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PERMISSION TO CUT IN LINE

As another fast-growing city approaches full build-out, planning for efficient and attractive transit systems has become the center of attention. Mike Mah, city transportation engineer for Chandler, Ariz., says the community has mainly focused on building roads and freeways. “Now we’re planning ahead, and in the future, there will be a very heavy emphasis on transit,” he says.

To reduce the effects of congestion on the city’s bus system, Mah and his team incorporated what it calls “queue jumper” technology into signalized intersections where bus traffic is heaviest. The city hopes the technology, which gives buses permission to “cut in line” at intersections, will entice residents to leave their cars at home.

“The goal is to make the buses competitive with the cars so that transit is much more efficient and encourages more people to ride the bus,” Mah says. As part of the plan to craft the city’s main thoroughfare into a high-capacity transit corridor, the city set out to widen three signalized intersections along Arizona Avenue. In addition to adding more through and turn lanes, the city also added bus-and-bike-only lanes.

Mah’s team went a step further by adding special traffic signals for the 40-foot buses that would be traveling in the designated lanes. Today, when a city bus is stopped at the light, a camera detects its presence and sets in motion a “head-start” signal that will allow the bus to enter the

intersection four seconds sooner than the vehicles stopped at the same light.

While bicycle riders may use the designated lanes, they are not allowed to enter the intersection early. According to Mah, only bus drivers have been trained to recognize and respond to the special “go” signal, which is a glowing vertical bar borrowed from a light rail transit signal system.

The queue-jumper system was developed in-house by adapting a 16-phase controller and cabinet. Mah says the controller manufacturer was impressed with Chandler’s adaptation of the system and has since incorporated some of Chandler’s features to offer the queue-jumper option to other cities.

Chandler has three queue-jumper systems in operation on Arizona Avenue. The city is planning to add several new queue-jumper lanes on other planned high-capacity transit corridors. As they plan for the future of the city’s transit system, Mah and his team see the potential for time and cost savings from the use of the queue-jumper technology.

“Each bus saves between 20 and 30 seconds at the queue-jumper intersections, saving them up to a minute and half on Arizona Avenue,” Mah says. “If we can do this often enough along several corridors, we might be able to use fewer buses, saving money in the long run.”

— Kelly Moore is a Des Moines, Iowa-based freelance writer.



Bus-and-bike-only lanes equipped with special traffic signals allow Chandler, Ariz., buses to “cut in line”, saving up to 30 seconds per intersection.