

# Research Guides Countermeasure Selection in Boulder

City of Boulder Transportation Division

## KEY ELEMENTS:



Field work



Data-driven

The City of Boulder merged research and user-friendly tools to create guidelines that provide recommendations for pedestrian countermeasures at controlled and uncontrolled crossing locations.

Boulder's Pedestrian Crossing Treatment Installation Guidelines incorporate a four-step selection procedure that is designed to recommend appropriate pedestrian countermeasures.

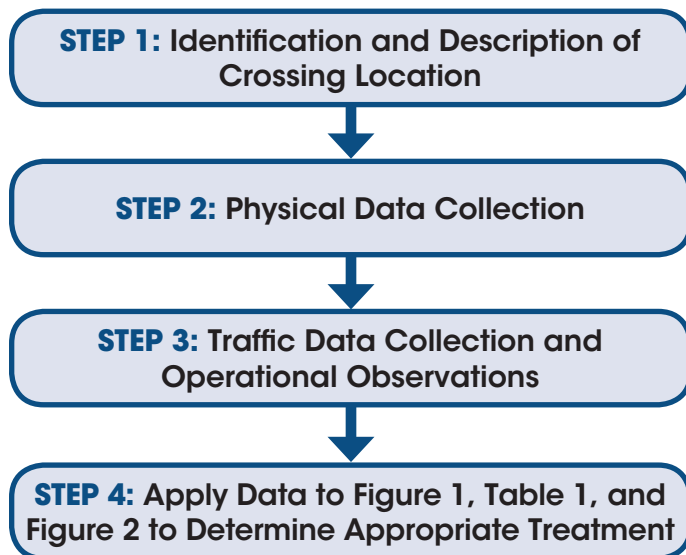


Figure 1. Boulder's four-step evaluation crossing treatment selection procedure.<sup>1</sup>

## STEP 1: IDENTIFICATION AND DESCRIPTION OF CROSSING LOCATION

Public requests and the City's Transportation Master Plan are used to create a list of potential crossing improvement locations. The City then records the basic characteristics of the crossing location under study. This includes the location (e.g., address, cross-street), posted speed, presence of existing traffic control devices and cross treatments, and connectivity to multi-use paths (if at all).

## STEP 2: PHYSICAL DATA COLLECTION

After Step 1, the City conducts a site visit of the location to gather roadway information. Information required for this step includes number of lanes, presence and nature of medians, distance to closest marked crossing, and sight distance.

## STEP 3: TRAFFIC DATA COLLECTION AND OPERATIONAL OBSERVATIONS

Next, the City collects pedestrian and vehicular traffic volume data. For pedestrian and bicycle volumes, the City policy recommends collecting data during AM, mid-day, and PM peak hour periods relevant to the crossing location. City staff also collect hourly and average daily traffic (ADT) at the crossing location, with attention paid to key pedestrian activity hours. Finally, the City records vehicle

queuing duration and frequency from downstream signals or intersections that may impact the crossing location.

“Pedestrian safety is a top priority for the City of Boulder. The Pedestrian Crossing Guidelines were developed using a data driven approach that analyzed a wide variety of pedestrian crossing scenarios, crash history and best practices from peer communities. The guidelines have been very useful for determining what’s appropriate for new projects and for responding to community requests for crossing treatments.”

–David Kemp, Senior Transportation Planner, City of Boulder, CO

**STEP 4: APPLY DATA TO FIGURE 1, TABLE 1, AND FIGURE 2 TO DETERMINE APPROPRIATE TREATMENTS**

The procedure’s final step uses the data from Steps 2 and 3 to recommend countermeasures for the location under analysis. City staff begin by using the Pedestrian Crossing Treatment Flowchart.<sup>1</sup> A sequence of questions on ADT, pedestrian volumes, and controlled status (e.g., traffic control device) narrows the options for appropriate crossing treatments (figure 2). The flowchart leads to three possible outcomes: a countermeasure is recommended, no action is needed, or the user is referred to another selection tool.

The second component of Step 4 is the “Table 1–Criteria for Crossing Treatments at Uncontrolled Locations.”<sup>1</sup> If directed to this tool, City staff must match the candidate location’s roadway configuration, roadway

ADT, and roadway speed. This step will result in one of six possible outcomes that describes specific guidance for the treatments to consider and potential roadway modifications (e.g., posted speed reduction).

**Uncontrolled Crossing Location:**

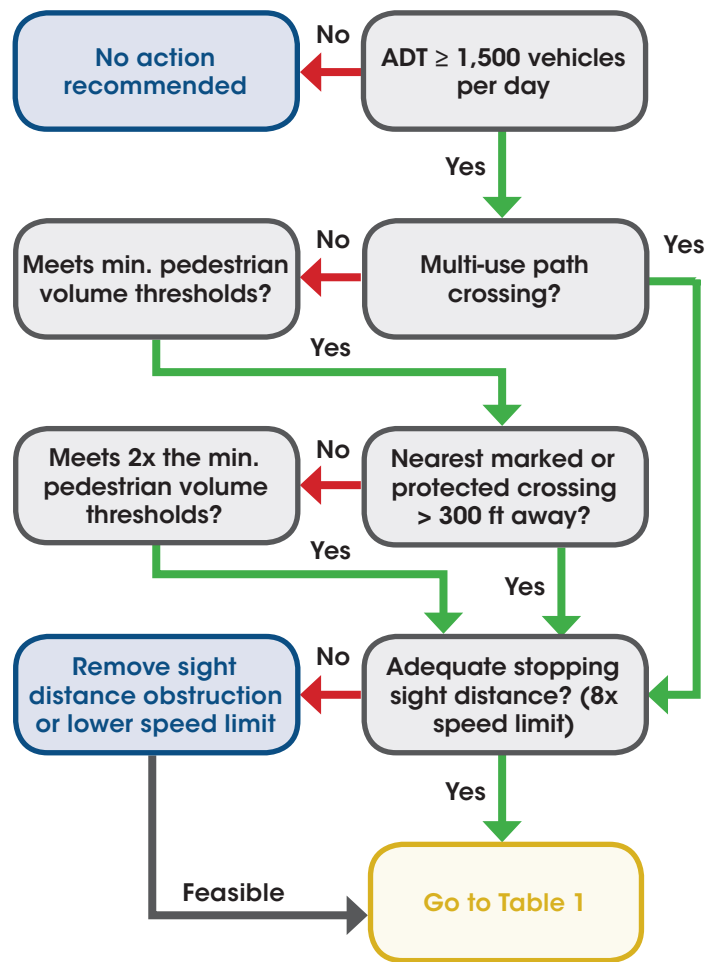


Figure 2. Excerpt from "Figure 1–Pedestrian Crossing Treatment Flowchart" from Boulder's Pedestrian Crossing Treatment Installation Guidelines.<sup>1</sup>

References

1. City of Boulder, "Pedestrian Crossing Treatment Installation Guidelines," (2011) [https://www-static.bouldercolorado.gov/docs/pedestrian-crossing-treatment-installation-guidelines-1-201307011719.pdf?\\_ga=2.138631796.633574636.1505499208-1937072.1505499208](https://www-static.bouldercolorado.gov/docs/pedestrian-crossing-treatment-installation-guidelines-1-201307011719.pdf?_ga=2.138631796.633574636.1505499208-1937072.1505499208)