

Monitoring traffic in work zones

As I-65 was being widened in District 4, multiple crashes caused countless hours of delays to drivers. To help address these recurring issues, the district implemented the iCone, a work zone monitoring technology that prompts faster response and clearance of work zone incidents.

At first glance, the iCone looks like a conventional construction barrel. However, closer inspection reveals speed detectors, communication equipment that sends real-time data, and a solar panel to power it all.

For each direction approaching the work zone on I-65, four iCones were placed at 2.5 miles spacing. When vehicle speeds dropped below a certain threshold, the iCone alerted construction personnel of a potential incident, allowing workers to detect, locate, and respond to a crash or incident quickly.

A variable message board placed in advance of the work zone can be remotely controlled to notify the travelling public of incidents or lane closures. When the low speed threshold is triggered, an automatic message is activated

warning drivers to recognize upcoming traffic queues and to slow down. Timely notification and quicker clearance of crashes not only reduce road user costs caused by delays, but also help reduce the likelihood of secondary crashes.

In addition to promoting real-time incident response, the iCone can collect and store analyzable speed and incident data. Law enforcement can strategically use this information to place iCones within or approaching a work zone where speeding occurs. Furthermore, the iCone can be used to identify problem areas where modifications to work zone traffic control may be needed.

Data collected by the iCone can be compiled from multiple projects to improve the implementation of traffic control under different scenarios. Data can also be used to determine where this type of work zone monitoring is most suitable and cost effective.

District 4 personnel were pleased with their iCone experience; a future enhancement is to couple iCones with cameras that could



be used for incident verification and data validation. KYTC has plans to use iCones on the upcoming I-75 widening project in Rockcastle County.

by: [Anthony Norman](#)

Standard drawings

Rumble strips

Each year the Highway Safety Improvement Program (HSIP), within the Division of Traffic Operations, submits a report on the effectiveness of Kentucky's safety countermeasures. The 2016 report shows that rumble strips have a 65:1 rate of return. That's right! For every \$1 that KYTC spends on rumble strips, the Cabinet helps Kentucky's motoring public save \$65 in crash costs.

In Kentucky, approximately 67 percent of highway fatalities are the result of roadway departure crashes: crashes in which a vehicle

crosses an edgeline or a centerline or leaves the traveled way. Kentucky installs rumble strips to alert distracted motorists when they are leaving either their lane or the traveled way.

In an effort to install rumble strips as consistently as possible across Kentucky, KYTC has updated rumble strip standard drawings and has released new sepia drawings. A new bid item for edgeline rumble strips (ELRS) has been created, so there are now three different rumble strip bid items. The drawings are available and effective for the February 2017

letting.

The new drawings include a handy rumble strip decision matrix. Using factors such as pavement, lane, and shoulder width, the matrix supplies a recommendation on whether to use an ELRS or shoulder rumble strip.

A ten-foot gap must be placed every 60 feet, allowing bicyclists to make a turn safely or to go around debris on a shoulder. Additionally, to help accommodate ADA users, standard drawings include a five-foot setback of rumble strips prior to the radius of an intersection without a marked crosswalk and a five-foot setback from a marked crosswalk.

Mike Vaughn of the HSIP sums it up: "Because of their effectiveness at preventing run-of-the-road crashes, we want to place rumble strips on as many high-speed roadways as possible. These new drawings allow us to do so with more consistency to their application while accommodating bicyclists and pedestrians."

by: [Mike Vaughn](#) & [Brent Sweger](#)

Updated Drawings	
002, 003, 004	Centerline rumble strips
005	Shoulder & edgeline rumble strips
New Drawings	
006	Edgeline rumble strips for two-lane roadways
007	Shoulder rumble strips for two-lane roadways
008	Rumble strips for multi-lane roadways & ramps

