New city traffic center helps cars flow

By Theo Douglas, staff writer
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Part CSI, part sky scrubber, the city of Bakersfield's new Traffic Operations Center -- which debuted in June and was highlighted during Tuesday's State of the City program -- aims to improve the region's bad air quality by improving traffic flow.

Crime dramas in film and TV have featured massive walls of computer monitors for decades, but in real life they can cost hundreds of thousands of dollars so cities and law enforcement agencies have been slow to follow suit.

Bakersfield's previous Traffic Operations Center, which debuted in 1982 and was last updated in the 1990s, was a place where traffic engineers could watch drivers at a few of the city's hundreds of intersections to correct traffic flow problems.

Traffic signals had to be adjusted on the street by having a city worker manually retime their clocks while traffic engineers watched, with '90s-era computer servers transmitting video feed through black-and-white televisions.

Jump-cut to June, and much has changed.

MONITORS HELP TRAFFIC FLOW

The new TOC, relocated to the second floor of City Hall south, features six 50-inch flatscreen monitors capable of displaying up to six cameras at once, or a mix of live feed and traffic map or timing information that will let engineers retime and watch intersections without actually having to send a city worker out to reset them.

It cost $390,000 -- nearly 89 percent of that, or more than $345,000, came from Federal Transportation Improvement Program funds. The remainder, nearly $45,000, came the city's general fund.

"We're not trying to catch somebody doing something. This is strictly traffic flow, trying to make it flow as well as we can," said John Ussery, a civil engineer in Bakersfield's traffic engineering division.

"Safety is a big issue, but one of the (bigger) issues with these is air quality," Ussery continued. "When you synchronize these signals, you keep platoons of traffic moving so there's less stopping and less accelerating. That's when cars create most of their pollution, when they're stopping and accelerating."

CONTROLLED SIGNALS ARE CRUCIAL

Bakersfield has 404 traffic signals within city limits. Of those, 342 are controlled by city traffic systems and can be timed to move traffic more effectively, while 70 have what are called fixed cameras -- which record video to tell traffic control boxes when to change the lights, but don't send that video back to the TOC.

The city has just 13 of the most advanced pan-tilt traffic cameras in place -- although it anticipates getting enough FTIP funds to pay for eight more cameras during the next two years.

Pan-tilt cameras are capable of 360-degree vision, which they can transmit back to the TOC -- although officials are quick to say they're not recording it, and do not report traffic violators.

The city's traffic cameras are for research purposes only -- and are separate from the city's red light traffic cameras, which are operated by Arizona-based Redflex Traffic Systems at 12 city intersections.

Since June, traffic engineers can retime Bakersfield intersections without driving out to farflung control boxes -- and they can see, with greater clarity on those new monitors, how the retiming works.

"When you're out in the field, you're down at traffic level. You can't see how far traffic is backing up," said Traffic Engineer Ryan Starbuck, explaining that "because the camera is up high, it lets us look down the (traffic) corridor."

Public Works Director Nick Fidler, whose department includes the traffic engineering division, agrees.

"That's where I started with the city. I was actually working doing traffic signal timing," said Fidler, whose first position in Bakersfield was as an engineer 1. "We still have to go out there and physically count (vehicles at) the intersections, but now with the TOC the synchronization efforts are a lot easier."

ACCELERATING FIGHTS POLLUTION

Synchronizing traffic lights so drivers don't wait too long at any one intersection is not a new concept.

Today, however, it's considered a key not just to traffic flow, but to improving the region's air quality.

Since 2010, Ussery said the city calculates synchronizing traffic signals has reduced carbon monoxide pollution in the air by 14,000 pounds per year.

The Environmental Protection Agency estimated the average passenger car in 2000 emitted 575 pounds of carbon monoxide pollution annually, Ussery said, characterizing the statistic as being the equivalent of "taking 28 cars off the road per year."

That's not the only benefit.

Fine particulate matter -- small particles like dust that are too small to be seen with the naked eye -- has been reduced by 600 pounds per year, Ussery said.

He noted this statistic is harder to put in context because vehicles are not the only source of fine particulate matter.

Ahron Hakimi, executive director of the Kern Council of Governments, said TOCs like Bakersfield's will be even more important as cities face hard choices in traffic reduction.

"Operational improvements -- getting the most out of the existing system we have, which is what a traffic operations center can contribute to -- things like synchronizing signals, ramp meters and just monitoring traffic and getting the maximum out of our existing system is the future of our transportation system," Hakimi said. "We just can't continue to widen roads and widen roads to build our way out of congestion."

During his State of the City remarks, Tandy agreed, citing a June 17 article "Best Cities for Car Drivers," on finance website NerdWallet that ranked Bakersfield seventh among 10 cities nationwide.

He also pointed out the city's investment of $12.9 million to date, to lay the 66 miles of "interconnected cable" and more than 22 miles of fiber optic cable linking the cameras and the TOC.

"I'm personally familiar with Ming Avenue in the morning. I'm going eastbound, it works beautifully. I will also tell you that White (Lane) going westbound in the afternoon works beautifully," Tandy said, noting, "This is before most of our (Thomas Roads Improvement Program major highway) projects are complete."