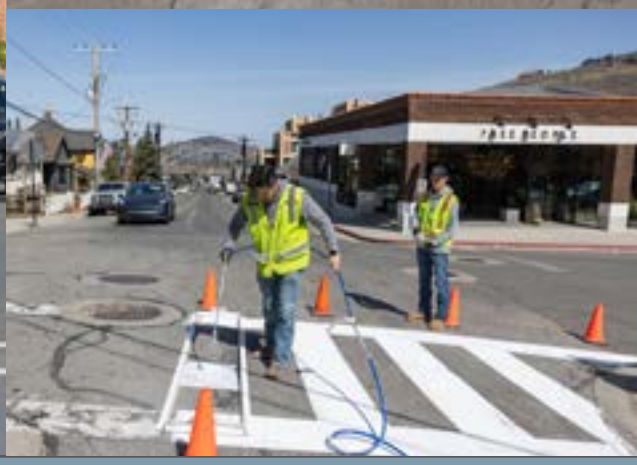
PARK CITY

CROSSWALK TREATMENT GUIDELINES



UNCONTROLLED AND CONTROLLED CROSSWALKS

PARK CITY
1884

PURPOSE

This document shall provide crossing typology uniformity across the Park City Active Transportation network for all City crosswalks, including those on multi-use paths. Both the Transportation and Engineering departments have heard from residents through the Neighborhoods First Committee and the Bicycle and Pedestrian Plan that crossings, the primary conflict point between vehicles and pedestrians, are a priority for safety improvements. Park City's Modal Priority for Decision Making, shown below, demonstrates the transportation planning considerations.

Modal Priority. Source: Park City Municipal

Crosswalk guidelines are based on national standards and requirements, including those set by the Manual of Traffic Control Devices (MUTCD), Federal Highway Administration (FHWA), Americans with Disabilities Act (ADA), Public Rights-of-Way Accessibility Guidelines (PROWAG), National Association of Bicycle and Pedestrian Officials (NACTO), American Association of State Highway and Transportation Officials (AASHTO), the Utah Department of Transportation (UDOT), and peer-reviewed published research.

Park City's crosswalk treatment guidelines are designed to complement, not replace, the federally mandated standards established by the MUTCD and FHWA, which ultimately govern the design and placement of crosswalks and related traffic control devices.

All proposed crosswalk or trail crossing locations and treatments must be reviewed by the Engineering Department and approved by the City Engineer.

GOALS

1. Standardize maintenance and striping plans
2. Reinforce driver and pedestrian familiarity
3. Prioritize pedestrian safety
4. Locally, context-sensitive research-based guidelines

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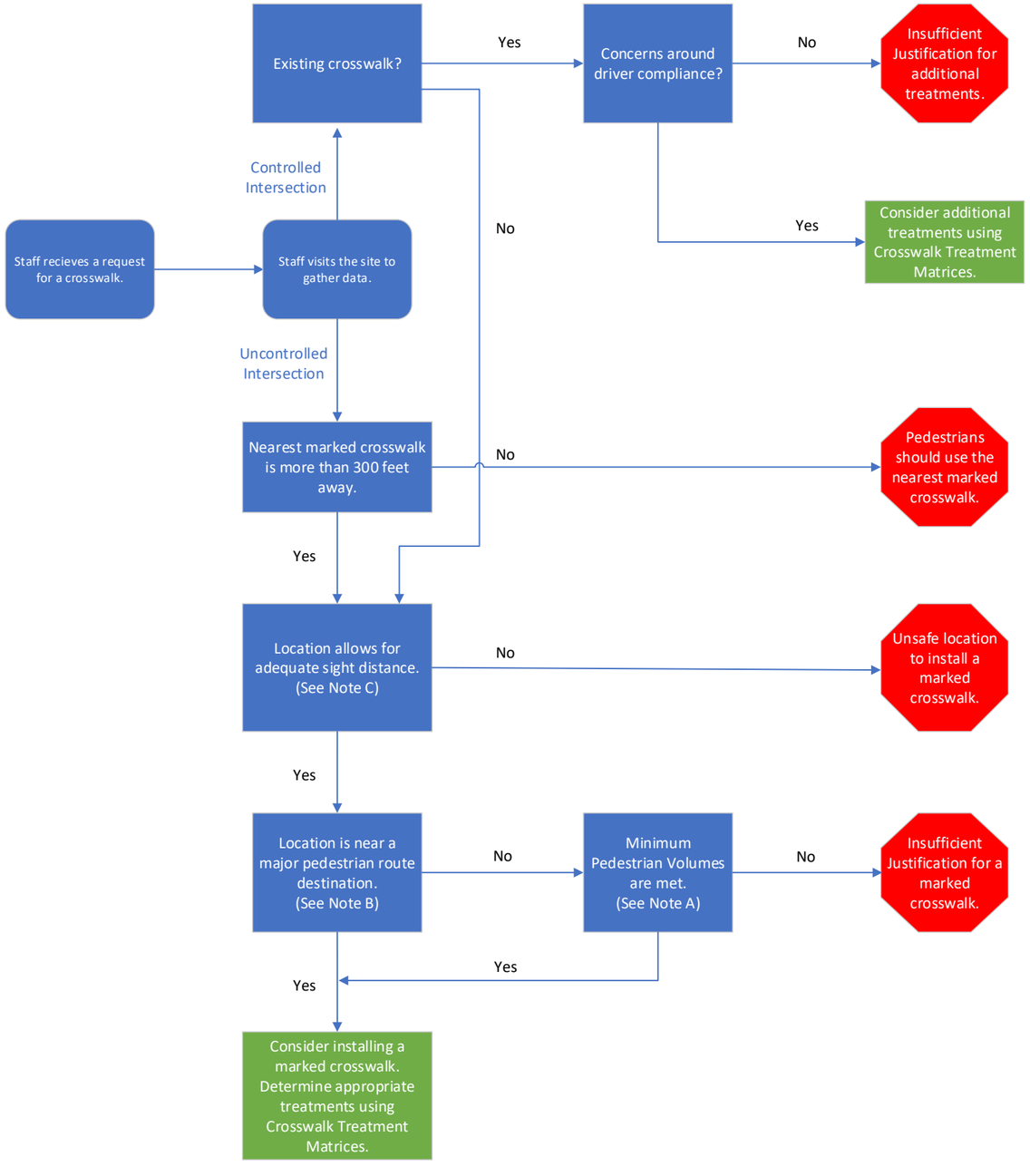
LOCATION DECISION MATRIX



LOCATION DECISION MATRIX

DETERMINATION NOTES AND CRITERIA

A) Minimum Pedestrian Volume Criteria:
Pedestrian Counts indicate the minimum counts have been met:

- 20 pedestrians per hour in any hour, or;
- Average of 18 pedestrians per hour in any two hours, or;
- Average of 15 pedestrians per hour in any three hours

Note: School-aged children, elderly, and disabled pedestrians count double towards volume criteria.

B) Major Pedestrian Route Destinations:
These pedestrian generators include, but are not limited to, the following:

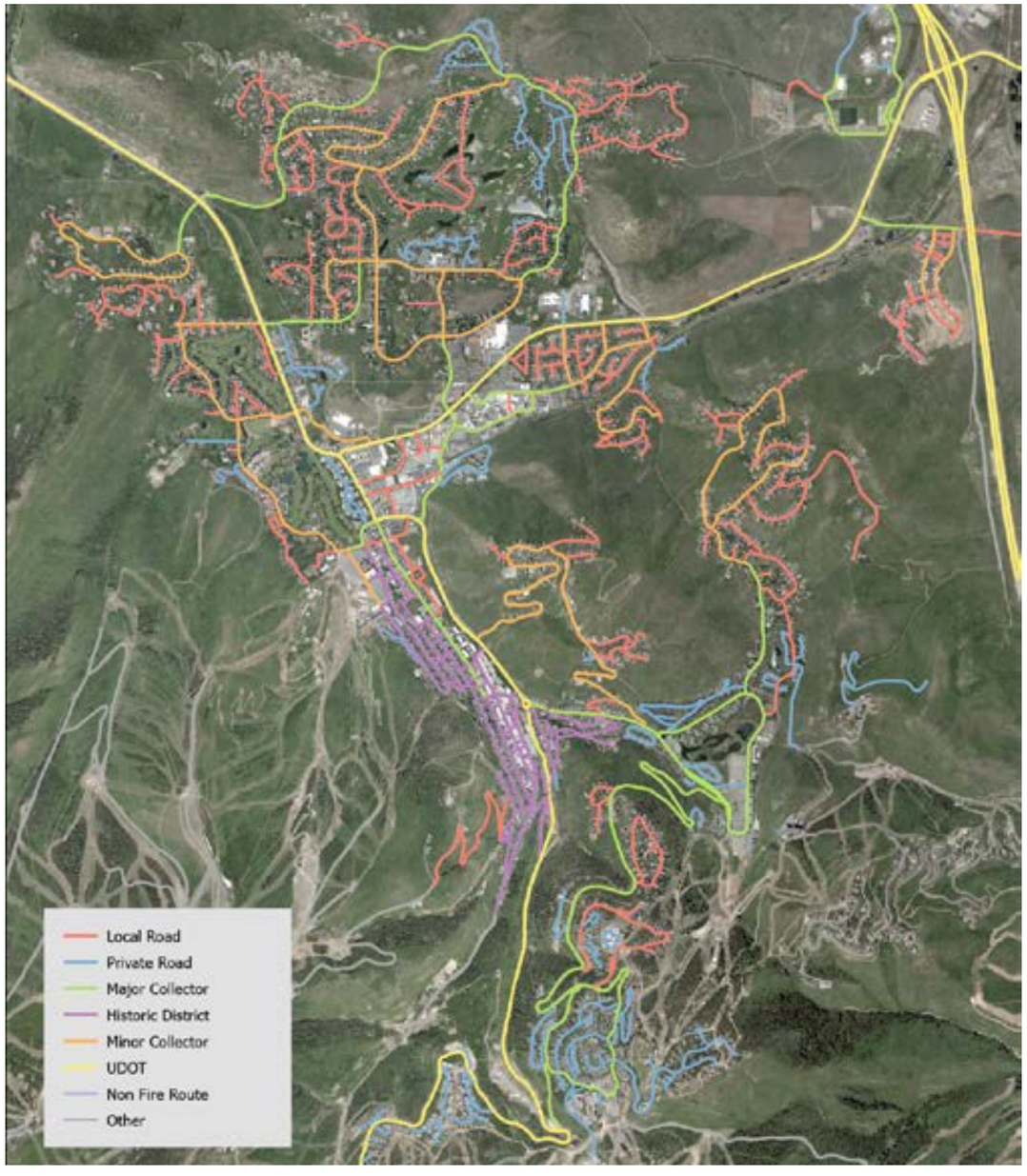
- Schools
- Hospitals
- Large Hotels
- Resorts
- Category 1 Bus Stops or Transit Centers

C) Sight Distance Criteria
Pedestrians can easily be seen from a minimum of the AASHTO Design Stopping Sight Distance for the average vehicle speed.
If no roadway speed data is available, defer to 250'.

15 mph = 80'
20 mph = 115'
25 mph = 155'
30 mph = 200'
35 mph = 250'
40 mph = 305'

ROADWAY TYPOLOGIES

Park City crosswalk guidelines recommend treatments based on the roadway typologies. These typologies are informed by vehicle volumes and posted speeds. Detailed crosswalk guidelines are provided for the number of lanes and intersection type (controlled vs. uncontrolled).



CROSSING TYPOLOGIES

CROSSWALK: *The part of a roadway at an intersection or elsewhere, distinctly indicated for pedestrian crossing by lines or other markings on the surface (MUTCD 1A.13).*

CONTROLLED CROSSINGS

Controlled crosswalks are a marked pedestrian crossing located where vehicle movements are regulated by a traffic control device (STOP, YIELD, or signal).

UNCONTROLLED CROSSINGS

Uncontrolled crosswalks are where there are no traffic control devices for the roadway being crossed. Uncontrolled crossings may be in locations where drivers aren't expecting pedestrians to cross the roadway, such as midblock crossings, and should consider the visibility of pedestrians and driver yield behavior when determining enhancements.

PATHWAY CROSSINGS

Pathway crossings may be located at either uncontrolled or controlled crossings. Requirements and recommendations for pathway crossings are the same as traditional crossings.

This symbology will be used to **indicate treatments with unique pathway crossing considerations** and will include a description for the pathway design in the treatment's description.

Additional design considerations for pathway crossings include bicycle approach speeds (15 - 20 mph compared to 3 - 4 mph for pedestrians), wider crossing widths, bicycle ramps and tactile warnings, and pathway crossing locations.

CROSSING TREATMENTS

STANDARD TREATMENTS

Required at every crosswalk

1. **High-Visibility Striping**
2. **Parking Restrictions**
3. **Crosswalk Warning Signs**
4. **Curb Ramps**
5. **Stop Bar** *(Controlled)*

SUPPLEMENTAL TREATMENTS

May be required or recommended

- **A. Pedestrian Refuge Island**
- **B. Curb Extension**
- **C. Raised Crosswalk**
- **D. Advance Yield Here Sign & Teeth**
- **E. Lighting**
- **F. Ped-Activated Lighting**
- **G. Ped Hybrid Beacon**
- **H. Grade-Separated Crossing**
- **I. Leading Pedestrian Interval**

CROSSING GUIDELINES

UNCONTROLLED and CONTROLLED CROSSINGS

1 - 2 Lanes		
ROADWAY TYPE	**Local, Historic, Minor Collector**	**Major Collector, UDOT Arterial**
EXAMPLE STREETS	**Little Kate:** *Minor, 20 mph, >5,000 AADT* **Comstock:** *Minor, 20 mph, 2,500-5,000 AADT*	**Park Ave:** *Major, 25 mph, >5,000 AADT* **Monitor:** *Major, 25 mph, 2,500 - 5,000 AADT*
REQUIRED *(Standard + Supplemental)*	**Standard**	**Standard**
CONSIDER	**B:** Curb extension **C:** Raised crosswalk (*25 mph max*) **E:** Lighting	**A:** Ped refuge island **B:** Curb extension **D:** Advance Yield Here sign & teeth *(uncontrolled)* **E:** Lighting **F:** Ped activated lights (*Uncontrolled)*

3 Lanes		
ROADWAY TYPE	**Local, Historic, Minor Collector**	**Major Collector, UDOT Arterial**
EXAMPLE STREETS		**Bonanza:** *Major, 25 mph, >5,000 AADT* **SR 248:** *UDOT, 35 mph, >5,000 AADT*
REQUIRED *(Standard + Supplemental)*	**Standard**	**Standard +** **E:** Lighting **F:** Ped activated lights *(Uncontrolled)*
CONSIDER	**A:** Ped refuge island **B:** Curb extension **C:** Raised crosswalk (*25 mph max*) **E:** Lighting **F:** Ped activated lights *(Uncontrolled)*	**A:** Ped refuge island **B:** Curb extension **D:** Advance Yield Here sign and teeth *(Uncontrolled)* **G:** PHB *(Uncontrolled)*

4+ Lanes		
ROADWAY TYPE	**Local, Historic, Minor Collector**	**Major Collector, UDOT Arterial**
EXAMPLE STREETS	**Snow Creek:** *Minor, 20 mph, >5,000 AADT* **Round Valley Dr:** *Local, 20 mph, >5,000 AADT*	**Kearns Blvd:** *UDOT, 35 mph, >5,000 AADT*
REQUIRED *(Standard + Supplemental)*	**Standard +** **D:** Advance Yield Here sign and teeth *(Uncontrolled)*	**Standard +** **D:** Advance Yield Here sign and teeth *(Uncontrolled)* **E:** Lighting **F:** Ped activated lights *(Uncontrolled)*
CONSIDER	**A:** Ped refuge island **B:** Curb extension **E:** Lighting **F:** Ped activated lights *(Uncontrolled)*	**A:** Ped refuge island **B:** Curb extension **G:** PHB *(Uncontrolled)* **H:** Grade-separated crossing **I:** Leading Pedestrian Interval *(Signal controlled)*

STANDARD TREATMENTS

Required at every crosswalk

1. **High-Visibility Striping**
2. **Parking Restrictions**
3. **Crosswalk Warning Signs**
4. **Curb Ramps**
5. **Stop Bar**

1. High-Visibility Striping

High-visibility crosswalk striping is comprised of longitudinal lines parallel to traffic flow and will comply with MUTCD Markings (MUTCD Section 3C.03) and Park City's Supplemental Standard Plans and Specifications (1.1.G). Park City's standard crosswalk design will be the Ladder (MUTCD Section 3C.07), which includes two transverse lines with longitudinal lines parallel to traffic flow. Inlaid strping is preferred.

Artistic crosswalk striping composed of repeating patterns may be accepted by the City Engineer or Designee for significant locations. Crosswalk widths should be 8 - 10' wide *except at pathways.

Pathway Consideration: Crosswalk width should match the width of the pathway up to 12'.

High visibility ladder striping. Source: Park City Municipal

2. Parking Restrictions

Parking is restricted in or on, or within twenty feet (20') of a crosswalk, as required for sight lines (Utah State Code Section 41-6a-1404.1b and Park City's Land Management Code 9-2-1). Parking may be additionally restricted by the City Engineer or Designee as required to maintain adequate sight lines

Parking restriction may be indicated with red curb striping or a 'No Parking' sign (MUTCD R7 and R8 series).

No parking curb striping. Source: Park City Municipal

Examples of No Parking sign. Source: Park City Municipal

STANDARD TREATMENTS

3. Crosswalk Warning Signs

Per MUTCD Section 2C.55.08, a Pedestrian Crossing (W11-2) sign, size recommendation of 30" x 30", may be placed overhead or post-mounted with a diagonal downward-pointing arrow (W16-7P) plaque at or in advance of a crosswalk. If in advance, include an AHEAD (W16-9P) plaque. See MUTCD Section 2C.55.08 for additional placement requirements. For additional visibility, crossing signs may be placed back-to-back on both sides of the pole, to be seen by traffic in both directions.

Additional crossing signs may include Bike Crossings (W11-1), Bike Crossings (W11-1), and School Crossing (S1-1).

W11-2

W11-1

W11-15-a

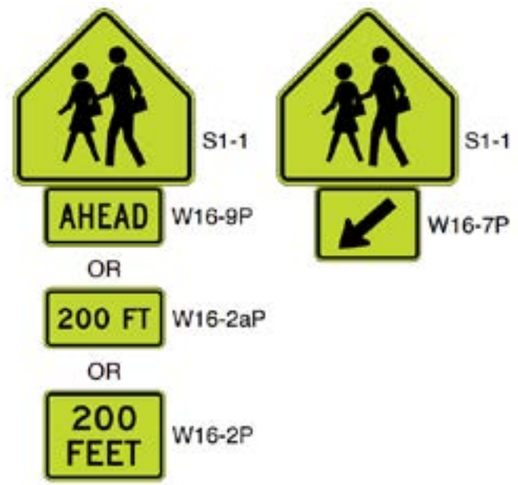
W11-15
W11-15P

W16-9P

W16-7P

The School Crossing sign cannot be used at any crossing other than those adjacent to schools and those established on Safe Routes to School (MUTCD 7B.03).The School Crossing assembly shall consist of a School (S1-1) sign supplemented with a diagonal downward-pointing arrow (W16-7P) plaque to show the location of the crossing. A School Advance Crossing Assembly shall be used in advance of the first School Crossing assembly that is used on each traffic approach. Overhead signs at school crossings (R1-9b) or R1-9c) may also be used to supplement a School Crossing sign.

Pathway Consideration: Trail Crossing (W11-15a or W11-15P) may be used where a shared-use path crosses the roadway.



School Crossing sign assembly. Source: MUTCD

STANDARD TREATMENTS

4. Curb Ramps

Curb ramps must meet the American with Disabilities Act (ADA) standards and, per Park City Supplemental Standard Plans and Specifications, the tactile warning surface must be composed of cast-iron truncated domes (1.1.G). Directional ramps are preferred if they fit within the available footprint.

Curb ramp with cast-iron truncated domes.
Source: Park City Municipal

Pathway Consideration: Curb ramps and truncated domes at multi-use pathway crossings should match the width of the adjoining pathway.

Bike ramps may be used to aid the transition from a bike lane to a shared use path. In these instances, the ramp must be ADA compliant with a running slope of no more than 1:12 and cross slope maximum of 1:48. Where bike ramps merge with shared use paths, use Tactile Directional Indicators (TDIs) where the ramp connects to the path (NACTO).

5. Stop Bar

Controlled Crosswalks Only

A stop bar is a painted solid white line, used in conjunction with a form of intersection control such as a STOP sign or signal, that indicates the point behind which vehicles are required to stop. When used with a crosswalk, the stop bar should be between 4 to 8 feet ahead of the crosswalk and 12 to 24 inches wide (MUTCD Section 3B.16). Inlaid stop bar striping is preferred.

SUPPLEMENTAL TREATMENTS

SUPPLEMENTAL TREATMENTS

May be required or recommended

A. Pedestrian Refuge Island
B. Curb Extension
C. Raised Crosswalk
D. Advance Yield Here Sign & Teeth
E. Lighting
F. Ped-Activated Lighting
G. Ped Hybrid Beacon
H. Grade-Separated Crossing
I. Leading Ped Interval

Pedestrian Refuge Island.
Source: Park City Municipal

A. Pedestrian Refuge Island

A median with a refuge area that is intended to help protect pedestrians who are crossing a multi-lane road (FHWA).

Purpose:
Increase safety of pedestrians crossing and reduce vehicle speeds approaching crosswalk by increasing visibility and providing safe waiting areas for longer crossings.

Design Recommendations:
Refuge island widths should match crosswalk widths - minimum of 6 feet, with a preferred 8 - 10 feet. Landing area needs to be ADA accommodating, a minimum of 6 feet.

Implementation Guidelines

- Base decision on vehicle speeds, vehicle volumes, and road width

The higher each factor is, the more likely a pedestrian refuge island would be beneficial
- Prioritize for midblock crossings on 3+ lanes
- Likely paired with a ped-activated signal, if so a flashing beacon in the island is preferred and a push button in the island should be considered

Pedestrian refuge island and signage.
Source: Federal Highway Administration

B. Curb Extensions

Curb extensions extend the sidewalk or curb line out into the parking lane, which reduces the effective street width (FHWA).

Purpose:
Improve pedestrian safety by increasing visibility, reducing speed of turning vehicles, encouraging pedestrians to cross at designated locations, and decreasing pedestrian crossing distance and time. Curb extensions may be used in locations with parking violations to prevent vehicles from parking near crossings.

Design Recommendations:
Should not extend more than 6 feet from the curb. Horizontal taper on the upstream side and a 1:3 taper on the downstream side (facilitate snow removal). Leave 1-2 feet of space from travel shoulder line.

Implementation Guidelines

- Avoid placing in bike lanes
- Consider turning needs of larger vehicles and truck routes
- Conduct drainage analysis

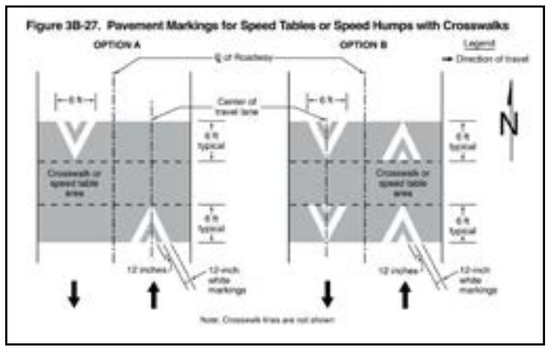
Curb extension. Source: Park City Municipal

C. Raised Crosswalk

Ramped speed table spanning the entire width of the roadway (FHWA).

Purpose:
Improve pedestrian safety by increasing pedestrian visibility and reducing speeds of approaching vehicles. Can consider in locations where additional traffic calming may be advantageous to safety at a crossing.

Design Recommendations:
Design to work with the existing gutter height, but are generally 4-6 inches in height, lengths between 12-22 feet (shorter lengths for slower speeds), and minimum widths of 10 feet. A series of white markings following (MUTCD Figure 3B-27) shall be used.



Pavement markings for speed table with crosswalk. Source: MUTCD Figure 3B-27

A sinusoidal slope may best accommodate snow removal based on guidelines from comparable cities (Breckenridge CO, Quebec Canada, Minnesota DOT) and the UDOT

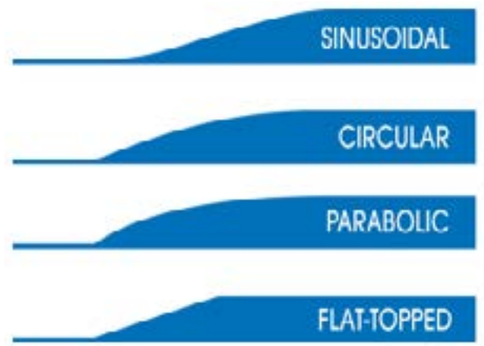
SUPPLEMENTAL TREATMENTS

MUTCD Raised Crosswalk Guidelines (Chapter 9, Section 3B.29).

Implementation Guidelines

- Review treatment location and design with Park City Fire District - must receive approval.
- Prioritize locations with high number of conflicts between pedestrians and vehicles[1]
- Include MUTCD-compliant white markings, inlaid preferred
- May use as traffic calming tool
- For use on Local, Historic, and Minor Streets, with a maximum posted speed limit of 25 mph
- Conduct drainage analysis

1 FHWA does not define a specific threshold for what constitues a 'high number of pedestrian-vechicle conflicts' or 'high rates of vehicles not yielding to pedestrians'. Instead, the agency refers to context-based safety indicators, such a frequent yielding issues, near-miss events, high turning volumes, and observed conflict patterns.



Raised crosswalk slopes. Source: Federal Highway Administration

D. Advance Yield Here Sign & Teeth

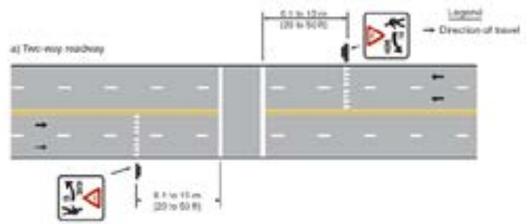
Striped yield teeth indicate where vehicles are required to yield in compliance with the accompanying 'YIELD Here for Pedestrians' signage (MUTCD R1-6 and R1-6a).

Purpose:
Improve visibility of pedestrians to motorists & prevent multiple-threat crashes.

Design Recommendations:
20-50 feet in advance of uncontrolled crossings on both approaches. Includes teeth striping and YIELD Here for Pedestrians signage, inlaid paint is preferred

Implementation Guidelines

- Prioritize on multi-lane approaches and speeds 35 mph+
- Locations with high rates of vehicles not yielding to peds[1]
- Use in conjunction with pedestrian activated lighting
- Locations where commercial driveways or uncontrolled intersection legs close to the crossing cause confusion



Source: Manual on Uniform Traffic Control Devices, Figure 3B-15

E. Lighting

Vehicular-scale lighting for pedestrian visibility at or in a crossing.

Purpose:
Illuminate pedestrians during nighttime crossings.

Design Recommendations:
Consideration should be given to placing lights in advance (10 -15 feet) of midblock and intersection crosswalks on both approaches to illuminate the front of the pedestrian to avoid creating a silhouette (FHWA). Crosswalk lighting should attempt to comply with Park City's Dark Sky Ordinance[2].

Implementation Guidelines

- Prevalence of crosswalk use at nighttime
- Strongly consider in commercial districts
- Inadequate pedestrian visibility at night

2 Park City Land Managment Code Section 15-5-5(J). Streetlights are exempt, however, efforts should be made to shield lights where feasible.

Source: FHWA's Informational Report on Lighting Design for Midblock Crosswalks

F. Pedestrian-Activated Lighting

Conspicuity enhancements used in combination with a crossing warning sign to improve safety at uncontrolled, marked crosswalks (FHWA). May include Rectangular Rapid Flashing Beacons (RRFB) or a Flashing LED Warning Sign.

Purpose:
Provide high-visibility warning to drivers when pedestrians use a crosswalk.

Rectangular Rapid Flashing Beacon. Source: Park City Municipal

Design Recommendations:
Used in combination with a pedestrian, school, or trail crossing warning sign (Utah MUTCD Section 4N.02). Advance Yield Sign and Teeth (MUTCD R1-6 and R1-6a) may accompany pedestrian-activated lights.

Pathway Consideration: Trail crossings should consider utilizing this treatment with pedestrian detection devices used to automatically actuate pedestrian warning beacons or hybrid beacons (FHWA).

Implementation Guidelines

- Connect to direct power if feasible
- Viability of solar power needs to be considered
- Prioritize use on multi-lane roads less than 40 mph
- Prioritize at trail crossings and Safe Routes to School
- Prioritize at crosswalks with lower pedestrian visibility

Pedestrian Hybrid Beacon signage on SR-224. Source: Park City Municipal

G. Pedestrian Hybrid Beacon

A traffic control device designed to help pedestrians safely cross higher-speed roadways at midblock crossings and uncontrolled intersections (FHWA).

Purpose: Assist pedestrians in crossing a multi-lane, high speed, high volume streets

Design Recommendations:
Must follow Utah MUTCD Guidelines: Section 4F.01.

Implementation Guidelines

- Must comply with Utah MUTCD Guidance (Section 4F.01). It uses input from the number of vehicles in peak hour, number of pedestrians in peak hour, and length of crosswalk
- For UDOT arterials, coordinate with UDOT on a warrant analysis
- AADT above 9,000
- Locations where pedestrians need to cross, vehicle speeds and volumes are high, but a signal isn't warranted

Pedestrian Hybrid Beacon on SR-224. Source: Park City Municipal

H. Grade-Separated Crossing

Separated pedestrian crossings, either over or under the roadway.

Purpose:
Provides the highest level of pedestrian safety when crossing a roadway. Eliminates conflicts and facilitates the crossing of significant volumes of pedestrians without interruption to vehicular traffic.

Design Recommendations:
Grade-separated crossings must meet ADA accessibility standards, and should consider visibility, lighting, and security.

Implementation Guidelines

- When removing sight distance obstructions is not feasible
- Majority of users are expected to be non-traditional pedestrians
- Pedestrian volumes exceed 200 pedestrians per hour
- At-grade crossing is expected to cause traffic impediment or cannot be safely accomodated
- Connect pathways across major barriers

Tunnel along Poison Creek Trail. Source: Park City Municipal

I. Leading Pedestrian Interval

At signalized intersections with pedestrian crossing signals, the leading pedestrian interval (LPI) gives pedestrian the opportunity to enter the crosswalk at an intersection 3 to 7 seconds before vehicles are given a green indication (FHWA).

Pedestrian push button. Source: Park City Municipal

Purpose:
Give pedestrians time to establish presence in crosswalk before motorists begin turning.

Design Recommendations:
Provides a 3 to 7 seconds head start

SUPPLEMENTAL TREATMENTS

at a pedestrian crossing signal in a signalized intersection. For signalized intersections within a UDOT right-of-way, work with the UDOT Signals Timing Group.

Implementation Guidelines

- Signalized intersection
- Significant conflicts between pedestrians and motorists turning right or left
- Provide longer crossing time with head start for pedestrians
- Consider 'No Turn on Red' signage in conjunction
- Couple with vehicle-scale lighting

ADDITIONAL TREATMENTS TO CONSIDER

Project managers should consider additional treatments based on the location's context to increase the safety at crosswalks. These are optional.

Reduce Turning Radius

Reconstructing turn radius to a tighter turn.

Purpose:
Reduce turning speeds, shorten the crossing distance for pedestrians, and also improve sight distance between pedestrians and motorists (FHWA).

Design Recommendations:
Turn radius is reduced by tightening the corner where vehicles turn. The recommended design turn speed is 15 mph or less. Consider street functionality to ensure safe passage of appropriate design vehicles.

Restricted Right Turn on Red

Restricting right turn movements along a leg of an intersection when perpendicular legs have the green light.

Purpose:
Reduce conflict at signalized intersections between motorists and pedestrians in a perpendicular crosswalk. Consider use where high pedestrian volumes are present or

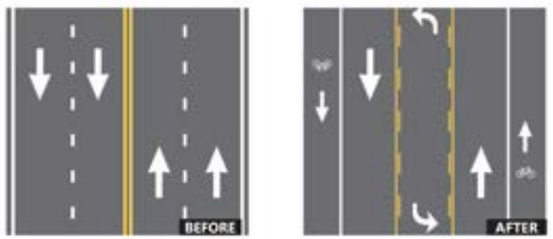
Restricted right turn on red. Source: Park City Municipal

where exclusive pedestrian phases are used (FHWA).

Design Recommendations:
Standard regulatory signage includes 'NO TURN ON RED' (R10-11, R10-11b) or circular red icon.

Road Diet

Converts an existing multi-lane, undivided roadway to two through lanes and a center, two-way left turn lane (FHWA).



Road diet example. Source: Federal Highway Administration

ADDITIONAL TREATMENTS

Purpose:
Frees up roadway space that can be reallocated to other uses, including a refuge island, curb extensions, widened sidewalks, bicycle and/or transit lanes, buffer zones, or on-street parking.

Design Recommendation:
Reduce the number of roadway lanes or the lane widths, keeping an 11 foot minimum for busses.

High-Visibility Pedestrian Flags

Temporary brightly colored flags provided at each end of a crosswalk to be used by pedestrians crossing.

Purpose:
Increase visibility of pedestrians in the crosswalk

Design Recommendation:
Use neon orange flags with reflective tape at each end of a crosswalk.

High-visibility pedestrian flags. Source: Park City Municipal

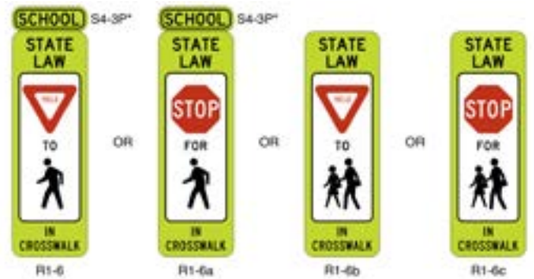
Pedestrian Vertical Panels

Temporary signs placed in the roadway at an unsignalized pedestrian crossing (FHWA).

Purpose:
Remind road users of laws regarding right-of-way and serve as additional warning to drivers of roadway condition. For use in Spring, Summer, and Fall, removed from roadway by November 1.

In-Street Pedestrian Vertical Panel. Source: Park City Municipal

Design Recommendation:
Place sign (MUTCD R1-6 or R1-6a) on centerline or median in the crosswalk on minor collectors, local, or historic district roads. Signs may be used for School Crossings with SCHOOL (MUTCD S4-3P).



In-Street Pedestrian Vertical Panels at School Crossings. Source: MUTCD

ADDITIONAL TREATMENTS

Bicycle Ramp

May be placed at crosswalks, often where a pathway intersects.

Purpose:
Help cyclists navigate changes in elevation without needing to dismount.

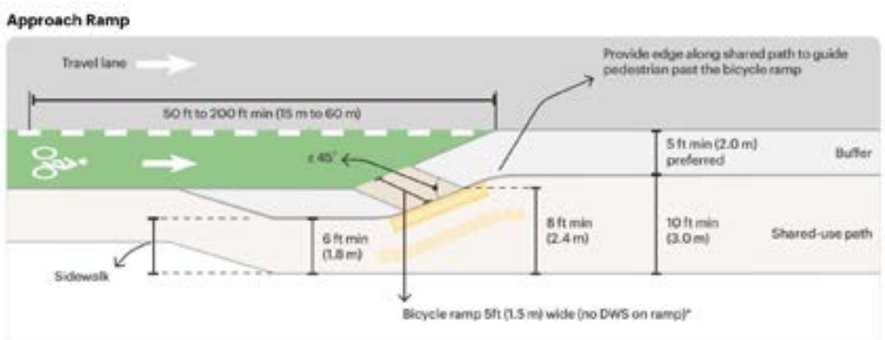
Design Recommendations:
Ramps should be 6 to 10 feet wide to accommodate two-way bicycle traffic. Maximum slope recommendation is 5%, with 8.3% acceptable for short segments (PROWAG). Consider water drainage to prevent water pooling.

When bike ramps intersect with pedestrian facilities, place Tactile Directional Indicators (TDIs) on the sidewalk or pathway.

Stop or YIELD Signage for Trail Users

Signage to direct pathway users to stop or yield to intersecting streets.

Design Recommendations:
Overuse of YIELD or STOP signs along pathways may reduce compliance by pathway users. Consideration should be given for intersecting roads or driveways with a stop sign, allowing pathway users to continue across a road without yielding. Signage sizing and orientation should mitigate confusion of raodway users.



Recommended design for a bike ramp approach onto a multi-use path. Source: AASHTO

RESOURCES

American Association of State Highway and Transportation Officials. Guide for the Development of Bicycle Facilities. 5th ed., American Association of State Highway and Transportation Officials, 2024.

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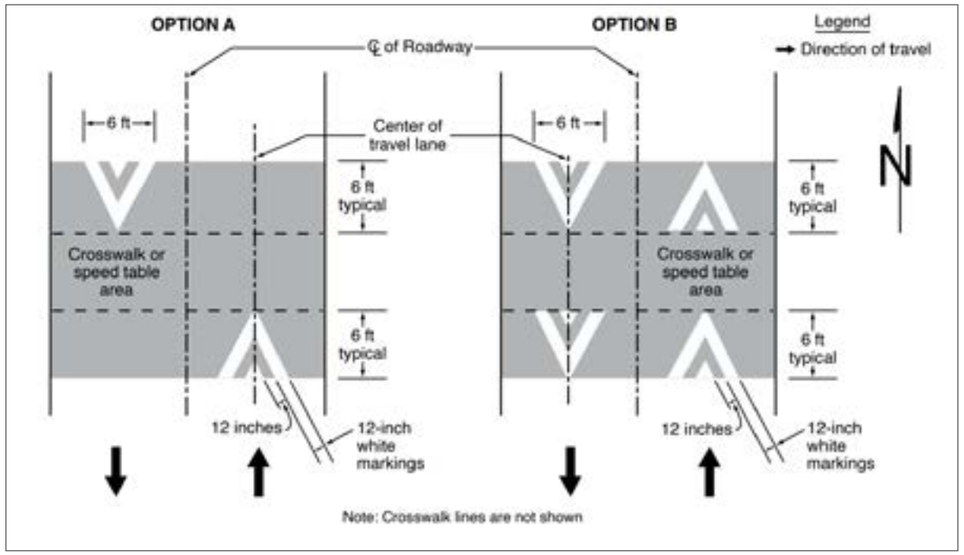
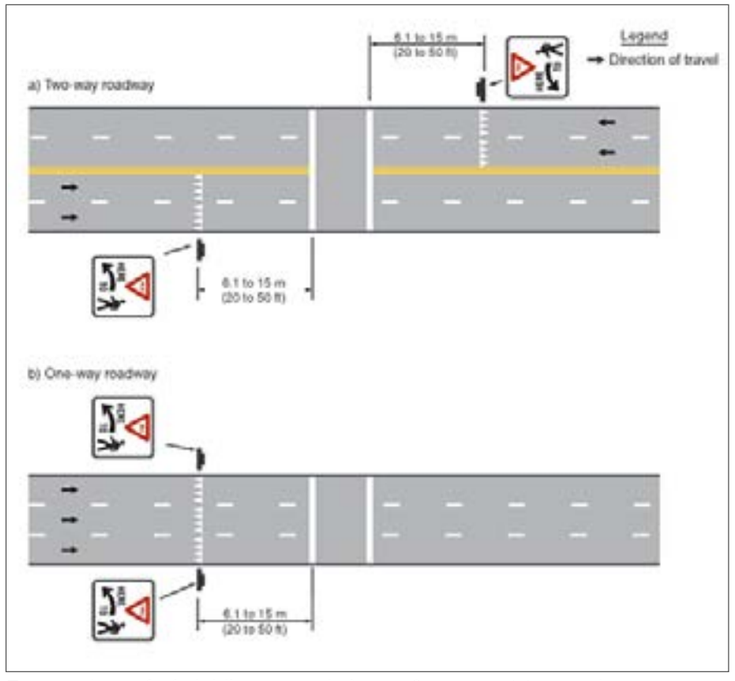
APPENDIX A - MUTCD GUIDELINES

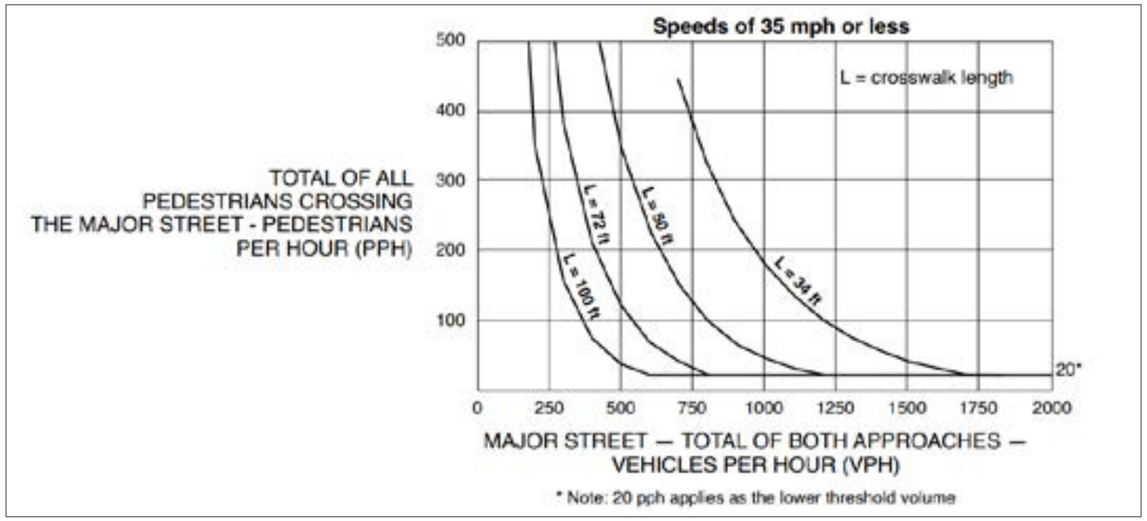


Pavement markings for speed table with crosswalk. Source: MUTCD Figure 3B-27

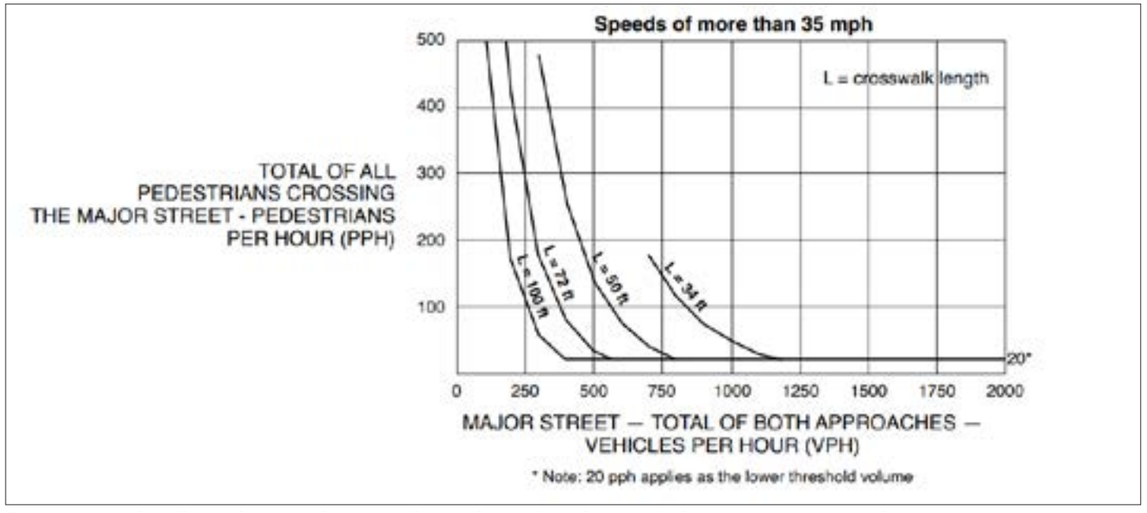


Examples of yield lines and signs. Source: Manual on Uniform Traffic Control Devices, Figure 3B-15

APPENDIX A - MUTCD GUIDELINES



Federal guidelines for the installation of pedestrian hybrid beacons on low-speed roadways: Manual on Uniform Traffic Control Devices, Figure 4J-1



Federal guidelines for the installation of pedestrian hybrid beacons on high-speed roadways: Manual on Uniform Traffic Control Devices, Figure 4J-2