

```

graph TD
    A[20 pedestrians per hour  
(in any two hours, not necessarily consecutive)  
cross at the location] -- "if yes" --> B[Nearest appropriately marked or protected crosswalk is at least 300 feet or more away]
    A -- "if no" --> C[Location along a suggested route to school path or which connects two pedestrian generators such as a school, park, bus stop, or hospital expected to generate pedestrians on a regular basis]
    B -- "if yes" --> D[Pedestrians can be easily seen from a feasible stopping sight distance]
    B -- "if no" --> E[Low speed (posted or prima facie 25 MPH), two-lane roadway]
    C -- "if yes" --> D
    C -- "if no" --> E
    D -- "if yes" --> F[Use Salinas Pedestrian Toolbox and engineering judgment to determine treatment options]
    D -- "if no" --> G[Can the sight distance obstruction be removed or the speed limit lowered?]
    E -- "if yes" --> F
    E -- "if no" --> H[Direct pedestrians to the nearest marked or protected crosswalk]
    G -- "feasible" --> F
    G -- "infeasible" --> I[Direct pedestrians to the nearest marked crosswalk or consider installing stop sign, signal, or grade separation]
    H --- J(( ))
    style J stroke:#f00,stroke-width:2px
    style J fill:none
  
```

The flowchart outlines the following decision process:

- Step 1:** Check if 20 pedestrians per hour (in any two hours, not necessarily consecutive) cross at the location.
  - If yes:** Proceed to Step 2.
  - If no:** Proceed to Step 3.
- Step 2:** Check if the nearest appropriately marked or protected crosswalk is at least 300 feet or more away.
  - If yes:** Proceed to Step 4.
  - If no:** Proceed to Step 5.
- Step 3:** Check if the location is along a suggested route to a school path or which connects two pedestrian generators (e.g., school, park, bus stop, hospital) expected to generate pedestrians on a regular basis.
  - If yes:** Proceed to Step 4.
  - If no:** Proceed to Step 5.
- Step 4:** Check if pedestrians can be easily seen from a feasible stopping sight distance.
  - If yes:** Proceed to Step 6.
  - If no:** Proceed to Step 7.
- Step 5:** Check if it is a low speed (posted or prima facie 25 MPH), two-lane roadway.
  - If yes:** Proceed to Step 6.
  - If no:** Proceed to Step 8.
- Step 6:** Use the Salinas Pedestrian Toolbox and engineering judgment to determine treatment options.
- Step 7:** Check if the sight distance obstruction can be removed or the speed limit lowered.
  - Feasible:** Proceed to Step 6.
  - Infeasible:** Proceed to Step 9.
- Step 8:** Direct pedestrians to the nearest marked or protected crosswalk.
- Step 9:** Direct pedestrians to the nearest marked crosswalk or consider installing a stop sign, signal, or grade separation.

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Table 1. Recommendations for installing marked crosswalks and other needed pedestrian improvements at uncontrolled locations.\*

Roadway Type (Number of Travel Lanes and Median Type)	Vehicle ADT ≤ 9,000			Vehicle ADT >9000 to 12,000			Vehicle ADT >12,000 - 15,000			Vehicle ADT > 15,000		
	Speed Limit**											
	≤ 30 mi/h	35 mi/h	40 mi/h	≤ 30 mi/h	35 mi/h	40 mi/h	≤ 30 mi/h	35 mi/h	40 mi/h	≤ 30 mi/h	35 mi/h	40 mi/h
2 Lanes	C	C	P	C	C	P	C	C	N	C	P	N
3 Lanes	C	C	P	C	P	P	P	P	N	P	N	N
Multi-Lane (4 or More Lanes) With Raised Median***	C	C	P	C	P	N	P	P	N	N	N	N
Multi-Lane (4 or More Lanes) Without Raised Median	C	P	N	P	P	N	N	N	N	N	N	N

\* These guidelines include intersection and midblock locations with no traffic signals or stop signs on the approach to the crossing. They do not apply to school crossings. A two-way center turn lane is not considered a median. Crosswalks should not be installed at locations that could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone **will not** make crossings safer, nor will they necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g., raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions), as needed, to improve the safety of the crossing. **These are general recommendations; good engineering judgment should be used in individual cases for deciding where to install crosswalks.**

\*\* Where the speed limit exceeds 40 mi/h (64.4 km/h) marked crosswalks alone should not be used at unsignalized locations.

**C = Candidate sites for marked crosswalks.** Marked crosswalks must be installed carefully and selectively. Before installing new marked crosswalks, an engineering study is needed to determine whether the location is suitable for a marked crosswalk. For an engineering study, a site review may be sufficient at some locations, while a more in-depth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, etc. may be needed at other sites. It is recommended that a minimum of 20 pedestrian crossings per peak hour (or 15 or more elderly and/or child pedestrians) exist at a location before placing a high priority on the installation of a marked crosswalk alone.

**P = Possible increase in pedestrian crash risk may occur if crosswalks are added without other pedestrian facility enhancements.** These locations should be closely monitored and enhanced with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.

**N = Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased due to providing marked crosswalks alone. Consider using other treatments, such as traffic-calming treatments, traffic signals with pedestrian signals where warranted, or other substantial crossing improvement to improve crossing safety for pedestrians.**

\*\*\* The raised median or crossing island must be at least 4 ft (1.2 m) wide and 6 ft (1.8 m) long to adequately serve as a refuge area for pedestrians in accordance with MUTCD and American Association of State Highway and Transportation Officials (AASHTO) guidelines.

With these studies as a backdrop, the remainder of this chapter outlines a decision making process to identify appropriate treatments and presents a variety of treatment options to mitigate safety, visibility, or operational concerns at specific locations.

## TREATMENT SELECTION

At uncontrolled locations, a marked crosswalk with striping only may not provide adequate visibility to the pedestrian crossing, especially at high volume, high speed, or multi-lane crossings. Enhancements should

