

Critical Infrastructure Assets

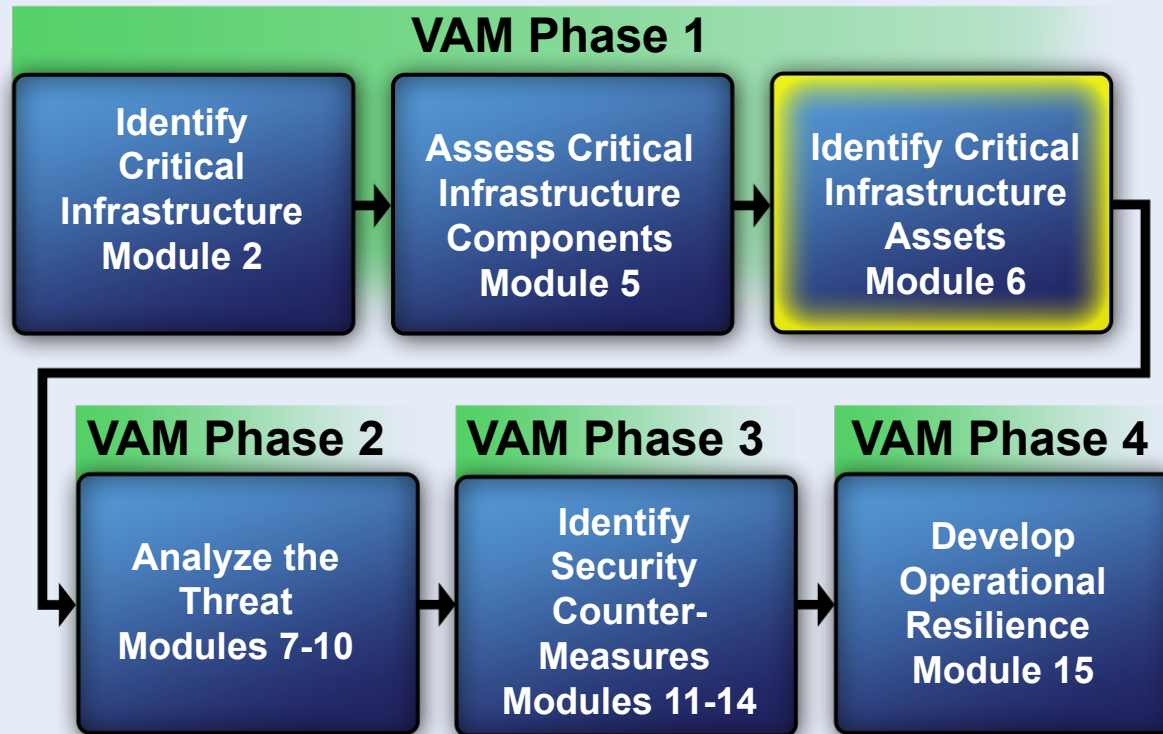


Module Objective

- **By the end of this module, you will be able to analyze critical infrastructure assets in order to prioritize them for protection**



PPS Diagram



Critical Assets

- **Any people, information, processes, and equipment that must be protected to prevent an undesired consequence from occurring**



Categories of Critical Assets (1 of 2)

- **People** — dignitaries, government leaders, and officials or individuals in critical mission-specific positions
- **Information** — classified documents, reports, or other proprietary data



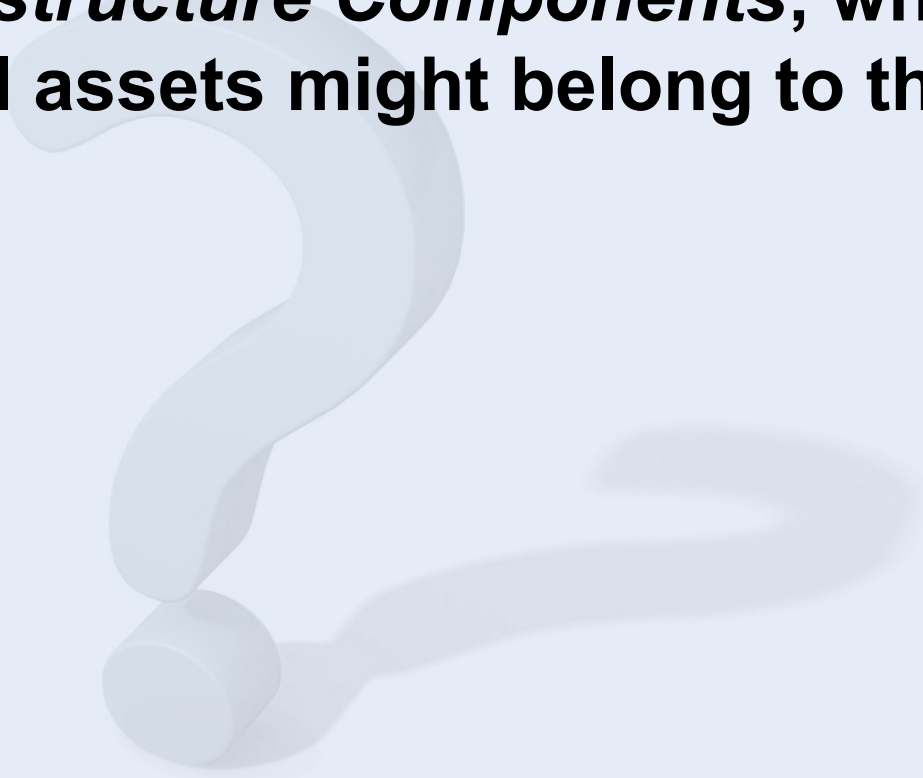
Categories of Critical Assets (2 of 2)

- **Processes — backup and storage of data processing materials and special analytical programs**
- **Equipment — data processing equipment, military weapons, computers, and vehicles**



Discussion Question

- Thinking back to the facilities listed in *Module 5: Critical Infrastructure Components*, what types of critical assets might belong to those facilities?



Critical Asset Identification

- **Identify all critical assets to prepare for asset analysis**
- **Identification must occur before prioritizing critical assets for protection**



Critical Asset Identification Activity

Refer To:

Handout 6.1



- **Purpose: to identify critical assets for assigned facilities**
 - **Duration: 30 minutes (20-activity; 10-debrief)**
 - **Group composition: table groups**
 - **Debrief: large-group discussion**



Protecting Critical Assets

- **Cannot protect all critical infrastructure assets**
- **Prioritize all critical assets according to their importance**
- **Analyze critical assets to determine which to protect**



Undesirable Consequences of Critical Asset Loss Analysis

Refer To:

Workbook 6.1



▪ The steps are:

1. Specify the undesirable consequences of loss for each critical asset
2. Determine the levels (high, medium, low) of the undesirable consequences of loss for each asset
3. Determine the probability of occurrence of undesirable events



Specify the Undesirable Consequences of Loss for each Critical Asset (1 of 2)

- Define the anticipated negative effects resulting from a specific type of threat:
 - Terrorist attack
 - Natural disaster
 - Biochemical attack
 - Other threat



Specify the Undesirable Consequences of Loss for each Critical Asset (2 of 2)

- **Consequence measure may be classified as a:**
 - **Loss of tangibles (revenue, life, or property)**
 - **Loss of intangibles (reputation)**
 - **Combination of tangibles and intangibles**
- **Identify sets of critical assets**
- **Consequence measure establishes consistency among assets**



Undesirable Consequences of Loss Examples (1 of 2)

- Loss of life
- Theft of material or information
- Environmental damage
- Interruption of critical utilities
- Degraded business operations
- Workplace violence



Undesirable Consequences of Loss Examples (2 of 2)

- Building damage or collapse
- Equipment damage or destruction
- Damage to reputation
- Damage to national security
- Legal liability
- Disruption to economy



Determine Levels of Undesirable Consequences (1 of 5)

- A decision-making process that relies on knowledge about the importance of each critical asset
- When evaluating:
 - People assets: know the number of people and their expertise and skills



Determine Levels of Undesirable Consequences (2 of 5)

- **Equipment and process assets:**
 - Know criticality of specific pieces of equipment and processes
 - Know about availability of backup equipment, processes, and systems



Determine Levels of Undesirable Consequences (3 of 5)

- **To make decisions about consequences:**
 - **Define all the negative effects of a specific threat's occurrence**
 - **Compare negative effects with all identified consequences of loss**
 - **Assign levels to the undesirable consequences of loss**
 - **Compare all loss levels to each other**



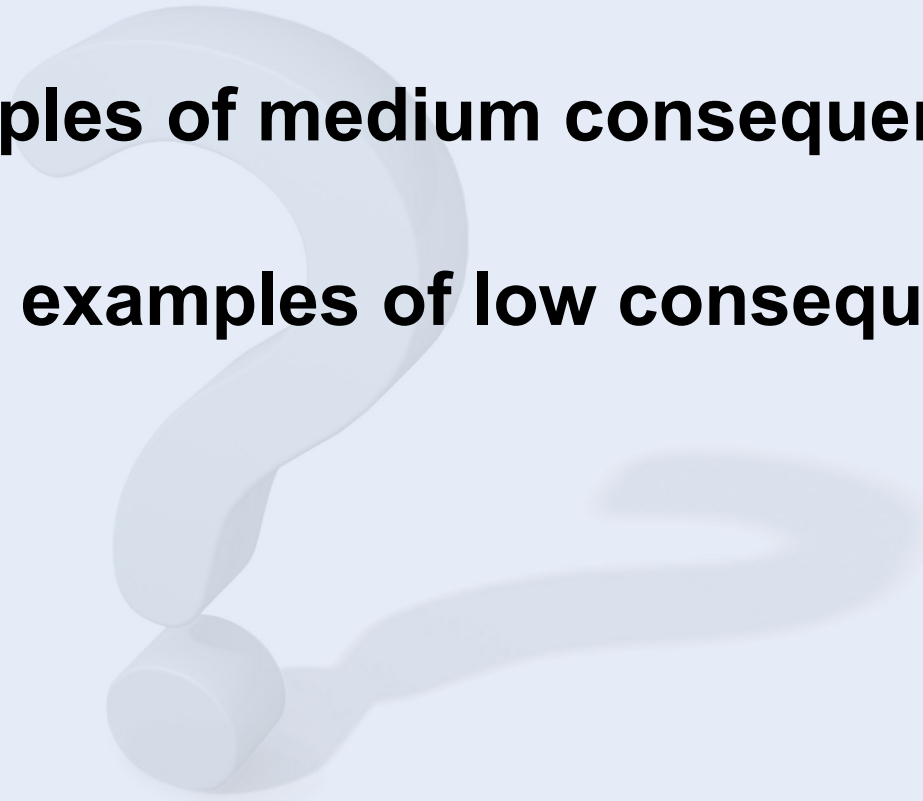
Determine Levels of Undesirable Consequences (4 of 5)

- Establish consequence levels by using a qualitative scale to determine undesirable consequences of loss as:
 - High — example: loss of life
 - Medium — example: moderate financial loss due to industrial espionage
 - Low — example: damage to a critical asset's reputation



Discussion Questions

- **What are examples of high consequences of loss?**
- **What are examples of medium consequences of loss?**
- **What are some examples of low consequences of loss?**



Determine Levels of Undesirable Consequences (5 of 5)

Refer To:

Workbook 6.1



- **Assigning levels:**
 - Helps determine overall effects
 - Requires communication between analysts
 - Provides rationale for levels
- **Comparing all consequences of loss levels helps prioritize:**
 - Critical infrastructure
 - Security upgrades



Determine Probability of Occurrence (1 of 2)

- **The likelihood that a terrorist will attack or an undesirable event will happen**
- **A complex process that must be conducted in coordination with a complete threat analysis**



Determine Probability of Occurrence (2 of 2)

Refer To:

Workbook 6.1

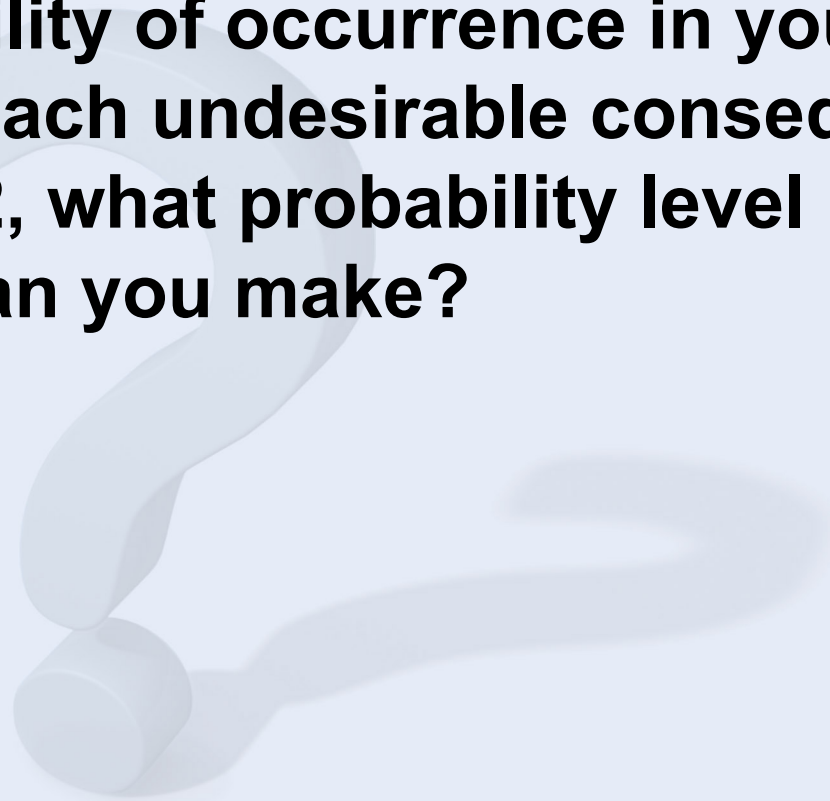


- **Examine historical records and information obtained during threat analysis:**
 - Review previous reports regarding attacks against the facility
 - Consult terrorist trend experts to gather information about current terrorist attack operations
- **Determine the level of probability using the scale of high, medium, and low**



Discussion Question

- **Based on Table 4, and what you currently know about the probability of occurrence in your nation today for each undesirable consequence listed in column 2, what probability level determinations can you make?**



Threat Spectrum Matrix (1 of 6)

- A table that visually illustrates the relationships between consequence, level of consequence, and probability of occurrence
- A clear format to analyze and quickly see the relationships between collected information



Threat Spectrum Matrix (2 of 6)

- **Presents risks to a facility across a threat spectrum at various consequence levels**
- **A completed matrix helps asset selection for protection**
- **Any asset with a high consequence and high probability level requires the highest priority for protection**



Threat Spectrum Matrix (3 of 6)

- Any asset with a low consequence and low probability level requires the lowest priority for protection
- The completed matrix may be used later in physical protection system design, when determining the allocation of resources



Threat Spectrum Matrix (4 of 6)

Refer To:

Workbook 6.2



Facility: Water Treatment Plant			
High consequence			
Medium consequence			
Low consequence			
Vertical ↑ Horizontal →	Low probability	Medium probability	High probability



Threat Spectrum Matrix (5 of 6)

Refer To:

Workbook 6.2



- **Consequences level scale — vertical axis**
- **Probability of occurrence scale — horizontal axis**
- **Parameters remain fixed for critical assets within a specific facility**
- **Qualitative scale must also remain fixed**



Threat Spectrum Matrix (6 of 6)

Refer To:

Workbook 6.2



Facility: Water Treatment Plant			
High consequence		Environmental damage	Loss of life
Medium consequence	Damage to national security		
Low consequence			Interruption of critical utility services
Vertical ↑ Horizontal →	Low probability	Medium probability	High probability



Discussion Questions

Refer To:

Workbook 6.2



- Where in the threat spectrum matrix would you expect to see the assets that require the highest priority for protection?
- Where in the threat spectrum matrix would you expect to see the assets with the lowest priority for protection?



Community Engagement and Human Rights Discussion



- **When determining the undesirable consequences, why is it important to engage with community representatives?**



TeachBack Moment



- **What are the four categories of critical infrastructure assets?**
- **What are the steps to determine undesirable consequences of critical asset loss?**
- **What are some of the negative consequences of a terrorist attack on a critical infrastructure asset?**



Threaded Exercise Part 2 — National Ministries Building

Refer To:

Workbook Part 2



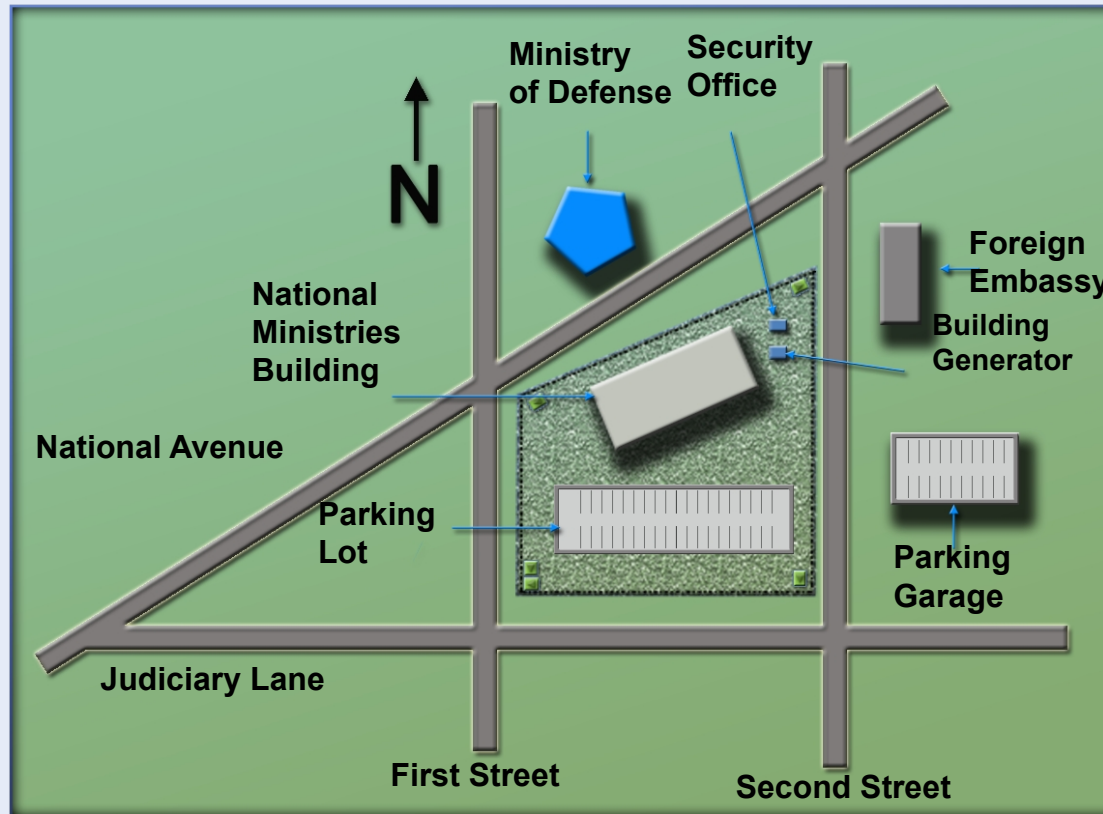
- **Purpose: to prioritize consequences for a given critical infrastructure**
 - **Duration: 110 minutes (90-exercise; 20-debrief)**
 - **Group composition: table groups**
 - **Debrief: presentation and discussion**



National Ministries Building Complex Map

Refer To:

National Ministries
Building Complex Map



Threaded Exercise Part 2 — Discussion Questions

Refer To:

Workbook Part 2



- **What influenced your decision regarding probability of occurrence levels?**
- **What additional information would you need to make more accurate decisions about probability of occurrence?**



Module Summary

- **Critical assets**
- **Undesirable consequences of critical asset loss analysis**

