

# Travel Time Methodologies: Better Simulating the User Experience

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Presented By  
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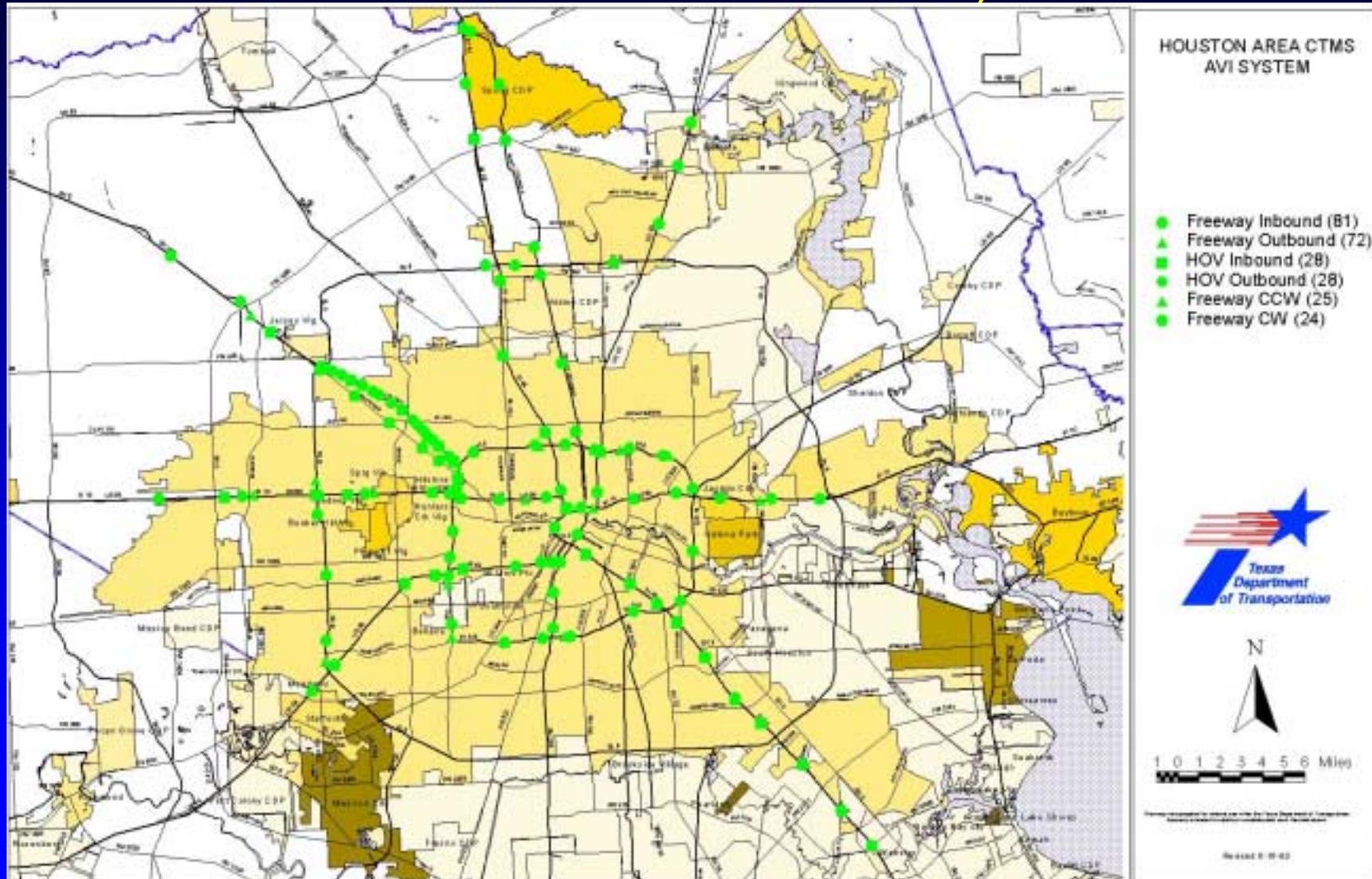
# Overview

- The AVI System
- Aggregation Methods
  - Snap Shot
  - Built-up
- Comparisons
- Data Uses
- The next step

# The AVI System

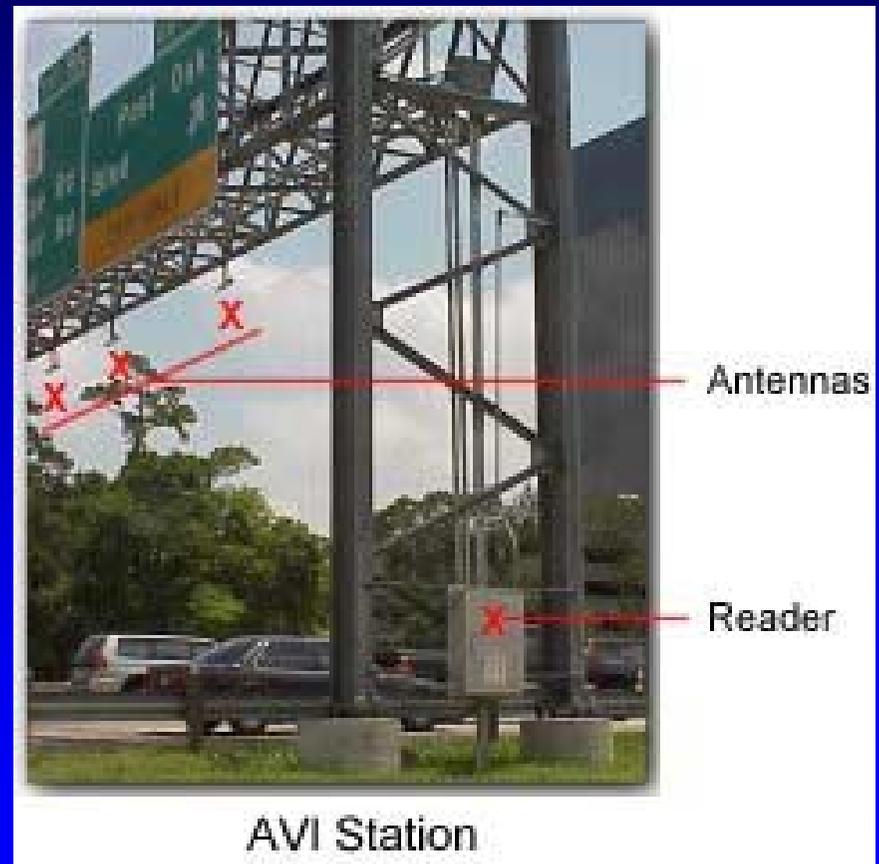
- AVI (Automatic Vehicle Identification)
- Toll tag technology
- 258 Readers
- Approximately One Million Tag Reads per day
- 3 to 4 mile spacing

# The Houston AVI System

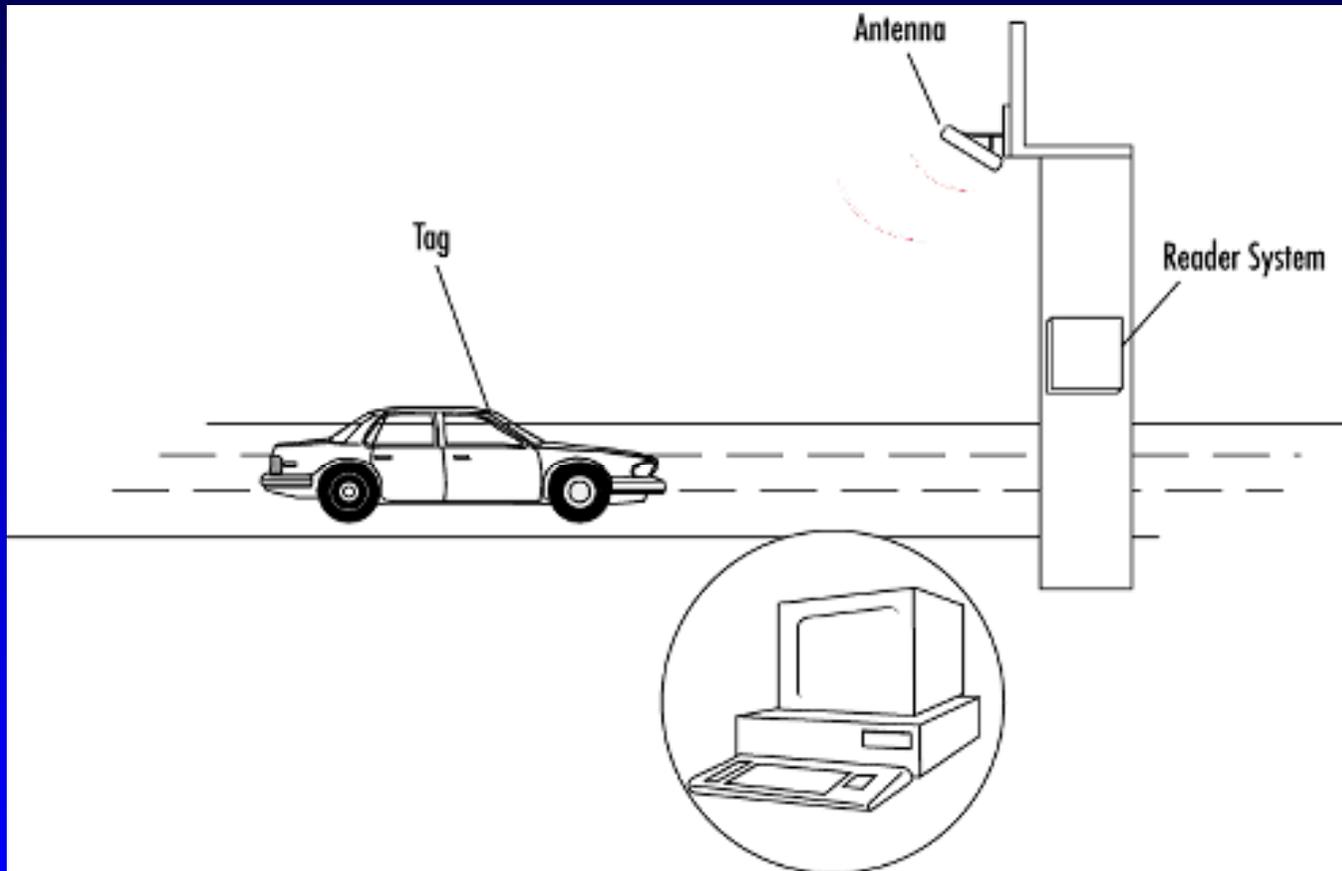


# Toll Tag Technology

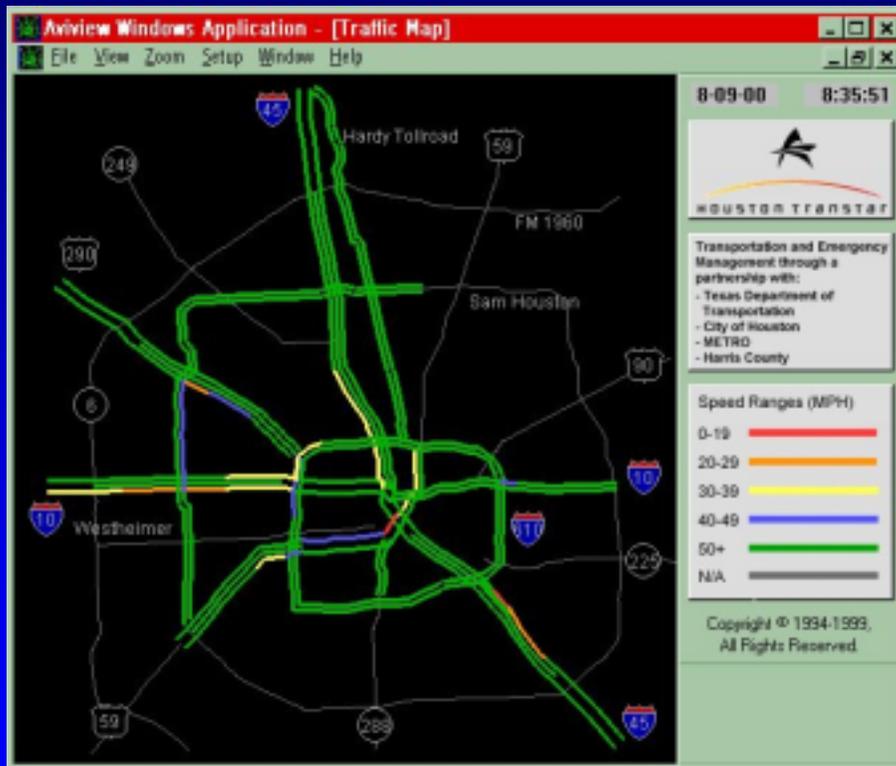
- AVI Station
  - Single direction
  - multiple antennas
  - one reader



# How AVI Reads Tags

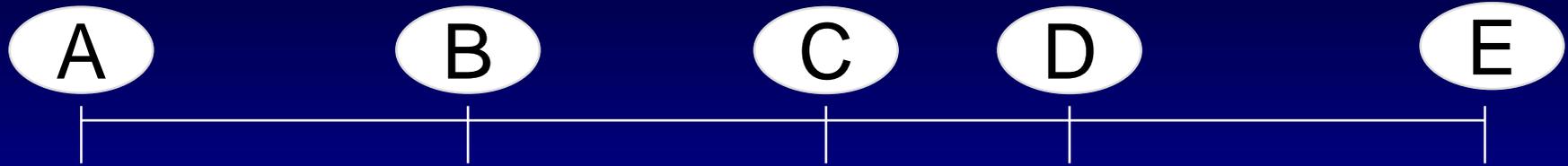


# AVI System Uses



- Originally used for real-time operations
- ATIS (Internet)
- Incident Detection
- Next Bus Arrival
- Congestion Pricing
- Planning

# Aggregation Methodologies



- Snap Shot

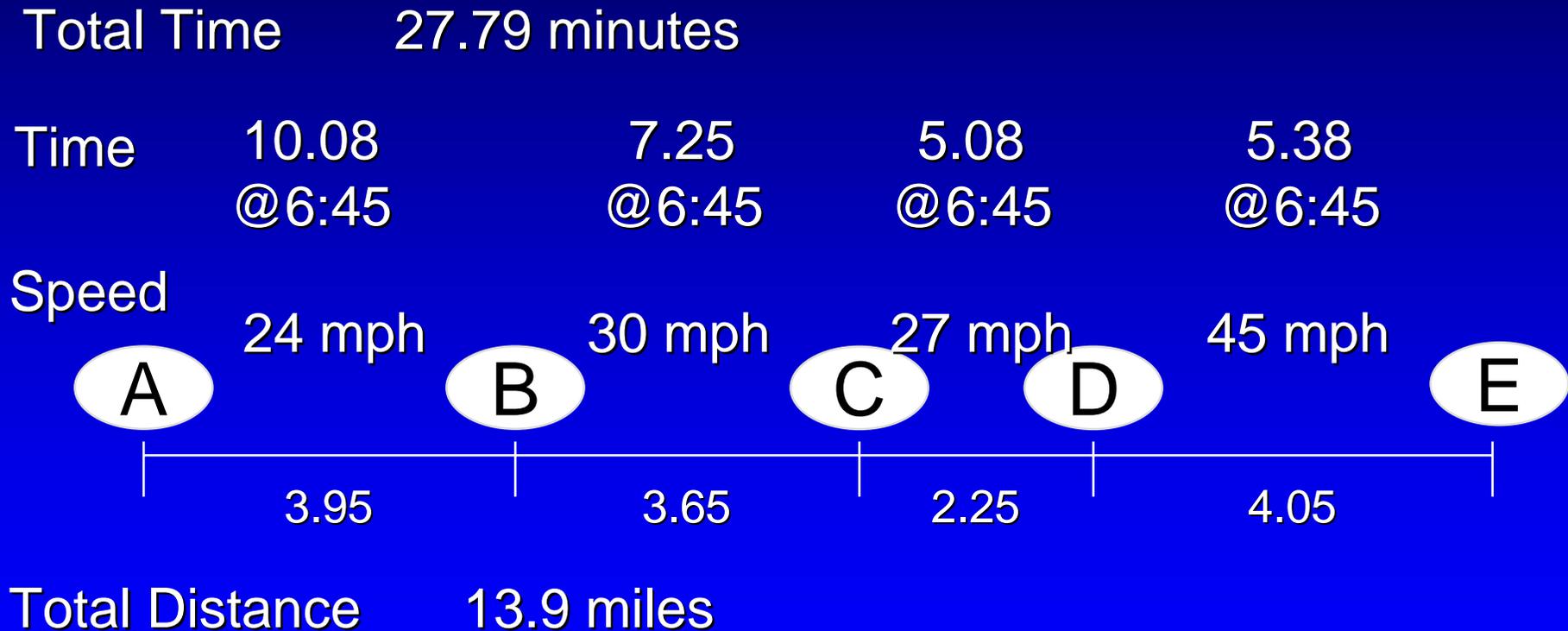
- Aggregating multiple segments with the same start time
- $6:45@AB + 6:45@BC + 6:45@CD + \dots$

- Built-up

- Aggregating multiple segments adding the segment travel time to previous start time
- $6:45@AB + BC=(6:45 + AB) + CD=(6:45+AB+BC) + \dots$

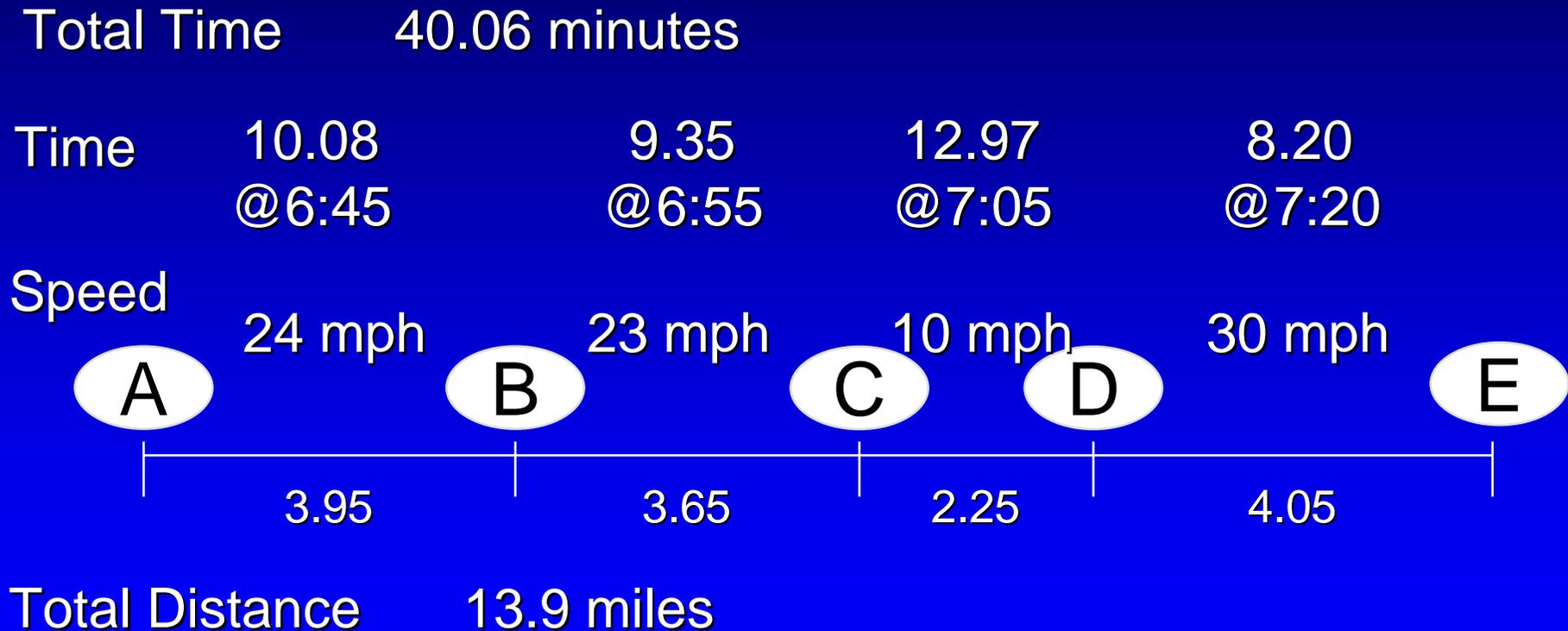
# Aggregation Methodologies

## 5 Minute Snap Shot



# Aggregation Methodologies

## 5 Minute Built-up

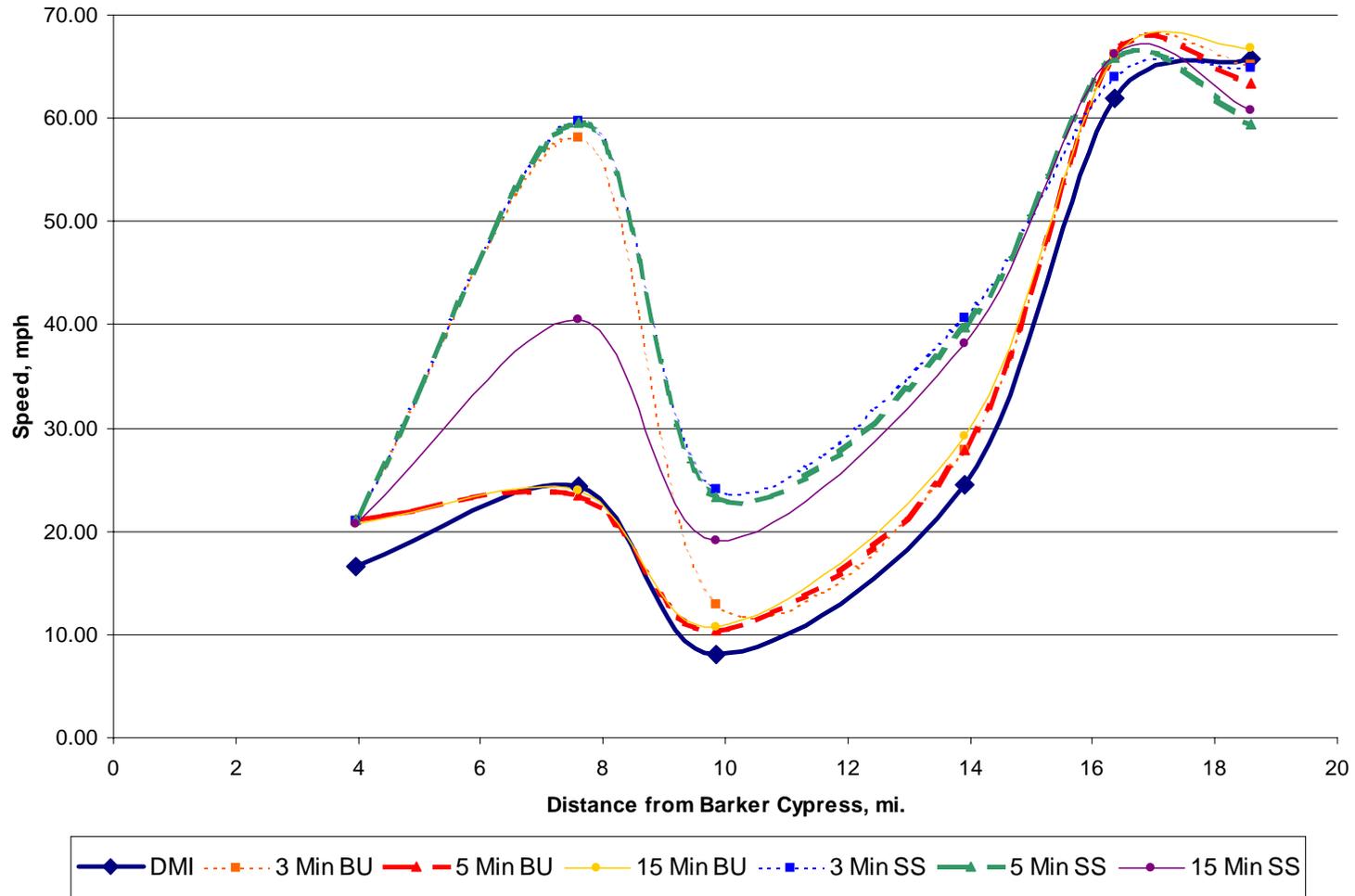


# Travel Time Methodology Comparisons

- Average Car Using DMI
- 3 Minute Snap Shot
- 5 Minute Snap Shot
- 15 Minute Snap Shot
- 3 Minute Built-up
- 5 Minute Built-up
- 15 Minute Built-up

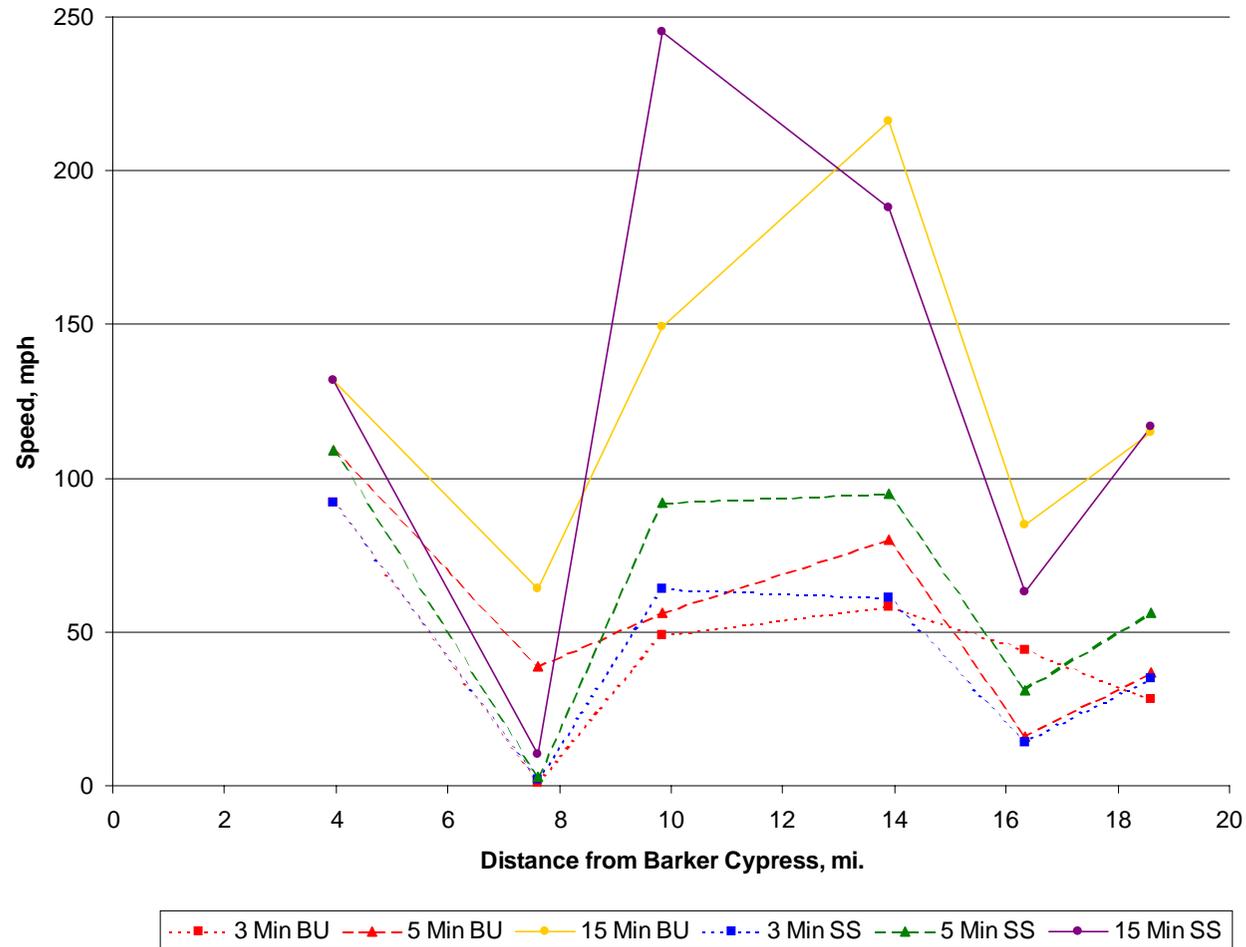
# Travel Time Comparison

7:00 AM IH 10 W Inbound

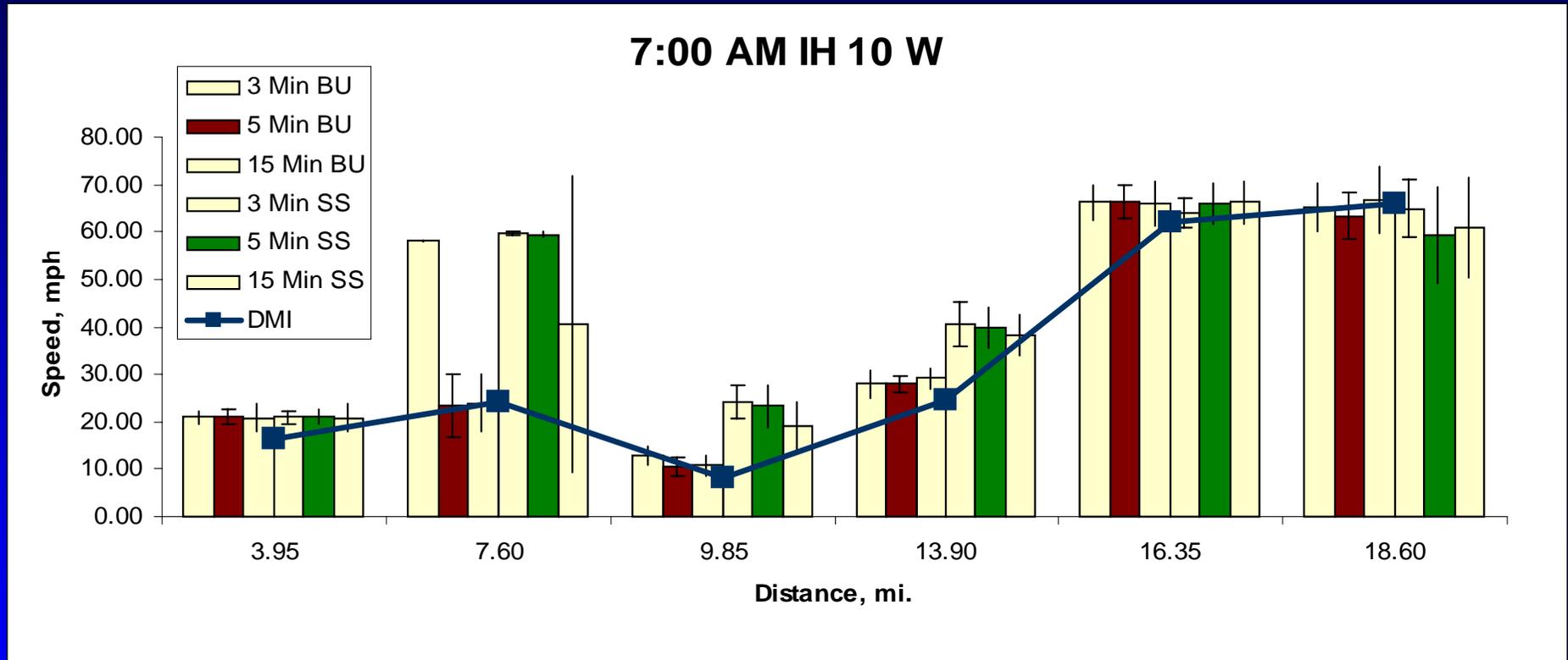


# Observation Comparison

7:00 AM, IH 10 W Inbound Observations



# Travel Time Comparisons



# Data Uses

- Planning
- Operations
- Historical Comparisons
- Daily Benchmark
- Base for Travel Time Prediction

# The Next Step

- More Rigorous Validation
- Archiving / Data Warehouse
- Methods for Predicting Travel Time
- Advanced Traveler Information Systems (ATIS)

# Any Questions

