

Project Risk Management FAQs

Question 1: Why is project risk management important?

The primary objective of project risk management is to effectively identify, address, and mitigate or avoid threat risk events before they develop into negative outcomes, or identify, address, and enhance/exploit opportunity risk events into positive outcomes. See the “Guide to Managing Project Risks for ODOT STIP” on the Project Risk Management, Value Engineering, and Constructability Review website.

Question 2: How much time and effort is required to create a risk register and complete a risk assessment?

Generally, on a typical project, the Project Team could have approximately 16 – 20 Project Team hours (and could vary based on project complexity)

The following is the anticipated base project risk management process:

- Initiation Milestone: Generate risk register (risk identification, analysis, and response strategies – 4 hour Project Team meeting
- DAP milestone: Update risk register (monitor and review risk, analyze new risk) – 2 hour Project Team meeting
- Preliminary milestone: Update plan for risk register – 2 hour Project Team meeting
- Advance plans milestone: Update plan for managing risk – 2 hour Project Team meeting
- Final plans milestone: Update plan for managing risk – 2 hour Project Team meeting
- PS&E milestone: Update plan for managing risk – 2 hour Project Team meeting
- Construction handoff: Meeting with TPM/RE-CP and Construction Administration project manager to discuss the plan for managing risk – 2 hour meeting

Question 3: How much is the average cost to create a risk register and complete a risk assessment?

Costs could range from \$20,000 to \$25,000 (using 1 Project Manager and 9 discipline leads at \$125/hr for this estimate) for a project.

Question 4: How much is the average cost to perform a Cost Risk Assessment?

For the quantitative risk assessment (Cost Risk Assessment), this process is done in a workshop setting, usually once. The workshop will be scheduled prior to DAP when the project has a stable scope, and requires risk modelling and cost and schedule estimate validation. According to WSDOT’s Program, a typical Cost Risk Assessment will cost approximately \$100,000. This process will typically be done on projects that exceed \$25 million, or at Region request (for projects below \$25 million).

Question 3: Projects over \$25M require both a “qualitative” risk assessment, and a “quantitative” Cost Risk Assessment (CRA). Could we assign a project to one type of assessment or the other to reduce duplicative analysis?

The qualitative analysis, which is generated at initiation, will be used to “seed” the Cost Risk Assessment, which should be performed around the time that the project has a stable scope. The CRA is a different, higher level, risk analysis process that produces risk based cost and schedule estimates.

Projects that will conduct a Cost Risk Assessment would have a project risk management process similar to the following:

- Initiation Milestone: Generate risk register (risk identification, analysis, and response strategies – 4 hour Project Team meeting
- **Prior to DAP**: Conduct Cost Risk Assessment, produce risk based cost and schedule estimate
- DAP milestone: Update risk register (monitor and review risk, analyze new risk) – 2 hour Project Team meeting
- Preliminary Plan milestone: Update plan for risk register – 2 hour Project Team meeting
- Advance plans milestone: Update plan for managing risk – 2 hour Project Team meeting
- Final plans milestone: Update plan for managing risk – 2 hour Project Team meeting
- PS&E milestone: Update plan for managing risk – 2 hour Project Team meeting
- Construction handoff: Meeting with TPM/RE-CP and Construction Administration project manager to discuss the plan for managing risk – 2 hour meeting

Question 4: Is there a risk register template?

The Project Risk Management program has developed a risk register for use by all and can be found at the Project Risk Management, Value Engineering, and Constructability Review website.

Question 5: What is risk rating?

Risk rating is used to determine a potential magnitude of the risks for the purposes of prioritizing risk and allocating risk response resources.

Question 6: How are probability of occurrences calculated?

Through experience and engineering judgement. The project team has detailed knowledge of the project and is therefore the risk experts of the project. An example of how this works is by thinking about the probability of the following: What is the probability of occurrence of you getting to work without being stopped at a signalized intersection? Few people could answer that question besides you because you are an expert in the route that you travel to work.

Question 7: How is a project manager to know if the risk plan is complete?

Project Risk Management is dynamic and the risk analysis is typically a “snap shot in time” during project development. A risk plan or register is complete when the following steps have been performed:

- Planning the risk management process,
- Identifying project risk, performing risk analysis,
- Evaluating and prioritizing risk,
- Determining risk response strategy,
- Implementing risk response, and
- Monitoring and reviewing risk

Question 8: Why is it required to submit the Project Risk Register at Initiation, Design Acceptance Package, and Plan, Specifications, and Estimate submittal package?

The intent in this is to allow for the Project Risk Management program to gather valuable project risk data regarding enterprise risk (risks that regularly occur on projects) and to determine whether additional training is needed.

Question 9: What is a Cost Risk Assessment?

A Cost Risk Assessment (CRA) typically includes a 2 day workshop with the Project Team. The length of the workshop depends on project and risk size.

In this workshop, risk are identified and quantified by project team members in terms of the following questions:

- How likely is it that the risk event will be triggered?
- What is the cost impact range of the risk?
- What is the schedule impact range of the risk?

With this data a risk modeller uses a statistical analysis technique called a Monte Carlo simulation to produce a probability distribution of estimated total project cost with an associated confidence level.

What a Monte Carlo simulation does is simulate the project 10,000 times with random risk events triggering. When the risk event is triggered, its expected value for cost and time is added to the total base cost and schedule for the project.

Using this technique, a CRA produces a Risk Based Cost and schedule estimate for the project.

Question 10: When should a CRA be conducted?

Typically it is best to perform a CRA when the project has a stable scope. The intent of this timing is to prevent the need to perform multiple CRA's on multiple alternatives (although, this can be done if desired) and allows for a thorough project cost and schedule estimate.

Question 11: Who is responsible for risk modeling?

The Region can develop this capacity, outsource this work by hiring a Consultant, or task the VE/Project Risk Engineer with facilitating a CRA and performing risk modelling.