

Meeting Date: May 1, 2025 Item Number: 25-05	From: Patrick Leung, Caltrans
Sponsored By: Amjad Obeid, Caltrans	Presented By: Michael C. Robinson, Caltrans
Description: Revisions to Pedestrian Intervals and Signal Phases to comply with Assembly Bill AB-2264 (effective January 1, 2023), which includes requirements for leading pedestrian intervals and accessible pedestrian signals and detectors at state traffic signals. Includes clarifications from Traffic Operations Policy Directive 24-01.	

Recommendation:

Motion by committee to recommend inclusion of the proposed changes to the California Manual on Uniform Traffic Control Devices (CA MUTCD) Section 4E.06 "Pedestrians Intervals and Signal Phases" to comply with Assembly Bill AB-2264 (effective January 1, 2023).

Note: NMUTCD Section 4E.06 was relocated to Section 4I.06 in the 2023 update and CA MUCTD will adopt the same relocation. Additionally, referenced Sections 4E.08 through 4E.11 have been relocated to Sections 4I.05 and 4K.01 through 4K.03, respectively.

Agency Making Request/Sponsor:

Patrick Leung, Caltrans / Amjad Obeid, Caltrans

Background:

Assembly Bill AB-2264 titled "Pedestrian crossing signals" authored by Bloom (A), Haney (A), and Portantino (S), was approved by the Governor and filed with the Secretary of State on September 23, 2022.

AB-2264 amends the Vehicle Code Section 21450.5 to require state-owned or operated traffic-actuated signals upon first placement or replacement to include leading pedestrian interval (LPI) with accessible pedestrian signals (APS) and detectors. Existing state-owned or operated traffic-actuated signals, if located within bill-specified areas, are required by AB-2264 to have LPI installed when maintenance work is performed.

AB-2264 requires LPI implementation for "state-owned or operated" to focus on state-owned highways. However, it might not be clear that local agencies need to implement LPI for the delegated state-owned traffic signals. For clarification and emphasis on operators of delegated signals being required to implement LPI, the term

“state-owned or operated” is reworded in the proposed CA MUTCD text as “state-owned but operated by others or state-operated.”

The specification of maintenance work in AB-2264 is not clear who performs the work. Caltrans Electrical Maintenance does not implement changes for new signal timing features and therefore cannot implement LPI. Traffic signal timing changes are performed by signal operations while performing operational reviews. The CA MUTCD update needs to be clear that maintenance work performed on traffic signals refers to signal operations work performed during scheduled operational reviews where signal operations are prepared to determine if a traffic signal is located within a bill-specified area requiring LPI.

AB-2264 does not include engineering judgment for determining traffic signal locations requiring LPI. AB-2264 designates a list of areas requiring LPI including areas with high concentrations of pedestrians or cyclists with a reference to CVC Section 22358.7 which refers to Table 2B.106(CA) from the CA MUTCD. With the Table 2B.106(CA) reference, LPI is required anywhere on the state highway system where there are crosswalks or sidewalks. However, if there are no signalized crosswalks at the intersection then LPI cannot be enabled since there is no pedestrian indication available to provide an early walk. The proposed revision therefore clarifies requirements with “signalized pedestrian crosswalks.”

Refer to the following links for more background and information on AB-2264:

1. Text of AB-2264 Pedestrian Crossing Signals:

https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB2264

2. AB-2264 Bill Analyses:

https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=202120220AB2264

3. AB-2264 Today's Law As Amended:

https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=202120220AB2264&showamends=false

Attachments:

Attachment A – AB-2264 Pedestrian Crossing Signals

Attachment B – Traffic Operations Policy Directive 24-01 Leading Pedestrian Interval (LPI) at Signalized Intersections

Attachment C – Proposed Revisions to CA MUTCD Section 4E.06

ATTACHMENT A

Attachment A – AB-2264 Pedestrian Crossing Signals.



Assembly Bill No. 2264

CHAPTER 496

An act to amend Section 21450.5 of the Vehicle Code, relating to pedestrians.

[Approved by Governor September 23, 2022. Filed with
Secretary of State September 23, 2022.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2264, Bloom. Pedestrian crossing signals.

Under existing law, a pedestrian control signal showing a "WALK" or approved "Walking Person" symbol means a pedestrian may proceed across the roadway in the direction of the signal. Under existing law, a pedestrian facing a flashing "DON'T WALK" or "WAIT" or approved "Upraised Hand" symbol with a "countdown" signal, as specified, means a pedestrian may start crossing the roadway in the direction of the signal but requires the pedestrian to finish crossing prior to the display of the steady "DON'T WALK" or "WAIT" or approved "Upraised Hand" symbol, as specified.

Existing law defines a traffic-actuated signal as an official traffic signal, as specified, that displays one or more of its indications in response to traffic detected by mechanical, visual, electrical, or other means. Upon the first placement or replacement of a traffic-actuated signal, as specified, existing law requires the traffic-actuated signal to be installed and maintained to detect bicycle or motorcycle traffic on the roadway.

This bill would require a traffic-actuated signal to be installed and maintained to have a leading pedestrian interval, and to include the installation, activation, and maintenance of an accessible pedestrian signal and detector, upon the first placement or replacement of a state-owned or operated traffic-actuated signal. The bill would also require an existing state-owned or operated traffic-actuated signal capable of being implemented with remote installation or in-person programming to be programmed with a leading pedestrian interval when maintenance work is done on the intersection in which the traffic-actuated signal is located, if the signal is in a residential, business, or business activity district, a safety corridor, a school zone, or an area with a high concentration of pedestrians and cyclists, as specified. These requirements would not apply when prohibited by the California Manual on Uniform Traffic Control Devices. The bill would, for these purposes, define a "leading pedestrian interval" as an official traffic control signal that advances the "WALK" signal for 3 to 7 seconds while the red signal halting traffic continues to be displayed on parallel through or turning traffic, and define "accessible pedestrian signal and detector" as an integrated device that communicates information about the "WALK" and "DON'T WALK" intervals at signalized intersections in nonvisual

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formats, including audible tones, speech messages, and vibrotactile surfaces, to pedestrians who are blind or have low vision.

The people of the State of California do enact as follows:

SECTION 1. Section 21450.5 of the Vehicle Code is amended to read:
21450.5. (a) A traffic-actuated signal is an official traffic control signal, as specified in Section 445, that displays one or more of its indications in response to the presence of traffic detected by mechanical, visual, electrical, or other means.

(b) Upon the first placement of a traffic-actuated signal or replacement of the loop detector of a traffic-actuated signal, the traffic-actuated signal shall, to the extent feasible and in conformance with professional traffic engineering practice, be installed and maintained to detect lawful bicycle or motorcycle traffic on the roadway.

(c) Cities, counties, and cities and counties shall not be required to comply with the provisions contained in subdivision (b) until the Department of Transportation, in consultation with these entities, has established uniform standards, specifications, and guidelines for the detection of bicycles and motorcycles by traffic-actuated signals and related signal timing.

(d) (1) Upon the first placement or replacement of a state-owned or operated traffic-actuated signal, a traffic-actuated signal shall be installed and maintained to have a leading pedestrian interval, and shall include the installation, activation, and maintenance of an accessible pedestrian signal and detector that complies with sections 4E.08 to 4E.13 of the California Manual on Uniform Traffic Control Devices in effect on December 31, 2022.

(2) An existing state-owned or operated traffic-actuated signal capable of being implemented with remote installation or in-person programming shall have a leading pedestrian interval programmed when maintenance work is done on the intersection in which the traffic-actuated signal is located, if the traffic-actuated signal is in any of the following areas:

- (A) A residential district.
- (B) A business district.
- (C) A business activity district.
- (D) A safety corridor.
- (E) A school zone.

(F) An area with a high concentration of pedestrians and cyclists, as determined by the Department of Transportation pursuant to Section 22358.7.

(3) The requirements in paragraphs (1) and (2) do not apply when prohibited by the California Manual on Uniform Traffic Control Devices.

(4) As used in this subdivision, a “leading pedestrian interval” means an official traffic control signal that advances the “WALK” signal for three to seven seconds while the red signal halting traffic continues to be displayed on parallel through or turning traffic.

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(5) As used in this subdivision, an “accessible pedestrian signal and detector” means an integrated device that communicates information about the “WALK” and “DON’T WALK” intervals at signalized intersections in nonvisual formats, including audible tones, speech messages, and vibrotactile surfaces, to pedestrians who are blind or have low vision.

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ATTACHMENT B



California Traffic Control Devices Committee Agenda Item Report



Attachment B – Traffic Operations Policy Directive 24-01 Leading Pedestrian Interval (LPI) at Signalized Intersections

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

TRAFFIC OPERATIONS POLICY DIRECTIVE

TR-001 (REV 1/2022)

TRAFFIC OPERATIONS POLICY DIRECTIVE	NUMBER: 24 - 01	PAGE: 1 of 5
David Man, DIVISION CHIEF (Signature) <i>David S Man</i>	DATE ISSUED: February 8, 2024	EFFECTIVE DATE: February 8, 2024
SUBJECT: Leading Pedestrian Interval (LPI) at Signalized Intersections	DISTRIBUTION <input checked="" type="checkbox"/> All District Directors <input checked="" type="checkbox"/> All Deputy District Directors - Traffic Operations <input checked="" type="checkbox"/> Chief Counsel, Legal Division Headquarters Division/Program Chiefs for: <input checked="" type="checkbox"/> Construction <input checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Maintenance <input checked="" type="checkbox"/> Safety Programs <input checked="" type="checkbox"/> Transportation Planning <input type="checkbox"/> Additional:	
DOES THIS DIRECTIVE AFFECT OR SUPERSEDE ANOTHER DOCUMENT? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	IF YES, DESCRIBE Traffic Operations Memo dated 12/29/2022, "IMPLEMENTATION OF LEADING PEDESTRIAN INTERVAL (LPI) AT SIGNALIZED INTERSECTIONS"	
WILL THIS DIRECTIVE BE INCORPORATED IN A DEPARTMENT MANUAL, GUIDELINE OR STANDARD PLAN? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	IF YES, DESCRIBE Traffic Signal Operations Business Plan	

DIRECTIVE

New and replaced traffic-actuated signals owned or operated by the California Department of Transportation (Caltrans) shall include a touch-free Accessible Pedestrian Signal (APS) and Leading Pedestrian Interval (LPI). LPIs shall also be implemented at existing traffic-actuated signalized intersections in LPI-required areas.

IMPLEMENTATION

The first placement or replacement of a state-owned or operated traffic-actuated signal shall be installed and maintained to have LPIs, and such signal shall also include the installation, activation, and maintenance of a touch-free APS, provided these requirements comply with the California Manual on Uniform Traffic Control Devices (CA MUTCD) and are not prohibited by the version of the CA MUTCD in effect on December 31, 2022.

In the context of this policy, “replaced” or “replacement” refers to the relocation or exchange in place with new ones, of all existing signal poles at an intersection.

Caltrans shall implement LPIs on existing state-owned or operated traffic-actuated signals that are in any of the following LPI-required areas unless prohibited by the CA MUTCD:

- Residential district, as determined by California Vehicle Code (CVC) section [22507.5](#).
- Business district, as defined in CVC sections [235](#) and [240](#).
- Business activity district, as defined in CVC section [22358.9](#).
- Safety corridor as defined in CA MUTCD section 2B.13.
- School zone, as defined in CA MUTCD section 1A.13.185.
- Areas with a high concentration of pedestrians and cyclists, as defined in CA MUTCD, Section 2B.13 and Table 2B.106(CA).

As soon as practicable, all existing state-owned or operated traffic signals located in LPI-required areas, as described above, shall be identified and recorded in the Transportation Management System (TMS) Inventory Database to assist future annual operational review requirements and coordination with locals for delegated signals. LPIs should then be implemented at the next opportunity for regularly scheduled operational reviews. The traffic signal LPI implementation shall be recorded in the TMS Inventory Database.

As soon as practicable, district signal operations units shall formally notify, in writing, local agencies operating state-owned traffic-actuated signals in LPI required areas, as described above, about the opportunity to implement LPI. Additionally, such local agencies shall report their implementation of LPI at these locations to Caltrans so the locations can be included in the TMS Inventory Database.

For existing traffic signals not in LPI required areas, Caltrans should follow the [Guidelines for Implementing LPI](#) to assess and implement LPI at intersections.

For additional requirements on the use of touch-free APS refer to [TOPD 21-06](#).

Depending on local site geometric and traffic conditions, some LPI locations may need to restrict turns on red using illuminated blank out signs and enhanced signing. LPI may be implemented at existing signals without touch-free APS and pedestrian countdown signals.

IMPLEMENTATION (Cont'd)

This policy does not require a traffic-actuated signal replacement.

DELEGATION

No new delegations of authority are created under this policy.

BACKGROUND

LPI is a signal-timing tool that can reduce vehicle-pedestrian crashes. At signalized intersections, LPI gives pedestrians the opportunity to enter an intersection 3 to 7 seconds before vehicles are given a green indication. With this head start, pedestrians can better establish their presence in the crosswalk before vehicles proceed to make their turn. LPI provides the benefits of increased visibility of crossing pedestrians, reduced conflicts between pedestrians and vehicles, and increased likelihood of motorists yielding to pedestrians.

LPI is a Federal Highway Administration "[Proven Safety Countermeasure](#)" that may reduce pedestrian-vehicle crashes at intersections by up to 13 percent. Therefore, the implementation of LPI may help enhance pedestrian safety and reduce traffic fatalities.

Assembly Bill 2264 (Bloom) added the following language to section 21450.5 of the California Vehicle Code, effective January 1, 2023:

(d)

- (1) Upon the first placement or replacement of a state-owned or operated traffic-actuated signal, a traffic-actuated signal shall be installed and maintained to have a leading pedestrian interval, and shall include the installation, activation, and maintenance of an accessible pedestrian signal and detector that complies with sections 4E.08 to 4E.13 of the California Manual on Uniform Traffic Control Devices in effect on December 31, 2022.
 - (2) An existing state-owned or operated traffic-actuated signal capable of being implemented with remote installation or in-person programming shall have a leading pedestrian interval programmed when maintenance work is done on the intersection in which the traffic-actuated signal is located, if the traffic-actuated signal is in any of the following areas:
 - (A) A residential district.
 - (B) A business district.
 - (C) A business activity district.
 - (D) A safety corridor.
 - (E) A school zone.
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BACKGROUND (Cont'd)

- (F) An area with a high concentration of pedestrians and cyclists, as determined by the Department of Transportation pursuant to Section 22358.7.
- (3) The requirements in paragraphs (1) and (2) do not apply when prohibited by the California Manual on Uniform Traffic Control Devices.
- (4) As used in this subdivision, a "leading pedestrian interval" means an official traffic control signal that advances the "WALK" signal for three to seven seconds while the red signal halting traffic continues to be displayed on parallel through or turning traffic.
- (5) As used in this subdivision, an "accessible pedestrian signal and detector" means an integrated device that communicates information about the "WALK" and "DON'T WALK" intervals at signalized intersections in nonvisual formats, including audible tones, speech messages, and vibrotactile surfaces, to pedestrians who are blind or have low vision.

DEFINITIONS

When used in this Traffic Operations Policy Directive, the text shall be defined as follows:

- 1) **Standard** – a statement of required, mandatory or specifically prohibited practice. All standards text appears in **bold** type. The verb **shall** is typically used. Standards are sometimes modified by Options.
- 2) Guidance – a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements text appears in underline type. The verb should is typically used. Guidance statements are sometimes modified by Options.
- 3) Option – a statement of practice that is a permissive condition and carries no requirement or recommendation. Options may contain allowable modifications to a Standard or Guidance. All Option statements text appears in normal type. The verb may is typically used.
- 4) Support – an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements text appears in normal type. The verbs shall, should and may are not used in Support statements.

ATTACHMENT C

Attachment C – Proposed Revisions to CA MUTCD Section 4E.06.

Note:

Black text is consistent with the Federal MUTCD.

Blue text is current text as amended for use in California. ~~Struck out blue~~ text is to be deleted from the CA MUTCD. Red text is newly proposed text.

Standard:

25 Upon the first placement or replacement of a state-owned but operated by others or state-operated traffic-actuated signal that is equipped with pedestrian crosswalks, a traffic-actuated signal shall be installed to have a leading pedestrian interval, and shall include the installation, activation, and maintenance of an accessible pedestrian signal pushbutton or touch-free detector that complies with sections 4E.08 to 4E.13. These features shall be available at all times of the day.

26 Existing traffic-actuated signals with signalized pedestrian crosswalks that are state-owned but operated by others or state-operated shall be configured and include a leading pedestrian interval as part of an operational review that is performed on traffic-actuated signals in any of the following areas:

- A. Residential district, as determined by CVC section 22507.5.**
- B. Business district, as defined in CVC sections 235 and 240.**
- C. Business activity district, as determined by the CVC Section 22358.9.**
- D. Safety corridor, as defined by section 2B.13.**
- E. School zone, as defined by section 1A.13.185.**
- F. An area with a high concentration of pedestrians and cyclists, as defined in Section 2B.13 and determined by Table 2B-106(CA).**