Risk Management Implementation Plan

Overview

For current projects in the Capital Project Delivery (CPD) program, Risk Management (risk identification, risk analysis, risks response planning, risk monitoring and control) shall be implemented at the discretion of the Project Manager. The integration approach, however, has to be adjusted in accordance with:

- What current CPD phase of the project
- Type and detail of previously gathered information
- What analysis has been performed
- What decisions and/or agreements have been made to date

Even without a formal process, informal project risk management, in some form, has always been employed throughout the development of a CPD project. Since the formal risk management process isn't significantly more effort than the informal one, there should be very little change to project scope, schedule and budget.

Implementing a formal process provides for consistency, the ability to capture lessons learned and share information, as well as developing a repository for that information that will subsist beyond the project.

With any process, key steps or components may rely or be dependent on previous ones. The project risk management process also follows this "crawl, walk, run" model. Some key risk management activities or products may not be able to be produced or utilized simply because the predecessor(s) was not accomplished. For example, if risks are not formally analyzed, a formal risk strategy cannot be developed.

Risk Management Implementation by Phase

Problem Screening

The greatest opportunity to realize the benefits of a formal risk management process occurs when it is integrated into the CPD process at a project's inception. The amount of information available at the Problem Screening phase limits the consideration of risk to an anticipation of what project risks might be encountered considering the type of problem/possible solutions and the location of the problem/prospective project. Consequently, during the Tier 1 Screening and Tier 2 Screening, risk should be given the same attention as the information being gathered. Risks can be identified and assessed sufficiently to aide in selecting the most efficient and rapid path that the deficiency outlined in the Problem Statement could follow to move ahead. (Tier 1 Screenings are performed by the Division of Capital Investment Strategies. Tier 2 Screenings are performed by the Division of Project Management.)

If a proposed project is in the beginning of the Problem Screening phase when the NJDOT project risk management process is implemented, the Project Manager should utilize all of the risk management core components.

Concept Development

During the Concept Development (CD) phase, the risk management process helps evaluate deficiencies and identify fatal flaws to assist in selecting the Preliminary Preferred Alternative (PPA). At this phase, the Project Manager, Designer and Initial Risk Owners have the greatest flexibility in developing

response strategies to address the risks and the greatest ability to exploit opportunities. Projects that have progressed beyond the Local Officials Briefing and have received local support, prior to the NJDOT implementing the risk management process, should perform risk identification and analysis on the PPA.

If a proposed project is in the beginning of the CD phase when the NJDOT project risk management process is implemented, the Project Manager can use the risk process to:

- *Assist in the development the CD Scope Statement*
- *Prepare the Utility Risk Assessment Plan*
- *Identify major risks when completing the Alternatives Matrix*
- *Perform quantitative risk analysis on the selected PPA (if required)*
- *Assist in the development of the PE Scope Statement*
- *Summarize the risk management efforts in the CD Report*

Preliminary Engineering

Although it is preferable to begin risk management as early in the project life cycle as possible, some of the components of the risk management process can be readily integrated at the start of the Preliminary Engineering (PE) phase. Early in PE, the opportunity still exists to implement response strategies for newly identified and analyzed risks with minimal or no effect on the project scope, schedule or budget. Initiating the risk management process at the beginning of PE requires only some backtracking to perform risk assessment of the PPA and, depending on how far into PE the project has progressed, any new or more in-depth information gathered to date.

For projects requiring an EA or EIS that have progressed to completion of the draft environmental document, risk management should begin once a finding on the PPA has been received. Once the environmental document is approved, the risk management process is implemented based on the preferred alternative. If the project is within six (6) months of completing Preliminary Engineering, the risk management process is initiated at start of the Final Design (FD) phase. For projects with a Preliminary Engineering completion date greater than six (6) months away or where the Project Manager determines that the benefit of implementing the risk management process immediately is significant, the process is integrated into the project. Risk identification and analysis is conducted, and risk response strategies and action plans are developed within the Risk Register. The Risk Register is attached to the PE report for further refinement, re-evaluation and monitoring through FD.

If a proposed project is in the beginning of the PE phase when the NJDOT project risk management process is implemented, the Project Manager can use the risk process to:

- *Identify and analyze project risks from the various technical studies and design activities*
- *Identify and analyze project risks from the Public Information Center and the EA Public Hearing*
- *Update the Utility Risk Assessment Plan*
- *Assist in the development of the FD Scope Statement*
- *Summarize the risk management efforts in the PE Report*

Final Design

The purpose of FD is to prepare the contract documents needed to award the construction contract. The risk management process is designed to help improve these contract documents.

A significant amount of project information has been gathered and analyzed by the start of the FD phase. Whether the risk management process began in an earlier phase or starts during the FD phase, opportunities exist to increase the Department's ability to meet the project objectives by formally identifying and assessing risks and developing and monitoring response strategies.

The risk management process does not change or lose its effectiveness because the project has advanced to FD. Formal project risk management may not have been utilized during previous phases, but informal risk management was certainly used in the development of the project (i.e., selecting the PPA). Risks were informally identified, assessed and responded to, either through acceptance, avoidance or mitigation.

When implementing the formal risk management process, the Project Manager adds any previously identified risk that has an ongoing response/mitigation strategy to the Risk Register. Although it is not likely that many new risks will be identified during FD, it should be noted that the FD phase offers the least flexibility and opportunity to address newly identified risks or change response strategies without significant changes to the project scope, schedule or budget.

A goal of the risk management process is to avoid surprises in design and construction that lead to crisis management. One of the benefits of integrating risk management into the CPD process at any phase of project development is the ability to capture and share lessons learned. Therefore, any previously avoided, mitigated or accepted risks should be noted for the purpose of lessons learned.

For projects that have already started FD, but have more than six (6) months until the Final Design Submission, risk response action plans that would be implemented during Construction should be documented in the Risk Register. The Risk Register should then be provided to Construction personnel.

> Note: Six (6) months is the anticipated time it would take to get a proposal, execute a contract addendum or modification, identify an initial list of risks and response strategies, and hold a team meeting with SME's to complete the Risk Register. It also allows time to make reasonable modifications to the plans and/or special provisions to incorporate newly developed response strategies.

Implementation Plan: If a project is in the beginning of the FD phase when the NJDOT project risk management process is implemented, the Project Manager can use the risk process to:

- *Formally identify and analyze risks that may arise from developing the Alternatives of Accommodation Plan*
- *Formally identify and analyze risks that may arise from conducting the Title Search*
- *Implement risk response strategies within the contract documents*
- *Summarize the risk management efforts in the Risk Report (included in the FD Submission package)*