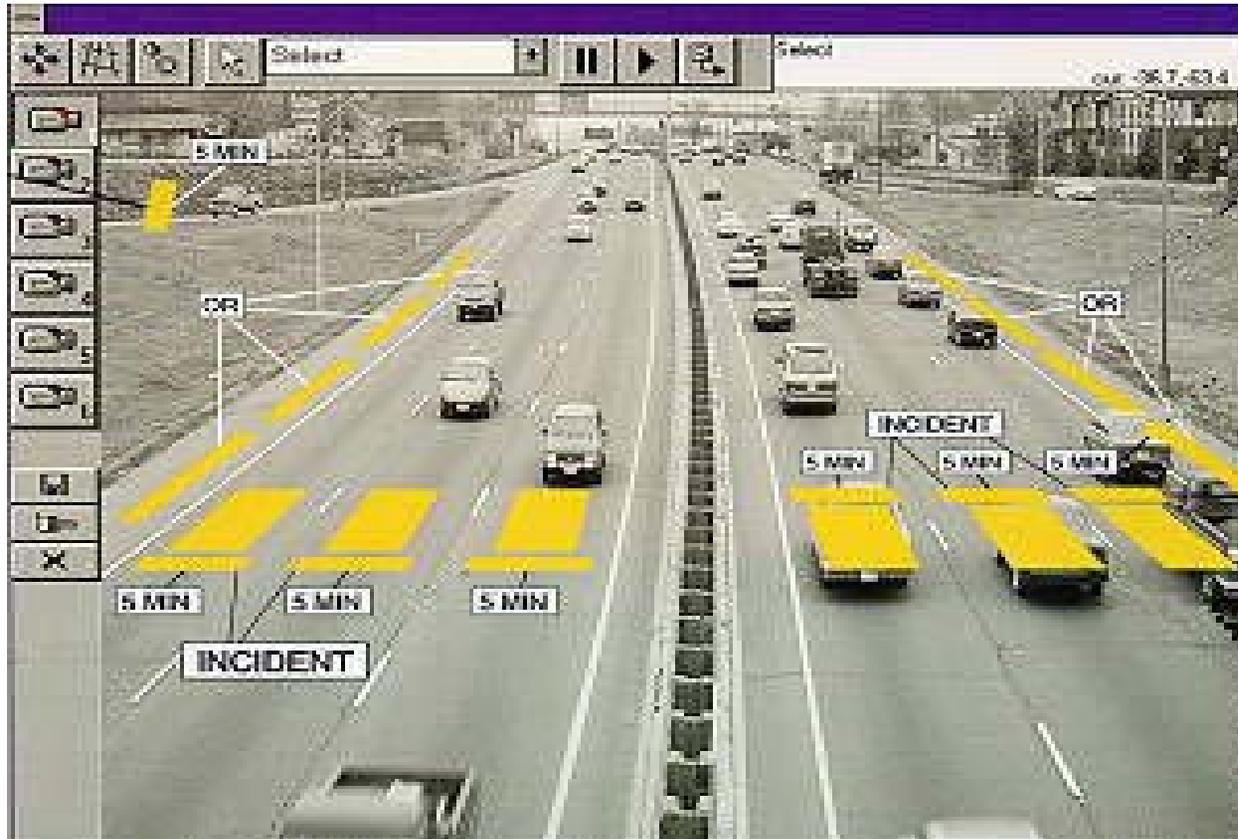


Cameras

- **2 Autoscope® Solo Pros**



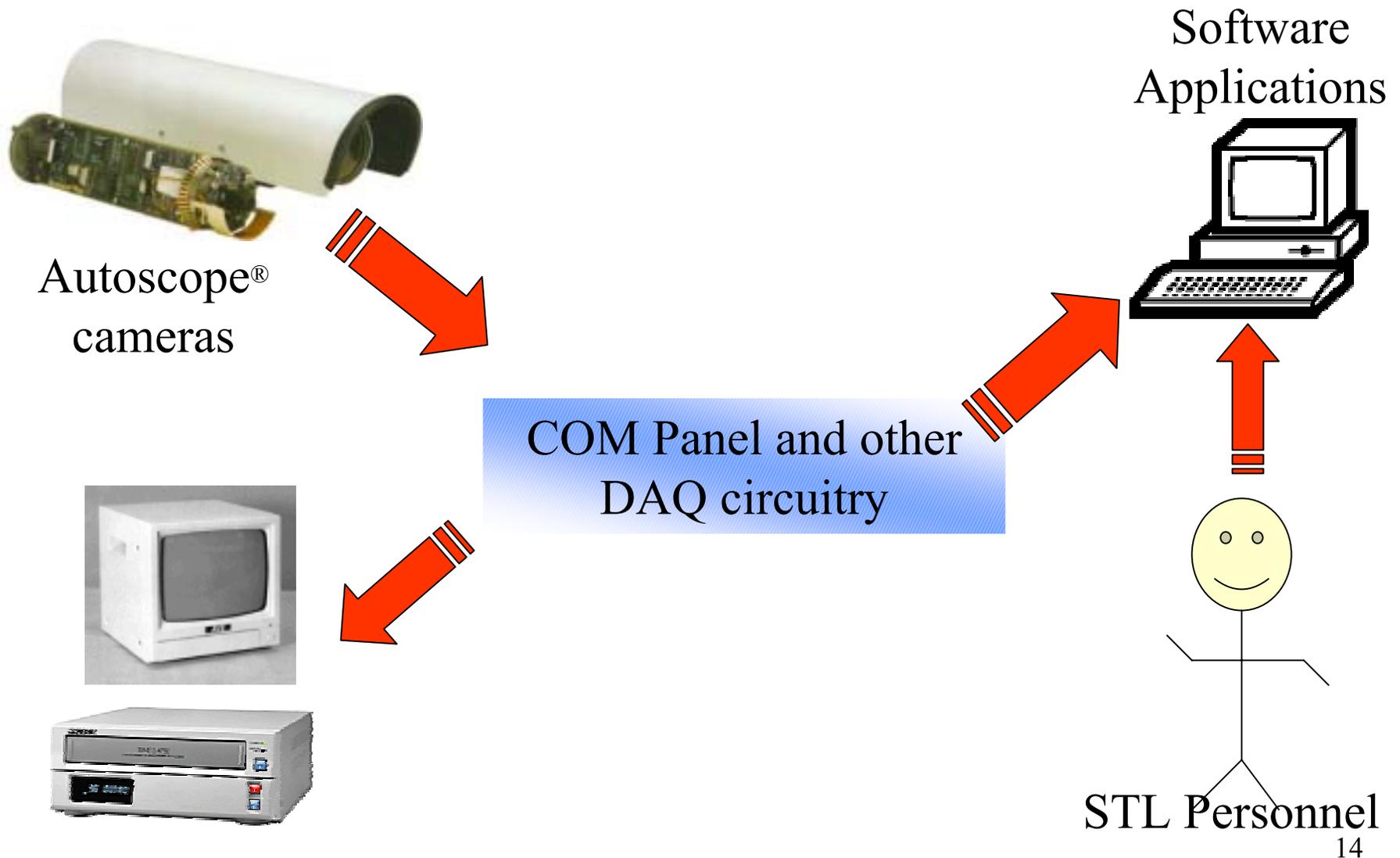
Video Traffic Detection



Computer Equipment



System Diagram



Data Collection Capabilities

- Traffic volume
- Vehicle classification
- Occupancy
- Queue-length measurement
- Speed measurement
- Average time headway

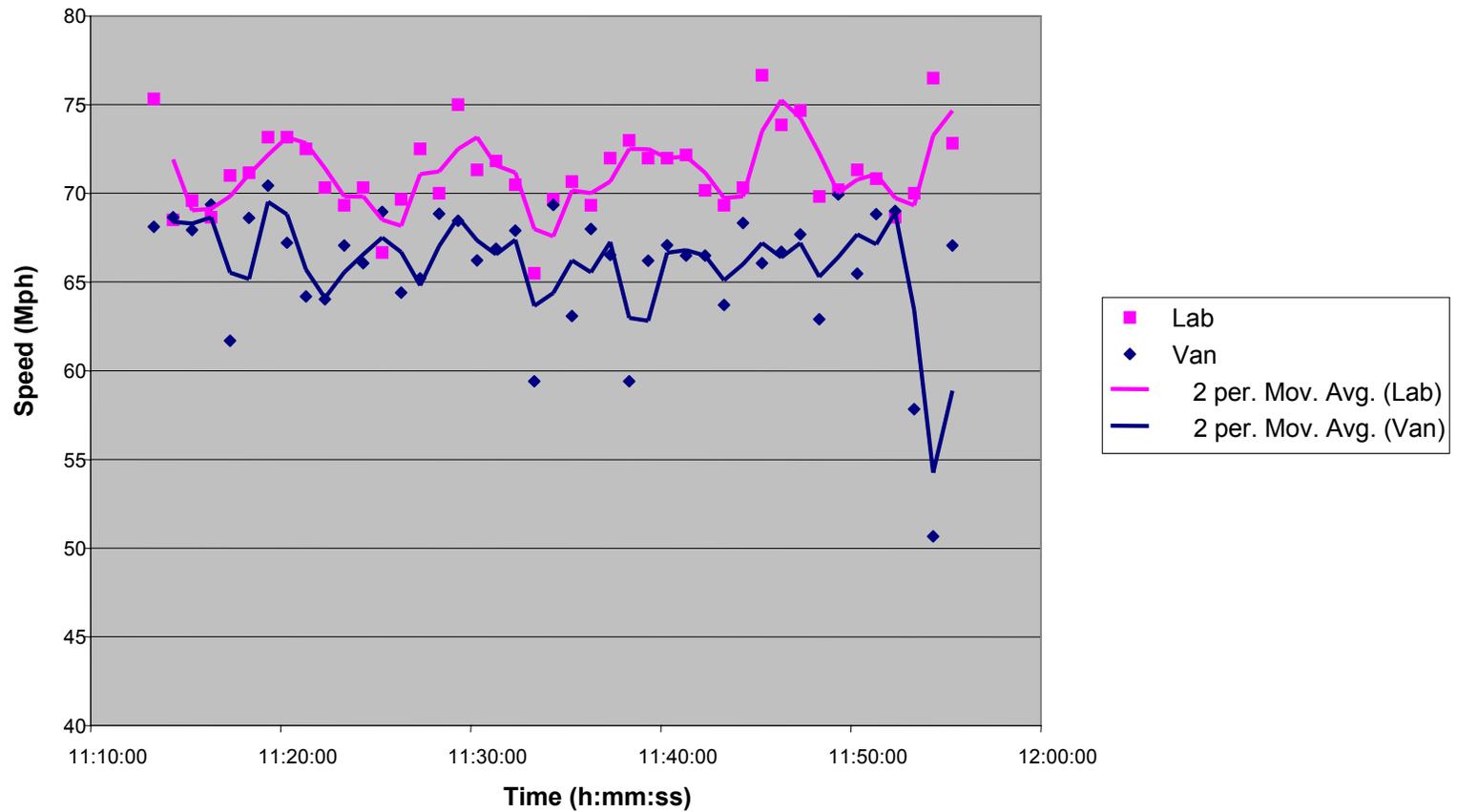
Current Projects



- Transportation Management Applications of Anonymous Mobile Call Sampling
- Intersection Deceleration Rates
- Queue Length Evaluation
- Guidelines for Left Turn Lanes
- Variable Speed Limits in Work Zones
- HOV Evaluation

Example Application

Speed Comparison
(Station 90, Detector 243)



Questions?

