Division of Transportation Planning
Interim Guidelines for State Highway Operation and Protection Program Project Initiation Report

Table of Contents

Table of Figures

Interim Guidelines for State Highway Operation and Protection Program Project Initiation Report

OVERVIEW

Use of Report

The project initiation report (PIR) is used for documenting project planning, scoping, and programming efforts for State Highway Operation and Protection Program (SHOPP) projects.

Exempt Projects

This document is to be used for all SHOPP projects except for; the 20.XX.201.130 – Major Damage Program (Emergency Opening) that is initiated with a damage assessment form and project approvals – which have to follow the requirements found in Project Development Procedures Manual (PDPM) Appendix K (Preparation Guidelines for Project Report). Minor A and Minor B projects do not need a project initiation report.

Preparing Report

This guidance is for completing the project initiation report (PIR) and not for designing the project. While there is obvious overlap between the information needed in the PIR and project development requirements, the purpose of the report is to provide enough information for management to concur with programming subsequent phases of the project.

The report contains sections that cover various topics which support project initiation. The primary guidance establishes the framework for providing information in the report. In addition to the PIR guidance, there is supplemental guidance for each SHOPP asset.

The PIR guidance contains a comprehensive list of concerns that all SHOPP programs have in common. It should be used as a tool with all the pertinent information for all SHOPP projects. The specific requirements of each program have been shown in the Supplemental Guidance. They must be reviewed, and their requirements identified in the project's PIR.

The Supplemental Guidance should be used in conjunction with the primary guidance to meet the specific needs of the assets within the project. Within the SHOPP program supplemental guidance, information regarding report level determination, estimate contingency, required reviews, and required attachments may be found.

For projects with multiple assets, one asset will be the anchor asset and the other ones will be the satellite assets. Each asset will have a set of program requirements that must be identified and their impacts, either incorporated in the cost and schedule, or discussed in the Risk Register. For the multi-asset projects, if there is a conflict between supplemental program guidance, the PDT should work with the Program Managers to resolve the conflict.

The initiation report should be developed using PIR's Guidance, the SHOPP program-specific Supplemental Guidance and the Template. They can be found at:
SHOPP PIR Guidance

The PIR Template must be used for all SHOPP projects. All the sections of Guidance are reflected in the body of the Template. Following the Template for the conveyance of all the findings, reduces oversight of issues and permits. And it provides the users of the report the consistency needed to effortlessly obtain information. It must be followed.

For more information on the needs of the SHOPP programs, consult with the district program advisor and the Headquarter SHOPP program managers.

Updating Report

When, within the initiation phase (K-Phase), a report needs to be updated due to programming delay or changed project conditions, a supplemental report must be prepared. The supplemental report must have a new cover sheet and only needs to contain the updated information with the previously approved report included as an attachment.

Use of Template

The individual preparing the report should begin with the report template provided and copy and paste the appropriate information from the SHOPP program supplemental guidance. If a section is not applicable to a specific project, fill in section as "Not applicable" and provide a brief description why the section does not apply to the project. Modify the format to include information that is pertinent to the scope, cost and schedule of the project. See template section on page 19.

Level Determination

The procedure for determining the report documentation level is intended to maintain simplicity in the documentation process while properly defining the scope, cost and schedule of the project.

The goal is for each project to begin at the lowest level (Level 1) of detail needed and only provide additional detail when warranted by the project's unique characteristics. Initial level determination, to some extent, can be correlated to the Project Development Category presented in PDPM Chapter 8 –

Overview of Project Development. The broad definitions for each report documentation level are as follows:

- Level 1 – Represents projects that require only a minimal amount of detail necessary to develop the scope, cost, and schedule. These types of projects have a single Build Alternative and have very few issues and risks.
- Level 2 – Represents projects that require increased amounts of detail necessary to develop the scope, cost, and schedule. These types of projects may have multiple build alternatives and have a moderate number of issues and risks which require investigation and analysis.
- Level 3 – Represents projects that require the highest level of detail to develop the scope, cost, and schedule. These types of projects may have multiple build alternatives and have a high number of issues and risks which require extensive investigation and analysis.

The documentation level can be further refined by the use of Figure 1 on page 5. It identifies the environmental scoping tool as a means of providing additional classification between levels. The documentation level criteria is further refined for each individual SHOPP asset. The documentation level may also vary based on the assets included in a project. The individual writing the report is expected to refer to the appropriate SHOPP asset supplemental guidance for specific level requirements and final level determination.

Figure 1: Initial Report Documentation Level Determination

PIR Level	Level 1	Level 2	Level 3
PDPM Category (see Note 1)	5	4B & 5	1, 2, 3 & 4A
Preliminary Environmental Assessment	Mini-PEAR	Mini-PEAR	PEAR
Alternative Type (see Note 6)	A & B	A, B & C	A, B & C
Anticipated Environmental document (see 4,5)	CEQA:CE NEPA:CE	CEQA: CE/ND NEPA: CE/EA	DED & FED

Notes:

1. Chapter 8 describes the attributes and exceptions associated with each Project DevelopmentCategory.
2. Chapter 8 describes project attributes that require formal consideration of alternatives. If formal consideration of alternatives is required, the Build alternatives must include the formal alternatives listed in Chapter 10.
3. The project initiation report must include the Programmable Project Alternative and the Minimum Project Alternative. These two alternatives may be same alternative or separate alternatives.
4. PIR Level 1 projects correspond to PDPM Category 5 which require a CE under CEQA but Level 2 projects could require a higher level CEQA document.
5. All the reference Environmental Documents are Anticipated. NEPA can only be issued by the Environmental Division at the end of PA&ED phase. CEQA can be issued at the initiation phase if and when Environmental division deems appropriate.
6. Alternative Types:
   A Programmable Project Alternative and Minimum Project Alternative
   B No Build Alternative
   C Additional Build Alternatives (if applicable)

Legend:

Mini-PEAR = Mini-Preliminary Environmental Assessment Report
PEAR = Preliminary Environmental Assessment Report

DED = Draft Environmental Document
CEQA = California Environmental Quality Act
ND = Negative Declaration
CE = Categorical Exemption or Statutory Exemption
NEPA = National Environmental Policy Act
CE = Categorical Exclusion
EA = Environmental Assessment
FED = Final Environmental Document
PDPM = Project Development Procedure Manual

Report Layout

Cover Sheet

In the header of the cover sheet provide the project identifiers; the district, county, route, post mile range, the expenditure authorization (EA), project number, planning program number (PPNO), SHOPP Tool ID, Activity Category – Anchor Asset Program Code, and the date (month and year) of report approval.

The beginning and ending post miles shall be in the format of XXX.XXX with the appropriate prefix and suffix of the proposed project area. Refer to Traffic Accident Surveillance and Analysis System (TASAS) The project limits in the initiation report should be the limits of the Programmable Project Alternative.

The project number is the 10 digit EFIS ID number provided by the Accounting Division.

The SHOPP Tool ID and Activity Category fields are located in the project SHOPP tool record. Information on the program codes and names can be found in the Activity Detail Tab of the SHOPP Asset Management Tool. The program code is typically presented in the format of "20.XX.201.010" where "XX" is entered in the element location to represent project's capital outlay and support, when they are funded from the same funding program.

Add "Supplemental" to the cover sheet as needed.

See the *Plans Preparation Manual*, Section 2-2.2 for guidance in developing the project legal description. The title sheet project description must be the same as the project legal description. The cover sheet must be signed by the project manager, Planning Deputy District Director, and District Director, or the delegated authority. The Manual can be found at:
https://dot.ca.gov/programs/design/manual-plans-preparation-manual-ppm

Vicinity Map

The vicinity map is a district, county, or city map showing all State highways and major local roads when pertinent. It should be placed on a separate page and should include the project limits, major topographic limits listed in the report, and a north arrow.

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 technical signature of the person in charge.

Project Development Team (PDT)

All PDT members must be identified and their contact information provided. PDT members may be partially present in the meetings or fully participate though out the development. Project Engineer and Project Manager should determine the participation level of the PDT members.

Table of Contents

On a separate sheet, place a table of contents that includes all the elements of the report. The table of contents format must be identical to what is provided in the template.

Reference Material

The purpose of this outline is to identify the key elements to document in the report. All headings presented in the template shall be included in the report. For discussion of individual topics, see the PDPM Chapter 8 – Overview of Project Development, PDPM Chapter 9 – Project Initiation, PDPM Chapter 10 – Formal Project Studies, and PDPM Chapter 12 – Project Approvals and Changes to Approved Projects, for essential procedures and PDPM Appendix L – Preparation Guidelines for Project Study Report, as well as PDPM Appendix K – Preparation Guidelines for Project Report.

Some of the references found in this chapter 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 users in need of obtaining references should contact their district liaison, Caltrans project manager, or the appropriate Headquarters division to inquire about the availability of the reference.

Senate Bill (SB 1) Sustainability Provisions

SB 1 requires that the Department address four Sustainability Provisions on projects to the extent feasible and cost-effective (SHC § 2030 (c)-(f)). The following two provisions shall be considered on all Department projects, regardless of funding source:

- Use advanced technologies and material recycling techniques that reduce greenhouse gas emissions through material choice and construction method
- Use advanced technologies and communications systems (for example, infrastructure-to-vehicle communications for connected and autonomous vehicle systems) and support for ZEV charging infrastructure

The following provisions apply to all projects that receive Road Maintenance & Rehabilitation Account funds (including SHOPP, Local Street & Road, Local Partnership, and Active Transportation projects):

- Including features to better adapt, assets to withstand climate change impacts, such as fires, floods, and sea level rise
- Incorporate complete streets elements such as pedestrian and bicycle facilities

SHOPP PIRs shall reflect all four Sustainability Provisions. Instructions on how to incorporate Sustainability Provisions into PIRs are included within appropriate sections of this guidance. The SHOPP PIR template includes fields to indicate that the Sustainability Provisions were incorporated. If any provisions were not addressed on a project, a rationale for excessive cost or in feasibility must be provided.

SHOPP Long Lead Projects

For long lead projects refer to SHOPP Long Lead Procedures. It can be found at the following Transportation Programming, Office of SHOPP Management website:

https://shopp.onramp.dot.ca.gov/downloads/shopp/files/Revised_SHOPP_Long-Lead-Procedures_11-2018_v2-Final.pdf

The SHOPP Long Lead Request Form is located at:

http://cefs2.dot.ca.gov/v2Forms/servlet/FormRenderer?frmid=PRG0008

Early Design Considerations

Based on FHWA guidance, the Project Delivery Directive (PD) 10 lists the permissible design activities that can be conducted during the NEPA process: Preliminary Design. Preliminary Design, also termed as Early Design, consists of design and engineering activities that can be performed prior to the Environmental Document being finalized if these activities are deemed to not materially affect the objective consideration of alternatives in the NEPA process or have adverse environmental impacts.

Early Design (Preliminary Design) activities can include tasks that produce draft design products: reports, plans, specifications, quantities, and estimates. These tasks can be performed prior to the Environmental Document being finalized (see PD-10 Attachment A). Early Design activities listed the PD-10 are generally encouraged for all projects to promote early coordination and involvement with other functional units, which in turn can help to identify and address risks earlier in the project development process, and avoid potential scope change, cost increase, and schedule delay in later stages of the projects.

Early Design tasks that produce draft design deliverables should be implemented for projects that meet the following criteria:

1. Single-Build Alternative only, and
2. CE/CE, and
3. No R/W Acquisition (No Utility Relocation, No Railroad Study/Agreement/Involvement)

A PSRM work plan template for Early Design is now available for developing the workplan, support estimate, and delivery schedule for projects that include producing draft design deliverables in Early Design, refer to Appendix (D)

MAIN BODY OF REPORT

1. Introduction, Work Description and Summary Table

Describe the proposed project and fill out the table with the project limits, number of alternatives, programmable project alternative, current (includes determined monetary value associated with risks) and escalated cost estimates for Project Approval and Environmental Document (PA&ED) support, Plans, Specifications, and Estimates (PS&E) support, construction, and right-of-way, activity category, funding year, type of facility, number of structures, anchor asset SHOPP project output, anticipated environmental determination or document, legal description, project development category, and PIR level.

2. Purpose and Need

Provide the purpose and need statements for the project. A project's "Need" is defined as the identified transportation deficiencies or problems, and its "Purpose" is the set of objectives that will be met to address the transportation deficiencies. Consideration to an overarching purpose and need statement to facilitate a multi-objective approach should be given to align with asset management goals. The requirement to meet state law mandates, such as SB 1, may be part of the project objectives. A reasonable solution or range of solutions is developed and evaluated based on these objectives. Additional information and guidance can be found at:

https://dot.ca.gov/programs/environmental-analysis/environmental-management/purpose-need

http://www.dot.ca.gov/assetmgmt/index.html

http://www.dot.ca.gov/assetmgmt/multi-objective.html

https://dot.ca.gov/programs/environmental-analysis

Additional guidance may be obtained from the SHOPP supplemental guidance for the specific SHOPP program.

3. Recommendation

Recommend that the report be approved, and the project programmed and include the documentation level. Sample text is provided below:

It is recommended that this report be approved, and the project programmed using the estimate and schedule for the Programmable Project Alternative. This report was prepared to documentation Level (#).

4. Risk Summary

Describe the high impact risks and the risk responses of those identified threats and opportunities. If more than one alternative is being considered, each alternative must have its own Risk Register (Refer to PIR Risk Register attachment). This section should include the risk summary for each alternative.

For additional detail about risk management, see the following web references:
Internal risk management website: https://projmgmt.onramp.dot.ca.gov/statewide-project-management-improvement-spmi/risk-management

External risk management website: https://dot.ca.gov/programs/project-management

5. Background

Project background should include the project history.

The project history discussion should include: if the project was previously programmed or approved and is now being re-scoped (including previous programming and approval dates); how much project development effort has already been expended; right-of-way acquired; pertinent or notable issues or developments that will affect the project scope, cost, and schedule.

6. Asset Management

Discuss the anchor, supplementary or other asset classes performance objectives identified by the HQ SHOPP managers and entered in the SHOPP asset management tool. Describe how the project achieves the performance objective. Changes (increases/deletions) from the initial identified performance objectives as indicated in the print out from the SHOPP asset management tool must be part of the report's attachments.

Including the following:

Primary Asset Classes

- Performance Measure: Pavement(120,121,122,125)/ Bridges(110,111,113,119, 322,112)/Culverts(151)/TMS Elements(315)

	Unit	Good	Fair	Poor	Quantity
Existing Condition					
Post Condition					

Supplementary Asset Classes:

- Performance Measure: Drainage Pump Plants(151)/ Highway Lighting(170)/Office Buildings(353)/Overhead Signs(170)/Roadside Rest Facilities(250)/ Sidewalks and Park and Ride ADA Infrastructure(361,378)/Transportation Related Facilities(351,352,354)/Weigh in Motion Scales(321)

	Unit	Good	Fair	Poor	Quantity
Existing Condition					
Post Condition					

Other Assets

- Performance Measure: Major Damage Restoration(130)/Permanent Restoration(131)/Safety Improvements(010)/Collision Severity Reduction(015)/Roadside Safety Improvements(235)/Relinquishments(160)/Hazardous Waste Mitigation(330)/Storm Water Mitigation(330)/Roadway Protective Betterments(150)/Non-Capacity Increasing Operational Improvements(310)/Highway Planting Restoration(210)/Roadside Enhancement(240)/SHOPP Miscellaneous(999)

Unit	Quantity

Attachment of the Performance Tab from the SHOPP Asset Management Tool for the completed PIR is also required.

Project performance objectives must be consistent with the Transportation Asset Management Plan, Ten-Year SHOPP Plan, Ten-Year Project Book, and Five-Year Maintenance Plan.

7. Corridor and System Coordination

This section should address the correlation of the proposed Purpose-and-Need with statewide, regional, and local planning efforts described in the following:

- Complete streets for multimodal transportation
- District System Management Plan (DSMP)/Project List (DSMP/PL)
- Transportation Concept Reports/Route Concept Reports (TCR/RCR)
- Corridor System Management Plan (CSMP)
- Regional Transportation Plans (RTP)
- Congestion Management Program (CMP)

- State Implementation Plan (SIP)
- Bicycle and pedestrian master plans
- Short- and Long-Range Transit Plans
- Local Measure Programs
- General Plan and Circulation Elements

Summarize and discuss the key elements of the Transportation Planning Scoping Information Sheet, located at: https://transplanning.onramp.dot.ca.gov/project-nomination-process#.

Include, if applicable, complete streets and context-sensitive-solution features. Identify and address other State highway regional, and local goals.

Planned projects, within project vicinity, should be identified and their relevance to the region and corridor plans discussed. Describe how this project, if relevant, fits into the overall concept for the route and its ultimate plan.

8. Engagement

This section presents engagement activities and documentation during the K-phase. The K-phase is a valuable opportunity to involve tribes, stakeholders, and the public in identifying the project's purpose and need and shape the initial project scope, cost, and schedule. Identifying engagement goals, objectives, values, risks, and concerns early enables the Project Development Teams (PDTs) to proactively address the input received.

Determining a level of engagement and specific approach is contextual and depends on factors including previous engagement (i.e., transportation planning), project type (i.e., complete streets), or project location (i.e., highway as main street). A project engagement strategy, including methods and tools, is determined on a project-by-project basis. Engagement must be accessible to all groups and accommodate varying levels of technical understanding. This supports both trust in the Caltrans engagement process and clear justification of future project scope decisions.

Scope may develop significantly beyond a PID, and it is important to exercise caution when making scope commitments at this stage. The PDT must be transparent to the fact that projects are iterative, and changes may occur throughout project development. While some design decisions occur at K-phase, other decisions may be deferred to later in project development until further engineering analysis can be completed. Therefore, it is also important to consider implications to engagement after PID completion, including how PDTs will inform the stakeholders on any future scope decisions in this discussion.

Developing a Public Engagement Plan (PEP) is a tool to scale your engagement efforts. The PEP should consider engagement that took place during planning activities. Engagement during planning will have identified and prioritized local, regional, and statewide transportation objectives. Previous

engagement data will help provide a baseline for future engagement, ensure that stakeholders are kept involved through the project lifecycle, and can be a good place for re-starting community conversations. When a Public Engagement Plan (PEP) is developed, it should be stored in the project development record. Additional tools like the Caltrans Engagement Portal are leveraged to record engagement data from planning to project development.

Note: SB 960, Complete Streets & Transit Priority Facilities, requires all projects with complete streets facilities to consult with, and document consultation with, public agencies and representatives from local bicycle, pedestrian, and transit advisory committees, community-based organizations, or other local stakeholders impacted by the project. For project with complete streets facilities in an underserved community, the law requires specific outreach targeted to the most underserved areas. SHOPP projects with CS facilities are required to develop a Public Engagement Plan (PEP) and a Caltrans Engagement Portal (Portal) page. For more information about the SB 960 Engagement Guidance, check the engagement guidance section of the PID Guidance Webpage (part 5).

For detailed guidance on planning, conducting, and documenting engagement (guidance on engagement methods and tools, level and scale of engagement, roles and responsibilities, engagement resources, and PEP development), consult Caltrans engagement tools and guidance documents such as Equitable Engagement Toolbox, Public Engagement Plan Template, Guide, and Samples, and Caltrans Engagement Guidance.

This section does not include mandated agency coordination, the environmental process, or project permitting. These topics should be covered under the Environmental Compliance or External Agency Coordination sections respectively. For additional information and engagement support, contact the Office of Advancing Community Engagement (ACE). Contact: ACE@dot.ca.gov.

9. Existing Facility Condition

This section is used to describe the existing facility within the proposed project limits. Information must reflect applicable SHOPP assets within the project.

- Corridor Information and Condition plus Topical Attributes

  - Earth retaining systems
  - Fences
  - Guardrail
  - Hydraulic facilities
  - Landscape
  - Landscape irrigation facilities
  - Lights
  - Noise barriers
  - Railroads
  - Right-of-way
  - Signs
  - Crash Data – PID Guidance - Safety
    - *Most recent 5-year crash rates, actual and statewide averages*

    - *Most recent 5-year crash frequency by injury severity*
- Traffic management systems
- Traffic signals
- Traffic volumes
- Utilities
- Others

1. Roadway Geometric Information and Condition
2. Alignment
3. Driveways
4. Intersections
5. Median
6. Others conflict Points
7. Pavement cross slope
8. Posted and Design Speed
9. Profile
10. Shoulders
11. Sight Distance
12. Super Elevation
13. Traveled way
14. Others
15. Structure Geometric Information

    - Bridge rail
    - Bridge approach rail
    - Bridge approach slab
    - Vertical clearance
    - Width between curbs
    - Others

10. Alternatives

The following alternatives should be investigated;

- Minimum project alternative,
- Stageable alternatives,
- No Build alternative,
- Programmable Project Alternative.

PDPM Chapter 9 describes alternatives more comprehensively.
PDPM Chapter 8 describes project attributes that require formal consideration.
PDPM Chapter 10 lists alternatives as;

- "No Action" alternative, also known as "No Build,"
- Transportation System Management (TSM) alternative, including high-occupancy vehicle (HOV) lanes in urbanized areas,
- Mass transit in larger urbanized areas,
- Improvement of the existing system, which may include both State and localfacilities,
- The full range of potentially reasonable "build" alternatives.

In consideration of the preceding information, the required alternatives to include in the project initiation report are:

- Build Alternatives,
  - Programmable Project Alternative,
  - Minimum Project Alternative,
- No Build Alternative.

The project initiation report must include the Programmable Project Alternative. For most SHOPP projects, the number of build alternatives will likely be few.

This section is used to document pertinent details of the competing build alternatives studied in the K-phase. Within this section the differences between build alternatives should be specified for each relevant topic. Sections 9 through 16 provide additional detail for the Programmable Project Alternative.

In addition to the Build Alternatives discussion, describe the consequences of not selecting one of the build alternatives.

Associated with each location, there might be multiple alternatives. Each alternative will have a related capital & support cost estimate for each of the project delivery components as identified in the Section 18 Estimate, Funding and Programming Table.

The relevant topics for the alternative discussion should be obtained from the supplemental guidance for each SHOPP program.

For the programmable alternative, select one of the following options:

a) The impact of this issue has been mitigated in the project cost, schedule and program's requirement.

b) The impact of this issue was not incorporated in the project's cost, schedule and the program's requirement. It has been identified as a known risk in the Risk Register.

c) This issue does not have a known impact on the project's cost, schedule and program's requirements.

Discuss program-specific topics for the Build Alternatives. Only address the topics that have a PIR level identified in the table located in the program specific Supplemental Guidance for each asset included in the project. If blank, the topic does not apply and does not need to be addressed. For information regarding PIR Levels 1-3, refer to page four of the Preparation Guidelines for SHOPP PIR located at: https://dot.ca.gov/programs/transportation-planning/project-initiation-documents/project-initiation-report-pir-guidance

The list of topics includes;

- California Highway Patrol (CHP) enforcement activities
- Earth retaining systems
- Erosion control
- Highway planting and irrigation
- High-occupancy vehicle lanes
- Interim features
- Noise barriers
- Operational improvement features
- Proposed engineering features
- Ramp metering
- Reversible Lanes: The following statement should be included in every report. *This project (does/does not) qualify as a capacity increasing or a major street or highway realignment project and reversible lanes (have been/ not been) considered. Provide justification for the adopted decision. Refer to:* https://transplanning.onramp.dot.ca.gov/downloads/transplanning/files/ppplan/PIR%20Guidance/Reversible%20Lanes%20Guidance%20(Interim).pdf
- Roadside design and management
- Traffic analysis
- Design standards and deviations from design standards (Highway Design Manual, Tables82.1A and 82.1B) and *Chapter 21 of PDPM-Design Standard Decisions.*

For the most updated guidance follow the instructions located at Chapter 21

- *State that the proposed project will follow all design standards or identify the existing nonstandard features that will be perpetuated and the proposed nonstandard designfeatures.*
- *Identify the edition of the Highway Design Manual and other standards used to identify the nonstandard features.*
- *Include the date that the Design Standard Decision Document was approved or;*

  Example language for concurrence to delay the preparation of the Design Standard Decision Document:

  > *"Preparation and approval of the Design Standard Decision Document, will be deferred until the PA&ED phase when more accurate topographic, utility, environmental, and right of way information is known. The decision to defer is concurred by the approval authority, {insert name of delegated authority}, District Deputy of Design and/or {insert name of delegated authority}, Headquarters Project Delivery Coordinator on {insert month, day, & year}."*

- *Provide a Design Standards Risk Assessment (see table below). Determine a risk rating based on available information and project details. Describe additional studies or investigationsnecessary to secure approval for incorporating a nonstandard feature. Identify who the approval authority or authorities are and the date of their concurrence for postponing the approval.*

Design Standards Risk Assessment Matrix			
Alternative	Standard (*HDM index, DIB, TOPD, etc.*)	Nonstandard feature and its risk of not being approved (low, medium, high)	Justification for the approval risk rating and additional data/studies needed for approval
1	302.1 (shoulder width)	Existing 2-foot left shoulder low	Propose that the 2-foot left shoulder remain on the ramp as project work is isolated to the right side of the ramp. The scope of work has been discussed with the PD Coordinator and they have provided preliminary concurrence. Verification of work area to be confirmed at PAED.

- Other topics as needed.

11. Complete Streets

Caltrans' policy on Complete Streets is to view all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California. A Complete Street is a facility that is planned, designed, constructed, operated, and maintained with all users in mind, including bicyclists, pedestrians, transit and rail riders, and motorists appropriate to the function and context of the facility. Developing transportation facilities with users of all ages and abilities in mind is the Complete Streets Design Approach.

All SHOPP projects should be developed using the Complete Streets Design Approach to incorporate appropriate facilities for travelers of all ages and abilities.

Complete Streets facilities may include, but are not limited to, any of the following:

- Bicycle facilities
- Park-and-ride facilities
- Pedestrian facilities
- Transit facilities and facilities to access transit
- Facilities to access passenger rail
- Facilities to connect travel modes

All these facilities and proposed new changes should be shown on Caltrans or local agency plans.

For general information on Complete Streets policy and planning guidance, refer to the general Caltrans Complete Streets Program website. https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/smart-mobility-active-transportation/complete-streets

For more information on the various types of the Complete Streets elements, and guidance on how to quantify them within the SHOPP tool, please refer to the Complete Streets Elements Toolbox. Contact PIDHQ@dot.ca.gov

For more information on utilizing Design Flexibility to accommodate the Complete Streets features within projects, visit the Design Flexibility website. https://dot.ca.gov/programs/design/design-flexibility

If complete streets features are not applicable a rationale must be provided.

12. Climate Change Considerations

PIR Climate Change Requirements – GHG Emissions Analysis Guidance

Pursuant to Section 15064.4(a) of the CEQA Guidelines, Caltrans, as a CEQA lead agency, makes a good faith effort to describe, calculate, and/or estimate the amount of GHG emissions that may result from a proposed project. EO B-30-15 requires all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets as outlined in AB/SB32. To achieve these requirements, set forth in statute, Caltrans must consider the potential for GHG emissions early in the planning process to ensure that potential emissions and measures to reduce those emissions are considered in all investment decisions and project phases.

To comply with the applicable State GHG reduction targets, statutes, and executive orders, the PIR shall include a summary of the following:

(Note- for projects that may potentially induce VMT, please consult with the Caltrans SB743 Implementation office for further instruction on consideration of induced demand):

1- The FHWA Infrastructure Carbon Estimator tool (ICE) shall be used to generate a planning level GHG emissions estimate for the proposed project.

    i. PID should use the output summary of the ICE tool to summarize the total estimate emissions in carbon dioxide equivalent, and the anticipated primary sources (material, operation and construction) sources of emissions.

2- A list of potential GHG reduction measures to be included for consideration / incorporation in the proposed project scope.

GHG Analysis Guidance for SHOPP PIDs describes the process in detail for additional reference.

A list of potential suggested measures for inclusion in the project scope can be found in the DEA GHG Reduction Measures Toolbox, Chapter 4 of Caltrans Greenhouse Gas Emission and Mitigation Report, and Activity I03 through I12 and I115 in the Asset Management tool Activity Detail List.

PIR Climate Change Requirements – Climate Adaptation Guidance

The State Multimodal Transportation System and related transportation infrastructure throughout California are at increasing risk of impacts from climate change-related extreme weather events. Climate stressors include changes in temperature, changes in precipitation, wildfire, sea level rise, storm surge, and cliff retreat, as well as other secondary impacts such as landslides. To respond to both Executive Orders and legislation (e.g., EO B-30-15, SB1, Assembly Bill 2800, and other policies), Caltrans must account for climate change in all project planning and investment decisions. The Climate Action Plan for Transportation Infrastructure (CAPTI) similarly calls out in its guiding principles that assessing physical climate risk should be a standard practice for transportation infrastructure projects to enable informed decision-making.

A screening was developed to ensure climate risks are assessed for all projects. This screening is located on the title page of the Climate Change Risk & Adaptation Report. The intent of the climate change screening is to determine whether an in-depth climate change analysis is needed. If the screening demonstrates that there are climate risk(s) at the proposed project location, the Climate Change Risk and Adaptation Report (Report) is required to be completed in close partnership with climate change subject matter expert(s) (SME) in the district. The PID preparer should then summarize findings from the Report in the PIR to accurately and completely scope for climate change considerations. If the screening determines no climate risk, attach screening with those findings to the template.

The screening requires 3 questions to be completed, any of which would trigger an in-depth climate change analysis. If the project

1) falls within the external coast, San Francisco Bay, or legal delta,
2) location has been previously identified at risk in the Caltrans Vulnerability Assessments and Adaptation Priority Reports, and/or
3) location has a Transportation Planning Scoping Information Sheet (TPSIS) or a Corridor Plan or other system plan identifying a climate risk, further analysis is needed through the completion of the Report. This analysis can be supported by District climate change SME(s).

If an in-depth analysis is conducted, summarize the findings in the PID by describing the likelihood, timing, and consequences associated with projected changes in climate within the project area. Discuss how the design alternatives and materials used incorporate appropriate elements in projects to ensure that the project can withstand, avoid, and/or adapt to projected climate change impacts appropriately. This section need not be extensive but should identify potential issues that will affect the cost, schedule, and scope of the project.

Example approach for findings:

1. Climate risk identified and adaptation alternatives summarized: Climate risks identified using ___ data sources indicate the project area is at risk for [sea level rise, cliff retreat, extreme precipitation, drought, extreme heat, wildfire, and/or landslides] by ___ [fill in year impact expected]. Assets at risk in project area include [e.g., bridges, roadway, culverts, or identify other]. Adaptation options for the project to consider in design include.

2. Climate risks identified, but adaptation alternatives not included: Climate risks identified using ___ data sources indicate the project area is at risk for [sea level rise, cliff retreat, extreme precipitation, drought, extreme heat, wildfire, and/or landslides] by ___ [*fill in year impact expected*].
   A) Because the impacts are expected after the design life of assets in the project, adaptation alternatives have not been proposed.
   B) Because the impacts are expected to be minor and not impact safety or operation of the project, adaptation alternatives have not been proposed.

3. No climate risks identified: No climate risks were identified for the project area during the design life of assets in the project, using _____ data sources.

Each District has climate change planners (SMEs) to provide assistance to PID preparers to complete the climate change section of the PIR. If climate risks are identified for the project area, these SMEs should also be involved in related PDT meetings to ensure climate considerations are included in the project scope. The preparer(s) should also closely coordinate with district environmental staff working on the PEAR document since climate change considerations tie directly to many resource agency permitting requirements that will need to be addressed in PA&ED. Furthermore, resource agencies will be actively engaged in project development pursuant to the AB 1282 Transportation Planning Task Force Early Engagement Guidance. It is recommended that coordination occur with other potential interested parties, including but not limited to local fire districts, California Department of Forestry and Fire Protection (CALFIRE), California Air Resources Board (CARB), California Coastal Commission, San Francisco Bay Ara Conservation and Development Commission, Delta Stewardship Council, Metropolitan Planning Organizations (MPOs) and Rural Transportation Planning Agencies (RTPAs).

Guidance to complete Climate Change Risk & Adaptation Report
Section 1,2, and 3 of the Climate Risk & Adaptation Report must be completed based off results derived from the climate change screening.

The screening is located on the first page of the Report. When scoping a new project, an initial climate change risk screening is required. This screening determines whether an in-depth climate change analysis is

warranted. Please follow the guidance in the Climate Change Risk and Adaptation Report Appendix to complete the initial climate change screening.

Climate Exposure (Section 1)

Section 1 of the Report focuses on identifying previous climate-related work analyzed at the project location through completed corridor plans and the TPSIS, understanding project design life, and analyzing climate vulnerabilities and consequences. Specifically, Section 1 of the Report scopes for (1) identifying baseline climate risks, and (2) Asset Types, Adaptation Priority Report, and Consequence.

(1) To further identify baseline climate risks beyond the screening, utilize the Caltrans Climate Change Vulnerability Assessments, Adaptation Priority Reports, and completed corridor plans or other system plans. Also consider climate considerations that may have been scoped in TPSIS. These reports may have already scoped for climate vulnerabilities at the project location. This analysis can be supported by external data and local and regional reports, such as local government hazard mitigation plans, local or regional vulnerability assessments, and climate action plans that Districts deem within scope of the proposed project. Supplemental data that may pertain to the project location can also be found using the Division of Environmental Analysis GIS Library. Please consider asset types and associated design lives when evaluating climate exposure. This will help ensure that assets in the project will ultimately be resilient to identified climate change risks through their design life.

The California Transportation Commission has adopted asset classes associated with the State Highway System. Primary Asset Classes are defined as: (a) Pavement, (b) Bridges, (c) Culverts, and (d) Transportation Management Systems. Please reference chapters 612, 850, and 880-13 of the Highway Design Manual and AASHTO LRFD Bridge Design Specifications for additional guidance on design life or project expected lifetime.

(2) Refer to the Appendix of the Report (page 14) for detailed guidance and instruction on the incorporation of the Adaptation Priority Reports data into the PIR. This section also requires a summary of anticipated consequences of the climate stressors to the project area. In this section, consider community and economic impacts, such as detour length around vulnerable assets. The level of consequence of climate impacts should be considered when developing project alternatives that address identified climate vulnerabilities.

Coastal Adaptation Summary (Section 2)

Section 2 of the Report focuses on considerations specific to coastal or tidally influenced areas, beginning with: (1) coastal permitting history; (2) tide gauge and sea level rise scenario identification; (3, 4) evaluating sea level rise exposure on and off the SHS; (5) and secondary data sources to consider floodplains, groundwater emergence, and coastal squeeze. If the location is not within the coastal zone, section 2 is not required.

(1) When scoping for coastal permitting history, projects must evaluate if there are any applicable permits tied to the project location. This will be further evaluated in the PAED phase of project scoping. Evaluating whether there are any outstanding permits is important because they could influence potential adaptation solutions.

(2) Assessing future sea level rise values requires looking at projections for the tide gauge closest to your project location. The values identified in this section will be carried through the rest of this analysis.

(3) As described in Section 1, use existing Caltrans sea level rise exposure analyses to document exposure for the project area along the State Highway System (SHS). SHS is called out separately because the data sources vary. The Caltrans Climate Change Vulnerability Assessments and Adaptation Priority Reports can be used to identify whether roadways, bridges, and culverts are susceptible to sea level rise. The 2023 State Highway System Management Plan also can be utilized. If the project is not located along the SHS, see section 2.4.

(4) To evaluate sea level rise exposure off the SHS, please refence the DEA GIS Library. This resource houses both geography-based data sources, as well as CoSMos data evaluating storm surge and cliff retreat.

(5) Secondary coastal data sources can be utilized to support data previously mentioned above. This will ensure that secondary effects, such as flood risk, groundwater emergence, coastal squeeze is considered. These impacts should be considered on top of the sea level rise baseline to accurately understand the timing and severity of these impacts at the project location.

NOAA, NASA, and USGS published an update to sea level rise projections in a federal interagency report in 2022 titled *Global and Regional Sea Level Rise Scenarios for the United States*. The report details sea level rise scenarios to 2150 and a set of extreme water level probabilities for various heights along the U.S. coastline. Since the 2022 report represents the best available science and most up-to-date climate projections, Section 2 of the Report presents how to use this dataset as a resource for assessing sea level rise exposure scenarios.

The 2023 State Highway System Management Plan (SHSMP) presents a performance-based framework that guides decision-making and priorities for maintenance, preservation, rehabilitation, and reconstruction investments. The 2023 SHSMP addresses climate risks pertaining to sea level rise, storm surge, and cliff retreat, including assessing exposure and the associated investment need for deficient assets out to 2100 and the near-term considerations over the 10-year plan horizon. The 2023 SHSMP is therefore recommended in the Report as a key data source to be utilized for assessing SHS coastal climate risk.

Finally, the Coastal Commission's Critical Infrastructure Guidance provides recommended datasets, tools, and other resources to complete analysis pertaining to sea level rise, and includes more detailed

information regarding adaptation strategies and how to do adaptation planning across various time horizons[1].

Adaptation Alternatives (Section 3)

Section 3 of the Report focuses on adaptation alternatives for changes in temperature, changes in precipitation, wildfire, sea level rise, storm surge, and cliff retreat.

1. After considering the identified climate impacts at the project location, any priority assets, design life, and other factors relevant for the project area, identify potential project-level adaptation components or alternatives for each stressor. The purpose is to address projected climate impacts that should be resourced for study later in Project Delivery. If no adaptation alternatives or project components are included, it is important to describe why, based on factors mentioned above. Relevant factors may include considering users of the project area, environmental resources in the project location, economic concerns (e.g., freight, detour needs, etc.), funding constraints, and type of project/assets present. This step will bring design considerations forward into future phases of project delivery and help ensure they are included in the overall scope of the project.
   This section highlights the importance of utilizing complete street elements, consideration of extreme heat days, use of appropriate materials in wildfire-susceptible areas, and consideration of accommodating or retreating adaptation alternatives related to sea level rise. If adaptation options are not identified in this section, it must be clearly acknowledged and explained. Examples could include if previous technical analysis has already narrowed the adaptation options for a project.

To learn more on the potential adaptation alternatives, consult the ***educational*** Adaptation Strategies for Transportation Infrastructure resource for general climate-stressor-specific adaptation options. Consult with District counterparts, HQ Division of Design, HQ Division of Environmental Analysis, and HQ Climate Change Planning Branch, for additional guidance regarding adaptation alternatives.

[1] The following pages of the CCC's Critical Infrastructure Guidance provide a framework for evaluating all the planning considerations associated with sea level rise: x, xi, xii, xiii, xiv, 21-22, 24, 25, 29, 45, 50, 60, 63, 66, 73, 84, and 94-28.

13. Environmental Compliance

Identify the type of environmental scoping information prepared for the project and what may be anticipated.

The Mini-PEAR, attached to the report, indicates that the project will likely receive an environmental determination of a Categorical Exemption (CE) under the California Environmental Quality Act (CEQA) and Categorical Exclusion (CE) under the National Environmental Policy Act (NEPA), although a "higher-level" document may be required

Briefly describe environmental issues that influence the project scope, schedule, or cost; include permit requirements, mitigation, and construction work windows.

Discuss the requirements and restrictions enumerated in the Mini-Preliminary Environmental Analysis Report (Mini-PEAR) or Preliminary Environmental Analysis Report (PEAR).

Information on the PEAR and Mini-PEAR can be accessed at:
Chapter 5 - Preliminary Environmental Scoping

Refer to information in the attached environmental assessment as needed. The more common environmental process/documents are;

- California Environmental Quality Act (CEQA),
  - Categorical Exemption (CE) or Statutory Exemption (SE),
  - Initial Study (IS) and Negative Declaration (ND) or Mitigated Negative Declaration (MND),
  - Environmental Impact Report (EIR),
- National Environmental Policy Act (NEPA),
  - Categorical Exclusion (CE),
  - Environmental Assessment (EA) and Finding of No Significant Impact (FONSI),
  - Environmental Impact Statement (EIS),
  - TCR Environmental Scan

14. Right-of-Way

Describe the requirements and restrictions enumerated in the Right-of-Way Conceptual Cost Estimate (CCE) or RW Data Sheet based on project complexity. Refer to Chapter 4 of the Caltrans RW Manual for guidance and preparation of both the RW Data Sheet (4-EX-1) and Right-of-Way Conceptual Cost Estimate form (4-EX-8) as well as guidance, located at https://row.onramp.dot.ca.gov/estimating

15. Stormwater

The PIR Storm Water Data Report (PIR SWDR) process addresses specific information in the Storm Water Data Report. Refer to the PIR SWDR Storm Water process located at: https://design.onramp.dot.ca.gov/storm-water-data-report-swdr

To ensure early incorporation of stormwater treatment in the project development process to comply with the National Pollutant Discharge Elimination System (NPDES) Permit, projects located within a Total Maximum Daily Load (TMDL) watershed and areas identified as a Significant Trash Generating Area (STGA) should investigate, through collaboration with the District NPDES Coordinator and Asset Management, the feasibility of incorporating a stormwater treatment into the project.

16. Transportation Management Plan

Describe the anticipated 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 needs through the construction area.

17. Advanced Technologies & Communication Systems

Caltrans shall use advanced technologies and communication systems, including charging or fueling opportunities for zero-emission vehicles, and infrastructure-to-vehicle communications for transitional or full autonomous vehicle systems in all transportation projects where feasible and cost-effective.
Refer to the Deputy Directive 116-R1 for wired broadband facility encroachments within the State Highway rights-of-way when there is a benefit for the public. Accommodation shall be in accordance with Federal and state laws and shall not adversely impact highway user or worker safety, transportation facility longevity, and highway aesthetic quality.

Describe in the PIR the anticipated accommodation for:

A. Wired broadband
B. Fueling or charging opportunities for zero-emission vehicles
C. Vehicle to infrastructure (V2I) communications for transitional or full autonomous vehicle and supporting high speed data infrastructure

Refer to the following link for additional Guidance:

1. Broadband at https://dot.ca.gov/programs/design/wired-broadband
2. Zero-emission vehicle (ZEV) Program at https://sustainability.onramp.dot.ca.gov/zero-emission-vehicles
3. Vehicle to Infrastructure (V2I) at https://traffic.onramp.dot.ca.gov/cav.

18. Additional Considerations

For the programmable alternative, select one of the following options:

a) The impact of this issue has been mitigated in the project cost, schedule and program's requirement.
b) The impact of this issue was not incorporated in the project's cost schedule and program's requirement. It has been identified as a Known Risk in the Risk Register.
c) This issue does not have a known impact on the project's cost schedule or program'srequirements.

The relevant topics for the alternative discussion should be obtained from the SHOPP asset supplemental guidance for the specific program. The following topics should be investigated for applicability:

α. Accommodation of oversize loads
β. Airports or emergency related helipads
χ. Air quality conformity
δ. Contaminated material including regulated, designated and hazardous waste https://admin.onramp.dot.ca.gov/downloads/admin/deputy_directives/dd_16.pdf
ε. Constructability issues
ϕ. Construction staging
γ. Environmental-justice (Title VI considerations)
η. Floodplain issues
ι. Graffiti control
φ. Maintenance and Cooperative Agreements
κ. Maintenance and Worker Safety
Safety for all workers is a critical component of all activities performed on the State Highway System (SHS) by the California Department of Transportation (Caltrans) and its partners.

For policy and general design guidance on Worker Safety, refer to Deputy Directive 103 - Worker Safety on the State Highway System and the following website:

https://admin.onramp.dot.ca.gov/downloads/admin/deputy_directives/dd_103.pdf

https://design.onramp.dot.ca.gov/landscape-architecture-program/roadside-transportation-asset-management

λ. To meet the requirements of SB 1's Sustainability Provision 2030 (c), Caltrans shall useadvanced technologies and material recycling techniques that reduce the cost of maintaining and rehabilitating the streets and highways, and that exhibit reduced levels of greenhouse gas emissions through material choice and construction method. Related topic information toconsider includes:
   - Material and/or disposal site https://admin.onramp.dot.ca.gov/downloads/admin/deputy_directives/dd_16.pdf
   - Material disposal, staging and borrow sites https://dot.ca.gov/-/media/dot-media/programs/design/documents/f0005285-dib85-a11y.pdf
   - Recycled materials. *See Appendix (E) of the PIR Guidance*

μ. Noise abatement decision report
Reversible Lanes AB2542. Refer to Section 9 –Alternatives
https://transplanning.onramp.dot.ca.gov/downloads/transplanning/files/ppplan/PIR%20Guidance/Reversible%20Lanes%20Guidance%20(Interim).pdf

ν. Resource conservation

ο. Report on feasibility of providing access to navigablerivers

π. Route adoptions, freeway agreements, relinquishments and modification of accesscontrol

θ. Salvaging and recycling of hardware and other non-renewable resources

ρ. Sea level rise http://www.dot.ca.gov/ser/downloads/sealevel/guide_incorp_slr.pdf

σ. Tribal Employment Rights Ordinance (TERO)

τ. Value analysis

υ. Other topics as needed

19. Estimate, Funding and Programming

Estimate

The optimistic, pessimistic, and most realistic cost estimates are obtained from the use of good engineering judgement applied to each of the components plus the added contingencies from the Risk Register. Escalation is per current policy as specified in the SHOPP Guidelines. Reference the Caltrans project cost estimate components graphic illustration in Appendix (A) for definitions of cost estimating components and their sources.

Depending up project complexity, the PDT will decide the best approach for determining the Optimistic,

Pessimistic, and Risk Adjusted costs. Professional judgement will always be the basis for estimates. Risk contingency amounts will typically be generated using the Risk Register/Risk Management Tool which used Program Evaluation and Review Technique (PERT) and may incorporate a Monte Carlo method using @Risk software for complex projects. The manageable risk events associated with the different aspects of the projects are broken down and converted to Risk Contingencies and applied to both the Capital and Support Cost Estimates described below by the Project Development team (PDT) for the programmable Alternative.

The Risk Contingency amounts are applied appropriately to the capital and support amounts and summarized in the table below.

Estimated Capital & Support Cost ($1,000s)- Programmable Alternative									
Component	(A)[1] Total Optimistic	(B)[1] Total Pessimistic	(C) Total Most Likely	(D) Risk Amount	(E) Total including Risk (C+D)	(F) # Years to Mid Yr of Component	(G) Escalation Rate	(H) Escalation Amount	(I) Total Escalated Cost (E + H)
Support									
PA&ED[2]									
PS&E									
Right of Way									
Construction									
Capital									
Right of Way[1]									
Construction									
Totals									

Notes:

1. Providing a cost range is optional, the optimistic and pessimistic provides the opportunity to offer a range of cost to account for confidence in the most likely estimated components for programmable alternative. Both Columns A & B are in place to accommodate range estimates per the new CTC minimum PIR requirements for SHOPP Projects. Cost ranges are established by the PDT using professional judgement. Currently, only PIR R/W Conceptual Cost Estimate and DES Structure PIR Cost Estimates provides capital cost estimates in a range format. Quantified Risk Register tools provide ranges for cost impacts and can assist with establishing cost ranges in conjunction with professional judgement. Most of the other deliverables are not able to generate cost range estimates, therefore a single Cost estimate or most likely estimate can be used. In that case, it is acceptable to leave these columns blank and proceed to Column C.
2. PA&ED support estimates is a bottom-up cost estimate.

As illustrated in the Table above,
C = PRSM Work Plan for Support and 11-Page Preliminary Cost & R/W Conceptual Cost Estimates for Capital. This applies to the Programmable Alternative.
D = Risk Amount (from the Risk Register) may need to adjust the Capital Cost Contingency in the 11-page Estimate to account for Added Risk Amount.
E = C+ D = Total including Risk

F = Number of Years from current date of estimate to midpoint of the duration of component
G = Escalation rate in %
H = E [$(1 + i)^n - 1$]= Escalation Amount where, i = Escalation rate per year (%)
n = number of years from current date of estimate to midpoint of the duration of component
I = E + H = Total Escalated Cost = Program Amount input into the Funding Table for Programmable Alternative.

Projects shall incorporate escalation in Capital Outlay Support (COS) estimates at time of programming to more accurately estimate future support costs *(Project Management Directive 011 R1)*.

To help ensure the quality and accuracy of COS estimates, labor costs must address future cost increases. Hourly labor costs can escalate over time due to several factors such as:

- Employee Salary – This includes merit salary adjustments, bargained raises, and cost of living adjustments.
- Payroll Reserve Assessment Rate (PRAR) – Caltrans employee benefits are applied using an additive percentage.
- Indirect Cost Rate Proposal (ICRP) – Per SB 45 (1997) Caltrans must include functional indirect costs when calculating COS project costs. If a project's work is reimbursed by others, State Administrative Manual Section 8752 requires the administrative ICRP rate to also be included. These costs are applied using an additive percentage.
- Operating Costs – The projected unit costs normally accounted-for in PRSM are based on the average of prior three fiscal years' usage of operating costs for each unit. Higher support costs may need to be built into the estimate for projects that will have extraordinary operatingexpenses such as specialized equipment or significant travel.
- Right-of-way capital cost estimates are already escalated.

Funding:

Discuss the project funding.

Special Funding: If the project has special funding, identify the source of funding, the dollar amount, and when funding will be available.

Cooperative Agreement: If a project requires cooperative agreements, they must be identified in the Risk Register and, their resolution dates identified. The Cooperative Agreements must be executed before beginning any work or exchange of funds covered in the Cooperative Agreement.

State-Only Funding: If the project will use State-only funding, fully explain the need for the exception and discuss why the project does not qualify for federal participation.

Federal-aid Funding: In consultation with the Office of Federal Resources, HQ Budgets, determine if the project is eligible for Federal-aid funding and include one of the following statements:

"It has been determined that this project is or is not eligible for Federal-aid funding."

Programming:

If the project is already programmed, include the data for comparison and discuss how the proposed estimates compare to the current programmed amounts.

Complete the table for each funding source, such as SHOPP and Local Funding. Consult with the project manager to determine the fiscal funding year, the escalated estimates, and the escalation rates. Enter funding source, estimates, adjust fiscal year designations as needed, and state any key assumptions including the escalation rates used for the Programmable Project Alternative.

Fund Source	Fiscal Year Estimate for the Programmable Alternative								
20.XX.###.###	Current	##/##	##/##	##/##	##/##	##/##	##/##	Future	Total
Component	In thousands of dollars ($1,000)*								
PA&ED Support									
PS&E Support									
Right-of-Way Support									
Construction Support									
Right-of-Way									
Construction									
Total									

*Values are escalated to mid-point of the duration of each component.

State the support to capital cost ratio. Consult with the project manager to determine the support to capital cost ratio.

The support to capital cost ratio is percentage.

State the escalation rates applied to both Capital & Support components.

20. Delivery Schedule

Enter the milestone dates in the table and discuss any schedule assumptions, issues, constraints, and risks. The project schedule should be based on functional units' input, available resources, and funding constraints. The project manager must provide the project schedule. Except for the following, the milestones shown in the PIR Template's Schedule Table are mandatory;

A. M030 is only required when there is an environmental impact report,
B. M035 is only required when there is an environmental impact statement,
C. M120 is only required if there is a draft environmental document that will be released to thepublic,
D. M378 is not required, but optional if there are structures.

For projects that apply Early Design activities, the project schedule should be developed using the Work Breakdown Structure provided by the PRSM template for Early Design.

21. External Agency Coordination

See the latest *Stewardship and Oversight Agreement on Project Assumption and Program Oversight* between the Federal Highway Administration, California Division and Caltrans for the project actions assumed by Caltrans and the project actions where FHWA has retained their authority as well as the detail associated with the various oversight responsibilities. Project actions are identified in the "Project Action Responsibility Matrix" within the stewardship agreement.

Discuss project actions, as appropriate, assumed by Caltrans and any coordination with the FHWA for review and approval of project actions. Determine need for Financial Plan and/or Project Management Plan based on estimated costs of all projects, all phases, covered under the NEPA footprint. See PDPM Chapter 8, Section 7, Article 8 for FHWA coordination.

If the project proposes new or modified Interstate access as defined in 23 USC 111, include a discussion of any issues and the proposed or actual dates for the Determination of Engineering and Operational Acceptability and Final Approval. See PDPM Chapter 27 – New Public Road Connections, for more information.

Identify potential involvement with outside agencies for agreements, or permits required for the project. The district environmental division is a resource for determining some of the required permits

The following is a list of common entities that Caltrans coordinates with on projects, delete and add to the list as appropriate.

California Department of Fish and Wildlife
California Fish and Game Code Section1602
Lake or Streambed Alteration Agreement

California Coastal Commission and/or Local Coastal Program
California Public Resources Code Division 20 (California Coastal Act)
Coastal Development Permit

California State Lands Commission
California Public Resources Code Division 6
Permit

Central Valley Flood Protection Board
California Water Code Division 5, Part 4
Encroachment Permit

Local Agency
Cooperative Agreements with _____

Local Agency
Agreements with _____

Regional Water Quality Control Board
Clean Water Act Section 401
Water Quality Certification

Railroads
Railroad Agreement for at-grade or separated-grade crossings

US Army Corps of Engineers
Department of Army Permit for:
Clean Water Act Section 404
Rivers and Harbors Act of 1899 Section 9
Rivers and Harbors Act of 1899 Section 10
General Permits (Regional Permit, Nationwide Permit or Programmatic Permit)
Standard Permits (Individual Permit or Letter of Permission)
Section 9 Permit

United States Coast Guard
Rivers and Harbors Act of 1899 Section 9
Bridge Permit

San Francisco Bay Conservation and Development Commission
California Government Code Title 7.2
California Public Resources Code Division 19
Major Permit, Administrative Permit, or Region wide Permit
Tribal Highway Construction Permit (THCP)
This permit allows construction of a project on tribal land. For THCP requirements refer to TERO office.

For a complete list of agencies and permits see PDPM Chapter 13 – Project Related Permits, Licenses, Agreements, Certifications, and Approvals.

22. Project Reviews

The template includes a list of possible reviews. Modify the list to reflect district review procedures. Include "Completed" or "Not applicable" or the reviewer's name along with the review completion date. Depending on the project aspects and phase, some of the reviews are mandatory. Requirements should be obtained from the SHOPP asset supplemental guidance for the specific program.

23. Project Personnel

To facilitate contacts, include project personnel names, telephone numbers, and their area of expertise. It should be in general format of:

Name, Title, Functional Area, Phone Numbers

24. Attachments (Number of Pages)

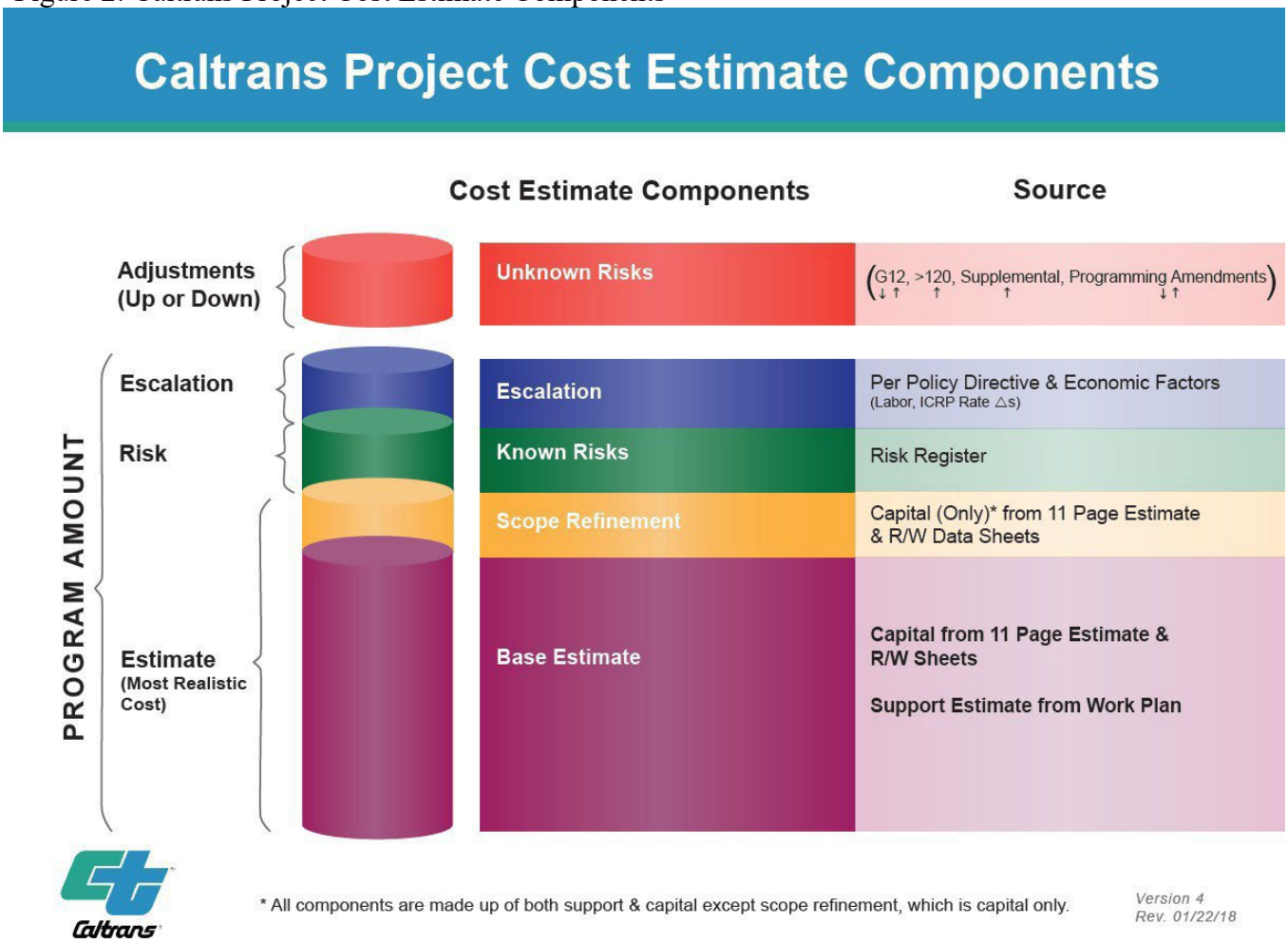
Most likely attachments are:

- Location and/or vicinity map,
- Schematic maps of the study areas,
- Layouts maps of the study areas,
- Should illustrate proposed geometrics and include estimated embankment/excavation limits, grading limits, environmental disturbance limits, right-of-way acquisition areas, temporary construction easement (TCE) limits, and potential utility relocations,
- Capital outlay project estimate- 11-page Cost Estimate,
- Typical cross sections,
- Mini Pear/PEAR (Preliminary Environmental Analysis Report),
- Project Initiation Proposal (PIP) with Transportation Planning Scoping Information Sheet(TPSIS),
- Right-of-way conceptual report or Data Sheet
- PIR Risk register
- PIR SWDR (Stormwater Data Report)
- Structure PIR Cost Estimate/APS (Advance Planning Studies)
- SHOPP Performance Measures Reports. (Pre & Post PIR)

Raw data used in analysis and many engineering reports do not need to be attached to the report. Functional scoping checklists are worksheets for collecting pertinent information from specified functional units also do not need to be attached to the report. This information should be part of the project history file to support the engineering recommendation

APPENDIX (A) - COST ESTIMATING

Figure 2: Caltrans Project Cost Estimate Components



The Program Evaluation and Review Technique (PERT) Estimate

The estimated cost of each component must be the weighted average - PERT- of three estimates; the minimum (optimistic, O), maximum (pessimistic, P) and most realistic (M). These values are based on of historical data and/or personal experiences of the subject matter experts. The weighted estimate is then calculated by:

Component PERT estimate = (O + 4M + P)/6

In the case of support cost, the values of subcomponents should be rolled up using Zero-Based method.

For more information on the PERT model * please refer to Project Management Book of Knowledge - PMBOK- 6th Edition

APPENDIX (B) - CLIMATE CHANGE

GHG Reduction measures:

The list below represented in this guidance are choices that can be made to improve a project and demonstrate that it is contributing to the Departments goals and mandates to reduce GHG and consider climate change. Briefly include information regarding the proposed project that can be included and further refined through the project development process to ensure that GHG reduction measures are considered.

The following is a sample list of items which should be considered where appropriate or applicable:

- Reduction of roadway construction / demolition waste
- Energy efficient project features or construction methodologies
- Water efficient project features or construction methodologies
- Fuel efficient measures both for construction equipment and traffic management during delays or detours
- Materials use/choice, including source distance from site
- Maintain existing or plant new trees (carbon sequestration)
- Implement strategies that reduce heat islands- provide shade
- Improve operational efficiency
- Reduce the amount fuel use/reduce driving
- Inclusion / Implementation of Complete Streets Elements
- Construction methods and materials with lower GHG than standard specification

GHG Emissions Calculations: Some projects will require calculation of construction emissions to be included in the PIR. See Greenhouse Gas Calculations for more information https://transplanning.onramp.dot.ca.gov/pid-guidance-0

Adaptation Measures:

Include features in the proposed project to better adapt the asset to withstand the negative effects of climate change and make the asset more resilient to impacts such as fires, floods, and sea level rise.

Evaluate the project's risk associated with each climate change stressor (such as fires, floods, and sea level rise) identified in the list below. If the project is at risk from any of these stressors, identify and describe the likelihood, timing, and consequences associated with projected changes in climate within the project area. Discuss how the design alternatives and materials used incorporate appropriate elements in projects to ensure that the project can withstand, avoid, and/or adapt to projected climate change impacts appropriately. This section need not be extensive, but should identity potential issues that will affect the cost, schedule, and scope of the project such that the information should be included in the PIR.

Refer to the list below for information pertaining to possible climate stressors:
*As data and guidance are developed, this list will be updated.

- Sea Level Rise:

  - Projects that are in the coastal zone will be impacted by future sea level rise. For these considerations should be given to the impacts, and account for potential cost and resource needs to mitigate them. For more information see Caltrans Guidance on Incorporating Sea Level Rise located at; https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser

  - Use available sea level rise viewers to easily scope whether to include information for further development: cal-adapt.org, NOAA sea level rise viewer or USGS' sea level rise viewer "Our Coast Our Future".

  - http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

Climate data are being developed for the following stressors as part of Caltrans' Climate Change Vulnerability Assessments.

- Changes in 100-year rainstorm precipitation depth
- Changes in maximum temperatures
- Changes in minimum temperatures
- Storm surge
- Change in frequency and scale of wildfires

Consult HQ Division of Transportation Planning / Climate Change Branch for the status of your District's Climate Change Vulnerability Assessment. In absence of data from the Caltrans' Climate Change Vulnerability Assessment for your District, data and guidance from local and regional partners within the project area should be considered.

Questions and updates to this Appendix

For questions and updates pertaining to GHG Reductions, consult HQ Division of Environmental Analysis.
For questions and updates pertaining to Adaptation, consult Transportation Planning/Climate Change Branch.

APPENDIX (C) - 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.

The SHOPP PIR template is available at:

California Department of Transportation - Division of Transportation Planning

APPENDIX (D) – EARLY DESIGN WORKLOAD BREAKDOWN STRUCTURE

Early design should be implemented in the 0 Phase for projects that meet the following criteria:

- Single-Build Alternative Only, and
- CE/CE, and
- No R/W Acquisition (No Utility Relocation, No Railroad Study/Agreement/Involvement)

The corresponding Work Breakdown Structure is refined as follow:

- Eliminate 160.10.50
- Eliminate 160.10.60
- Eliminate 160.10.65
- Eliminate 160.10.90
- Eliminate 160.20.35
- Eliminate 165.10.55
- Eliminate 170.15
- Eliminate 170.20
- Eliminate 170.40
- Eliminate 180 (CE/CE only)
- Eliminate 185.05
- Eliminate 185.15.10
- Eliminate 185.15.15
- Eliminate 185.15.20
- Eliminate 185.20.05
- Eliminate 185.20.30
- Eliminate 185.20.35
- Eliminate 180.10.15
- Eliminate 185.25.20
- Eliminate 205.15
- Eliminate 205.45
- Move 180.15.20 to 165.10.75
- Frontload 185.10 activities in 160
- Move 185.15.05 to 160
- Move 185.15.99 to 160
- Move 185.20.10 to 160
- Move 185.20.15 to 160
- Move 185.20.20 to 160
- Move 185.20.25 to 160
- Move 185.20.40 to 160
- Move 185.20.99 to 160

- Move 185.25 to 160
- Move 230 activities leading up to Draft Plans, Specs and Estimates to 160
- Edit 160.10.15 for geometric plans only (no alterations)
- Edit 160.15 to “Project Report” (no draft)
- Edit 160.15.05 to “Cost Estimate” (no alternatives)
- Edit 160.15.20 – remove word “draft”
- Edit 160.15.25 – remove word “draft”
- Edit 205.10 – permits – limited / lower level of effort
- Edit 240 – structures can start activity as early as 35% design (can start as early as 0phase)
- Resource estimate surveys in K phase; request work in 0 phase, complete most design datasurveys in 0 phase

APPENDIX (E) - Recycling Opportunities

Almost all pavement materials can be recycled so all pavement rehabilitation and reconstruction projects should be considered as a possible candidate. If the existing on-site materials are contaminated with hazardous materials or contains significant quantity of elements that will become hazardous when processed for recycling, for example asbestos or lead, then recycling options may still be considered. However, these projects will require additional testing to insure proper mitigation of the hazardous materials.

Recycling opportunities must be considered in the PID so that the cost estimate and project schedule include recycling options and appropriate field investigation is included as part of the geotechnical and/or pavement evaluation during preliminary and final design phases of the project. When recycling opportunities are considered during the construction phase, the options become limited due to the limited time window to perform all the necessary investigation and testing.

Recycling opportunities can be categorized into in-place recycling, off-site recycling, or using imported recycled materials. The in-place recycling approach provides significant opportunity to assist the Department in achieving its sustainability goal by reducing the environmental impact from transporting materials and producing new materials, i.e. less fuel for trucking, less GHG emissions, less energy to produce new materials. In-place recycling may result in additional benefits of reducing construction costs and reducing construction-related community impacts.

PDPM
https://dot.ca.gov/programs/maintenance/pavement/concrete-pavement-and-pavement-foundations/pavement-foundations

SB1
https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1

Current PDR and FDR Guide:
https://dot.ca.gov/-/media/dot-media/programs/maintenance/documents/office-of-asphalt-pavements/469fdrpdr-guidestg6ada.pdf

Current Pulverization Guide:
https://dot.ca.gov/-/media/dot-media/programs/maintenance/documents/office-of-concrete-pavement/pavement-foundations/pulv-guide-jan-2013-update-final-a11y.pdf

HDM Chapter 630 that discusses recycling options:
https://dot.ca.gov/-/media/dot-media/programs/design/documents/chp0630-a11y.pdf

Following are recycling questions for asphalt, concrete, Base and sub-base:

- Does the Project Require Imports?
- Does the project require export?
- Is the export viable material for recycling?
- Is a material recycling business rear the project site?
- Can recycled material be imported?
- Is enough recycled material available?
- Is the available material viable?

- Does using recycle material offer savings to the project?
- Does using the recycle material impose extra cost to the project?

APPENDIX (F)- Vehicle Miles Traveled (VMT)

Consistent with the language of Section 15064.3 of the California Environmental Quality Act (CEQA) Guidelines, Caltrans has determined Vehicle Miles Traveled (VMT) is the most appropriate way to measure transportation impacts. This means that for capacity-increasing projects on the State Highway System (SHS), induced travel analysis is required to determine the significance of transportation impacts from VMT. Projects with significant impacts require mitigation to reduce them to less than significant, or the issuance of a Statement of Overriding Considerations (SOC) in cases where these impacts cannot be fully mitigated. To avoid induced VMT, Caltrans should consider project alternatives that are not capacity increasing.

To better assess the potential for a project to induce VMT, a risk assessment, called the Vehicle Miles Traveled Decision Document (VMTDD), is required for projects that add lane miles or increase capacity. The questions in the VMTDD will be used to assess risk; answer them to determine if the project has the potential to induce VMT and require induced travel analysis. Descriptions of project alternatives, delivery schedules, and mitigation estimates may be required. For active transportation, transit, and highway projects that do not add lane-miles or otherwise increase capacity, a VMTDD generally is not required.

For the VMTDD and information on VMT policy and guidance, refer to the Director's Office of Sustainability's Reduced Vehicle Miles Traveled intranet site:
https://sustainability.onramp.dot.ca.gov/reduce-vehicle-miles-traveled