

# Appendix C

## HDM CH 105 PEDESTRIAN FACILITIES

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considerations, frequently are terminated at the railroad right of way.

Any new railroad grade crossings and grade separations, and any relocations or alterations of existing crossings must be cleared with the railroad and approved by the PUC.

- (5) *Frontage Roads Financed by Others.* Frontage roads which are not a State responsibility under this policy may be built by the State upon request of a local political subdivision, a private agency, or an individual. Such a project must be covered by an agreement under which the State is reimbursed for all construction, right of way, and engineering costs involved.

### 104.4 Protection of Access Rights

**For proper control of acquired access rights, fencing or other approved barriers shall be installed on all controlled access highways except as provided in Index 701.2(3)(e).**

### 104.5 Relation of Access Opening to a Median Opening

Access openings should not be placed within 300 feet of a median opening unless the access opening is directly opposite the median opening.

Details on access openings are given under Index 205.1.

### 104.6 Cross References

- (a) Access Control at Intersections at Grade (see Index 405.6).
- (b) Access Control at Interchanges (see Index 504.8).

## Topic 105 - Pedestrian Facilities

### 105.1 Sidewalks

The design of sidewalks and walkways varies depending on the setting and the standards and requirements of local agencies. Most local agencies in California have adopted varying design standards for urban and rural areas, as well as more specific requirements that are applicable to residential settings, downtowns, special districts,

and other areas. Design of sidewalks should be coordinated with the local agencies. The minimum width of a sidewalk should be 5 feet. See Index 105.3 for accessibility requirements. See Index 205.3(6) and the Standard Plans for sidewalk requirements at driveways. See Index 208.6 for information on pedestrian overcrossings and undercrossings and Index 208.4 for sidewalks on bridges.

“A Policy on Geometric Design of Highways and Streets”, issued by AASHTO, and the “Highway Capacity Manual” contain pedestrian level of service criteria. This is a means of measuring the capacity of existing pedestrian facilities to determine the need for improvements or expansions. If adequate capacity is not provided, pedestrian mobility may be seriously impeded.

Traffic volume-pedestrian warrants for sidewalks or walkways along highways have not been established. In general, whenever the roadside and land development conditions are such that pedestrians regularly move along a highway, those pedestrians should be furnished with a sidewalk or walkway, as is suitable to the conditions. The State may assume financial responsibility for the construction of sidewalks under the conditions described below. (See the Project Development Procedures Manual for further discussion of the State's responsibility in providing pedestrian facilities.)

- (1) *Replacement in Kind.* Where existing sidewalks are to be disturbed by highway construction, the replacement applies only to the frontages involved and no other sidewalk construction is authorized except:
  - (a) As part of a right of way agreement.
  - (b) Where the safety or capacity of the highway will be improved.
- (2) *Conventional Highways.* The roadway cross section usually provides areas for pedestrians. If the safety or capacity of the highway will be improved, the State may contribute towards the cost of building a pedestrian facility. The city, county, or property owner whose adjacent development generated the pedestrian traffic may build sidewalks on State right of way under a permit.

- (3) *Freeway and other Controlled Access Facilities.* Sidewalks should be built across the freeway right of way on overcrossings and through undercrossings where necessary to connect with existing or planned sidewalks. Construction of planned sidewalks should be imminent. Within the foregoing criteria, sidewalks can be part of the original project or added later when the surrounding area develops.
- (4) *Overcrossing and Undercrossing Approaches.* Where sidewalks are planned on overcrossing structures, an area should be provided to accommodate future sidewalks where they are not now warranted.
- (5) *School Pedestrian Walkways.* School pedestrian walkways may be identified along a route used by school pedestrians that is not limited to crossing locations, but includes where physical conditions require students to walk in or along rural or suburban roadways.
- (6) *Frontage Roads.* Sidewalks may be built along frontage roads connecting local streets that would otherwise dead end at the freeway provided the intersecting streets have sidewalks. Such sidewalks are considered to be replacements of existing facilities. Normally, sidewalks should not be placed on the freeway side of frontage roads except where connections must be made to pedestrian separations.
- (7) *Separated Cross Streets.* Sidewalks may be built on separated cross streets where reconstruction of the cross street is made necessary by the freeway project and where the criteria of paragraph (3) above apply.
- (8) *Bus Stops.* Sidewalks may be built to connect bus stops to local streets.
- (9) *Vehicular Tunnels.* Sidewalks and pedestrian facilities may be built as part of vehicular tunnels which do not require ventilation as part of the tunnel structure. Contact the Division of Engineering Services - Structure Design (DES-SD), regarding allowable conditions.
- (10) *Maintenance.* The State is responsible for maintaining and replacing damaged sidewalks within the right of way except:

- (a) Where the sidewalk was placed by a private party under encroachment permit that requires the permittee to maintain the sidewalk, but only if the original permittee still owns the abutting property.
- (b) Where the city or county has placed nonstandard sidewalks with colored or textured surfaces, or meandering alignment. See Maintenance Manual for additional discussion on State's maintenance responsibilities regarding sidewalks.

### 105.2 Pedestrian Grade Separations

- (1) *Warrants.* The need for a pedestrian grade separation is based on a study of the present and future needs of a particular area or community. Each situation should be investigated and considered on its own merits. The study should cover pedestrian generating sources in the area, pedestrian crossing volumes, type of highway to be crossed, location of adjacent crossing facilities, circuitry, zoning, land use, sociological and cultural factors, and the predominant type and age of persons expected to utilize the facility.

Pedestrian patterns should be maintained across freeway routes where these patterns have been previously established. Where vehicular crossings are inadequate for pedestrians, separate structures should be provided. In general, if a circuitous route is involved, a pedestrian separation may be justified even though the number of pedestrians is small.

State participation in the financing of pedestrian separations at ramp terminals is not normally justified because of the accident history at these locations. Exceptions to this general policy should be considered only in special circumstances where no less expensive alternative is feasible.

Where a pedestrian grade separation is justified, an overcrossing is preferred. Undercrossings should be avoided because of the potential for criminal incidents and vandalism. Consideration may be given to an undercrossing when specifically requested in writing by a local agency, but unobstructed

visibility should be provided through the structure and approaches.

See Index 105.3 for discussion of provisions for physically disabled persons.

(2) *Financing.*

- (a) **Freeways**--Where the pedestrian grade separation is justified prior to award of the freeway contract, the State should pay the full cost of the pedestrian facility. In some cases, construction of the separation may be deferred; however, where the need has been established to the satisfaction of the Department prior to award of the freeway contract, the State should pay the entire cost of the separation.

Local jurisdictions have some control (by zoning and planning) of development that influences pedestrian traffic patterns. Therefore, where a pedestrian grade separation is justified after the award of a freeway contract, the State's share of the total construction cost of the separation should not exceed 50 percent. The State must enter into a cooperative agreement with the local jurisdiction on this basis.

- (b) **Conventional Highways**--Grade separations are not normally provided for either cars or pedestrians on conventional highways. However, in those rare cases where pedestrian use is extensive, and where the local agency has requested in writing that a pedestrian separation be constructed, an overcrossing may be considered. The State's share of the total construction cost of the pedestrian facility should not exceed 50 percent. The State must enter into a cooperative agreement with the local jurisdiction on this basis.

### 105.3 Accessibility Requirements

(1) *Background.*

The requirement to provide equivalent access to facilities for all individuals, regardless of disability, is stated in several laws adopted at both the State and Federal level. Two of the most notable references are The Americans with Disabilities Act of 1990 (ADA) which

was enacted by the Federal Government and took effect on January 26, 1992, and Section 4450 of the California Government Code.

(a) **Americans with Disabilities Act Highlights.**

- Title II of the ADA prohibits discrimination on the basis of disability by state and local governments (public entities). This means that a public entity may not deny the benefits of its programs, activities and services to individuals with disabilities because its facilities are inaccessible. A public entity's services, programs, or activities, when viewed in their entirety, must be readily accessible to and usable by individuals with disabilities. This standard, known as "program accessibility," applies to all existing facilities of a public entity.
- Public entities are not necessarily required to make each of their existing facilities accessible. Public entities may achieve program accessibility by a number of methods (e.g., providing buses as opposed to structurally accessible pedestrian facilities). However, in many situations, providing access to facilities through structural methods, such as alteration of existing facilities and acquisition or construction of additional facilities, may be the most efficient method of providing program accessibility.
- Where structural modifications are required to achieve program accessibility, a public entity with 50 or more employees is required to develop a transition plan setting forth the steps necessary to complete such modifications.
- In compliance with the ADA, Title 28 of the Code of Federal regulations (CFR) Part 35 identifies all public entities to be subject to the requirements for ADA regardless of funding source. It further states that

the Uniform Federal Accessibility Standards (UFAS) and the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) are acceptable design guidelines that may be used. However, FHWA has directed Caltrans to use the ADAAG as the Federal design guidelines for pedestrian accessibility.

(b) California Government Code 4450 et seq. Highlights.

- Sections 4450 (through 4460) of the California Government Code require that buildings, structures, sidewalks, curbs, and related facilities that are constructed using any State funds, or the funds of cities, counties, or other political subdivisions be accessible to and usable by the physically disabled. Section 4450 says that facilities are to be constructed in conformance with the California Building Code. The California Building Code is part of Title 24 of the California Code of Regulations. The Department of General Services (DGS), through the Division of the State Architect, and Caltrans have the authority to review and approve plans for facilities covered under Section 4450.
- California Building Code has been revised to generally conform to the ADAAG. In most cases, the accessibility standards in Title 24 are more stringent than those in ADAAG, but in some cases they are less so.

(2) *Policy.*

It is Caltrans policy to:

- Comply with the ADA and the Government Code 4450 et seq. by making all State highway facilities accessible to people with disabilities to the maximum extent feasible. In general, if a project on State right of way is providing a pedestrian facility, then accessibility must be addressed.

- Follow the requirements of both the ADAAG and Title 24 for new construction and alterations of existing facilities. Both requirements should be reviewed to determine if differences exist. Where there are differences between Title 24 and the ADAAG, the guidelines that provide the higher accessibility may be used as long as at least the ADAAG is satisfied. The ADAAG allows the use of other design standards, i.e., a local agency's adopted accessibility standard, where the standard used will provide substantially equivalent or greater access to and usability of the facility. The decision to identify and use an equivalent or higher accessibility standard than the ADAAG or Title 24 should be documented for projects on the State highway system.

(3) *Procedures.*

- (a) The engineer will consider pedestrian accessibility needs in the Project Initiation Documents (PSRs, PSSRs, etc.) for all projects where applicable.
- (b) All State highway projects administered by Caltrans or others with facilities subject to the ADA and Title 24 must be designed in accordance with the requirements in Design Information Bulletin 82, "Pedestrian Accessibility Guidelines for Highway Projects."
- (c) The details of the pedestrian facilities and their relationship to the project as a whole should be clearly depicted and submitted as described in DIB-82.

ADA compliance must be noted in PS&E Transmittal, Attachment A, on State-administered projects. Appropriate project records should document the fact that necessary review and approvals have been obtained as required above.

#### **105.4 Guidelines for the Location and Design of Curb Ramps**

- (1) *Policy.* On all State highway projects adequate and reasonable access for the safe

and convenient movement of physically disabled persons are to be provided across curbs that are constructed or replaced at pedestrian crosswalks. (This includes all marked and unmarked crosswalks, as defined in Section 275 of the Vehicle Code.)

Access should also be provided at bridge sidewalk approaches and at curbs in the vicinity of pedestrian separation structures.

Where a need is identified at an existing curb on a conventional highway, a curb ramp may be constructed either by others under encroachment permit or by the State.

- (2) *Location Guidelines.* When locating curb ramps, designers must consider the position of utilities such as power poles, fire hydrants, street lights, traffic signals, and drainage facilities.

On new construction, two ramps should be installed at each corner as shown on the Standard Plans. For retrofit construction, one ramp at the center of the curb return is acceptable, but not desirable. The usage of the one-ramp design should be restricted to those locations where the volume of pedestrians and vehicles making right turns is low. This will reduce the potential frequency of conflicts between turning vehicles and disabled persons entering the common crosswalk area to cross either street.

Ramps and/or curb openings should be provided at midblock crosswalks and where pedestrians cross curbed channelization or median islands at intersections. Often, on traffic signalization, channelization, and similar projects, curbs are proposed to be modified only on portions of an existing intersection. In those cases, consideration should be given to installing retrofit curb ramps on all legs of the intersection.

- (3) *Ramp Design.* Curb ramp designs should conform to current Standard Plans. See Index 105.3(3) for review procedures.

## Topic 106 - Stage Construction and Utilization of Local Roads

### 106.1 Stage Construction

(1) *Cost Control Measures.* When funds are limited and costs increase, estimated project costs often exceed the amounts available in spite of the best efforts of the engineering staff. At such times the advantages of reducing initial project costs by some form of staged construction should be considered as an alternative to deferring the entire project. Stage construction may include one or more of the following:

- (a) Shorten the proposed improvement, or divide it into segments for construction in successive years;
- (b) Reduce number of lanes for initial construction. For example, a 4-lane freeway in a rural area with low current traffic volumes might be staged for two lanes initially with capacity adequate for at least 10 years after construction. Similarly, a freeway might be constructed initially four or six lanes wide with provision for future widening in the median to meet future traffic needs.
- (c) Stage pavement structure. For flexible pavement, this could be done by reducing the surface course thickness with provision for a future overlay to bring the pavement to full design depth. For rigid pavement, the base and subbase layers could initially be built (if the base is built with HMA) and then overlaid later with a Portland cement concrete slab. In each case, life-cycle cost should be considered before using a staging option.
- (d) Downscope geometric design features. This last expedient should be considered only as a last resort; geometric features such as alignment, grade, sight distance, weaving, or merging distance, are difficult and expensive to change once constructed.

A choice among cost reducing alternatives should be made only after weighing the benefits and disadvantages of each,