

# Updates to traffic signals paying off

Motorists already seeing reduction in driving time

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HUNTINGTON — From a small, second-floor office overlooking 3rd Avenue across from Pullman Square, Andrew Nichols and his staff manage and control traffic signals at 58 intersections in Huntington.

All of the intersections communicate via wireless radios to a central management system at the Rahall Transportation Institute, where Nichols is program director

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Lori Wolfe/The Herald-Dispatch

Assistant engineer Michael Audelo of Intelligent Transportation Systems works on a traffic signal box along 3rd Avenue on Monday in Huntington.

# Signals

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of Intelligent Transportation Systems. The primary objective, he says, is to accomplish something Huntington motorists haven't experienced in years: Synchronize traffic signals using traffic volume data at different times of the day to keep vehicles moving smoothly along primary and secondary corridors.

"From the public's perspective, our goal is to keep traffic moving as efficiently as possible," Nichols says. "When the signals are timed correctly, we will see reduced travel time and numerous safety benefits."

So far, motorists' travel time on the affected streets has been reduced, officials say. For example, trips along 5th Avenue are on average about 25 percent shorter, according to project data.

Making the changes possible was a \$3.67 million Congestion, Mitigation and Air Quality grant received by Huntington. It was used to replace the city's outdated traffic signal system on 3rd and 5th avenues between 5th and 31st streets and on 4th, 6th and 7th avenues in the central business district. While the old traffic signals and signal arms were replaced several months ago, RTI's Traffic Management Center's synchronization system just came online at the end of July.

The partnership the city, West Virginia Department of Transportation and RTI has formed is one-of-a-kind, says Nichols, who also is an associate professor of engineering at Marshall University.

"Traffic signals these days are becoming more technical. Any given traffic signal could have two or three traffic control vendors using wireless radio signals," Nichols said. "The state DOT has that expertise, but they're always dealing with retirements and finding people to replace, so we are an added layer of expertise. It's a unique relationship to have a university-based research center to have complete autonomy like this and perform this function on behalf of a department of transportation."

Huntington's old traffic signal system was hard wired and most of the lines that allowed

the traffic signals to communicate with one another had been severed or were in disrepair.

"The timing patterns were there, but there was no communication from a central server, so the traffic signals were random in regards to the way they were coordinated," Nichols said.

Motorists so far are offering mixed reviews of the new system.

"I can't say I've noticed much of a difference," said Aaron Walters, who works in Huntington. "It seems like I still get caught at every red light in town."

Sarah Thacker lives in Lawrence County, Ohio, but spends a good portion of her week traveling in and around Huntington.

"I'm all for anything that improves the area, upgrades the area and, generally speaking, makes life easier for everyone involved," Thacker said.

The RTI Traffic Management Center has implemented three different timing patterns that run during the day, giving preference to the peak flow of traffic during that time of day. Based on the traffic flow patterns, the center identified primary and secondary corridors to minimize the number of stops for vehicles traveling at the posted speed limit.

The primary corridors are 3rd Avenue from 29th Street to 13th Street to Veterans Memorial Boulevard, 5th Avenue from 5th to 31st streets and 31st street from 3rd to 5th avenues. Secondary corridors are 10th, 16th and 20th streets from 3rd to 7th avenues.

Comparing data before and after the new timing patterns, the average travel time on 5th Avenue and the one-way segments reduced by 25 percent while the variation in travel times reduced by 75 percent, according to the RTI Traffic Management Center.

Huntington is not the only city that has traffic signals managed by RTI. Morgantown (26), Teays Valley (5) and Elkins (3) all have traffic signals managed by RTI, and Charleston, St. Albans and Lewisburg will be integrated in the coming months.

In addition to Nichols, the Traffic Management Center includes Michael Audelo, who obtained his bachelor's degree in engineering from Marshall University and handles the

daily operations of the Huntington traffic signal system, and Chih-Sheng "Jason" Chou, a research associate who helps with signal monitoring and performance measurement. Chou has a doctorate degree in civil engineering from the University of Maryland.

"This is a cloud-based system, so we tunnel through the Internet on a private connection and anywhere we have a connection we can dial in and see what's happening," Nichols said.

The RTI Traffic Management Center will eventually move to the applied engineering complex on Marshall's campus after it is built, Nichols said. The move will allow the center to leverage research opportunities and serve as an academic platform that will train students and state Division of Highways workers.

The Traffic Management Center dovetails into the state Department of Transportation's Intelligent Transportation Systems initiative, which is designed to develop tools to proactively monitor traffic and notify motorists of traffic conditions in real time.

"We're reaching out to drivers along our system by providing them with constant information, whether it be weather, construction, accidents, special events or anything else that might influence traffic," said Bruce Kenney, coordinator of the Department of Transportation's Intelligent Transportation Systems initiative.

Part of West Virginia's initiative will include a statewide "511" telephone number and website that will allow motorists to check for road conditions and view roadways in real time. The system will launch in November and also include a free smart phone application called "Drive Safe" that allows users to customize travel information.

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