

# Preparation Guidelines for Design Engineering Evaluation Report (DEER)

## 1. PROJECT DESCRIPTION

*Items such as the proposed engineering features and nonstandard design features should be discussed briefly, as details should be included in the appropriate attachments.*

*Additional project items to expand on include the following:*

- a. Agreements (Cooperative, Interagency, Maintenance or Freeway)*
- b. Permits*
- c. Complete Street Elements*

## 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.*

*Answer these questions: Was the project previously approved and is it now being rescope? How much project development effort has already been expended? Has any right-of-way been acquired? Have any issues been identified? As appropriate, give approval dates of the PSR, etcetera. How does the current proposal differ, if any, from the approved PSR?*

*Existing Facility - Describe the existing facility within the proposed project limits, in addition explain how it transitions or conforms to the existing facility prior to and after the begin and end post mile limits, respectively. Note right-of-way (r/w) widths, access control, capacity adequacy, geometrics, structural section condition, drainage, and any other appropriate information. The level of detail to be given should relate to the proposed project features and existing deficiencies and substandard features and should not give a lot of detail unless it is needed to explain the proposed project.*

## 3. PURPOSE AND NEED

*Provide a concise discussion on the purpose-and-need of the project proposal, 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 such as "this curve caused six accidents" 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?*

*This section should also discuss the compatibility of the proposed project with state, local, and regional plans.*

#### **4. RIGHT-OF-WAY IMPACTS**

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 RRs within 1 mile of the project limits:

- a. Will construction be within 25 ft of RR tracks?
- b. Is construction or work anticipated within 100 ft of the RR corridor?
- c. Are there any permanent or temporary alterations to the RR (crossing, signals, or tracks)?
- d. Will there be traffic controls that can potentially cause vehicle queuing at the RR crossing?

#### **5. TRAFFIC AND MAINTENANCE AND OPERATIONS IMPACTS**

Include a discussion of the capacity of mainline to absorb additional traffic, as applicable.

Describe project elements such as the addition of ramp metering/toll lanes. The following questions should be answered:

Ramps -

- a. Has Traffic Operations concurred with the proposed on-ramp storage lengths?
- b. Will the High Occupancy Lanes also be metered? If no, expand on why.
- c. Are maintenance vehicle pullouts being constructed near the electrical ramp metering elements/fixed objects?
- d. Are all fixed objects outside of the clear recovery zone?

Discuss whether an Intersection Control Evaluation was conducted. Were the results or recommendations used to select the proposed project? If not, explain why.

Explain if a Highway Safety Manual (HSM) analysis was required and include a summary of how the results were applied.

#### **6. STRUCTURES INFORMATION**

Explain in detail the type of structure involved (i.e. retaining wall, decorative railing, aesthetic treatment, methacrylate overlay). The following questions should be answered:

- a. Confirm the structural modifications do not have any effect on the live load carrying capacity.
- b. Is the design standard or non-standard?
- c. Are there existing utilities or are utilities being proposed within the structure?
- d. Has Structures Design or Structure Maintenance and Investigations reviewed and concurred with the proposed design?