

## Knowledge Area 5

# Asset and Risk Management

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## Administrative Items

- Emergency procedures
- Emergency exits
- Restrooms
- Break facilities
- Lunch facilities
- Cancellation policy
- Course attendance policy
- Please turn off mobile devices\*



# Risk

What types of risky situations have you witnessed?



## Getting to Know You

### 1. In your table groups:

- Introduce yourselves
- Brainstorming: Records-related risks
  - As a team, select your top 5 records-related risks

### 2. All together:

- Introduce yourself (name, agency/organization, city)

# **Risk Planning and Management Experience?**

Who has experience or involvement with risk management, emergency management, contingency planning, or essential records planning?

## About NARA

Many of the policies, programs, and guidance products NARA provides are designed to help agencies manage records-related risks:

- Records appraisal and scheduling
- Records management guidance
- Records Management Self Assessment
- Records Management Inspections
- Essential Records planning
- NARA's Information Security Oversight Office (ISOO)



## Knowledge Area 5

### Course Outline

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# NARA's Knowledge Areas and Certificate of Federal Records Management Training

- KA 1: Records Management Overview
- KA 2: Creating and Maintaining Agency Business Information
- KA 3: Records Scheduling
- KA 4: Records Schedule Implementation
- **KA 5: Asset and Risk Management**
- KA 6: Records Management Program Development



# Course Objectives

At the completion of this course, you will be able to do the following:

- Define key terms and concepts of asset and risk management
- Identify and access information and guidance resources pertaining to asset and risk management
- Describe the techniques and tools for identifying and assessing risk
- List the steps involved in a risk analysis

## Course Objectives (cont'd.)

- Identify various risk management strategies
- Explain the purpose and process of a Business Impact Assessment (BIA)
- Conduct a cost-benefit analysis

# Course Agenda

## Day 1

- Welcome
- Course Outline
- Module 1: Introduction to Risk Management
- Module 2: Risk Assessment and Analysis
- Module 3: Handling Risk
- Day 1 Wrap-Up

## Day 2

- Welcome Back
- Module 3: Handling Risk, continued
- Module 4: Risk Management Project
- Module 5: Cost-Benefit Analysis
- Course Wrap-Up

# Course Materials

## Knowledge Area 5: Asset and Risk Management Participant Guide (PG)

- KA 5 Modules 1 through 5
- KA 5 Handouts
- KA 5 References

# Course Outline

## Applying What Your Learned

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## Action Items Worksheets

- At the end of each module you will be given the opportunity to complete an Action Items Worksheet
- Use this worksheet to record what you've learned in the module and how you will apply it to your job



## Course Outline

### Why Are We Here?

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# The Importance of Risk Management

*Before Risk Management...*





# Module 1: Introduction to Risk Management

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# Module 1 Learning Objectives

At the completion of this module, you will be able to do the following:

- Define risk management key terms and concepts
- Describe how risk management is an integral part of a records management program



# Module 1: Introduction to Risk Management

## Lesson 1: Risk Management Terms and Concepts

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# Key Terms—Assets and Asset Management

- An **asset** is anything of value or perceived value
- **Asset management** is the process of documenting and controlling all assets, either in use or under development by an agency

## Key Terms—Risk

- **Risk** is the potential harm that may arise from some present process or future event
- Risk contains two elements:
  - The likelihood of an event occurring
  - The consequence and/or impact if it happens



# Key Terms—Risk Management

**Risk management** is the process of identifying and evaluating risk and then developing strategies to manage the risk.



## Key Terms—Risk Assessment

- **Risk assessment** is an examination of the potential harm that may result from exposure to certain hazards
- Risk assessment consists of two main phases:
  - Risk Identification
  - Risk Analysis and Prioritization

## Key Terms—Risk Identification

**Risk identification** involves identifying, defining, categorizing, documenting, and communicating the risks that could affect an organization, program, or project.

# Activity

## District Court Example



## Key Terms—Risk Analysis

**Risk analysis** is the systematic use of available information to determine how often specified events may occur, and the magnitude of the consequences if they do occur.

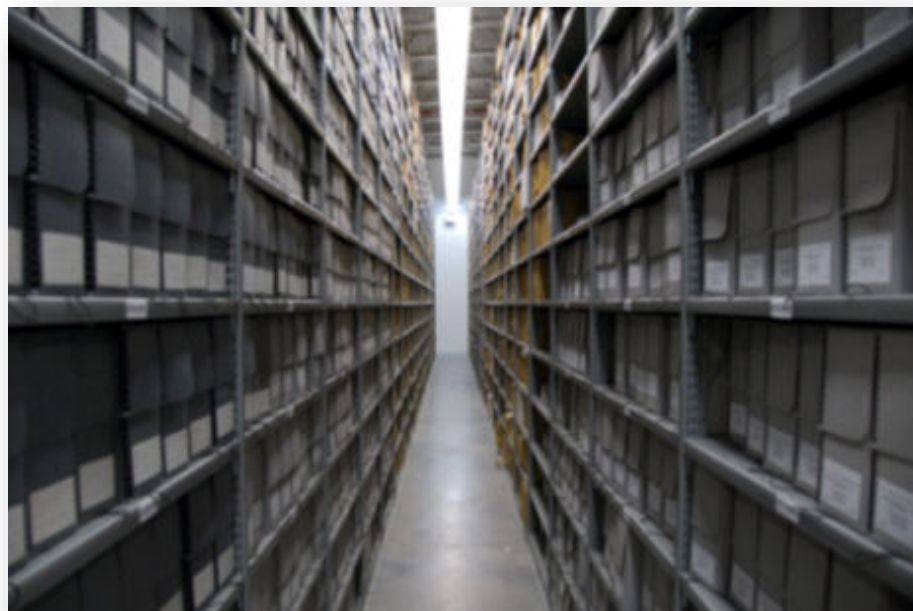
# Risk Perceptions

Different groups or individuals may look at the same risk in very different ways.

## Risk Perceptions (cont'd.)

### Public perception:

It would be helpful to be able to browse through records in the stacks at the Archives.





## Risk Perceptions (cont'd.)

### Agency perception:

Access to the records must be controlled to minimize risks to the records, including damage, theft, loss, or misfiling.



# Players Involved in Risk Management

The government does risk management on many different levels—the players are government-wide:

- Congress and the President
- Government Accountability Office (GAO)
- Agencies

# Module 1: Introduction to Risk Management

## Lesson 2: Risk Management and Records Management

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# **Risk Management as a Tool for Records Management**

Risk management helps to:

- Ensure that the records management program is doing the best job possible
- Identify records-related risks that may jeopardize your program
- Ensure that the records management program is making the best use of limited resources

# **Risk and the Critical Components/Elements of a Records Management Program**

Each critical component/element of a records management program helps to manage risk, including:

- Policy and procedures
- Asset management
- Records schedules
- Management support
- Training
- Budget and resources

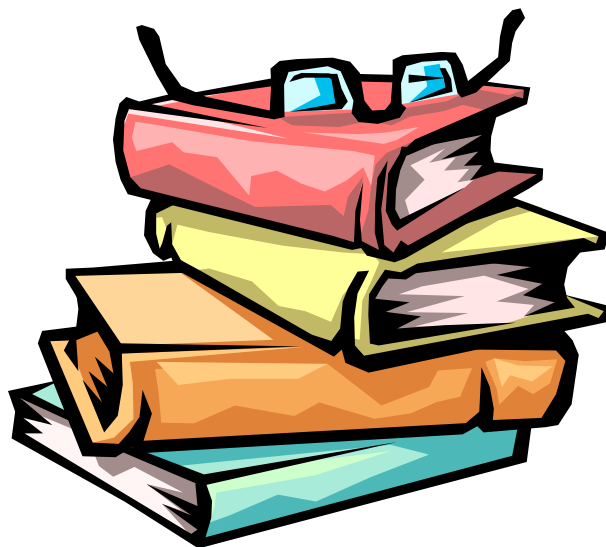
# Module 1: Introduction to Risk Management

## Review and Wrap-Up

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# Module Review





# Applying What You Learned

## Module 1—Action Items Worksheet



## Module 2: Risk Assessment and Analysis

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## Module 2 Learning Objectives

At the conclusion of this module, you will be able to

- Identify the types of risk relevant to agency records
- Explain the Expert Interview, Brainstorming, and Nominal Group techniques for identifying risk
- Given a scenario, perform a Risk Probability/Impact Assessment
- Given a scenario, complete a Risk Acceptability/Tolerance Matrix
- Explain the purpose and process of a Business Impact Analysis (BIA)

## Module 2: Risk Assessment and Analysis

### Lesson 1: Risk Assessment—Identifying Risk

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## Types of Risk

The types of risks relevant to a records management program include:

- Disaster-related risks
- Records control risks
- Records lifecycle risks
- Technology-related risks
- Records preservation risks
- Project-related risks

## Disaster-Related Risks

- Natural disasters
- Mechanical, structural, and technical disasters
- Human disasters





# Records Control Risks: Physical Control

- Records storage
- Storage media
- Access control





## Records Control Risks: Intellectual Control

- Organization and retrieval
- Version control
- Failure to create or capture records
- High-ranking officials leave and take records with them



## Records Lifecycle Risks

- Retention
- Legal
- Security
- Business
- Personnel
- Accountability



# Technology Risks

- Decentralized storage
- Technological obsolescence
- Data migration
- Hardware/software/media failure
- Viruses



# Long-Term Preservation Risks

- Access and retrieval
- Technological obsolescence
- Environment
- Physical format deterioration



## Project-Related Risks

- Financial
- Technical
- Operational
- Schedule
- Legal and contractual
- Organizational



# **Risk Assessment Techniques**

- Expert Interviews
- Brainstorming
- Nominal Group

## Things to Consider When Identifying Risk

- Identify risks early, often, regularly, and at all levels
- Teams can be an effective way to help identify and analyze risks
- Risks are seldom deeply held secrets
- Risks may have more than one cause. Treat each cause as a separate risk.



# Review Activity

## Brainstorming Risks



## Module 2: Risk Assessment and Analysis

### Lesson 2: Risk Analysis—Evaluating Risk

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# Introduction to Risk Analysis

- Risk analysis evaluates the probability and the impact of identified risks.
- Three methods for evaluating risk are:
  1. Risk Probability/Impact Assessment
  2. Risk Acceptability/Tolerance Matrix
  3. Business Impact Analysis (BIA)

# Risk Probability/Impact Assessment

A risk probability/impact assessment is used to analyze and prioritize the risks identified in the risk assessment. It consists of three steps:

- Establish a rating system:
  - Probability rating
  - Impact rating
- Determine the risk factors
- Determine the risk score

## **Step 1: Establish a Rating System**

The rating system should incorporate two types of ratings:

1. Probability rating
2. Impact rating

# Step 1: Establish a Rating System (cont'd.)

## Probability rating

<u>Scale</u>	<u>Probability</u>	<u>Description</u>
3	High	The event is expected to occur
2	Medium	Similar events have occurred in the past
1	Low	The event has little chance of occurring

# Step 1: Establish a Rating System (cont'd.)

## Impact rating

<u>Scale</u>	<u>Impact</u>	<u>Impact Descriptor</u>
3	Catastrophic	Extremely high impact; devastating loss
2	Serious/Critical	Major impact; significant loss
1	Minor/Marginal	Some loss; sustainable



## **Step 2: Determine the Risk Factors**

- Rate the probability of each risk
- Rate the impact of each risk
- $\text{Probability} \times \text{Impact} = \text{Risk Factor}$

## Step 2: Determine the Risk Factors (cont'd.)

<u>Identified Risk</u>	<u>Probability</u>		<u>Impact</u>		<u>Risk Factor</u>
1. Cost overruns	3	×	3	=	9
2. Unfamiliar with similar systems	2	×	2	=	4
3. Limited resources	2	×	3	=	6
4. Scheduled timeframe is impossible	3	×	3	=	9
5. Unhappy stakeholders	2	×	3	=	6
6. System not integrated with current system	2	×	3	=	6

## **Step 3: Determine the Risk Score**

The risk score is the average of the risk factors of all a project's risk.

- To calculate the risk score:
- Calculate the risk rating:
  - Risk rating = the sum of all risk factors
- Then divide the risk rating by the number of risks:
  - Risk score = risk rating  $\div$  number of risks

## Step 3: Determine the Risk Score (cont'd.)

<u>Identified Risk</u>	<u>Probability</u>		<u>Impact</u>		<u>Risk Factor</u>
1. Cost overruns	3	×	3	=	9
2. Unfamiliar with similar systems	2	×	2	=	4
3. Limited resources	2	×	3	=	6
4. Scheduled timeframe is impossible	3	×	3	=	9
5. Unhappy stakeholders	2	×	3	=	6
6. System not integrated with current system	2	×	3	=	6
6 Risks			Risk Rating	=	40

---

**Risk Score for Project =  $40 \div 6 = 6.67$**

## **Step 3: Determine the Risk Score (cont'd.)**

**Low risk** = Risk score between 1 and 3

**Medium risk** = Risk score between 4 and 6

**High risk** = Risk score between 7 and 9

**Risk score = 6.67**

**Project is borderline high-risk**

## **Step 3: Determine the Risk Score (cont'd.)**

The risk score concept has two benefits:



1. It encourages users to include all identified risks
2. It incorporates the fact that several low-impact, low-probability risks are less dangerous than a single high-impact, high-probability risk

# Risk Acceptability/Tolerance Matrix

The **risk acceptability/tolerance matrix** represents your agency's tolerance level for acceptable and unacceptable risks.



# Creating the Matrix

		Degrees of impact 		
Degrees of probability 	<u>Probability</u>	<u>Catastrophic Impact</u>	<u>Serious/ Critical Impact</u>	<u>Minor/ Marginal Impact</u>
	Certainty	U	U	U
	Significant	U	U	U/A (depending on circumstances)
	Minimal	A	A	A

## Tolerance levels:

U = Unacceptable Risk

A = Acceptable Risk

## Using the Matrix

**Example:** BPR decides that mold would have catastrophic effects and has a significant probability of occurring; therefore, the tolerance rating is unacceptable.

<u>Probability</u>	<u>Catastrophic Impact</u>	<u>Serious/ Critical Impact</u>	<u>Minor/ Marginal Impact</u>
Certainty	U	U	U
<b>Significant</b>	<b>U</b>	U	U/A
Minimal	A	A	A

## The “Do Nothing” Analysis

The “do nothing” analysis will give you the comparison point by which to decide whether implementing change is the best alternative.



# Review Activity

## Risk Evaluation



# Business Impact Analysis

BIA identifies the effect on an organization if a risk should occur.

It involves identifying types of disasters and the impact they would have, should they occur.

## Business Impact Analysis (cont'd.)

A BIA:

- Is a process or methodology that determines critical functions
- Is expressed in terms of financial, service level, or other impact
- Includes workflow analysis
- Is essential to establish necessary strategic priorities for recovery

## Business Impact Analysis (cont'd.)

A BIA focuses on identifying the impact of something going wrong in each function, with the goal of protecting those functions that the agency can least afford to lose.

- Evaluation of the probability of threat
- Identification of essential functions
- Determination of the decline in service levels
- Workflow analysis to determine where work and records might be exposed to potential risk
- Interviews and meetings with key staff



# Steps for Performing a BIA

**Step 4:** Advise management of the priorities assigned to services, systems, projects, or functions

**Step 3:** Rank services, systems, projects, or functions

**Step 2:** Conduct a workflow analysis

**Step 1:** Identify critical services, systems, projects, functions, and responsible staff

## Best Practices—BIA

- Consider how likely records generated by each function are to become disordered or damaged
- Consider asking the following questions:
  - Is the work process well-defined and repeated often?
  - Does the work process occur rarely, so that standard operating procedures are less likely to be in place?
  - What are the potential records-related risks to our agency performing its mission?
  - What do they pose risks to?
  - What would happen if these things came to pass?
  - How likely are they to happen?

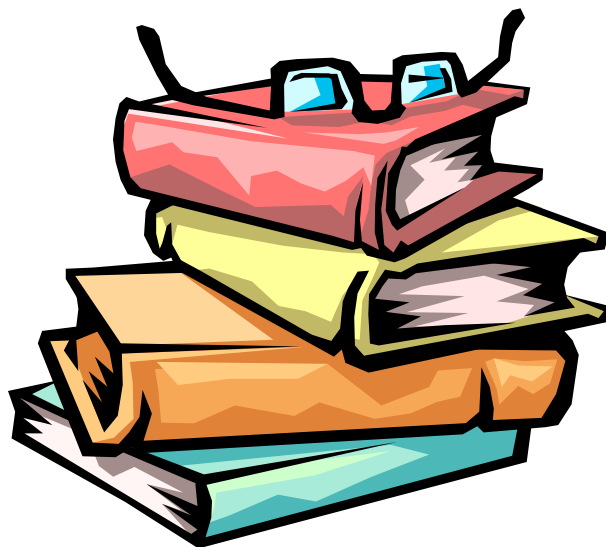
## Module 2: Risk Assessment and Analysis

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# Module Review



# Applying What You Learned

## Module 2—Action Items Worksheet



## Module 3: Handling Risk

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## Module 3 Learning Objectives

At the conclusion of this module, you will be able to do the following:

- Describe the three basic risk management strategies and the circumstances in which their use would be appropriate
- Describe the steps in creating and implementing a risk management strategy
- Describe the elements of risk control plan



## Module 3: Handling Risk

### Lesson 1: Three Courses of Action

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# **Risk Management Strategies: Acceptance, Avoidance, and Mitigation**

The three risk management strategies used to manage risk are:

1. Acceptance
2. Avoidance
3. Mitigation

# **Risk Management Strategies: Acceptance, Avoidance, and Mitigation**

**Acceptance**—Recognizing the existence of a specific risk and accepting the impact of the risk should it occur.

# Risk Management Strategies: Acceptance, Avoidance, and Mitigation

**Avoidance**—Taking specific, necessary measures to remove a potential threat by eliminating the cause of the risk.



# Risk Management Strategies: Acceptance, Avoidance, and Mitigation

**Mitigation**—Taking actions to *reduce* the expected value/future cost of the risk.



# Review Activity

## Risk Management Strategies



# Risk Management Considerations

Records-related risk must be managed to reduce the chance of problems, which include:

- Inability to retrieve records easily and quickly
- Failure to destroy obsolete records
- Susceptibility to illegal destruction of records
- Greater difficulty of finding inactive records that are not indexed
- Costs of records that are poorly controlled or not indexed; electronic records on obsolete formats



# **Tactics for Managing Risks to Program Records**

Agency Records Officers have many tactics to manage risks to program records.

- Adequate rules must be in place and followed
- Records schedules must identify the office of records
- Electronic records may require migration plans
- Stored records accessed in consistent and comprehensive manner
- Agency has a loss prevention and disaster recovery plan and/or vital records program
- Special protection for vital records

## **Tactics for Managing Risks to Program Records (cont.)**

- Records series/systems contain all the applicable records
- Approved records schedules
- Custom-built schedules, following NARA's guidance
- Schedules kept up-to-date and user-friendly
- Compliance audits, employee awareness checks, and staff education programs
- Periodically review the agency's records plan
- Use training, change management, and follow-up to reduce risk
- Assign each risk to an "owner"

## Module 3: Handling Risk

### Lesson 2: Creating and Implementing a Risk Management Strategy

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# The Risk Management Strategy

A risk management strategy is developed in three steps:

1. Identify the appropriate strategy
2. Develop the strategy
3. Implement the strategy

## **Step 1: Identify the Appropriate Strategy**

Identify the appropriate risk management strategy (either avoidance, mitigation, or acceptance) by applying the risk acceptability/tolerance matrix:

- Unacceptable risk = avoidance or mitigation
- Acceptable risk = acceptance or mitigation

## Step 2: Develop the Strategy

After you have identified the appropriate strategy, you need to develop *how* you will achieve that strategy.

- Determine whether your agency has strategic guidance on risk management
- Check to see whether the agency has addressed similar risks
- Check to see whether the agency has a risk management strategy in place
- Determine the resources available (e.g., money, time)
- Identify the people affected by the risk

## Risk Controls

Risk controls are the specific measures put in place to ease or reduce the probability of a risk, including:

- Accountability
- Business
- Disaster
- Financial
- Legal and contractual
- Operational
- Organizational
- Records management
- Security
- Schedule
- Technical



## **Step 3: Implement the Strategy**

Put the strategy in place by doing the following:

- Get senior management buy-in
- Identify the players involved in implementing the risk management strategy
- Create the risk control plan to document the strategy.
- Communicate the strategy
- Train staff on the strategy
- Monitor and incorporate necessary changes to the risk control plan

# Performance Metrics

Performance metrics help you answer questions like:

- What are you doing?
- How well are you doing it?
- How do you know?
- How can you demonstrate how well you're doing it?

## Risk Control Plan

Used to document your risk management strategies. For each risk identified, your risk control plan should specify the following information:

- Name of the risk
- Risk management strategy
- Owner of the risk
- Risk controls
- Mitigation resources
- Performance metrics
- Current status
- Target completion date

# Sample Risk Control Plan

Name of Risk	Risk Management Strategy	Owner	Risk Controls	Mitigation Resources	Performance Metrics	Current Status	Target Completion Date
Cost overruns  Risk of going over budget and not being able to complete project	Mitigation	Joe Smith Procurement 231-555-2252	<b>Financial Controls:</b> Analyze costs during all phases of the project to control cost overruns	The team is trained in cost-benefit analysis and can use the method to track and control the project overruns	Actual cost data. Projected cost data. Amount of funds available for project	Obligating and monitoring fund for each phase of project	Final payment due 4 weeks after project is completed
Unfamiliar with similar systems  Risk of IT staff not understanding technical requirements of the new system	Mitigation	Jane Doe IT Staff 231-555-2279	<b>Operational Controls:</b> Analyze project requirements during all phases of the project  <b>Technical Controls:</b> Analyze technical requirements during all phases of the project	Training of IT staff on similar systems. Project developer required to document and describe the system fully. Training requirements for new system added to overall project contract	Percentage of employees who have completed training Monitoring technical and project requirements	25% of IT staff have completed first course. Other training scheduled  Meeting all technical and project requirements	Training of staff on similar systems to be completed within 6 weeks. Training on new system right before final rollout of completed system

# Review Activity

## Creating a Risk Control Plan



# Risk Management: An Ongoing Process



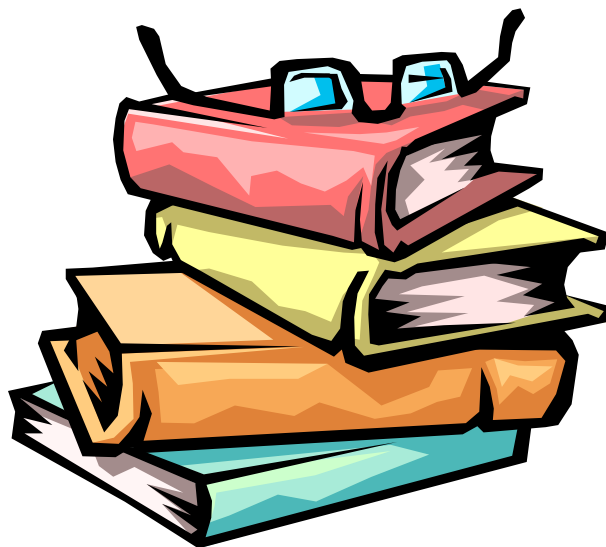
## Module 3: Handling Risk

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# Module Review





# Applying What You Learned

## Module 3—Action Items Worksheet



## Module 4: Risk Management Project

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## Module 4 Learning Objectives

At the conclusion of this module, you will be able:

- Identify at least six project-related risks
- Evaluate the identified risks using the Risk Probability/Impact Assessment and the Risk Acceptability/Tolerance Matrix
- Create a risk management strategy for each identified risk

## Module 4 Learning Objectives (cont'd.)

- Document the risk management strategies in a risk control plan
- Identify performance metrics for each risk management strategy

# **Module 4: Risk Management Project**

## **Lesson 1: Risk Management Project Scenario**

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## The Scenario





## The Scenario (cont'd.)



## The Scenario (cont'd.)





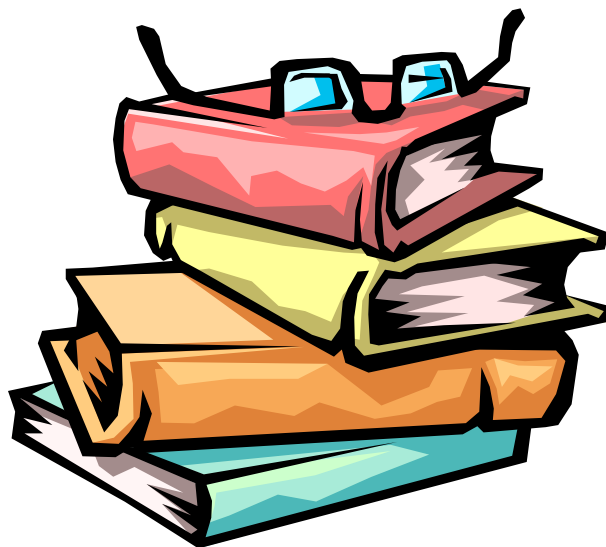
## The Scenario (cont'd.)



# The Project

- Perform a risk assessment to identify at least six project-related risks
- Evaluate the identified risks by completing a risk probability/impact assessment and a risk acceptability/tolerance matrix
- Create a risk management strategy
- Document your strategy in a risk control plan

# Review and Wrap-Up



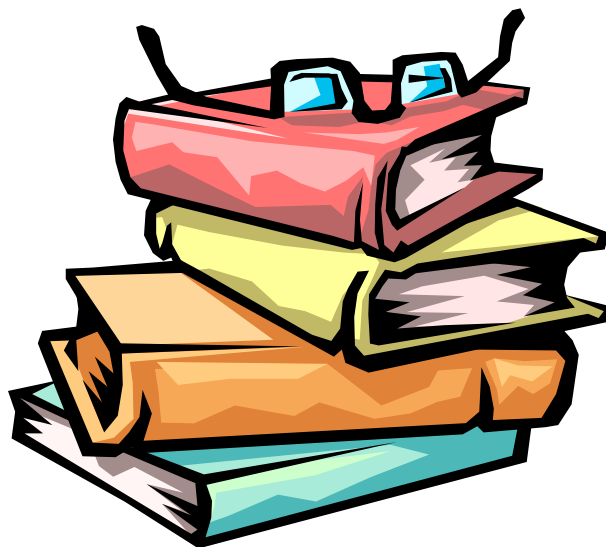
# Needs Assessment and Feasibility Studies

- Needs Assessment – Determines best solution to a problem
- Feasibility Study – Analyzes ability of an organization to acquire and implement new technology

# Project Chartering

- Defines scope—what's in/out
- Identifies resource needs, risks, assumptions, restraints, deliverables, milestones
- Gains commitment from stakeholders
- Is what you're proposing even possible?

# Module Review



# Applying What You Learned

## Module 4—Action Items Worksheet



## Module 5: Cost-Benefit Analysis

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## Module 5 Learning Objectives

At the conclusion of this module, you will be able to:

- Define key terms related to cost-benefit analysis
- Explain how cost-benefit analysis can be applied to records management
- Determine when to use cost-benefit analysis
- Given a scenario, conduct a cost-benefit analysis from start to finish

## Module 5: Cost-Benefit Analysis

### Lesson 1: Introduction to Cost-Benefit Analysis

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# Overview

Simply put, CBA weighs costs against benefits to help **determine** the best course of action.



## Key Terms

- **Cost**—The total money, time, and resources associated with a purchase or activity
- **Benefit**—A payment or entitlement or, more generally, something of value or usefulness
- **Net benefit**—The result when the sum of the benefits is great enough to exceed or offset the sum of the costs

# Regulatory Framework Surrounding CBA

The Information Technology Management Reform Act addresses CBA:

“...the purpose of [a CBA] is to promote efficient resource allocation through well-informed decision-making by agencies of the Executive Branch of the Federal Government when initiating, renewing, or expanding programs or projects which would result in a series of measurable benefits or costs extending for three or more years...”

## Why Should CBA Be Important to You?

- Helps to ensure that your resources are effectively allocated
- Looks at other ongoing projects or services of the agency, not just new projects
- Measures policy effectiveness
- Finds ways to improve your agency's programs
- Enhances your position within your agency

## **How CBA Supports Management Decisions**

CBA supports management decisions by providing justification as to why the decisions were made.

# **Cost-Benefit Analysis and Records Management**

Cost analysis concepts and methods are important to records managers for several reasons:

- Records managers have planning and decision-making responsibilities for their own operations
- Records managers also advise other programs within their agencies on cost-related matters
- Records managers will be faced with making cost-benefit decisions in the future



## When to Use a CBA

CBA should be used prior to each **significant** project or change in technology direction.



## CBA and the “Do Nothing” Option

In some cases, the best course of action may be the one you are already on.



## Module 5: Cost-Benefit Analysis

### Lesson 2: Conducting a CBA

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## **A Step-by-Step Process**

For the purposes of this training, the CBA process is broken down into nine basic steps.

Every CBA is different, depending on the agency policies and procedures, the formality of the CBA, the size of the project, etc.

## **Step 1: Determine/Define Objectives**

State the goals and objectives of the project. Key items to be addressed are:

- Problem definition
- Background
- Project objectives

## Step 2: Document Current Process

The baseline for any CBA is the current process. Documentation should cover:

- Customer services
- System capabilities
- System architecture
- System costs

## Step 3: Estimate Future Requirements

The two key items to consider are the system lifecycle and the lifecycle demands:

- **System lifecycle**—The period of time the system is in existence
- **Lifecycle demands**—An estimate of the user demands over the system lifecycle

## **Step 4: Choose Alternatives**

Present at least three options for resolving your current issues and reaching your desired outcomes.



## Step 5: Collect Cost Data

Six sources of data are:

1. Historical organizational experience
2. Current system costs
3. Market research
4. Publications and online tools
5. Analyst judgment
6. Special studies

## Step 6: Estimate Costs



Estimate the costs associated with each alternative, including:

- Activities and resources
- Cost categories
- Depreciation
- Annual costs

## Step 7: Estimate Benefits

Steps for analyzing benefits:

1. Define the benefits
2. Identify the benefits
3. Establish measurement criteria
4. Classify benefits
5. Estimate tangible benefits
6. Quantify intangible benefits

## Step 8: Document Assumptions

Because a CBA relies on many assumptions, it is important to document all of them and, if possible, justify them on the basis of prior experience or actual data.



## **Step 9: Assess Your Findings and Reach Your Conclusion**

Convert the cost and benefits to a common unit of measurement, then compare and rank the net value (benefit minus cost) of the competing alternatives.

Alternative with lowest cost and highest benefit = winner!

## Module 5: Cost-Benefit Analysis

### Review and Wrap-Up

THE  
NATIONAL  
ARCHIVES  
AND RECORDS  
ADMINISTRATION

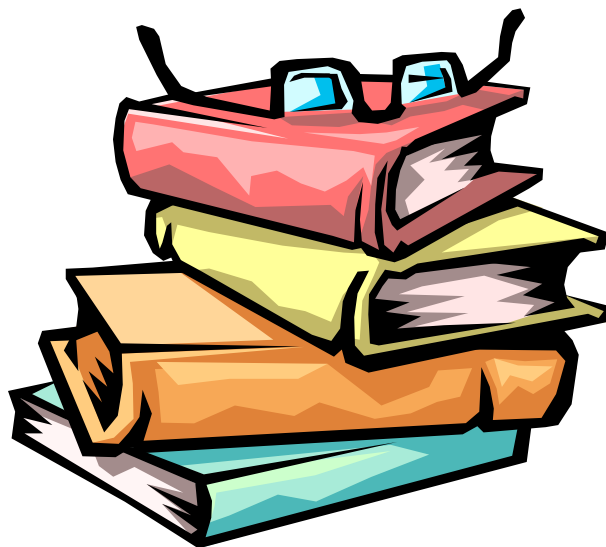
RECORDS  
MANAGEMENT  
TRAINING  
PROGRAM

# Review Activity

Complete a CBA



# Module Review





# Applying What You Learned

## Module 5—Action Items Worksheet

