

PROJECT DESCRIPTION

The Washington Road Corridor is a 1.03 mile long arterial corridor with 5 traffic signals. The arterial ran without coordination until 1995, when a coordinated signal system was implemented and periodically updated. This study compares the operation of the Washington Road corridor under its existing timing schemes with its operation under the InSync adaptive traffic control system.

OBJECTIVE

Reduce stops, travel time, delay and fuel consumption along the artery by optimizing traffic signal operations using InSync.

CHALLENGE

A major challenge of coordinating Washington Road is the intersection at North Belair Road, another major arterial. The traffic flow is split about 60/40 with >24,000 ADT on the south side and >17,000 ADT on the north side of the intersection.

SOLUTION

Rhythm Engineering installed the adaptive traffic signal system at 5 signals along the 1.03 mile corridor during January of 2010. By early February, Rhythm Engineering had configured the system, monitored its performance, and made the appropriate adjustments to the system to optimize traffic flow.

DATA COLLECTION

Field data were collected along the study corridor during two study periods. The first was conducted January 12, 2010, prior to the installation of the InSync system. The second was conducted February 9, 2010, 4 weeks after InSync was deployed. Each study was conducted during normal weekday travel conditions to ensure similar travel patterns between studies. This corridor has > 40,000 ADT (average daily traffic).

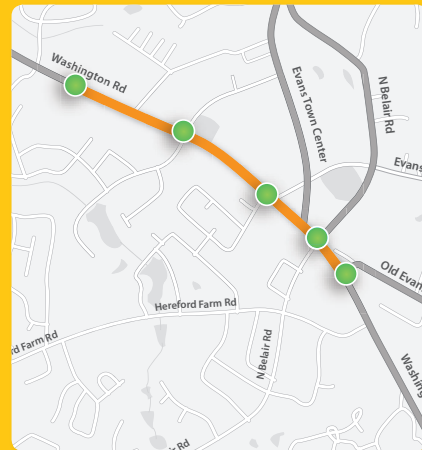
Travel time runs were conducted through the corridor in both directions during four time-of-day periods (AM peak, noon peak, PM peak, and evening) on Tuesday, Wednesday, and Thursday.

The drivers conducting the travel time used the "floating car method," in which the drivers attempt to travel with the flow of traffic, changing lanes so as to pass as many cars as they are passed by. This method is used so that the travel times collected are representative of the travel time of the average vehicle traveling through the corridor.

Data were gathered by driving the corridor utilizing GPS equipment and software, collecting data, then processing the data using PC-Travel software.

BENEFITS

Calculations are based on an ADT of 40,000 vehicles and an assumption that the change impacts 80% of the ADT. All calculations are based on normal weekday travel and the results indicate approximate benefits to drivers.



The green markers indicate the intersections where InSync is deployed. The Washington Road corridor is highlighted in orange.

It was amazing to see the transformation in the road in mere minutes after the system was turned on. In the past five years, I have driven this corridor several times a day. I can clearly remember only making it through the corridor, without stopping, one time in those five years. We were able to do it three times in a row within 30 minutes of activating the system.

Matt Schlachter, P.E.
Director
Columbia County
Board of Commissioners

	DAILY BENEFIT	ANNUAL BENEFIT
Vehicle Hours of Travel (reduction)	408 hours	105,574 hours
Fuel Consumption (decrease)	164 gallons	42,715 gallons
Stops (eliminated)	35,840 stops	9,344,000 stops
Total Economic Benefit (fuel * \$2.50 + stops * \$0.10 + time * \$15.00)	\$10,068	\$2,624,802

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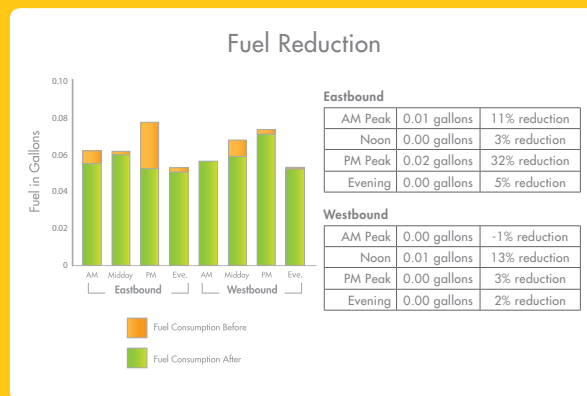
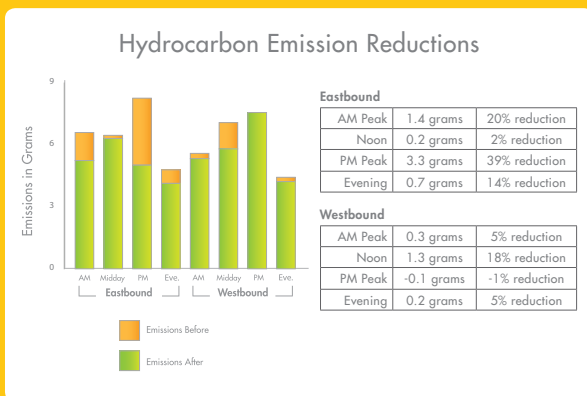
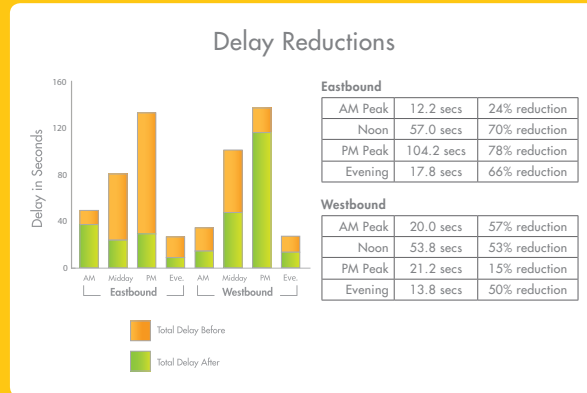
EVANS GEORGIA

WASHINGTON ROAD CORRIDOR

VALIDATION STUDY BRIEF

RESULTS

The study evaluates and compares the travel time, number of stops, speed, delay, emissions and fuel consumption before and after the implementation of the InSync system.



MOST NOTEWORTHY IMPROVEMENTS:

- 75% reduction in stops
- 78% reduction in delay
- 93% increase in average speed
- 32% reduction in fuel consumption
- 48% reduction in travel time
- 39% reduction in emissions