

APPENDIX I – Preparation Guidelines for Design Engineering Evaluation Report

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APPENDIX I – Preparation Guidelines for Design Engineering Evaluation Report

ARTICLE 1 Overview

Reference Information

Some of the references found in this appendix have hyperlinks that connect to Caltrans intranet pages which are not displayable to the general public. Until such time that the specific reference becomes available on the internet, the user will have to contact their district liaison, Caltrans project manager, or the appropriate Headquarters division to inquire about the availability of the reference.

Quality Management Assessment Process using Design Engineering Evaluation Report

Based on the complexity of the project, the impacts, need for CTC action, need for FHWA's approval, and the scope of work on the State Highway System, all projects that require an encroachment permit will be processed through one of the two processes, the encroachment permit office process (EPOP) or the quality management assessment process (QMAP). The EPOP will require a permit application review, and the QMAP will require either a design engineering evaluation report (DEER) or a PSR-PDS. A DEER will document both project initiation and project approval eliminating the need for separate processing of a PID.

The DEER process is intended to streamline the processing of projects-funded-by-others by reducing the steps in the project development process. This is not intended to relieve the project sponsor from meeting all other Caltrans policies, standards, and practices. Caltrans may increase the level of documentation and processing for those projects that are deemed complex.

The project sponsor is responsible for the preparation of the DEER and providing all supporting documentation. The Caltrans point of contact will ensure that the appropriate district units, such as design, environmental, right of way, utilities, maintenance, etcetera, review the project as needed. Other district units will not be involved in the DEER unless requested by the Caltrans point of contact. For information about the processing of projects-funded-by-others, see [Chapter 9](#) – Project Initiation.

Approval for Deviation from Design Standards

When a project sponsor proposes nonstandard design features, the design standard decision document is prepared by the sponsor’s registered civil engineer. The Caltrans functional unit responsible for oversight of the DEER will facilitate the coordination with the Headquarters Project Delivery Coordinator and/or district approval authority for review of the draft design standard decision document. See [Chapter 21](#) – Design Standard Decisions and [Appendix BB](#) – Design Standard Decision Documentation for more information.

Quality Management Plan Requirement

Current Caltrans policy mandates all projects that qualify for the QMAP must submit a Quality Management Plan (QMP). A QMP is a document prepared by the implementing agency that describes by whom, what, when and how quality control and quality assurance activities will be performed. Caltrans must approve the QMP for each project component. Work on a project component shall not commence until the corresponding QMP has been approved. For additional information about QMP, see the [Quality Assurance Program Guide for Design Products](#).

ARTICLE 2 Outline

General

The purpose of this outline is to identify the key elements to document in a DEER. All headings presented in the template shall be included in the report.

Topics listed under outline item 7, “Other Considerations as Appropriate” may not apply to some projects, so these should only be discussed if appropriate.

Front Matter

Cover Sheet

The cover sheet provides the project identifiers such as the district, county, route, post mile range, expenditure authorization (EA), project number, month and year of report approval, and project sponsor and their consultant’s name. The project number is the 10 digit number used for reporting labor charges.

The beginning and ending post miles should be rounded to the nearest 0.1 mile that encompasses all proposed construction. The project location should be listed as a spot location to the nearest 0.1 mile if the project is less than 0.2 mile in length. The cover sheet must include a statement signed by the district division chief of right of way, indicating review of the right of way information contained in the report and the right of way data sheet attached to it.

The cover sheet must include endorsement of the project manager.

The District Director or Deputy District Director to whom that authority has been officially delegated approves the recommendations of the report. The signature date on the report becomes the official date of State project approval. Edit the signature block as appropriate.

Registered Professional Stamp

The registered professional stamp or seal and number with signature shall be placed on a separate sheet, which shall be part of the report. Also included on this sheet shall be a statement indicating that the registered professional is attesting to the technical information contained therein and the engineering data upon which recommendations, conclusions, and decisions are based. This seal does not constitute approval of the report. Approval of the report is a management decision and is separate from this technical signature of the person in responsible charge.

Main Body of Report

1. INTRODUCTION

Describe the proposed project and fill out the table with the project limits, current project cost estimates (construction and right of way); type of facility; environmental determination or document; legal description; Plans, Specifications, and Estimate (PS&E) date; Ready to List (RTL) date; Award date; and estimated construction seasons.

2. BACKGROUND

Project History

Discuss the history of the project to-date. Discuss how it got to where it is in the project development process.

Community Interaction

Summarize community interaction and contacts (what was expressed and project sponsor's response). Were meetings held with legislators or local politicians, etcetera? Were any commitments made? Have any issues developed? Is there support or opposition? Has there been contact with any special interest groups, including contacts with minorities, elderly, physically challenged, non-drivers (transit-dependent), pedestrians, bicyclists, and the economically disadvantaged? Discuss their needs and what can be done to accommodate these needs.

Existing Facility

Describe the existing State highway facility within the proposed project limits, as well as contiguous with each end of the project. The level of detail to be given should relate to the proposed project features, existing deficiencies, and/or substandard features; but it should not give a lot of detail unless it is needed to explain other impacts caused by the proposed project.

3. PURPOSE AND NEED

Provide a concise discussion on the purpose and need of the project proposal and alternatives, supplemented by attached maps, charts, tables, letters, etcetera. Project "need" should be stated in a factual and professional manner. Adjectives that promote an unsubstantiated opinion such as "dangerous", "hazardous", or phrases should not be used.

Answer these questions: What is the problem? Does the discussion set the stage to conclude that the project is needed? Be as specific as possible: How much congestion? How many fatalities? How much flooding? How much maintenance effort is needed?

The discussion should make a convincing case that a solution to a problem is needed and that the purpose of the proposed project is to provide a solution that best solves the problem.

4. RIGHT OF WAY

Describe in general the right of way requirements and refer to the right of way data sheet, which should be an attachment to the DEER. Describe any right of way issues that influence the design of the project such as, acquisitions (not by Caltrans), temporary construction easements, utility conflicts, utility relocations, etcetera. Items such as high priority utilities and exceptions to the encroachment and utility policies should be included as they pertain to utilities. Include reviews and mitigation strategies, if applicable.

The following questions should be answered concerning railroads within 1 mile of the project limit: Will construction be within 25 feet of railroad tracks? Is construction or work anticipated within 100 feet of the railroad corridor? Will there be traffic controls that can potentially cause vehicle queuing at the railroad crossing?

5. TRAFFIC, MAINTENANCE AND OPERATIONS IMPACTS

Current and Forecasted Traffic

Give current and forecasted design year values for annual average daily traffic (AADT), peak month average daily traffic (ADT), peak hour and peak hour directional split—including percentage of trucks, if appropriate. Refer to the [Highway Design Manual \(HDM\)](#) Index 103.2 and Index 603.2 for a discussion of design periods. Briefly state the growth assumptions that provided the basis for the forecast.

Collision Analysis

Provide a summary of the collision analysis. The analysis should include, but not be limited to, the primary factors or causes of the collision and the

type of collision that can be addressed with the proposed project. Collision diagrams, collision data and reports, and safety index calculations must not be attached to the DEER.

Maintenance and Operations Impacts

Describe how the project potentially affects the capacity and operating characteristics of the State highway mainline.

6. PROPOSED SCOPE OF WORK

Describe the proposed scope of work in detail. If any nonstandard features are proposed, provide a summary, and refer to the Design Standard Decision Document.

7. STRUCTURE INFORMATION

Describe any structure work proposed in detail. Various types of standard structures are shown in Caltrans Standard Plans. Retaining walls, sound walls, concrete box culverts, and concrete arch culverts are considered structures.

8. OTHER CONSIDERATIONS AS APPROPRIATE

Permits

Discuss any permits, licenses, or approvals that may be of special significance or a problem to obtain. If special procedures or actions are required, make appropriate recommendations.

Cooperative Agreements

A cooperative agreement is not mandatory when a locally administered project qualifies to proceed with the Quality Management Assessment Process (QMAP) using a DEER unless the project requires any types of oversight reimbursements, funds transfers, CTC allocations, or State-Furnished Materials. For more information, see [Chapter 16](#) – Cooperative Agreements and [Chapter 2](#) – Roles and Responsibilities.

Other Agreements

Features of other needed agreements, such as interagency agreements or maintenance agreements should be outlined.

Transportation Management Plan

Describe the transportation management plan requirements for the project.

Describe planned detours, rerouting, temporary closures, and full closures for roadways and ramps. Discuss any impacts to transit routes, high-occupancy vehicle lanes, school bus routes, emergency vehicle access, and park-and-ride lots. Discuss the bicycle and pedestrian traffic need through the construction area. See discussion of this topic in [Chapter 8 – Overview of Project Development](#) and the [Transportation Management Plan Guidelines](#) for more information.

Stage Construction

If multiple construction units or stage construction is proposed, describe them and the reasons for them.

Accommodation of Oversize Loads

A discussion should be included relevant to the policy that State freeways be designed to provide passage for vehicles of unrestricted height while moving in and out of an area; to or from airports, harbors, and testing sites; and to or from ultimate destination for use or assembly. Discuss exceptions to this policy when an existing city or county facility allows for bypass of the State-restricted facility. Refer to [Chapter 8 – Overview of Project Development](#).

If it is impractical to follow this policy due to engineering controls, excessive costs, or community values considerations, discuss contacts with the impacted industries and describe the mutually satisfactory solution agreed to. A full discussion of the solution must be presented.

Graffiti Control

Include this section if the project will be in an identified graffiti-prone area. The urban areas of the following counties are considered graffiti-prone: San Diego, Orange, Los Angeles, San Bernardino, Riverside, Ventura, Santa Barbara, Fresno, Santa Cruz, Santa Clara, Alameda, San Mateo, San Francisco, Contra Costa, Marin, Napa, Sonoma, Solano, San Joaquin, and Sacramento. Discuss any special attention given to the design in these

areas and describe design features proposed, such as details to prevent vandals from accessing bridges, signs, and walls.

Complete Streets

Discuss any complete streets improvements. Additional information about complete streets is located at the Headquarters Division of Transportation Planning website at: [Complete Streets Program](#) website.

Climate Change Considerations

Discuss any climate change considerations. Additional information about climate change considerations including greenhouse gas emissions, is located at the Headquarters Division of Transportation Planning website at: [PID Guidance](#) website.

Broadband and Advance Technologies

Discuss any broadband or advance technology issues or improvements. For information on broadband policy, see *Deputy Directive DD-116-R1 Wired Broadband Within State Highway Rights-Of-Way*.

Additional information about broadband issues is located at the [Wired Broadband Facilities on State Highway Right of Way](#) website.

Other Appropriate Topics

Discuss any other appropriate topic that has a bearing on the approval of the project.

9. PROJECT PERSONNEL

List the project personnel info such as name, title, email address and phone number.

10. ATTACHMENTS

All attachments shall be clearly labeled and referenced in the text to assist the reader in following the report's content. Sheets wider than 8.5 inches are to be folded to open to the right, with identification shown at the right edge. List each attachment with the corresponding number of pages in parentheses.

Mandatory Requirements:

- A final environmental document or a signed Categorical Exemption/Categorical Exclusion Determination Form; see [Standard Environmental Reference](#) for guidelines
- Location map
- Appropriate project detail maps or layout sheets to show existing conditions and proposed improvements
- Typical sections
- Right of way data sheet
- Storm water data report

- Initial Site Assessment

Additional Attachments: The following additional attachments should be included, when appropriate:

- Geotechnical report (including log of test borings)
- Photographs
- Traffic Management Plan
- Traffic Impact Report
- Intersection Control
- Cost estimate

ARTICLE 3 Template

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.

[Appendix I Template](#)

