

## The Menu

	Speed Reduction	Walking Safety	Bicycling Safety	Crosswalk Improvement	Transit Access	Cost
Advanced yield/stop markings		X		X		\$5/sf
Bike conflict zone marking			X			\$5/sf
Buffered bike lane	X		X			\$2/ft
Close sidewalk gap		X		X		\$130/ft
Co-locate bus stops and marked crosswalks		X		X	X	\$1500
Countdown pedestrian signal head		X		X		\$800
Curb extension	X	X		X		\$12/sf
Curb ramp		X		X		\$8000
Extend bike lane to intersection			X			\$1/ft
Extended signal clearance time			X	X		Min
Hardened centerline/lane line	X	X		X		\$825
High-visibility crosswalk		X		X		\$1/sf
Improved bus stop					X	\$7500
In-street crosswalk signs	X	X		X		\$500
Leading pedestrian interval		X		X		Min
Narrow lanes	X					\$3/ft
New all-way stop control	X	X		X		\$5000
New traffic signal	X	X		X		\$550,000
Pedestrian hybrid beacon		X		X		\$230,100
Pedestrian refuge island	X	X		X		\$10,000
Pedestrian signal		X		X		\$230,100
Raised crosswalk	X	X		X		\$10,000
Rectangular rapid flashing beacon		X		X		\$122,230
Full Roundabout	X	X	X	X		\$1,200,000
Mini Roundabout	X	X	X	X		\$250,000
Separated bikeway	X		X			\$20/sf
Speed feedback sign	X					\$16,725
Speed lump	X					\$2500

Based on tables from Pocket-Greenhaven Plan, Fehr & Peers 2021

## Improvement Strategies A-Co



### Advanced Yield/Stop Markings

Crosswalk improvement, Pedestrian Safety

A stop bar placed ahead of the crosswalk at stop signs and signals reduces instances of vehicles encroaching on the crosswalk. Similarly, advanced yield markings placed 20 to 50 feet in advance of crosswalks increase visibility of people who are walking. Beneficial at multi-lane crosswalks to reduce the likelihood of a multiple-threat crash.



### Close Sidewalk Gap

Pedestrian Safety

Continuous sidewalks for people who are walking provide a separated facility for people to walk along the street and can help minimize crashes with people who are walking in the street.



### Bike Conflict Zone Marking

Bicyclist Safety

Green pavement within a bike lane to increase visibility of people who are bicycling and to reinforce bike priority. Green pavement is used as a spot treatment in conflict areas such as driveways.



### Co-locate Bus Stops and Marked Crosswalks

Crosswalk Improvement, Pedestrian Safety, Transit Access

Placement of bus stops and crosswalks in close proximity to allow people riding the bus to cross the street more conveniently and more safely.



### Buffered Bike Lane

Bicyclist Safety, Speed

Dedicated street space for people who are bicycling with designated lane markings, pavement legends, and signage. Includes pavement markings between the bike lane and vehicle lane to provide additional space between bikes and vehicles and/or between the bike lane and parking to denote door zone of parked vehicles. Creates a street-narrowing effect that reduces vehicle speeds.

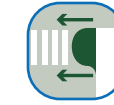


### Countdown Pedestrian Signal Head

Crosswalk Improvement, Pedestrian Safety

Display of "countdown" of seconds remaining on the pedestrian signal. Countdown indications improve safety for all street users, and are required for all newly installed traffic signals where pedestrian signals are installed.

## Improvement Strategies Cu-H



### Curb Extension

Crosswalk Improvement, Pedestrian Safety, Speed

Curb extensions or bulbouts are raised devices, usually constructed from concrete, landscaping, or paint and plastic materials, that narrow the street to reduce speeds of turning vehicles, improve sight lines, and shorten crosswalk lengths.



### Extend Signal Clearance Time

Crosswalk Improvement, Bicyclist Safety

Extending yellow and all-red time allows people who are driving and bicycling to more safely cross through a signalized intersection before conflicting traffic movements are permitted to enter the intersection.



### Curb Ramp

Crosswalk Improvement, Pedestrian Safety

Curb ramps provide access to those using wheelchairs and also ease access for people using other assistive devices or wheeled devices such as strollers. New ramps must also incorporate tactile warning devices detectable to visually impaired people.



### Hardened Centerline/Lane Line

Crosswalk Improvement, Bicycling Safety, Speed

Centerline hardening encourages people who are driving to make left turns at slower speeds. Lane line hardening also make lanes feel smaller and encourages drivers to stay in their lane and proceed more slowly. Typically, plastic delineators and/or curbing are placed along the line striping to provide a vertical separation between lanes.



### Extend Bike Lane to Intersection

Bicyclist Safety

In locations where a bike lane is dropped due to the addition of a right-turn pocket, the intersection approach may be restriped to allow for people who are bicycling to move to the left side of right-turning vehicles prior to reaching the intersection.



### High-Visibility Crosswalk

Crosswalk Improvement, Pedestrian Safety

A crosswalk designed to be more visible to approaching people who are driving, striped with ladder markings using high-visibility material such as thermoplastic tape instead of paint.

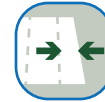
## Improvement Strategies I-N



### Improved Bus Stop

Transit Access

Adding benches and shelters improves the comfort of people who are waiting for a bus.



### Narrow Lanes

Speed

A reduction in lane width, to 11 feet, produces a traffic calming effect by encouraging people who are driving to travel at slower speeds, lowering the risk of crashing with people walking and bicycling and other people who are driving.



### In-Street Crosswalk Signs

Crosswalk Improvement, Pedestrian Safety, Speed

Yield-to-pedestrians signs alert people who are driving about the presence of people crossing the street. These signs can be placed on the centerline in the street with advanced yield markings.



### New All-Way Stop Control

Crosswalk Improvement, Pedestrian Safety, Speed

Requires all vehicles to stop before crossing the intersection. Removes the need for people walking, bicycling, and driving on a side-street stop-controlled intersection to cross free-flowing lanes of traffic, which reduces the risk of collision. Can have a traffic calming effect on long straightaways.



### Leading Pedestrian Interval

Crosswalk Improvement, Pedestrian Safety

Traffic signals timed to allow people walking across the intersection a short head start to minimize conflicts with turning vehicles and improve visibility of people walking across the street.



### New Traffic Signal

Crosswalk Improvement, Pedestrian Safety, Speed

New traffic signals help organize travel of all modes at an intersection, limiting interactions between people walking, bicycling, and driving in conflicting movements. New signals can have a traffic calming effect on long, high-speed straightaways.

## Improvement Strategies P-R



### Pedestrian Hybrid Beacon

Crosswalk Improvement, Pedestrian Safety

Pedestrian hybrid beacons (PHBs) are button-activated lights used at unsignalized intersections or mid-block crosswalks to notify oncoming drivers to stop with a series of red and yellow lights. Unlike a traffic signal, the PHB rests in dark until activated by a person walking across the street.



### Raised Crosswalk

Crosswalk Improvement, Pedestrian Safety, Speed

A raised crosswalk is typically elevated 3-6 inches above the street or at sidewalk level and ensures that people who are driving traverse the crosswalk slowly. Similar to speed lumps and other vertical speed control elements, it reinforces slow speeds and encourages motorists to yield to people walking at the crosswalk.



### Pedestrian Refuge Island

Crosswalk Improvement, Pedestrian Safety, Speed

Pedestrian refuge islands provide a protected area for people walking across the street at the center of the street. They reduce the exposure time for people walking across the intersection and simplify crossing the street by allowing people walking across the street to focus on one direction of traffic at a time.



### Rectangular Rapid Flashing Beacon

Crosswalk Improvement, Pedestrian Safety

A rectangular rapid flashing beacon (RRFB) is a flashing light activated by a person crossing the street with additional signage to alert motorists of the crosswalk. Improves safety by increasing the visibility of marked crosswalks and provides motorists a cue to slow down and yield to people walking across the street.



### Pedestrian Signal

Crosswalk Improvement, Pedestrian Safety

Pedestrian signals are button-activated traffic signals used at mid-block crosswalks to notify oncoming motorists to stop. These signals operate similarly to traffic signals at intersections.



### Roundabout

Bicyclist Safety, Crosswalk Improvement, Pedestrian Safety, Speed

Circular intersection with a raised central island and yield control, which direct flow in a continuous circular direction around the intersection. Can reduce the number of conflict points compared to an uncontrolled intersection and decrease vehicle speeds due to intersection geometry.

## Improvement Strategies S-Sp



### **Separated Bikeway**

Bicyclist Safety, Speed

Designated bike lanes, separated from vehicle traffic by a physical barrier, usually bollards, landscaping, or parked cars. These facilities can increase safety by decreasing opportunities for crashing with overtaking drivers and reducing the risk of dooring.



### **Speed Feedback Sign**

Speed

A speed feedback sign notifies people who are driving of their current speed, with a reminder of the posted speed limit. Improves safety by providing a cue for people who are driving to check their speed and slow down, if necessary.



### **Speed Lump**

Speed

Speed lumps and humps use vertical deflection to raise the entire wheelbase of a vehicle and encourage motorists to travel at slower speeds to avoid discomfort or damage to the undercarriage of the vehicle.