

# **IL Department of Transportation: Pedestrian, Bicyclist, and Non- motorized Safety**



Illinois Department  
of Transportation

# Why is there a need?

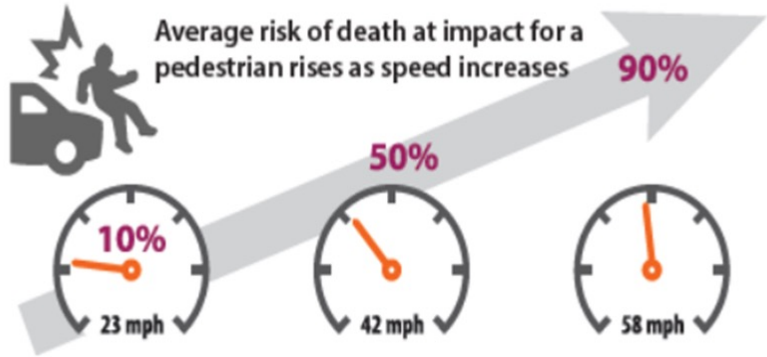
Occupants and Nonoccupants Killed in Traffic Crashes, 2017-2018

Description	2017	2018	Change	% Change
Total*	37,473	36,560	-913	-2.4%
<b>Occupants</b>				
Passenger Vehicles	23,663	22,697	-966	-4.1%
Passenger Cars	13,477	12,775	-702	-5.2%
Light Trucks	10,186	9,922	-264	-2.6%
Large Trucks	878	885	+7	+0.8%
Motorcycles	5,229	4,985	-244	-4.7%
<b>Nonoccupants</b>				
Pedestrians	6,075	6,283	+208	+3.4%
Pedalcyclists	806	857	+51	+6.3%
Other/Unknown	236	214	-22	—

Source: FARS 2017 Final File, 2018 ARF

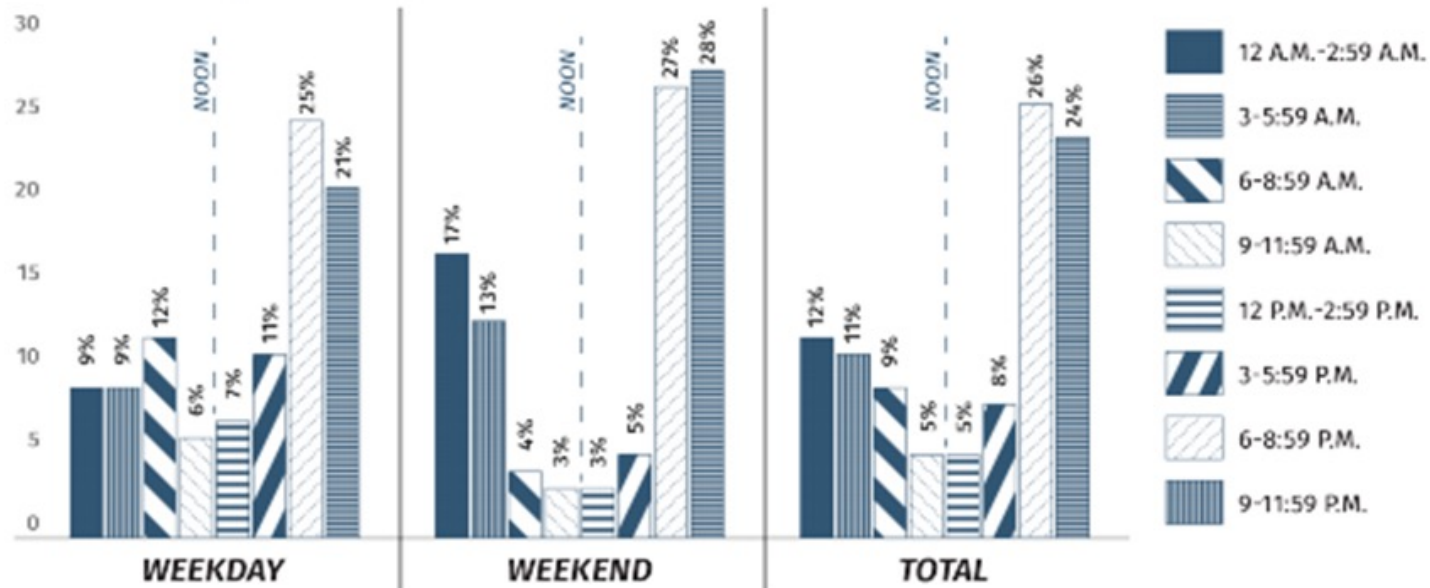
\*Total includes occupants of buses and occupants of other/unknown vehicles not shown in table.

In 2018, Pedestrians and Cyclists accounted for 19.5% of all roadway fatalities. In 2017, they were 18.4%



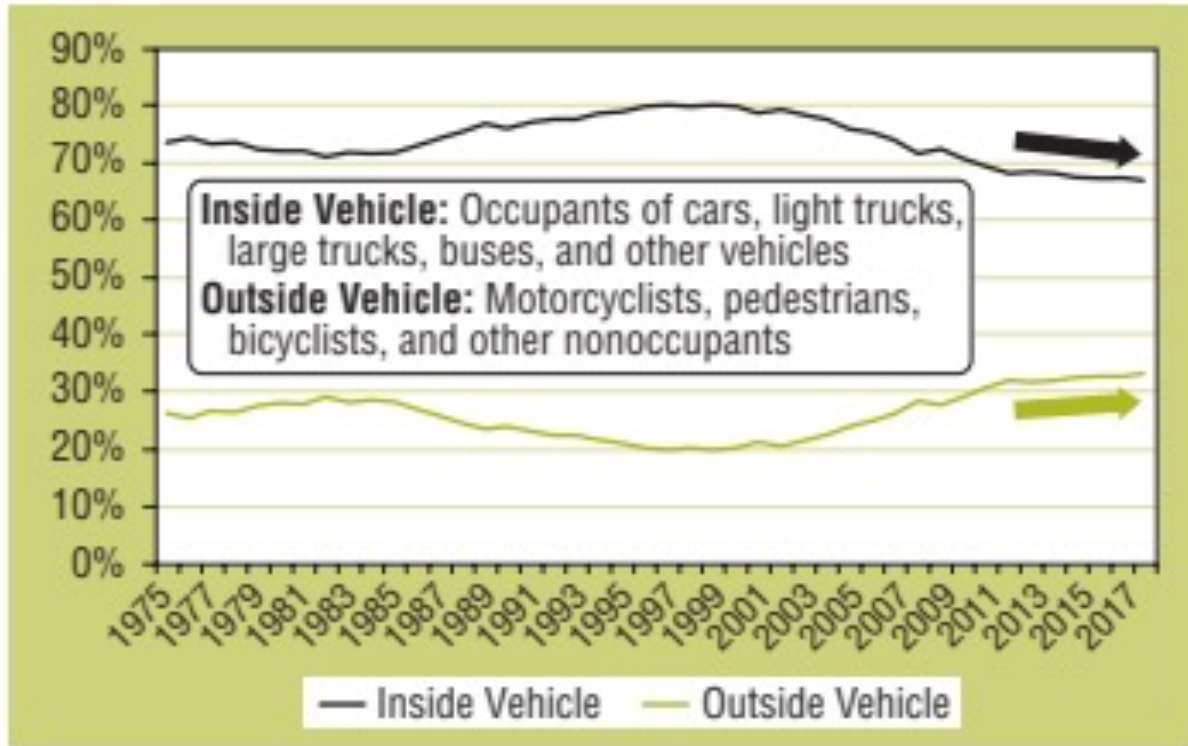
Data from the AAA Foundation for Traffic Safety, *Impact Speed and a Pedestrian's Risk of Severe Injury or Death*, September 2011.

Figure 3. Percentage of Pedestrian Fatalities, by Time of Day and Day of Week, 2018

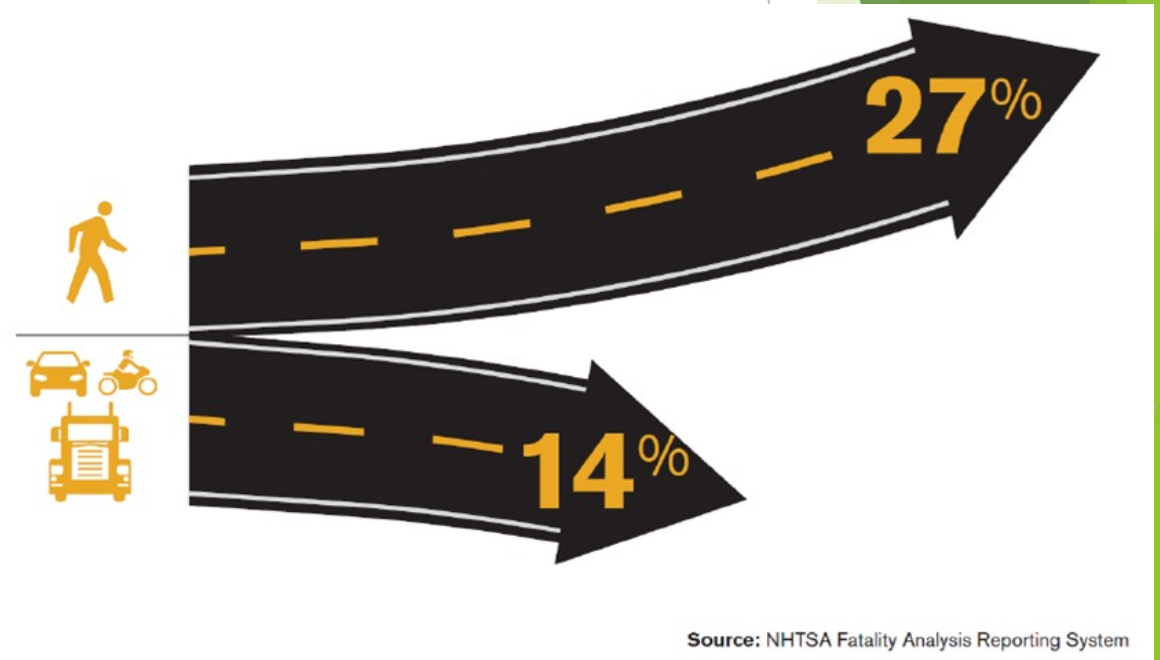


Source: FARS 2018 ARF

## Proportion of Fatalities Inside/Outside Vehicle, 1975–2018



Source: FARS 1975 - 2017 Final File, 2018 ARF



2007-2016 data by NHTSA shows 27% increase in pedestrian fatalities while occupied vehicle fatalities fell 14%

Source: NHTSA Fatality Analysis Reporting System

# FHWA Guidance from the Nov 2021 signed Infrastructure and Jobs Act (IIJA)



## Memorandum

Subject: **ACTION:** 23 U.S.C. 148(g) Highway Safety Improvement Program Special Rules Guidance

Date: February 2, 2022

From: Cheryl J. Walker *Cheryl J. Walker*  
Associate Administrator, Office of Safety

In Reply Refer To:  
HSA-1

To: Division Administrators

The Infrastructure Investment and Jobs Act (IIJA) (Pub. L. 117-58, also known as the “Bipartisan Infrastructure Law” (BIL)), was signed into law on November 15, 2021. Among other things, the BIL established a new Special Rule under the Highway Safety Improvement Program (HSIP) for vulnerable road user (VRU) safety and continued the two existing special rules for High-Risk Rural Roads (HRRR) and Older Drivers and Pedestrians without change. The VRU Special Rule is part of a larger focus on non-motorist safety that includes a new requirement for States to complete VRU safety assessments.

This memorandum provides guidance to support implementation of the three Special Rules in section 148(g) of title 23 of the United States Code (U.S.C.) as part of the HSIP:

- HRRR Special Rule (23 U.S.C. 148(g)(1));
- Older Drivers and Pedestrians Special Rule (23 U.S.C. 148(g)(2)); and
- VRU Safety Special Rule (23 U.S.C. 148(g)(3)).

For each Special Rule, the guidance includes the statutory reference, purpose, definitions, a description of how FHWA will determine if the special rule applies, and a description of how States should implement each Special Rule. This guidance replaces guidance FHWA issued on December 27, 2012, related to the HRRR Special Rule and on February 13, 2013 and May 19, 2016, related to the Older Drivers and Pedestrians Special Rule.

FHWA also issued guidance on December 16, 2021 (“Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America,” hereafter “Policy”) that serves as an overarching framework to prioritize the use of BIL resources on projects that will Build a Better America. That Policy is available on FHWA’s BIL implementation website at the following URL: [https://www.fhwa.dot.gov/bipartisan-infrastructure-law/docs/building\\_a\\_better\\_america-policy\\_framework.pdf](https://www.fhwa.dot.gov/bipartisan-infrastructure-law/docs/building_a_better_america-policy_framework.pdf).

*Except where required by statute or regulations, the contents of this document do not have the force and effect of law and are not meant to bind States in any way. This document is intended only to provide clarity to States regarding existing requirements under the law or agency*

## Vulnerable Road Users (VRU) Special Provision:

- Requires states to analyze single, past-year fatality data and apportion no less than 15% of Highway Safety Improvement Program (HSIP) funds to address VRU safety if that state’s single year data showed greater than 15% of all fatalities were of VRUs
- HSIP funds can be used for any highway safety improvement project on any public road or publicly owned bicycle or pedestrian pathway or trail. (23 U.S.C. 148(e)(1)(A)).

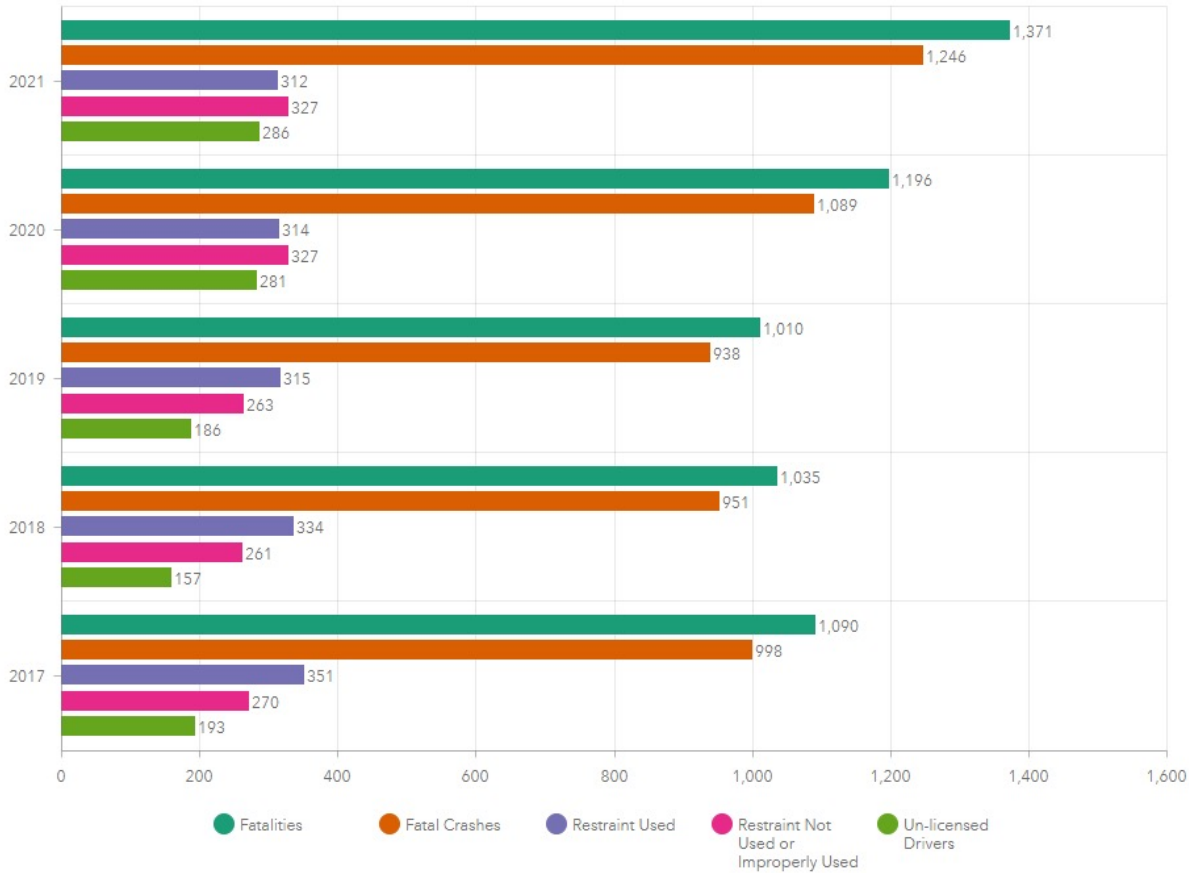
# FHWA Timeline of VRU Reviews

Annual Data	FHWA Notifies State DOT if VRU Special Rule Applies	Fiscal Year that VRU Special Rule would apply
2020	By March 2022	FY 2023: Oct 1, 2022 to Sept 30, 2023
2021	By March 2023	FY 2023: Oct 1, 2023 to Sept 30, 2024
2022	By March 2024	FY 2023: Oct 1, 2024 to Sept 30, 2025
2023	By March 2025	FY 2023: Oct 1, 2025 to Sept 30, 2026

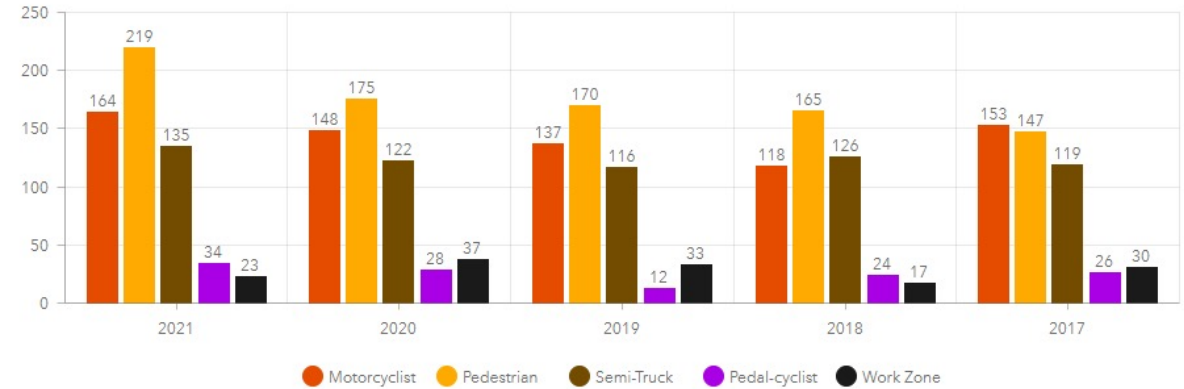
Source: Memorandum to by FHWA, Feb 2, 2022: Guidance on 23 USC 148(g) Highway Safety Improvement Program Special Rules

# IL Crash Statistics \*Provisional\* 2017-2021

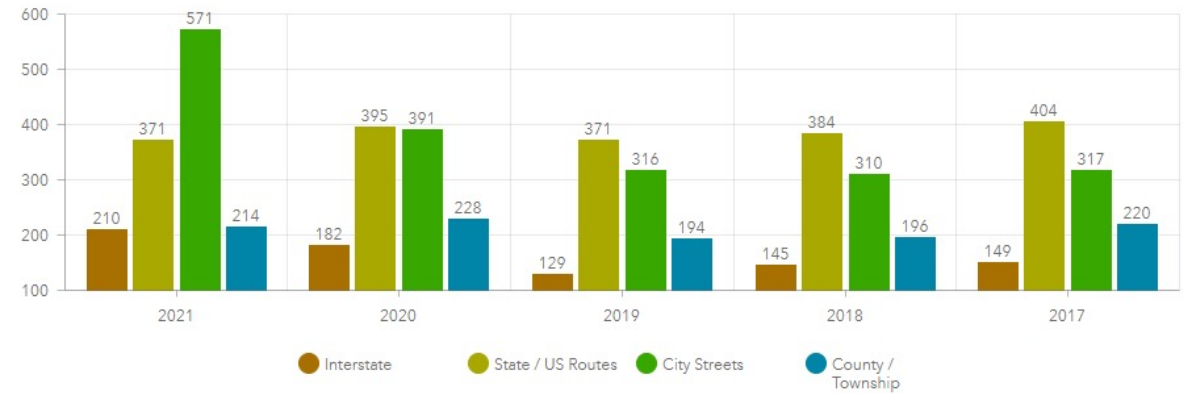
Fatalities / Fatal Crash Overview



Fatality Involvement



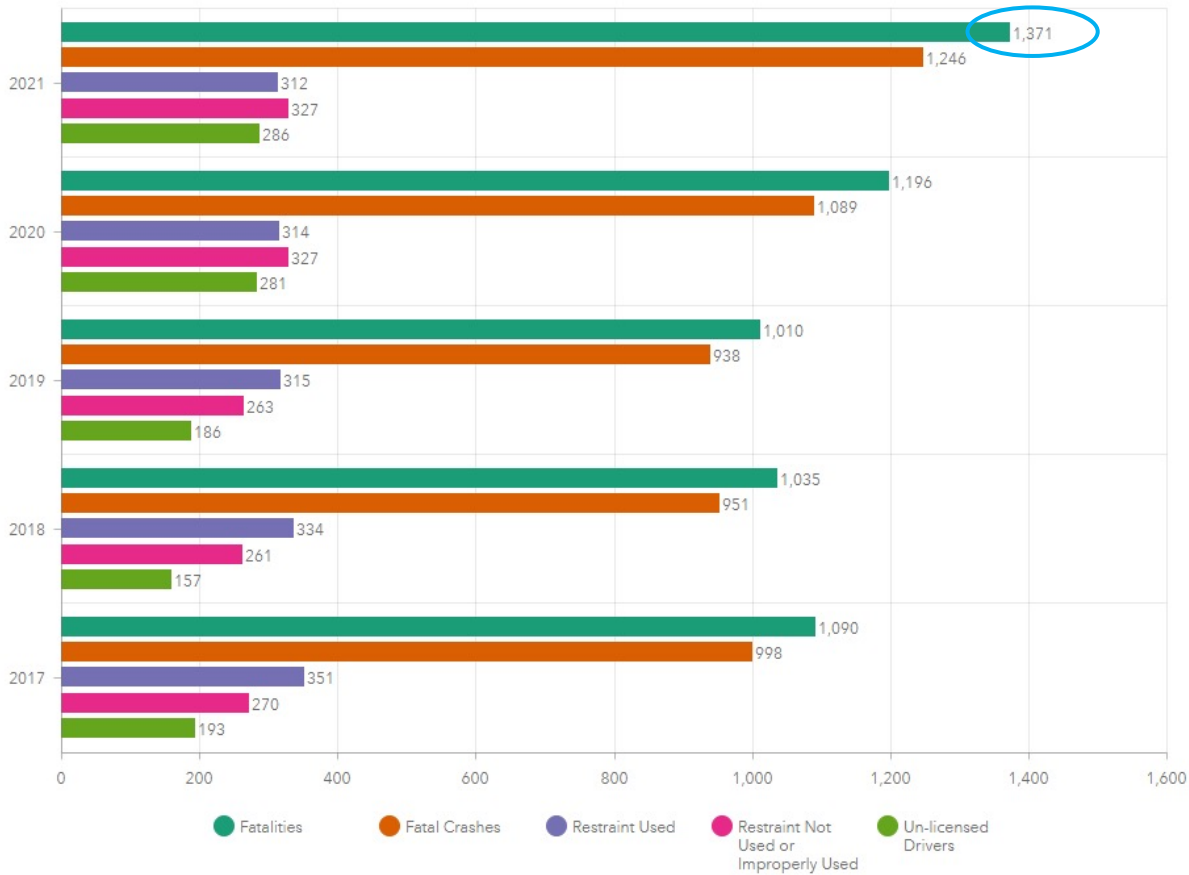
Fatalities by Road Class



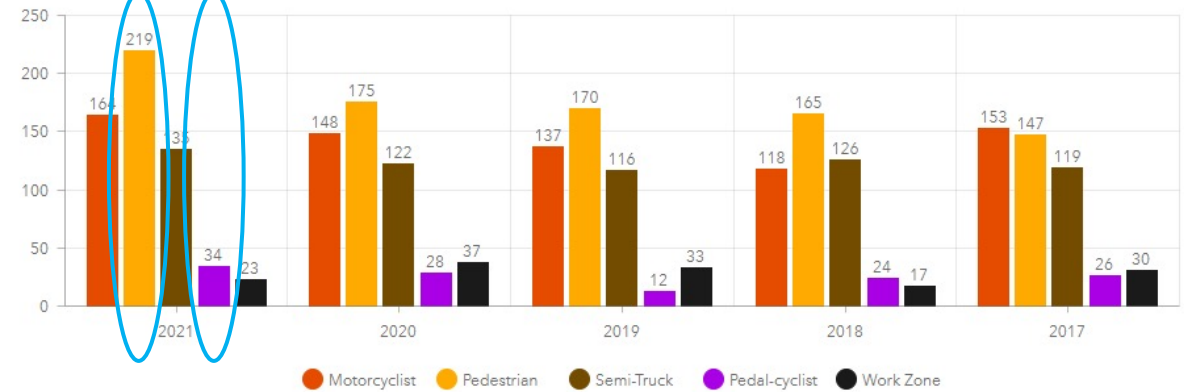
Source: IDOT webpage <http://apps.dot.illinois.gov/FatalCrash/historicsnapshot.html>

# IL Crash Statistics \*Provisional\* 2017-2021

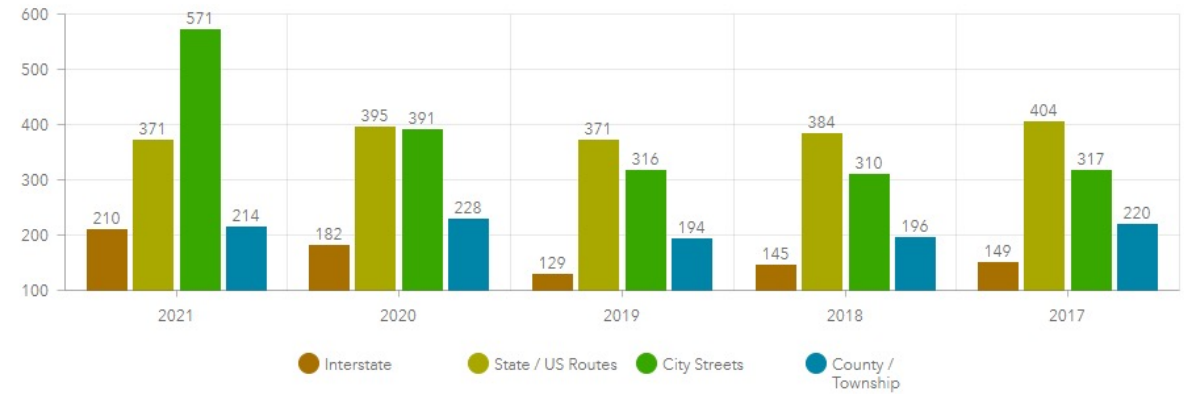
Fatalities / Fatal Crash Overview



Fatality Involvement



Fatalities by Road Class



Source: IDOT webpage <http://apps.dot.illinois.gov/FatalCrash/historicsnapshot.html>

In 2021, 219 Peds + 34 Bicyclists = 253 nonmotorized K's.  $253/1371 = 18.45\%$



# The Spectacular Seven



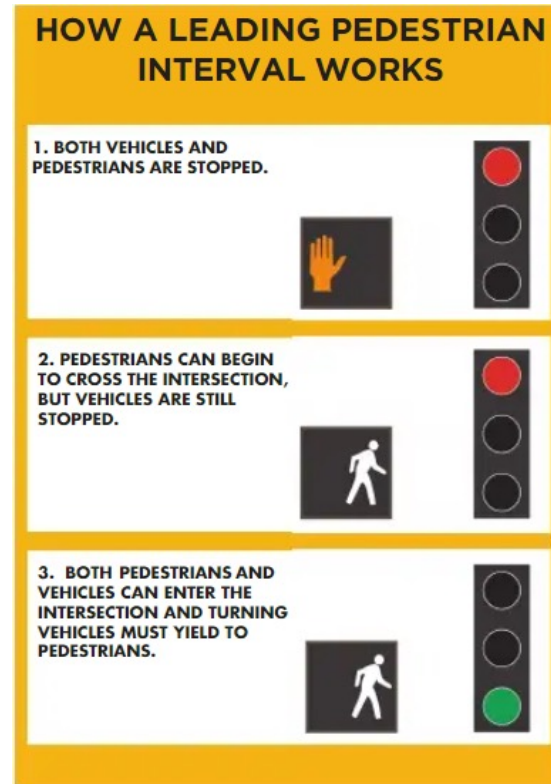
# 1. Leading Pedestrian Interval (LPI)

*Can Reduce Pedestrian Crashes by 60%, USDOT*



An LPI allows a pedestrian to establish presence in the crosswalk before vehicles are given a green indication.

Source: FHWA



#### ADDITIONAL RESOURCES

Van Houten, R., R.A. Retting, C.M. Farmer, J. Van Houten, and J.C.L. Malenfant. Field Evaluation of a Leading Pedestrian Interval Signal Phase at Three Urban Intersections. Transportation Research Record No. 1734, 2000.

- Increases visibility of crossing pedestrians
- Reduces conflicts between peds and vehicles
- Increases likelihood of vehicles yielding to pedestrians already in the crossing
- Enhances safety for pedestrians who may be slower to start or need more time to cross

10. **Leading Pedestrian Interval (LPI)** The practice of displaying the walk symbol to pedestrians several seconds ahead of parallel vehicular traffic receiving a green signal allowing pedestrians a 'head start' to occupy the crosswalk and increase their visibility to both right-turning and left-turning drivers.

# 2. Crossing Visibility Enhancements

*Can Reduce Pedestrian Crashes by 23 to 48%, USDOT*



- Providing lighting, enhanced signage, and visible pavement markings

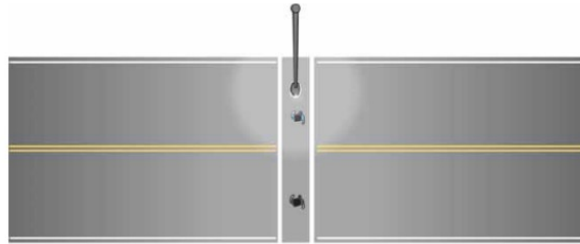


Figure 11. Drawing. Traditional midblock crosswalk lighting layout.



Figure 12. Drawing. New design for midblock crosswalk lighting layout.

Figure 18: Two types of pedestrian lighting placement.

Figures 11 and 12 from the Gibbons, Edwards, Williams, and Andersen report. The above drawing shows traditional crosswalk lighting design in which the lamp is placed directly over the crosswalk. The bottom drawing shows a more effective system in which the lamp is installed in front of the crosswalk on each side, increasing visibility distance (1).



## 2. Crossing Visibility Enhancements



*Integrating curb extensions and on-street parking into the sidewalk corridor enhances pedestrian safety and the walking experience  
(Credit: Michele Weisbart)*

IL 40 & Main St in Peoria, IL  
4-lane (One-Way) to 3-lane (OW)



### 3. Rectangular Rapid Flashing Beacon (RRFB)

*Can Reduce Pedestrian Crashes by 47%, USDOT*

- RRFBs are user-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system.
- RRFBs use an irregular flash pattern that is similar to emergency flashers on police vehicles.
- RRFBs may be installed on either two-lane or multi-lane roadways.
- Improves driver yielding behavior



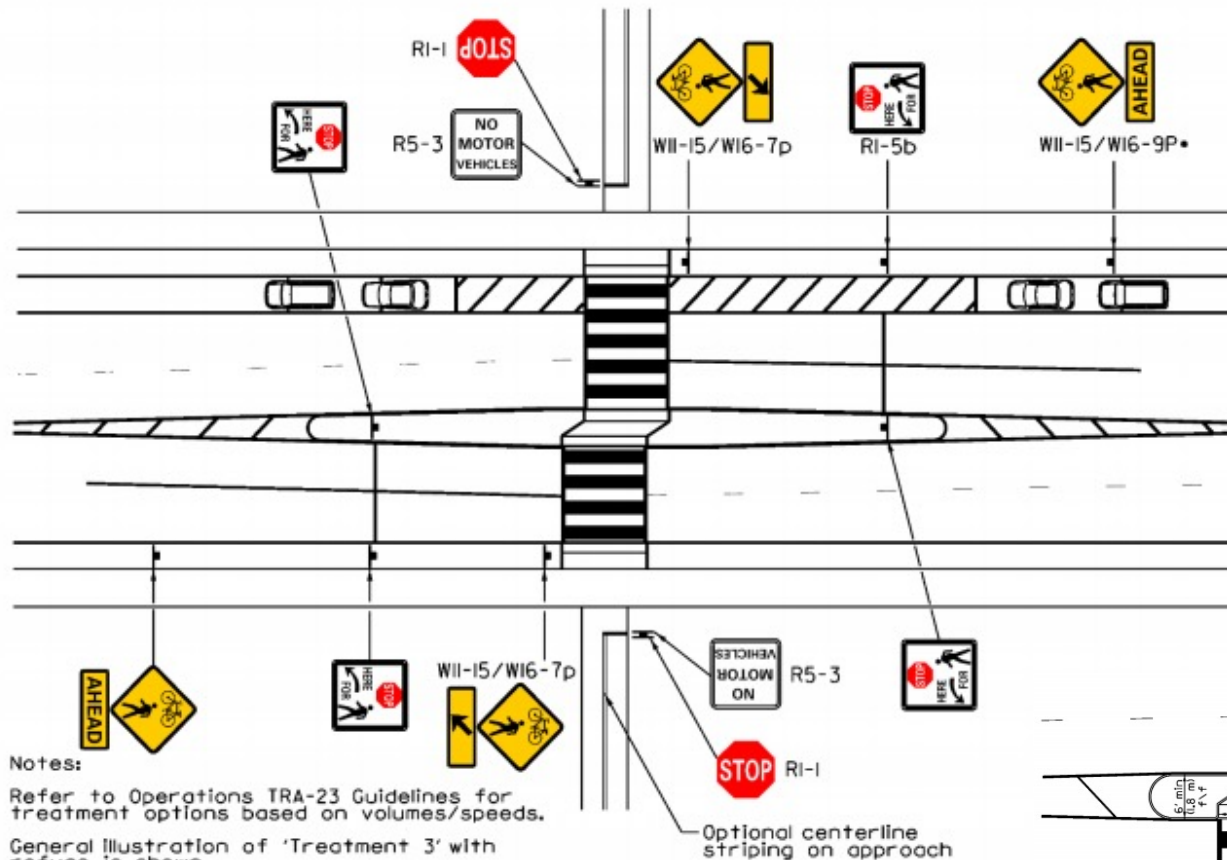


# 4. Pedestrian Refuge Islands, Midblock Crossing

Can Reduce Crashes by 32%, USDOT



EXAMPLE MIDBLOCK CROSSWALK WITH REFUGE FOR SHARED-USE PATH



**Notes:**

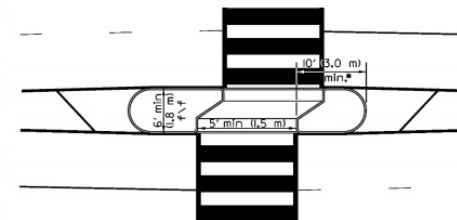
Refer to Operations TRA-23 Guidelines for treatment options based on volumes/speeds.

General illustration of 'Treatment 3' with refuge is shown.

Refer to MUTCD for dimensions.

Restrict parking and consider curb bump-outs to provide adequate sight distance.

Optional centerline striping on approach



\*Extend raised curb 50 feet ahead of the crossing on each approach where possible based on location constraints.

EXAMPLE MIDBLOCK CROSSWALK WITH REFUGE FOR SHARED-USE PATH

Figure 17-4.C  
(2 of 2)

# 4. Pedestrian Refuge Islands, Midblock Crossing



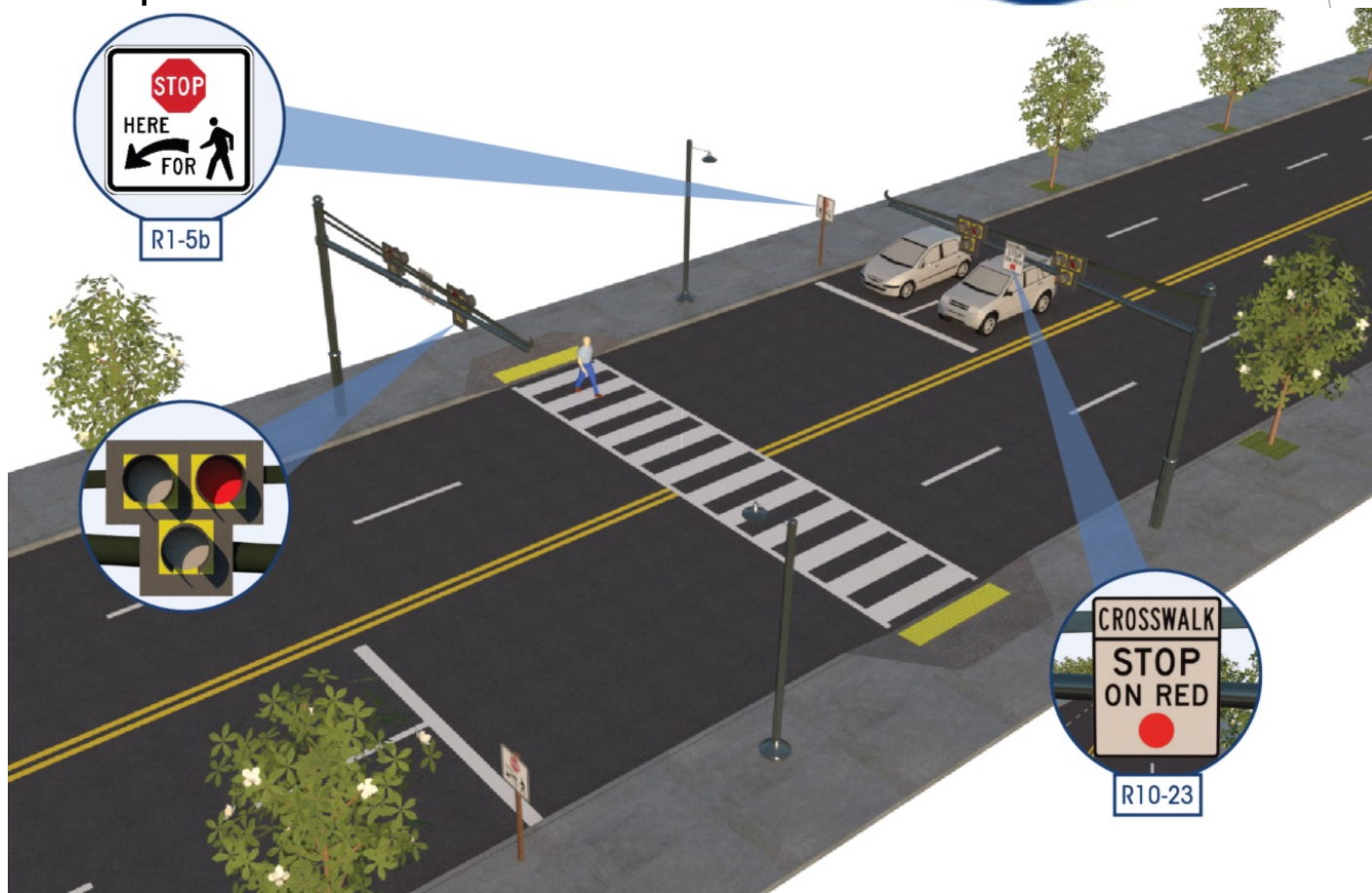
Route 40/Knoxville Ave, Peoria IL



# 5. Pedestrian Hybrid Beacon

*Can Reduce Crashes by 55%, USDOT*

NCHRP Report 562 shows driver compliance is above 95%



**Pedestrian Hybrid Beacon Guide—  
Recommendations and Case Study**

FHWA Safety Program

U.S. Department of Transportation  
Federal Highway Administration

Safe Roads for a Safer Future  
Investment in roadway safety saves lives

<http://safety.fhwa.dot.gov>

*PHB image from PedBikeSafe.org (FHWA)*

# 5. Pedestrian Hybrid Beacon



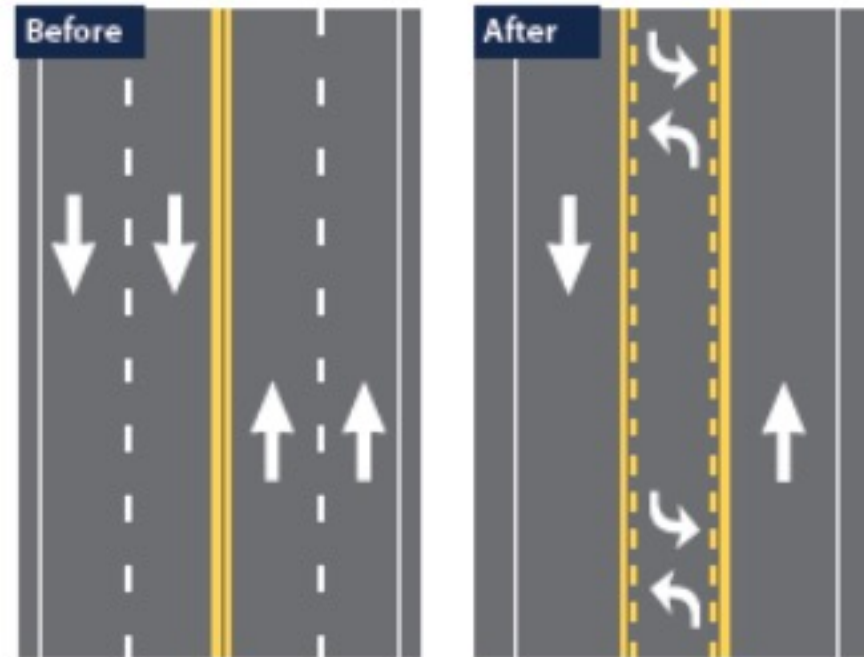
PHB at Glen Ave & Rock Island Trail Greenway crossing in Peoria Heights, IL

# 6. Road Diets

Can Reduce Crashes by 19 to 47%, USDOT



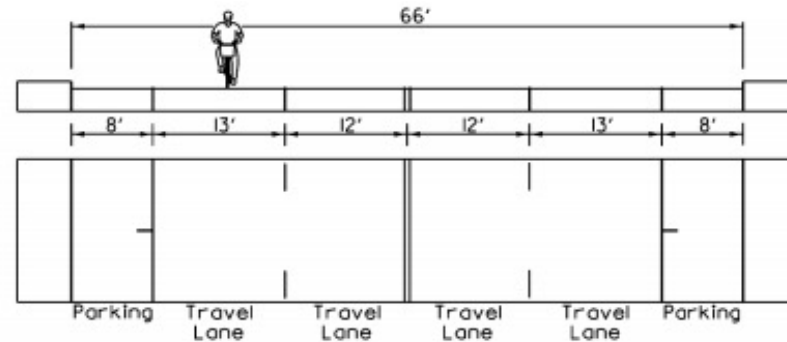
Loads of good FHWA information here:  
[https://safety.fhwa.dot.gov/road\\_diets/](https://safety.fhwa.dot.gov/road_diets/)



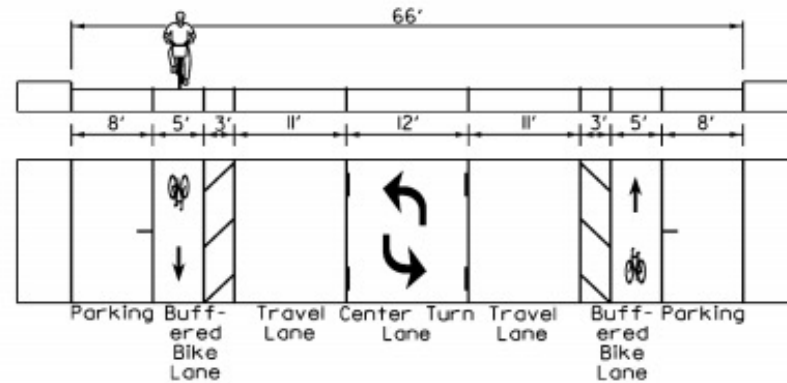
Example of a Road Diet

Road Diet on Edgewater Dr., Orlando, FL

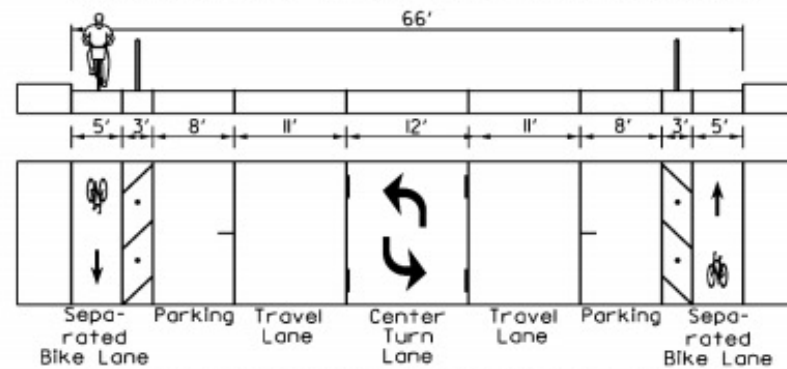
# 6. Road Diets



EXAMPLE EXISTING ROADWAY-BEFORE RECONFIGURATION



EXAMPLE PROPOSED ROADWAY WITH BUFFERED BIKE LANES



EXAMPLE PROPOSED ROADWAY WITH SEPARATED BIKE LANES

ROAD DIET EXAMPLES ADDING BUFFERED OR SEPARATED BIKE LANES

Figure 17-2.N



W. Forrest Hill Ave, Peoria, IL 2020



~11,000 AADT  
PREV. 5-Lane roadway with bidirectional left lane  
NEW 3-lane roadway with buffered bike lanes  
Elementary school is on the left of this picture

# 7. Raised Crosswalk

*Can Reduce Crashes by 45%, USDOT*



Alexandria, VA. FHWA



- Installed on local or collector roads with speeds 30 MPH or less, 2- or 3-lane roads with AADT < 9K.
- May not be appropriate along bus routes or primary emergency vehicle routes.
- Snowplowing can be a concern in IL.
- Pay attention to drainage.
- Also, pay attention to installations in vertical curve roadways.

# FHWA's EDC Countermeasure Selector

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
<b>2 lanes</b> (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 7 9	① 4 5 6 7 9	① 5 6 7 9	① 5 6 7 9	① 4 5 6 7 9	① 5 6 7 9	① 5 6 9
<b>3 lanes with raised median</b> (1 lane in each direction)	① 2 3 4 5	① ③ 5 7 9	① ③ 5 7 9	① 3 4 5 7 9	① ③ 5 7 9	① ③ 5 7 9	① ③ 4 5 7 9	① ③ 5 7 9	① ③ 5 9
<b>3 lanes w/o raised median</b> (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6	① ③ 5 6 7 9	① ③ 5 6 7 9	① 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 7 9	① ③ 4 5 6 7 9	① ③ 5 6 9	① ③ 5 6 9
<b>4+ lanes with raised median</b> (2 or more lanes in each direction)	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 9	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 9	① ③ 5 7 8 9	① ③ 5 8 9	① ③ 5 8 9
<b>4+ lanes w/o raised median</b> (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 8 9

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.\*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.














































- 1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning sign
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Rectangular Rapid-Flashing Beacon (RRFB)\*\*
- 8 Road Diet
- 9 Pedestrian Hybrid Beacon (PHB)\*\*

\*Refer to Chapter 4, "Using Table 1 and Table 2 to Select Countermeasures," for more information about using multiple countermeasures.

\*\*The PHB and RRFB are not both installed at the same crossing location.

# EDC's Countermeasure Selector

Table 2. Safety issues addressed per countermeasure.

Pedestrian Crash Countermeasure for Uncontrolled Crossings	Safety Issue Addressed				
	Conflicts at crossing locations	Excessive vehicle speed	Inadequate conspicuity/visibility	Drivers not yielding to pedestrians in crosswalks	Insufficient separation from traffic
Crosswalk visibility enhancement					
High-visibility crosswalk markings*					
Parking restriction on crosswalk approach*					
Improved nighttime lighting*					
Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line*					
In-Street Pedestrian Crossing sign*					
Curb extension*					
Raised crosswalk					
Pedestrian refuge island					
Pedestrian Hybrid Beacon					
Road Diet					
Rectangular Rapid-Flashing Beacon					



# IDOT's Operations Policy, TRA-23

**Figure 1 – Base Recommendations for Legs of Intersections Without Stop, Yield, or Signal Control<sup>1</sup> Two-Way Streets<sup>2</sup>**

Configuration, including turn and parking lanes <sup>3</sup>	ADT ≤ 9000			9000 < ADT < 15,000				15,000 < ADT < 25,000				25,000 < ADT < 35,000				ADT > 35,000			
	Posted Speed or 85 <sup>th</sup> Percentile Speed, mph																		
	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	All		
2 lanes or 3 with refuge	1	2	3	Site-Specific Design	1	2	3	Site-Specific Design	2	2	3	Site-Specific Design	2	3	3	Site-Specific Design	Site-Specific Design		
3 lanes no refuge	1	2	3		1	3	3		2	3	3		3	3	3			4	
4 lanes with refuge	2	2	3		2	3	3		3	3	3		3	3	3			4	4
6 lanes with refuge	2	3	3		2	3	4		3	3	4		3	3	4			4	4
> 4 lanes no refuge	Site-Specific Design								Site-Specific Design										
4 lanes, refuge not feasible	2	2	4	2	3	4	3	4	4	4	4	4	4	4					

Treatment Number	Treatment Detail
1	Two W11-2 Ped Signs, each with W16-7P Slanted Down Arrow plaques. <sup>4</sup>
2	Treatment 1 + Pedestrian-actuated warning beacons in suburban and less dense urban areas. In dense urban areas Treatment 1 alone may be considered. Continuously operated beacons are not recommended.
3	Treatment 1 + Rectangular Rapid Flashing Beacon
4	Request Traffic Signal Warrant Study

Crosswalk Pavement Marking	Application – Refer to Part 4, Guidelines for Implementation, Crosswalk Pavement Markings
Continental	Standard application
Ladder	Enhanced conspicuity application

Footnotes:	1. Base recommendations are a starting point for design. Engineering judgment must be applied to all locations.
	2. One-way streets are evaluated as one side of a multi-lane road with refuge. See Part 4 discussion of Site Specific Design for more information.
	3. Refuge is defined as a raised median or other pedestrian safety island.
	4. W16-9P (Ahead) plaques should also be considered in accordance with the MUTCD. Ahead plaques may be omitted in dense urban areas to avoid proliferation of signs.

# IDOT's Operations Policy, TRA-23

Figure 2 – Base Recommendations for **Midblock Locations<sup>1</sup>**, Two Way Streets <sup>2</sup>

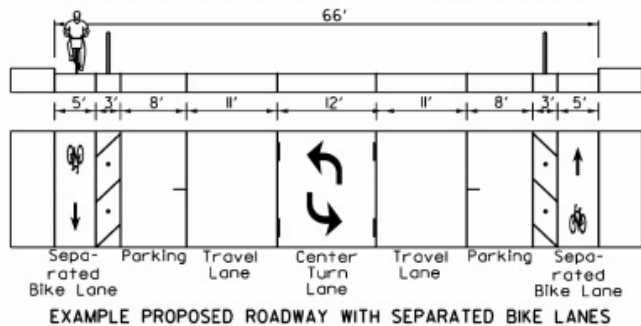
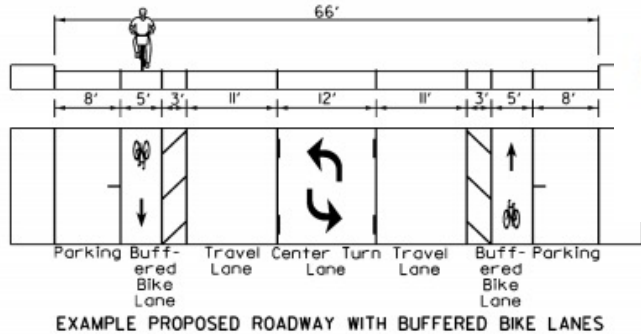
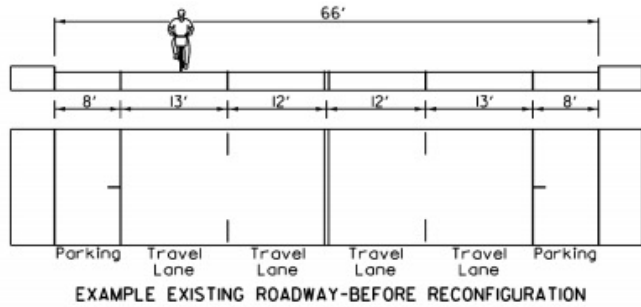
Configuration, including turn and parking lanes <sup>3</sup>	ADT ≤ 9000				9000 < ADT < 15,000				15,000 < ADT < 25,000				25,000 < ADT < 35,000				ADT > 35,000
	Posted Speed or 85 <sup>th</sup> Percentile Speed, mph																
	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	All
2 lanes or 3 with refuge	1	2a	3	Site-Specific Design	1	2b	3	Site-Specific Design	2a	2b	3	Site-Specific Design	2a	3	3	Site-Specific Design	Site-Specific Design
3 lanes no refuge	1	2a	3		1	3	3		2b	3	3		3	3	4		
4 lanes with refuge	2a	2b	3		2b	3	3		3	3	3		3	4	4		
6 lanes with refuge	2b	3	3		2b	3	4		3	3	4		4	4	4		
> 4 lanes no refuge	Site-Specific Design								Site-Specific Design								
4 lanes, refuge not feasible	2b	2b	4	2b	3	4	3	4	4	4	4	4					

Treatment Number	Treatment Detail
1	Two W11-2 Ped Signs, each with W16-7P Slanted Down Arrow plaques. <sup>4</sup>
2a	Treatment 1 + Pedestrian-actuated warning beacons. Continuously operated beacons are not recommended.
2b	Treatment 2a + R1-5b Stop Here for Pedestrians signs at stop bar pavement marking (omit R1-5b for single lane approach)
3	Treatment 1 + Rectangular Rapid Flashing Beacon
4	Evaluate Standard Traffic Signal or Pedestrian Hybrid Beacon; review IL MUTCD for placement restrictions

Crosswalk Pavement Marking	Application – Refer to Part 4, Guidelines for Implementation, Crosswalk Pavement Markings
Continental	Standard Application.
Ladder	Enhanced conspicuity application.

Footnotes:	
	1. Base recommendations are a starting point for design. Engineering judgment must be applied to all locations.
	2. One-way streets are evaluated as one side of a multi-lane road with refuge. See Part 4 discussion of Site Specific Design for more information.
	3. Refuge is defined as a raised median or other pedestrian safety island.
	4. W16-9P (Ahead) plaques should also be considered in accordance with the MUTCD. Ahead plaques may be omitted in dense urban areas to avoid proliferation of signs.

# IDOT's BDE Policies, Ch 17 BDE Manual



ROAD DIET EXAMPLES ADDING BUFFERED OR SEPARATED BIKE LANES

Figure 17-2.N

BDEM, Ch 17-4.05 & 17-4.06, Pedestrian Crossings at Intersections & Midblock: PHBs, RRFBs, LPI, Refuge Islands, Illumination, Signing & Marking

10. Leading Pedestrian Interval (LPI) The practice of displaying the walk symbol to pedestrians several seconds ahead of parallel vehicular traffic receiving a green signal allowing pedestrians a 'head start' to occupy the crosswalk and increase their visibility to both right-turning and left-turning drivers.

# IDOT's BDE Policies, Ch 17 BDE Manual

## ▶ Bicycle Scoping Policy

- ▶ Is Project in or within 1 mile of a municipality with over 1,000 people?
- ▶ Is Project on an access-controlled roadway (ie. interstate or other road system that prohibits bikes and peds)?
- ▶ Is Project a resurfacing-only project that does not widen the shoulders or roadway?

If previous are YES, NO, then NO, then move into analyzing warrants to see whether bicycles shall be included in the design.


- ▶ Warrant 1: Is the project site designated on a recommended bicycle network or locally adopted bicycle plan?
- ▶ Warrant 2: Will projected two-way bicycle travel be 25 or more users per day during peak 3 months of bicycling season?
- ▶ Warrant 3: Will this route provide access to a park, school, recreational area, or significant destination?
- ▶ Warrant 4: Does the project provide access across a river, railroad, highway, or other natural or man-made barrier?
- ▶ Warrant 5: Will the Project negatively affect an existing trail? (ie. grade separation that would sever an existing at-grade trail crossing)

# IDOT's BDE Policies, Ch 17 BDE Manual

Roadway Characteristics <sup>6f</sup>	Type and Width of Bicycle Accommodation <sup>1f, 2f</sup>			
	Paved Shoulder	Wider Outside Lane	Bicycle Lane including Buffers <sup>3f</sup>	One-way Separated Bicycle Lane <sup>4f, 5f</sup>
<b>Rural Roadway Two-Lane, ≤ 40 mph</b>				
Design Year ADT < 2,900	3 ft (0.9 m) <sup>6f</sup>	14 ft (4.2 m) <sup>7f</sup>		
Design Year ADT 2,900 - 8,000	4 ft (1.2 m)			
Design Year ADT > 8,000	5 ft (1.8 m)			
<b>Rural Roadway Two-Lane, ≥ 45 mph</b>				
Design Year ADT < 2,750	3 ft (0.9 m) <sup>6f</sup>			
Design Year ADT 2,750 - 5,000	4 ft (1.2 m)			
Design Year ADT 5,001 - 10,000	5 ft (1.5 m)			
Design Year ADT > 10,000	6 ft (1.8 m)			
<b>Rural Roadway Multilane, All Speeds</b>				
Design Year ADT < 12,000	6 ft (1.8 m)			
Design Year ADT ≥ 12,000	8 ft (2.4 m)			
<b>Urban Roadway Two-Lane, &lt;30 mph</b>				
Design Year ADT < 2,900		14 ft (4.3 m) <sup>7f</sup>	5 ft (1.5 m)	
Design Year ADT 2,900 - 4,000			5 ft (1.5 m)	
Design Year ADT > 4,000			6 ft (1.8 m)	
<b>Urban Roadway Two-Lane, 30-35 mph</b>				
Design Year ADT < 2,900			5 ft (1.5 m)	
Design Year ADT 2,900 - 4,000			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 4,001 - 9,500			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 9,500			8 ft (2.4 m)	7 ft (2.1 m)
<b>Urban Roadway Two-Lane, 40 mph</b>				
Design Year ADT < 3,500			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 3,500 - 7,700			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 7,700			8 ft (2.4 m)	7 ft (2.1 m)
<b>Suburban Roadway Two-Lane, 40-45 mph</b>				
Design Year ADT < 6,500	6 ft (1.8 m)			7 ft (2.1 m)
Design Year ADT ≥ 6,500	8 ft (2.4 m)			7 ft (2.1 m)
<b>Urban Roadway Four-Lane, &lt;30 mph</b>				
Design Year ADT < 5,800		14 ft (4.3 m) <sup>7f</sup>	5 ft (1.5 m)	
Design Year ADT 5,800 - 8,000			5 ft (1.5 m)	
Design Year ADT > 8,000			6 ft (1.8 m)	
<b>Urban Roadway Four-Lane, 30-35 mph</b>				
Design Year ADT < 5,800			5 ft (1.5 m)	
Design Year ADT 5,801 - 8,000			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 8,001 - 19,000			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 19,000			8 ft (2.4 m)	7 ft (2.1 m)
<b>Urban Roadway Four-Lane, 40 mph</b>				
Design Year ADT < 7,000			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 7,000 - 15,400			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 15,400			8 ft (2.4 m)	7 ft (2.1 m)
<b>Suburban Roadway Four-Lane, 40-45 mph</b>				
Design Year ADT < 13,000	6 ft (1.8 m)			7 ft (2.1 m)
Design Year ADT ≥ 13,000	8 ft (2.4 m)			7 ft (2.1 m)

BICYCLE FACILITY SELECTION TABLE

# Many Various Resources



Pedestrian and Bicycle Information Center

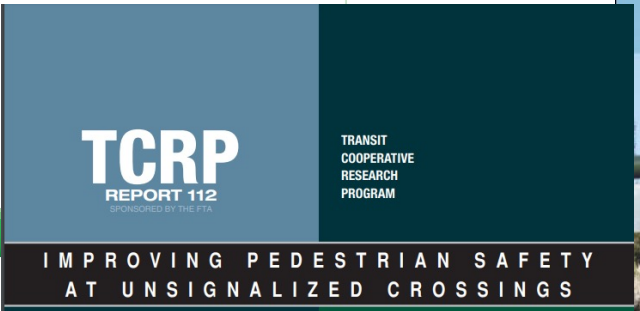
## Evaluation of Pedestrian-Related Roadway Measures: A Summary of Available Research

April 2014

Jill Mead  
Charlie Zegeer  
Max Bushell

For:  
Federal Highway Administration  
DTFH61-11-H-00024

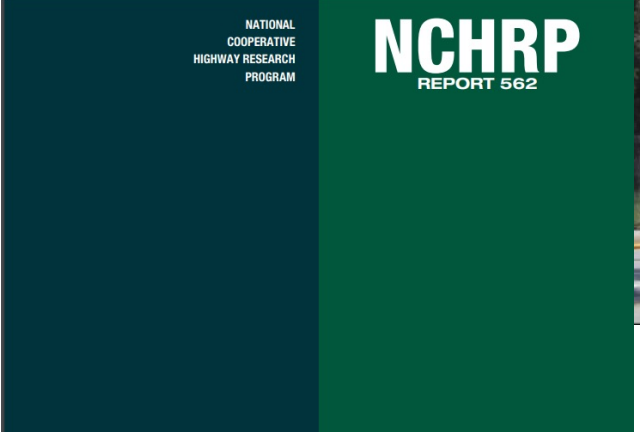
www.pedbikeinfo.org



**TCRP**  
REPORT 112  
SPONSORED BY THE FHWA

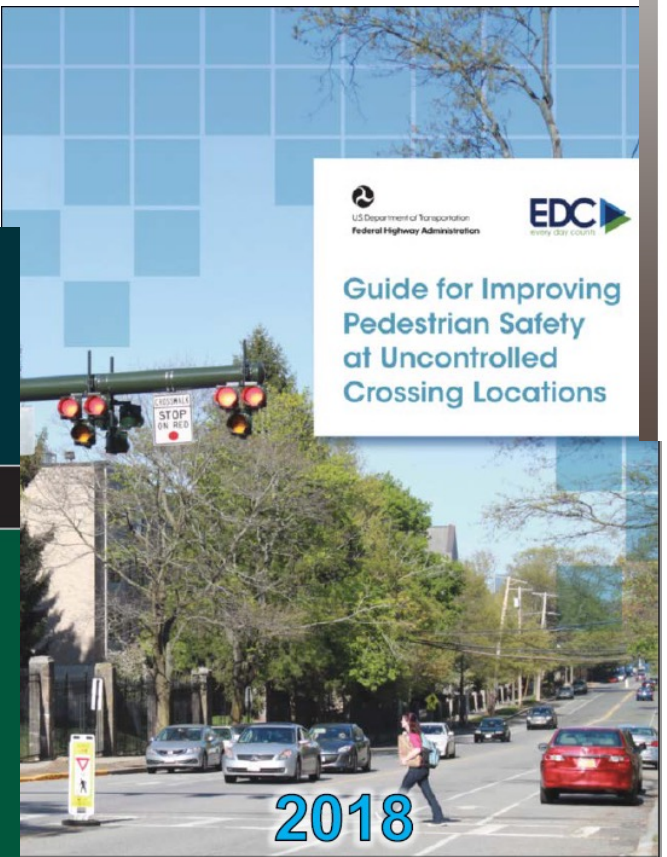
TRANSIT COOPERATIVE RESEARCH PROGRAM

IMPROVING PEDESTRIAN SAFETY AT UNSIGNALIZED CROSSINGS



NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

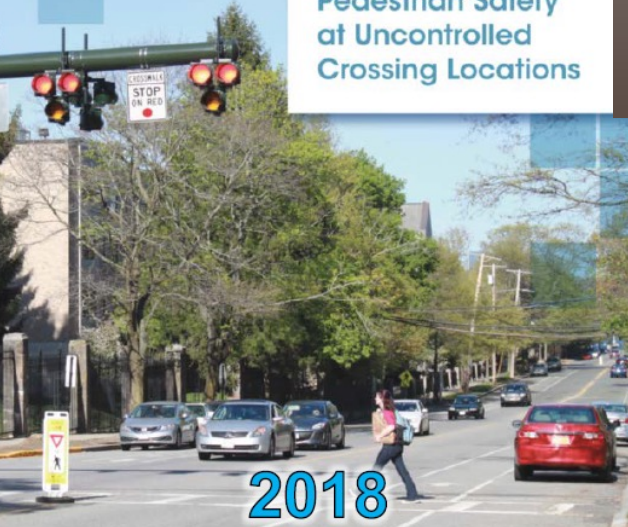
**NCHRP**  
REPORT 562



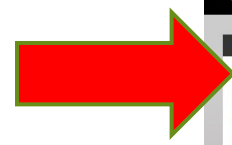
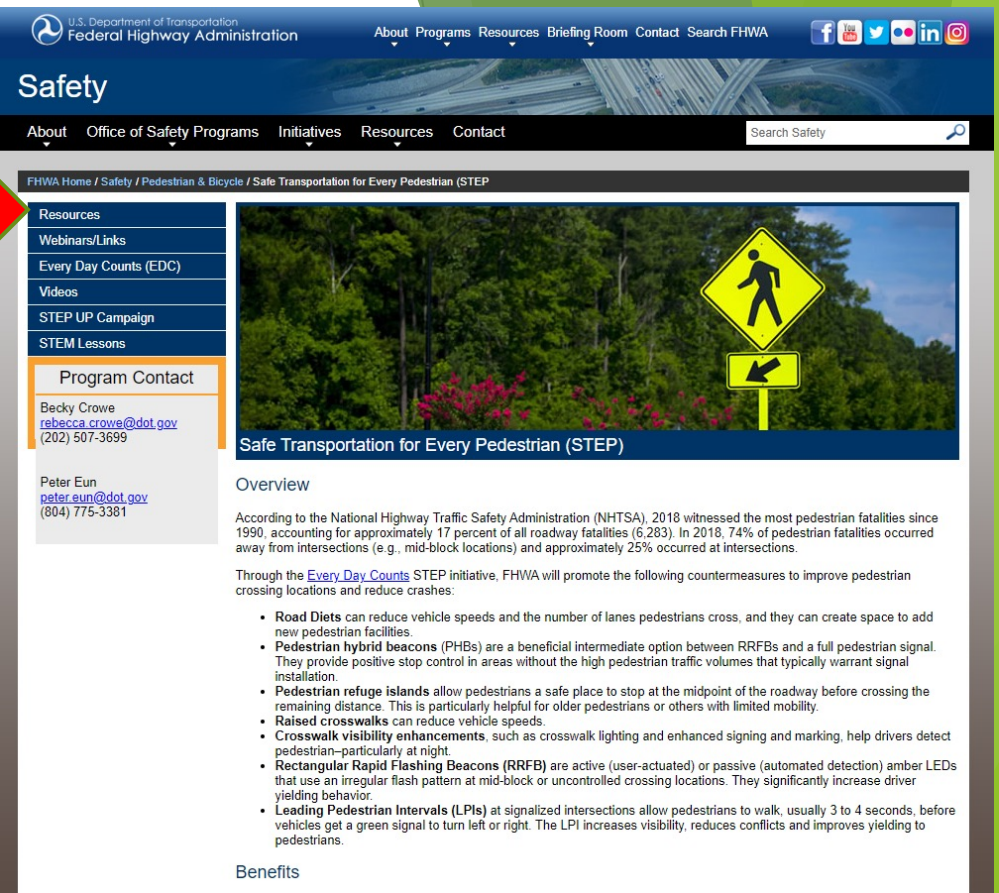
U.S. Department of Transportation  
Federal Highway Administration

**EDC**  
Every Day Counts

## Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations



2018

U.S. Department of Transportation  
Federal Highway Administration

About Programs Resources Briefing Room Contact Search FHWA

## Safety

About Office of Safety Programs Initiatives Resources Contact

Search Safety

FHWA Home / Safety / Pedestrian & Bicycle / Safe Transportation for Every Pedestrian (STEP)

**Resources**

- Webinars/Links
- Every Day Counts (EDC)
- Videos
- STEP UP Campaign
- STEM Lessons

**Program Contact**

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### Safe Transportation for Every Pedestrian (STEP)

**Overview**

According to the National Highway Traffic Safety Administration (NHTSA), 2018 witnessed the most pedestrian fatalities since 1990, accounting for approximately 17 percent of all roadway fatalities (6,283). In 2018, 74% of pedestrian fatalities occurred away from intersections (e.g., mid-block locations) and approximately 25% occurred at intersections.

Through the **Every Day Counts** STEP initiative, FHWA will promote the following countermeasures to improve pedestrian crossing locations and reduce crashes:

- Road Diets** can reduce vehicle speeds and the number of lanes pedestrians cross, and they can create space to add new pedestrian facilities.
- Pedestrian hybrid beacons (PHBs)** are a beneficial intermediate option between RRFBs and a full pedestrian signal. They provide positive stop control in areas without the high pedestrian traffic volumes that typically warrant signal installation.
- Pedestrian refuge islands** allow pedestrians a safe place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or others with limited mobility.
- Raised crosswalks** can reduce vehicle speeds.
- Crosswalk visibility enhancements**, such as crosswalk lighting and enhanced signing and marking, help drivers detect pedestrian—particularly at night.
- Rectangular Rapid Flashing Beacons (RRFB)** are active (user-actuated) or passive (automated detection) amber LEDs that use an irregular flash pattern at mid-block or uncontrolled crossing locations. They significantly increase driver yielding behavior.
- Leading Pedestrian Intervals (LPIs)** at signalized intersections allow pedestrians to walk, usually 3 to 4 seconds, before vehicles get a green signal to turn left or right. The LPI increases visibility, reduces conflicts and improves yielding to pedestrians.

**Benefits**

# How to Develop a Pedestrian Safety Action Plan



US Department of Transportation  
Federal Highway Administration

FHWA-SA-05-12  
Revised March 2009



# Chicago Pedestrian Plan

Department of Transportation



## Illinois Strategic Highway Safety Plan 2017



Driving Zero Fatalities to a Reality  
Partnering for Illinois

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# QUESTIONS ???

THANK YOU!

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BICYCLE & PEDESTRIAN/ADA POLICY ENGINEER  
CENTRAL OFFICE

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