



Optimal Traffic Monitoring in a New Data Age – Executive Summary

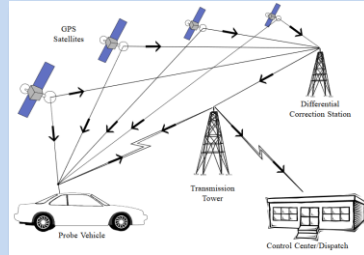
Many agencies are re-examining how best to architect their traffic monitoring and management systems using multiple data sources, types and levels of fidelity, the design of a monitoring system is becoming requirements driven. Some of the data sources being used today are outlined below.

Conventional Sensors



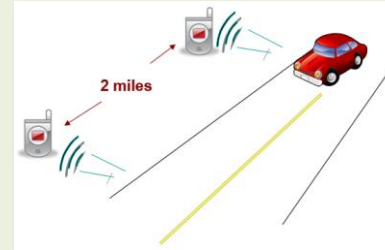
- Still needed and viable, and will be for the foreseeable future.
- Justified on critical portions of the roadway where ownership and direct control of the data stream trump the value proposition of probe data.
- Needed to continue to sample across a broad array of road classes and types as ground-truth sources for spot speed and counts.
- Data are owned by the agency and can be shared and used without being subject to licensing.

Commercial Probe Data



- Useful for any state DOT and sub-jurisdictions.
- High value proposition, scalability and usefulness for a variety of applications from planning to operations.
- Analytics options are robust and growing, and supported by a number of industry players.
- Key personnel within the DOT should be well-versed in its capabilities and limitations.
- **Useful Applications: Travel Time on Signs, Signal Performance Studies, Smart Work Zones**

Re-identification Data



- Bluetooth and WiFi
- Should be viewed as travel time sensors (as opposed to speed sensors). Such data is needed for travel time or O-D studies.
- Re-identification is typically used as ground truth for validating accuracy of sources of travel time data (such as commercial probe data).
- **Useful Applications: Travel Time on Signs, Travel Time Validation, Signal Performance Studies, Origin-Destination Studies, Smart Work Zones**

HRCD (High-Resolution Controller Data)



- HRCD and the corresponding Automated Traffic Signal Performance Measures (ATSPMs) are in the domain of traffic signal engineers.
- Signal upgrades should include consideration for acquisition and processing of HRCD and ASTPMs.
- **Useful Applications: Signal Performance Studies (ATSPMs)**

Emerging, Leading Edge Technologies

Trajectory Data

- Waypoint data every 1 second
- OD studies, arterial analysis, freight studies
- Market-ready by 2021

Estimated Volumes from Probe Data

- AADTs, turning movements, vehicle/hour
- I-95CC Validation
- Market-ready by 2021