



# DRAFT DESIGN TREATMENT MATRIX

Alameda Active Transportation Plan  
July 2020

## Introduction

The design treatment matrix presented below is intended for use in tandem with the pedestrian street typology memo and map. This matrix will help the City quickly assess which types of design treatments should be considered on different types of streets, such as a neighborhood street, or commercial street, or “Main Street.” The treatments are pedestrian-focused, but will also create safer, more comfortable streets for bicyclists.

Toole Design (the project consultant) developed this matrix based on national best practices and their experience. The matrix reflects guidance presented in the Federal Highway Administration’s *Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations* (2018) and the Transportation Research Board’s National Cooperative Research Program’s *Guidance to Improve Pedestrian and Bicycle Safety at Intersections*.

## We want to hear from you!

We would like to know what you think. Please share your comments through the survey on the Alameda Active Transportation Plan website: <https://www.activealameda.org/Recommendations#section-4>.

Treatments	Street Types				Overlays				Implementation Timeframe*
	Neighborhood Street	Neighborhood Connector	Main Street	Commercial or Industrial Street	School	Transit	Community Destinations	Truck	
<b>Crossing Treatments</b>									
Curb extension	X	X	X	X	X		X		R and L
Median refuge island <sup>1</sup>		X	X	X	X	X	X		R and L
In-street pedestrian crossing sign (paddle sign) <sup>2</sup>	X	X	X	X	X		X		R
Mid-block crossing		X	X		X	X	X		R and L
Pedestrian Hybrid Beacon (PHB) <sup>3</sup>		X	X	X	X	X	X	X	L
Rectangular Rapid Flashing Beacon (RRFB) <sup>3</sup>		X	X	X	X	X	X	X	R
High-visibility crosswalk marking (i.e., ladder- or continental-style markings)		X	X	X	X	X	X	X	R
Raised crossing <sup>4</sup>	X	X	X		X		X		L
Crosswalk visibility enhancements (advance yield lines, pedestrian yield sign)		X	X	X	X	X	X	X	R
Truck aprons on bulb outs						X		X	R and L
Parking prohibition near intersection	X	X	X	X	X	X	X	X	R and L
Pedestrian signal and leading pedestrian interval <sup>5</sup>		X	X	X	X	X	X	X	R and L
<b>Corridor Treatments</b>									
Streetlighting	X	X	X	X	X	X	X	X	L
Sidewalks <sup>6</sup>	X	X	X	X	X	X	X	X	L
Vertical traffic calming (e.g., speed humps and cushions)	X				X				R and L
Horizontal traffic calming <sup>2</sup>	X	X	X		X				R and L
Mini traffic circle <sup>2</sup>	X								R and L
Lower Speed Limits (20 mph or 15 mph)	X				X				R

Treatments	Street Types				Overlays				Implementation Timeframe*
	Neighborhood Street	Neighborhood Connector	Main Street	Commercial or Industrial Street	School	Transit	Community Destinations	Truck	
Road Diet (4 lanes to 3 or 2)			X	X					R and L
<b>Streetscape Improvements</b>									
Trees/Planter strip	X	X	X	X	X	X	X	X	L
Green Infrastructure (e.g., bio-retention areas)	X	X	X	X	X		X		L
Bus benches and shelters <sup>7</sup>		X	X	X		X			R and L
Street furniture (e.g., benches, art, water fountains, and recycling bins)			X		X		X		R
Pedestrian-scale lighting	X	X	X		X	X	X		L
Above-ground planters and potted plants			X						R
Sidewalk seating and dining			X						R
Pedestrian-oriented wayfinding			X			X	X		R
Pedestrian plazas and closed streets			X						R and L

\*R = rapid implementation options available L = long-term implementation or higher cost, permanent options available; refer to Design Guidelines for more information.

<sup>1</sup> Preferable on streets with operating speeds of at least 30 mph unless in a school or community destination overlay.

<sup>2</sup> Mostly applicable on streets with posted speeds 25 mph or less. "Horizontal traffic calming" includes treatments such as neckdowns that create a yield condition, or chicanes that force automobiles to slow speeds for a winding path of travel.

<sup>3</sup> In general, PHBs are reserved for crossings with three or more travel lanes and roadways with 30+ mph posted speeds or higher motor vehicle volumes (9,000+ ADT) and RRFBs are used on one- or two-lane crossings typically with lower motor vehicle volumes and/or 35 mph posted speeds or less. RRFBs should be supplemented with a median crossing island on streets with four or more total travel lanes. Near schools, high-visibility crosswalks can be accompanied by RRFBs and multi-lane (3 or more travel lanes) crossings can be treated with PHBs instead of RRFBs.

<sup>4</sup> Applicable on streets with posted speeds 30mph or less, ADT 9,000 or less, and less than four lanes.

<sup>5</sup> Leading pedestrian intervals are recommended at signalized intersections with high pedestrian volumes and high conflicting turning vehicle volumes; pedestrian signals should be applied per CA-MUTCD standards.

<sup>6</sup> Recommended sidewalk widths will be provided in the design guidelines developed as part of Task 9.

<sup>7</sup> Transit stop improvements are only applicable along transit routes. Prioritize bus shelters at bus stops with the highest ridership.

Sources: Federal Highway Association. *Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations*. 2018. Transportation Research Board. *NCHRP 15-63: Guidance to Improve Pedestrian and Bicycle Safety at Intersections*. 2020.