

SUMMARY MINUTES - ADOPTED



Bicycling and Pedestrian Advisory Committee (BPAC)

Broward County Government Center, in person
1 University Drive, 2nd FL Hearing Room, Plantation, FL 33324
January 10, 2024, at 6:30 p.m.

Board Members Present

Steve Lim – District 1
Chris Wolf – District 3
Maximiliano Goldstein (Vice Chair) – District 5
Janet Arango – District 6
Michael Kroll (Chair) – League of Cities

Board Members Absent

Phillip Kim – District 9

County Staff

Sara Forelle, Senior Planner, BPAC Coordinator, Urban Planning
Paula Finlayson, Parks & Recreation
Rasem Awwad, Assistant Director, Traffic Engineering Division (TED)
Carmelo Caratozzolo, Traffic Operations Engineer, TED

Other Attendees

None.

I. CALL TO ORDER

Michael Kroll, Chair called the meeting to order at 6:36 PM.

II. ROLL CALL

The roll was called by staff. A quorum was present.

III. INTRODUCTION OF VISITORS

The presenters and staff introduced themselves.

IV. APPROVAL OF MINUTES – November 8, 2023

Chair Kroll stated the meeting was not publicly noticed on the Broward County online calendar; therefore, no actions will be taken. The November minutes will be considered for approval at the March 13 meeting.

V. NEW BUSINESS

1. ELECTION OF OFFICERS-postponed

By consensus of the BPAC, election of officers was postponed for consideration at the next advertised meeting.

2. PRESENTATION – Crosswalk Safety Traffic Control Devices & Strategies – Rasem Awwad, Assistant Director, TED, and Carmelo Caratozzolo, Traffic Operations Engineer, TED

The presenters introduced themselves. Mr. Caratozzolo discussed the County efforts to address mid-block crossings. Mid-block crossings are uncontrolled crossings located between two signalized intersections that control crossing through marked crosswalks and pedestrian signals. People tend to cross mid-block because it is convenient. The County tries to establish crossing points where cars and pedestrians move in predictable patterns and motorists are made aware that pedestrians may be crossing. The County also tries to formalize pedestrian crossings with curbing, pavement markings, signage, and potentially, signals. Formalized pedestrian crossings would help reduce pedestrian injuries and fatalities, while improving connectivity and walkability. Mr. Caratozzolo listed a number of documents that contain agency standards, including the Manual on Uniform Traffic Control Devices (MUTCD), which is being revised and is expected to be effective in January 2024.

The County is working with municipalities to establish a local standard for when a midblock crossing should be considered. Through interlocal agreement with the County, 20 of Broward County's 30 municipalities are responsible for signage and maintenance of signage, traffic markings, and signals. The County studies requests from municipalities to establish midblock crossings. The criteria used includes, but is not limited to the following:

- Location:
 - A well-defined spatial pattern of pedestrian generators, attractors, and flow;
 - A well-defined pattern of existing pedestrian crossings;
 - Minimum of 300 feet to nearest alternative intersection or crossing;
 - Extent of influence area of adjacent signalized intersection, including turn lanes.
- Demand:
 - Minimum vehicular volume of 2,000 Average Daily Traffic/Vehicles;
 - 20 or more pedestrians per hour, with seniors, children and disabled counted as two;
 - 50% reduction of above criteria for shared-use path connections.

Data collection for pedestrian studies includes identifying and mapping the area of concern. Counting crossings near traffic signals is avoided. Typical day activity is observed, as well as nighttime and weekends, depending on area activity. The study area is divided up into four areas of concern, depicted in the image below. Each zone is 250 feet in length and allows staff to pinpoint where pedestrians are crossing so that the mid-block crossing can be proposed near where the majority of mid-block crossing are observed.

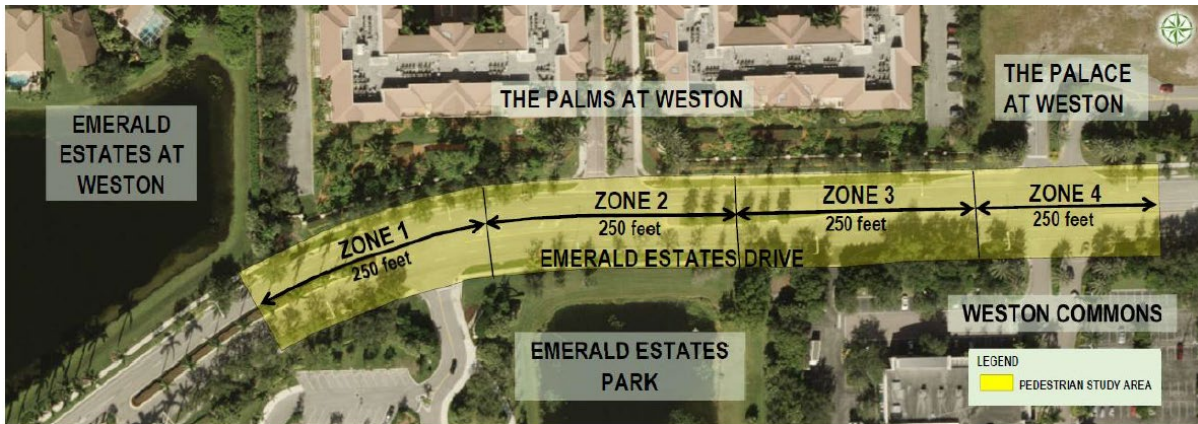


Figure 1 - Image from slide that depicts the 250-foot study zones on a map.

The County also works with the municipalities to improve driver sight distance in proximity to the installed mid-block crossings. This may require removal of some landscaping on medians.

AI was used to convert video imagery into renderings with lines that depict the location of frequent crossings (see slide below). Each line represents a single crossing. Colors identify different types of users (pedestrians, cyclists). This new technology is being added to the County's study toolbox within the next year for future projects.



Figure 2 - Presentation slides with two images depicting pedestrian movements.

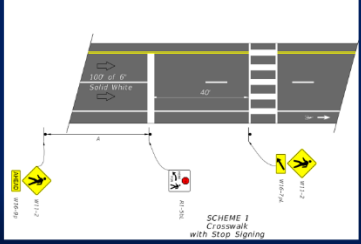
Mr. Awwad explained that the Traffic Engineering Division focuses on solutions that include the installation of traffic control devices (signs, markings and signals). Other types of treatments might focus on designing the road geometry, including features such as bulb-outs/curb extensions and raised crosswalks, among others.

As shown in the next few slides, the first level of treatment considered are the special emphasis markings. The next level of treatment is the use of Yellow Flashing Beacons and may progress up to Rectangular Rapid Flashing Beacons (RRFB). The last two options require more justification to install, including the Pedestrian Hybrid Beacon (PHB) and full-color pedestrian signals. Both of these options cause traffic to stop with

a solid red signal. PHBs are also known in the industry as “HAWK” beacons for “high-intensity activated crosswalk.”

Standard Midblock Ped Crossing Treatment

- Special Emphasis Markings and Signs
- Yellow Flashing Beacons
- Rectangular Rapid Flashing Beacons (RRFB)
- Pedestrian Hybrid Beacon (PHB)
- Full-Color Pedestrian Signal



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Figure 3 - Slide depicting Standard Midblock Pedestrian Crossing Treatments.

According to Mr. Awwad, warrants are required to determine the level of intensity of the treatment to be proposed. Warrants refer to a set of criteria used to determine which traffic control device would be warranted for installation based design speed, number of lanes, and other safety considerations. The Manual for Unified Traffic Control Devices (MUTCD) outlines the standards used by traffic engineers. The intent tailor the treatment to the need. Repetitive use of the same treatment can lead to drivers ignoring the signs or devices.

The slide below lays out the types of treatments that include signals with increasing traffic controls from left to right. The newest treatment is the PHB and full signal, which causes traffic to come to a full stop with a solid red light, rather than a flashing yellow caution light.

RRFB VS. PHB VS. SIGNAL




		
<ul style="list-style-type: none"> - Low cost and highly effective in increasing motorist yielding to pedestrian - Lower cost than PHB or Signal - Not applicable to all conditions (lanes, width, speed) 	<ul style="list-style-type: none"> - Warns & controls (solid red) traffic - Fills gap where ped signal not warranted and RRFB not applicable - Lower overall delays compared to a ped signal - Less costly than a signal 	<ul style="list-style-type: none"> - Must meet MUTCD warrant - Criteria very difficult to meet; requires very high demand - Most costly

Figure 4 - Slide depicting Rectangular Rapid Flashing Beacons (RRFB), Pedestrian Hybrid Beacons (PHB) and Pedestrian Signals.

RRFBs are not recommended on wider roads (greater than 2 lanes), with speeds greater than 35 miles per hour (mph) and higher traffic volumes. Below are two charts showing how total number of pedestrians and total number of vehicles per hour are used to identify the potential for installing a PHB or full signal at a mid-block location. The left chart is for speeds less or equal to 35 mph and the right one is for speeds greater than 35 mph. The vertical axis represents the number of pedestrians crossing and the horizontal axis represents total number of vehicles on the road in both directions.

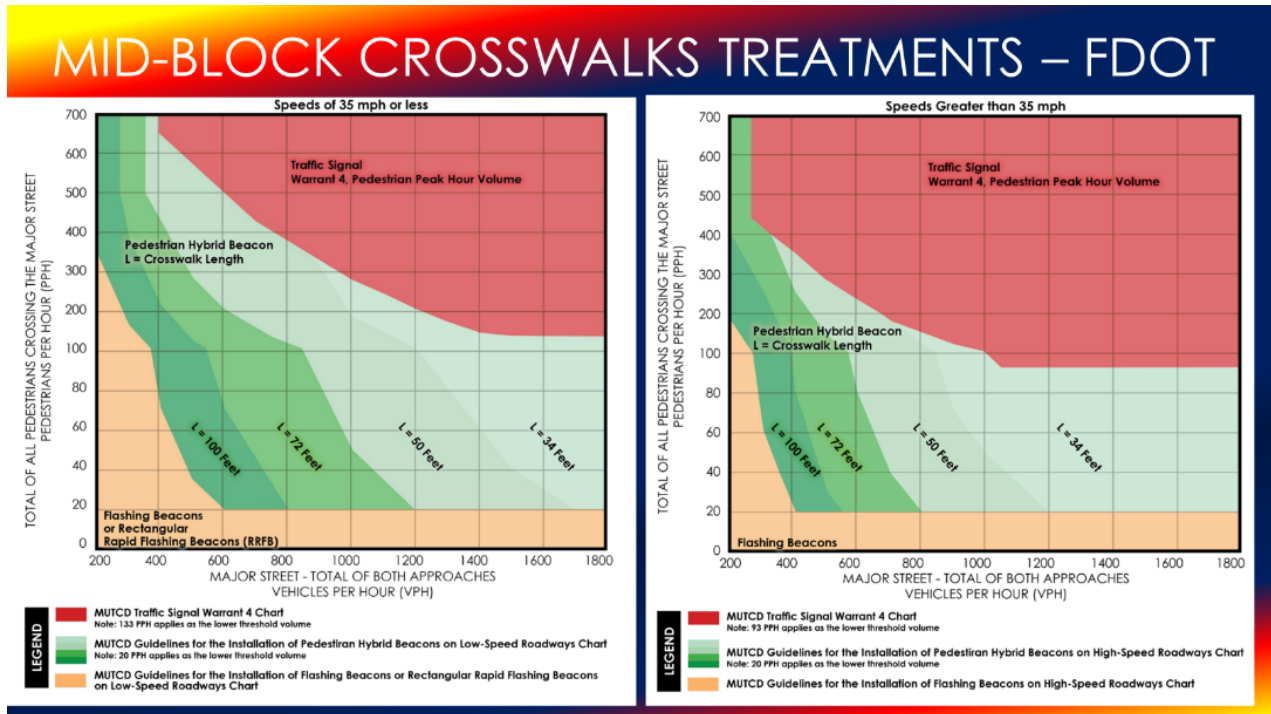



Figure 5 - Mid-Block Crosswalks Treatment - FDOT Charts.

Several PHBs have been installed around the County, including on Pine Island Road north of Commercial Boulevard, on Flamingo Road north of SR 84, and on Rock Island Road, just to name a few. When possible, the County installs refuge islands at pedestrian crossings, in addition to improving visibility by the removal of landscaping in the medians. The PHBs are very popular around the country, but fairly new to the region, so there is a certain amount of education and awareness needed for people to adhere to the signal. However, following known standards of the road should lead to delivering the message about use. (See slide below).

In response to the receipt of questions from residents about the beacons, the County plans on featuring instructional videos on the County website.

Pedestrian Hybrid Beacon

- Beacon head consists of two red lenses above a single yellow lens.
- The lenses remain "dark" until a pedestrian desiring to cross the street pushes the call button to activate the beacon.
- Call button initiates a yellow to red lighting sequence consisting of flashing and steady lights that directs motorists to slow and come to a stop, and provides the right-of-way to the pedestrian to safely cross the roadway before going dark again.




U.S. Department of Transportation
Federal Highway Administration


OFFICE OF SAFETY
Proven Safety Countermeasures

Pedestrian Hybrid Beacons


The pedestrian hybrid beacon (PHB) is a traffic control device designed to help pedestrians safely cross high-speed roadways at mid-block crossings and uncontrolled intersections. The beacon head consists of two red lenses above a single yellow lens. The lenses remain "dark" until a pedestrian desiring to cross the street pushes the call button to activate the beacon, which then initiates a yellow to red lighting sequence consisting of flashing and steady lights that directs motorists to slow and come to a stop, and provides the right-of-way to the pedestrian to safely cross the roadway before going dark again.




1. Dark Lens Activated




2. Flashing Yellow When Activated




3. Steady Yellow



4. Steady Red During Pedestrian Cross Movement



5. Alternating Flashing Red During Pedestrian Clearance Interval



6. Dark Again Lens Activated

Legend
 DF Steady yellow
 FF Flashing yellow
 DR Steady red
 FR Flashing red

Sequence for a PHB. Source: MUTCD 2009 Edition, p. 611. FHWA




Figure 6 - Slide of Pedestrian Hybrid Beacon (PHB)

The Pedestrian Traffic Signals (PTS) provide the greatest level of safety; however, they are the most difficult to warrant and most costly of the crossing safety options. These signals do not normally have audio warnings, but they can be added if needed in areas where there is a known population of visually impaired pedestrians.

Pedestrian Traffic Signal

The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

- Based on MUTCD Warrant 4 Pedestrian Volume
 - Four Hour Warrant 107 peds per hour
 - One Hour Warrant 133





Figure 7 - Slide with Information about the Pedestrian Traffic Signal. The image was taken at the Davie Road Extension near the educational campus.

DISCUSSION

- Member Wolf shared experiences with these specialized crossing signals. He asked if roadway level of service applies to the consideration of whether to install this type of signal at a mid-block crossing. Mr. Awwad responded that they try to be consistent with Federal and State guidelines. They also take into account need, as well as distance to another crossing signal, and a cost/benefit analysis.

- Activities that invite pedestrians and cyclists influence the need for people to cross. Mr. Caratozzolo provided an example where they are considering a beacon crossing after the fact, at a park where a new road connection was built. There has been a marked increase in informal mid-block crossings, so they are looking at how to increase safety at this location.
- Sometimes they seize the opportunity to potentially add a mid-block crossing into the design of other planned roadway improvements. Mr. Caratozzolo also shared that adding a pedestrian refuge requires consideration of number of lanes and crossing width, as well as sufficient ROW of accommodate the feature.
- Vice-chair Goldstein asked whether narrowing lanes has been considered not only for adding island refuges but also bulb-outs at intersections or crossing edges. He mentioned that he is aware that in the City of Atlanta, lanes are sometimes narrowed to ten feet to accommodate these features.
- Previously, the County relied on an interim approval received from FDOT to install RRFBs and PHBs on a trial basis. Some municipalities used the County's umbrella approval to install them in their own jurisdictions. Currently, these installations are approved in Florida and listed in the MUTCD, but must meet the required warrants. Each jurisdiction is responsible for the installations, including bulb-outs and other speed reduction measures.
- The need for additional lighting is also considered in the study and design of the mid-block crossing installation.
- As the Broward County Transit's (BCT) PREMO plan is implemented, the Traffic Engineering Division will be working with BCT on designing and installing appropriate pedestrian crossings in relationship with the stations.
- The MUTCD includes standards, guidelines and options. The County is required to adhere to the required standards and considers guidelines and options using engineering judgement. Liability and consistency factor into decisions.
- Ms. Forelle asked about the use of speed tables at crossings, since she has seen several new mobility projects proposing them. Mr. Awwad responded that among the factors that need to be considered are the width of the roadway (number of lanes) and the slope of the approaches so that a hazard is not being created. They may be appropriate for two-lane local roadways where posted speeds are in the 30-mph range. Mr. Caratozzolo mentioned that the County is currently working on a speed calming plan for one of the Broward Municipal Services District neighborhoods in Central County, which may include speed tables.

3. DISCUSSION – Designing Ped & Bike Friendly Communities Brochure Draft

Ms. Forelle shared copies of the draft brochure and asked BPAC members to review. She recommended scheduling a discussion for the May 8 meeting, since presenters have already confirmed attendance to the March 13 meeting. She reminded members that the brochure fulfills the BPAC's goal of publishing an information piece on the BPAC website for use developers and architects that includes least 10 best practices for incorporating and encouraging active travel. Ms. Forelle described the research she conducted and organized the recommendations around a framework that the Dutch use in their bicycle system and safety planning efforts, such as safety, continuity and comfort. A portion of the draft brochure is dedicated to what can be done at the community, neighborhood and building design levels. Building design includes considerations published in the BMPO's Complete Streets 2.0 guidebook that reference "end of trip facilities". These types of features could help promote greater bicycle usage as a true alternative to using the car.

Ms. Forelle stated the brochure is a draft document that BPAC members can use to make their own. She is looking for comments about the graphics, layout and content that can enhance the document. The intent is to produce a “conversation piece” that can be handed to someone else to begin a conversation about the topic and lead the recipient to more information. She recommended reserving time for discussion at the May 2024 meeting.

DISCUSSION

- Chair Kroll suggested that the brochure begin with the issues regarding the injuries and then continue with how to avoid or diminish the crashes by providing solutions such as creating corridors that are safe, contiguous, attractive. This would be a strong way to get to a politician: here is the issue and how to make it better. He liked some of the points being made and how to make the corridors and built environment safer and better.
- Member Lim shared that one of the challenging issues is defining the general audience. Need to include “what’s in it for them?” and modify it by jurisdiction.
- A question was asked about sources of data that would be specific to municipalities. Ms. Forelle states the last page of the brochure points to links where more information can be obtained. It was suggested that a link to Signal 4 Analytics might be helpful. The crash heat maps by state, county and jurisdiction show where crashes concentrate on the network. It could be added as a link in the brochure under, “Go to this site and see what is happening in your City”, along with the phrase, “If you want to know more about your community, check this link: <https://signal4analytics.com/>” (please note that not all jurisdictions are listed).
- The brochure could include a “Want to get involved?” section that includes links. include local governments and encourages people to show up to meetings and provide comments.
- The brochure should be added as a discussion item on the May 2024 agenda. The brochure should be accessible and general, but also provide useful information.
- The brochure should include specifics or graphics about fatalities in 2022-2023.

VI. OLD BUSINESS

None.

VII. AGENCY UPDATES

None.

VIII. STAFF REPORT

Ms. Forelle shared that the annual proclamation was submitted. She is waiting on whether it will be scheduled, since the number of proclamations that can be read at each public hearing is limited to two to three. A Commissioner is needed to sponsor the proclamation. Commissioner Fisher supported Bicycle Month in the past. If a Commissioner is identified to put the proclamation forward, Ms. Forelle will send invitations once the date is confirmed. Ms. Finlayson suggested that one of the Commissioners in whose district a bike rodeo will be held may be willing to sponsor the proclamation.

IX. PUBLIC COMMENT

None

X. COMMITTEE MEMBER UPDATES

- a. *Complete Streets Team Updates* – Ms. Forelle shared information about a special Complete Streets Team meeting where the Coral Springs Everglades Memorial Loop and bridge over the Sawgrass was discussed. The City of Coral Springs was seeking a letter of support to apply for a SUN Trail Grant.
- b. *Committee Member Updates* – None

XI. ADJOURN

The meeting adjourned at 8:17 p.m.

Next Meeting: Wednesday, March 13, 2024, at 6:30 PM

Transcript of meeting or recording available upon request. Contact Sara Forelle, Senior Planner, for additional information. Email: sforelle@broward.org or Phone: (954) 357-9785