Project Delivery Directive

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TO: Project Delivery Employees

TITLE: Program and Project Risk Management

DIRECTIVE

Proactive risk management shall be applied to Capital Outlay program projects for which Caltrans has delivery responsibility. The minimum risk management requirements should be based on the Scalability Level table shown below.

Scalability Level	**Project Capital Cost Estimate (Construction and R/W)**	**Risk Management Requirements**
0	Minor B projects	District's discretion
1	Minor and Major projects within Minor A limits	Risk Register with qualitative risk analysis Risks that have a medium or high probability will do a quantitative risk analysis
2	Greater than Minor A limit to $75M	Risk Register with deterministic or probabilistic quantitative risk analysis
3	Greater than $75M	Risk Register with probabilistic quantitative risk analysis

Project Managers, in consultation with the project development team (PDT), may choose a higher or lower scalability level based on the complexity of the project. For any project that requires a project contingency higher or lower than 5 percent, a fully developed risk management plan with a quantitative risk register is required in accordance to PD-04-R1. An approval from the Deputy District Director for Program/Project Management (Single Focal Point) is required for using a lower scalability level.

Following is a partial list of factors that the PDT should consider in determining a project's complexity when adjusting the risk scalability level:

- Scope
- Environmental and R/W impacts
- Utility conflicts and impacts
- Political/community sensitivity
- Project location
- Sponsor's sensitivity to cost and/or schedule
- Stakeholders of the project
- Duration of the project
- New type of design or innovative technology
- Alternative project delivery methods
- Road safety conditions
- Materials/suppliers/contractor availability
- Complete Streets implementation and A&E resources
- Maintenance and Construction Worker Safety Impacts

The risks identified in the Risk Register shall be updated and managed throughout the entire project lifecycle. This includes updating the risk reserve and documenting the responses implemented with the resources used when a risk occurs. The project's Risk Register shall be certified by the project delivery deputies or their delegates, indicating that they have reviewed the risks and agree that the risks are being managed to the greatest extent possible by the PDT and the risk owners.

Risk Certification shall take place **prior to:**

- Approving the Project Initiation Document (PID - M010),
- Approving the Project Report, Approval and Environmental Document (PA&ED - M200),
- Achieving Ready to List (RTL - M460).

Risk Register shall be continuously updated or retired as appropriate, but at a minimum **prior to**:

- Approving the Project Report (PA&ED - M200),
- Achieving Ready to List (RTL - M460),
- Achieving Construction Contract Acceptance (CCA - M600),

- Achieving Final Project Closeout (PED - M800),
- Prior to M800, all individual risks shall be retired.

Risk Tasks should be incorporated into all new project workplans as of July 1, 2024.

BACKGROUND

Every project has risks, regardless of project size or complexity. Risk is defined as an uncertain event or condition that, if it occurs, has a negative (threat) or positive (opportunity) effect on at least one project objective (cost, schedule, scope and/or quality). The objectives of Program Project Risk Management (PPRM) are to increase the likelihood and impact of positive events and decrease the likelihood and impact of negative events in the project and within the program. PPRM minimizes uncertainties that may impede successful program and project delivery through effective communication and proactive and timely action throughout the delivery process.

Project delivery success can be increased by establishing and maintaining a Risk Register over the project lifecycle. The Risk Register communicates to the project stakeholders throughout the project delivery phases that the project's risks and responses are known, understood and managed.

The *Program Project Risk Management Handbook* is the user guide for implementing PPRM across all phases of project delivery. In addition to the handbook, risk management training and subject matter experts are available to assist project teams in successfully implementing project risk management.

PRSM Risk Tasks allow documentation of additional risk related resources to conditionally use the risk reserve into those tasks associated with a particular risk together with the commitment of resources. The purpose of the newly added Risk Tasks, per phase (except K Phase), in PRSM is to allow for allocation of additional support dollars without impacting the workload during the annual pull. The guidelines can be accessed in the Project Management Division web page using the following link.

https://projmgmt.onramp.dot.ca.gov/risk-management

The Caltrans Risk Management Maturity Model (Project Risk Management Handbook, Section 1.1) provides the framework to manage risks at the portfolio, program, and project levels. In addition, it will contribute to standardized

processes and tools, enforce the commitment of resources, document the closeout of risks, and generate lessons learned.

DEFINITIONS

Monitor and Control Risks is the process of implementing risk responses plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating the risk process throughout the project life cycle.

Program Risk Management is the application of knowledge, skills, and principles to a program to achieve the program objectives and obtain benefits and control not available by managing program components individually.

Project Risk Management is a process of planning, identifying, analyzing, communicating, managing, and responding to project risks through all phases of project delivery to optimize the chances of project success.

Qualitative Risk Analysis is the process of prioritizing risks for further analysis or action by assessing and combining their probability of occurrence and impact.

Quantitative Risk Analysis is the process of numerically analyzing the effect that cost and/or schedule related risks have on the overall project objectives. Quantitative risk analysis can primarily be performed in two different ways: deterministic or probabilistic.

Deterministic Quantitative Risk Analysis uses calculations to produce a single estimate from the effect of the risk and response efforts. Impact and probability values are assigned for discrete risks to determine what the impacts might be for each risk.

Probabilistic Quantitative Risk Analysis is a more sophisticated and comprehensive method that uses a Monte Carlo style simulation to estimate the effect of combined risks and response efforts. This method produces levels of confidence for the total project cost and schedule.

Retired risks are those risks that no longer have a potential impact on the project, regardless of whether they have triggered or not or have zero probability of happening.

Risk is an uncertain event or condition that, if it occurs, has a negative (threat) or positive (opportunity) effect on at least one project objective (cost, schedule, scope, and quality).

Risk Breakdown Structure (RiBS) is a hierarchically organized depiction of the identified project risks arranged by risk category and subcategory that identifies the various areas and causes of potential risks.

Risk Certification is an approval by district management at established checkpoints that they have reviewed the project risks documented in the Risk Register and agrees that they have been managed to the greatest extent possible by the PDT.

Risk Closeout is a formal process in which information on the risk being closed is documented. Items for documentation should include any updates on risk information, closure rationale, and lessons learned. Risks are closed when it has been successfully mitigated, it has been accepted, it has become an issue, or the risk has not occurred.

Risk Owner is the individual who owns, updates, manages, and statuses the identified risk(s) and is responsible for implementing the planned risk response actions until the risk is retired.

Risk Register is a document that contains a list of identified risks specific to the project, the results of a qualitative risk analysis and/or a quantitative risk analysis, the risk owners, and an agreed-upon risk response strategy.

Risk Reserve is the calculated amount of funds or time needed in addition to the base estimate to cover the unexpected costs or schedule delays resulting from occurrence of uncertain events.

Risk Tasks are a mechanism in PRSM to set aside support and capital funds, per phase (except K phase) that should be utilized should a risk (particularly a threat) come to fruition. Particularly they are used for the Accept and Mitigate risk response strategies. Note, funds set aside within Risk Tasks do not impact workload.

Scalable provides the level of effort appropriate to the project depending on its size and complexity.

RESPONSIBILITIES

Deputy Director, Project Delivery (Chief Engineer):

- Issues PPRM policy.

District Directors:
- Ensure that PPRM is implemented.
- Appoint a dedicated District Risk Management Coordinator(s)and a support project delivery team as needed.

Chief, Division of Project Management:
- Leads, champions, sponsors, and implements PPRM by developing and maintaining policies, guidance (including the *Project Risk Management Handbook*), procedures, practices, training, and expertise.
- Ensures consistent application of PPRM practices throughout all project phases.
- Appoint the HQ Risk Management Coordinator.

Chiefs, Divisions of Construction, Design, Engineering Services, Environmental Analysis, Right of Way and Land Surveys, Maintenance, and Planning:
- Ensure that PPRM requirements are incorporated and maintained in appropriate guidance and manuals.
- Work collaboratively to ensure that risks are communicated, managed, and certified across the entire project lifecycle.
- Work collaboratively to ensure that PPRM is implemented statewide.

Deputy District Directors and DES Deputy Division Chiefs:
- Ensure staff is communicating, managing, and updating risks throughout the project lifecycle.
- Provide Risk Certification at the checkpoints accepting the disposition of risks.

Deputy District Directors of Program/Project Management (Single Focal Points):
- Ensure Project Managers and Project Risk Managers comply with PPRM.
- Approve exceptions to PPRM requirements.
- Support District Risk Management Coordinators, Project Risk Managers and champions, and sponsors.
- Implements PPRM by developing and maintaining policies, guidance, procedures, training, and expertise within the districts.

Project Managers:
- Assumes the responsibilities of the Project Risk Manager unless a dedicated Project Risk Manager is assigned to the project.
- Promote and direct risk management for the project.

- Inform management about risk management results, major issues and concerns.
- Track and monitor the effectiveness of risk response actions.
- Take a lead role in obtaining Risk Certification at required milestones.
- Document new risks in the Risk Register, when identified.
- Assign committed resources to Functional Groups when a risk occurs.
- Document lessons learned.
- Retire risks when they are no longer active.
- Completes the closeout section for the assigned risk.

Project Risk Managers:

- Districts may choose to have dedicated Project Risk Managers who will assist the PMs and/or District Risk Management Coordinators in all PPRM related activities.
- Report to the Project Manager on all matters related to risk management if the PM is not functioning in this role.
- Determine the project's Risk Register requirements based on project capital cost estimate and complexity with input from the PDT.
- Request exceptions to project risk management requirements where desired.
- Ensure the project Risk Register is populated and maintained with risks developed by functional units and the PDT.
- Ensure proactive response to all threats and opportunities that will impact the successful delivery of the project.
- Produce risk management reports for sponsors.
- Schedule and conduct project risk meetings.
- Ensure project risks are classified according to the appropriate RiBS category.
- Document lessons learned.
- Retire risks when they are no longer active.
- Completes the closeout section for the assigned risk.

HQ Program & Project Risk Management Coordinator:

- Develops and deploys risk management business process improvements and tools.
- Maintains corporate risk management dataset; develop and deploy reports and analysis relating to program/project risk management.
- Provides risk management support to district and corporate staffs.
- Updates guidance (policies, memoranda, manuals, checklists, etc.) relating to risk management practices within the Capital program.

- Review and develop program/project risk management process improvements, tools, data systems, and training content.
- Provide data management, reporting, and analysis relating to the Program's risk management efforts.
- Develop and maintain a risk management dataset that incorporates historical data relating to actual risk occurrence and impacts.
- Supports the districts at the project level and the Program at the corporate level within the organization.
- Acts as corporate liaison to the Enterprise Risk Management group within the Division of Organizational Risk Management.

District Risk Management Coordinators:

- May function as the Project Risk Manager.
- Assist Project Managers in implementing PPRM requirements.
- Provide expertise, direction, and assistance.
- Obtain expert services as needed.
- Document and share risk management best practices with district project delivery staff.
- Provide collaboration between HQ and Districts.
- Provide input to update the Project Risk Management Handbook as well as this Project Delivery Directive.
- Document lessons learned.
- Leads the District's efforts in implementing risk management best practices and systems.

First-line Supervisors:

- Review all risks throughout the project lifecycle.
- Support the PDT members in the risk identification, monitoring and implementation of the risk response strategies.

Project Delivery Team (PDT) Members:

- Identify and assess risks, identify the risk owner, develop proactive risk responses, and ensure that the response strategy is followed through.
- Document lessons learned.

Risk Owners:

- Commit to risk responses documented in the Risk Register.
- Review and update the risk responses when a risk occurs or when a risk is mitigated.

- Implement the risk response actions and report to the PDT for inclusion in risk management updates.
- Document the resources used for mitigating a risk
- Communicate status of risks to the PDT.
- Document lessons learned.
- Recommends that the risk should be retired.
- Completes the closeout section for the assigned risk.

APPLICABILITY

All Caltrans employees.

Donna Berry

DONNA BERRY
Chief Engineer
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03/28/2024

Date Signed