CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Manual Change Transmittal

NO. 4

TITLE	APPROVED BY	Date Issued:
HIGHWAY DESIGN MANUAL SEVENTH EDITION – MCT #4	Elbert Cox, Acting Chief	12/13/24 Page 1 of 2
SUBJECT AREA	ISSUING UNIT	
Table of Contents, Chapters 100 & 1000	DIVISION OF DESIGN	
SUPERCEDES	DISTRIBUTION	
Highway Design Manual – Seventh Edition, July 1, 2020 and all associated Manual Change Transmittals	**ALL HOLDERS OF THE 7TH EDITION, HIGHWAY DESIGN MANUAL**	

The Table of Contents and Chapters 100 and 1000 of the Seventh Edition, Highway Design Manual (HDM) have been revised. The Manual Change Transmittal including associated changed pages of the HDM is available on the Department's Division of Design Website at:

https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm.

Significant changes include updates to Safety Review references, Streets and Highways Code reference update, and changes to Shared Lane Markings usage for Class III bikeways.

These changes are effective January 1, 2025, and shall be applied to on-going projects in accordance with HDM Index 82.5 – Effective Date for Implementing Revisions to Design Standards.

HDM Holders are encouraged to use the most recent version of the HDM available on-line at the website indicated above. Should a HDM Holder choose to maintain a paper copy, the Holder is responsible for keeping their paper copy up to date and current. Using the latest version available on-line will ensure proper reference to the latest design standards and guidance. For automatic notification of any significant changes or updates to the HDM, you may subscribe to the email notification list at:

https://lists2.dot.ca.gov/mailman/listinfo/highway-design-manual-updates

A summary of significant revisions referenced in this Manual Change Transmittal is as follows:

Table of Contents Update of page numbers related to changes indicated in this Manual Change Transmittal

Index 110.8 Safety Reviews
Inclusion of reference to Chapter 8 of the PDPM, which provides the process for Safety Review.

Index 1001.1 Bicycle Transportation
Incorporation of Director's Policy 37 "Complete Streets" (DP-37) and removal of reference to Deputy Directive 64-R2 "Complete Streets – Integrating the Transportation System."

Index 1001.2 Streets and Highways Code References
Addition of Section 891.9 – Shared Lane Marking Requirements

Index 1003.3 Class III Bikeways (Bike Routes)
Inclusion of new requirements for the use of Shared Lane Markings. Provide clarification on Class III Bikeways.

Enclosures: Table of Contents, Index 110.8, 1001.1, 1001.2, and 1003.3

Temporary roadways with alignment and surfacing consistent with the standards of the road which has just been traveled by the motorist should be provided if physically and economically possible.

Based on assessments of safety benefits, relative risks and cost-effectiveness, consideration should be given to the possibility of including a bid item for continuous traffic surveillance and control during particular periods, such as:

(a) When construction operations are not in progress.

(b) When lane closures longer than a specified length are delineated by cones or other such nonpermanent devices, whether or not construction operations are in progress.

(c) Under other conditions where the risk and consequences of traffic control device failure are deemed sufficient.

Potentially hazardous working conditions must be recognized and full consideration given to the safety of workers as well as the general public during construction. This requirement includes the provision of adequate clearance between public traffic and work areas, work periods, and lane closures based on careful consideration of anticipated vehicle traffic volumes, and minimum exposure time of workers through simplified design and methods.

If a Transportation Management Plan (TMP) is included in the project, the traffic control plans (TCP) may need to be coordinated with the public information campaign and the transportation demand management elements. Any changes in TMP or TCP must be made in harmony for the plans to succeed. The “TMP Guidelines”, available from the Headquarters Division of Traffic Operations should be reviewed for further guidance.

Traffic control plans along with other features of the design should be reviewed by the District Safety Review Committee prior to PS&E as discussed in Index 110.8.

The cost of implementing traffic control plans must be included in the project cost estimate, either as one or more separate pay items or as extra work to be paid by force account.

It is recognized that in many cases provisions for traffic control will be dependent on the way the contractor chooses to execute the project, and that the designer may have to make some assumptions as to the staging or sequence of the contractor's operations in order to develop definite temporary traffic control plans. However, safety of the public and the workers as well as public convenience demand that designers give careful consideration to the plans for handling all traffic even though a different plan may be followed ultimately. It is simpler from a contract administration standpoint to change a plan than to add one where none existed. The special provisions should specify that the contractor may develop alternate traffic control plans if they are as sound or better than those provided in the contract PS&E.

See Section 2-30, Traffic, of the Construction Manual for additional factors to be considered in the preparation of traffic control plans.

110.8 Safety Reviews

During various project development phases, formal safety reviews of project plans and documents are conducted to assess the application of safety-related standards. Safety reviews can also provide opportunities to further strengthen proposed design elements and implement additional items, such as proven safety countermeasures and traffic calming

measures, by introducing an impartial review performed by a knowledgeable group of subject matter experts.

This process can lead to cost-effective modifications that enhance safety for all users and workers without significant changes in the scope of the project. The current procedures and documentation requirements pertaining to safety reviews are discussed in Chapter 8 of the Project Development Procedures Manual (PDPM).

110.9 Value Analysis

The use of Value Analysis techniques should begin early in the project development process and be applied at various milestones throughout the PS&E stage to reduce life-cycle costs. See the Project Development Procedures Manual for additional information.

110.10 Proprietary Items

The use of proprietary items is discouraged in the interest of promoting competitive bidding. If it is determined that a proprietary item is needed and beneficial to the State, their use must be approved by the District Director or by the Deputy District Director of Design (if such approval authority has been specifically delegated by the District Director). The Division Chief of Engineering Services must approve the use of proprietary items on structures and other design elements under their jurisdiction. The Department's guidelines on how to include proprietary items in contract plans are covered in the Office Engineer's Ready to List and Construction Contract Award Guide (RTL Guide) under "Proprietary Products."

On projects that utilize federal funds, the use of proprietary items requires an additional approval through a Public Interest Finding (PIF). A PIF is approved by the Federal Highway Administration (FHWA) Division Office for "High Profile Projects" or by the Division of Budgets, California Federal Resources Engineer for Delegated Projects, in accordance with the Stewardship Agreement. Additional information on the PIF process can be found through the Division of Budgets, Office of Federal Resources.

The use of proprietary materials, methods, or products will not be approved unless:

(a) There is no other known material of equal or better quality that will perform the same function, or

(b) There are overwhelming reasons for using the material or product in the public's interest, which may or may not include cost savings, or

(c) It is essential for synchronization with existing highway or adjoining facilities, or

(d) Such use is on an experimental basis, with a clearly written plan for "follow-up and evaluation."

If the proprietary item is to be used experimentally and there is Federal participation, the request for FHWA approval must be submitted to the Chief, Office of Landscape Architecture Standards and Procedures in the Division of Design. The request must include a Construction Evaluated Work Plan (CEWP), which indicates specific functional managers, and units, which have been assigned responsibility for objective follow-up, evaluation, and documentation of the effectiveness of the proprietary item.

CHAPTER 1000 – BICYCLE TRANSPORTATION DESIGN

Topic 1001 – Introduction

Index 1001.1 – Bicycle Transportation

The needs of nonmotorized transportation are an essential part of all highway projects. Mobility for all travel modes is recognized as an integral element of the transportation system. Therefore, the guidance provided in this manual complies with Director's Policy 37 "Complete Streets" (DP-37). See AASHTO, "Guide for the Development of Bicycle Facilities" for supplemental guidance.

Design guidance for Class I bikeways (bike paths), Class III bikeways (bike routes), and Trails are provided in this chapter. Design guidance that addresses the mobility needs of bicyclists on all roads as well as on Class II bikeways (bike lanes) is distributed throughout this manual where appropriate. Design guidance for Class IV bikeways (separated bikeways) is provided in DIB 89. The AASHTO Guide for the Development of Bicycle Facilities also provides additional bikeway guidance not included in this chapter. In addition, bikeway publications and manuals developed by organizations other than FHWA and AASHTO also provide guidance not covered in this manual.

See Topic 116 for guidance regarding bikes on freeways.

1001.2 Streets and Highways Code References

The Streets and Highways Code Section 890.4 defines a "bikeway" as a facility that is provided primarily for bicycle travel. Following are other related definitions, found in Chapter 8 Nonmotorized Transportation, from the Streets and Highway Code:

(a) Section 887 – Definition of nonmotorized facility.

(b) Section 887.6 – Agreements with local agencies to construct and maintain nonmotorized facilities.

(c) Section 887.8 – Payment for construction and maintenance of nonmotorized facilities approximately paralleling State highways.

(d) Section 888 – Severance of existing major non- motorized route by freeway construction.

(e) Section 888.2 – Incorporation of nonmotorized facilities in the design of freeways.

(f) Section 888.4 – Requires Caltrans to budget not less than $360,000 annually for nonmotorized facilities used in conjunction with the State highway system.

(g) Section 890.4 – Class I, II, III, and cycle tracks or separated bikeway definitions.

(h) Section 890.6 - 890.8 – Caltrans and local agencies to develop design criteria and symbols for signs, markers, and traffic control devices for bikeways and roadways where bicycle travel is permitted.

(i) Section 891 – Local agencies must comply with design criteria and uniform symbols.

(j) Section 891.9 – Prohibits the installation of a new Shared Lane Marking for the development or operation of bikeways or highways with a posted speed limit greater than 30 mph, except at or near an intersection for the purpose of connecting a Class I, Class II, or Class IV bikeway through the intersection.

(k) Section 892 – Use of abandoned right-of-way as a nonmotorized facility.

1001.3 Vehicle Code References

(a) Section 21200 – Bicyclist's rights and responsibilities for traveling on highways.

(b) Section 21202 – Bicyclist's position on roadways when traveling slower than the normal traffic speed.

(c) Section 21206 – Allows local agencies to regulate operation of bicycles on pedestrian or bicycle facilities.

(d) Section 21207 – Allows local agencies to establish bike lanes on non-State highways.

(e) Section 21207.5 – Prohibits motorized bicycles on bike paths or bike lanes.

(f) Section 21208 – Specifies permitted movements by bicyclists from bike lanes.

(g) Section 21209 – Specifies permitted movements by vehicles in bike lanes.

(h) Section 21210 – Prohibits bicycle parking on sidewalks unless pedestrians have an adequate path.

(i) Section 21211 – Prohibits impeding or obstruction of bicyclists on bike paths.

(j) Section 21400 – Adopt rules and regulations for signs, markings, and traffic control devices for roadways user.

(k) Section 21401 – Only those official traffic control devices that conform to the uniform standards and specifications promulgated by the Department of Transportation shall be placed upon a street or highway.

(l) Section 21717 – Requires a motorist to drive in a bike lane prior to making a turn.

(m) Section 21960 – Use of freeways by bicyclists.

(n) Section 21966 – No pedestrian shall proceed along a bicycle path or lane where there is an adjacent adequate pedestrian facility.

1001.4 Bikeways

(1) Role of Bikeways. Bikeways are one element of an effort to improve bicycling safety and convenience - either to help accommodate motor vehicle and bicycle traffic on the roadway system, or as a complement to the road system to meet the needs of the bicyclist.

intersections, at locations where nighttime security could be a problem, and where obstacles deter unauthorized vehicle entry to bicycle paths. See Index 1003.1(17). Daytime lighting should also be considered through underpasses or tunnels.

Depending on the location, average maintained horizontal illumination levels of 5 lux to 22 lux should be considered. Where special security problems exist, higher illumination levels may be considered. Light standards (poles) should meet the recommended horizontal and vertical clearances. Luminaires and standards should be at a scale appropriate for a pedestrian or bicycle path. For additional guidance on lighting, consult with the District Traffic Electrical Unit.

1003.2 Class II Bikeways (Bike Lanes)

Design guidance that addresses the safety and mobility needs of bicyclists on Class II bikeways (bike lanes) is distributed throughout this manual where appropriate.

For Class II bikeway signing and lane markings, see the California MUTCD, Part 9.

1003.3 Class III Bikeways (Bike Routes)

Class III bikeways (bike routes) are intended to provide continuity to the bikeway system. Bike routes are established along through routes not served by Class I, II, or IV bikeways, or to connect discontinuous segments of bikeways (normally bike lanes). Class III facilities are facilities shared with motor vehicles or pedestrians, which are designated by signs or permanent markings. Section 891.9 of the Streets and Highways Code prohibits the installation of a new Shared Lane Marking on a highway with a posted speed limit greater than 30 mph, except for the purpose of connecting a Class I, Class II, or Class IV bikeways through an intersection. For application and placement of signs and pavement markings, see the California MUTCD Part 9.

Minimum widths for Class III bikeways are represented in the minimum standards for highway lanes and shoulder.

Since bicyclists are permitted on all highways (except prohibited freeways), the decision to designate the route as a bikeway should be based on the advisability of encouraging bicycle travel on the route and other factors listed below.

(1) On-street Bike Route Criteria. To be of benefit to bicyclists, bike routes should offer a higher degree of service than alternative streets. Routes should be signed only if some of the following apply:

(a) They provide for through and direct travel in bicycle-demand corridors.

(b) Connect discontinuous segments of bike lanes.

(c) They provide traffic actuated signals for bicycles and appropriate assignment of right of way at intersections to give greater priority to bicyclists, as compared with alternative streets.

(d) Street parking has been removed or restricted in areas of critical width to provide improved safety.

(e) Surface imperfections or irregularities have been corrected (e.g., utility covers adjusted to grade, potholes filled, etc.).