“Certainly this is indicative of a substantial need for the establishment and adoption of a pedestrian crossing signal standard to solve this particular problem.”

ITE, Traffic Engineering, June 1965 “…The lack of a generally accepted standard, designed to fit this problem (pedestrian crossings) has left a vacuum which can only result in the continued use of non-uniform traffic control devices.”

“In summary, national literature and local experience in Phoenix, Arizona, show that flashers offer no benefit for intermittent pedestrian crossings in an urban environment. In addition, the longer the flasher operates, the more it becomes part of the scenery and eventually loses any effectiveness.”
"One of the challenges faced by engineers working on pedestrian improvements is the status of (conflicting) research and the absence of clear guidance."

**Development of Device**

- Responding to a need to provide a safe pedestrian crossing device on high speed multilane urban arterials
- Studied by TCRP/NCHRP and found to be a very effective device
- Developed by a Public Agency Traffic Engineer

**HAWK (High intensity Activated crossWalk)**
(Double RED over YELLOW)
HAWK Operation

Innovative Crosswalk Treatments

Issues with the HAWK

1. Dark Beacon May be Confusing
2. Drivers on Side Street May be Confused
3. Will Cause Proliferation of Devices
4. Creates Non-Uniform Designs
1. Dark Beacon Confuses Drivers
   - Has not been observed during scientific studies by UNC & TTI
   - Experience shows that vehicles do not stop at a dark beacon
   - Dark beacon critical to overcome 1/2 signal concerns
   - Similar device used in Europe for last 60 years

European Beacon, Newcastle

4M Pedestrian Beacon (MUTCD Standard Signal Face 4D-3e without green Lens)
2. Drivers on Side Street May be Confused

- Drivers on Side Street do not know who has the Right-of-Way
- Device is like a “Half-Signal” Operation (Not approved by MUTCD where signal rests in GREEN on main street with STOP signs on the side street)

Portland “Half-Signal”

4M Pedestrian Beacon
2004: Canadian Study: found issues minimal and it (1/2 signal) is an appropriate traffic control device

1999: Seattle Study found no significant driver confusion issues

2006: Tucson HDR Study: found no significant driver confusion issues and Normal Right of Way codes apply at a Pedestrian Beacon

Uniform Vehicle Code:
Normal Crosswalk Right of Way

Compliance 17-20%

Flashing Beacon Crossing
Right of Way: NO CHANGE

Compliance 47-49%
Flashing In-Road Lights
Right of Way: NO CHANGE
Compliance 66%

4M Pedestrian Beacon
Right of Way: NO CHANGE
Compliance 97%

The HAWK device, acts basically as a supplement to the crosswalk, does not change the Right-of-Way, thus acts more as a beacon, not an intersection traffic signal.
3. Proliferation of Devices

- Beacons Normally do not have a Numeric Warrant

- Pedestrian Level of Warrant 4 is Greater Than Pedestrian Beacon Warrant by 30 peds/hr (1 pedestrian every 2 minutes)

- Pedestrian Beacon Warrant Level Matches Requirements for the Currently Approved School Crossing Warrant 5 (20 peds/hr)

Proliferation of Devices (cont.)

- There is a need for a device at crosswalks that is more than a flasher, but a full signal is not warranted or appropriate.
  - Avoid Side Street “Defacto Arterial”
  - Allows for Progression
  - ½ Cycle Operations, Flashing Red Reduces Delay

Proliferation of Devices (cont.)

- Pedestrian Beacon can reduce the pressures to install unwarranted full traffic signals

- Warrant produced as a result of scientific study by TTI
4. Creates Greater Number of Non-Uniform Pedestrian Designs

A. Current Traffic Control Standards are Adequate to Meet the Pedestrian Needs

B. Further Proliferate Non-Uniform Designs and Installations

B. Further Proliferate Non-Uniform Designs and Installations

However, there are numerous variations in use throughout the nation currently now.
AASHTO, Florida & San Jose "STUDDER" Flash (3 flashes per Second per lamp)

Boulder, Colorado

Florida Crossing Eyes
In-Pavement Lights, New Jersey

Portland 1/2 Signals
(Not Approved by MUTCD)

Seattle 1/2 Signals
(Not Approved by MUTCD)
L.A. Midblock Signals
(Signal rests in GREEN UPWARD ARROW)

Santa Monica Midblock Signals
(Signal Rests in GREEN)

Section 4M Pedestrian Beacon Overcomes the Half Signal issues
(Never Gives a Thru GREEN Indication, Rests in the Same Dark Mode as a Beacon)
Section 4M Pedestrian Beacon Overcomes the Half Signal issues (Local Street Minor Traffic or Right Turn Only)

TCRP Report 112, NCHRP Report 562, Fall, 2006

Now a scientifically tested and proven solution is available via Section 4M Pedestrian Beacon

Necessity is the Mother of Invention:

Approval of Section 4M, will fill the “Vacuum” and give the Profession Clear Guidance for a Standard Device to Assist Pedestrians
Texas Transportation Institute Study, 2006

Five Crossings Reviewed
Two Further Reviewed in Depth by HDR Engineering Consultants

Speedway / Plumer
9th / Irvington

Speedway/ Plumer
Tucson’s National Recognition

- Institute of Transportation Engineers (ITE) 2000
- Institute of Transportation Engineers (ITE) 2005
- Walkable America 2000
- Federal Highway Administration
- American Public Works Association 2004

Questions and Additional Information

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