



Kansas LTAP Fact Sheet

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Hybrid Beacons Help Pedestrians Feel Safer When Crossing the Street

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When activated by a pedestrian, this Pedestrian Hybrid Beacon at 18th and Kentucky Streets in Lawrence stops traffic to allow school children to cross the street near Cordley Elementary School.



A Pedestrian Hybrid Beacon (PHB) is a traffic control device similar to the PELICAN pedestrian signal from Europe. It was first adopted in the United States by City of Tucson, Arizona in 1990s. The system is designed to increase motorists' awareness of pedestrians crossing the street. A PHB differs from pre-timed traffic signals and constant flash warning beacons because it is only activated by pedestrians when needed. This article will describe how they work and where they are especially effective.

Two traffic control devices in one

Being a "hybrid" beacon, a PHB functions like two types of traffic control devices into one: a traditional traffic signal and a stop sign. A "steady red" indication acts like a red traffic signal and means motorists are prohibited from crossing the crosswalk. After 5-7 seconds, the steady red changes to alternating flashing red, and acts like a stop sign, meaning motorists can proceed (after a complete stop at stop bar) if the pedestrian has safely completed that portion of the crossing.

Where are they best used?

PHBs are most effective at locations where traditional crosswalk signs and markings do not provide adequate safety measures and/or where installation of a conventional traffic signal is unwarranted and/or cost prohibitive. FHWA guidance says that good candidates are multi-lane, high-volume, high-speed roadways that pose a major challenge for pedestrians to cross. However, they can also be installed successfully on two-lane streets.

PHBs can be installed mid-block and or at an intersection. Where used, a PHB should be located outside the functional area of any nearby signalized intersection and outside of any turn lanes or acceleration lanes.

Benefits: Increased safety, less delay

A number of studies have been conducted to assess safety and operational efficiency of PHBs. The results indicate that the beacons can reduce pedestrian crashes by 69 percent, total crashes by 29 percent, and severe crashes by 15 percent. Compared to traditional signalized crossings, PHB crossings show fewer rear-end collisions. From operational standpoint, motorists also benefit from PHBs by experiencing up to 50 percent less delay.

Guidance for installation

Chapter 4F of the MUTCD contains provisions on how PHBs can be installed and used in conjunction with signs and



pavement markings. It also identifies factors for agencies to consider in determining the use of PHBs, including pedestrian and traffic volumes, roadway speeds, and sight distance.

Experience with PHBs in Lawrence

Lawrence, KS, has installed 10 PHBs in various locations, and more are on the way. The first one was a test installation when the technology was fairly new. It is on a school route that crosses a busy two-lane street. The project was done in conjunction with Kansas State University faculty, who reported to FHWA on the beacon's effectiveness.

Lawrence's PHBs have been installed at locations requested by citizens where traffic volume and speed are such that the citizens feel uncomfortable crossing the street themselves or having their children or elderly neighbors cross unattended. None of the locations had a crash history. Some are at intersections, some are installed mid-block.

The streets on which the PHBs have been installed in Lawrence to date have been two-lane collectors or minor arterials. A few of them are one-way streets with two lanes.

The City is considering installing PHBs at a few locations on four-lane major arterials. In two cases, the beacons would be near facilities that serve or employ individuals with disabilities who need to cross the four-lane street to get to a bus stop.

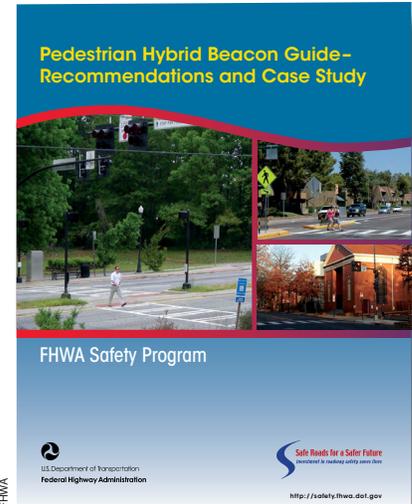
David Woosley, Lawrence's transportation/traffic engineer, said the City has received hardly any complaints about the beacons, and a lot of thank-yous, especially from parents of elementary school children.

He has noticed that some drivers treat the alternately flashing red beacon like a red light and do not proceed through the intersection when it is safe to do so. "Sometimes you'll hear a horn," he said. Woosley understands the confusion. "I doubt there is anything about [PHBs] in the *Kansas Driving Handbook*," he said, "so it's understandable people don't always know what to do."

In Lawrence, the City purchases all the equipment for the crossings and then hires-out the installation, costing about \$50,000 per location on a two-lane facility.

Lawrence has had a good experience with PHBs in helping citizens feel more safe when they are crossing the street. For more information on Lawrence's experience with PHBs, contact David Woosley at (785) 832-3034 or at dwoosley@lawrenceks.org.

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This new, 12-page free guide on PHBs can be found at the link in the Sources below. It contains detailed information on how and where to install the beacons, along with case studies where they have been installed in various cities. Photographs and illustrations help make the guide easy-to-read.



Sources:

- Pedestrian Hybrid Beacon Guide: Recommendations and Case Study. FHWA-SA-14-014. http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa14014/fhwasa14014.pdf
- Interview with David Woosley, June 19, 2014.