PROJECT INFORMATION

Project Name	RoadX & Smart Mobility Situational Awareness and Snowplow Route Optimization
Location	Colorado
Work Type	GIS Data Analysis and GPS/AVL solutions
AECOM Role	Prime
Total Project Fee	$423,000
Project Start Date	06/2015
Project Completion Date	08/2018
Project current Status	Complete

CLIENT INFORMATION

Client Name	Colorado Department of Transportation
Client Project Manager Name	John Williams
Client PM Email	johnd.williams@state.co.us
Client PM Phone	303-512-5823

AECOM PROJECT TEAM

Project Manager	Kyle Williams
Key Staff	Kyle Williams, John Fuller, Kyle Marek, Chase Musgrove, Robert Banuealos

WORK PERFORMED

- AECOM worked with CDOT/ITS to assist with the implementation of Qognify Situator, a situational awareness platform that relies heavily on current, complete, and accurate GIS data. This COTS tool was integrated with CDOT's automatic vehicle location (AVL) system to display GIS data and asset status in real-time. Intelligent Snowplow activities were planned and dispatched based on weather events and road conditions were maintained through increased communication between field and dispatch personnel.
- AECOM reviewed TMC operations to identify processes, technology, and software improvement recommendations. AECOM reviewed available documentation and interviewed staff at all organizational levels (management, supervisors, and operators) to gather a complete understanding of how the current programs and systems operate. AECOM used a TMC Evaluation Form, a series of questions designed to cover 18 areas of focus to improve operations efficiencies.
- AECOM conducted workshops with stakeholders to document existing workflow processes and identify areas of improvement via the introduction of relevant GIS data. These use cases and subsequent GIS data and attribution requirements were documented to improve an understanding of the existing infrastructure and assets.
- AECOM inventoried and reviewed GIS data representing Colorado's transportation network and associated assets that make up the intelligent transportation network – variable message signs, friction sensors, fiberoptic network, traffic signals, etc. Features were attributed with relevant and meaningful data, and data was developed for missing

features. AECOM determined the appropriate data authoring source to minimize duplicative data updates and identify any instances where data automation would add efficiencies.

- Data Analysis findings, AECOM developed new data, tools, and apps for using CDOT information. This task included chain laws, crash sites, secondary crashes, and GPS/AVL truck tracking to enhance the Colorado Department of Transportation's (CDOT) maps. This task supported the implementation of GIS maps and web services for the Qognify Situator Web application, which delivers an integrated, real-time application to CDOT.

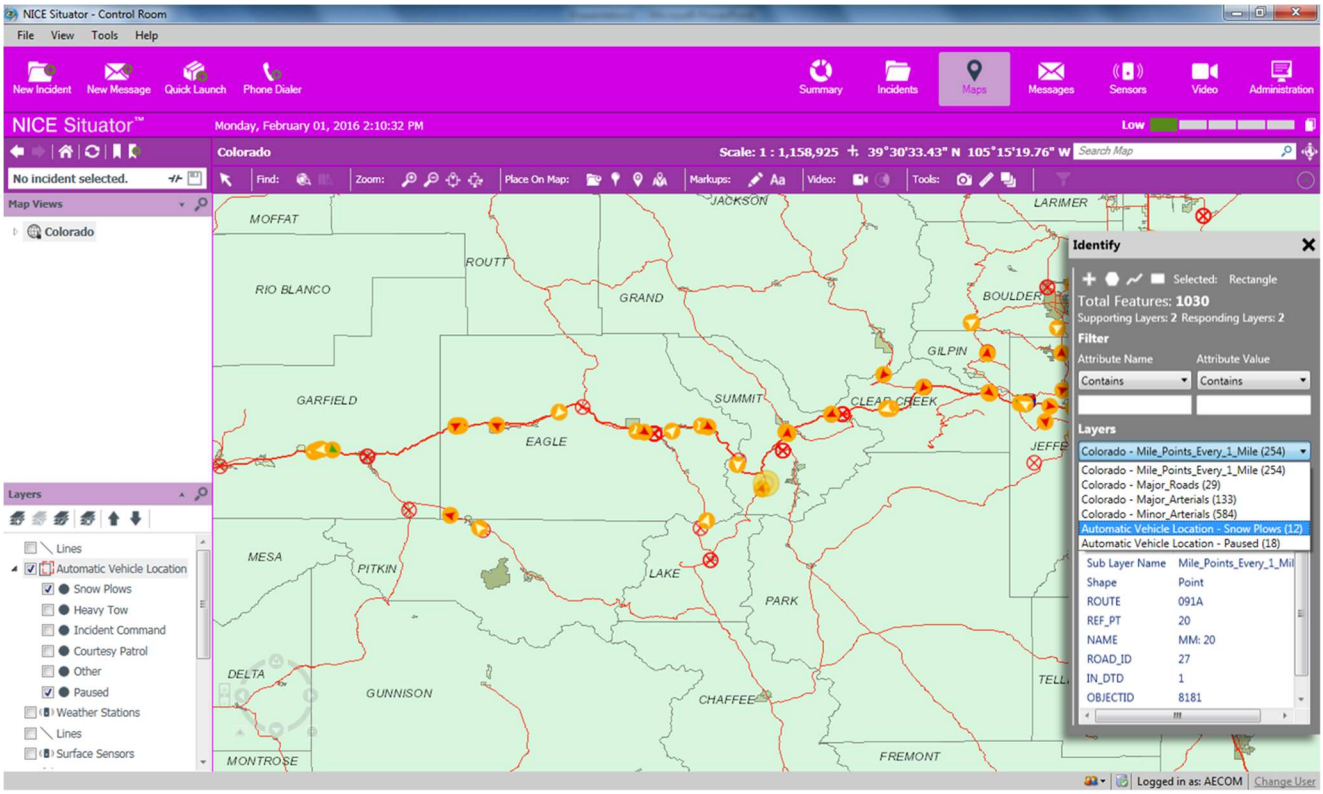
CLIENT BENEFITS

- CDOT received user business cases and a comprehensive data inventory used to identify operational and maintenance data to help improve operational efficiencies that aligned with the current concept of operations (COP).
- GAP Analysis provided insight into issues or missing information that would provide a benefit to CDOT. Based on the gap analysis AECOM developed data and refined or created tools and applications to improve CDOT operations.
- Real-time awareness of incidents, asset locations (mobile and static), asset status enables effective collaboration enabling confident decision making.

BEST PRACTICE / LESSONS LEARNED

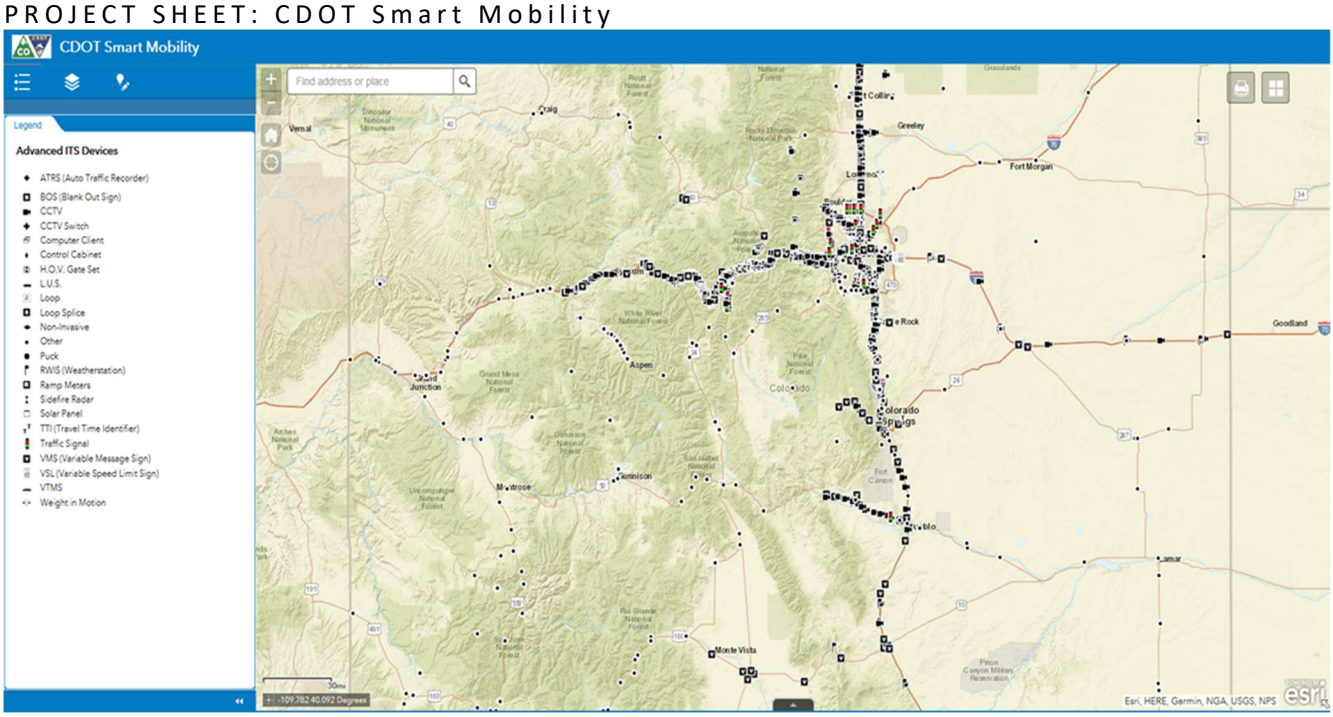
- Work with stakeholders early to identify opportunity for process improvements and gained efficiencies.

PROJECT PHOTOS



Snowplow location AVL

PROJECT SHEET: CDOT Smart Mobility



ITS device locations