



PennDOT I-83 ARMS

Client: PennDOT, District 8

Location: Harrisburg, PA



System Features

- DYNAC® Software •
- Decision Support Management •
- Automatic Incident Detection •
- Traffic/Incident History Database •
- Radar Vehicle Detectors •
- DMS •
- CCTV •
- Reporting Subsystem •



Interstate 83 is a key transportation link carrying heavy inbound commuter traffic to Harrisburg, PA from outlying areas. Not only does lane reduction at the I-83 to State Route 581 interchange cause congestion, but drivers also encounter limited sight distance due to crest curves. These conditions result in conflicts between high speed traffic approaching stopped traffic.

To alleviate these conditions and reduce the number of crashes, PennDOT District 8 initiated a program to implement an Automated Real Time Messaging System (ARMS). The ARMS automatically detects slowed and stopped traffic conditions and displays advisory messages warning motorists to reduce their speed.

PennDOT selected Transdyn to develop and implement a roadside data network, vehicle detectors and master control server. Video and side-fire radar traffic detectors were placed at strategic locations to monitor traffic speed, volume and occupancy. Transdyn's DYNAC® software collects traffic data in real time, evaluates it to determine traffic conditions, and then automatically displays the appropriate traffic advisory messages on dynamic message signs (DMS).

The entire system is deployed in multiple roadside enclosures interconnected by Ethernet radio and frame relay connections. The DYNAC® software runs on an industrial server located in the field. The ARMS operates without operator intervention, however, PennDOT operators have the ability to monitor the highway remotely from the District 8 office. They receive e-mail and voice message notifications of stopped traffic events and system alarms and are able to observe real time traffic conditions via digital video cameras operating over the ARMS network. DYNAC® records traffic data in a relational database, and PennDOT computers can upload it on demand.