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## City working on traffic flow



Green lights line up on S.W. 6th looking west from Kansas Ave., but some intersections in Topeka are lagging in traffic flow efficiency. A federal grant will pay for upgrades that will allow for real-time adjustments in traffic signals.

BY [PHIL ANDERSON](#)

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Traffic on some of Topeka's busiest streets should begin to flow more smoothly in coming months, thanks to a \$660,000 federal grant that will synchronize signals at intersections along the thoroughfares.

Besides saving motorists time by reducing waits at red lights, the new system also will save fuel and be kinder to the environment, reducing carbon-dioxide emissions from vehicles into the atmosphere.

Scott Alisoglu, a funding resource analyst for the city's public works department, said federal stimulus money will fund InSync adaptive traffic systems at 22 Topeka intersections.

The first section to receive the InSync system will be S.W. 21st Street from S.W. Wanamaker to S.W. Fairlawn, an area that is one mile in length with seven traffic signals.

The second section that will receive the InSync system is S.W. Wanamaker from S.W. 10th to S.W. 21st, a stretch of roadway that is about one and a half miles in length with eight traffic signals, one of which will be done in the first section.

The other eight systems will be installed on S.W. Topeka Boulevard from S.W. 29th to S.W. 45th.

The InSync traffic signal system, developed by Rhythm Engineering, is in use in many communities, including the Kansas City suburb of Lee's Summit, Mo.

### HOW IT WORKS

InSync is a traffic signal system developed by Lenexa-based Rhythm Engineering that utilizes state-of-the-art sensor technology, image processing and artificial intelligence.

- InSync does away with set cycle lengths, using digital cameras to coordinate signals based on real-time traffic demand.
- Cameras are connected to a processor in the traffic control cabinet, and data is updated every second.
- The processor reads and interprets images of vehicles approaching an intersection and the occupancy of each lane.
- Stops at an intersection are reduced by 90 percent, travel time by 20 to

60 percent, and fuel consumption by 10 to 20 percent.

- In case of emergency or fog, the system relies on four weeks of data to process signals.

InSync integrates state-of-the-art sensor technology, image processing and artificial intelligence to coordinate signals according to real-time traffic demand.

According to data provided by InSync, the system saves about 5,000 gallons of gasoline per intersection per year, assuming 25,000

vehicles travel through the intersection per day.

City traffic engineer Linda Voss said efforts to keep traffic flowing will help motorists avoid unnecessary waits at signals and reduce pollution caused by vehicles.

"It's very important to the city," Voss said. "When you sit at a traffic signal, not only do you become frustrated, but you're wasting fuel and you're wasting time."

Sophisticated traffic systems in place at many Topeka intersections -- particularly those with protected left-turn signals -- rely on drivers remaining alert and going when it is their turn.

Too much text-messaging or cell-phone calling can derail those plans, as the systems are set for a steady movement of traffic. One person who is asleep at the wheel and doesn't go forward at the appropriate time can spell a long wait for everyone in line.

"The traffic signal will 'see' you if you're close to the stop line," Voss said. "But if you're sitting back and do not move forward, it may not see you, it will gap out and you'll have a red light."

The InSync system costs about \$30,000 per intersection, Voss said, so implementing it at more intersections becomes "a cost issue."

In the meantime, Voss said, the city continues to monitor its 182 traffic signals in an effort to make changes that will benefit motorists with shorter waits at traffic signals.

Many intersections already are equipped with cameras mounted on the tops of traffic signal poles, allowing for real-time adjustments based on the amount of cars passing along a street.

Electronic loops that are placed in the street's surface also are used to activate signals at some intersections.

But at other intersections,

particularly those in the downtown area, fixed-time signals are programmed to allow time for pedestrians to cross streets. Traffic flow at such intersections isn't a factor in how lights cycle from green to yellow to red.

The city must patch together various systems and requirements in a never-ending effort to keep waits to a minimum while responding to the actual flow of traffic.

Peak traffic flow can cause the systems to go to their maximum limits, but even then the cycle is no more than 120 seconds. Some intersections become bottlenecks, but most drivers, Voss said, are able to move through the intersection within one light rotation.

"It may seem like you're sitting there forever," Voss said, "but it's usually only a minute or two."

Topeka has some traffic signals that are nearing or exceeding 33 years of age, which Voss said is beyond their 25-year life expectancy. At almost \$200,000 per intersection, only a few can be replaced each year.

Other cost factors include galvanized steel poles, concrete work around the poles and replacement and maintenance of the traffic signals themselves.

Beyond looking at traffic flow, Voss said, the city continues to monitor the best use of signals to ensure driver safety.

A recent step was taken in this direction when the city changed the left-turn requirements at intersections that include S.W. 17th and Washburn and S.W. Huntoon and Wanamaker, the site of nearly a dozen injury accidents in the first six months of this year.

Until early July, motorists could turn left at the intersections on green lights after yielding the right of way to through traffic. But because of the high incidence of crashes, left turns at the intersections now require a green turn arrow.

Discussions also were held in June regarding the intersection of S.W. 17th and MacVicar. City staff members wanted a roundabout at the intersection, but that plan was put off after area residents voiced their opposition.

A new traffic signal is planned for there instead.

Motorists accustomed to long lines at the Interstate 470 and S.W. Fairlawn Road exit also are in store for relief as new construction at that intersection is expected to begin today and last until winter 2010.

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