

POWERFUL NEW TECHNOLOGIES BENEFIT THE PUBLIC

WisDOT implemented several new technologies to improve transit times, safety, and emergency response times, and inform travelers with real-time data. These new technologies include Adaptive Signal Control (ASC), full matrix color Dynamic Message Signs (DMS), and Bluetooth detectors. Traffic modeling performed during the design process indicated that a 20 percent reduction/diversion in traffic to local roads was necessary to maintain operations along Verona Road and the Beltline during construction. This diversion was achieved (and confirmed by WisDOT monitoring) by implementing various combinations of improved signage, traffic signals, and intersection geometrics, as well as implementation of ASCs and DMS to outlying intersections and affected routes. WisDOT (in conjunction with Dane County and the cities of Fitchburg and Madison) deployed an ASC system at 14 existing traffic signals along affected local roads to monitor traffic and make real-time adjustments to signal timings, which minimized delays caused by the varying diverted traffic volumes. Studies have shown that systems with an approximate 20 percent reduction in vehicle delay also realize up to a 15 percent reduction in vehicle emissions.



New DMS along the Beltline provided travel times for alternative routes to drivers throughout construction.

During meetings with the local emergency services groups, representatives conveyed their concerns about impacts to their response times during construction. Therefore, WisDOT and the Strand Associates design team prepared GIS shape files of each construction sequence for the Dane County 9-1-1 Computer Aided Dispatch system. During construction, as the contractor switched between the various sequences, WisDOT was able to inform Dane County of which sequence was in place to efficiently dispatch emergency services. Real-time GIS files were provided directly to first responders through mobile phone applications.

– By Joe Bunker, P.M., Strand Associates, Inc.®