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# Risk Response Planning

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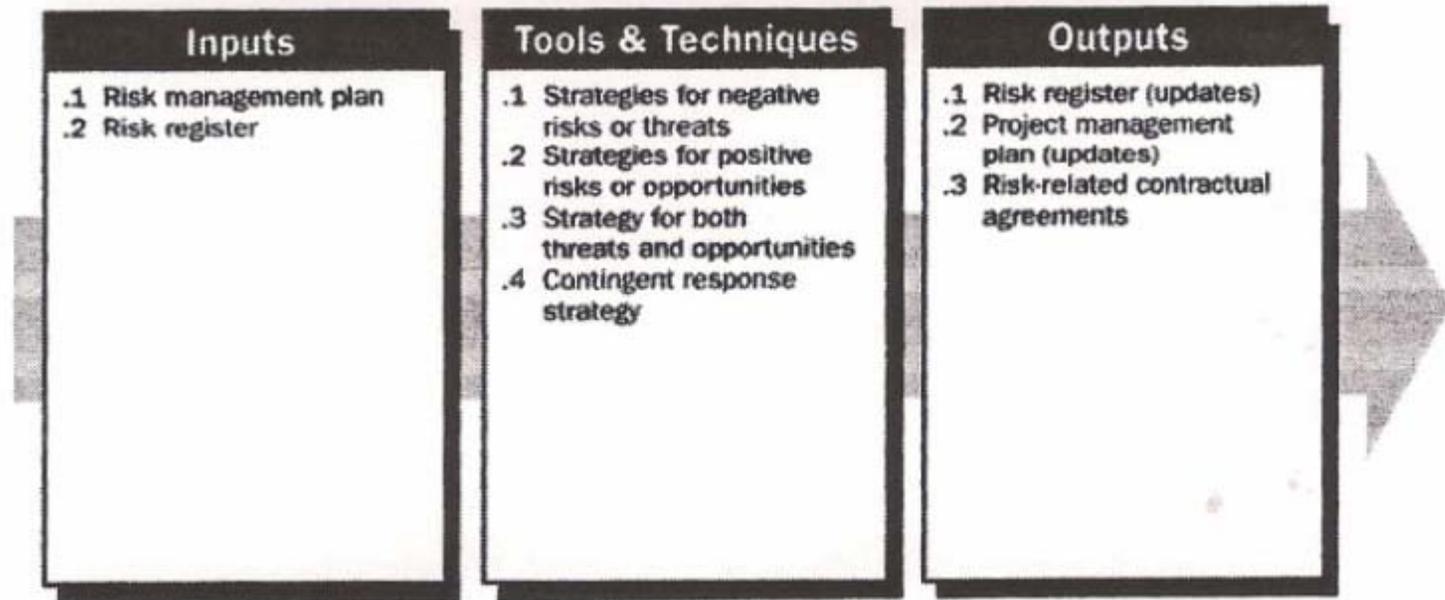
# Objective

- Develop options and determine actions to enhance opportunities and minimize threats to project objectives.
  - Assign responsibility to individuals or parties for each risk response.
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# Criteria for risk response

- Risk response must be:
    - Proportional to the severity of the risk.
    - Cost effective.
    - Timely.
    - Realistic.
    - Accepted by all parties involved.
    - Owned by a person or a party.
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**Figure 11-14. Risk Response Planning: Inputs, Tools & Techniques, and Outputs**

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# Inputs to Risk Response Planning

## 1. Risk management plan.

Major elements from the plan needed include roles & responsibilities, budgets and schedule for risk management activities, risk categories, definitions of probability & impact, and the stakeholders' tolerances.

## 2. Risk Register

Reference will be made to:

1. *List of prioritized risks.* from qualitative and quantitative risk analysis.
  2. *Probabilistic analysis of the project.* from quantitative risk analysis.
  3. *Probability of achieving the cost and time objectives.*
  4. *List of potential responses.* In the risk identification process, actions may be identified that respond to individual risks or categories of risks.
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# Inputs to Risk Response Planning

5. ***Risk thresholds.*** The level of risk that is acceptable to the organization will influence risk response planning.
  6. ***Risk owners.*** A list of project stakeholders able to act as owners of risk responses. Risk owners should be involved in developing the risk responses.
  7. ***Common risk causes.*** Several risks may be driven by a common cause. This situation may reveal opportunities to mitigate two or more project risks with one generic response.
  8. ***Trends in qualitative and quantitative risk analysis results.*** Trends in results can make risk response or further analysis more or less urgent and important.
  9. ***Watch list of low priority risks.***
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## Tools & Techniques for Response Planning

1. Strategies for negative risks (Threats)
  2. Strategies for positive risks (Opportunities)
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# 1. Strategies for negative risks (Threats)

- Risk Response may be one of several strategies.
    1. Avoid
    2. Transfer
    3. Mitigate
    4. Accept
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# Risk Avoidance

- Risk avoidance is done by
    - changing the project plan to eliminate the risk or the condition that causes the risk in order to protect the project objectives from its impact.
    - Relaxing the relevant objective (extend the schedule, reduce specification requirements, reduce scope)
  - Not all risks can be avoided, but some may.
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# Examples of Risk Avoidance

- ❑ Add resources or time.
  - ❑ Adopt a familiar approach instead of an innovative one.
  - ❑ Avoid an unfamiliar subcontractor.
  - ❑ Clarify requirements.
  - ❑ Improve communication
  - ❑ Obtain information
  - ❑ Acquire expertise.
  - ❑ Reduce scope to avoid high-risk activities
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# Risk Transfer

- Transfer the risk to a third party who will carry the risk impact and ownership of the response.
  - Risk Transfer is *most effective in dealing with financial risk exposure*.
  - Risk transfer nearly always involves payment of a risk premium to the party acquiring the risk.  
Examples of risk transfer are:
    - The use of insurance, performance bonds, warranties and guarantees.
    - Contracts may be used to transfer liability for specified risks to another party.
      - Use of a fixed price contract may transfer risk to the seller if the project's design is stable. A cost reimbursable contract leaves more of the risk with the buyer, but it may help reduce cost if there are mid-project changes.
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# Risk Mitigation

- Risk mitigation aims at reducing the probability and/or impact of a risk to within an acceptable threshold.
  - The probability/Impact should be mitigated before the risk takes place. Thus avoiding to deal with the consequences after the risk had occurred.
  - Mitigation costs should be appropriate given the likely impact and probability of the risk.
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# Examples of Risk mitigation

- Implementing a new course of action that will reduce the problem, e.g. adopting less complex processes, conducting more seismic or engineering tests, or choosing a more stable supplier.
  - Changing conditions so that the probability of the risk occurring is reduced, e.g. adding resources or time to the schedule.
  - Prototype development to reduce the risk of scaling up from a bench scale model.
  - Where it is not possible to reduce probability, a mitigation response might address the risk impact by targeting linkages that determine the impact severity. For example, designing redundancy into a subsystem may reduce the impact that results from a failure of the original component.
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# Risk Acceptance

Acceptance indicates a decision not to make any changes to the project plan to deal with a risk or that a suitable response strategy cannot be identified. This strategy can be used for both negative and positive risks

There are two types of acceptance:

- ❑ Active acceptance: may include developing a **contingency plan** to execute should a risk occurs.
  - ❑ Passive acceptance: requires no action. The project team will deal with the risk as it occurs.
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# Risk Acceptance

- **A *contingency plan*** is developed in advance to respond to risks that arise during the project. Planning would reduce the cost of an action should the risk occur. **Risk triggers**, such as missing intermediate milestones, should be defined and tracked.
  - The most usual risk acceptance response is to establish **a *contingency allowance***, or reserve, including amounts of time, money or resources to account for known risks. The allowance should be determined by the impacts, computed at an acceptable level of risk exposure, for the risks that have been accepted.
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## 2. Strategies for positive risks (Opportunities)

- Strategies for positive risks are:
    1. Exploit
    2. Share
    3. enhance
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# Exploit the opportunity

- Ensure that the risk event happens by eliminating the uncertainty. to take advantage of the opportunity. Examples: assign qualified personnel, select an appropriate project delivery, provide better quality.
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## Share the risk

- Allocate ownership to a third party who has a better chance of achieving the required results. Examples: joint ventures, partnerships, rewards.
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# Enhance

- Increase the likelihood of occurrence or the impact of the event
    - Improve chances for the event to happen so the opportunity becomes more certain
    - Consider how the impact can be increased and choose a course of action that in the increased impact
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# Accept the risk

- See slide on Risk Acceptance



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# Outputs from Risk Response Planning

## **1. *Risk Register Updates***

The risk register is updated to reflect the results of the response planning process. Level of detail of documenting a risk should be appropriate to the ranking of the risk (high risks in detail, low risks by listing)

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# Risk Register Content

## Items in the risk register

- ❑ **Identified risks**, their description, the area of the project (e.g. WBS element) affected, their causes and how they may affect project objectives.
  - ❑ **Risk owners** and assigned responsibilities.
  - ❑ **Results from the qualitative and quantitative risk analysis** processes.
  - ❑ **Agreed response strategies**
  - ❑ Specific actions to implement the response plan.
  - ❑ **Budget and schedule activities** for responses.
  - ❑ **Symptoms and warning signs** for risks' occurrence
  - ❑ **Contingency plans with triggers**
  - ❑ **Contingency reserves**.
  - ❑ **Fallback plan** for when risk occurs and original response is inadequate
  - ❑ **Residual risks** expected to be remaining after the strategy is implemented and accepted risks
  - ❑ **Secondary risks** arising directly from implementing a risk response
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# Results from Risk Response Planning

## 2. *Project Management Plan Updates*

The project management plan is updated to incorporate response activities including reflecting impact on cost and schedule.

## 3. *Contractual agreements.*

Contractual agreements are prepared to specify each party's responsibility for specific risks, should they occur. This include agreements for insurance, services, and other items as appropriate in order to avoid or mitigate threats.

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