

# **APPENDIX BB – Fact Sheets for Exceptions to Mandatory Design Standards**

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## ARTICLE 1 Introduction

### Fact Sheets

This appendix provides concepts and best practices for the preparation of fact sheets for exceptions to mandatory design standards as contained in the [Highway Design Manual](#). Fact sheets are developed to document and justify the reasoning behind the deviation from design standards.

Presented in this appendix is a description of the information that should be contained in a fact sheet and the format used to collect and organize information.

For delegated mandatory design exceptions and advisory design exceptions, use of a fact sheet format similar to the one found in this appendix is recommended.

To appropriately apply the guidance described in this appendix, review the intent of policies and procedures in [Chapter 21](#) – Exceptions to Design Standards.

## ARTICLE 2 Outline

### General

The purpose of this outline is to identify the key elements to document in the fact sheet. All headings presented in the outline must be included in the fact sheet.

### Cover Sheet

The registered civil engineer in responsible charge of the work (as defined by *California Business and Professions Code*, Section 6703), or other licensed professional practicing within the scope of their license must sign and seal the cover sheet.

## Outline

### 1. PROPOSED PROJECT

#### A. Project Description:

Briefly describe the proposed project. Note the type of project and/or major elements of work to be performed, such as safety or operational improvement, roadway widening, rehabilitation, reconstruction, etcetera. Provide the geographic project limits and length, for example: "...On Route 12 in Sonoma County between Napa Street, PM 37.7 and Napa Road, PM 38.7". Reference the attached project location map and/or project vicinity map. Project plan title sheets may be insufficient to show the greater vicinity and general surroundings near the proposed project.

#### B. Existing Highway:

Describe the general highway characteristics, including the classification of the facility (such as: freeway, expressway, or conventional highway), number of lanes, posted speeds, etcetera. The focus should be on those features relevant to the proposed design exception, such as the widths of lanes, shoulders, median, roadbed, and structures; horizontal and vertical alignment and clearances; design speed, sight distance, grades, cross slope, sidewalks, superelevation, etcetera. If the project is on the Interstate system, is it a part of the Federal Highway Administration (FHWA) Rural and Single Interstate Routing System? See [Chapter 21](#) – Exceptions to Design Standards, Article 3. Identify truck designation and design vehicles as well as bicycle classification of the facility, when appropriate.

If relevant, note structure clear width and the lane and shoulder widths across the structure; does the structure clear width match or exceed the approach roadbed width?

Note bridge-rail type; does it meet current standards for structural adequacy? Request this information from the Headquarters Division of Engineering Services-Structure Design technical liaison engineer assigned to your district.

Provide a similar, but brief, description of adjacent highway segments, highlighting existing nonstandard features.

#### C. Safety Improvements:

Describe proposed improvements that would qualify as safety enhancements, such as: median barrier, guardrail upgrade, flattening slopes, adding sidewalks, eliminating roadside obstructions, etcetera.

Briefly discuss if any existing nonstandard features will be brought to standard with the proposed project.

**D. Total Project Cost:**

Include a concise summary of the estimated project cost segregated by the major elements (Roadway, Structure, and Right-of-Way).

**2. FEATURES REQUIRING AN EXCEPTION**

**A. Design Exception Feature #1**

Nonstandard Feature(s):

Describe the proposed nonstandard feature and identify whether it would be created, maintained, improved, or reduced. Reference the attachment(s) that show the location, limits, and nature of the proposed nonstandard feature and clearly label the nonstandard feature on the attachment(s).

Standard for Which Exception Is Requested:

State the specific standard and refer to the applicable topic and/or index reference in the [Highway Design Manual](#). If more than one standard applies to a design feature, such as shoulder width and horizontal clearance, state all that apply.

Reason for Requesting Exception:

Be thorough, but brief. Justification with appropriate backup information must be as complete and compelling as possible. Reasons for which exceptions have been granted in the past include a combination of excessive cost, significant right-of-way, and environmental and/or social economic impacts. Supportive factors have included low collision frequency, local opposition, consistency with adjacent highway segments and applicability to alternative design guidance when provided by the [Highway Design Manual](#) if the specific standard is impractical to meet.

Added Cost to Make Standard:

Summarize, by major elements, the added cost above the proposed project cost that would be required to meet the design standard(s) for which the exception is requested. The estimate does not have to be highly developed, but must be realistic.

Also, when the fact sheet covers multiple nonstandard features, provide separate cost summaries for the “standardization” of individual design features. If upgrading a design feature to standard results in the standardization of additional features, note the additional features that will be automatically upgraded to standard. An example of this would be upgrading shoulders to standard resulting in providing standard horizontal clearance.

**B. Design Exception Feature #2**

For projects with more than one exception, add additional sub-headings B, C, D etcetera, with the same format used in sub-heading A.

**3. TRAFFIC DATA**

Include both annual average daily traffic (AADT) and design (peak period) hourly volumes. Use current year data for pavement rehabilitation, roadway rehabilitation and safety projects. For all others, use design year traffic, usually 20 years after construction is complete as well as current year traffic volumes. For interim projects that are to be superseded by programmed future construction, provide traffic data for both the ultimate programmed construction year and the ultimate project's design year.

**4. COLLISION ANALYSIS**

Traffic safety is of primary importance to both the Headquarters Division of Design (DOD) and FHWA when considering approval or rejection of design exceptions. To strengthen the justification for design exceptions, the fact sheet must include an analysis of collision data to identify prevalent collision types and causes, plus an evaluation of the effect of the requested design exceptions on collision types and frequencies. This analysis should be completed either by the appropriate district traffic branch or in close coordination with the branch.

Summarize an analysis of how the proposed project will help alleviate identified safety problems. At a minimum, how it will not contribute to any increase in collision rates. The collision analysis will include the Traffic Accident Surveillance and Analysis System (TASAS) Table B statistical data regarding both the number and severity of collision as well as actual versus statewide average collision rates for a similar facility and the collision patterns and causes. For design exceptions related to spot locations (such as nonstandard horizontal curve) on existing highways, analyze only the collision data within the vicinity of the proposed nonstandard feature. The analysis should also review the TASAS Table C listing for high collision frequency spot locations, if any are within the proposed project limits.

Provide a summary table of TASAS Table B collision data for latest 3-year period showing actual versus average collision rates; however merely stating actual versus average numbers is insufficient. TASAS data should be supplemented by a review of collision patterns covering the project area in order to enhance the understanding of prevalent collision types and how they relate to existing and proposed highway design features, specifically those that are nonstandard and how they will not contribute to any increase in collisions.

In determining collision causes, keep in mind that although terms like “excessive speed”, “inattention”, “failure to yield right-of-way”, “under the influence”, etcetera, are perfectly valid for the California Highway Patrol (CHP), they have meaning for the highway engineer only as they relate to the underlying highway characteristics. The engineer must instead look for other reasons, such as: tight radius curves with inadequate superelevation, high-volume turning movements without separate turn lanes, a concentration of rear-end/side-swipe collisions in a particular lane, etcetera. In general, the collision concentrations detected in this manner are too small for a TASAS Table C printout, but collectively they are the key to understanding the vehicle-highway interactions that are the basic causes of collisions.

## **5. INCREMENTAL IMPROVEMENTS**

Discuss any practical improvements that are intermediate in scope and cost between the proposed project and an alternative that meets design standards. Discuss why such an incremental improvement is not proposed as part of the project.

## **6. FUTURE CONSTRUCTION**

Describe any planned future projects in the vicinity of the proposed design exception. If a commitment is made to correct the nonstandard design features, it must be concurred by the Headquarters Project Delivery Coordinator and approved by the Deputy District Director for the design function. Describe the follow-up project’s funding source (STIP, SHOPP) and schedule as listed in the appropriate programming document. Identify the ultimate concept from the transportation concept report.

## **7. PROJECT REVIEWS, CONCURRENCE**

Note relevant project reviews by the Headquarters project support engineer, Headquarters Traffic Engineering Liaison, and/or FHWA transportation engineer (if appropriate), etcetera. Provide the date of meeting or discussion, and state the individual’s concurrence with the proposed design exception.

## **8. ENVIRONMENTAL DETERMINATION/DOCUMENT**

Approval of design exceptions for projects on the National Highway System, including the Interstate System, is a federal action that requires compliance with the National Environmental Policy Act (NEPA). Caltrans has developed a “blanket” categorical exclusion for NEPA compliance when approval of design exceptions is the only relevant federal action on the project. See the [\*“blanket” categorical exclusion memorandum\*](#), from the Division of Environmental Analysis, for the “blanket” categorical exclusion signed by Jay Norvell on March 3, 2008.

Federal actions include FHWA approval of fact sheets and changes in access control for Interstate System projects, the use of Federal-aid funding, as well as Caltrans approval of fact sheets for National Highway System projects and Interstate projects where the approval has been delegated from FHWA.

Consult with the district environmental unit to determine the appropriate federal environmental determination/document for the project and if the “blanket” categorical exclusion is applicable. The circumstances for determining applicability of the “blanket” categorical exclusion include the following:

- The project is on the National Highway System.
- There is no project-specific federal environmental determination/document.

Construct an appropriate project attribute statement by choosing and modifying the following:

The project location (is part/is not part) of the National Highway System.

And choose one:

A federal environmental (determination/document) (will be/has been) approved specifically for this project to comply with the *National Environmental Policy Act of 1969* (NEPA).

The project conforms to the conditions of the “blanket” categorical exclusion for approval of design exceptions, signed by Jay Norvell on March 3, 2008.

Compliance with the *National Environmental Policy Act of 1969* (NEPA) is not applicable to this project.

## 9. ATTACHMENTS

All attachments should be black and white (no color copies or color photos) and in standard paper sizes of 8.5” x 11”, 11” x 14”, or 11” x 17” per Caltrans Division of Legal request. Clearly label each attachment page and the nonstandard feature number.

Provide the project location map and/or project vicinity map that was referenced in heading 1A “Project Description.” When the fact sheet covers multiple nonstandard features for exception at various locations, a project strip map may be provided to indicate the general location of each nonstandard feature.

Provide cross sections and/or special details to clearly illustrate the proposed condition for each location that does not meet the mandatory standard for horizontal/vertical clearance and lane/shoulder/bridge clear width. For example, an exception for nonstandard vertical and horizontal alignment features must include a layout with existing and proposed horizontal curve data, existing and proposed profile with vertical alignment data, and existing and proposed superelevation diagram. It may not be necessary for these drawings to be developed on Computer Aided Drafting and Design (CADD) or other electronic drafting media. These details can often be clearly illustrated with hand drawings.

Letters, resolutions, traffic study summaries, etcetera should only be attached if requested by the Headquarters Project Delivery Coordinator, otherwise these documents should be filed in the project binder. While TASAS data and collision rates may be summarized within the “Collision Analysis” heading, TASAS reports, such as Table B and Table C, should never be attached.

Do not attach superfluous materials such as complete project plan sets or engineering reports unless specifically requested by the Headquarters Project Delivery Coordinator.

## **ARTICLE 3      Template**

This article is a template for the fact sheet. When using the template, delete any italicized text within the body of the document. The italicized text provides instructions for template users and does not provide any value to the final document. The template is available at:

<http://www.dot.ca.gov/hq/oppd/pdpm/templates/apdx-bb-template.docx>