



WICHITA KANSAS

WOODLAWN CORRIDOR

VALIDATION STUDY BRIEF

PROJECT DESCRIPTION

The City of Wichita installed the InSync adaptive traffic control system at five intersections on N. Woodlawn Blvd. at its intersection with Kansas highway 96. This study compares the operation of the Woodlawn Boulevard corridor under its existing timing schemes with its operation using 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

The major challenges of coordinating the signals on the N. Woodlawn Boulevard corridor are unpredictable fluctuations in traffic volume, highway-related traffic and high pedestrian volume. The corridor was previously controlled by a coordinated timing plan.

SOLUTION

Rhythm Engineering deployed the InSync adaptive traffic signal system at five intersections along a 0.7 mile portion of the corridor in February 2011. Immediately thereafter, Rhythm Engineering configured the system, monitored its performance and made the appropriate adjustments to the system to optimize traffic flow.

DATA COLLECTION

Field data was collected along the study corridor in June 2010 prior to the installation of the InSync system. The data collected during this period was used as the baseline for comparing measures of effectiveness. Data was collected again in March 2011 after the InSync system was installed and had been in operation for several weeks.

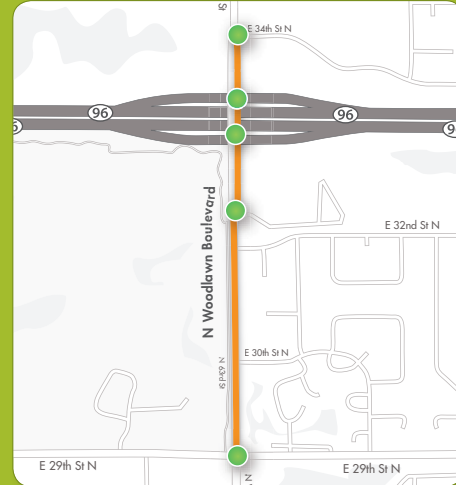
The travel time runs were conducted through the corridor in both directions during three time-of-day periods (AM Peak, Midday, PM Peak). The drivers conducting the travel time study used the "floating car method," in which the drivers attempt to travel with the flow of traffic, changing lanes so as to 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 was gathered by driving the corridor utilizing GPS equipment and software, collecting data, then processing the data using PC-Travel software.

PEAK-TIME BENEFITS

InSync creates the following benefits during peak times on weekdays, which accounts for 50% of the corridor's volume. Total benefits are likely greater; please contact us for more specifics. Calculations are based on an ADT of 25,389 vehicles using data from PC-Travel and vehicle counts from InSync video detection. All calculations are based on normal weekday travel and the results indicate approximate benefits to drivers.

	PEAK-TIME DAILY BENEFIT	PEAK-TIME ANNUAL BENEFIT
Vehicle Hours of Travel (reduction)	133 hours	34,580 hours
Fuel Consumption (decrease)	114 gallons	29,640 gallons
Stops (eliminated)	14,627 stops	3,803,020 stops
Total Economic Benefit (fuel * \$2.50) + (stops * \$0.10) + (time * \$15.00)	\$3,751	\$975,260



The green markers indicate the intersections where InSync is deployed. The N. Woodlawn Boulevard corridor is highlighted in orange.

The InSync system is optimizing the signals to improve service to both the corridors and side streets. Wichita motorists are experiencing noticeable improvements in travel time and number of stops.

Dan Cook
Project Engineer
Rhythm Engineering

Project Contact: Brian Coon
Assistant Traffic Engineer
City of Wichita, Kansas
316.268.4448
bcoon@wichita.gov



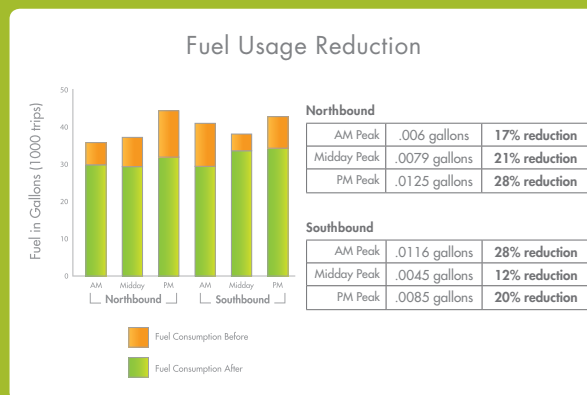
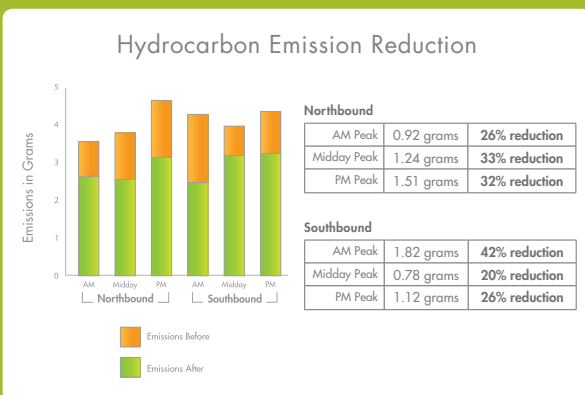
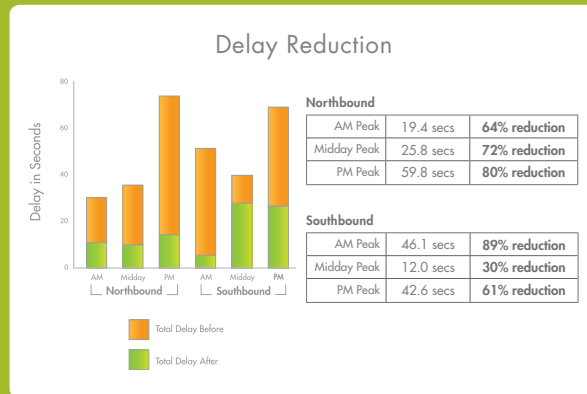
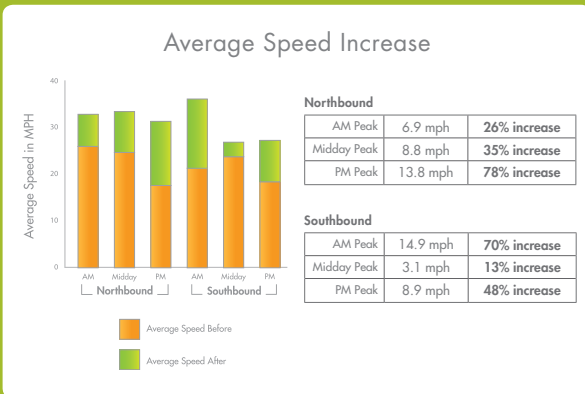
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RESULTS

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.



Data collected by the City of Wichita, Kansas, 2011.

MOST NOTEWORTHY IMPROVEMENTS:

- 100% reduction in stops
- 89% reduction in delay
- 78% increase in average speed
- 28% reduction in fuel usage
- 44% reduction in travel time
- 42% reduction in emissions