

# STEP

Safe Transportation for  
Every Pedestrian



## Pedestrian Hybrid Beacons

Duane Thomas, FHWA  
Joel Meyer, City of Austin  
Ryan Lowe, City of Columbus  
May 29, 2018



U.S. Department of Transportation  
**Federal Highway Administration**

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The screenshot shows the website for the Pedestrian and Bicycle Information Center (PBIC). The header is green with the PBIC logo (a pedestrian, a bicycle, and an information icon) and the text "Pedestrian and Bicycle Information Center". Below the header is a navigation menu with links for "Data & Resources", "Community Support", "Planning & Design", "Training & Events", and "Behavior Change". The main content area is white and features a sidebar on the left with a "TRAINING & EVENTS" section containing links for "Webinars", "Livable Communities", "Ped Focus Series", "PSAP Series", "Additional Webinars", "University Courses", "In Person Training", "CEU & PDH Information", "Course Costs", "Instructors", "Course References For Instructors", and "Conferences & Events". The main content area has a "Webinars" section with a sub-header "Webinars" and a paragraph explaining that PBIC offers webinars on various topics related to pedestrian and bicycle safety. It includes a link to sign up for a newsletter and follow on Facebook and Twitter. Below this is an "Upcoming Webinars" section with a sub-header "Upcoming Webinars" and a link to a webinar titled "4/10/2018 - Tools to Inventory Pedestrian Crossing Infrastructure". This webinar is presented by Tim Fremaux, Lorraine Moyle, and Carey Shepherd. It also includes a link to sign up for a newsletter. The "Recently Delivered Webinars" section has a sub-header "Recently Delivered Webinars" and two links to past webinars: "1/30/2018 - Selecting Countermeasures for Uncontrolled Crossing Locations" and "12/14/2017 - Safety Performance Measures for Bicyclists and Pedestrians". The first webinar is presented by Gabe Rousseau, Lauren Blackburn, and Charlie Zegeer. The second webinar is presented by David Kopacz, Amy Schick, and UNC Highway Traffic Safety Administration. The "12/11/2017 - Determining the Safety Impacts of Bicycling and Walking Investments" webinar is presented by Daniel Carter and Raghavan Srinivasan.



# The Fabulous Five: STEP Countermeasures



Crosswalk Visibility Enhancements



Raised Crosswalk



Pedestrian Refuge Island



Pedestrian Hybrid Beacon (PHB)



Road Diet

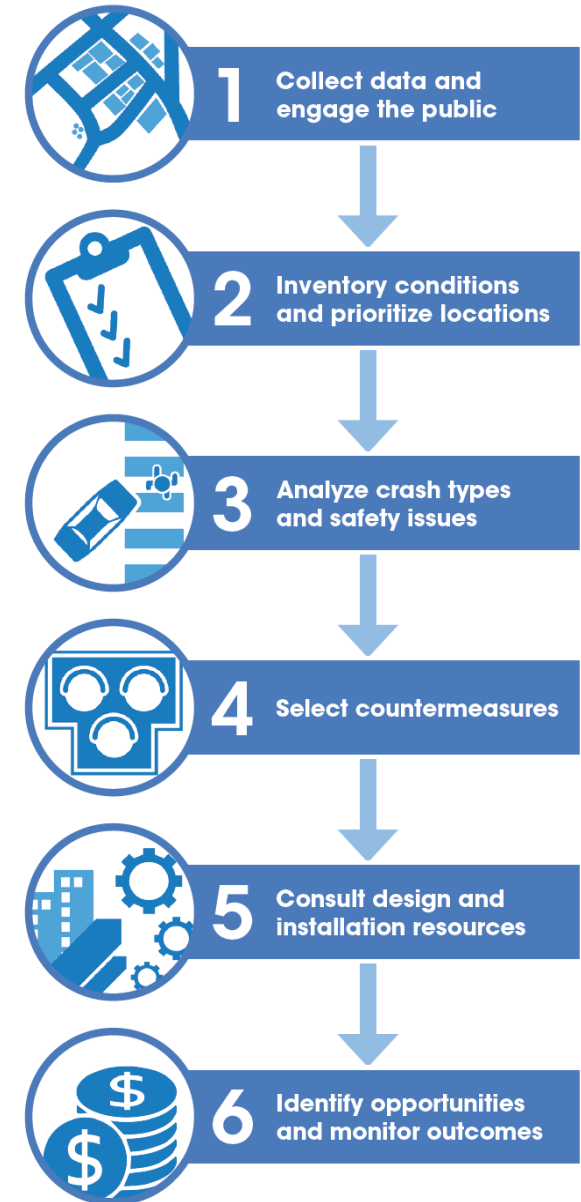
Rectangular Rapid Flashing Beacon (RRFB)  
Coming Soon!

# Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

Follows a 6-step process

Guides the selection of countermeasures to improve pedestrian safety

Supported by a “Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations”



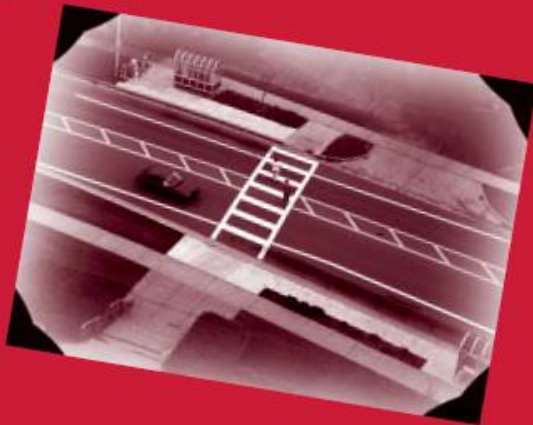
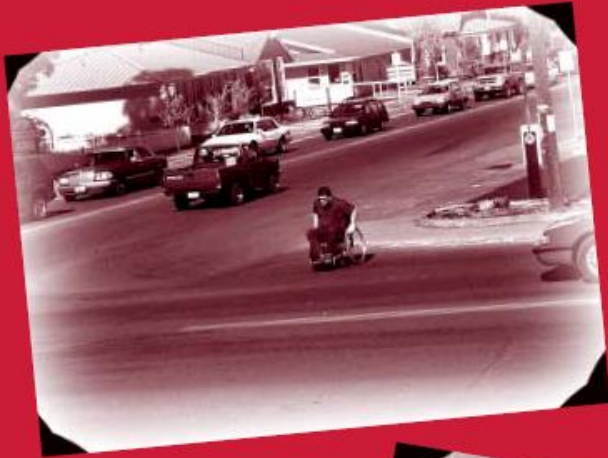


# Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations

Final Report and  
Recommended Guidelines

FHWA PUBLICATION NUMBER: HRT-04-100

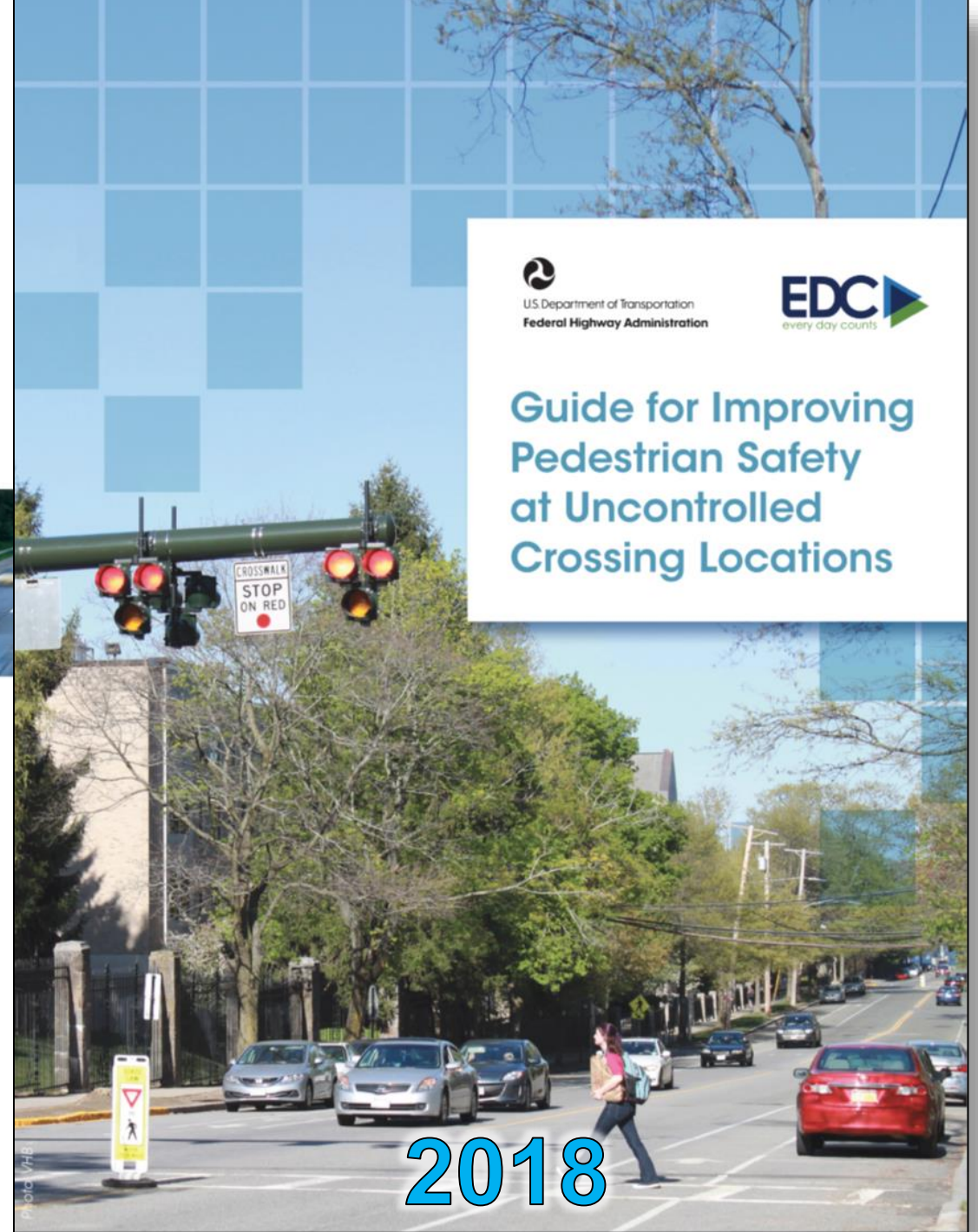
SEPTEMBER 2005



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Federal Highway Administration

Research, Development, and Technology  
Turner-Fairbank Highway Research Center  
6300 Georgetown Pike  
McLean, VA 22101-2296

2005



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## Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

2018



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## **FHWA EVERY DAY COUNTS 4 / STEP**

**For Additional Information Contact:**

[https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_4/step.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/step.cfm)

**Becky Crowe**  
**FHWA Office of Safety**  
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[Rebecca.Crowe@dot.gov](mailto:Rebecca.Crowe@dot.gov)

**Peter Eun**  
**FHWA Resource Center**  
**(360) 753-9551**  
[Peter.Eun@dot.gov](mailto:Peter.Eun@dot.gov)





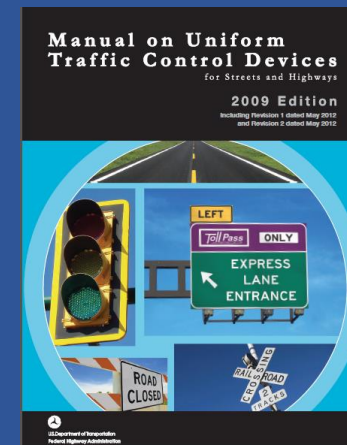
# Pedestrian Hybrid Beacons

**Duane H. Thomas, P.E.**

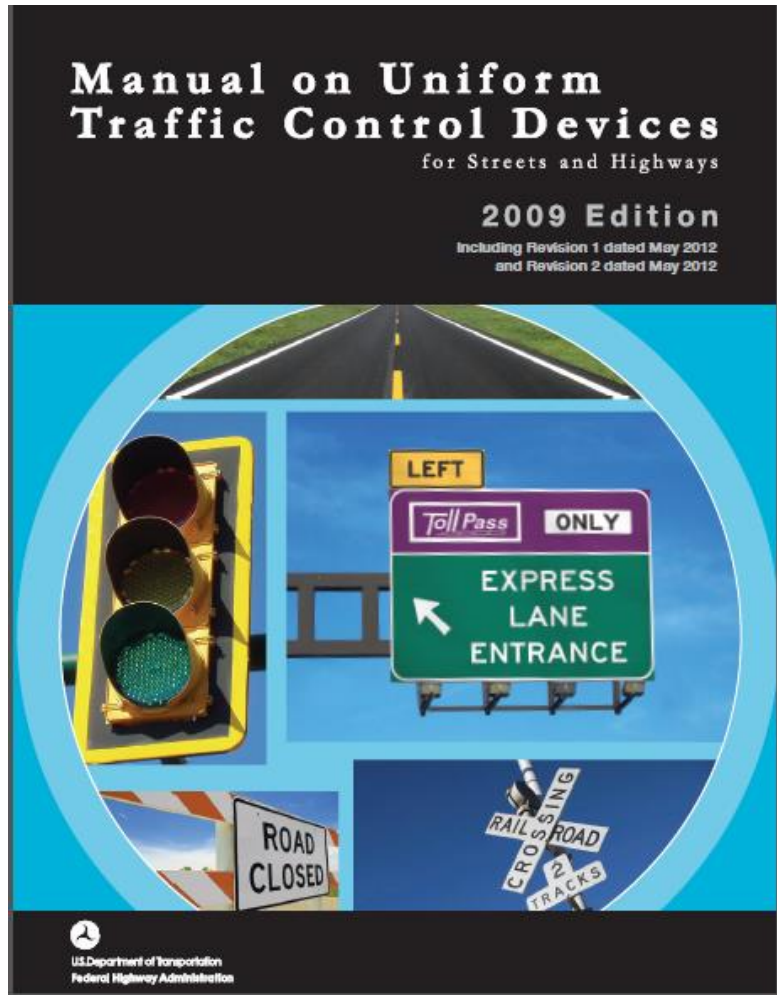
**Federal Highway Administration**

**MUTCD Team**

**May 29, 2018**



# The 2009 MUTCD with Revisions 1 and 2 Incorporated



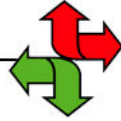
**2009 MUTCD  
Effective Date:  
January 15, 2010**

**MUTCD w/ Rev 1 and 2  
Effective Date:  
June 13, 2012**


**Current Official Version  
Available only on the  
MUTCD website**

# The MUTCD Website: [mutcd.fhwa.dot.gov](http://mutcd.fhwa.dot.gov)

## Manual on Uniform Traffic Control Devices (MUTCD)



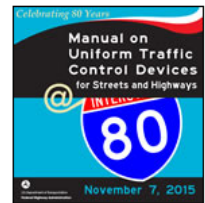
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## Manual on Uniform Traffic Control Devices for Streets and Highways

### Your MUTCD — Guiding You for Over 80 Years

On November 7, 2015, the U.S. celebrated [80th birthday of the MUTCD](#). Whenever you see an easy-to-read sign, a bright edgeline marking on a foggy night, the countdown timer at a crosswalk, or a well-placed bike lane, take a moment to reflect on the more than eighty years of progress and innovation that the MUTCD embodies. This progress has resulted in safer, more efficient travel on our Nation's roads. Over the years, the MUTCD has unknowingly become the traveler's best friend and silent companion, guiding us on our way along the streets, bikeways, back roads, and highways. As the direct means of communication with the traveler, traffic control devices speak to us softly, yet effectively and authoritatively. From glass "cat's-eye" reflectors to glass beads to microprismatic sheeting, nighttime sign visibility has advanced significantly. Active devices at rail crossings save lives by giving us a positive message about train traffic. And countdown timers on pedestrian signals help us cross a busy street. So the next time you hit the pavement, the path, or the pedals, you can be sure that the MUTCD, through our dedicated professionals who make complex decisions on what devices to install, will help you get where you want to go safely, efficiently, and comfortably! The MUTCD...it's all about you!



### What's New

**UPDATED March 20, 2018**

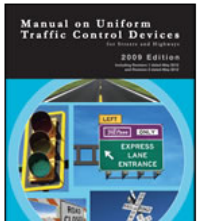
Check out the [MUTCD News Feed](#) for up-to-the-minute information on new items such as Interim Approvals, Official Interpretations, Policy Statements, Federal Register notices—everything you need to make the most of your MUTCD and keep road users on the move!

### Current Edition of Manual on Uniform Traffic Control Devices for Streets and Highways

The *Manual on Uniform Traffic Control Devices for Streets and Highways*, or **MUTCD** defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public travel. The MUTCD is published by the Federal Highway Administration (FHWA) under [23 Code of Federal Regulations \(CFR\), Part 655, Subpart F](#).

The MUTCD, which has been administered by the FHWA since 1971, is a compilation of national standards for all traffic control devices, including road markings, highway signs, and traffic signals. It is updated periodically to accommodate the nation's changing transportation needs and address new safety technologies, traffic control tools, and traffic management techniques.

On December 16, 2009 a final rule adopting the 2009 Edition of the MUTCD was published in the Federal Register with an effective date of January 15, 2010. States must adopt the 2009 National MUTCD as their legal State standard for traffic control devices within two years from the effective date. The Federal Register notice, which provides detailed discussion of the FHWA's



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# Pedestrian Treatment Toolbox

- *Pedestrian-activated Flashing LEDs in the Border of a Warning Sign*
- *Enhanced Conspicuity of Pedestrian Crossing Signs*
- *YIELD/STOP Here to Pedestrians signs (multi-lane approaches)*
- *Overhead Pedestrian Crossing Signs*
- *In-street Pedestrian Crossing Signs*
- *High-visibility Crosswalk Markings*
- *Midblock Pedestrian Signals*
- *Pedestrian Hybrid Beacons*
- *Pedestrian-activated Warning Beacons*
- *In-roadway Warning Lights*
- *Curb Extensions (bulb-outs, neckdowns)*
- *Pedestrian Refuge Islands (median islands)*
- *Raised Crosswalks*
- *Crosswalk Lighting*



# CHAPTER 4F. PEDESTRIAN HYBRID BEACONS



Figure 1. A PHB in Phoenix Arizona provides protection for pedestrians near a high school. Photo Credit: Mike Cynecki

# Pedestrian Hybrid Beacon - History

- City of Tucson, Arizona starting in the late 1990s
- R. B. Nassi, P.E., PhD. Transportation Administrator
- Modeled after similar device in England
- Originally called a HAWK (**H**igh-Intensity **A**ctivated cross**W**alk **K** beacon)



# CHAPTER 4F. PEDESTRIAN HYBRID BEACONS

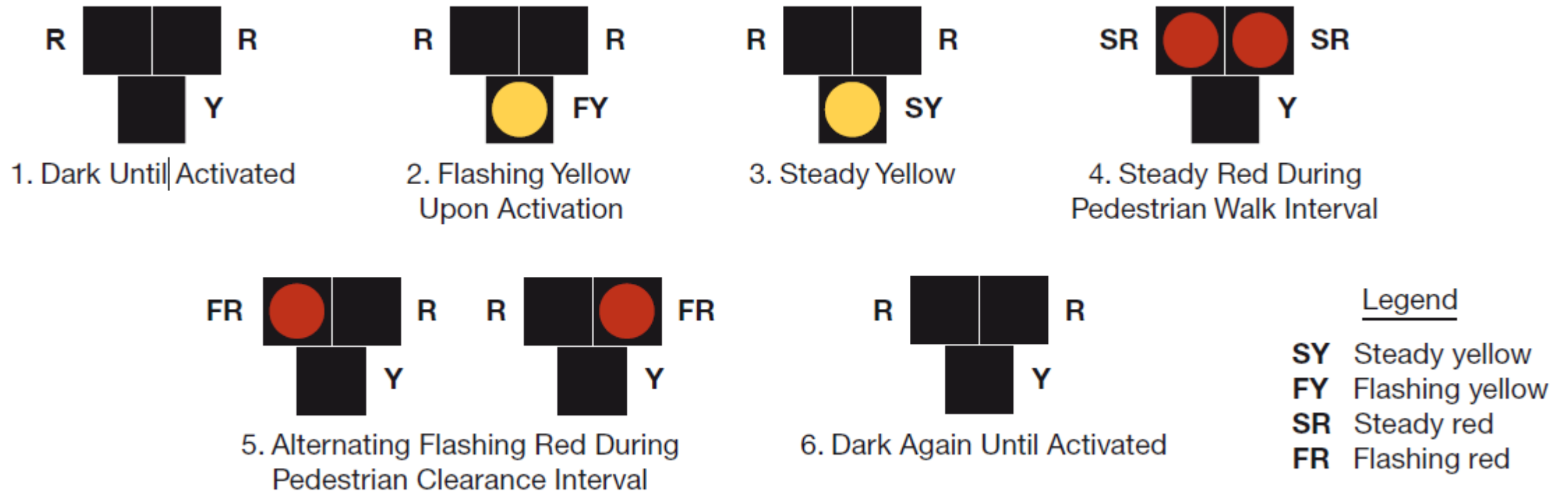


Figure 3. Corresponding Display Sequence for PHB and Pedestrian Signal

# Benefits

- **FHWA Research Study on PHBs:**
  - **Pedestrian crashes reduced by 69%**
  - **Total crashes reduced by 29%**
  - **Serious injury and fatal crashes reduced by 15%**
  - **Rear-end crashes do not increase**
  - **50% less delay compared to traditional signalized crossings**
  - **96% driver compliance when PHB was active**

Source: FHWA-HRT-10-0421, July 2010 and FHWA-HRT-16-040, July 2016

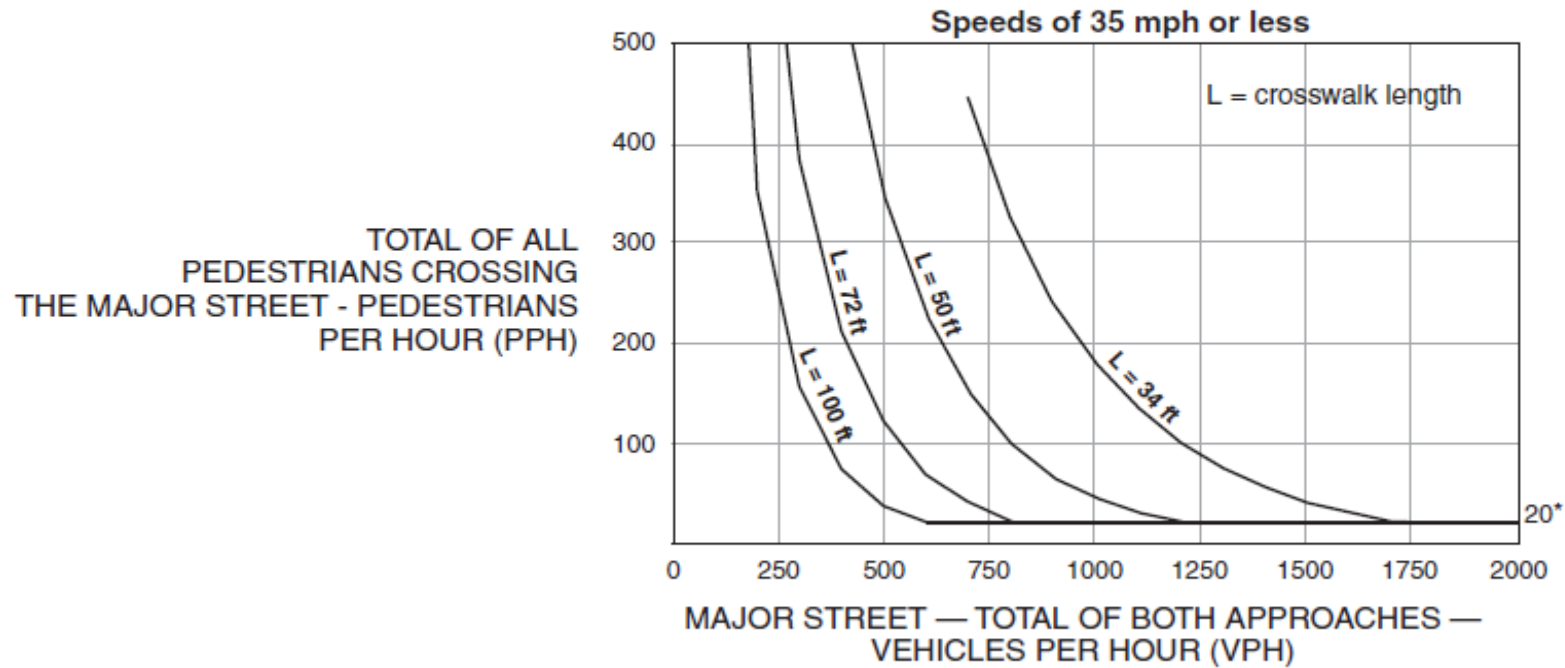
## Section 4F.01 Application of PHBs

OPTION: A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings:

- Traffic control signal is warranted, but decision is made not to install, or
- Traffic control signal is not justified under the signal warrants and:
  - Gaps in traffic are not adequate to permit pedestrians to cross, or
  - Speed for vehicles approaching on the major street is too high to permit pedestrians to cross, or
  - Pedestrian delay is excessive

# Section 4F.01 Application of PHBs

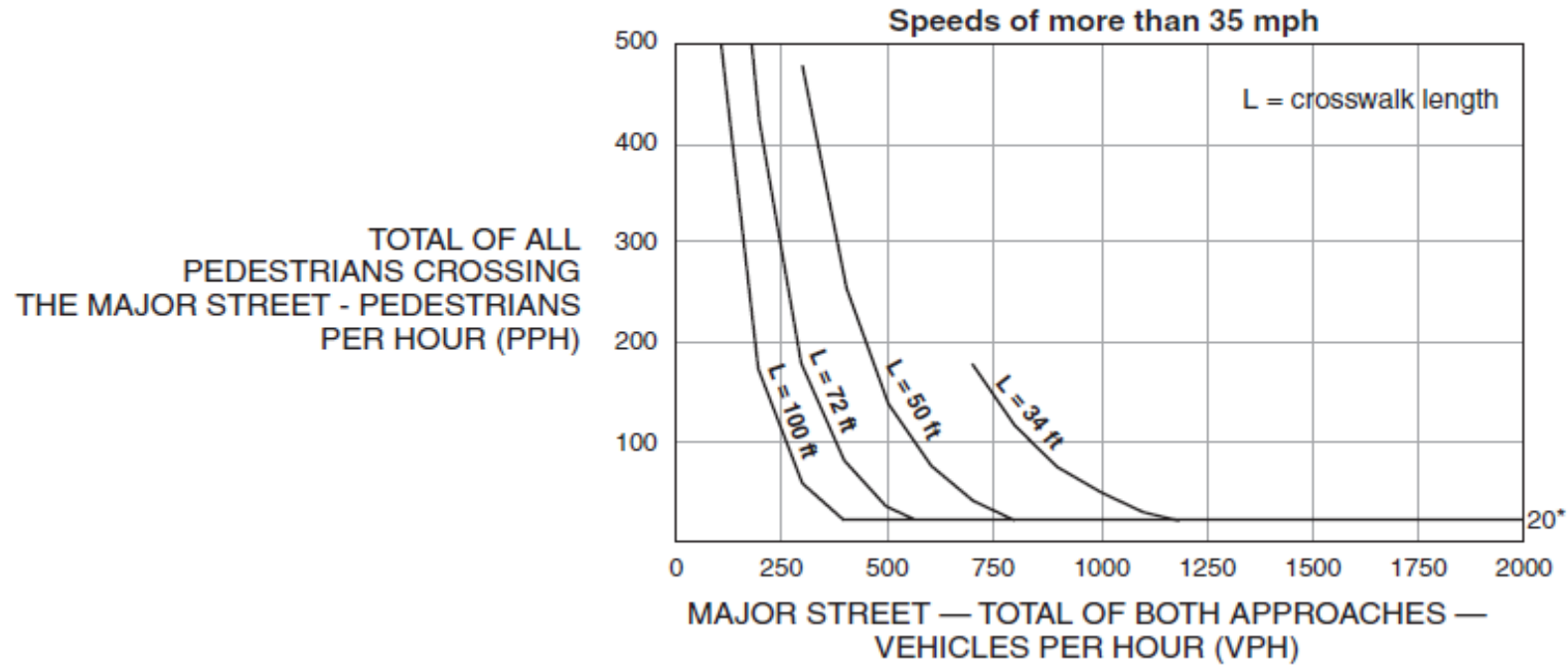
Figure 4F-1. Guidelines for the Installation of Pedestrian Hybrid Beacons on Low-Speed Roadways



\* Note: 20 pph applies as the lower threshold volume

# Section 4F.01 Application of PHBs

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



## Section 4F.02 Design of PHBs

- **At least two pedestrian hybrid beacon faces shall be installed for each approach of the major street,**
- **A stop line shall be installed for each approach to the crosswalk,**
- **A pedestrian signal head conforming to the provisions set forth in Chapter 4E shall be installed at each end of the marked crosswalk, and**
- **The pedestrian hybrid beacon shall be pedestrian actuated.**



## Section 4F.02 Design of PHBs

*“The pedestrian hybrid beacon should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs”*

- Guidance statement in MUTCD
- Additional research and field experience after 2009 indicated the 100 feet requirement is not needed
- Severely limited locations where PHBs could be considered, especially along densely developed streets
- Very likely to be considered for revision in next MUTCD

## Section 4F.02 Design of PHBs

- *Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk, or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance,*
- *The installation should include suitable standard signs and pavement markings, and*
- *If installed within a signal system, the pedestrian hybrid beacon should be coordinated.*

# PHB - Timing

- *Guidance:*
  - *The duration of the flashing yellow interval should be determined by engineering judgment.*
- **Standard:**
  - **The duration of the steady yellow change interval shall be determined using engineering practices.**
- *Guidance:*
  - *The steady yellow interval should have a minimum duration of 3 seconds and a maximum duration of 6 seconds (see Section 4D.26). The longer intervals should be reserved for use on approaches with higher speeds.*

# PHB - Regulatory Signs

**A CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign (see Section 2B.53) shall be mounted adjacent to a pedestrian hybrid beacon face on each major street approach. If an overhead pedestrian hybrid beacon face is provided, the sign shall be mounted adjacent to the overhead signal face.**



R10-23



R10-23a

# CHAPTER 4F. PEDESTRIAN HYBRID BEACONS



Figure 7. PHB installed on Buford Highway near pedestrian attractors: a transit stop. Photo credit: Bruce Landis

Option: May treat as two-stage crossing if median refuge is greater than 6 feet width.



Photo credit: *Public Roads*, 2016

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## Manual on Uniform Traffic

### Your MUTCD — Guiding You fo

On November 7, 2015, the U.S. celebr or a well-placed bike lane, take a mom on our Nation's roads. Over the years, highways. As the direct means of comr microprismatic sheeting, nighttime sign on pedestrian signals help us cross a b make complex decisions on what devic

### What's New

**UPDATED April 13, 2018**

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### Current Edition of Manual on U

The *Manual on Uniform Traffic Cont* devices on all public streets, highways, [Regulations \(CFR\), Part 655, Subpart f](#)

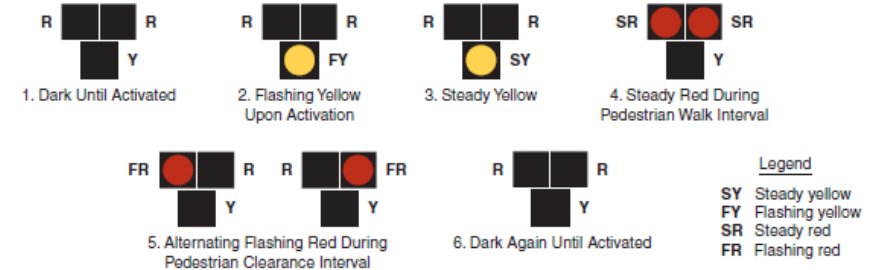
The MUTCD, which has been administe signals. It is updated periodically to ac

2009 Edition

Page 511

Known Error

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



*B. Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk, or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance,*

*C. The installation should include suitable standard signs and pavement markings, and*

*D. If installed within a signal system, the pedestrian hybrid beacon should be coordinated.*

05 *On approaches having posted or statutory speed limits or 85th-percentile speeds in excess of 35 mph and on approaches having traffic or operating conditions that would tend to obscure visibility of roadside hybrid beacon face locations, both of the minimum of two pedestrian hybrid beacon faces should be installed over the roadway.*

06 *On multi-lane approaches having a posted or statutory speed limits or 85th-percentile speeds of 35 mph or less, either a pedestrian hybrid beacon face should be installed on each side of the approach (if a median of sufficient width exists) or at least one of the pedestrian hybrid beacon faces should be installed over the roadway.*

07 *A pedestrian hybrid beacon should comply with the signal face location provisions described in Sections 4D.11 through 4D.16.*

Standard:

Offic. Interp.

08 A CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign (see Section 2B.53) shall be mounted adjacent to a pedestrian hybrid beacon face on each major street approach. If an overhead pedestrian hybrid beacon face is provided, the sign shall be mounted adjacent to the overhead signal face.

Option:

09 A Pedestrian (W11-2) warning sign (see Section 2C.50) with an AHEAD (W16-9P) supplemental plaque may be placed in advance of a pedestrian hybrid beacon. A warning beacon may be installed to supplement the W11-2 sign.

Guidance:

10 *If a warning beacon supplements a W11-2 sign in advance of a pedestrian hybrid beacon, it should be programmed to flash only when the pedestrian hybrid beacon is not in the dark mode.*

Standard:

11 If a warning beacon is installed to supplement the W11-2 sign, the design and location of the warning beacon shall comply with the provisions of Sections 4L.01 and 4L.03.

Offic. Interp.

09 Section 4F.03 Operation of Pedestrian Hybrid Beacons

Standard:

01 Pedestrian hybrid beacon indications shall be dark (not illuminated) during periods between actuations.

Known Error

02 Upon actuation by a pedestrian, a pedestrian hybrid beacon face shall display a flashing CIRCULAR yellow signal indication, followed by a steady CIRCULAR yellow signal indication, followed by both steady CIRCULAR RED signal indications during the pedestrian walk interval, followed by alternating flashing CIRCULAR RED signal indications during the pedestrian clearance interval (see Figure 4F-3). Upon termination of the pedestrian clearance interval, the pedestrian hybrid beacon faces shall revert to a dark (not illuminated) condition.

Offic. Interp.



# *Contact Information*

*Duane H. Thomas, P.E.*

*Transportation Engineer*

*Federal Highway Administration*

*Resource Center*

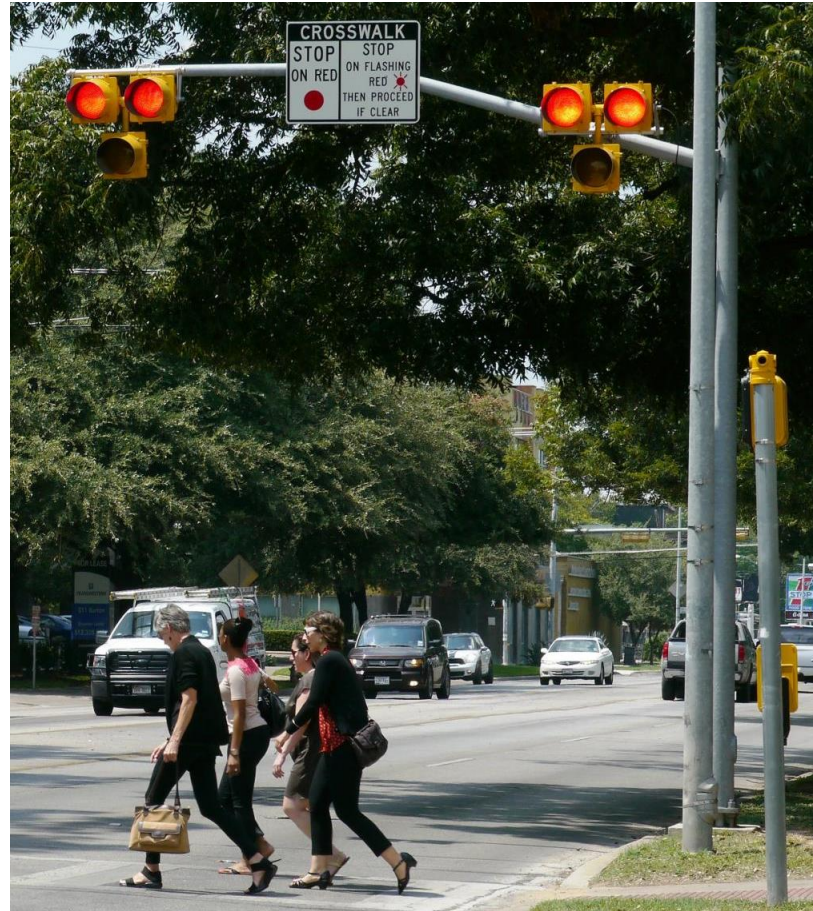
*Operations Technical Services Team*

*MUTCD Team*

*(404) 673-3222*

*Duane.Thomas@dot.gov*

# Austin's Experience with Pedestrian Hybrid Beacons



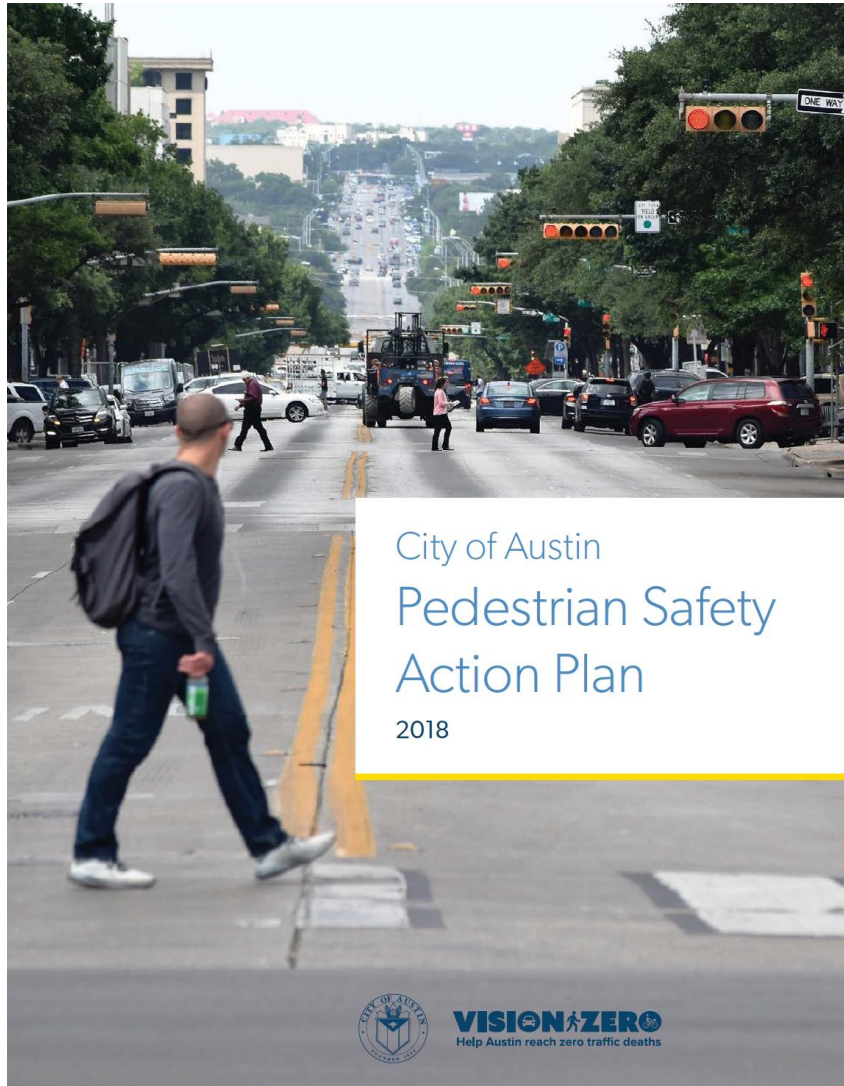
Joel Meyer | Pedestrian Coordinator  
Austin Transportation Department  
[joel.meyer@austintexas.gov](mailto:joel.meyer@austintexas.gov)



Congress Ave







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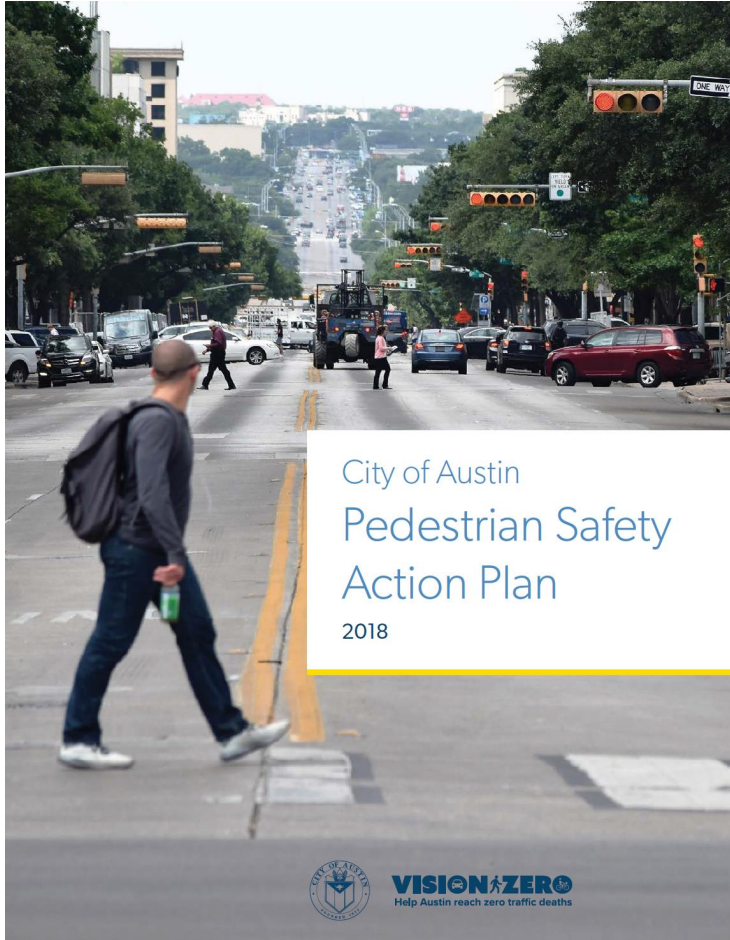
## In Austin:

- 38% of pedestrian crashes occur mid-block
- 75% of pedestrian fatalities in Austin occur mid-block
- Mid-block crashes were twice as likely to result in serious injury or fatality as intersection crashes.

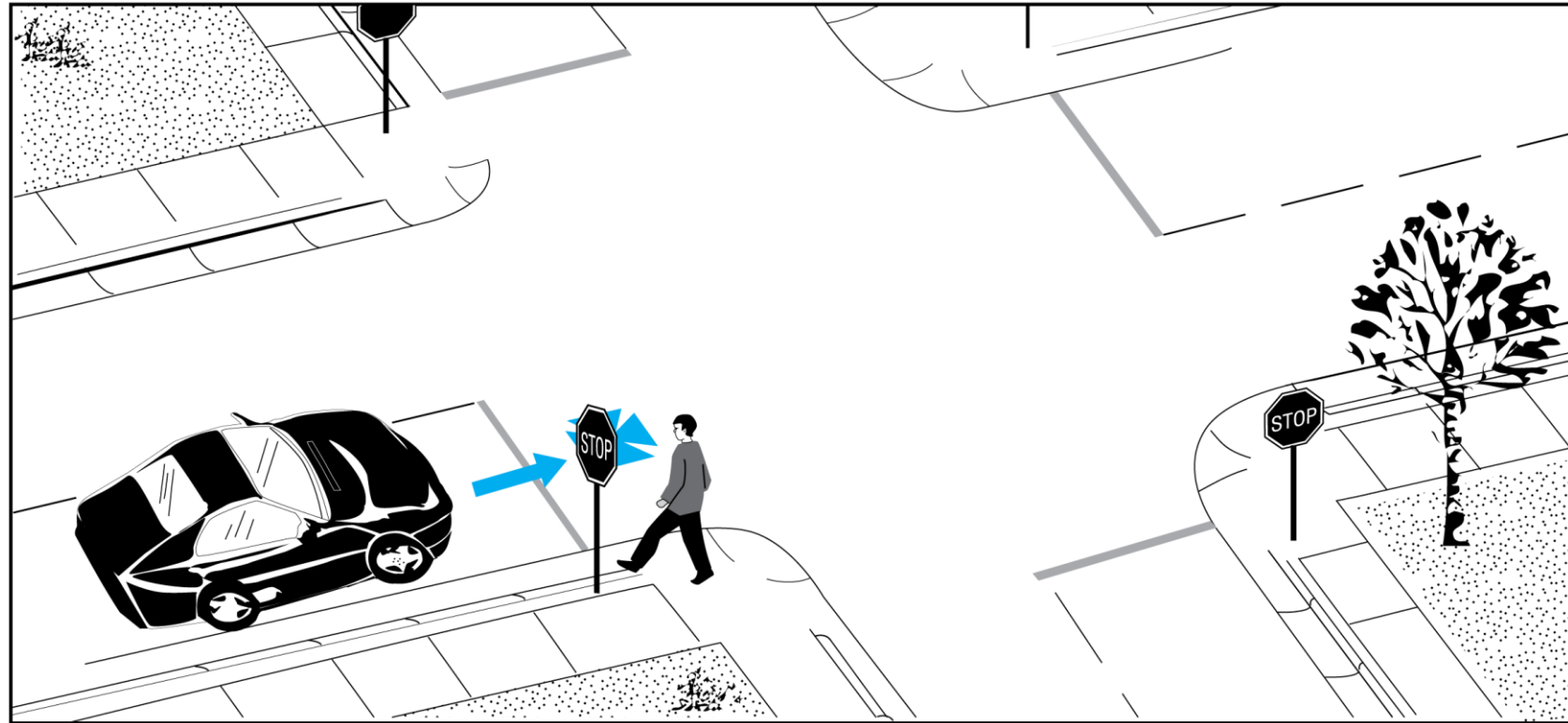
Source: CRIS, 2010-2015



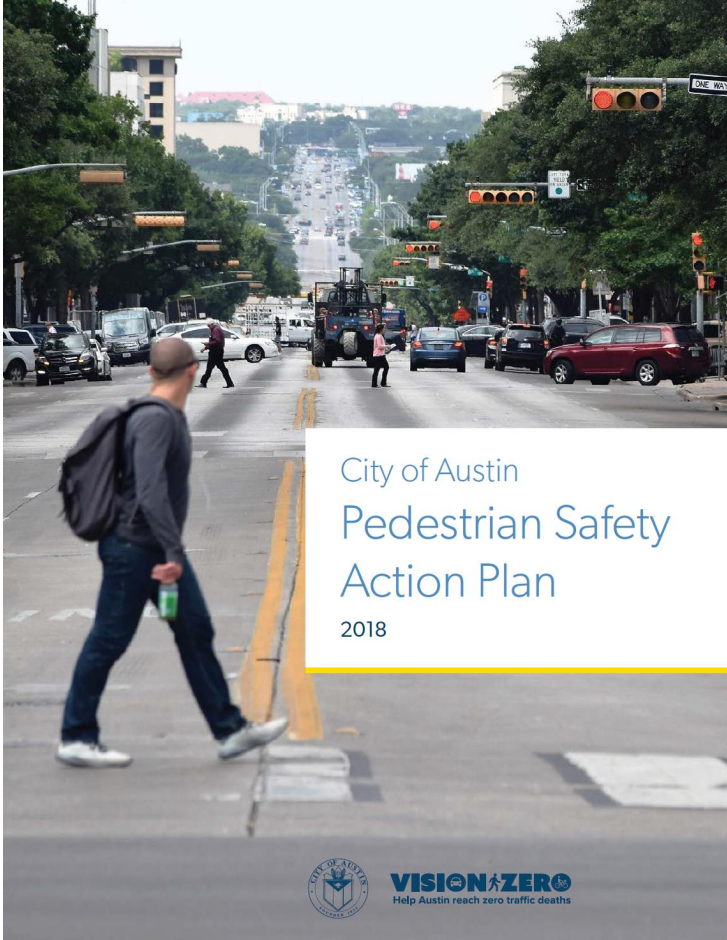
33% of Austin's serious injury and fatal pedestrian crashes between 2010-2015 can be categorized as *Crossing Roadway* – *Vehicle Not Turning* crash type



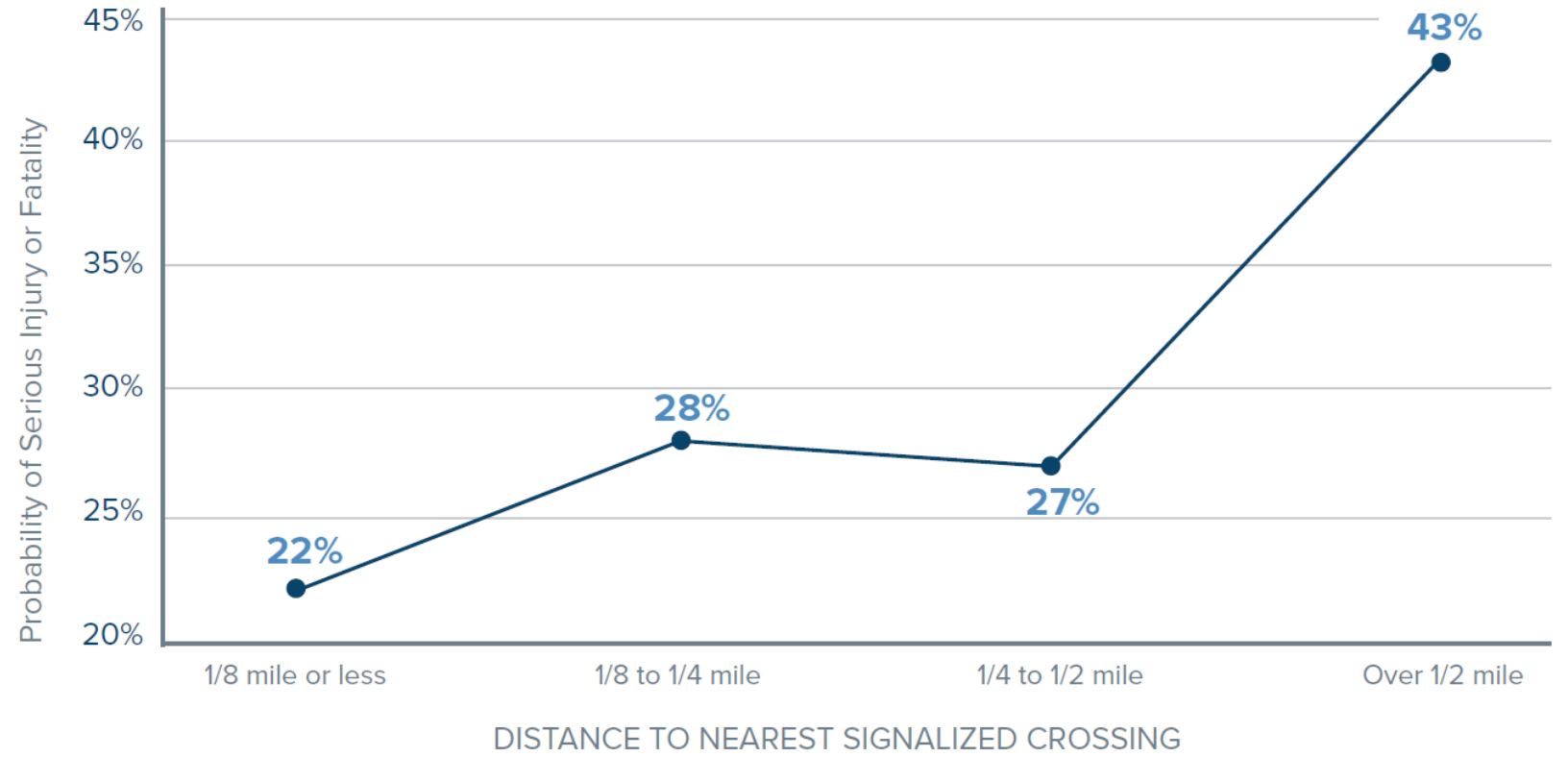
[austintexas.gov/pedsafetyplan](http://austintexas.gov/pedsafetyplan)



[http://www.pedbikeinfo.org/pbcat\\_us](http://www.pedbikeinfo.org/pbcat_us)

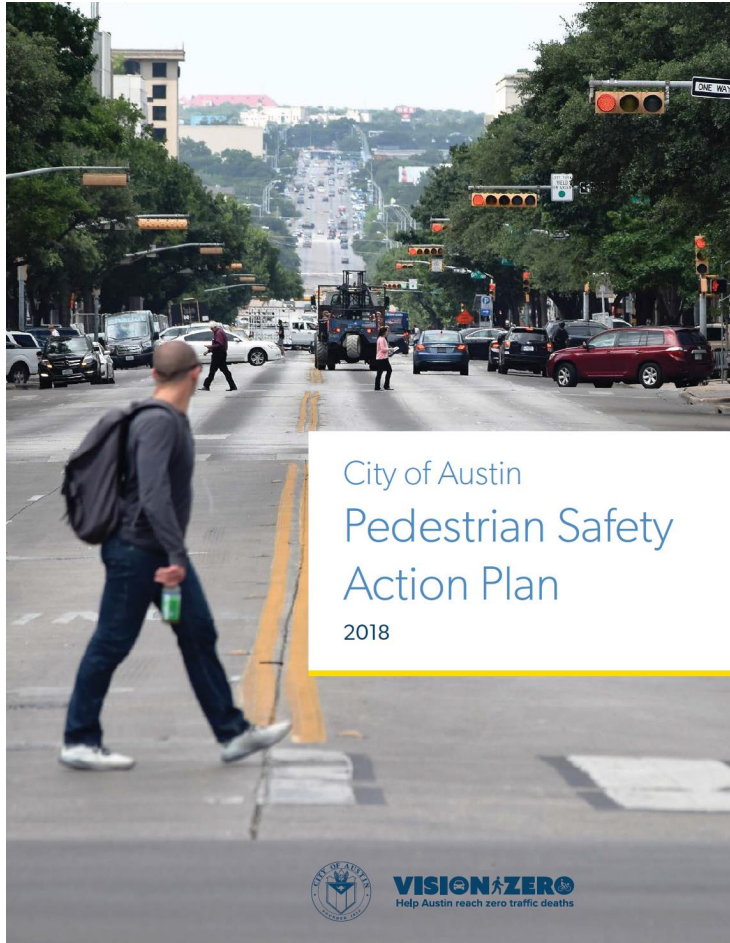


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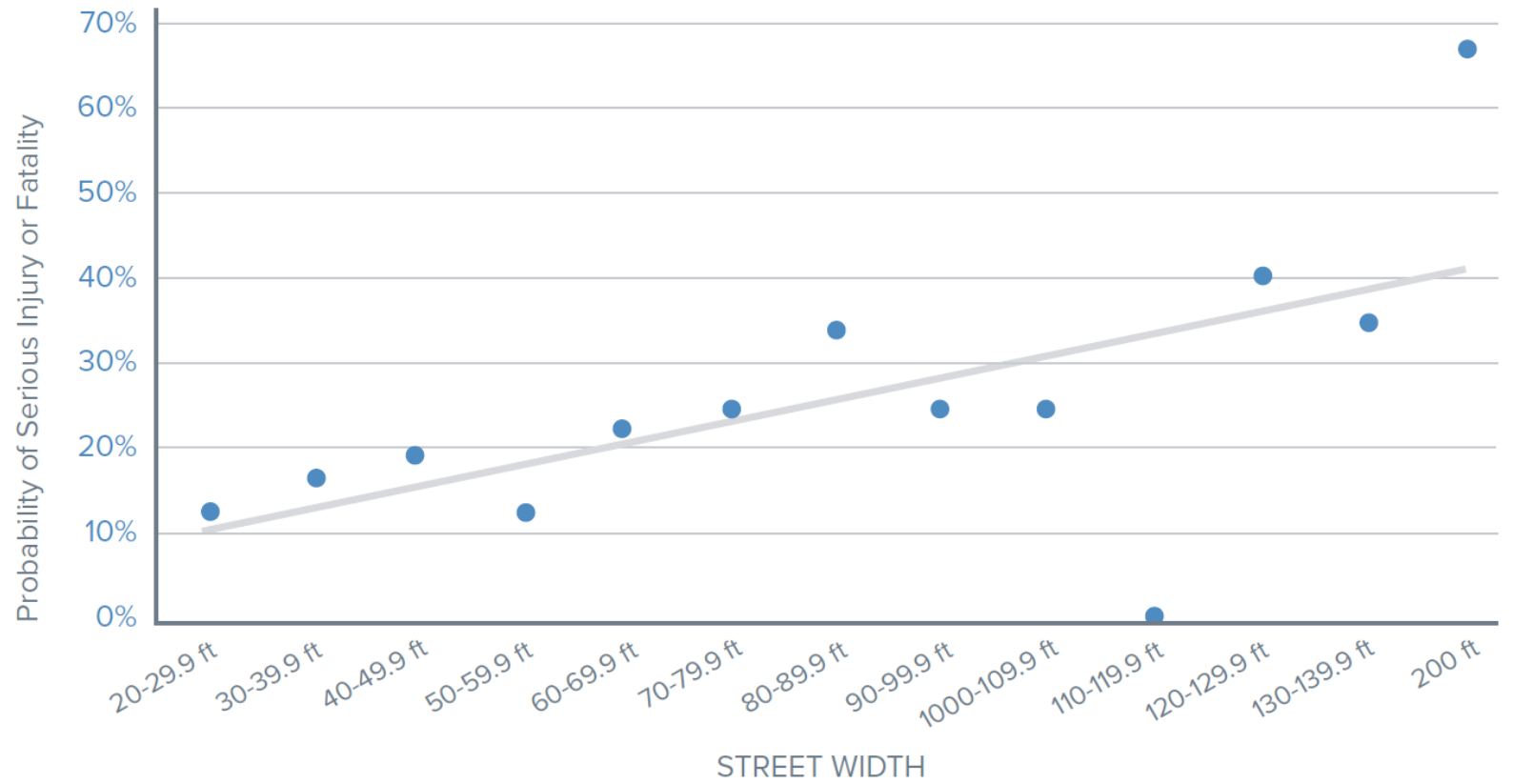


**Figure 7.** Distance to Nearest Signalized Crossing and Pedestrian Crash Severity, Austin, Texas





[austintexas.gov/pedsafetyplan](http://austintexas.gov/pedsafetyplan)



**Figure 6.** Street Width and Pedestrian Crash Severity, Austin, Texas

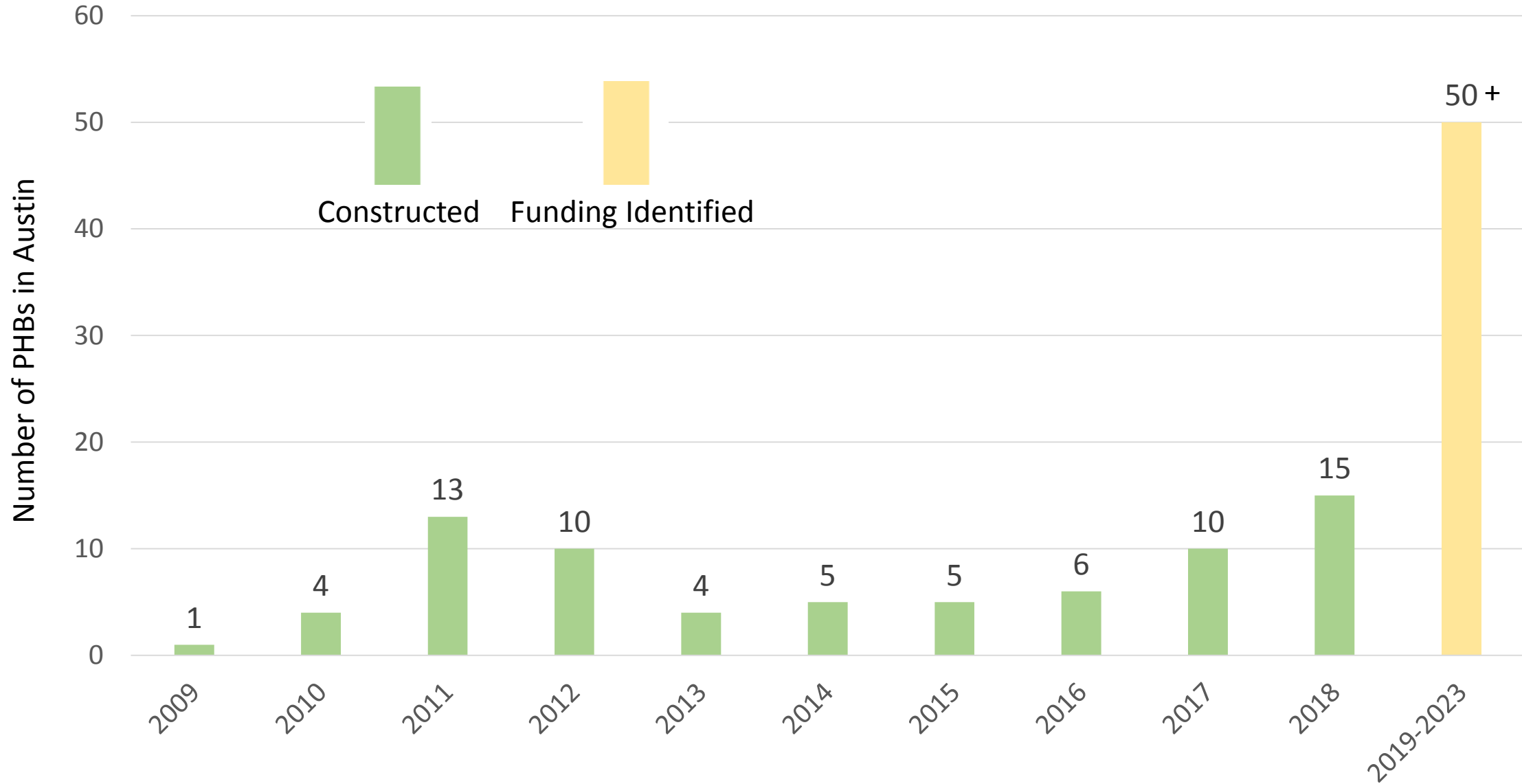
Source: CRIS 2010-2015



SPEED  
LIMIT  
40



# Constructed and Planned PHBs, Austin





# User Behavior



# User Behavior

- 96% of drivers yield to pedestrians
- About 5 percent of the actuations included at least one driver who stopped on the flashing red indication and remained stopped until the dark indication began.

## TECHBRIEF



Pedestrian and Bicycle Safety



U.S. Department of Transportation  
Federal Highway Administration

Research, Development, and  
Technology

Turner-Fairbank Highway  
Research Center

6300 Georgetown Pike  
McLean, VA 22101-2296

[www.fhwa.dot.gov/research](http://www.fhwa.dot.gov/research)

## Road User Behaviors at Pedestrian Hybrid Beacons

FHWA Publication No.: FHWA-HRT-16-039

FHWA Contact: Ann Do, HRDS-30, (202) 493-3319,  
[ann.do@dot.gov](mailto:ann.do@dot.gov)

### Introduction

The pedestrian hybrid beacon (PHB)—or high-intensity activated crosswalk (HAWK), as it is known in Tucson, AZ—is a traffic control device used at pedestrian crossings that was first included in the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD).<sup>(1)</sup> The treatment typically has the crosswalk marked on only one of the major road approaches. The PHB's vehicular display faces are generally located on mast arms over the major approaches to an intersection and in some locations on the roadside. An example is shown in figure 1 for an installation in Tucson, AZ. The face of the PHB consists of two red indications above a single yellow indication. It rests in a dark mode, but when it is activated by a pedestrian, it

Figure 1. Example of PHB installation in Tucson, AZ.







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# Operations



# Education



Don't be a Scott: Pedestrian Hybrid Beacon PSA

192 views

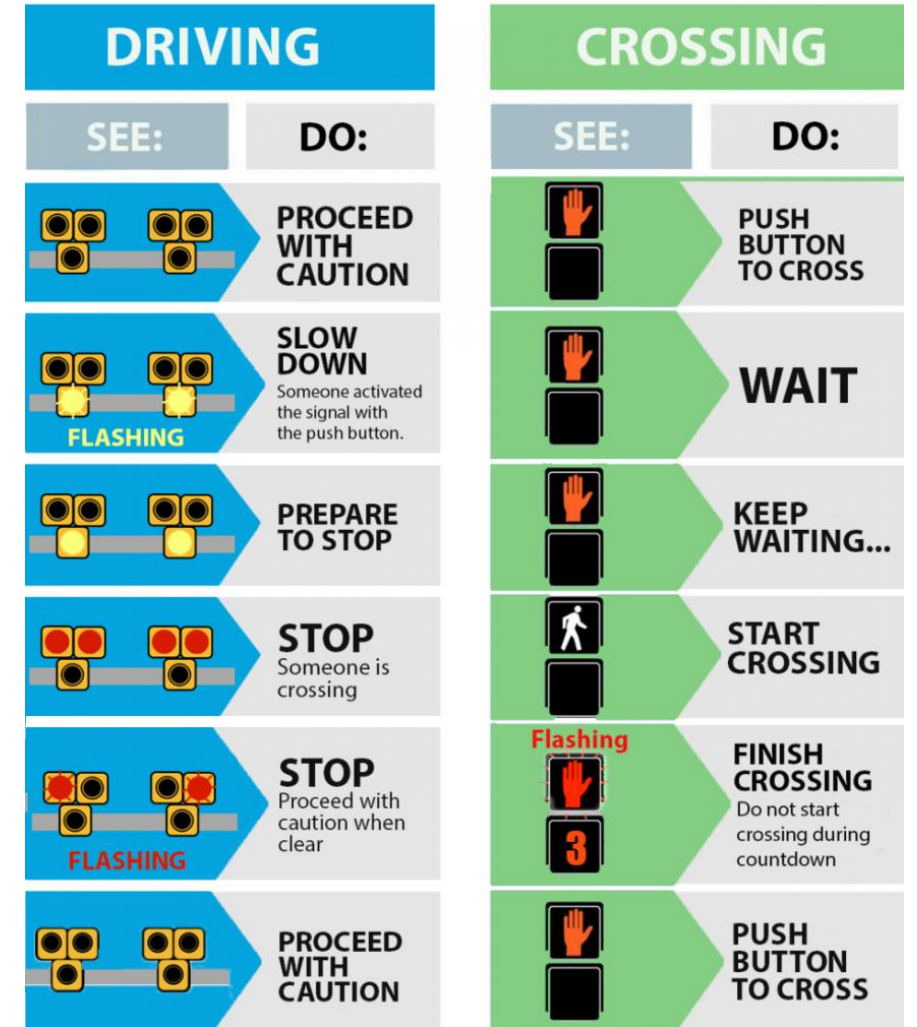
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## HOW TO USE A PEDESTRIAN HYBRID BEACON





# Citizen Requests



## PEDESTRIAN HYBRID BEACONS PHB How to Request a PHB

Anyone can make a request for a PHB by calling 3-1-1 or by clicking on the 3-1-1 icon in the upper right-hand corner of this page.

To be eligible, each request must:

- Be within the city limits.
- Be farther than 300 feet from an existing signal. Placing signals within 300 feet creates many traffic problems and is prohibited without just cause.
- Be more than 2 years since evaluated or studied previously. If a location has been evaluated or studied within the past 2 years, it will not be re-evaluated unless a significant change to the previous traffic patterns is anticipated. For example, if a large multifamily development or large grocery store opens in the area and significantly impacts traffic at the requested location.
- Be located on a roadway that is at least 3 travel lanes wide.

All PHB requests meeting these requirements are eligible for evaluation for further study. This evaluation consists of scoring each location on ten criteria. These criteria are intended to evaluate the

- Difficulty for a pedestrian to cross the road.
- Pedestrian needs, desires and safety history for crossing at that location.
- Environmental and community issues at that location – whether a PHB is recommended as part of an adopted neighborhood, corridor or master plan or is within an Imagine Austin Center. Also considers whether the location is part of an existing or desired school route or whether it is within an **Environmental Justice area**.

<https://www.austintexas.gov/page/pedestrian-hybrid-beacons>

# Signal Requests

Transportation Data and Performance Hub

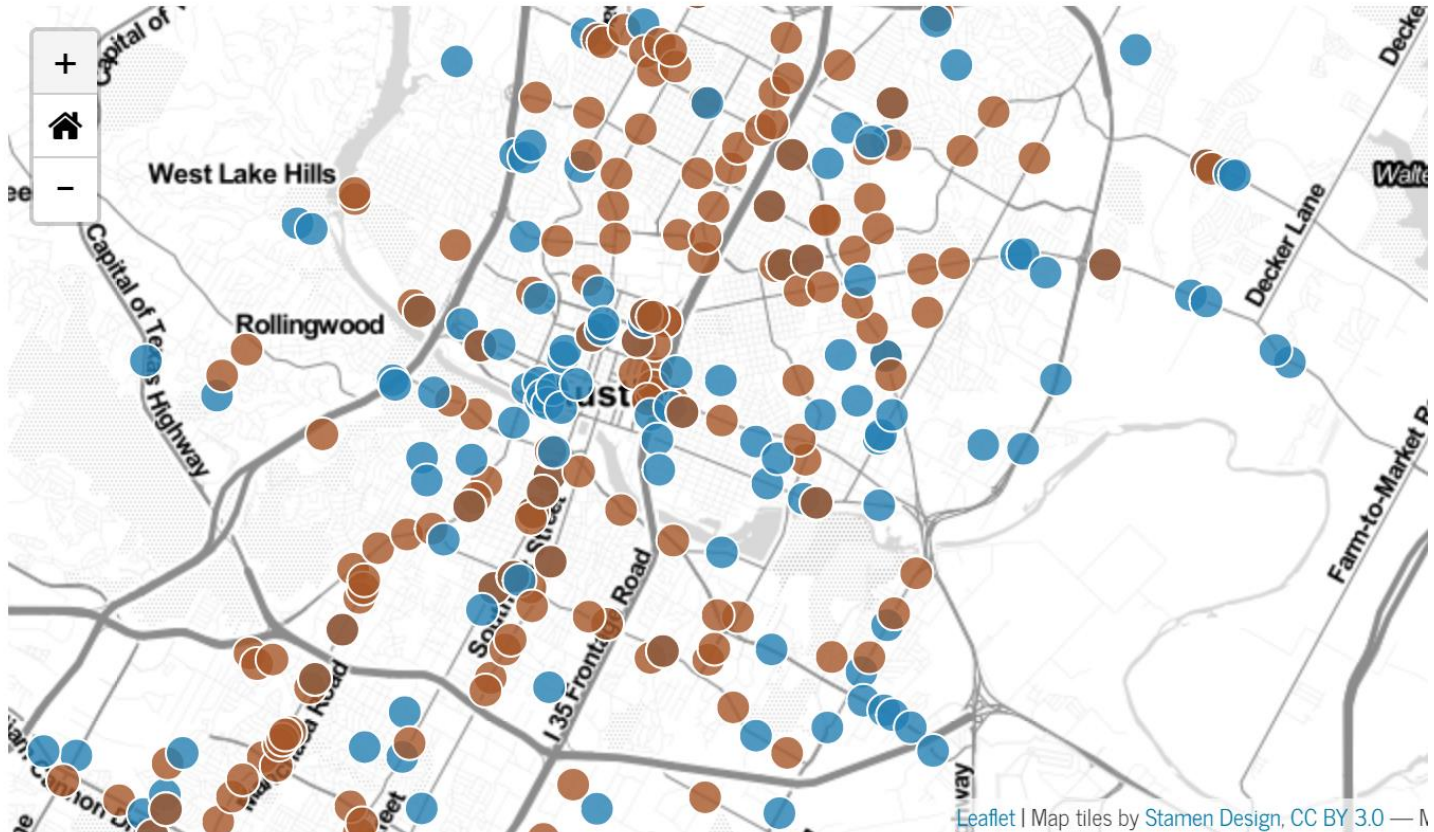
## Find a Signal Request

Search by street name or status...



Location	Type	Status
1000 BLK NORWOOD PARK BLVD	PHB	RECOMMENDED
10000 BLK MANCHACA RD (Moontower Saloon)	TRAFFIC	UNDER EVALUATION
10000 BLK WOLFTRAP DR	PHB	UNDER EVALUATION
10200 BLK BURNET RD (Travis County Adult Probation)	PHB	UNDER EVALUATION
109 BLK W OLTORF ST (St. Ignacius / HEB)	PHB	TURNED_ON
11001 BLK FOUR POINTS DR	PHB	STUDY
1137 BLK AIRPORT BLVD	PHB	RECOMMENDED
1137 BLK AIRPORT BLVD	TRAFFIC	NOT RECOMMENDED
1150 BLK AIRPORT BLVD	PHB	RECOMMENDED
11700 BLK N LAMAR BLVD	TRAFFIC	UNDER EVALUATION
11850 BLK N LAMAR BLVD (Brentwood Christian School)	TRAFFIC	UNDER EVALUATION

Showing 1 to 588 of 588 entries



Showing 1 to 588 of 588 entries

<https://www.austintexas.gov/page/pedestrian-hybrid-beacons>

# Prioritization: Initial Scoring

## Scoring Criteria

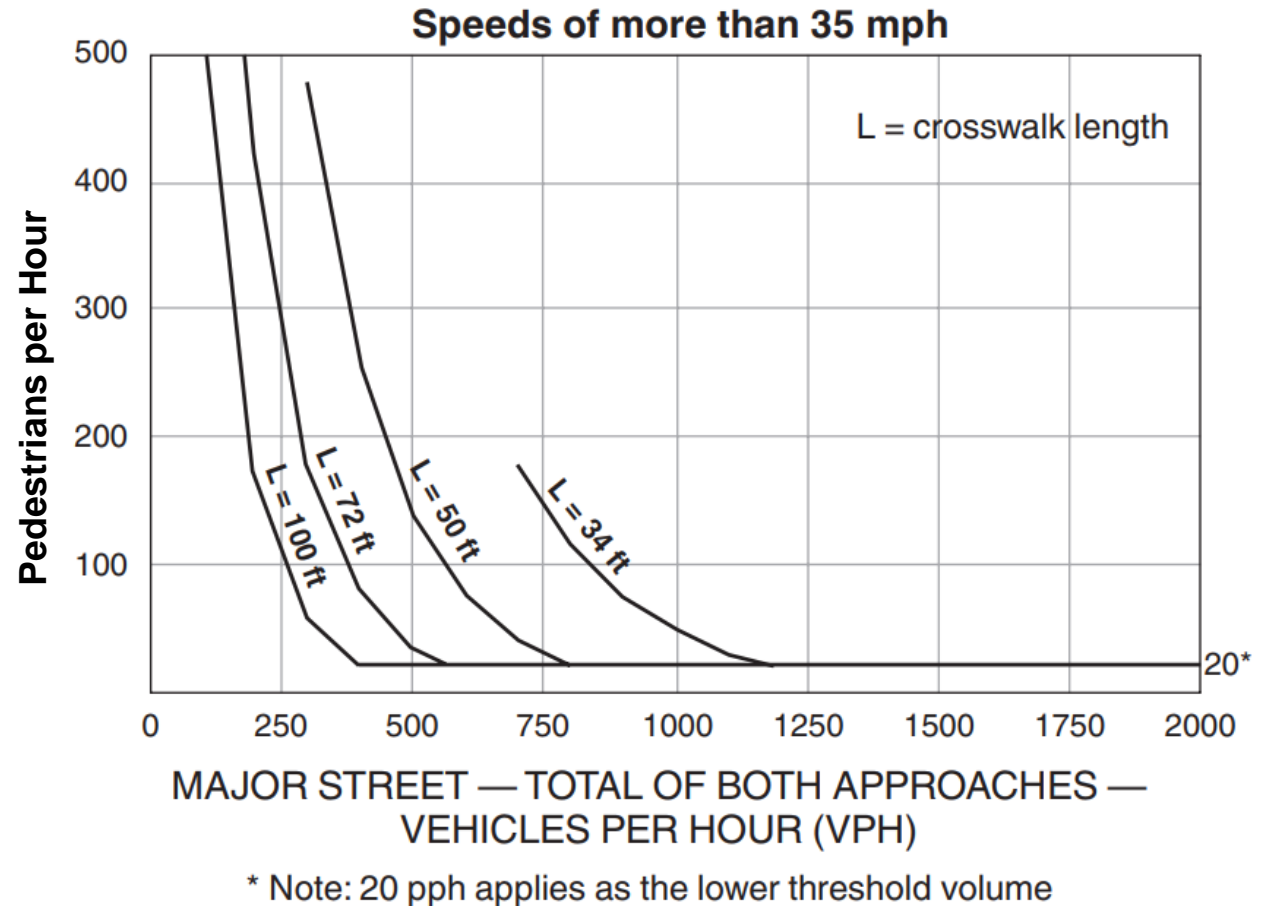
(1,000 points possible)

- Distance to nearest signalized or stop-controlled crossing
- Speed limit of roadway being crossed
- Total number of lanes to cross
- Presence of median for refuge
- Pedestrian Crash History
- Visual or mobility impaired-related pedestrian generators
- Number and type of pedestrian generators in close proximity
- Recommended in small area plan?
- Provide a safe route to school?
- Environmental Justice Area
- (>50% minority or low-income, or, >25% in poverty)

[http://www.austintexas.gov/sites/default/files/files/Transportation/PHB\\_Ranking\\_for\\_Study\\_Evaluation\\_and\\_Descriptions.pdf](http://www.austintexas.gov/sites/default/files/files/Transportation/PHB_Ranking_for_Study_Evaluation_and_Descriptions.pdf)

# Prioritization: Detailed Study

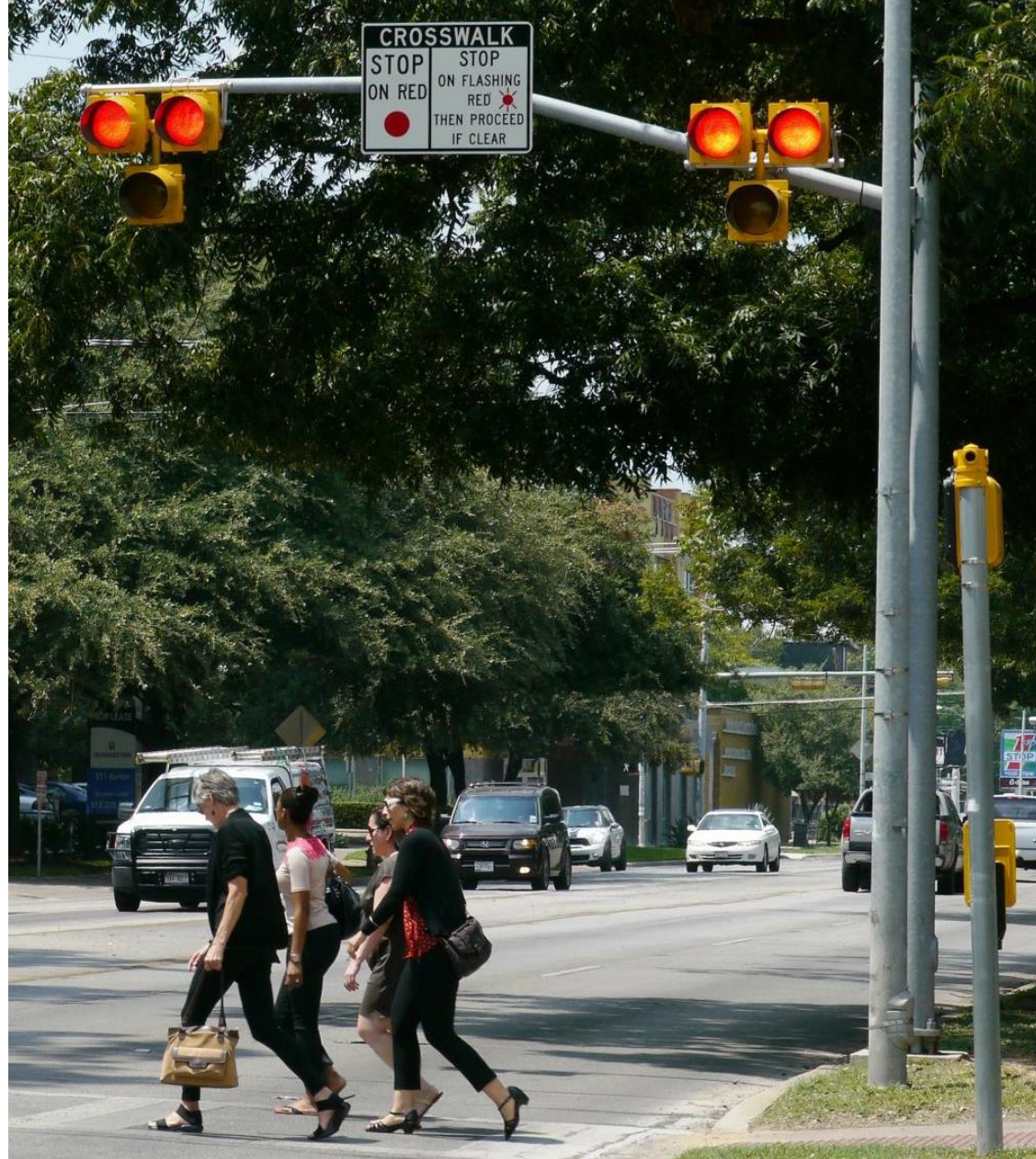
- Top 10 locations get forwarded for further study.
- Warrants outlined in Chapter 4F of Texas MUTCD
  - Pedestrian volume
  - Vehicle volume
  - Crosswalk length
  - Separate curves for >35 mph and <35 mph
- Room for engineering judgement (Latent demand, etc.)



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



# How PHBs fit into our larger pedestrian safety strategy





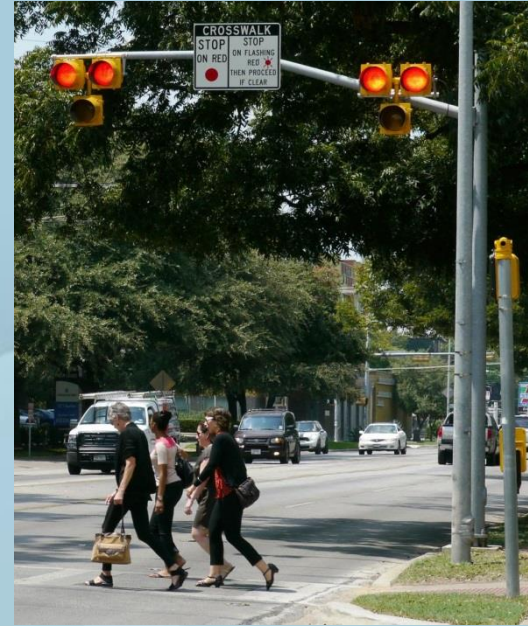
# How PHBs fit into our larger pedestrian safety strategy



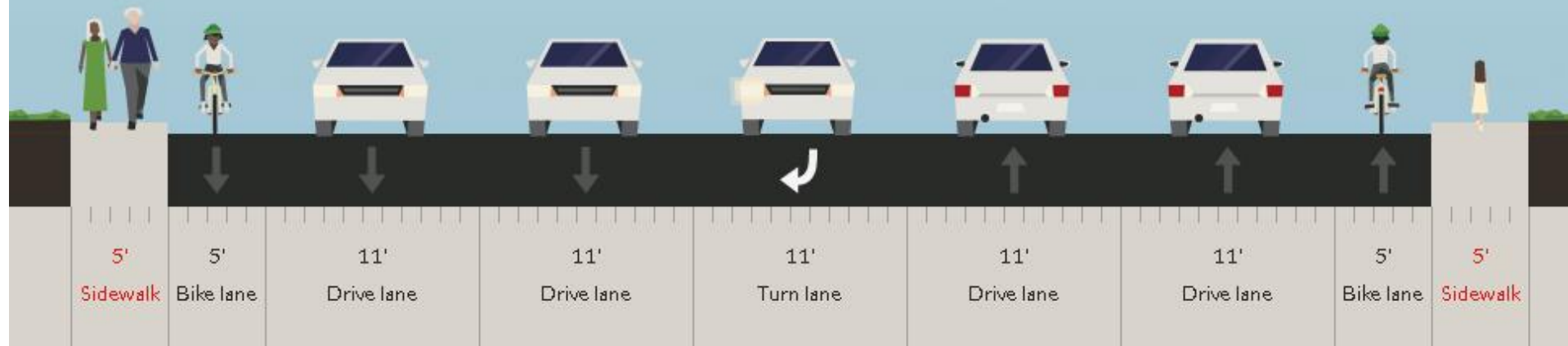
# How PHBs fit into our larger pedestrian safety strategy

Crossing Distance = 65'  
Speed Limit = 45 mph  
1,800 veh/hr in peak hour

Assumed: 25 crossings/hr



**\$100,000+**

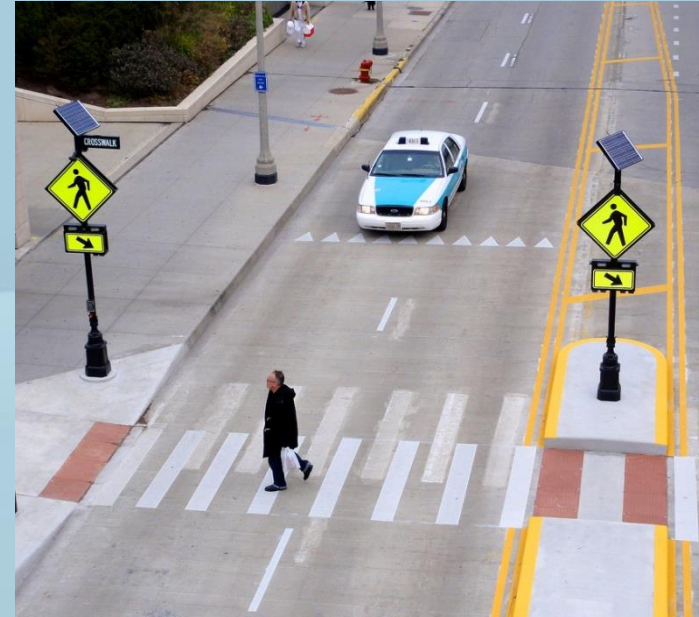




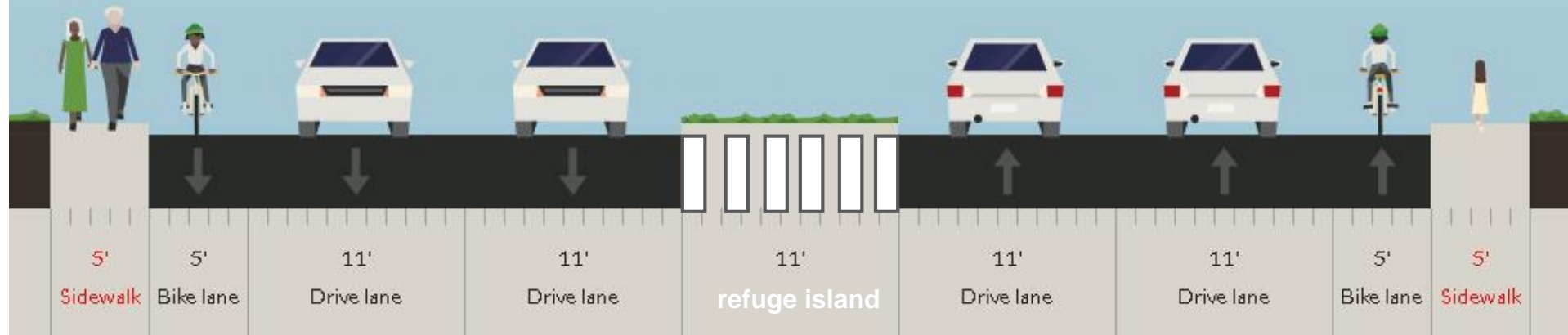
# How PHBs fit into our larger pedestrian safety strategy

Crossing Distance =  $(65' - 11') / 2 = 27'$   
Speed Limit = 45 mph  
 $(1,800 \text{ veh/hr}) * 2/3 = 1,200 \text{ veh/hr}$

Assumed: 25 crossings/hr



**\$10k-30k**



# Transit Supportive

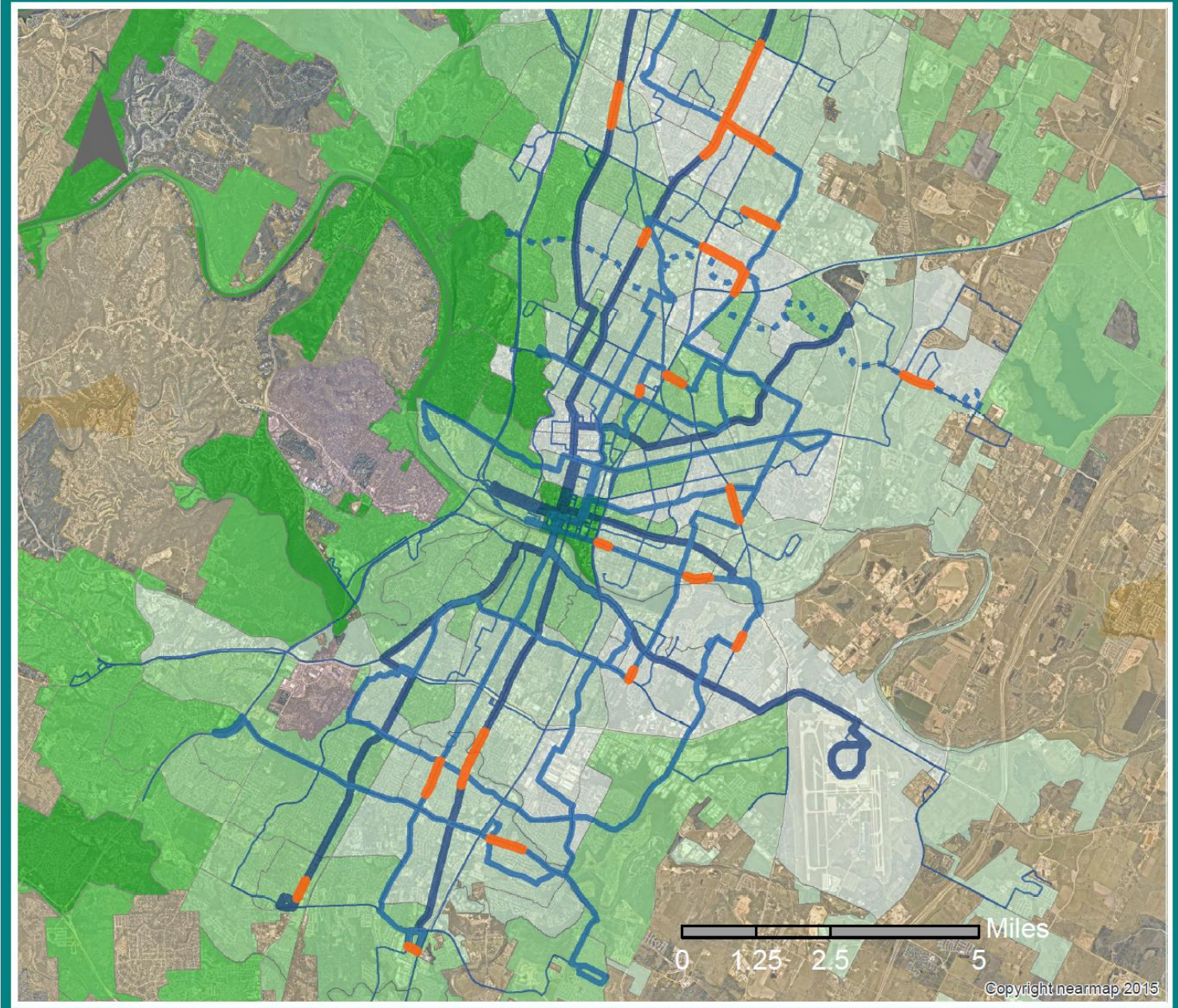





# Transit Supportive

## PEDESTRIAN SAFETY & TRANSIT CONNECTIONS PROJECT


Map 2. Candidate PHBs Locations -- Proximity to Transit & Low-Income Census Tracts




### Legend


 Candidate Segments for PHBs

### Connections 2025 Bus Service


 MetroRapid

 Frequent

 Local (Frequent Peaks)

 Local, Express, Shuttle, Circulator


### Median Household Income

 \$0 - \$35,233

 \$35,233 - \$56,315

 \$56,315 - \$81,506

 \$81,506 - \$120,000

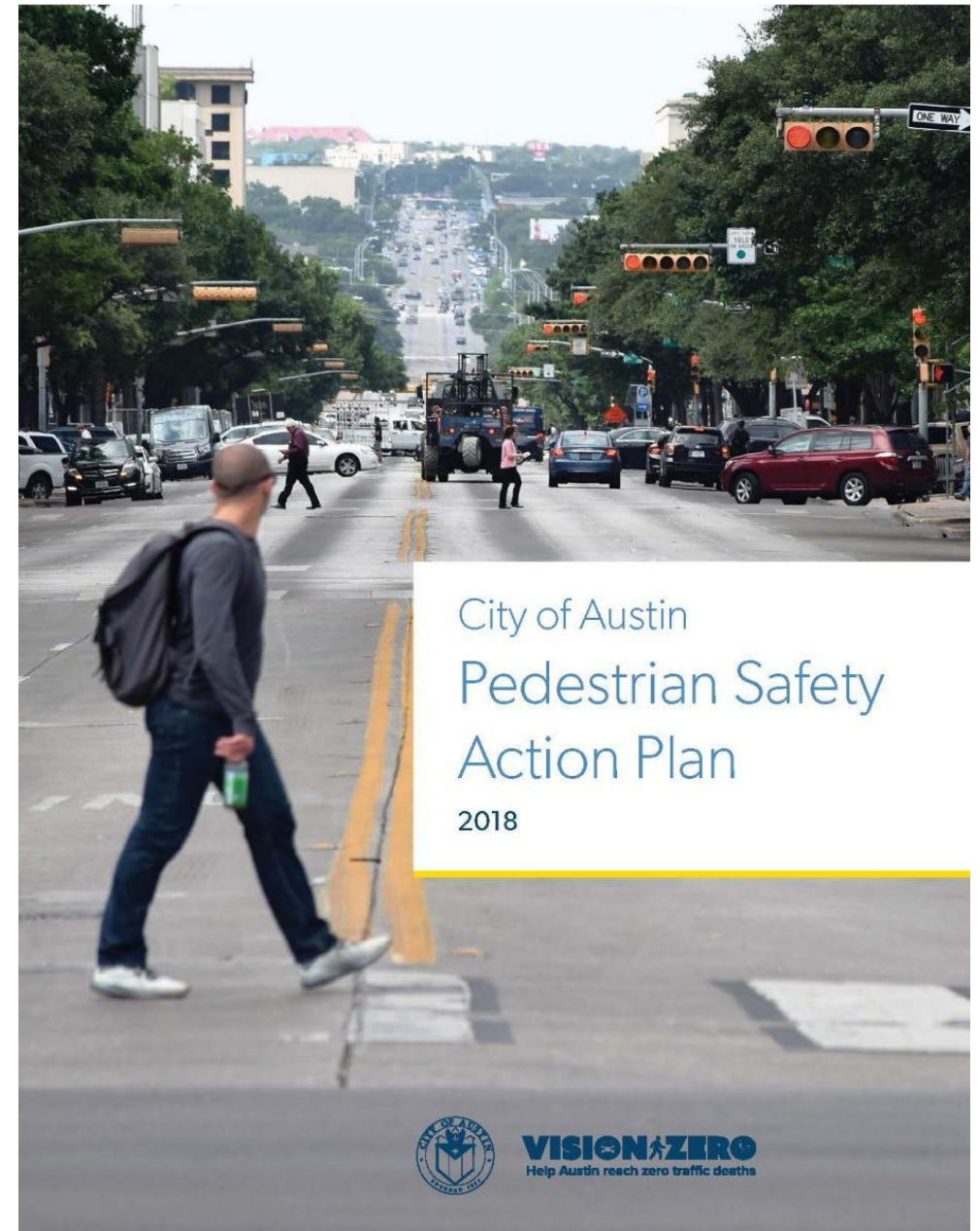
 \$120,000 - \$206,411



# Thanks!

Joel Meyer | Pedestrian Coordinator  
Austin Transportation Department  
joel.meyer@austintexas.gov

Renee Orr | Project Manager  
Austin Transportation Department



[austintexas.gov/pedsafetyplan](http://austintexas.gov/pedsafetyplan)

# Pedestrian Hybrid Beacons



THE CITY OF  
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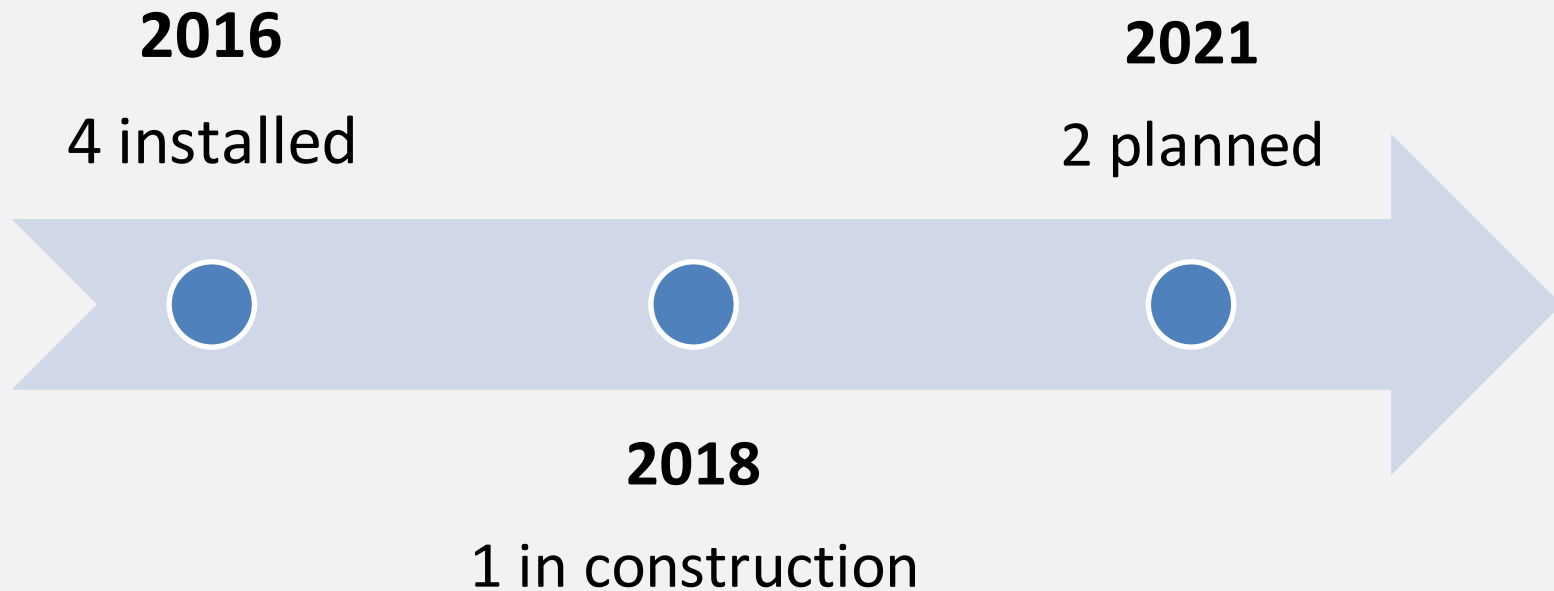
DEPARTMENT OF  
PUBLIC SERVICE

## Ohio Law – Yield to Pedestrians

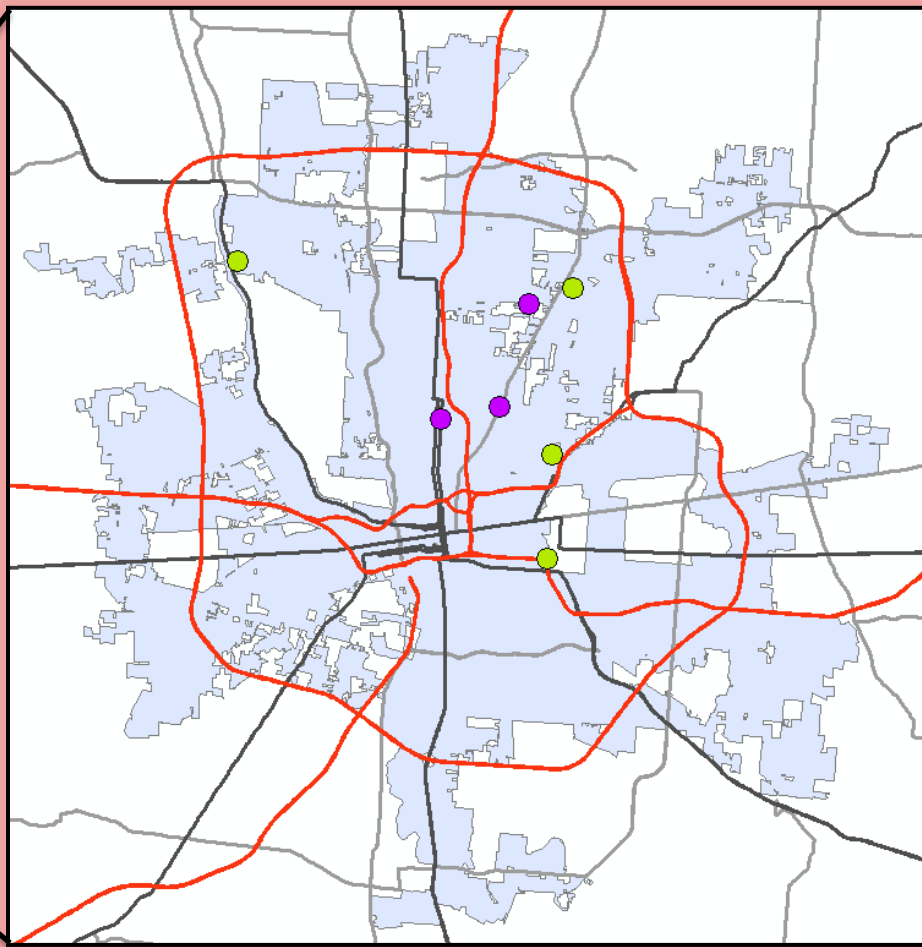




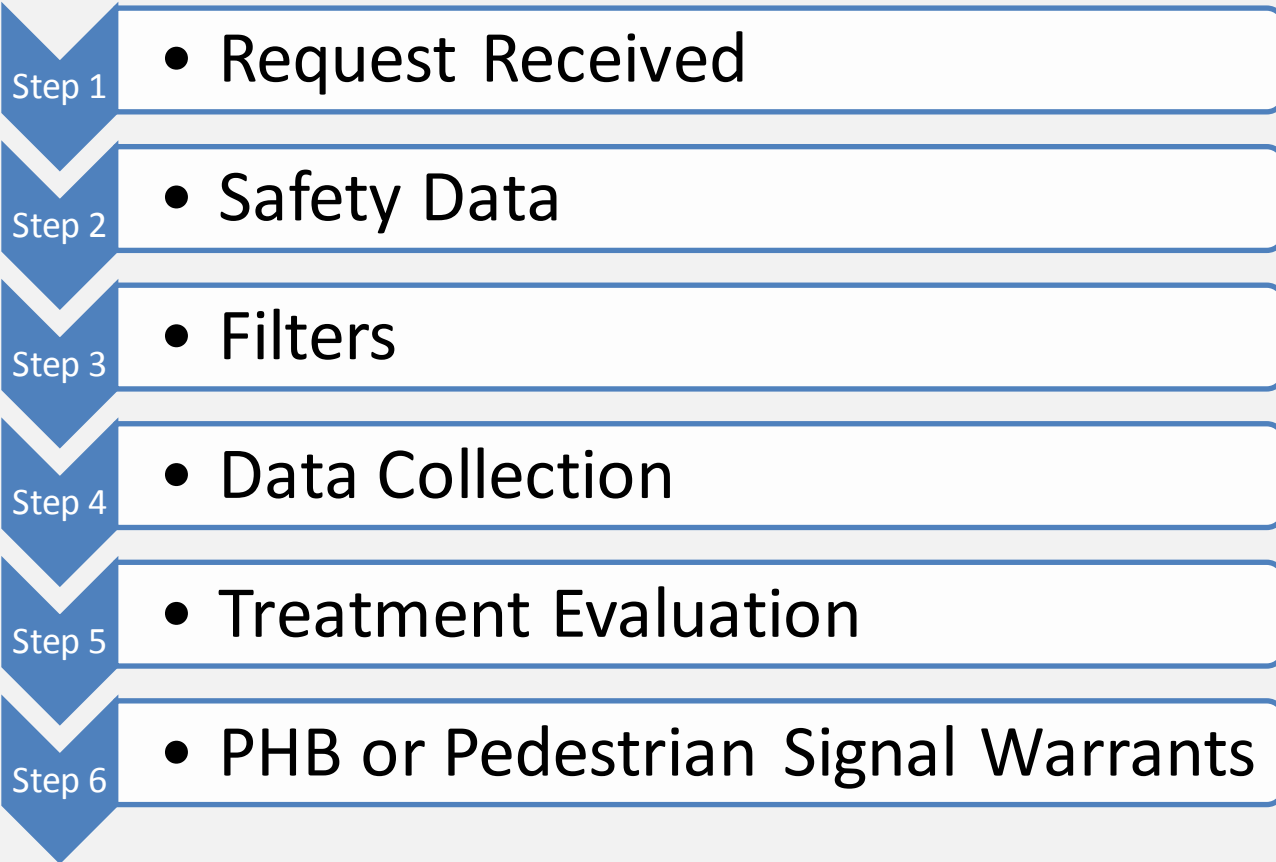
## Timeline



# Locations



## Crosswalk Treatment Selection





# Types of Crosswalk Treatments

- Level 1
  - Transverse Crosswalk Lines(Signing Optional)



# Types of Crosswalk Treatments

- Level 2
  - Transverse Crosswalk Lines with High-Visibility Markings and/or Yield Lines, Yield Signs and In-Road Signs



# Types of Crosswalk Treatments

- Level 3
  - Refuge Islands, Curb Extensions and Bump Outs





# Types of Crosswalk Treatments

- Level 4
  - Overhead Signs, Flashing Beacons, LED Signs and RRFB's



# Types of Crosswalk Treatments

- Level 4
  - Overhead Signs, Flashing Beacons, LED Signs and RRFB's



# Types of Crosswalk Treatments

- Level 4
  - Overhead Signs, Flashing Beacons, LED Signs and RRFB's





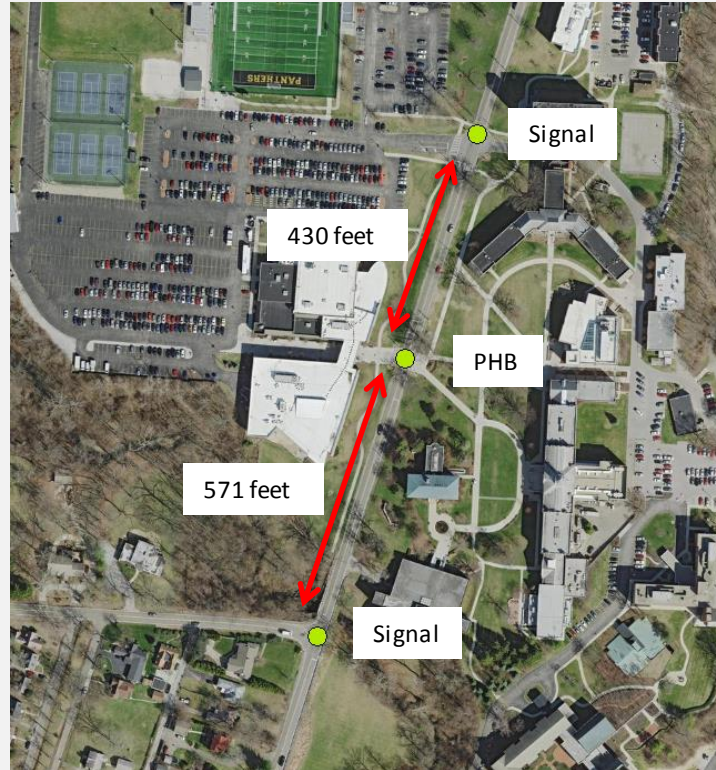
# Types of Crosswalk Treatments

- Level 5
  - RRFB with Refuge Island
  - PHB
  - Pedestrian Actuated Signal





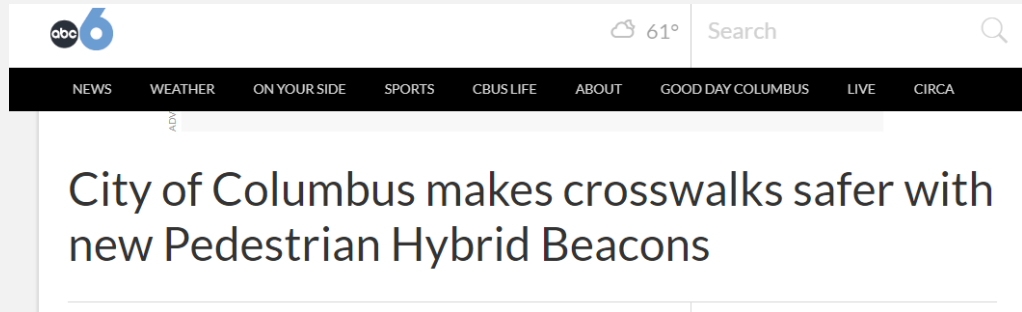
# Coordination with Adjacent Signals



## Education

- Columbus education campaign did not begin until after the PHB's were constructed
  - Press release
  - Email Blasts
  - PHB website and fact sheet
  - Educational signs setup near each PHB

To learn more about this  
**Pedestrian  
Hybrid Beacon**  
please go to our website at  
<http://bit.ly/hybridbeacon>



# Education

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columbus > departments > public service > streets > construction > pedestrian hybrid beacons

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PROJECT FACT SHEETS

FIND US



## PEDESTRIAN HYBRID BEACONS

The city of Columbus takes its role in pedestrian, bicyclist and motorist safety seriously. The Department of Public Service and the Ohio Department of Transportation are collaborating to make crossing heavily traveled, arterial streets safer and easier, with introduction of the first Pedestrian Hybrid Beacons in Columbus.



### What is a Pedestrian Hybrid Beacon?

A pedestrian hybrid beacon is a pedestrian-activated warning device located on the roadside or on most arms over mid-block pedestrian crossings.

### What benefits are provided by Pedestrian Hybrid Beacons?

- Mid-block locations account for more than 70% of pedestrian fatalities, according to the U.S. Department of Transportation.
- Pedestrians can more safely and easily cross the street at marked crosswalks by alerting and controlling drivers with a beacon warning system.
- The beacon includes a red stop light to motorists approaching the crosswalk.

### Where and when will Pedestrian Hybrid Beacons be installed?

Beacons, signage and pavement markings are at these locations:

- N. Fourth Street at E. Northwood Avenue
- Hayden Road between Riverside Drive and Bethel Road
- Morse Road between Dunbridge Street and Sundance Drive
- Sunbury Road between Woodward Avenue and the signalized entrance to Ohio



INSTRUCTIONS FOR			
DRIVERS		PEDESTRIANS	
1	 Dark until activated	Proceed with caution	 Steady Don't Walk Push the button to activate the system
2	 Flashing yellow	Slow down A pedestrian has activated the system	 Steady Don't Walk Wait
3	 Steady yellow	Prepare to stop	 Steady Don't Walk Continue to wait
4	 Steady red	STOP A pedestrian is in the crosswalk	 Steady Walk Start crossing when all vehicles have stopped
5	 Alternating flashing red	STOP Proceed with caution if the crosswalk is clear	 Flashing Don't Walk with countdown Continue crossing, the signal will countdown
6	 Dark again until activated	Proceed if the crosswalk is clear	 Steady Don't Walk Push the button to reactivate the system

How do pedestrians and drivers use a Pedestrian Hybrid Beacon? See illustration at left and steps 1-6 below:

1. When there is no pedestrian waiting to cross, drivers will see that all indication lights are dark. A pedestrian who wants to cross the street will need to push the button to activate the system.
2. When the pedestrian presses the button, approaching drivers will see a **FLASHING YELLOW** light for a few seconds, indicating that they should reduce speed and be prepared to stop for a pedestrian in the crosswalk. Pedestrians should wait.
3. Drivers will see a **STEADY YELLOW** light, warning that the indication will soon turn to a **STEADY RED** light. Pedestrians will continue to see the **DON'T WALK** symbol and should wait.
4. Drivers will see a **STEADY RED** light, which requires them to **STOP** at the stop line. Then the pedestrian receives a **STEADY WALK** symbol to cross.
5. Drivers will see **ALTERNATING FLASHING RED** lights, indicating that they need to stop until pedestrians have finished crossing the street. They may proceed with caution if the crosswalk is clear. Pedestrians will see a flashing countdown that indicates how much time they have to cross the street.
6. At the end of the countdown, drivers will see that all indication lights are dark. The pedestrian will see a **STEADY DON'T WALK** symbol. Pedestrians waiting to cross will push the button to reactivate the system.

Short video produced by ODOT showing a Pedestrian Hybrid Beacon in action:  
<https://www.youtube.com/watch?v=mXgJcyCfMmY>

## Lessons Learned

- Overhead sign changes
  - Old signs



- New sign





## Lessons Learned

- Sunbury Rd
  - 2 Lane Road splits college campus
  - High pedestrian volumes
  - Low pedestrian use of the PHB



## Lessons Learned

- Morse Rd
  - 7 lane cross-section with bike lanes
  - Island delineation and exposure to traffic



## Lessons Learned

- Education and public outreach
  - New infrastructure
  - Don't wait until after construction
- Educating law enforcement



# Thank You

Ryan Lowe, P.E.

City of Columbus

Department of Public Service

[rjlowe@columbus.gov](mailto:rjlowe@columbus.gov)

614-645-8490



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PUBLIC SERVICE



# Discussion

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⇒ **Send us your questions**



⇒ **Follow up with us:**

⇒ **Becky Crowe [rebecca.crowe@dot.gov](mailto:rebecca.crowe@dot.gov)**

⇒ **Duane Thomas [duane.thomas@dot.gov](mailto:duane.thomas@dot.gov)**

⇒ **Joel Meyer [joel.meyer@austintexas.gov](mailto:joel.meyer@austintexas.gov)**

⇒ **Ryan Lowe [rjlowe@columbus.gov](mailto:rjlowe@columbus.gov)**

⇒ **General Inquiries [pbic@pedbikeinfo.org](mailto:pbic@pedbikeinfo.org)**

⇒ **Archive at [www.pedbikeinfo.org/webinars](http://www.pedbikeinfo.org/webinars)**

