0-6659: Synthesis of TxDOT Uses of Real-Time Commercial Traffic Routing Data

Background

Traditionally, the Traffic Operations Division (TRF) and the TxDOT districts have collected traffic data through a system of fixed traffic sensors, supplemented with probe vehicles using transponders where they are available and where their numbers are sufficient. TxDOT owns and maintains the traffic sensors and toll tag readers and manages the data that come from these systems. In recent years, private sector (PS) providers of traffic data have entered the scene, offering traveler information such as speeds, travel time (TT), delay, and incident information.

What the Researchers Did

The research team gathered information by conducting a literature and Internet search followed by a phone survey to private sector data providers and consumers. Researchers then involved TxDOT district personnel in a webinar to discuss PS data and solicit their input to develop a recommended strategy to TxDOT.

What They Found

The webinar with TxDOT indicated that the limitations of PS data (e.g., lack of per-lane and count data) are not impediments to its use. Researchers believe the most important factors to TxDOT in deciding whether to purchase private sector data are: meeting SAFETEA-LU Section 1201 requirements for data coverage, data accuracy and availability, life-cycle cost, network coverage, and TxDOT control of the data stream. Section 1201 requires states to provide coverage of all major roadways by November 2014, which is feasible with PS data. Table 1 summarizes findings comparing fixed sensors with data from PS data providers. Cost comparisons shown by Figure 1 (spacing 3 to 5 miles) indicate that PS data are low-cost.

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Table 1. Summary Comparison of Data Sources.

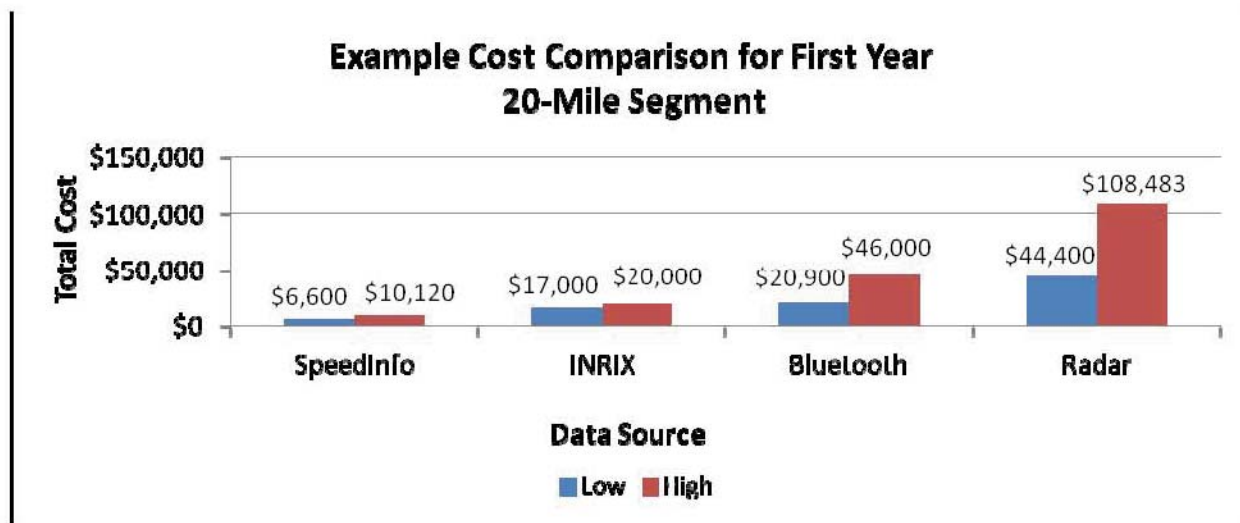| Measure of Performance	Private Sector Data	Bluetooth	Loops	Video	Side Fire Radar	Magnetometers
Speed Error (%)	±5–10	±5–10	±5–10	±5–20	±5–10	±2–10
Count Error (%)	N/A (w/o TxDOT sensors)	N/A	±2–5	±5–20	±2–5	±2–5
Data Source	GPS: High Doppler Radar: High Bluetooth: High	High	High	Medium	High	High
TxDOT Control of Data Stream	Low	Low	High	High	High	High
Uses of data -Speed/TT -Counts -Occupancy	Yes No No	Yes No No	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
Coverage	Traffic Message Channel (TMC) Network	As determined by TxDOT				

Note: N/A = Not Applicable

Figure 1. Example Comparison of Commercial Data with Fixed Sensor (Radar).

What This Means

None of the perceived negative factors regarding PS data should be construed as a deterrent to its use. However, any remaining apprehensions can be resolved through development of a pilot test. The research team recommends that TxDOT select two or more providers of PS data and select a trial network that already has a means of verification. This step would begin immediately through an Implementation Project Recommendation (IPR).