APPENDIX G – Preparation Guidelines for Project Scope Summary Report (Roadway Rehabilitation)

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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.

Use of Project Scope Summary Report (Roadway Rehabilitation)

These guidelines provide information to be used with the policies and procedures described in Chapter 9 – Project Initiation, Chapter 10 – Formal Project Studies, Chapter 11 – Public Hearing, Chapter 12 – Project Approvals and Changes to Approved Projects, *Highway Design Manual* (*HDM*), and *Design Information Bulletin 79* – Design Guidance and Standards for Roadway Rehabilitation Projects. Roadway rehabilitation projects are funded from the 20.XX.201.120 Roadway Rehabilitation Program (120 Program). The project scope summary report (PSSR) outline for a 120 Program project satisfies the requirements for both the project initiation document (PID) and the project report (PR) for projects in the 120 Program. The majority of 120 Program projects have a well-defined scope and follow a process that combines the project initiation and project approval phases. The project development team (PDT) should review project factors and determine whether the PSSR will signify completion of the project initiation phase or if a combined project initiation and approval process is appropriate. Chapter 9 – Project Initiation describes subsequent approval procedures related to the project development milestone reached with the signing of the PSSR.

The following guidance is tailored to projects with a primary project scope of roadway rehabilitation. The report template in Article 3 should be modified to include or exclude any applicable deficiencies or issues. See Appendix L – Preparation Guidelines for Project Study Report and Appendix K – Preparation Guidelines for Project Report for fundamental guidance and tools on the preparation of project initiation and project approval documents.

Preparation of Project Scope Summary Report

Scoping Team

A scoping team is staffed at the discretion of the district to scope pavement rehabilitation projects. Scoping provides a forum to identify and make decisions on significant issues.

Project Scoping

A scoping team field review is required for all resurfacing, restoration, and rehabilitation (RRR) projects. See Chapter 9 – Project Initiation for a discussion this requirement.

Resurfacing, restoration, and rehabilitation work is designed to preserve and extend the roadway service life for at least ten years as well as upgrade safety where reasonable. Resurfacing, restoration, and rehabilitation differs from new construction or reconstruction in that the scope does not include capacity improvements, major realignments or major upgrading of roadway features or standards. The designer must always emphasize implementation of cost-effective safety improvements where practical. *Design Information Bulletin 79* – Design Guidance and Standards for Roadway Rehabilitation Projects provides the guidelines and criteria to identify appropriate safety upgrades on resurfacing, restoration, and rehabilitation projects.

The roadway deficiencies may be so severe that the overall highway improvements must be substantial in order to facilitate the necessary improvements. A point may be reached, however, where even with substantial deficiencies, the economic and environmental constraints preclude making the improvements. These cases will require justification and approval in the PSSR and in the design exception fact sheets.

Current deflection study requirements are located in *HDM* Index 635.1. Accordingly, the deflection studies are an important component for the development of a rehabilitation strategy and should be done no more than 18 months prior to the start of

construction. Because PSSRs must often be developed more than 18 months prior to the start of construction and resources are not always available to complete two deflection studies, the guide *Alternative Procedures to Estimating Flexible Pavement Rehabilitation Requirements for Project Scoping* has been developed to provide a preliminary flexible pavement depth for scoping purposes.

The use of the Design Scoping Index located in Appendix L – Preparation Guidelines for Project Study Report can assist the project team in properly scoping a project. The Design Scoping Index can be used to identify facility deficiencies and the concerns of stakeholders. The Design Scoping Index ties together the Transportation Planning Scoping Information Sheet; *Design Information Bulletin 78* – Design Checklist; Traffic Forecasting, Analysis and Operations Scoping Checklist; preliminary environmental analysis report (PEAR); Headquarters Division of Engineering Services PSR-PDS Scoping Checklist; and right-of-way data sheet. The PDT should evaluate which deficiencies can be addressed given the purpose-and-need, program definition, and funding constraints.

Field Reviews and Documentation

All projects shall be field reviewed as discussed in Appendix L – Preparation Guidelines for Project Study Report.

District Planning, Environmental and Right-of-Way Involvement

The scope of the roadway improvements proposed for a rehabilitation project is often influenced by potential impacts on the surrounding land and development. This is especially true for non-freeway rehabilitation projects. Social, environmental, and economic impacts may influence the scope of a rehabilitation project. This is particularly true where existing right-of-way is narrow and adjacent development is extensive. The district transportation planning unit should be involved to provide background about city, county, and regional actions that have taken place within the project corridor that may have a bearing on the scope of the project. Some projects may require extensive involvement of the district right-of-way unit and environmental unit. The functional units should become involved as early as possible in the project development process to determine the appropriate level of involvement. Developing a plan for their involvement should help to avoid potential delays in project delivery and minimize potential changes in project scope that may result in project cost increases.

Safety Considerations

A safety analysis is performed early for all rehabilitation projects. These projects preserve and extend the service life of existing highways and also enhance safety. Therefore, rehabilitation projects may include such items as placement of additional surface material and/or other work necessary to return an existing roadway, including shoulders, bridges, roadside, and appurtenances to a condition of structural and functional adequacy. Rehabilitation projects may also include reworking or strengthening of base materials and upgrading of geometric features and appurtenances for safety purposes. See Chapter 8 – Overview of Project Development and *HDM* Index 110.8 for specific information regarding safety reviews.

Project revisions that occur as a result of safety reviews and recommendations may require additional environmental studies or right-of-way requirements. Notify the appropriate district unit of the revisions and determine the follow-up actions required.

Traffic Data

Traffic data is needed in the design of all highway projects, including rehabilitation projects. The data is used to determine the appropriate level of improvement and to evaluate the various roadway elements. For rehabilitation, the need for a formal forecast of future traffic is needed to establish the extent of loading the pavement during its pavement design life. This is quantified as an equivalent single-axle loads (ESAL) and pavement design life and traffic index (TI). Rehabilitation projects should normally be designed on the basis of current average daily traffic (ADT) and current peak period design hourly volume (DHV) to extend the structural section service life for at least 10 to 20 years. See *HDM* Topic 613 for further information.

Reliable Project Scope and Cost Estimates

To minimize future cost increases, a thorough scoping of projects and reliable project cost estimates are needed. Reliable project cost estimates are extremely important at every stage in the project development process. Inaccurate estimates result in problems in Caltrans' programming and budgeting. The final concept, scope, and cost of each project must be established as early as possible. Initial estimates made for rehabilitation projects should be based on the results of field reviews and include all anticipated work (such as: safety, restoration, hardware modification, and etcetera).

Approval of Project Scope Summary Report

The District Director (or Deputy District Director per Caltrans' delegation of authority) is responsible for approval of the PSSR (Roadway Rehabilitation).

Distribution of Project Scope Summary Report

One copy of the unsigned report shall be sent to the appropriate Headquarters SHOPP program advisor. Descriptions of the SHOPP programs and the corresponding Headquarters SHOPP program managers and advisors can be determined from: *SHOPP Programs and Program Managers*.

Two copies of the approved report shall be sent to:

Headquarters Division of Design
Office of Project Development Procedures
Attention: Design Report Routing
Mail Station #28

One copy of the approved report shall be sent to:

Appropriate Headquarters SHOPP program advisor.

Five copies of the approved report shall be sent to:

Headquarters Division of Engineering Services
Program/Project & Resource Management
MS 9-5/11g

ARTICLE 2 Outline

General

The standard PSR outline located in Appendix L – Preparation Guidelines for Project Study Report was adapted to meet the documentation needs of roadway rehabilitation projects. Sections of the standard PSR were combined and fill-in-the-blank features were included to facilitate the presentation of project information. The template is a guideline. The actual report should be similar in organization and may contain similar headings and subheadings, but will vary based on features, complexity, and issues. A template for the PSSR is located in Article 3. The space for filling in various sections of the template has been condensed for practical viewing of the template. As appropriate, each section can be expanded to accommodate necessary information. The template should be modified to include or exclude any pertinent

project information. "Not applicable" should be placed in the blanks for topics that do not apply to a specific roadway rehabilitation project.

Not every outline topic is discussed; information is presented when it differs from or is in addition to that found in Appendix L – Preparation Guidelines for Project Study Report and Appendix K – Preparation Guidelines for Project Report.

Front Matter

Cover Sheet

All PSSRs should have a standard cover sheet to provide project identification information and signatures.

When the purpose of the report includes project approval, the approved environmental determination/document must be attached to the report.

Vicinity Map

Registered Professional Stamp

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Main Body of Report

1. INTRODUCTION

Provide a one or two sentence description of the project. Fill in the table.

2. RECOMMENDATION

3. PURPOSE AND NEED

An example of a purpose statement for a rehabilitation project is: "The purpose of this project is to extend/provide X years of additional service life with minimal maintenance expenditures."

4. EXISTING FACILITY, DEFICIENCIES AND TRAFFIC DATA

4A. ROADWAY GEOMETRIC INFORMATION

Provide the information requested in the table. If lane widths are not uniform, note the width of each lane.

Identify and provide the dimensions of transportation facilities that are not already described in the table. For example, if there is a pedestrian walkway adjacent to the roadway, identify the type of facility and the width of the facility. Edit the legend for the table as appropriate.

In the "Remarks" area, if resurfacing, restoration, and rehabilitation standards are not being met, explain why, and provide exception approval date.

4B. CONDITION OF EXISTING FACILITY

Provide the latest information available for each homogeneous segment. Information about the traveled way is obtained from the most recent pavement management system pavement condition survey data.

Describe the nonstandard design features for pedestrian features in the pedestrian facilities data table. See *Design Information Bulletin 82* – Pedestrian Accessibility Guidelines for Highway Projects for accessibility requirements. Edit the heading to show the appropriate location reference point.

If the facility is adjacent to the roadbed and is provided for the exclusive use of bicycles and pedestrians, complete the table for bicycle path data. See *HDM* Chapter 1000 for bikeway condition guidance. Edit the heading to show the appropriate location reference point.

4C. STRUCTURES INFORMATION

Provide the information requested.

See *HDM* Index 307.3 and *Design Information Bulletin 79* – Design Guidance and Standards for Roadway Rehabilitation Projects for details on bridge (lane and shoulder) width criteria.

As appropriate, discuss evaluation of the bridge rail type with respect to pedestrian and bicycle use in the remarks sections.

In the remarks section, if resurfacing, restoration, and rehabilitation standards are not being met, briefly explain why, and provide exception approval date.

4D. TRAFFIC DATA

Traffic Volumes and Characteristics

Vehicle, bicycle, and pedestrian traffic data is needed for all rehabilitation projects to determine if the facility is at or approaching capacity, or if other improvements are needed. It is an important consideration both in the determination of the appropriate level of improvement (reconstruction vs. rehabilitation) and in the selection of values for various geometric elements. Discuss the current traffic data with respect to traffic demand in the construction year and how these factors affected the decisions regarding the timing of a major improvement such as additional lanes. Summarize information provided by the district transportation planning on bicycle and pedestrian traffic. The pavement design life is chosen per the requirement in *HDM* Index 612.5.

Provide the information requested.

Safety Improvements

All rehabilitation projects are to include a safety analysis (see Chapter 9 – Project Initiation). The analysis is to be documented in a separate report. The report is not to be attached to the PSSR.

In addition, a safety review is required to properly scope cost-effective improvements for safety and operational purposes. The PDT should evaluate the recommendations of the district safety review committee to ensure that customer and stakeholder needs can be addressed and Caltrans' safety goal is upheld. See Chapter 8 – Overview of Project Development and *HDM* Index 110.8 for further discussion of the safety review.

Special emphasis should be placed on implementing cost-effective solutions for safety improvements. When safety or operational improvements become a major factor in project scope, cost or impacts; the project becomes "reconstruction" (the fourth "R"). Reconstruction design criteria are covered by new construction standards shown in the *HDM*.

Accident Data

Evaluation of vehicle, bicycle, and pedestrian accident data often reveals situations that require attention. In addition, relative accident rates can be an important factor in establishing the scope of a rehabilitation project. A review of accident records is an integral part of the rehabilitation project development process. The individual accident records shall be not included in the PSSR. The analysis of the accident data shall be summarized as part of the project safety analysis. A summary of the recommendations shall be included in the PSSR.

4E. MATERIALS

Provide a summary of the information provided in the district materials report. See *HDM* Topic 114 for guidance on materials reports.

5. CORRIDOR AND SYSTEM COORDINATION

It is important to provide a broad view of what is happening in the corridor. Information from district planning can be obtained by requesting a Transportation Planning Scoping Information Sheet. This section should discuss:

- Pavement preservation strategies within the corridor.
- The long-term transportation plan for the corridor and how the strategy relates to the rehabilitation strategy. For example, identification of segments of roadway that may be relinquished can have an important impact of project decisions.
- Discussion of other planned projects in the corridor. Project management can provide information about other ongoing or anticipated projects in the vicinity of this project. District planning can provide information about ongoing local projects in the area.
- Should also discuss long-term maintenance or pavement strategy if available.

6. ALTERNATIVES

Discuss the roadway rehabilitation strategies. Identify the recommended alternative, and if appropriate, clearly identify the preferred alternative. Based on project complexities, the writer has discretion on how individual alternatives are presented. Issues may be itemized for each alternative or summarized for several alternatives. Discuss any exceptions to mandatory and advisory design standards. Proposed exceptions must be approved following the procedures in Chapter 21 – Exceptions to Design Standards.

Other Considerations:

Summarize all major issues; the template has a list of common issues. Address each item as appropriate or put "Not applicable." The template should be altered to include project-specific issues as needed.

7. TRANSPORTATION MANAGEMENT

7A. TRANSPORTATION MANAGEMENT PLAN

See Appendix K– Preparation Guidelines for Project Report topic "Transportation Management Plan" in outline item "7. Other Considerations As Appropriate."

7B. VEHICLE DETECTION SYSTEMS

If appropriate, discuss the recommendations of the district traffic unit as it applies to maintaining the operation of the existing vehicle detection system. The vehicle detection is critical to traffic management and traveler information applications. Costs associated with staging or installation of any temporary detection system should be included in the cost estimate.

8. ENVIRONMENTAL COMPLIANCE

9. PROJECT ESTIMATE

The template covers major items for pavement rehabilitation projects. The table should be expanded to add cost items that are not listed on the template, but are specific to the project.

Rehabilitation projects may include such items as placement of additional surface material and/or other work necessary to return an existing roadway, including shoulders, pedestrian walkways, bridges, roadside, and appurtenances to a condition of structural and functional adequacy. Rehabilitation projects may also include reworking or strengthening of base materials; upgrading of geometric features and appurtenances for safety purposes; and enhancement of the safety and mobility features for bicyclists and pedestrians. Include a cost breakdown for each of the major elements of the project by providing the information requested.

Districts should, in coordination with Headquarters Division of Engineering Services, base their cost estimates on experience with similar projects and available historical data. See Chapter 20 – Project Development Cost Estimates for further details on estimating project costs.

10. FUNDING/PROGRAMMING

11. DELIVERY SCHEDULE

12. RISKS

13. EXTERNAL AGENCY COORDINATION

14. PROJECT REVIEWS

15. PROJECT PERSONNEL

16. ATTACHMENTS

See Appendix L – Preparation Guidelines for Project Study Report for further information regarding what type of documents are more appropriate for project files.

- Strip map (may be eliminated if the vicinity map contains the following information)

  A small map showing the project limits consistent with the brief description, post miles, and a north arrow. The map should be sufficient to locate the project at a glance for a person unfamiliar with the project. It should show the features used to identify the project limits such as roads, streams, junctions or railroads, and the nearest community that can be reasonably shown on the map, and a note indicating the direction to and name of the next community in each direction. It is necessary to understand the proposed work, as such pertinent project features are shown on the strip map. The vicinity map is not to be cluttered with project features.

- A geographic information system map of the project vicinity and counties containing the project limits. Color-coding via a color key or legend for the map should indicate:

  a) The total number of distressed lane miles in the district from the last pavement condition survey (including the date);

  b) The location of distressed lane miles which the project will retire; and

  c) The number of distressed lane miles that are being retired in the current SHOPP (or midcycle SHOPP) document for the district.

  The statistic for item b) should be presented beside the largest colorized portion of the project. The key or legend for the color-coding should be superimposed in the corner of the map so as to not obscure the project limits, north arrow, or other markers.

- SHOPP project output

  Contact the Headquarters SHOPP roadway preservation program manager for the SHOPP Project Output form and guidance on how to complete the form.
- Typical section(s)
- Pavement management system inventory data
- Material report
- Environmental determination/document (required for project approval)
- Right-of-way data sheet
- Scoping team field review attendance roster
- STRAIN data
- Rail upgrade priority factors
- Structural section recommendation (as appropriate, memorandum from district materials unit for widening, realignment, and etcetera)
- Storm water data report-signed cover sheet
- Life-cycle cost analysis
- Risk register
- Note: Add additional attachments as necessary

ARTICLE 3 Template

This article is a template for the project scope summary report. When using the template, delete any italicized text within the body of the document. The italicized text provides instructions for template users and does not provide any value to the final document.

The template is located at:

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