

# Pedestrian Project Toolkit

Updated 2021


## For Pedestrian and Neighborhood Projects

This toolkit describes the engineering strategies the Seattle Department of Transportation commonly uses to make streets safer and more comfortable for pedestrians.

### Safety Improvements

-  ↓ Reduced Pedestrian Collisions
-  ↓ Reduced Collisions
-  ↓ Reduced Turning Collisions
-  ↓ Reduced Speed
-  ↑ Increased Driver Yielding

### Estimated Cost

-  < \$20,000.00
-  \$21,000.00 - \$100,000.00
-  > \$100,000.00

### Accessibility

-  ADA Infrastructure

### Installation Timeline

-  0-1 Years
-  1 -3 Years
-  3 + Years

Find more information at: [www.seattle.gov/transportation/pedestrian](http://www.seattle.gov/transportation/pedestrian)



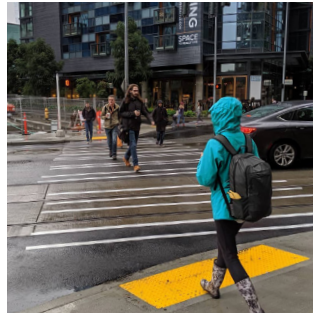
**Seattle**  
Department of  
Transportation

# Pedestrian Project Toolkit: Crossings

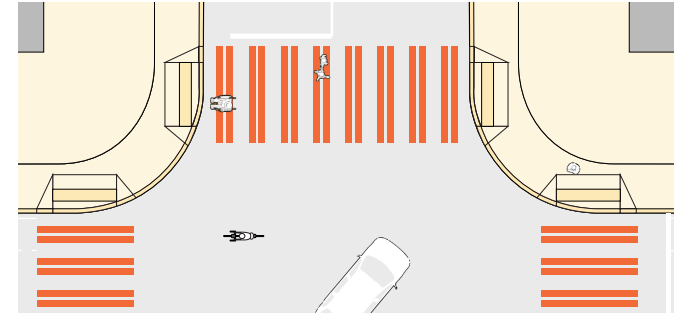
## Crosswalk Marking



- Alerts drivers to frequent crossing locations
- For additional cost can include community designed artwork
- Includes signage to restrict parking 20 - 30' from crosswalk in order to improve visibility



8th Ave & Westlake Ave



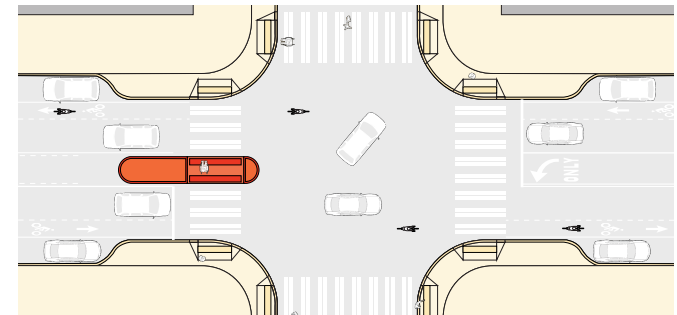
## Pedestrian Refuge Island



- Provides a protected space for pedestrians to cross half the roadway and wait until it is safe to cross the remainder
- Used on roads with a center turn lane or parking lane



Boylston Ave E & E Olive Way



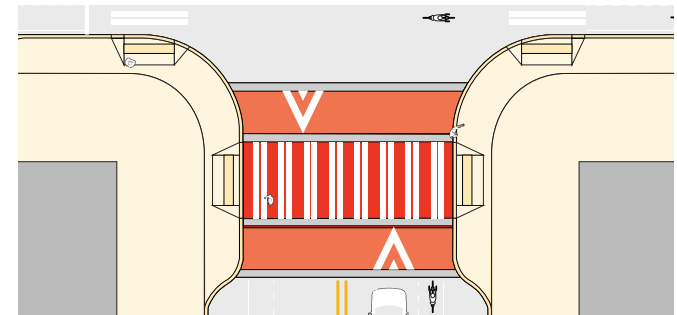
## Raised Crosswalk



- Alerts drivers to pedestrians and slows vehicles with an elevated marked crosswalk



8th Ave



# Pedestrian Project Toolkit: Curbs and Sidewalk

## Sidewalk or Walkway



### Cost Effective Walkway

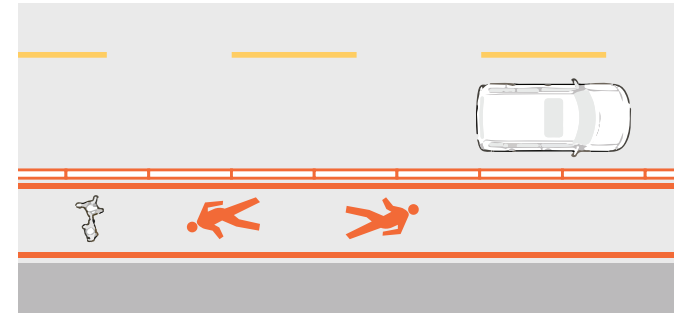
- Delineates pedestrian space from vehicles, can include paint, curb, planting, and paving.

### Traditional Sidewalk

- Separates pedestrians from vehicles via a raised concrete walkway, curb, and planting strip.



N 113th St - Cost Effective Walkway



Cost Effective Walkway

## Curb Bulb



- Shortens the distance needed to cross the roadway
- Improves visibility of pedestrians waiting to cross
- Used on streets with a parking lane

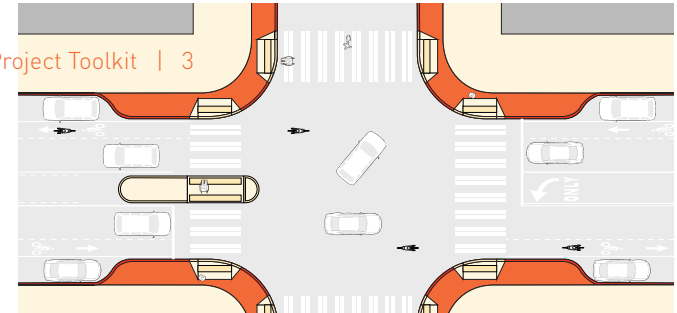
**Raised:** more expensive, expands the sidewalk

**Painted:** less expensive, can include artwork



24th Ave S & E Yesler Way

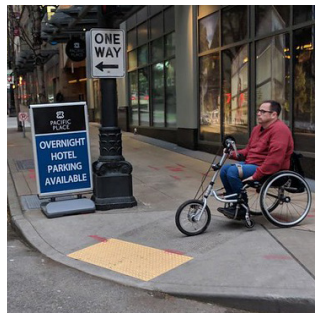
Pedestrian Project Toolkit | 3



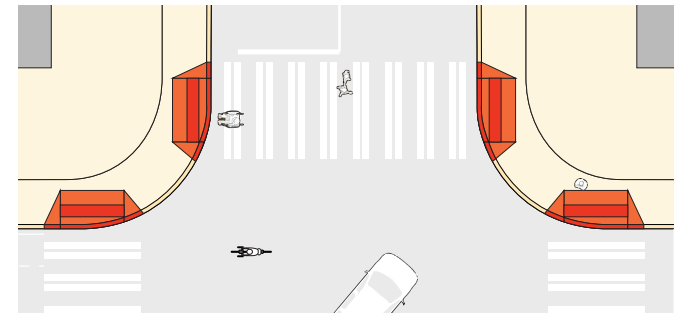
## Curb Ramp



- Provides access to sidewalks for pedestrians using mobility devices
- Can be community requested through the SDOT ADA Program



7th Ave & Olive Way





# Pedestrian Project Toolkit: Signals

## Signal



### Full Signal

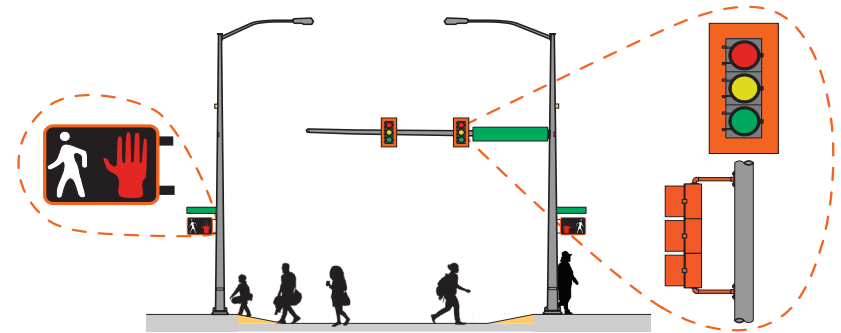
- Controls all vehicle and pedestrian movements at an intersection

### Half Signal

- Stops vehicle traffic on the busier streets to allow pedestrians to cross



Pioneer Square



## Accessible Pedestrian Signal



- Indicates whether walk sign is on or off, and intersection location, with signal and audio cues for pedestrians who are blind, have low vision, or are blind with other disabilities
- Can be community requested through the SDOT ADA Program



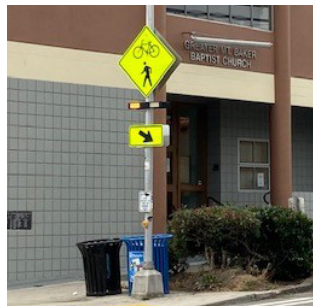
Westlake Ave N & Denny Way



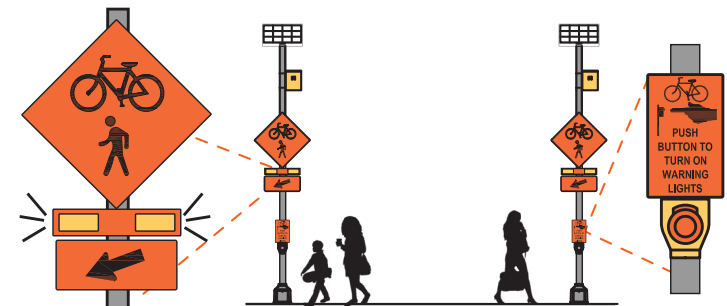
## Rapid Flashing Beacon



- Blinking lights that turn on only when pedestrians or bicyclists push a button to cross the roadway
- Alerts drivers to pedestrian or bike activity on the road



25th Ave S & S Jackson St



# Pedestrian Project Toolkit: Traffic Calming

## Speed Control

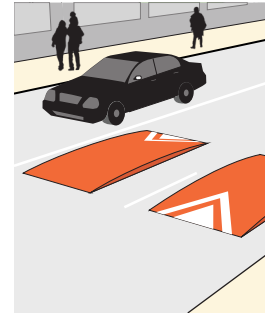


### Speed Hump, Speed Cushion, Speed Table

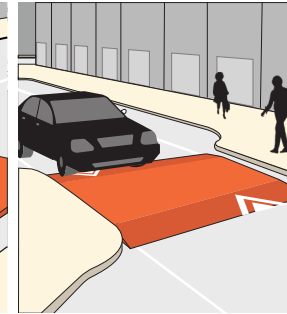
- Slows vehicles with mid-block rise in the roadway
- Speed cushions include cut outs to make it easier for emergency vehicles to pass through unhindered
- Best for streets that are steep



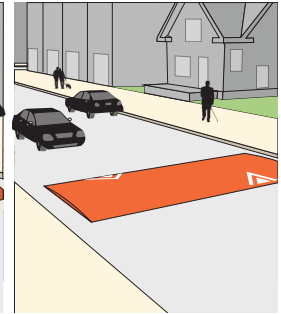
Highland Park Way SW



Speed Cushion



Speed Table



Speed Hump

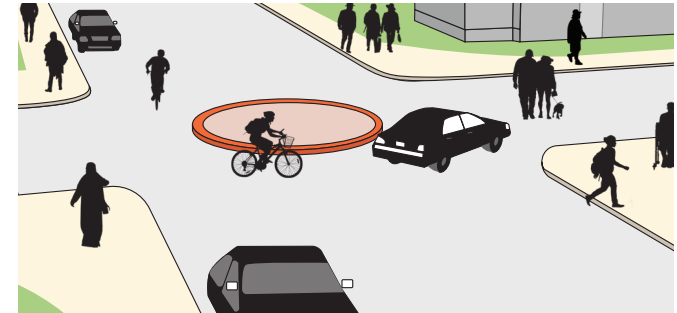
## Traffic Circle



- Requires drivers to slow and look for cross traffic at the intersection of residential streets
- Used on residential streets to reduce collisions and slow traffic
- Can include landscaping maintained by neighbors



Meridian Ave N & N 36th St



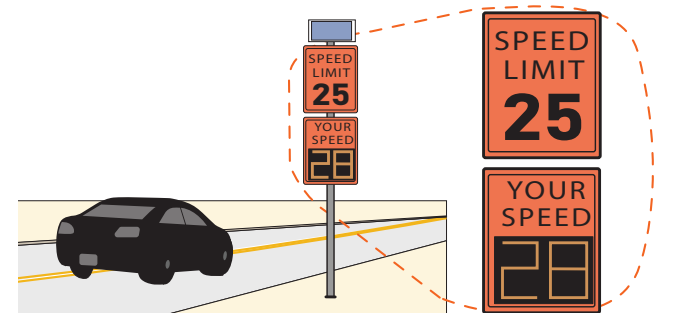
## Radar Speed Feedback Sign



- Discourages speeding by displaying speed of passing vehicles on sign along roadway
- Best used on arterials and streets with a pattern of drivers traveling above the posted speed limit



Rainier Ave S & S Alaska St

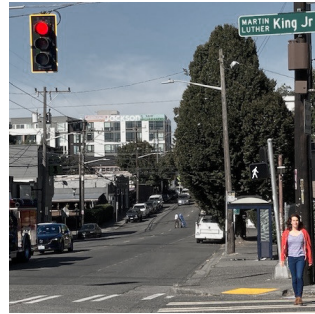


# Pedestrian Project Toolkit: Additional Tools

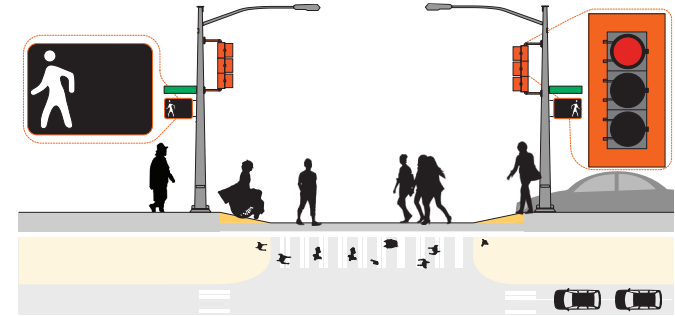
## Leading Pedestrian Interval



- Provides pedestrians time to cross intersection without moving vehicles
- Walk sign turns on while vehicles still have a red light



MLK Jr Way & S Jackson St



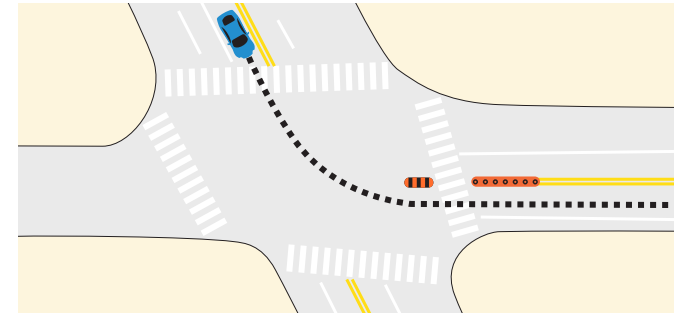
## Hardened Center Line



- Slows vehicles making a left turn and improves visibility of pedestrians using the crosswalk
- Raised line separates vehicle lanes at intersection before and after crosswalk



Rainier Ave S & S Massachusetts St



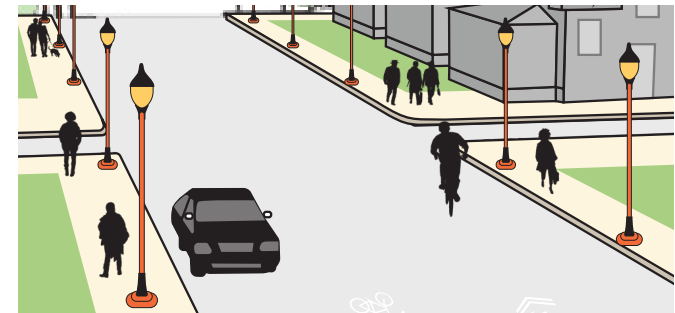
## Pedestrian-Scale Lighting



- Brightens pedestrian spaces, improving visibility
- Typically shorter than traditional streetlights
- Can have a variety of designs to enhance sidewalks, parks, or other pedestrian-focused areas



Occidental St



# Pedestrian Project Toolkit: Data Sources

## Marked Crosswalk

Can reduce collisions by 20-40%

Source: Crash Modification Factors Clearinghouse ([www.cmfclearinghouse.org](http://www.cmfclearinghouse.org))

## Raised Crossing

Can reduce pedestrian collisions by 45%

Source: [https://safety.fhwa.dot.gov/ped\\_bike/step/docs/techSheet\\_RaisedCW2018.pdf](https://safety.fhwa.dot.gov/ped_bike/step/docs/techSheet_RaisedCW2018.pdf)

## Pedestrian Refuge Island

Can reduce pedestrian collisions by 55%

Source: <https://safety.fhwa.dot.gov/provencountermeasures/pedmedians/>

## Sidewalks

Can reduce pedestrian collisions by 65-89%

Source: <https://safety.fhwa.dot.gov/provencountermeasures/walkways/>

## Curb Bulbs

Can increase drivers yielding to pedestrians

Source: [https://www.pedbikeinfo.org/cms/downloads/PedestrianLitReview\\_April2014.pdf#page=27&zoom=100,69,330](https://www.pedbikeinfo.org/cms/downloads/PedestrianLitReview_April2014.pdf#page=27&zoom=100,69,330)

## Signals

Half Signals: Can reduce pedestrian collisions by 55%

Source: [https://safety.fhwa.dot.gov/provencountermeasures/ped\\_hybrid\\_beacon/](https://safety.fhwa.dot.gov/provencountermeasures/ped_hybrid_beacon/)

## Flashing Beacon

Can reduce pedestrian collisions by 45%

Collision Source: Crash Modification Factors Clearinghouse ([www.cmfclearinghouse.org](http://www.cmfclearinghouse.org))

Can increase drivers yielding to pedestrians by 350%

Yielding Source: <https://www.fhwa.dot.gov/publications/research/safety/pedbike/10046/index.cfm#:~:text=The%20average%20yielding%20during%20baseline,in%20yielding%20to%2087.8%20percent.>

## Speed Control

Can reduce collisions by 40-50%

Source: Crash Modification Factors Clearinghouse ([www.cmfclearinghouse.org](http://www.cmfclearinghouse.org))

## Traffic Circle

Can reduce collisions by 30%

Source: <https://nacto.org/docs/usdg/fhwa-mini-roundabouts-technical-report.pdf>

## Radar Feedback Signs

Can reduce collisions by 5%

Source: Crash Modification Factors Clearinghouse ([www.cmfclearinghouse.org](http://www.cmfclearinghouse.org))

Can reduce speeds by 5-10%

Source: SDOT (Vision Zero) local study on West Marginal Way (2021)

## Leading Pedestrian Interval

Can reduce turning collisions with pedestrian by 50%

Source: SDOT (Vision Zero) local study of LPI's

## Hardened Center Lines

Can reduce turning speed by 10-16%.

Source: <https://www.portland.gov/sites/default/files/2020-07/left-turn-calming-evaluation-report.pdf>