

# Zebras, Puffins, Pelicans or Hawks for Pedestrians?

Submitted by Victoria Broadus on July 14, 2010

<http://thecityfix.com/zebras-puffins-pelicans-or-hawks-for-pedestrians/>



Walking can be hazardous. But "puffin" crossings are one way to make pedestrians safer. Photo via webax.it.

The next time you hear your transit geek peers arguing about the merits of puffins versus pelicans, you'll be able to join in the debate!

This post was inspired by a discussion on a sustainable transport listserv about which kind of pedestrian crossings should be installed in certain intersections in Indian cities. Most of the animal-inspired crosswalks are of British origin and are mostly found in the U.K. or countries with U.K.-influenced transit engineering policies.

Here's a little primer on zebra, pelican, puffin, toucan, hawk, pegasus and Barnes Dance crossings.

## CROSSWALKS STIR CONTROVERSY



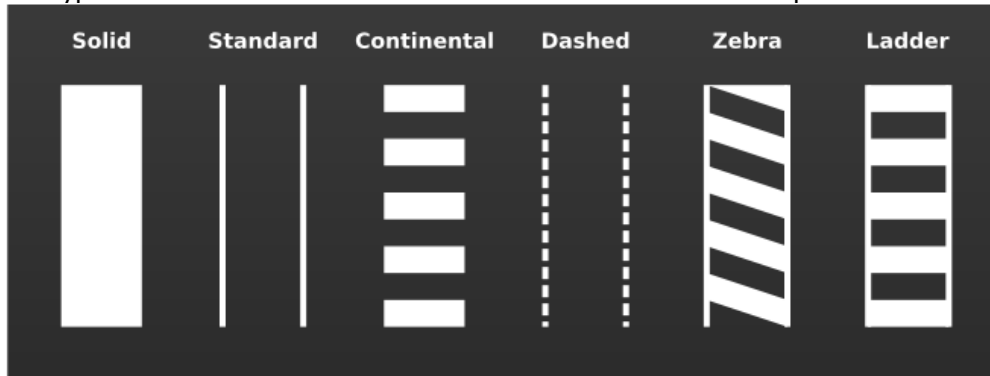
The first pedestrian crossing signal was installed in London in 1868, but it was controversial and quickly removed. Image via Wikipedia.org.

The Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) provides guidance for state and local governments about where crosswalks should be installed:

- Crosswalks should be marked at all intersections that have "substantial conflict between vehicular and pedestrian movements."
  - Crosswalk markings should be provided at points of pedestrian concentration, such as at loading islands, midblock pedestrian islands, and/or where pedestrians need assistance in determining the proper place to cross the street.
- The MUTCD also calls for thorough engineering studies before crosswalks are installed, to prevent "indiscriminate" use. However, the MUTCD does not provide guidance on the specific conditions — e.g. traffic volume, pedestrian volume, number of lanes, or presence of median — that determine whether a marked pedestrian crosswalk should be installed.

According to the FHWA, decisions about where to place crosswalks have been left to state officials and local traffic engineers, stirring controversy over the optimal conditions for crosswalk use. This controversy is heightened by studies that have found crosswalks decrease pedestrian safety in certain cases.

The type of crosswalk installed can also make all the difference for pedestrians' safety.



Many U.S. cities use variations of the zebra crossing, but have trended toward using zebra crossings because of they are more visible to drivers. Image via FHWA Pedestrian Facilities Users Guide.

## ZEBRAS



In Boulder, Colorado, cars are required to stop before the "yield line" to ensure they remain a safe distance from pedestrians at the zebra crossing. Photo via BoulderColorado.gov

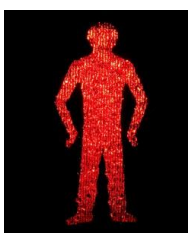
In 1951, animal-themed pedestrian crossings were born with the zebra crossing. Zebra crossings get their names because they're marked with black and white stripes of equal width across a road; in the U.K., they are generally accompanied by flashing amber beacons known as belisha beacons on both sides, meant to alert drivers. Zebra crossings are sometimes called ladder crossings in the United States, and the FHWA designates zebra crossings as having diagonal stripes.

These are generally the first crossing that come to mind when one thinks of pedestrian crossings. However, they generally lack sufficient signage warning oncoming drivers — particularly when they

are installed in uncontrolled locations — and can instill pedestrians with a false sense of security, lowering their concentration on traffic around them and reducing their safety. Behavioral psychology studies looking at pedestrian and motorist behavior are therefore an integral component to analysis of best practices for pedestrian crossings.

To make zebra crossings safer, cities have added traffic calming signs warning motorists, and yield lines set behind the crosswalk with signs saying "yield here to pedestrians," flashing overhead lights and lights in the street to warn motorists to stop.

## PELICANS – Pedestrian Light Controlled Crossings



The red man is shown in a standing position to reduce confusion for color-blind people. Image via Dominic's pics.

Really, these should be called Pe-Li-Con — the name comes from the first letters of Pedestrian Light Controlled crossings — but the UK decided to change the "o" to an "a" to keep animal names. They were designed to control traffic at mid-block crosswalks by allowing a pedestrian to push a button to give approaching motorists a red light. When the motorist gets a red light, the pedestrian signal turns from a red man to a green man, walking. Sometimes the lights beep to inform the visually impaired that they can cross. (There's also the experimental



In many pelican crossings, a green man walking lights up when pedestrians can cross. Image via Dominic's pics.

interactive “LonelyLight,” which we wrote about here, that actually talks back to pedestrians with witty comments.)

Pelicans are most common in the U.K. and countries like New Zealand that have strong British transport engineering influence.

Many pelican-style crossings in America include zebra crossings, and some crossings that look like pelicans are really not pedestrian-controlled anymore, since the advent of computer-controlled traffic lights.

Variations on the pelican crossing include signals that count down the seconds left until the light changes. These signals are common across the United States — including in Washington, D.C. and New York — and are now being trialled in the U.K.

One problem with conventional green man/red man pelican crossings in the U.K. is their blackout period: on some pelicans, the green man disappears but the red man hasn’t lit up, which confuses pedestrians. Such crossings are being phased out in the U.K. And in the United States, the latest version of the MUTCD requires countdown lights to be phased in at all pelican crossings over the next ten years.

### **PUFFINS – Pedestrian User-Friendly Intelligent Crossings**

Recently, puffins are the crossing of choice for the U.K. The U.K. Department for Transport (DfT) designed puffins to try to standardize pedestrian crossing signals and reduce pedestrian and motorist confusion at crossings. According to DfT’s Puffin Good Practice Guide, puffins are meant to “provide the basis for a standardised form of signalling at all crossings; crossing for pedestrians, cyclists and equestrians.”

Some experts say puffins improve upon pelicans by including:

- Lights controlling pedestrian traffic on the near side – set diagonally to the road’s edge – rather than on the opposite side of road. These are meant to improve ease of monitoring signals and traffic at the same time. These lights also cater to pedestrians with poor eyesight, who often cannot see lights across the street.
- On-crossing sensors allow pedestrians to “extend” their cross signal, because they do not allow the light to change while slow-moving pedestrians are detected in the crosswalk. In addition, they improve efficiency by canceling unwanted pedestrian demands so traffic is not stopped unnecessarily. If no one is detected in the crosswalk, clearance time is minimized. This minimizes vehicle delays, particularly at midblock crossings.

Puffins were designed to improve road safety. However, according to the DfT’s Puffin Good Practice Guide, studies on their effectiveness have reached contradictory conclusions. And, as we’ll discuss later on, they’re expensive.



Boulder zebra crossings are enhanced with pelican push-button crossing technology. And pedestrian actuated lights on signs by crosswalks alert motorists when people are crossing. Photo via BoulderColorado.gov.



### **TOUCANS – Where Two Can Cross**

Toucan crossings got their names because they’re built for two to cross: pedestrians and cyclists. They are similar to puffins, but they’re wider.

Pelicans, puffins, and toucans are usually accompanied by zigzag markings before the crosswalk, to alert motorists that they’re approaching the crosswalk.

Toucans are used in the UK to allow cyclists to cross with pedestrians. They use on-crossing detectors, like puffins, and cost about the same as puffins to install. Photo via newcastle.gov.uk.

## PEGASUS – Four-Footed Friends

Pegasus crossings integrate horseback riders, including higher buttons for people on horseback.

## HAWKS – High-Intensity Activated Cross Walks

The Tucson Department of Transportation came up with hawk crossings and installed five in 2004; there are now 40 hawks in operation.

Hawks feature overhead signs reminding motorists to “stop on red” and alerting them of the “pedestrian crossing.”



A hawk crossing in Tucson. Overhead signage announces “pedestrian crossing.” Photo via saferoutesinfo.org

Here’s how the hawk signals work: When not activated, the signal is blanked out. The HAWK signal is activated by a pedestrian push button. The overhead signal begins flashing yellow and then solid yellow, advising drivers to prepare to stop. The signal then displays a solid red and shows the pedestrian a “Walk” indication. Finally, an alternating flashing red signal indicates that motorists may proceed when safe, after coming to a full stop. The pedestrian is shown a flashing “Don’t Walk” with a countdown indicating the time left to cross.

To determine where HAWKS are most necessary, Tucson uses a HAWK priority

evaluation form that consists of ten questions about accidents and traffic at the specific intersection.

Preliminary studies of hawks have been promising; and in August of 2009, a hawk pedestrian signal was installed in Washington, D.C. at a crossing on upper Georgia Avenue, NW.

## BARNES DANCE



A new Barnes Dance crosswalk at the intersection of 7th and H Streets NW in D.C. Diagonal lines help guide pedestrians. Photo via wtop.com.

The Barnes Dance — also known as the pedestrian scramble — is a crosswalk where traffic is stopped on all sides and pedestrians can cross an intersection in any direction they please.

The Barnes Dance got its name from traffic engineer Henry Barnes. Barnes was traffic commissioner in cities like New York, Denver, and Baltimore in the mid-twentieth century, and strongly promoted the crosswalk.

Recently, the D.C. Department of Transportation (DDOT) piloted a modified Barnes Dance at one of the city’s most traversed intersections — 7th and H streets NW, in Chinatown.

DDOT director Gabe Klein said, “Nearly 27,000 pedestrians use this intersection on an average day and about 26,000 vehicles. We believe by utilizing the Barnes Dance we can minimize conflicts and create a safer environment for everyone.”

Unlike a conventional Barnes Dance crossing, where pedestrians are only given the “walk” signal when traffic is



stopped in all directions, pedestrians at 7th and H streets will also still be able to cross with traffic that has a green signal. In addition, according to DDOT, unlike your every-day Barnes Dance, "this enhanced Barnes Dance will prohibit all turns by all vehicles at that intersection," improving pedestrian safety.

### **WHICH IS THE BEST?**

There's no short and simple answer, which is part of the reason there's still no standardization of pedestrian crossings in places like the United States.

Studies on the pedestrian safety at marked an unmarked crosswalks at uncontrolled intersections in the United States, for instance, have come up with contradictory results. However, according to the FHWA, "contradictory findings can be attributed to limitations of the research project designs, which contained many confounding variables and small, potentially biased sample sizes and sites."



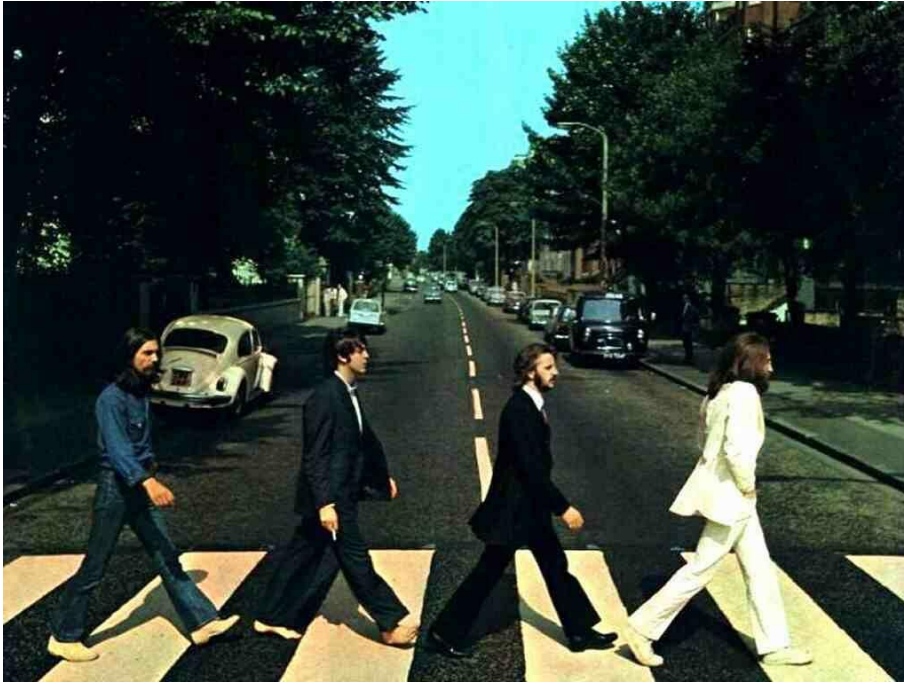
A zebra crosswalk in Burnaby, BC, Canada is enhanced with lit overhead signs. Photo via wikimedia.org.

### **TRAFFIC CALMING AND MOTORIST AWARENESS**

In general, there is a trend toward enhancing traffic calming features at crossings. In the United States, studies have found that pedestrians generally walk slower than the 4 feet per second that the MUTCD identifies as "normal," which makes traffic calming measures even more crucial. These include raised crosswalks, better and more visible signs and road paint, extra "yield to pedestrian" lines before the crosswalk, or restricting right turn on red, rather than installing more high-tech, expensive crossings. Pelican, puffin, and toucan crossings cost between \$50,000 and \$70,000 to install.

According to the FHWA, "Pedestrian safety is maximized when drivers are aware of the crosswalk location and know when a pedestrian is attempting to cross." To warn the motorist, a variety of light signals can be used:

- Flashing traffic signals over the crosswalk; and
- Imbedded flashing lights in the crosswalk surface; and
- Flashing signals to warn motorists if pedestrians are present.



The world's most famous zebra crossing, walked by The Beatles at Abbey Road. The photo doesn't show the beacons at either end. Image via gameslatest.com.

## **Victoria Broadus**

Victoria Broadus is a blogger for EMBARQ - The World Resources Institute Center for Sustainable Transport. Prior to coming to EMBARQ she worked on conservation, sustainable development and sustainable transportation innovations in Costa Rica, Brazil, and India. She has also studied and worked in Cuba and Mexico.