

US-75 INTEGRATED CORRIDOR MANAGEMENT: ARTERIAL STREET MONITORING SYSTEM

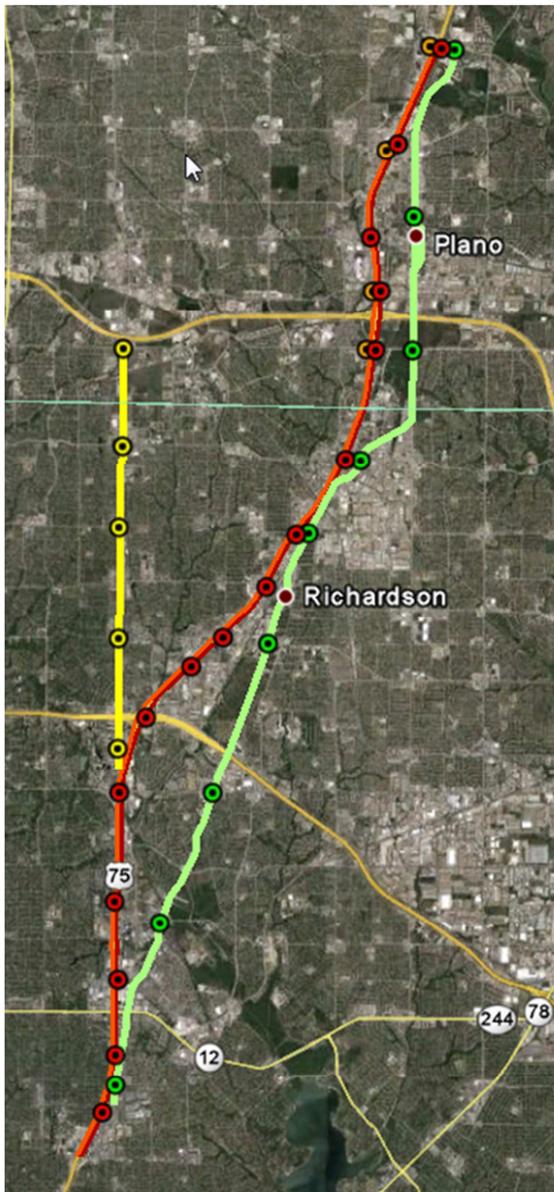


Figure 1. Location of Bluetooth Sites along US 75 Frontage Roads, Greenville Av., and Coit Rd.



The Integrated Corridor Management (ICM) Project fundamentally changes how transportation agencies in the US 75 corridor collaborate to move more people and vehicles through the corridor, respond to incidents, and provide better travel information to travelers, who can make better decisions about how and when to travel the corridor. A key component of the ICM is an Arterial Street Monitoring System (ASMS) that provides travel time and speed data on diversion route arterials.

Purpose of the ASMS:

One of the data gaps facing the Pioneer Sites identified during Stage 1 is arterial street data. Additional data is needed that provide travel time on selected diversion route arterials. The objectives of the ASMS are:

- Providing arterial speed data on strategic diversion routes to the ICM Decision Support System (DSS) for response plan evaluation.
- Providing arterial travel time data on strategic diversion routes for comparative travel analysis

Description:

During the early phases of the ICM Project, the Dallas ICM Team researched and developed an innovative, cost effective approach for collecting and processing traffic data using anonymous wireless network addresses as probes. The system currently uses anonymous addresses from Bluetooth network devices to identify probes and calculate travel times and speeds on instrumented roadway segments. Anonymous Wireless Address Matching (AWAM) detects vehicles equipped with enabled Bluetooth networking devices such as cellular phones, mobile GPS systems, telephone headsets, and in-vehicle navigation systems.



Each AWAM reader senses probe devices as they pass a reader station and transmits the time and location of the device to a central host system. As probes are detected at successive AWAM readers, the host system calculates average travel times and speeds for a roadway segment.

In addition, the Dallas ICM Team is working with a 3rd Party information provider to obtain real-time data in all arterials and freeways in the cities of Plano, Richardson, and Dallas. The added data from a 3rd party provider can be used as a backup to the Bluetooth system and allow for both a quality check on the strategic arterial data being collected by the Bluetooth system as well as broader collection of arterial data on secondary arterials.



Figure 2. Bluetooth Mounted on Pedestrian Head

ASMS at a Glance:

- Proven Technology
- Thirty eight Bluetooth stations along four diversion routes: US 75 frontage roads (NB and SB), Greenville Av., and Coit Rd.
- Approximately 65 mainlane miles monitored
- Ideal separation: 1 to 2 miles
- DSS will use travel time and speeds on diversion routes to select a recommended plan

From Forest to Walnut Hill (1.95 miles) - Individual MAC Address Matches - 4/18/2013

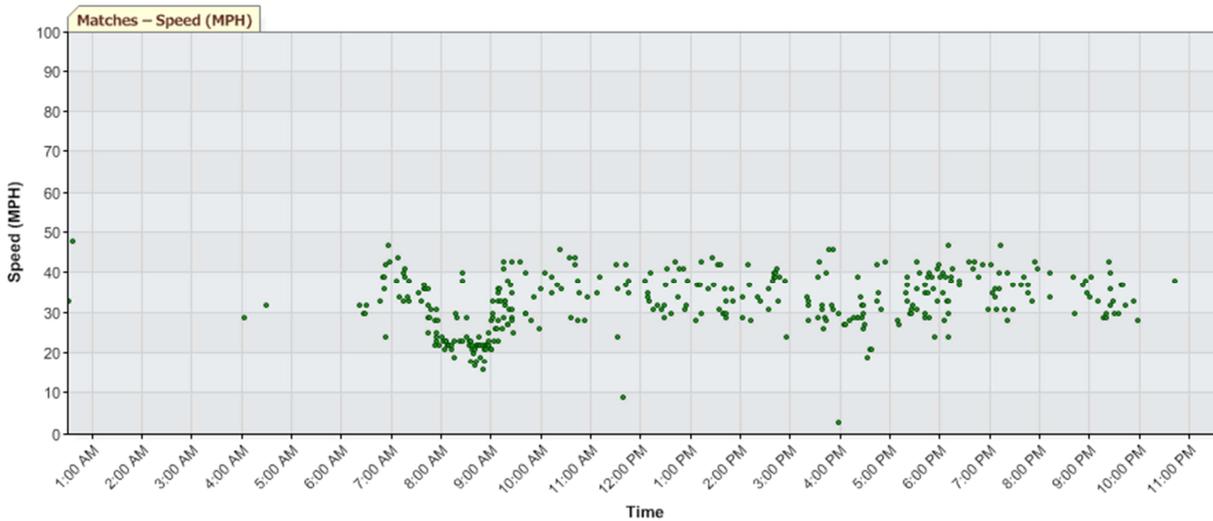


Figure 3. Bluetooth Speed Reads along Greenville Av.

FOR MORE INFORMATION

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