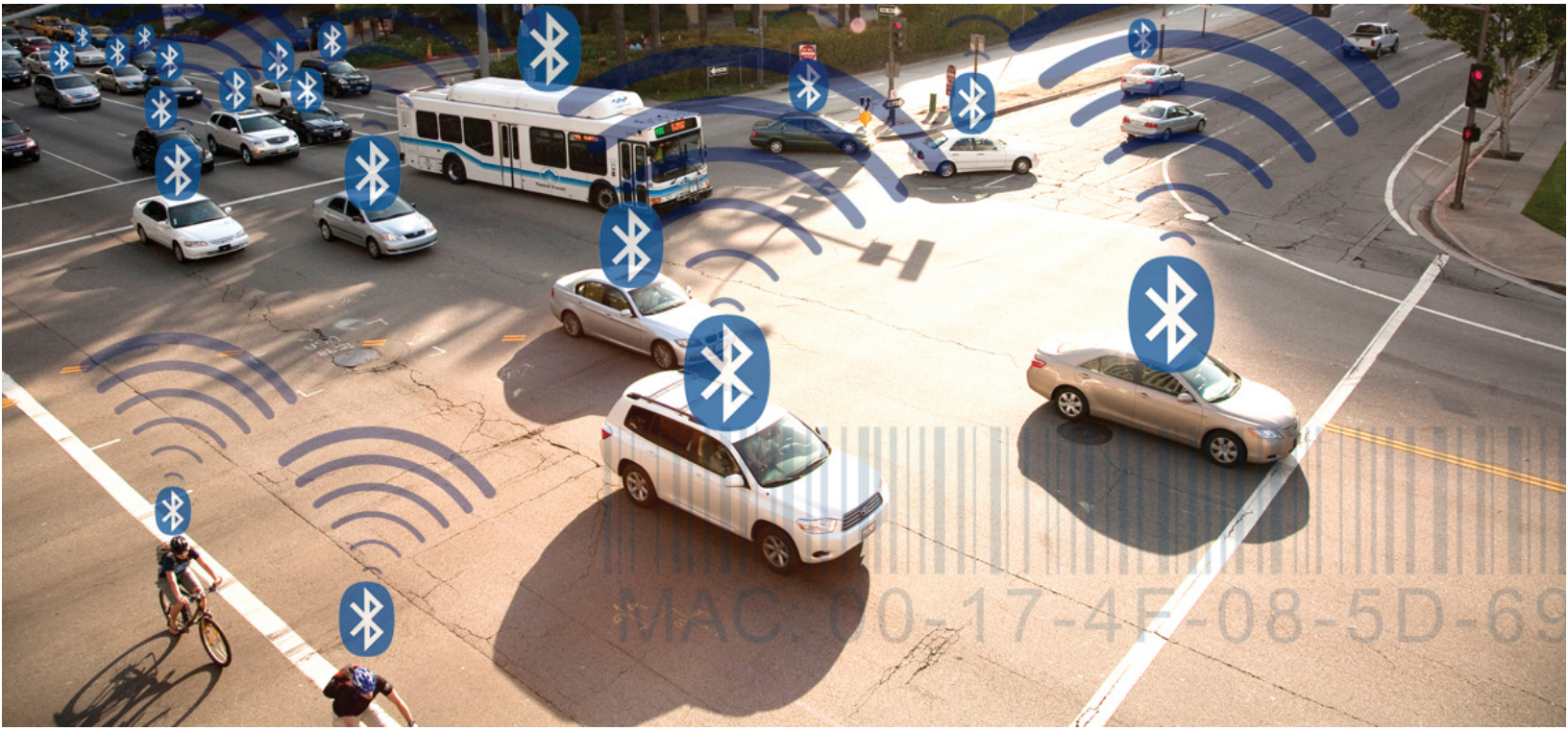
White Paper:

Vantage Velocity



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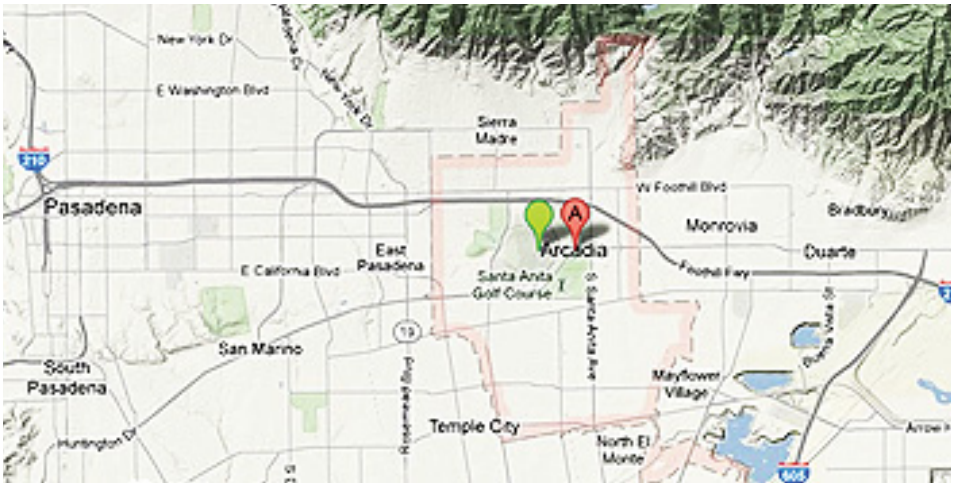
Problem

The City of Arcadia, California is made up of roughly 60,000 residents with approximately 59 traffic signals. Arcadia is also home to the famed Santa Anita thoroughbred horse racetrack, bringing tens of thousands of visitors from southern California and other regions there each race day. This provides significant and highly variable traffic management challenges for the City.



In 2008, the City implemented their overall traffic signal control system (TCS) to provide their residents with smoother traffic flow. Recently, the City started expanding its TCS system by bringing more of its traffic signals, CCTV cameras and vehicle detection stations (VDS) under TCS control. With this latest expansion, the City wanted to add performance measuring and monitoring into their traffic management program, leveraging their existing system to provide a more robust data output. City staff requested a system that would continuously and automatically monitor and graphically report on congestion levels along the city's busy arterials. Equipping the city with a dense network of standard detection systems at the intersections to achieve this monitoring system proved to be too expensive, and the accuracy of data was too low for the City's requirements.

Vantage Velocity processors

Solution

City staff decided that a Bluetooth-based data collection system would provide the most cost effective means of gathering the large amount of raw data needed to characterize real-time congestion. Iteris' Vantage Velocity Bluetooth Data Collection System was the selected system, partnered with Post Oak Traffic Systems from the Texas Transportation Institute. This data is ingested into this new special-purpose system, creating travel time and speed profiles on a congestion map interface, as well as feeding to an iOS- or Android-compatible tablet / smartphone application. The combined output would provide the residents of Arcadia with real-time travel time information to guide their local route decision making. Fifteen (15) Vantage Velocity field processing units were installed in existing traffic signal cabinets, communicating via Ethernet to the host software operating

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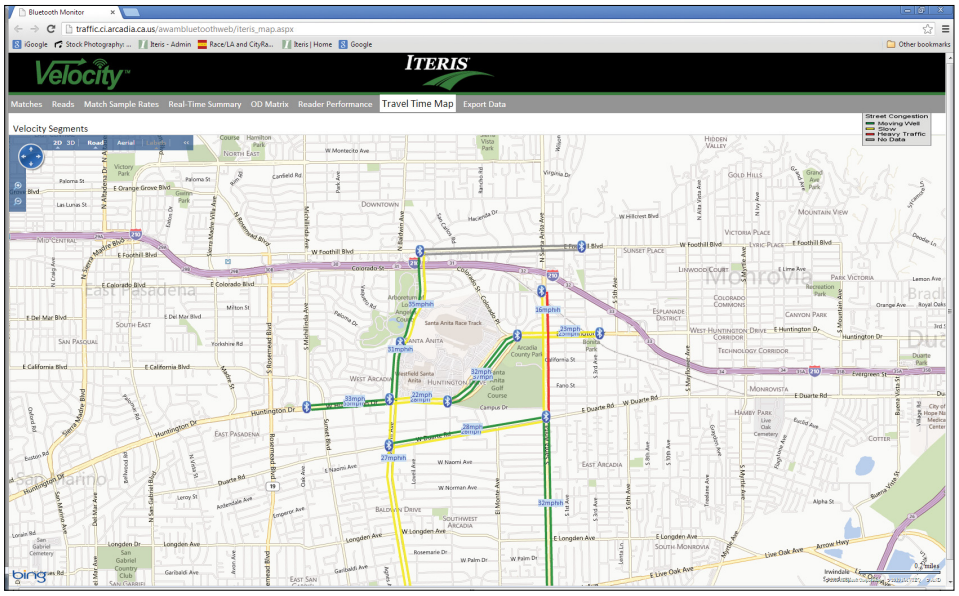
on a City-owned server. No additional communication infrastructure or poles were required. The system was installed in early 2012 and is providing travel time information to the City's traffic control system via its XML interface.

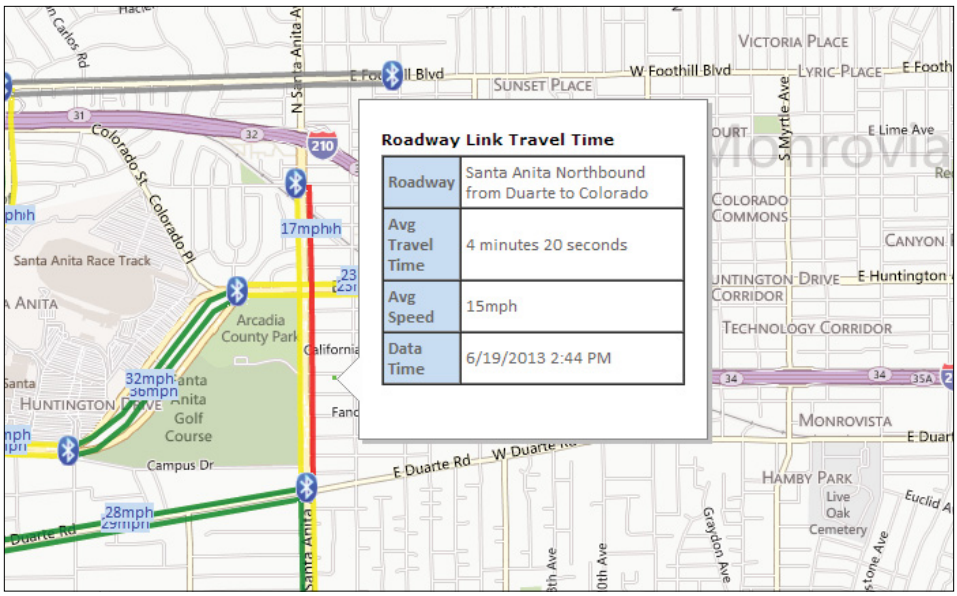
Results:

Vantage Velocity was successfully deployed as a turn-key system within the City's required tight time schedule and limited budget. On a daily basis, City staff use the Velocity system's revelations of the dynamic traffic flow to detect incidents, identify recurring congestion that may be susceptible to correction with updated coordination timing, and envision strategies to reduce congestion.

"Vantage Velocity has done exactly what we wanted" says Kevin Merrill, the City's traffic engineer. "The system helps me determine where to work on improving coordinated signal timing to balance out delays. Equipped with this new arterial performance monitoring tool, we find and work on those trouble spots far easier than in the past. It is also very easy to setup travel-time segments and requires very little staff time keeping the automated system up and running, which is essential due to limited staff availability. We are extremely happy with the results and how quickly the project was completed start to finish. Working with Iteris to accomplish this project has been an absolute pleasure. They are a great company to partner with on ITS projects."

Kevin Merrill
Traffic Engineer, City of Arcadia





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