

HAWK PEDESTRIAN SYSTEM

Presented
By
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What is a “HAWK” Pedestrian Signal

High-intensity Activated crossWalk (HAWK)

is a combination of a beacon flasher and traffic control *signaling* technique...

FHWA MUTCD Chapter 4.F (2009)

- Pedestrian Hybrid Beacon (HAWK)
 - Special type of hybrid beacon used to warn and control traffic at an un-signalized location to assist pedestrians in crossing a street or highway at a marked crosswalk
 - May be considered at locations to facilitate pedestrians where signal warrants are not met or where signal warrants are met but decision made not to install a signal system



HAWK Beacon at 12th Ave in St. Cloud WB



HAWK Beacon at 12th Ave in St. Cloud EB



HAWK indication design

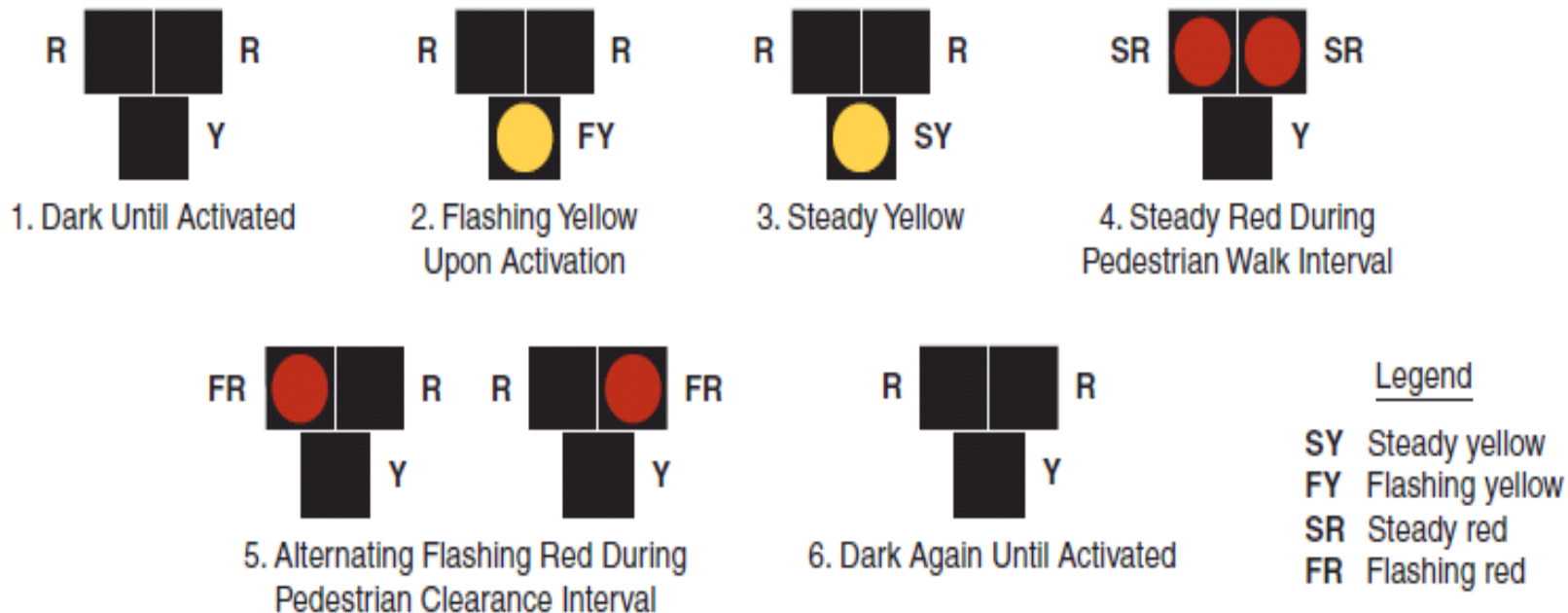
Operation of Pedestrian Hybrid Beacons

- Shall be dark during periods between actuations
- Upon ped activation shall display a flashing yellow ball, followed by solid yellow ball, followed by solid red ball during the walk period and a flashing (wig-wag) red ball during the pedestrian clearance interval
- Upon termination of the pedestrian clearance interval the vehicle indications shall be dark
- Should be placed midblock or at least 100 ft. intersection
- Additional criteria in Federal MUTCD

Sequence of Operation

- Traffic signal dark/Don't walk active
- Ped pushbutton activated
- Flashing yellow begins (7 seconds)
- Solid yellow (4.0 seconds)
- All red (3.0 seconds) prior to walk indication
- Walk indication (10 seconds)
- Flashing Don't Walk/Flashing red traffic signal
- Dark signal/Don't walk

Figure 4F-3. Sequence for a Pedestrian Hybrid Beacon

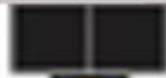


What Drivers See: What Pedestrians See:

See:



Dark



Flashing



Steady



Steady



Alternating (like RxR)
Stop then go if clear



Dark

See:



push the button



Start Crossing



Flashing
Continue Crossing

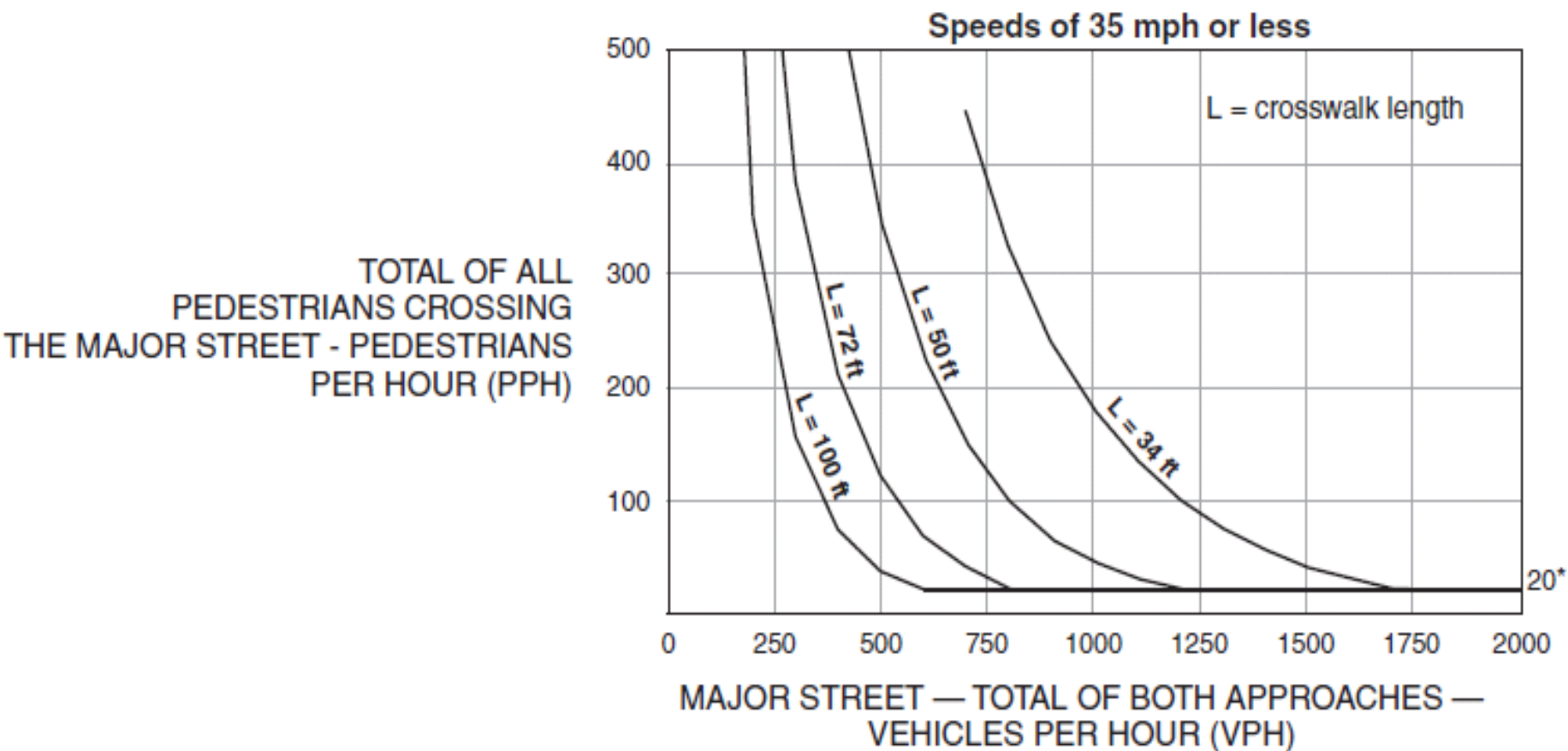




HAWK SYSTEM STC_PowerPoint_Lg.wmv

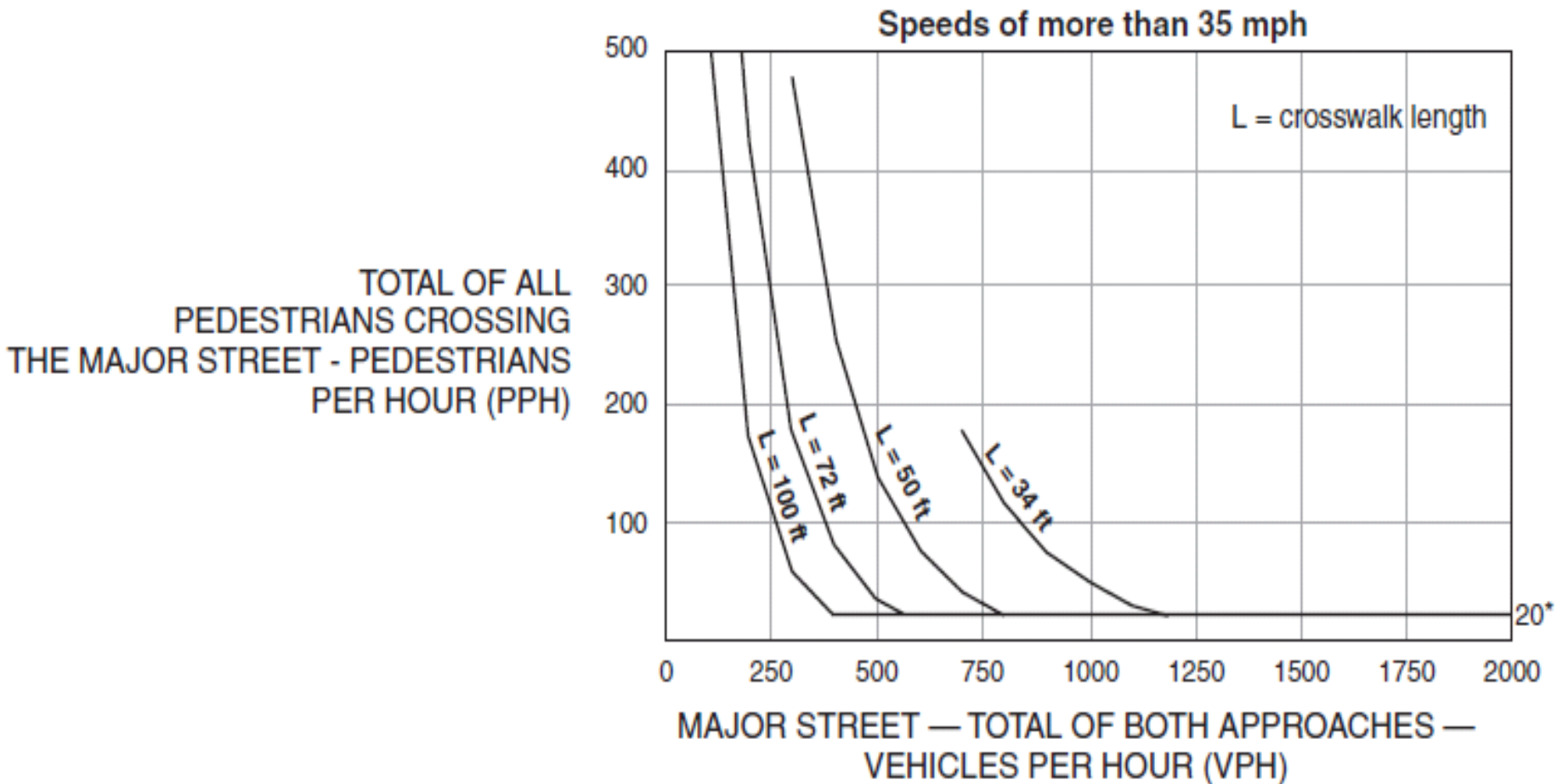
VIDEO

Figure 4F-1. Guidelines for the Installation of Pedestrian Hybrid Beacons on Low-Speed Roadways



* Note: 20 pph applies as the lower threshold volume

Figure 4F-2. Guidelines for the Installation of Pedestrian Hybrid Beacons on High-Speed Roadways

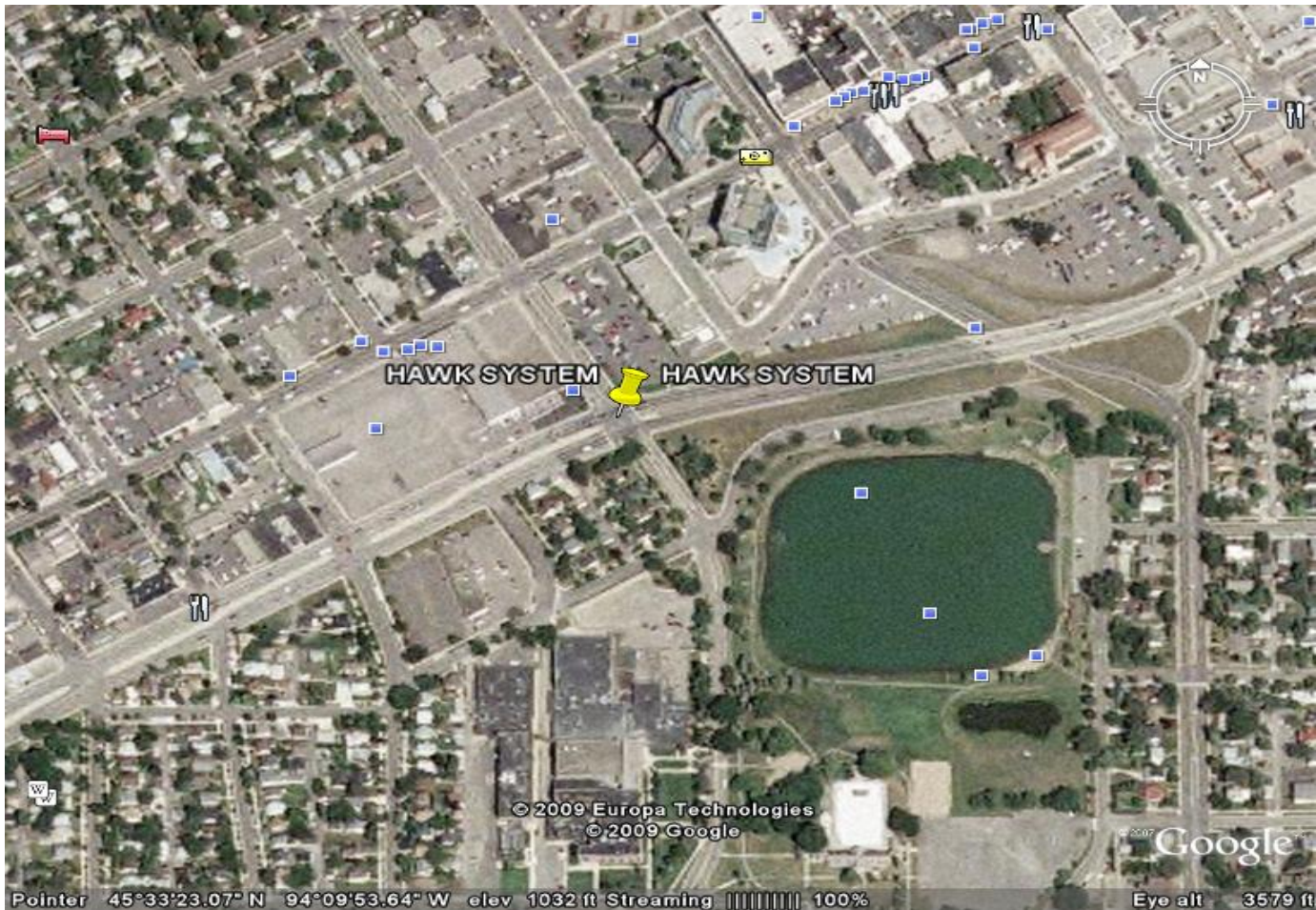


* Note: 20 pph applies as the lower threshold volume

History of HAWK in St. Cloud

- Map – Lake George/High School/Library
- State reconstruct Hwy 23
- City built new library near intersection
- Entrance to new library at 14th Ave.
- Prior signal at 12th Ave removed
- Relocated signal to 14th Ave
- City desired a controlled ped crossing at 12th
- MnDOT concerned with 2 signals/2 blocks

Area Map of HAWK location



Solution?

- HAWK Signal System
 - Needed experimental approval FHWA
 - Requested and received approval June 3, 2009
 - Activated in Fall of 2009
 - Since then FHWA has approved use of Hybrid Pedestrian Beacons in 2009 Federal MUTCD
 - MnDOT working to establish policy and guidelines for installation
 - Not part of MN MUTCD as of Jan 2010

HAWK Justification

- ADT – 34,000 vpd – Hwy 23
- Peak hour over 2000 vehicles per hour
- Ped count – over 20 children in hour
- Gap study showed insufficient gaps peak hour to allow safe crossing without control
- School Signal Warrant
- Additional ped traffic expected due to new library and improvement to Lake George Recreational Area

Design

- Immediate west side of 12th Ave intersection
- 2 poles and overhead mast arms for Hwy 23
- 2 overhead indications each direction
- Pedestrian count down indications w/ADA
- Stop signs on side street
- Interconnected with corridor signal/not part of system to date
- Simultaneous flashing of red indications - will be changed to wig/wag red flash
- Cost – approx. \$80,000 total cost

Concerns/Observations

- Concerns
 - Vehicles would stop for a dark indication
 - Learning curve
 - Issues with side street vehicles
- Observations
 - Vehicles did not stop for a dark signal
 - Pedestrians no learning curve
 - Some vehicles had tendency to drive thru beginning red
 - Some driver confusion during flashing red period

Questions ?

Contact

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