NORTHWEST MUNICIPAL CONFERENCE
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A Regional Association of Illinois Municipalities and Townships Representing a Population of Over One Million

Northwest Municipal Conference
Bicycle and Pedestrian Committee
Tuesday, April 17, 2018
10:30 a.m.
NWMC Offices
1600 E. Golf Road, Suite 0700, Des Plaines

AGENDA

I. Call to Order/ Introductions

II. Approval of March 20, 2018 Meeting Minutes (Attachment A)
Action Requested: *Approval of Minutes*

III. Trail Connect Chicagoland
Staff from the Active Transportation Alliance will discuss that organization's new initiative, Trail Connect Chicagoland, which aims to seamlessly connect the region's trail network.
Action requested: *Informational*

IV. NWMC Multimodal Plan Update
CMAP Senior Planner Lindsay Bayley will discuss the draft scope of work for the NWMC Multimodal Plan update.
Action requested: *Informational/Discussion*

V. Rectangular Rapid Flashing Beacon (RRFB) Policy (Attachment B)
Staff will discuss updated federal guidance regarding the use of RRFBs.
Action Requested: *Informational*

VI. Local Project Updates
Municipalities and others will be asked to provide updates on bicycle and pedestrian related projects.
Action Requested: *Information/Discussion*

VII. Other Business

VIII. Next Meeting
The next meeting of the NWMC Bicycle and Pedestrian Committee is scheduled for May 15, 2018 at the NWMC offices.
Action Requested: *Informational*

IX. Adjournment

Northwest Municipal Conference
Bicycle and Pedestrian Committee
Tuesday, March 20, 2018
Draft Meeting Minutes
10:30 a.m.
NWMC Offices, Des Plaines

Committee Members Present:
AC Buehler, Trustee, Village of Northbrook (co-chair)
Jim Baxa, Village of Northbrook
Nellie Beckner, Village of Mount Prospect
Mike Hankey, Village of Hoffman Estates
Maggie Jablonski, Elk Grove Village
Patrick Knapp, Village of Schaumburg
Darren Monico, Village of Buffalo Grove
Natalie Nye, Village of Barrington
Derek Peebles, City of Des Plaines
Harry Spila, Village of Palatine

Others Present:
Brooke Jones, Village of Wheeling
Matt Lawrie, Village of Mount Prospect
Dan Manis, Village of Wilmette
Stacey Meekins, Sam Schwartz Engineering
Robert Steele, Village of Glenview
Dan Randolph, Village of Niles
Brian Pigeon, NWMC
Mike Walczak, NWMC

I. Call to Order/ Introductions

Trustee Buehler called the meeting to order at 10:30 a.m. and asked those present for introductions.

II. Approval of February 20, 2018 Meeting Minutes.

On a motion by Mr. Hankey, seconded by Mr. Spila, the committee voted to approve the meeting minutes.

III. Northbrook Bike Plan Updates

Mr. Baxa reported that the village of Northbrook had selected Alta Planning and Christopher Burke Engineering as the project consultants for the update to the Northbrook Bike Plan. He discussed the project schedule and public outreach efforts and noted that the draft existing conditions report was available online. He added that staff

were reviewing the draft plan and intended to send it to the Public Works Committee. He anticipated Northbrook Board approval in May and a presentation to the NWMC Bicycle and Pedestrian Committee in June or July. He added that Village engineer Matt Farmer is the project contact for the bike plan update.
He added that the Phase II agreements for the Skokie Valley Trail were underway.

IV. Surface Transportation Program (STP) Project Selection Committee Updates

Mr. Pigeon discussed the initial outline of the regional shared fund being created at CMAP including the timeline for implementing the new fund, eligible project types and details on the first call for projects.

V. NWMC Multimodal Plan Update

Mr. Walczak noted that there were not updates since the last meeting.

VI. Des Plaines River Trail Updates

Mr. Walczak discussed a recent kick off meeting for improvements to the Des Plaines River Trail in the West Central Municipal Conference area. This meeting discussed the project scope and limits. He noted that this project was funded with an Invest in Cook grant and would be assisted by Active Transportation Alliance staff working on a new project, Trails Connect Chicagoland.

VII. Local Project Updates

Mr. Manis announced Wilmette would be kicking off a bike plan in April and that a Phase I study of the Skokie Valley Trail would begin with Baxter & Woodman as the consultant. Mr. Peebles reported that the Ballard Rd. sidepath was going to letting. Mr. Walczak noted that the Forest Preserve District of Cook County would sign a contract in May for work on the Des Plaines River Trail rail crossing.

VIII. Other Business

Mr. Walczak asked the committee to consider locations for a summer tour.

IX. Next Meeting

Chair Buehler announced that the next meeting was scheduled for April 17, 2018 at the NWMC offices.

X. Adjournment

On a motion by Ms. Beckner, seconded by Mr. Pebbles, the committee voted to adjourn.

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **INFORMATION:** MUTCD – Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks (IA-21)

Date: MAR 20 2018

From: Martin C. Knopp
Associate Administrator for Operations

In Reply Refer To: HOTO-1

To: Federal Lands Highway Division Directors
Division Administrators

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of Rectangular Rapid-Flashing Beacons (RRFB) as pedestrian-actuated conspicuity enhancements for pedestrian and school crossing warning signs under certain limited conditions. Interim Approval allows interim use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD). State and local agencies must request and receive permission to use this new Interim Approval, designated IA-21, from the Federal Highway Administration (FHWA) in accordance with the provisions of Section 1A.10 of the MUTCD before they can use the RRFB, even if prior approval had been given for Interim Approval 11 (IA-11), now terminated. The issuance of this new Interim Approval does not reinstate IA-11 either in whole or in part.

Background: The Florida Department of Transportation has requested that the FHWA issue an Interim Approval to allow the use of RRFBs as pedestrian-actuated conspicuity enhancements to supplement standard pedestrian and school crossing warning signs at uncontrolled marked crosswalks. The RRFB does not meet the current standards for flashing warning beacons as contained in the 2009 edition of the MUTCD, Chapter 4L, which requires a warning beacon to be circular in shape and either 8 or 12 inches in diameter, to flash at a rate of approximately once per second, and to be located no less than 12 inches outside the nearest edge of the warning sign it supplements. The RRFB uses rectangular-shaped high-intensity light-emitting-diode (LED)-based indications, flashes rapidly in a combination wig-wag and simultaneous flash pattern, and may be mounted immediately adjacent to the crossing sign.

Research on the RRFB: The City of St. Petersburg, Florida, experimented with the RRFB at 18 pedestrian crosswalks across uncontrolled approaches and submitted its final report in 2008. In addition to "before" data, the city collected "after" data at intervals for one year at all 18 sites and for two years at the first two implemented sites. For the first two sites, the city collected data for overhead and ground-mounted pedestrian crossing signs supplemented with standard circular yellow flashing warning beacons, for comparison purposes, before the RRFBs were installed. The data showed higher motorist yielding rates at crosswalks where the RRFBs had been installed in comparison to lower rates for standard warning beacons. The higher yielding rates were sustained even after two years of operation, and no identifiable negative effects were found. The St. Petersburg data also showed that drivers exhibit yielding behavior much farther in advance of crosswalks with RRFBs than with standard circular yellow flashing warning beacons.

In addition to the St. Petersburg locations, experimentation with RRFBs was also conducted at other uncontrolled marked crosswalks in Florida and other States. Data from locations other than St. Petersburg was limited, but did show results similar to those found in St. Petersburg.

The Texas Transportation Institute (TTI) conducted a Federally funded research project[1] that developed and tested a new flash pattern for the RRFB that was shown to be at least as effective as the flash pattern that was initially tested in St. Petersburg, Florida, and that showed that mounting the RRFB unit above the sign was at least as effective as mounting the RRFB unit below the sign. In this project, the results were generally favorable, however there was a wide range of yielding rates, with some as low as 19 percent. This broad range indicates that there might be certain factors or characteristics of locations at which the RRFB might not be effective.

A separate project[2] conducted by TTI examined data from multiple projects to determine various factors that influenced driver yielding rates at RRFB locations. In this project, the researchers found that intersection configuration, presence of a median refuge, crossing distance, approach to the crossing, and one-way vs. two-way traffic significantly affected the rate of driver yielding. Additional factors including posted speed limit, mounting of the beacons (overhead or roadside), and the type of crossing and sign—Pedestrian (W11-2) or School (S1-1) sign compared with the Trail Crossing (W11-15) sign—were also significant.

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[1] Fitzpatrick, K., R. Avelar, M. Pratt, M. Brewer, J. Robertson, T. Lindheimer, and J. Miles. *Evaluation of Pedestrian Hybrid Beacons and Rapid Flashing Beacons*. Report No. FHWA-HRT-16-040, pp. 88-106. Texas Transportation Institute, College Station, Texas. July 2016. https://www.fhwa.dot.gov/publications/research/safety/16040/index.cfm

[2] Fitzpatrick, K., M. Brewer, R. Avelar, and T. Lindheimer. *Will You Stop for Me? Roadway Design and Traffic Control Device Influences on Drivers Yielding to Pedestrians in a Crosswalk with a Rectangular Rapid-Flashing Beacon*. Report No. TTI-CTS-0010. Texas A&M Transportation Institute, College Station, Texas. June 2016. https://www.fhwa.dot.gov/publications/research/safety/16040/index.cfm

FHWA Evaluation of Results: The Office of Transportation Operations reviewed the available data in 2008 and considered the RRFB to be highly successful for the applications tested (uncontrolled marked crosswalks). The RRFB offers significant potential safety and cost benefits because it achieves high rates of compliance at a low relative cost in comparison to other more restrictive devices that provide comparable results, such as full midblock signalization or pedestrian hybrid beacons.

The FHWA granted interim approval status to the RRFB on July 16, 2008, and designated that action as Interim Approval 11 (IA-11).

The FHWA was later informed that the concept of the RRFB had been patented by a private company. Because patented traffic control devices are not allowed to be included in the MUTCD, are not allowed to be given interim approval status, and are not allowed to be a part of an official experiment, the FHWA terminated Interim Approval 11 on December 21, 2017.

The FHWA has confirmed that the patents on the RRFB device that was the subject of Interim Approval 11 have been expressly abandoned and the concept of the RRFB is now in the public domain. Because of this action, the RRFB is once again eligible for interim approval status and the FHWA is issuing this new Interim Approval for the RRFB.

Interim Approval 11 (IA-11) remains terminated. Agencies that previously had been approved to use RRFBs under IA-11 are not covered by this new Interim Approval to install new RRFBs. If agencies that had approval under IA-11 wish to continue to install new RRFBs, then they must submit a new request to the FHWA and agree to comply with the terms and conditions of IA-21.

This Interim Approval does not create a new mandate compelling installation of RRFBs, but will allow agencies to install this traffic control device, pending official MUTCD rulemaking, to provide a degree of enhanced pedestrian safety at uncontrolled marked crosswalks.

Conditions of Interim Approval: The FHWA will grant Interim Approval for the optional use of the RRFB as a pedestrian-actuated conspicuity enhancement to supplement standard pedestrian crossing or school crossing signs at uncontrolled marked crosswalks to any jurisdiction that submits a written request to the Office of Transportation Operations. A State may request Interim Approval for all jurisdictions in that State. Jurisdictions using RRFBs under this Interim Approval must agree to the following:

- Comply with the Technical Conditions detailed in this memorandum;
- Maintain an inventory list of all locations at which the RRFB is installed; and
- Comply with all the conditions as listed in Paragraph 18 of Section 1A.10 of the MUTCD.

In addition, any agency that receives this approval must acknowledge agreement with the following:

- That an agency will furnish its list of locations where implemented if requested by FHWA;
- That FHWA has the right to rescind this Interim Approval at any time; and
- That issuance of this Interim Approval does not guarantee that the provisions, either in whole or part, will be adopted into the MUTCD.

1. General Conditions:

   a. Each RRFB unit shall consist of two rapidly flashed rectangular-shaped yellow indications with an LED-array-based light source, and shall be designed, located, and operated in accordance with the detailed requirements specified below.

   b. The use of RRFBs is optional. However, if an agency opts to use an RRFB under this Interim Approval, the following design and operational requirements shall apply, and shall take precedence over any conflicting provisions of the MUTCD for the approach on which RRFBs are used:

2. Allowable Uses:

   a. An RRFB shall only be installed to function as a pedestrian-actuated conspicuity enhancement.

   b. An RRFB shall only be used to supplement a post-mounted W11-2 (Pedestrian), S1-1 (School), or W11-15 (Trail) crossing warning sign with a diagonal downward arrow (W16-7P) plaque, or an overhead-mounted W11-2, S1-1, or W11-15 crossing warning sign, located at or immediately adjacent to an uncontrolled marked crosswalk.

   c. Except for crosswalks across the approach to or egress from a roundabout, an RRFB shall not be used for crosswalks across approaches controlled by YIELD signs, STOP signs, traffic control signals, or pedestrian hybrid beacons.

   d. In the event sight distance approaching the crosswalk at which RRFBs are used is less than deemed necessary by the engineer, an additional RRFB may be installed on that approach in advance of the crosswalk, as a pedestrian-actuated conspicuity enhancement to supplement a W11-2 (Pedestrian), S1-1 (School), or W11-15 (Trail) crossing warning sign with an AHEAD (W16-9P) or distance (W16-2P or W16-2aP) plaque. If an additional RRFB is installed on the approach in advance of the crosswalk, it shall be supplemental to and not a replacement for the RRFBs at the crosswalk itself.

3. Sign/Beacon Assembly Locations:

   a. For any approach on which RRFBs are used to supplement post-mounted signs,

at least two W11-2, S1-1, or W11-15 crossing warning signs (each with an RRFB unit and a W16-7P plaque) shall be installed at the crosswalk, one on the right-hand side of the roadway and one on the left-hand side of the roadway. On a divided highway, the left-hand side assembly should be installed on the median, if practical, rather than on the far left-hand side of the highway.

b. An RRFB unit shall not be installed independent of the crossing warning signs for the approach that the RRFB faces. If the RRFB unit is supplementing a post-mounted sign, the RRFB unit shall be installed on the same support as the associated W11-2, S1-1, or W11-15 crossing warning sign and plaque. If the RRFB unit is supplementing an overhead-mounted sign, the RRFB unit shall be mounted directly below the bottom of the sign.

4. Beacon Dimensions and Placement in the Sign Assembly:

a. Each RRFB shall consist of two rectangular-shaped yellow indications, each with an LED-array-based light source. The size of each RRFB indication shall be at least 5 inches wide by at least 2 inches high.

b. The two RRFB indications for each RRFB unit shall be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of at least 7 inches, measured from the nearest edge of one indication to the nearest edge of the other indication.

c. The outside edges of the RRFB indications, including any housings, shall not project beyond the outside edges of the W11-2, S1-1, or W11-15 sign that it supplements.

d. As a specific exception to Paragraph 5 of Section 4L.01 of the 2009 MUTCD, the RRFB unit associated with a post-mounted sign and plaque may be located between and immediately adjacent to the bottom of the crossing warning sign and the top of the supplemental downward diagonal arrow plaque (or, in the case of a supplemental advance sign, the AHEAD or distance plaque) or within 12 inches above the crossing warning sign, rather than the recommended minimum of 12 inches above or below the sign assembly. (See the example photo that is shown below.)

5. Beacon Flashing Requirements:

a. When actuated, the two yellow indications in each RRFB unit shall flash in a rapidly flashing sequence.

b. As a specific exception to the requirements for the flash rate of beacons provided in Paragraph 3 of Section 4L.01, RRFBs shall use a much faster flash rate and shall provide 75 flashing sequences per minute. Except as provided in Condition 5f below, during each 800-millisecond flashing sequence, the left and right RRFB indications shall operate using the following sequence:

The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.

The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.

The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.

The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.

Both RRFB indications shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.

The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 250 milliseconds.

c. The flash rate of each individual RRFB indication, as applied over the full flashing sequence, shall not be between 5 and 30 flashes per second to avoid frequencies that might cause seizures.

d. The light intensity of the yellow indications during daytime conditions shall meet the minimum specifications for Class 1 yellow peak luminous intensity in the Society of Automotive Engineers (SAE) Standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.

e. To minimize excessive glare during nighttime conditions, an automatic signal dimming device should be used to reduce the brilliance of the RRFB indications during nighttime conditions.

f. Existing RRFB units that use the flashing sequence that was specified in the Interim Approval 11 memorandum and a subsequent interpretation (the RRFB indication on the left-hand side emits two slow pulses of light after which the RRFB indication on the right-hand side emits four rapid pulses of light followed by one long pulse of light) should be reprogrammed to the flash pattern specified above in Condition 5b as part of a systematic upgrading process, such as when the units are serviced or when the existing signs are replaced.

6. Beacon Operation:

   a. The RRFB shall be normally dark, shall initiate operation only upon pedestrian actuation, and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk.

   b. All RRFB units associated with a given crosswalk (including those with an advance crossing sign, if used) shall, when actuated, simultaneously commence operation of their rapid-flashing indications and shall cease operation simultaneously.

   c. If pedestrian pushbutton detectors (rather than passive detection) are used to actuate the RRFB indications, a PUSH BUTTON TO TURN ON WARNING LIGHTS (R10-25) sign shall be installed explaining the purpose and use of the pedestrian pushbutton detector.

   d. The duration of a predetermined period of operation of the RRFBs following each actuation should be based on the procedures provided in Section 4E.06 of the 2009 MUTCD for the timing of pedestrian clearance times for pedestrian signals.

   e. The predetermined flash period shall be immediately initiated each and every time that a pedestrian is detected either through passive detection or as a result of a pedestrian pressing a pushbutton detector, including when pedestrians are detected while the RRFBs are already flashing and when pedestrians are detected immediately after the RRFBs have ceased flashing.

   f. A small pilot light may be installed integral to the RRFB or pedestrian pushbutton detector to give confirmation that the RRFB is in operation.

7. Accessible Pedestrian Features:

   a. If a speech pushbutton information message is used in conjunction with an RRFB, a locator tone shall be provided.

   b. If a speech pushbutton information message is used in conjunction with an RRFB, the audible information device shall not use vibrotactile indications or percussive indications.

   c. If a speech pushbutton information message is used in conjunction with an RRFB, the message should say, "Yellow lights are flashing." The message should be spoken twice.

Any questions concerning this Interim Approval should be directed to Mr. Duane Thomas at duane.thomas@dot.gov.

Figure 1. Example of an RRFB dark (left) and illuminated during the flash period (center and right) mounted with W11-2 sign and W16-7P plaque at an uncontrolled marked crosswalk.

Figure 2. View of pilot light to pedestrian at shared-use path crossing with median refuge. Enlargement of pilot light at right.

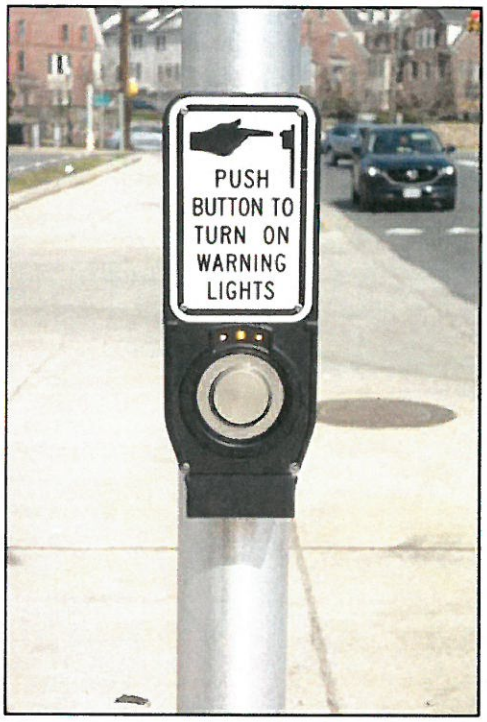

Figure 3. Example of pedestrian pushbutton and R10-25 sign with pilot light for pedestrian actuation.

cc:
Associate Administrators
Chief Counsel
Chief Financial Officer
Directors of Field Services
Director of Technical Services