

Independent Validation Study

Source: Atkins North America, Inc.



Longmont, Colorado

Adaptive Traffic Signal Project

Project Overview

Based on previous successful deployments of In|Sync along the 10th Street in Greeley, Colorado and on U.S. Highway 85, Colorado DOT and City of Longmont staff decided to use the same adaptive traffic signal control system on thirteen signals along SH 119 - to reduce congestion and maximize benefits of signal timing.

Project Goals

- Implement a better signal control system that will continuously adjust to traffic conditions;
- Reduce wasted costs in the form of travel time, delay, fuel consumption, and staff effort to maintain and re-time the signals;
- Create a greener environment for the community by reducing vehicle emissions.

Corridor Overview

SH 119, Ken Pratt Boulevard within Longmont Colorado, is the primary East-West corridor serving the greater city area. The roadway has rural characteristics (divided highway with a grassy median) with large spacing between signals and high speeds near the west and east ends of the study area. The middle portion of the corridor is more urban in character, with lower speeds and shorter distances between signals. The traffic on the corridor caters to local traffic, visitors, pass-through trips, and shopping center visitors. The corridor provides direct access to most of the major North-South arterials serving the area, the downtown central business district, and residential areas located directly adjacent to the highway.

The corridor length is 6.5 miles and comprises 13 signalized intersections.

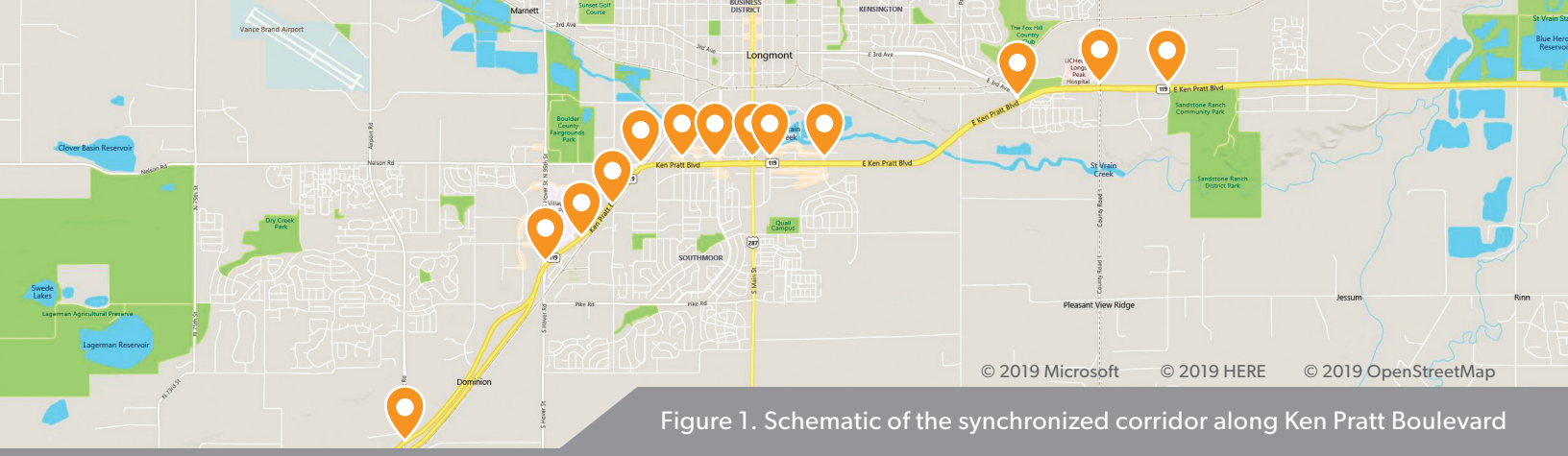
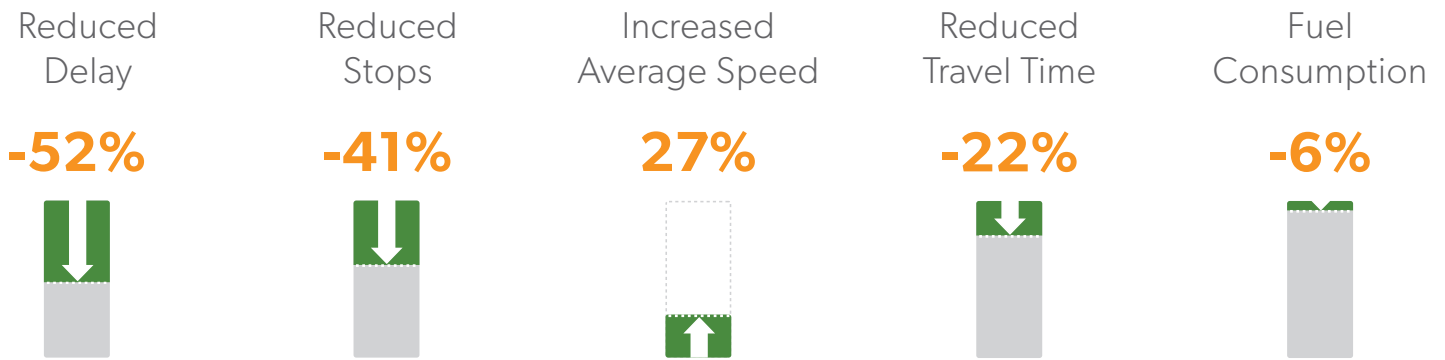


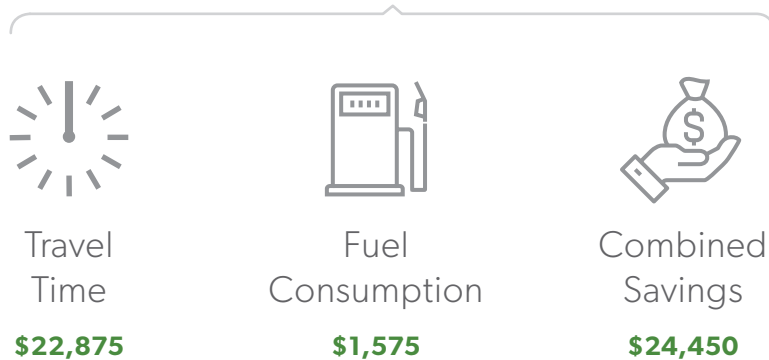
Figure 1. Schematic of the synchronized corridor along Ken Pratt Boulevard

Results and Benefits

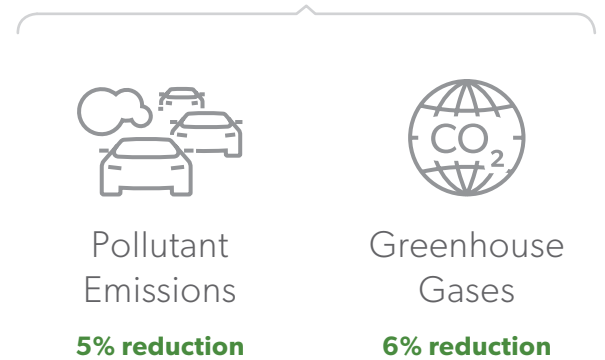
The In|Sync deployment achieved significant reduction in stop time and delay along the corridor, which translated into drivers being able to travel at a much higher speed. The study also showed less time needed to travel across intersections and reduction in fuel consumption. The study that was conducted by Atkins NA, Inc. established that CDOT R4 and City of Longmont have achieved the project goals through the implementation of the In|Sync adaptive traffic signal control system.



Economic Benefits (Daily)



Environmental Benefits (Daily)



Note: Assumes a value of time of \$19.50 per vehicle, an average vehicle occupancy of 1.3 persons, and a \$2.64 per gallon fuel costs (May 2018). The results represent median values, taken through drive runs along both Eastbound and Westbound approaches during three time intervals – AM Peak, Middy and PM Peak.



“ Our primary goal was to reduce congestion and gain efficiency of traffic flow. With the installation of In|Sync on SH 119 and US 287, we see significant reduction in travel time and delay. We experience smoothly flowing traffic and the best part is that we have fewer public complaints. The City of Longmont was so impressed, they will be placing the In|Sync system on other roads within the city.”

Larry Haas, PE | Traffic Operations Engineer | Colorado, DOT