

TxDOT Innovations and Technology Deployment Briefs

Connected Signals



PROBLEM

The Tyler District has 8,911 lane miles spread over eight counties and maintains and operates over 200 signals. Concerns such as the low reliability of spread spectrum radios, frequent utility provider line adjustment requests, and limited signal personnel, have led the District to pursue other options for signal connectivity to lessen travel and response times for signal-related issues.

SOLUTION

To improve communication reliability, cellular modems were installed at each intersection and connected to the Traffic Management Center (TMC) at the District headquarters. More reliable than spread spectrum radio, cellular modems allow signal personnel to perform real-time signal timing adjustments remotely, thus reducing travel and response times.

With equipment support from the Traffic Safety Division (TRF), the District signal personnel performed the troubleshooting and field installations and completed this effort solely with state forces.

BENEFITS

With increased connectivity reliability, District signal personnel can view signal performance through signal timing software in the TMC. Along with the capability of real-time timing adjustments in the TMC, signal locations can be prioritized to send alarms or alerts to signal personnel in the field.

KEY TASKS

- Develop inventory of signalized intersections to ensure all locations are captured.
- Coordinate with TRF for alternate, more reliable connectivity source.
- Develop implementation for cellular modems.
- Develop map view of signalized locations in signal timing software at TMC once installations are complete.



PROJECT DELIVERY



CUSTOMER FOCUS



FOSTER STEWARDSHIP



PRESERVE ASSETS



OPTIMIZE PERFORMANCE



PROMOTE SAFETY

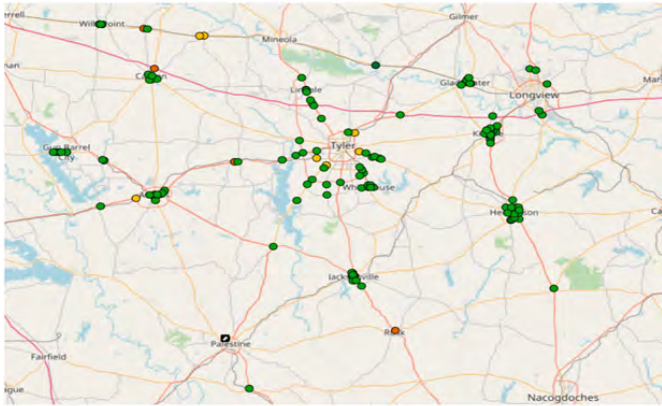


VALUE EMPLOYEES

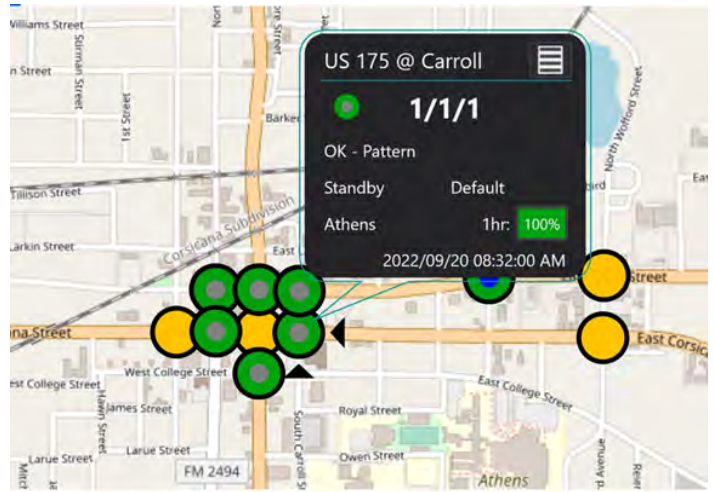


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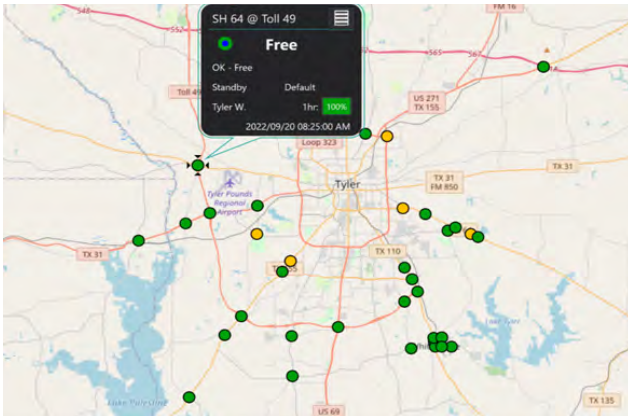
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Map overview of signal locations District wide.



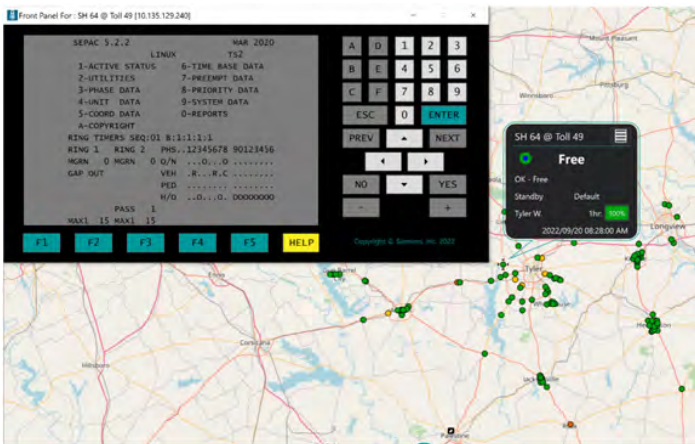
View of signal locations running in coordination.



Specific signal location status checked in signal timing software.



Cellular modem installed in signal cabinet.



Front panel module to allow signal timing changes remotely.



Front panel of controller in signal cabinet.



POINT OF CONTACT

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