Pedestrian Safety Toolkit

Pedestrian Refuge Islands
Pedestrian refuge islands and medians create a safe space for pedestrians crossing the street, especially on high-speed roads and streets with multiple travel lanes in one direction. Can be painted or concrete.
Crashes reduced by 56% ¹

Pedestrian Scramble
Gives pedestrians exclusive access to an intersection by stopping vehicular traffic on all approaches, allowing pedestrians to cross diagonally or conventionally.
Crashes reduced by 35%²

Rapid Flashing Beacons
Pedestrian-activated flashing LEDs accompanied by warning signs at crosswalks. Increase driver awareness of crossing pedestrians at uncontrolled crossings.
50% improvement in driver yielding³

Traffic Circles
Neighborhood traffic circles lower traffic speeds at minor, uncontrolled intersections and can help beautify the street.
Crashes reduced by up to 90%, driver speeds reduced by 11%⁴,⁵

Painted Bulb-Outs
Effectively widens the sidewalk to shorten pedestrian crossings, increase visibility, and slow turning vehicles.
Turning speeds decreased by 55%⁶

Left Turn Traffic Calming
Reducing the speed of drivers’ left turns lessens the risk of pedestrian collision.
Decreases left turn speeds by 20%⁷

High Visibility Crosswalk
High-visibility crosswalk styles have been shown to improve yielding behavior.
Crashes reduced by 48%¹

Pedestrian Countdown Signals
Discourages pedestrians from crossing late by showing how much time they have until the light turns.
Crashes reduced by 25%¹

Increased Crossing Time
Children and seniors may need more than the minimum required time (7 seconds) to cross the street safely.
Crashes reduced by 51%¹

Daylighting
Removing visual barriers by converting parking spaces to red curbs so that vehicles and pedestrians have a clear view of the intersection. Can be combined with bulb-outs to reinforce daylighting.
Crashes reduced by 30%¹

Road Diet
Decreasing the number of through-traffic lanes reduces vehicle conflict and speeds, making pedestrian crossing safer.
Crashes reduced by 50%⁴

Raised Crosswalk
A combination of speed tables and high-visibility crosswalks; can be used at midblock or intersections and in controlled or uncontrolled locations.
69-91% improvement in driver yielding* Reduces vehicle speeds to 20-30 mph⁸
Pedestrian Safety Toolkit

**Leading Pedestrian Interval**
Gives pedestrians a head start when entering an intersection, enhancing visibility and reinforcing their right-of-way over turning vehicles.
*Crashes reduced by up to 60%*

**Flashing Arrow Turn Signals**
Increases driver awareness of and yielding to pedestrians and bikes when making left turns.
*Yield rate of 70%*
*Crashes reduced by 10%*

**Reconfiguring Complex Intersections**
Simplifying intersection design can result in more clarity for drivers and more pedestrian space, reducing conflicts.

**Traffic Diverters**
Reduces cut-through traffic on neighborhood streets reduces total vehicle traffic, slows speeds, and eliminates points of conflict.

**Shared Streets**
Eliminate distinctions between vehicle, pedestrian, and bike rights-of-way to make roads more comfortable for pedestrian street activity and keep drivers alert, slowing traffic.
*Slows vehicle traffic to under 10mph*

**Protected Left**
Introducing protected left turn signal phasing allows better coordination with pedestrian signals and increase driver awareness.
*Reduce total crashes by 99%*

**Intersection Lighting**
Installing lighting at intersections allows cars better visibility of pedestrians and bikers at night.
*Nighttime vehicle/pedestrian crashes reduced by 42%*
Bike Safety Toolkit

Bike Boulevard
Streets with low car traffic volumes and speeds, designated and designed to give bicycle travel priority through use of signs, pavement markings, and speed and volume management.
Crashes reduced by 63%14

Buffered Bike Lanes
Conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.
Injury crashes reduced by 40%*15

Cycle Track
An exclusive bike facility that feels like a separate path but uses on-street infrastructure of a conventional bike lane.
89% reduction in injury risk16

Advanced Stop Line (Bike Box)
Pavement marking designed to give priority to bicyclists over vehicles at signalized intersections, while also increasing visibility between motorists and bicyclists.
70% improvement in driver yielding16

Two-Stage Turn Queue Box
Offers a safe way make left turns at multi-lane signalized intersections from a right side bike lane, or right turns from a left side bike lane.

Bike Lanes
A portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists.
Improves perception of safety, but actual effectiveness varies.15

Protected Intersection (Dutch Junction)
Maintains the separation of protected bike lanes through intersections to improve motorist-bicyclist sight lines, slow the speeds of turning vehicles, and to give bicyclists a head-start.
Crashes reduced by 63%15

Contra-flow Bike Lanes
Bike lanes in the opposite direction of vehicle traffic can reduce wrong-way and sidewalk riding on one-way streets and help connect parts of the bike network.
Can reduce sidewalk riding by 20%17

Back-in Angled Parking
This style of parking is more space-efficient and allows greater visibility of oncoming bike and vehicle traffic.
Shown to reduce vehicle/bicycle crashes.18

Bicycle Signals
Used in conjunction with bike lanes or other facilities, bike-specific signals can give bicyclists their own signal phase to avoid conflict with cars and increase cyclists’ signal compliance.19
Transit Safety Toolkit

Far-side Bus Stops
Encourage pedestrians to cross behind the bus at stops rather than in front.

Improves visibility between buses and pedestrians

Bus Bulbs
Allow buses to stop without having to merge back into traffic, decreasing risk of conflict with cars and bikes while making the bus route more efficient.

Improves bus efficiency while providing safe space for pedestrians

Transit-only Lanes
Red-painted transit-only lanes can reduce speeding and lower collision rates.

Injury collisions reduced by 24%
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