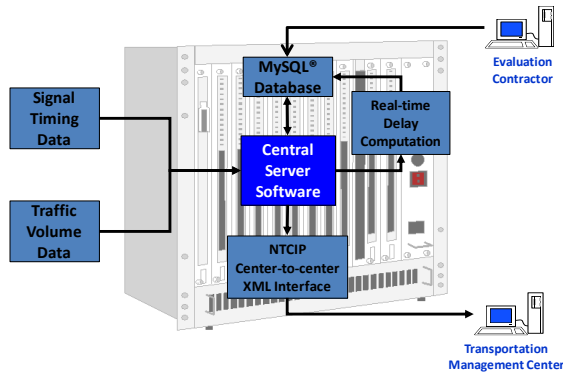# SafeTrip-21
Real-time Monitoring of Signalized Intersections
USDOT/RITA/Volpe TSC

Duration: 2010-2011
Project Cost: $85,000
Firm Fee: $85,000
**Role: Prime Consultant**

TrafInfo Communications, Inc. was selected by the US Department of Transportation's Research and Innovation Technology Administration (RITA) to demonstrate an ITS application of real-time monitoring of signalized intersections as part of the SAFETRIP-21 program. It involved installation and demonstration of the proposed ITS application at a test site in the San Francisco Bay Area working in collaboration with California Department of Transportation and assistance from the UC Berkeley's PATH research center.

As part of this project, TrafInfo developed an interface to the 2070 Advanced Traffic Controller (ATC) running the standard CalTrans software as per the AB3418 and NTCIP protocols. TrafInfo utilized their patented Trafmate™ transceiver to interface with the 2070 controller as well as with GTT's Canoga™ loop detectors through separate serial ports to collect signal timing and traffic volume information on a cycle-by-cycle basis.
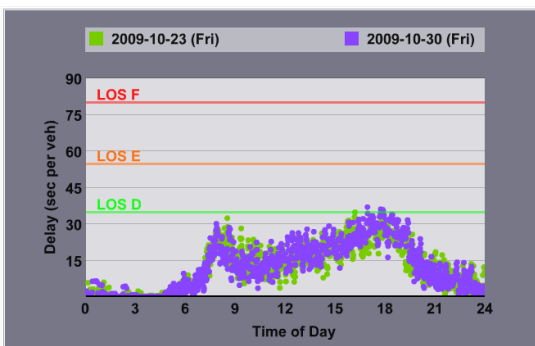
The signal timing and traffic volume information was transmitted to the TrafInfo server at the end of each signal cycle. The central server software logs the information into a MySQL® database, and computes the control delay as per procedures within the Highway Capacity Manual.

Unique aspect of the system is the ability to estimate saturation flow rate (SFR) and the arrival type by lane on a cycle-by-cycle basis based upon the volume, occupancy and headway information collected by the system. This allows for a more accurate estimate of control delay using HCM procedures. The system will allow traffic engineers to determine if signal retiming is necessary based upon level of service, and if so, enable the traffic engineers to upload new signal timing plans, and more importantly confirm the improvements resulting from it. Improvements resulting from the signal retiming can be documented.