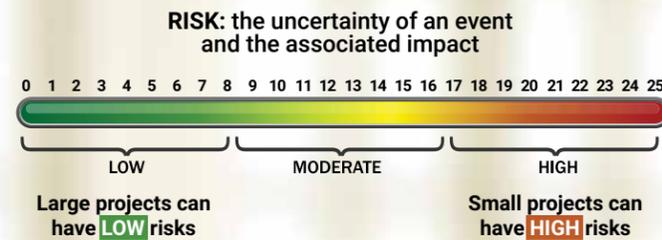


CSO PERSPECTIVES: Managing Risk

All Projects Have Risk



All projects have elements of risk. As the City works to deliver the many projects that make up the CSO Program, managing risk is critical to success. The CSO Program proactively manages risk on a project-by-project basis by identifying, understanding, and mitigating risks that could impact budget and schedules.

RISKS

A project risk is defined as “an uncertain event that may or may not occur during a project” and can either positively or negatively impact project cost or schedule. For example, a sewer line may be proposed to be placed underneath existing railroad tracks. Risks could include potential delays due to the need for coordination and cooperation from the railroad or additional costs required for more complex construction methods. In this example, risk could be eliminated during the design phase by re-routing the sewer line away from existing railroad tracks.

PROGRAM RISK REGISTER

The CSO Program Risk Register was initially created in 2008 and is periodically reviewed and updated to include current risk information. This allows for informed decisions to be made across the CSO Program and creates consistency in risk management activities. Updated risk register information is then applied to new projects to track and manage decisions related to risk, benefiting from lessons learned on previous efforts.

PROJECT RISK REGISTERS

The project risk register is provided to design consultants at project kick-off and is reviewed and updated throughout design. Just as no two projects are the same, project risks vary and are tailored for each unique effort. Once risks are identified, they are scored and categorized based on probability (the likelihood of occurrence) and impacts to cost and schedule. Once identified, risks can be

mitigated, transferred, avoided or accepted. Risks are also identified as either city-owned or contractor-owned. Eliminating risk is not always possible and there are instances where the contractor or City may need to accept a risk.

Design decisions are ultimately reflected in project plans and specifications. Once design is complete, the Risk Register is provided to the construction manager to monitor risk management activities during construction.

BENEFITS

Identifying risks early in project development allows for proactive decisions to be made about how to best address risk and potentially reduce costs. Tracking the potential for risk, as well as actual risks encountered on prior efforts, helps project teams improve future designs and reduce risk.

Since utility conflicts are often identified project risks, the City has recently assigned additional resources to review project design deliverables with a focus on utility conflicts and coordination. These items, identified in design, carry forward through construction. This review helps to identify potential utility conflicts and other risks that can be mitigated during design more easily than after a construction contractor has been engaged. Clearly defined utility risk items in project bid documents reduce contractor uncertainty and help to forecast expected construction bid pricing more accurately. Proactively defining and managing design risks benefits the CSO Program’s bottom line.



Risk Factor Scores and Composite Risk Levels

Risk Factor Score	Very Low 1	Low 2	Medium 3	High 4	Very High 5
Probability Range	<10%	10–25%	25–75%	75–90%	>90%
Cost Range	<0.5%	0.5–1%	1–5%	5–10%	>10%
Time Range (months)	<0.5%	0.5–1%	1–10%	10–20%	>20%
Rating	<5		5–10	≥10	
Score = ((Cost + Time)/2) x Probability					

Risk Mitigation Approach/Risk Ownership

Risk Mitigation Approach	Definition
Mitigate	Minimizes the probability and/or cost and schedule impact of the risk
Transfer	Shifts the risk to another party
Avoid	Eliminates the probability and/or cost and schedule impact of the risk
Accept	The risk is outside of the Project Team’s influence or the risk is minimal, and a mitigation strategy will not be implemented