

Eye-Opening Discovery Leads to New Stop Sign Option

District traffic divisions now have the option of installing solar-powered blinker stop signs, thanks to some sleuthing by Crawfordsville District Traffic Investigations Engineer Nathan Awwad and a few of his INDOT cohorts.

In spring 2014, the district installed five of these stop signs – which feature an array of bright light-emitting diode (LED) lights that flash in unison from all eight corners of the octagonal sign – in Boone, Montgomery and Tippecanoe counties. INDOT’s Traffic Administration group wanted to test the signs, which manufacturer Traffic & Parking Control Co. claims provide high-visibility, advanced warning to drivers and are ideal for intersections with high accident rates.



The solar-powered blinker stop sign lights up State Road 28 at State Road 25 in Tippecanoe County during the middle of the night.

The Crawfordsville District volunteered a few test sites and assigned Awwad, signal technicians and maintenance staff to review the signs for a year. Field evaluation included observing installation techniques and procedures; documenting visibility, functionality and durability of the signs; comparing sight distance with similar devices (overhead flashers, post-mounted flashers and standard stop signs already in existence); observing the signs at night; and taking before-and-after measurements.

Awwad’s observations were eye-catching.

“The signs were very noticeable and, essentially, they became 36-inch flashing beacons,” said Awwad. “When I was far away, I couldn’t even tell there were individual LEDs in the sign. This large beacon was especially noticeable at night, when it could be seen from much farther away than the standard 12-inch overhead flashing beacons.”

One of the signs, at State Roads 75 and 32 in Boone County, was run over by a semitrailer and sustained significant damage. INDOT was able to straighten the sign and solder the LED connections back together, and the product is still performing well in the field.

“After the crash, I was able to rebuild and redeploy a functioning product,” said Crawfordsville District Signal Technician Ezra Brooke. “The product was easy to install and it performs well. Overall, I’m happy with the quality.”

The before-and-after measurement of crashes was inconclusive because of the relatively short test period. The amount of crashes did not increase at any roads in which the signs were placed, and actually decreased at two spots. A fatal accident did occur on State Road 75 at State Road 32, but it

was deemed isolated because the driver ran through an overhead red flasher *and* the solar-powered blinking stop sign.



Nathan Awwad studied the effects of the new stop signs for a year.

Besides data, Awwad’s study report listed pros and cons. Among the pros: no utility needed, cheaper than a solar-powered flasher, the visible equivalent to at least an overhead flasher, quick and easy to install, self-contained, and durable and repairable. The only cons were that these signs are more expensive than regular stop signs, and crash data shows limited effect during the one-year period.

“I think this product is very useful and has a wide range of applicability,” said Awwad. “In the report, I recommended using the signs on an as-needed basis or where deemed appropriate by engineering judgment.”

Field Engineer Ting Nahrwold, the evaluation engineer at the time of the study, agreed with the findings, concluding, “The signs could be ideal for areas with elevated levels of disregarding the stop condition or incomplete stops, or with high accident rates.”

Materials Services Engineer Kenny Anderson at the Office of Materials Management ultimately approved the final report and product approval for all districts.

“I appreciate Nathan’s efforts, particularly his willingness to draft the final report for the study,” said Anderson. “When deemed appropriate, future installations may be placed due to Nathan and other Crawfordsville District personnel performing the investigation.”

The solar-powered blinker stop sign on northbound State Road 75 at State Road 32 in Boone County (right photo) is as visible as two overhead flashers; the blinker on State Road 234 at U.S. 231 in Montgomery County (bottom photo) is noticeable at dusk.

