

Unit I (C)

COURSE TITLE Building Design for Homeland Security for Continuity of Operations (COOP) Train-the-Trainer

TIME 90 minutes

UNIT TITLE Introduction and Course Overview

OBJECTIVES

1. Describe the goal, objectives, and agenda for the course
2. Describe and find material in the course reference manual and student activity handout

SCOPE The following topics will be covered in this unit:

1. Welcome and Opening Remarks
 2. Instructor Introductions
 3. Administrative Information
 4. Student Introductions
 5. Course Overview
 6. Course Materials
 7. Activity: Refamiliarize with Case Study materials
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REFERENCES

1. Course Agenda
2. Course Goal and Objectives
3. Evaluation Forms (EMI or other as appropriate)
4. FEMA 426, *Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings*
5. Case Study – Appendix C: COOP, Cooperville Information / Business Center
6. Student Manual, Unit I (C) (info only – not in SM)
7. Unit I (C) visuals (info only – not in SM)
8. Class Roster before course start and updated at end of course (info only – not in SM)

REQUIREMENTS	<ol style="list-style-type: none"> 1. FEMA 426, <i>Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings</i> (one per student) 2. FEMA 452, <i>Risk Assessment - A How-To Guide to Mitigate Potential Terrorist Attacks Against Buildings</i> (one per student) 3. Instructor Guide, Unit I (C) 4. Student Manual, COOP Case Study (C) (one per student) 5. Overhead projector or computer display unit 6. Unit I (C) visuals 7. Risk Matrix poster and one box of dry-erase markers (one per team) 8. Chart paper, easel, and markers (one per team)
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UNIT I (C)	<u>Time</u>	<u>Page</u>
I. Introduction and Course Overview	105 minutes	IG I-C-1
1. Welcome and Opening Remarks, Instructor Introductions, Administrative Information	8 minutes	IG I-C-5
2. Student Introductions	30 minutes	IG I-C-5
3. Course Overview	7 minutes	IG I-C-6
4. Course Materials	13 minutes	IG I-C-12
5. Case Study Activities and Content	15 minutes	IG-I-C-24
6. Risk Matrix	2 minutes	IG-I-C-34
7. Summary, Student Activity, and Transition	1 minutes	IG I-C-35
8. Student Activity: Introduction and Overview (Version (C) COOP) [20 minutes for students, 10 minutes for review]	30 minutes	IG I-C-38
9. FEMA 452 Risk Assessment Database v3.0, Checklist Questions – Section 14 COOP Facility: Additional Concerns		IG-I-C-47
10. Glossary of COOP terminology, FEMA Independent Study (IS) 546, <i>Continuity of Operations (COOP) Awareness Course</i>		IG-I-C-49

11. Alternate Facility Selection Factors, FEMA IS 547, <i>Introduction to Continuity of Operations</i>	IG-I-C-51
12. Components of an Effective Vital Records Program, FEMA IS 547	IG-I-C-52
13. FPC-65 Testing Requirements	IG-I-C-54

PREPARING TO TEACH THIS UNIT

- **Tailoring Content to the Local Area:** This instruction unit has no linkages to the Local Area. The unit is a course overview and refamiliarization with the contents of the COOP Case Study.
- **Optional Activity:** There are no optional activities in this unit.
- **Activity:** The students will begin refamiliarizing themselves with the Case Study materials. The Case Study is a risk assessment and analysis of mitigation options and strategies for a typical commercial office building located in a mixed urban-suburban environment business park that is being evaluated as a Continuity of Operations alternate facility. The assessment will use the DoD Antiterrorism Standards and the GSA Interagency Security Criteria to determine Levels of Protection and identify specific vulnerabilities, as well as Federal Preparedness Circular-65 for COOP specific requirements. Mitigation options and strategies will use the concepts provided in **FEMA 426** and other reference materials.
- Refer students to their Student Manual for worksheets and activities.
- Direct students to the appropriate page in the Student Manual.
- Instruct the students to read the activity instructions found in the Student Manual. Note that this Student Activity provides page numbers for each question to assist the students in their familiarization and answering of the questions.
- Tell students how long they have to work on the requirements.
- While students are working, all instructors should closely observe the groups' process and progress. If any groups are struggling, immediately assist them by clarifying the assignment and providing as much help as is necessary for the groups to complete the requirement in the allotted time. Also, monitor each group for full participation of all members. For example, ask any student who is not fully engaged a question that requires his/her viewpoint to be presented to the group. This latter point may not be evident in this first student activity.
- At the end of the working period, reconvene the class.

- After the students have completed the assignment, “walk through” the activity with the students during the plenary session. Call on different teams to provide the answer(s) for each question. Then simply ask if anyone disagrees. If the answer is correct and no one disagrees, state that the answer is correct and move on to the next requirement. If there is disagreement, allow some discussion of rationale, provide the “school solution” and move on.
- If time is short, simply provide the “school solution” and ask for questions. Do not end the activity without ensuring that students know if their answers are correct or at least on the right track.
- Ask for and answer questions.

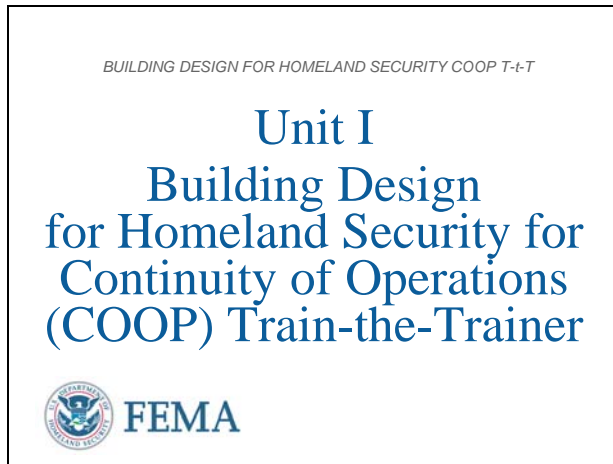
Editor Note: Two methods have been used in Instructor Guides to ensure the slide designation and slide thumbnail in the left column aligns with the Content/Activity in the right column.

- (1) Highlight row by placing cursor in left column until arrow shifts to right, Tab <Insert>, <Break>, <select Page Break>, <OK>
- (2) Highlight row as in (1), right click on highlighted row for menu, <Table Properties>, Tab <Row>, remove check in box <Allow row to break across pages>
- (3) Alternate for (2), highlight row, click on <Table> at top of screen, <Table Properties> and continue like (2)

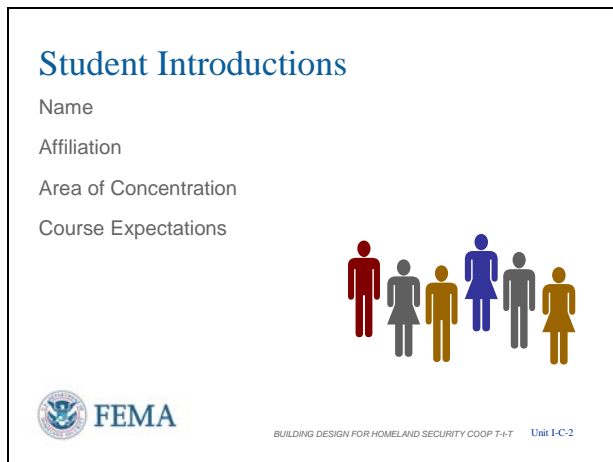
INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-1



VISUAL I-C-2



Recommend an instructor not presenting Unit I to collect Student Expectations on an easel tablet for reference throughout the course and review in Unit XIV.

Welcome and Opening Remarks

Welcome the students to the Building Design for Homeland Security Course.

Introduce yourself and have the other instructors introduce themselves, using:

- Your name
- Your company or organization
- Brief statement of background and experience

Make the necessary administrative announcements, including:

- Housing, parking, and meals
- Attendance, start/stop times, breaks
- Restroom locations
- Messages and emergencies
- Fire exits

Student Introductions

Ask the students to introduce themselves, including:

- Name
- Affiliation
 - Brief statement of background and experience
 - Include any work done in course topic area
- Reasons they are attending course / course expectations. [These will be reviewed during Unit XIV, Course Wrap-Up.]

INSTRUCTOR NOTES

CONTENT/ACTIVITY


VISUAL I-C-3

Purpose of Course and FEMA 426 Manual

- Provide guidance to COOP Planners/Managers to perform an assessment of their COOP sites
- Enable and encourage COOP Planners/Managers to apply measures and technology available to reduce risk from terrorist attack

Mitigation Information

- Not mandatory
- Not applicable to all buildings
- Not applicable when it interferes with other hazards



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-3

Purpose

The purpose of **FEMA 426** and this course is to provide guidance to the building sciences community working for public and private institutions. It presents tools to help decision-makers assess the performance of their buildings against terrorist threats and to rank recommendations. It is up to the decision-makers to decide which types of threats they wish to protect against and to determine their level of risk against each threat. Those decision-makers who consider their buildings to be at high risk can use this guidance as necessary.

The mitigation information in **FEMA 426** and this course is:

- Not mandatory
- Not applicable to all buildings
- Not applicable when it interferes with other hazards such as fire, seismic, or life safety requirements contained in building codes

VISUAL I-C-4

Course Goals

To enhance student understanding of the measures and technology available to reduce risk from terrorist attack.

To enhance student ability to assess a site for COOP requirements and natural and man-made hazards



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-4

Course Goals

The goals of this course are:

To enhance student understanding of the measures and technology available to reduce risk from terrorist attack.

To enhance student ability to assess a site for COOP requirements and natural and man-made hazards

Included in this understanding is the process for assessing risk to focus upon which mitigation measures have the greatest applicability and benefit. The students will understand the design approaches to mitigate manmade hazards and comprehend the trade-

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-5

Course Objectives

Students will be able to:

1. **Explain** the basic components of the assessment methodology.
2. **Appreciate** the different assessment methodology approaches that can be used.
3. **Perform** an assessment for a building by identifying and prioritizing assets, threats, and vulnerabilities and calculating relative risk.



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-5

offs needed to optimize various design requirements.

Course Objectives (1 of 3)

The primary target audience for this course version is COOP planners, COOP managers, COOP engineers, and COOP assessors. The basic course from which this course is derived has a target audience of engineers, architects, and state and local government and building officials with engineering and architectural backgrounds involved in mitigation planning and design to protect people and property against manmade hazards. Security personnel and first responders have also attended to understand the concerns of man-made hazards and the impact upon their areas of responsibility.

After attending the Building Design for Homeland Security course, the students should be able to:

1. Explain the basic components of the assessment methodology – threat/hazard, asset value, vulnerability, and risk, as applied to site, layout, and building.
2. Appreciate the different assessment methodology approaches being used by Federal agencies and comprehend which approach to use for a given organizational structure.
3. Perform an assessment for a given building by identifying the assessment components and prioritizing the asset-threat/hazard pairs by their relative risk to focus resources upon mitigation measures that reduce risk.


INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-6

Course Objectives

- 4. Identify** available mitigation measures applicable to the site and building envelope.
- 5. Understand** the technology limitations and application details of mitigation measures for terrorist tactics and technological accidents.
- 6. Perform** an assessment for a given building by identifying vulnerabilities using the Building Vulnerability Assessment Checklist in FEMA 426.



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-6


Course Objectives (2 of 3)

- Identify available mitigation measures either in-place or for new design and comprehend their applicability to a given situation.
- Understand the technology limitations and application details of mitigation measures for terrorist tactics and technological accidents involving explosive blast and agent release (chemical, biological, and radiological) to achieve a desired level of protection.
- Use the **Building Vulnerability Assessment Checklist in FEMA 426 (Table 1-22, pages 1-46 to 1-93)** and adjust the assessment relative risk based upon the identified vulnerabilities.

VISUAL I-C-7

Course Objectives

- 7. Select** applicable mitigation measures and prioritize them based upon the final assessment risk values.
- 8. Appreciate** that designing a building to mitigate terrorist attacks can create conflicts with other design requirements.
- 9. Understand** interfaces between assessing a facility for man-made and natural threats / hazards and for use as a COOP facility.



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-7

Course Objectives (3 of 3)

- Select applicable mitigation measures and prioritize them based upon the final assessment relative risk values and associated estimated risk reduction provided so as to focus limited resources, all for a given situation.
- Appreciate that designing to mitigate building vulnerabilities against terrorist attacks has conflicts with other design requirements, resulting in trade-offs to achieve acceptable compliance and levels of performance among the differing regulations, codes, programs, operational requirements, and owner desires within the resources available.
- Understand that, as with balancing mitigation trade-offs with other design requirements, the interfaces (duplicate concerns versus separate specific

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-8

The slide titled "Course Overview – Day 1" lists five units in a table:

Unit I – Introduction and Course Overview
Unit II – Asset Value Assessment
Unit III – Threat / Hazard Assessment
Unit IV – Vulnerability Assessment
Unit V – Risk Assessment / Risk Management

At the bottom left is the FEMA logo. At the bottom right, it says "BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-8".

assessment concerns) among assessing a facility for man-made threats/hazards, for natural threats/hazards, and for use as a COOP facility.

Course Overview – Day 1

This course is a full 3 days in length and includes 14 units of instruction. Most instruction blocks have an associated student activity using a Case Study to emphasize the concepts taught and apply what was just learned.

A detailed schedule is located in your Student Manuals. This is Unit I – Introduction and Course Overview. It will review the other blocks of instruction and the course materials.

For the rest of the first day, the course will introduce the components of risk and how to determine risk. Unit II – Asset Value Assessment will discuss how to identify assets – or things to be protected, and how to assign a relative value to them.

Unit III will examine the Threat/Hazard Assessment process and identify the threats and hazards that could impact a building or site, describe how to assess these threats and hazards, and provide a numerical rating for the threat or hazard.

Unit IV will cover Vulnerability Assessment, including what constitutes vulnerability and how to identify vulnerabilities using the **Building Vulnerability Assessment Checklist in FEMA 426 (Table 1-22, pages 1-46 to 1-93).**

Finally, the last Topic that will be covered on Day 1 is Unit V – Risk Assessment / Risk Management. Students will be taught what constitutes risk and how to determine a

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-9

The slide titled "Course Overview – Day 2" lists four units in a table:

Unit VI – FEMA 452 Risk Assessment Database
Unit VII – Explosive Blast
Unit VIII – Chemical, Biological, and Radiological (CBR) Measures
Unit IX – Site and Layout Design Guidance

At the bottom of the slide, there is the FEMA logo, the text "BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T", and the identifier "Unit I-C-9".

numerical value for risk and be introduced to the concept of the Design Basis Threat. This unit will be completed on Day 2.

Course Overview – Day 2

Day 2 will start with Unit VI which presents the associated software database. The database is an electronic way of managing the information you collected manually yesterday to assess risk, make observations, and identify vulnerabilities and mitigation measures, track actions, and generate reports. The database presents an efficient way to manage the diverse information collected during a risk and vulnerability assessment.

[Options: If you brought a laptop, you can use the FEMA 452 Database CD to follow along the presentation, by installing and navigating the database. However, the demonstration / performance approach has not been fully successful for various reasons, so opportunity at lunch and at the end of the day will be made to assist in loading the database.]

Units VII and VIII will provide students with an understanding of some of the weapons commonly used by terrorists. Unit VII will cover explosive blast and Unit VIII will cover chemical, biological, and radiological or CBR weapons.

Unit IX – Site and Layout Design Guidance will cover things you can do to mitigate terrorist attacks for the site – meaning from the property line up to the building.


INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-10

Course Overview – Day 3

Unit X – Building Design Guidance (continued)
Unit XI – Electronic Security Systems
Unit XII – Finalization of Case Study Results
Unit XIII – Train-the-Trainer
Unit XIV – Course Wrap-up

 BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-10

Course Overview – Day 3

Unit X will explore mitigation options for the building envelope and inside the building.

Unit XI will introduce the basic concepts of electronic security systems.

As mentioned earlier – each block of instruction has an associated student activity using a Case Study to emphasize the concepts taught and apply what was just learned. In Unit XII, students will present the results of their work using the Case Study – highlighting their top three risks identified by the group, the vulnerabilities identified for these risks, and the top three mitigation measures to reduce vulnerability and risk. One member of the group will have about 5 minutes to brief their team’s results. [This is the second component of the grading system for resident courses at the Emergency Management Institute.]

Unit XIII – Train-the-Trainer will clarify the procedures used to set up and deliver the course and answer any student questions about preparation and delivery.

Finally, Unit XIV will summarize the key points from the course and answer any final questions.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-11


Course Materials

Federal Preparedness Circular – 65

FEDERAL EXECUTIVE BRANCH CONTINUITY OF OPERATIONS (COOP)

The June 15, 2004 version of FPC-65 has been integrated into this course from the building assessment standpoint

All Federal agencies, regardless of location, shall have in place a viable COOP capability to ensure continued performance of essential functions from alternate operating sites during any emergency or situation that may disrupt normal operations.



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-11

FPC-65

This publication’s requirements are integrated into this course to supplement the building assessment, since this course deals with assessing an Alternate COOP facility.


VISUAL I-C-12

Course Materials

Federal Preparedness Circular – 65

Alternate Facility Objective:

- Ensuring that agencies have alternate facilities from which to continue to perform their essential functions during a COOP event



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-12

FPC-65 – Alternate Facility Objective

Each Federal agency needs alternate facilities to ensure continuation of essential functions.

INSTRUCTOR NOTES

CONTENT/ACTIVITY


VISUAL I-C-13

Course Materials

Federal Preparedness Circular – 65

Alternate Facility Requirements:

- Must be capable of implementation both with and without warning
- Must be operational within a minimal acceptable period of disruption for essential functions, but in all cases within 12 hours of COOP activation
- Must be capable of maintaining sustained operations until normal business activities can be reconstituted, which may be up to 30 days



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-13

FPC-65 – Alternate Facility Requirements (1 of 3)

- Activate with or without warning
- Operational within a max of 12 hours
- Can operate for up to 30 days

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VISUAL I-C-14

Course Materials

Federal Preparedness Circular – 65

Alternate Facility Requirements (continued):

- Must provide for a regular risk analysis of current alternate operating facility(ies)
- Must locate alternate operating facilities in areas where the ability to initiate, maintain, and terminate continuity operations is maximized
- Should consider locating alternate operating facilities in areas where power, telecommunications, and internet grids would be distinct from those of the primary



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-14

FPC-65 – Alternate Facility Requirements (2 of 3)

- Perform a regular risk analysis (one of the reasons for this course)
- Maximize continuity operations to initiate, maintain and terminate [initiate, maintain, and terminate continuity operations]
- Ensure utilities serving primary facility are not the same serving the alternate facility (so that a single event does not affect both facilities simultaneously, degrading the ability of the alternate facility to support Continuity of Operations) [in areas. ..distinct from ...primary]

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INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-15

Course Materials
Federal Preparedness Circular – 65
Alternate Facility Requirements (continued):

- Should take maximum advantage of existing agency field infrastructures and give consideration to other options, such as telecommuting locations, work-at-home, virtual offices, and joint or shared facilities
- Must consider the distance of alternate operating facilities from the primary facility and from the threat of any other facilities/locations (e.g., nuclear power plants or areas subject to frequent natural disasters)



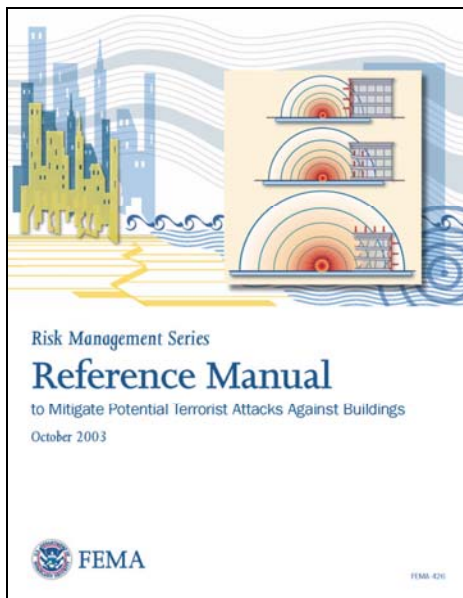
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-15

FPC-65 – Alternate Facility Requirements
(3 of 3)

- Considerations of other options to alternate COOP facilities (not part of this course)
- Distance between primary facility and alternate COOP facility ensures collateral damage from technological hazards or natural disasters do not affect both sites.

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NO SLIDE – USE HARDCOPY

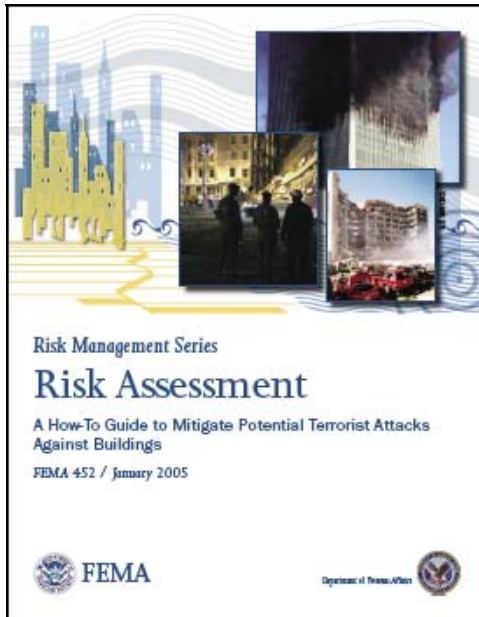


FEMA 426

- This is the primary reference for this course
- Throughout the course, slides will contain references to figure and page number, as appropriate, in this document.
- There will be a comprehensive introduction to the document later in this unit.

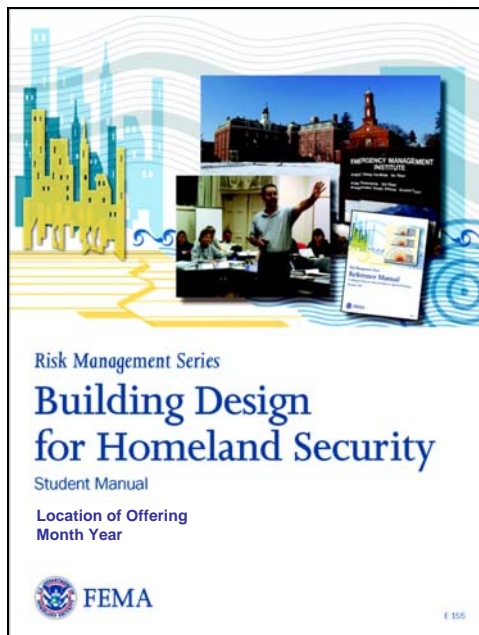
Display a copy of **FEMA 426**

NO SLIDE – USE HARDCOPY



Display a copy of **FEMA 452**.

NO SLIDE – USE HARDCOPY



Display a copy of the **Student Manual** binder.

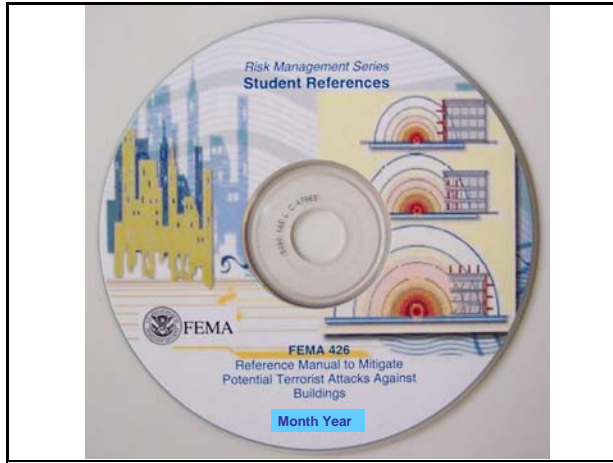
FEMA 452

- This is the “How-To” document that supplements FEMA 426 and expands the content of instruction units 2, 3, 4, and 5.
- It introduces the FEMA 452 Databases as the Risk Management tools to support the assessment and mitigation processes
- Similar to FEMA 426, the slides will contain reference to figure and page number taken from this document, as appropriate, as well as other publications

Student Manual

- The Student Manual will be primarily used as a workbook for activities designed to apply major teaching points.
- Each unit contains worksheets that will be completed in the small group student activity sections of each unit.
- **Appendix C** of the Student Manual is the COOP Case Study: Cooperville Information / Business Center (CI/BC) that you were asked to read prior to beginning this course.

NO SLIDE – USE HARDCOPY



Show the double-sided media storage package containing the **Student Reference CD** and the **FEMA 452 Databases CD**.

NO SLIDE – USE HARDCOPY



Show the reverse side of the media storage package to show the **FEMA 452 Databases CD**.

Student References CD

- The Student Reference CD contains electronic copies of various documents that will be referenced during this course and many that are contained in the Bibliography contained in FEMA 426.
- Tell students that they should have this CD in their handout packages at their seats.

FEMA 452 Databases CD

[Depending upon presentation option used, the database may already have been downloaded from the FEMA web site and installed by the students on their computers – See IG Unit 6 (C) for guidance.]

- The FEMA 452 Databases CD contains the installation programs, User Guides, and files that will be used to demonstrate the features, capabilities, and operation of the databases.
- Tell students that they should have this CD in their handout packages at their seats.
- Point out to the students that the CD found inside the back cover of FEMA 452 is the enterprise version (Version 1.0) of the database as explained in the appendices at the end of that publication. The CD handed out is the COOP version (Version 3.0) of the database. See the User Guide on this CD for installation and use instructions.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

NO SLIDE – USE HARDCOPY

Risk Matrix Poster

Walk to a table and indicate the Risk Matrix poster (laminated with threats/hazards, critical functions, and critical infrastructure cells that the student will fill out with ratings for asset value, threat/hazard rating, vulnerability rating, and risk rating.

VISUAL I-C-16

Course Materials

FEMA Publication 426
Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings

FEMA Publication 452
Risk Assessment: A How-To Guide to Mitigate Potential Terrorist Threats Against Buildings

FEMA

BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-16

Confirm that each student has a copy of these materials.

- Finally, tell the students that if they would like to have help loading the database on their laptop (if they brought one) to bring the laptop on Day 2 and we will assist in loading during lunch or at the end of the day.

Risk Matrix Poster

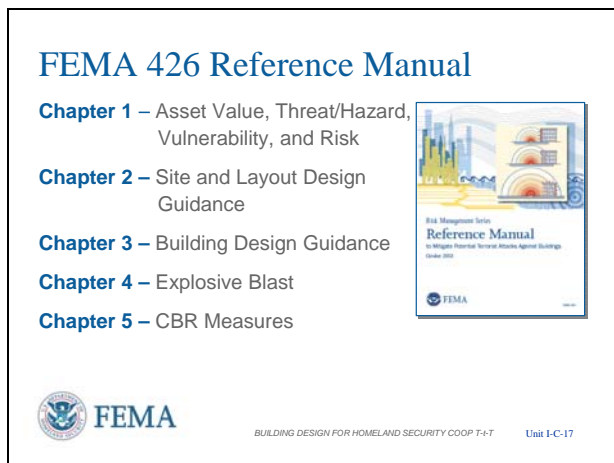
- The small group student activities are focused on the CI/BC Case Study (COOP).
- In small groups, you will conduct a phased assessment of the CI/BC building after each step of the assessment process is introduced by the instructors.
- The final activity involves the development of possible mitigation actions to address identified risks.
- The Risk Matrix poster is provided for groups to keep a comprehensive record of their findings and for use in presenting these findings to the class.

Course Materials

At this point each student should have the following:

- **FEMA Publication 426**
- **FEMA Publication 452**
- Student Manual for the Case Study Version (C - COOP) being used in this offering of the course.
- Risk Matrix Poster
- Multi-color dry-erase markers for use on the Risk Matrix Poster.
 - NOTE: The dry-erase markers are easy

VISUAL I-C-17



As you begin the following walk-through of **FEMA 426**:

Point out that the students will be following **FEMA 426** throughout the course and will use some sections heavily during exercises. The course visuals include **FEMA 426, FEMA 452, and other page references** for easy reference.

Encourage them to flag key pages and passages with the Post-It[®] notes and highlighting.

Ask them to open **FEMA 426** and follow along as you preview the contents.

to erase, meaning that anything placed on top of the posters will erase the entries – so do not place anything on the posters once you start filling them in.

Now that we have confirmed the Course Materials you should have in your possession, we will **look further into the FEMA 426 and 452 publications.**

FEMA 426 Reference Manual

There are five chapters in the manual as listed here. This manual contains many how-to aspects based upon current information contained in FEMA, Department of Commerce, Department of Defense (including Army, Navy, and Air Force), Department of Justice, General Services Administration, Department of Veterans Affairs, Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health, and other publications. It is intended to provide an understanding of the current methodologies for assessing asset value threat/hazard, vulnerability, and risk, and the design considerations needed to improve protection of new and existing buildings and the people occupying them. As needed, this manual should be supplemented with more extensive technical resources, as well as the use of experts when necessary.

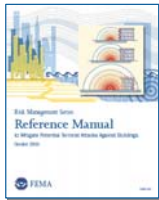
Key concepts:

- Design Basis Threat
- Levels of Protection
- Layers of Defense

VISUAL I-C-18

FEMA 426 Reference Manual

- Appendix A** – Acronyms
- Appendix B** – General Glossary
- Appendix C** – CBR Glossary
- Appendix D** – Electronic Security Systems
- Appendix E** – Bibliography
- Appendix F** – Associations and Organizations



FEMA
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-18

FEMA 426 Appendices

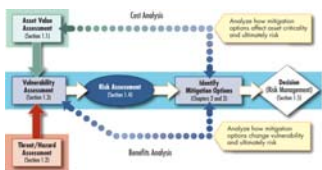
The manual also has six appendices to facilitate its use as a reference:

- Appendix A – Acronyms
- Appendix B – General Glossary
- Appendix C – CBR Glossary
- Appendix D – Electronic Security Systems
- Appendix E – Bibliography
- Appendix F – Associations and Organizations

VISUAL I-C-19

FEMA 426 – Chapter 1

- Asset Value Assessment
- Threat/Hazard Assessment
- Vulnerability Assessment
- Risk Assessment
- Risk Management
- Building Vulnerability Assessment Checklist



FEMA
FEMA 426, Figure 1-3: The Assessment Process Model, p. 1-5
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-19

FEMA 426 - Chapter 1: Asset Value, Threat/ Hazard, Vulnerability, and Risk

Chapter 1 presents selected methodologies to integrate threat/hazard, asset criticality, and vulnerability assessment information using applications such as the FEMA HAZUS-MH Geographic Information System (GIS) application to overlay imagery and maps to show access points, blast stand-off, and other site and building information.

The chapter also presents a risk matrix for the preparation of risk assessments. The topic areas of Chapter 1 are:

- Asset Value Assessment
- Threat/Hazard Assessment
- Vulnerability Assessment
- Risk Assessment
- Risk Management
- Building Vulnerability Assessment Checklist

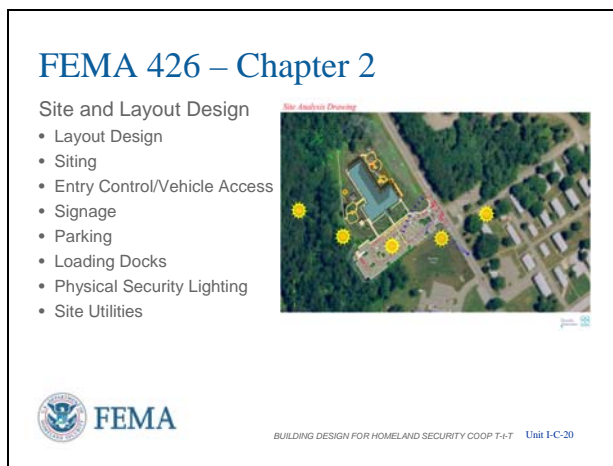
For each of the following chapters, have the students flip through each chapter and highlight some of the key concepts, graphics, etc.

Finally, Chapter 1 provides an assessment checklist that compiles many best practices (based upon current technologies and scientific research) to consider during the

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-20



design of a new building or renovation of an existing building.

Assessment Flow Chart

The assessment flow chart illustrates the process you will follow in conducting the assessment.

FEMA 426 - Chapter 2: Site Layout and Design Guidance

Chapter 2 discusses architectural and engineering design considerations (mitigation measures), starting at the perimeter of the property line, and includes the orientation of the building on the site. Therefore, this chapter covers issues outside the building envelope.

Chapter 2 also discusses the following site layout and design topics:

- Layout Design
- Siting
- Entry Control/Vehicle Access
- Signage
- Parking
- Loading Docks
- Physical Security Lighting
- Site Utilities

INSTRUCTOR NOTES


CONTENT/ACTIVITY

VISUAL I-C-21


FEMA 426 – Chapter 3

Building Design Guidance

- Architectural
- Building Structural and Nonstructural Considerations
- Building Envelope considerations
- Other Building Design Issues
- Building Mitigation Measures



FEMA 426, Figure 1-10: Non-Redundant Critical Functions Collocated Near Loading Dock, p. 1-41
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-21



FEMA 426 - Chapter 3: Building Design Guidance

Chapter 3 provides the same considerations for the building – its envelope, systems, and interior layout.

The topic areas in Chapter 3 include:



- Architectural
- Building Structural and Nonstructural Considerations
- Building Envelope Considerations
- Other Building Design Issues
- Building Mitigation Measures

VISUAL I-C-22


FEMA 426 – Chapter 4

Explosive Blast

- Building Damage
- Blast Effects and Predictions
- Stand-off Distance
- Progressive Collapse



FEMA 426, Figure 1-11: Explosive Blast Effects, p. 1-42
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-22



FEMA 426 - Chapter 4: Explosive Blast

Chapter 4 provides a discussion of blast theory to understand the dynamics of the blast pressure wave, the response of building components, and a consistent approach to define levels of protection.

Some of the details you will address include:

- Building Damage
- Blast Effects and Predictions
- Stand-off Distance
- Progressive Collapse

INSTRUCTOR NOTES


CONTENT/ACTIVITY


VISUAL I-C-23

FEMA 426 – Chapter 5

CBR Measures

- Evacuation
- Sheltering in Place
- Personal Protective Equipment
- Filtering and Pressurization
- Exhausting and Purging



 FEMA

BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-23

FEMA 426 - Chapter 5: CBR Measures

Chapter 5 presents chemical, biological, and radiological measures that can be taken to mitigate vulnerabilities and reduce associated risks for these terrorist tactics.


The concepts you should be familiar with at the end of the instruction include:


- Evacuation
- Sheltering in Place
- Personal Protective Equipment
- Filtering and Pressurization
- Exhausting and Purging

VISUAL I-C-24

FEMA 452 Risk Assessment How-To

- Step 1** – Threat Identification and Rating
- Step 2** – Asset Value Assessment
- Step 3** – Vulnerability Assessment
- Step 4** – Risk Assessment
- Step 5** – Consider Mitigation Options



 FEMA

BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-24

FEMA 452 Risk Assessment How-To

This publication expands Chapter 1 of FEMA 426 going into greater detail in each step of the risk assessment process as indicated by Steps 1 through 4. Step 5 takes an overarching view of mitigation options, looking at cost, benefit, special considerations, and the like, rather than going into specific mitigation options as done in Chapters 2 through 5 of FEMA 426.


INSTRUCTOR NOTES


CONTENT/ACTIVITY

VISUAL I-C-25

FEMA 452 Risk Assessment How-To

- Appendix A** – Building Vulnerability Assessment Checklist
- Appendix B1** – Risk Management Database v1.0: Assessor's User Guide
- Appendix B2** – Risk Management Database v1.0: Database Administrator's User Guide
- Appendix B3** – Risk Management Database v1.0: Manager's User Guide
- Appendix C** – Acronyms and Abbreviations



 **FEMA**

BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-25

FEMA 452 Risk Assessment How-To Appendices

The manual also has five appendices to facilitate its use as a reference:

- **Appendix A** – Building Vulnerability Assessment Checklist [This is the same checklist as found at the end of Chapter 1 in FEMA 426]
- **Appendices B1, B2, and B3** – Different User Guides to use the **Version 1.0** of the FEMA 452 Risk Assessment Database that comes with FEMA 452 on the inside back cover. [This is the large organization version of the database for use on servers to facilitate access by tens and hundreds of people.]
- **Appendix C** – Acronyms and Abbreviations

VISUAL I-C-26

Summary


FEMA 426 and 452 are intended for building sciences professionals.

Manmade hazards risk assessments use a “Design Basis Threat.”

Site and building systems and infrastructure protection are provided by layers of defense.

Multiple mitigation options and techniques.

Use cost-effective multihazard analysis and design.

 **FEMA**

BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-26

Summary

- **FEMA 426 and 452** are intended for building sciences professionals, but can be used by anyone with basic understanding of the systems being assessed.
- Manmade hazards risk assessments use a “Design Basis Threat” and “Levels of Protection” for manmade disaster and loads versus building codes for natural disaster and loads.
- Site and building systems and infrastructure protection are provided by layers of defense.
- Multiple mitigation options and techniques to deter, detect, deny, and devalue.
- Use cost-effective multihazard analysis and design.

INSTRUCTOR NOTES



CONTENT/ACTIVITY

VISUAL I-C-27

Case Study Activities

In small group settings, apply concepts introduced in the course.

Become conversant with contents and organization of FEMA 426.



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-27

Case Study Activities

Through case studies in small group settings, students will become conversant with the contents and organization of **FEMA 426**.

- In small group settings, apply concepts introduced in the course
- Become conversant with contents and organization of FEMA 426


VISUAL I-C-28

COOPERVILLE INFORMATION / BUSINESS CENTER (CI/BC)

Case Study

Small information technology company which also operates a Business Center at same location

- Occupies portion of building rented in Suburban Office Park
- Data center and communications for off-site clients
- Computer and office support for Business Center clients



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-28

Introduction to the Case Study

The Case Study activities throughout this course provide opportunities, in a small group setting, to apply concepts introduced in each unit.

These activities will enable students to become conversant with **FEMA 426**, *Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings*.

Students will be able to use the document readily during the process of mitigating potential damage from terrorist attacks against buildings.

The activities are designed to “walk” students through the same assessment and design steps using a Case Study involving a hypothetical building and associated data about the threat environment.

Cooperville Information / Business Center (CI/BC)

The Cooperville Information / Business Center (CI/BC) is a fictional entity created for

Divide students into small groups of 5 to 8, with 7 being the optimal. Greater than 8 leaves people out of the activity and tables are not usually large enough.

Students should work in these groups for the remainder of the small group sessions.

Refer students to the Unit I Case Study activity in the Student Manual.

Members of the instructor staff should be available to answer questions and assist groups

INSTRUCTOR NOTES

CONTENT/ACTIVITY

as needed.

this course (see Appendix C of the Student Manual).

- It is a composite of actual sites and buildings with actual systems typical of a number of commercial buildings.

The Case Study mainly addresses threat information related to manmade hazards:

- Explosive blast
- Chemical, biological, and radiological agents
- Armed attack
- Cyber attack

Each section of the Case Study activity includes:

- Examination of specific aspects of the Case Study data.
- Assessment of data and application to the Case Study of concepts and processes addressed in the unit.
- Completion of worksheets that demonstrate participant mastery of unit learning objectives.

VISUAL I-C-29



Cooperville Information / Business Center

General Student Activity Requirements

Each student is responsible for completion of his or her own worksheets.

In addition, the small groups will produce a completed worksheet for each unit's activity and post results as applicable on the Risk Matrix Poster.

Group members are encouraged to discuss activity requirements and collaborate on completion of the worksheets.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-30

Mission

Regional Computer / Business Center


- Real-time IT support
- Backup services
- 24 x 7 operations
- Temp office / computer space


Customers

- Government and commercial
- Some classified work

Layout

- Downstairs: Business Center, Computers, Communications, Loading dock, Storage
- Upstairs: Executive offices, Staff



 FEMA

BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-30

To facilitate this process, select a leader and a recorder.

- Turn to Appendix C, the COOP Case Study materials in the Student Manual and briefly peruse the document.
- Use the Case Study data to answer worksheet questions, but feel free to ask questions based upon your experience.

Cooperville Information / Business Center

The Cooperville Information / Business Center's Information Division supports approximately 1,000 users and 100 applications as a primary data center and as a disaster recovery backup site.

The Business Center provides office space with office, telephone, and computer support for up to 82 people with unsecure office and conference room space and up to 7 people with secure office and conference room space.

CI/BC has over 75 employees and approximately 40 employees are in the building during shift changes with about 25 employees at any other time.


INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-31

Threat Analysis

Terrorist Threat
Intelligence Threat
Criminal Threat



FEMA

FEMA 426, Figure 2-1: An Example of Using GIS to Identify Adjacent Hazards, p. 2-5
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-31

Threats/Hazards

- Terrorism
- Intelligence
- Crime

Note the site location, terrain, parking, and other commercial buildings around CI/BC.

VISUAL I-C-32

Hazard Analysis


HazMat

- Facilities
- Highway
- Rail

Liquid Fuels

Air Traffic

Natural Hazards



FEMA

FEMA 426, Figure 2-1: An Example of Using GIS to Identify Adjacent Hazards, p. 2-5
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-32

Threats/Hazards

- HazMat
- Natural Hazards

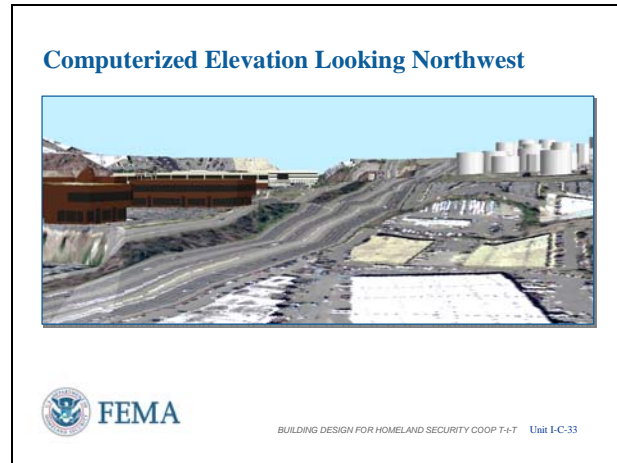
Note the major interstate and rail lines near CI/BC.

Also note that from a seismic and flood standpoint, the CI/BC location (COOP alternate site) has less risk than the US Department of Artificial Intelligence primary site.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-33



Computerized Elevation Looking Northwest

Note the elevation differences between the tank farm, the interstate, and the office park.

A tank leak overflowing the berm around the tank could flow down the interstate, but unlikely that it would flow into the office park.

VISUAL I-C-34



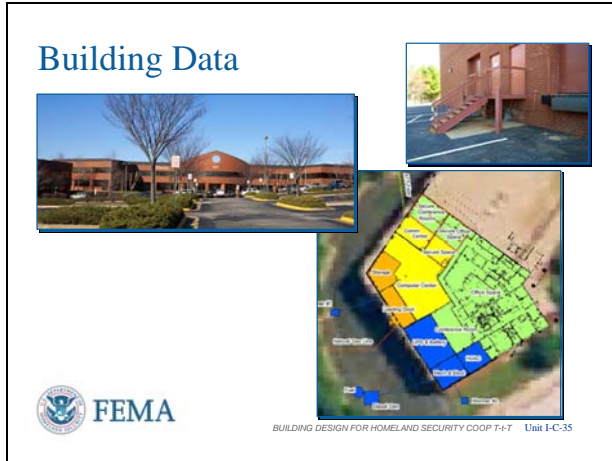
Computerized Elevation Looking Northeast

This slide shows the drop off behind the office complex which makes vehicle access very difficult from that direction.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-35



CI/BC Building Data

- Structural
- Mechanical
- Electrical
- IT
- Physical Security

Note the parking lot, building entry and exit access points, loading docks, building functions, and building infrastructure.

VISUAL I-C-36



CI/BC Building Structure

The Case Study will review the building structure and envelope to identify vulnerabilities and mitigation options.

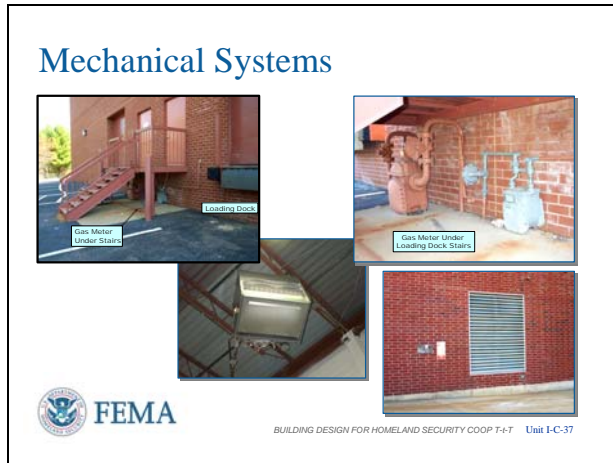
Note the percentage of glass on the exterior walls, overhangs, and type of construction.

Also note that the interior columns have architectural standoff of about 4 inches per the graphic in the upper right corner.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-37

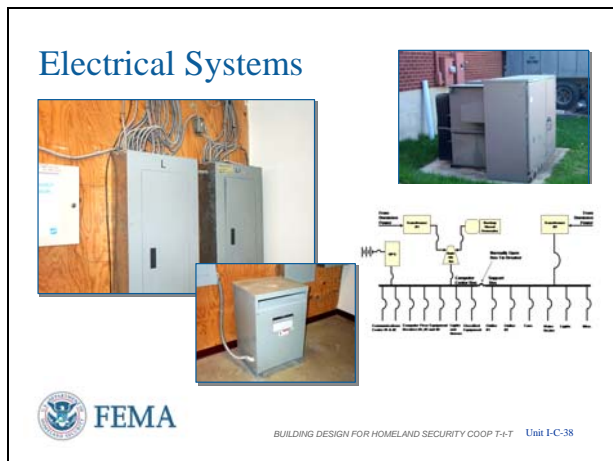


CI/BC Mechanical Systems

The Case Study will review mechanical systems, plumbing, and piping to identify vulnerabilities and mitigation options.

Note the exposed meter and ground level air intake.

VISUAL I-C-38



CI/BC Electrical Systems

The Case Study will review primary electrical utilities and backup power to identify vulnerabilities and mitigation options.

Note the exposed electrical transformers, critical utility entry points, and redundancies, especially the two buss system and the tie breaker.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-39



CI/BC Physical Security

The Case Study will review physical security systems, equipment, and procedures to identify vulnerabilities and mitigation options.

Note the locations of sensors, lights, access points, and type of badges or card readers.

VISUAL I-C-40



CI/BC IT Systems

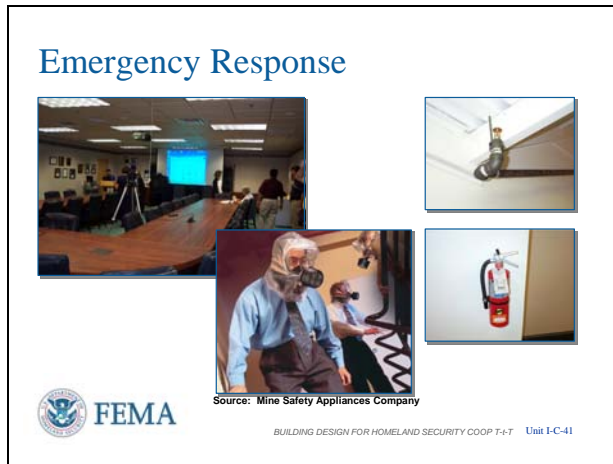
The Case Study will review key IT systems to include the data center and communications to identify vulnerabilities and mitigation options.

Note the type of flooring, penetrations through the floor, mixed cable and fiber runs, and racks.

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-41

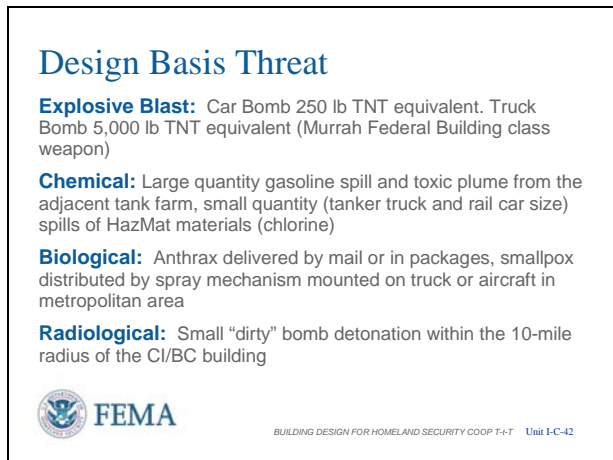


CI/BC Emergency Response

Determine the location, availability, and readiness condition of emergency response assets, and the state of training of building staff in their use.

Note the location and type of protective equipment, safe haven or shelter in place options, and mass notification capability.

VISUAL I-C-42



Design Basis Threat

- Explosive Blast
- Chemical
- Biological
- Radiological ("dirty" bomb)

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-43

Design Basis Threat

Criminal Activity/Armed Attack: High powered rifle or handgun exterior shooting (sniper attack or direct assault on key staff, damage to infrastructure [e.g., transformers, chillers, etc.])

Cyber Attack: Focus on IT and building systems infrastructure (SCADA, alarms, etc.) accessible via Internet access



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-43

Design Basis Threat

- Criminal Activity/Armed Attack
- Cyber Attack

VISUAL I-C-44


Levels of Protection and Layers of Defense

Levels of Protection for Buildings

- Interagency Security Committee (ISC) Level II Building
- DoD Low – Primary Gathering Building

Elements of the Layers of Defense Strategy

- Deter
- Detect
- Deny
- Devalue



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-44

Levels of Protection and Layers of Defense

The Case Study will consider both the ISC and DoD Levels of Protection in order to identify vulnerabilities and to develop mitigation options.

The basic ISC and DoD Levels of Protection information is duplicated at the end of the Appendix C Case Study.

A key design strategy and concept is “Layers of Defense.” The elements of a layered system are:

- Deter
- Detect
- Deny
- Devalue

These terms are defined on page 1-9 of FEMA 426.

VISUAL I-C-45

Risk Matrix

Infrastructure	Cyber attack	Armed attack (single gunman)	Vehicle bomb	CBR attack
Structural Systems	48	128	192	144
Asset Value	8	8	8	8
Threat Rating	3	4	3	2
Vulnerability Rating	2	4	8	9

	Low Risk	Medium Risk	High Risk
Risk Factors Total	1-60	61-175	> 176

Risk = Asset Value x Threat Rating x Vulnerability Rating

Asset: You x Threat: Intruder x Vulnerability: Open Door

FEMA 426, Adaptation of Table 1-21: Site Infrastructure Systems Pre-Assessment Screening Matrix, p. 1-39
FEMA 426, Table 1-19: Total Risk Color Code, p. 1-38
BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-45

NOTE to instructor: This is the introduction slide to how the Risk Matrix is used in the course. Do not teach the whole course on this slide. Illustrate how the Risk Matrix is used without going into ratings given as these points will be covered in subsequent instruction units.

Additional NOTE to instructor: Emphasize on this slide that FEMA 426 was built from DEFINITIONS up. That is, the General Glossary was written first as many terms have different definitions based upon the perspective of use. Asset Value, Threat, and Vulnerability are also widely defined and inconsistent between many risk assessment methodologies. In this course we will tightly define these terms in order to more easily break the risk assessment methodology into its components for ease of analysis. Thus, as shown on the slide, a simple example is that the asset it YOU, the threat is an INTRUDER attempting to get in, and the vulnerability identified is an OPEN DOOR between both of you that the intruder can easily use to get in and get to you.

Risk Matrix (Poster)

Whether you call the poster that you have at each of your tables [show the Poster again] a Risk Matrix or Threat Matrix or something else, its purpose as used in this course with this case study is to collect the assessment team / owner ratings and determine the highest risks that should receive the greatest attention. By splitting up the process into three logical subsets, it is easier to determine what the greatest risks are.

An example matrix from FEMA 426 indicates that the assessors and owners determined the Asset Value for the Structural Systems was 8.

Note: All ratings are on a scale of 1 – 10.

Then for each Threat the likelihood of attack upon the Structural Systems by the listed threat tactics was given a rating: 3 – 4 – 3 – 2. This was determined from a number of factors to consider.

Then the Vulnerability Rating illustrates how successful that threat tactic could fare against the Structural Systems – if the potential threat element selected that tactic to use against that asset would the potential outcome be considered successful by the terrorist or damaging by the asset owner. The vulnerability ratings listed are 2 – 4 – 8 – 9.

You will do this process for each of the entries on your Risk Matrix throughout today as you learn more about Asset Value, Threats / Hazards, and Vulnerabilities.

Then a simple calculation results in risk ratings from 1 to 1,000 in value. In this case the risk of a vehicle bomb being successfully used against the structural systems received

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-46



NOTE to instructor: This is a good time to emphasize students filling out the **evaluation forms** provided as feedback is important to improve this course in presentation and content.

the highest rating (in the red “high risk” zone). You will then compare the high risk ratings to determine the highest risks that you should mitigate.

The Risk Matrix is also useful during your outbriefs on Day 3 to illustrate how your going to reduce risk for the Case Study building.

See additional NOTES to instructor in the left column to cover on this slide.

Summary

The objective of this course is to provide a comprehensive approach to reducing the physical damage to structural and non-structural components of buildings and related infrastructure, focusing on six specific types of facilities:

- Commercial office facilities
- Retail commercial facilities
- Light industrial and manufacturing
- Health care
- Local schools
- Higher education

Most importantly, the course provide participants with a solid foundation on:

- Design Basis Threat
- Levels of Protection
- Layers of Defense

From a COOP standpoint, the course provides a methodology to assess COOP alternate facilities in compliance with FPC 65, including periodic reassessment.

VISUAL I-C-47



RMS Publications – 2003 – Present

FEMA 426 and FEMA 452 are part of the Risk Management Series of publications that seek to reduce damage from natural and man-made hazards and threats.

NOTE to instructor: Do not go through the titles but they are listed here if any questions arise:

- [FEMA 426](#) - Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings
- [FEMA 427](#) - Primer for Design of Commercial Buildings to Mitigate Terrorist Attacks
- [FEMA 428](#) - Primer to Design Safe School Projects in Case of Terrorist Attacks
- [FEMA 429](#) - Insurance, Finance, and Regulation Primer for Terrorism Risk Management in Buildings
- [FEMA 452](#) - A How-To Guide to Mitigate Potential Terrorist Attacks Against Buildings
- [FEMA 453](#) - Design Guidance for Shelters and Safe Rooms: Protecting People Against Terrorist Attacks
- [E155](#) - Building Design for Homeland Security Course

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-48



RMS Publications – 2003 – Present

The RMS Series includes many publications dealing with specific natural hazards and multi-hazards.

NOTE to instructor: Do not go through the titles but they are listed here if any questions arise:

- [FEMA 389](#) - Communicating with Owners and Managers of New Buildings on Earthquake Risk: A Primer for Design Professionals
- [FEMA 395](#) - Incremental Seismic Rehabilitation of School Buildings (K-12): Providing Protection to People and Buildings
- [FEMA 396](#) - Incremental Seismic Rehabilitation of Hospital Buildings: Providing Protection to People and Buildings
- [FEMA 397](#) - Incremental Seismic Rehabilitation of Office Buildings: Providing Protection to People and Buildings
- [FEMA 398](#) - Incremental Seismic Rehabilitation of Multifamily Apartment Buildings: Providing Protection to People and Buildings
- [FEMA 399](#) - Incremental Seismic Rehabilitation of Retail Buildings: Providing Protection to People and Buildings
- [FEMA 400](#) - Incremental Seismic Rehabilitation of Hotel and Motel Buildings
- [FEMA 424](#) - Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds
- [FEMA 433](#) - Using HAZUS-MH for Risk Assessment: How-To Guide (not on slide)

INSTRUCTOR NOTES

CONTENT/ACTIVITY

VISUAL I-C-49

RMS Publications – In Development


FEMA 452 (enhanced) – A How-To Guide to Prepare Multihazard Risk Assessments

FEMA 430 – Site and Urban Design for Security

FEMA 455 – Rapid Visual Screening for Building Security

FEMA 549 – Incremental Rehabilitation to Improve Building Security

FEMA 582 – Design Guide to improve Commercial Building Safety for Earthquake, Flood, and Wind



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-49

VISUAL I-C-50

Unit I Case Study Activity

Introduction and Overview


Background

- Answers to FEMA 452 database COOP questions applicable to Case Study found in student activity
- Note additional COOP information at end of activity

Requirements

As a team, determine if sufficient square footage is available for DAI essential functions

- Needed information contained in student activity
- Ask instructors any clarifying questions based upon your experience



BUILDING DESIGN FOR HOMELAND SECURITY COOP T-t-T Unit I-C-50

NOTE to instructor: Point out the information in the Unit 1 Student Activity as listed in the right column. Also point out that all the information needed for determining the square footage is summarized in the Essential

- [FEMA 454](#) - Designing for Earthquakes: A Manual for Architects
- [FEMA 543](#) - Design Guide for Improving Critical Facility Safety from Floods and High Winds

RMS Publications – In Development

FEMA 452 will be updated to complement the changes being made to the FEMA 452 database – COOP, Natural Hazards, and Rapid Visual Screening

FEMA 430 expands Chapter 2, Site and Layout Design Guidance in FEMA 426, using actual case studies as examples

FEMA 455 parallels the Seismic Rapid Screening approach, but for building security

FEMA 549 and 582 update previous information in the respective areas.

Unit I Case Study Activity

Background

- The Unit 1 Student Activity in your Student Manual contains extensive additional COOP information **that is generally not part of a risk assessment.**
 - The FEMA 452 COOP questions based upon FPC-65 requirements dealing with Deployment Planning and Alternate Facility Description are answered using Case Study information.
 - Pages SM I-C-8 to SM I-C-10
 - The risk assessment information under Alternate Facility Description is:
 - Facility requirements for auxiliary power sources (generators)
 - Auxiliary power fuel requirement

INSTRUCTOR NOTES

CONTENT/ACTIVITY

Functions table starting on Page SM I-C-5 and totaled on Page SM I-C-6 at the end of the table. Then walk the students through the remaining content in Student Manual Unit 1. Particularly cover the Deployment Planning and Alternate Facility Description, and finish the preview by pointing out the remaining 5 documents.

NOTE to instructor: Students initially think that secure and unclassified work space is mutually exclusive, that is 18 classified cubicles and 75 unclassified cubicles are needed.

Point out the following found on Page SM I-C-3:

“NOTE: DAI configures their cubicles such that secure computer terminals are in secure space and the unclassified computer terminal required for these personnel are properly configured for placement in the same cubicle/workstation within the secure space.”

This means that $75 - 18 = 57$ unclassified cubicles are needed and 18 cubicles will have both secure and unclassified computer terminals.

At the end of 20 minutes, reconvene the class and facilitate group reporting in the plenary session.

- Water requirement
- There are 5 additional extracts of COOP information from other FEMA sources for consideration during each student activity.
 - Pages SM I-C-11 to SM I-C-18

Requirements

- Go to the Unit I Student Activity found in your Student Manual at the Unit 1 tab and, as a group, determine if the square footage in the CI/BC Building will accommodate the US Department of Artificial Intelligence essential function during COOP use.
- All needed information is provided in the student activity
- Feel free to ask any questions dealing with any student activity if your experience indicates a different or alternate answer or concern.

Transition

In this course, you will learn how to perform a multihazard risk assessment of a building and become familiar with the key concepts to protect buildings from manmade threats and hazards:

- Asset Value
- Design Basis Threat
- Level of Protection

INSTRUCTOR NOTES

CONTENT/ACTIVITY

- Layers of Defense
- Vulnerability Assessment
- Risk Assessment
- Mitigation

Using the approach and guidance provided in **FEMA 426**, the majority of building owners should be able to complete a risk assessment of their building in a few days and identify the primary vulnerabilities, mitigation options, and make informed decisions on the ability of their building to survive, recover, and operate should an attack or event occur.

For the rest of the first day, the course will introduce the components of risk and how to determine risk.

- Unit II – Asset Value Assessment
- Unit III – Threat/Hazard Assessment
- Unit IV – Vulnerability Assessment
- Unit V – Risk Assessment/Risk Management

**UNIT I (C) CASE STUDY ACTIVITY:
CASE STUDY OVERVIEW
(COOP Version)**

Requirements

SQUARE FOOTAGE ANALYSIS – Does the CI/BC Building have sufficient space to accommodate the DAI essential functions?

NOTE to instructor: The *blue bold italics* information below is the school solution for this student activity. All other information is provided to the students.

Criteria used to evaluate square footage (rules of thumb):

Workstations in Business Center office areas average 100 square feet in floor space. Additional workstations or tables are available on a one-day's notice.

There is no formal Federal Government-wide standard for office space per person. However EPA and GSA recommend 225-230 usable square feet per person which includes all individual and shared space such as workstations, circulation, storage, filing space, and conference rooms. The minimum functional workstation footprint is 64 to 80 square feet (an 8 foot by 8 foot to 8 foot by 10 foot cubicle).

A good approach is to use 100 square feet as the minimum space needed for each work station to allow for movement around office and filing/storage space for deployed equipment and files.

a. Available Unclassified Square Footage for Personnel: 8,225 or 8,775 (w/half of Conf Room)

(1) Shift Personnel Requiring Unclassified Square Footage: 57
(with **no** secure computer terminal co-located)

NOTE: DAI configures their cubicles such that secure computer terminals are in secure space and the unclassified computer terminal required for these personnel are properly configured for placement in the same cubicle/workstation within the secure space.

See Page SM I-C-8 for Alternate Facility Description Personnel Shift Configuration

There are 75 total COOP personnel on shift at any one time. It is assumed that all shift personnel requiring secure computer terminals (18 out of the 75) will be in a secure space and their unclassified computer terminals would be available at the same location using a selector switch or separate terminals. Other approaches would require unclassified terminals to be outside the secure spaces, but in that case a one-to-one person-to-unclassified computer relationship would not be

needed for those in secure spaces and 6 unclassified terminals would be more than adequate and the space required for these unclassified terminals would not be anywhere near 80 square feet. Thus, unclassified space is only required for those who have no secure computer requirements and that number is $75-18 = 57$.

- (2) Minimum Required Unclassified Square Footage for Personnel: 5,700
- (3) Maximum Required Unclassified Square Footage for Personnel: 13,110
- (4) Available Unclassified Square Footage per person: 144.3 to 153.9

Business Center Office Space – 11,000 SF

Includes Main Conference Room – 1,100 SF which can be partitioned in half

Includes Secure Office Space – 745 SF

Includes Secure Conference Rooms – 930 SF

Business Center Office Space (Unclassified) = $11,000 - 745 - 930 - 1,100 = 8,225$ SF office space available

- 1. At 100 SF/Workstation the Business Center is set up to support 82 personnel ($8,225 / 100$)*
- 2. Using EPA/GSA 230 SF/person requires $230 \times 57 = 13,110$ SF (not enough SF)*
- 3. Minimum of 100 SF/person requires 5,700 SF (more than enough, but configuration may be unattainable)*
- 4. Unclassified SF/Person = $8,225 / 57 = 144.3$ SF*
- 5. No problem with Unclassified Office Square Footage. Could use half of main conference room if needed additional space due to workstation layout.*

- b. Available Secure (Classified) Square Footage for Personnel: 1,675 or 2,275 (w/InfoDiv space)

- (1) Shift Personnel Requiring Secure Square Footage: 18
(with unclassified computer terminal co-located)

See Page SM I-C-8 for Alternate Facility Description Personnel Shift Configuration

- (2) Minimum Required Secure Square Footage for Personnel: 1,800
- (3) Maximum Required Secure Square Footage for Personnel: 4,140
- (4) Available Secure Square Footage per person: 93 to 126.4 (using all secure space)
-

Business Center Secure Office Space – 745 SF
Business Center Secure Conference Rooms – 930 SF
Information Division Secure Space – 600 SF

- 1. At 100 SF/Workstation the Business Center is set up to support 7 secure personnel (745 / 100) using only Business Center secure office space*
- 2. At 100 SF/Workstation the Business Center can support 16 secure personnel using the Secure Office Space (7 personnel) and the Secure Conference Rooms (9 personnel).*
- 3. Thus, DAI must use the Information Division Secure Space to cover the 18 personnel. $7 + 9 + 6 = 22$ personnel (total capability using existing configuration)*
- 4. Using EPA/GSA 230 SF/person requires $230 \times 18 = 4,140$ SF (not enough SF)*
- 5. Thus, additional workstations, including computers and telephones, need to be moved into the Secure Conference Room space within 24 hours after notification of the COOP activation or 12 hours with preplanning and locally stored workstations and equipment.*

BACKGROUND INFORMATION

The needed information from Appendix C, Case Study, is contained here to answer the square footage questions. Use only the Case Study data to answer the student activity questions. However, feel free to ask questions of the instructors based upon your experience.

ESSENTIAL FUNCTIONS – NOTE: Table information is summarized in the last row of the table.

Priority	Essential Function	Req Square Footage	Req # Personnel	Req # Computer Terminals (U) Unclassified (S) Secure	Req # Telephones (U) Unclassified (S) Secure	Req Cell Phone Coverage (Y or N)
1	Orchestrate national level response to any loss of artificial intelligence production capability and loss of AI revenue required for payments to US citizens		4 COOP Site Managers 10 Staff	(U) 2 (U) 5 (S) 5	(U) 2 (S) 5	Y 4 N
2	Consult with and provide reports and other technical assistance to appropriate Federal agencies that may be impacted by loss of AI component availability and resultant revenue flow		4 COOP Site Fin Sys Mgrs 12 Staff	(U) 2 (U) 6 (S) 6	(U) 2 (S) 6	Y 4 N
3	Process and post financial documents supporting monthly cash flow to Agencies that distribute AI		36	(U) 18	(U) 18	N

Course Title: Building Design for Homeland Security COOP T-t-T

Unit I (C): Introduction and Course Overview

Priority	Essential Function	Req Square Footage	Req # Personnel	Req # Computer Terminals (U) Unclassified (S) Secure	Req # Telephones (U) Unclassified (S) Secure	Req Cell Phone Coverage (Y or N)
	revenues to entitlement recipients					
4	Operate personnel / payroll system to ensure all DAI personnel receive payments		28	(U) 14	(U) 14	N
5	Manage operations, security, safety, and health programs for all DAI personnel, programs, and operations		20	(U) 10 (S) 2	(U) 10 (S) 2	Y-4
6	Manage Department-wide computer security functions		10	(U) 5 (S) 5	(S) 5	N
7	Provide liaison with state, local, and tribal officials on status of critical AI production, availability, and shortfalls.		26	(U) 13	(U) 13	Y 5
	Summary of Essential Function Requirements		Mgrs 8 Staff 142	(U) 75 (S) 18	(U) 59 (S) 18	17

ADDITIONAL INFORMATION – Consider during each student activity throughout course.

FEMA 452 COOP questions – answered

1. Deployment Planning
2. Alternate Facility Description

Information from other FEMA sources:

3. FEMA 452 Risk Assessment Database v3.0, Checklist Questions – Section 14 COOP Facility: Additional Concerns
4. Glossary of COOP terminology, FEMA Independent Study (IS) 546, *Continuity of Operations (COOP) Awareness Course*.
5. Alternate Facility Selection Factors, FEMA IS 547, *Introduction to Continuity of Operations*.
6. Components of an Effective Vital Records Program, FEMA IS 547.
7. FPC-65 Testing Requirements.

2. DEPLOYMENT PLANNING

a. Minimum distance to alternate facility 60 miles.

b. Required access to transportation:

 ? Yes/No Privately Owned Vehicle

 ? Yes/No Agency Arranged Transportation

 ? Yes/No Mass Transit

Types of Mass Transit at Primary Facility:

 Yes Yes/No Bus

 Yes Yes/No Rail

 Yes Yes/No Taxis

Types of Mass Transit at Alternate Facility:

 Yes Yes/No Bus

 Yes Yes/No Rail

 Yes Yes/No Taxis

3. Alternate Facility Description:

- a. How soon after decision to deploy must site be available?
12 # of hours
- b. Number of Persons to be supported overall (all shifts) 150 # people
- Shift A Number of Persons on shift 75 # people
- Shift B Number of Persons on shift 75 # people
- Shift _____ Number of Persons on shift _____ # people
- c. When this alternate facility is activated, how many hours per day and days per week will it operate?
- 24 # hours per day
- 7 # days per week
- d. If people must stay overnight at the site, indicate the total billet requirement.
- 150 # billets per day

Where will billets be located?

There is sufficient hotel room space in the local area to handle part or all of the Emergency Relocation Group. Local colleges can be contacted for use of dormitory space, but this would be limited to the summer months per a preliminary inquiry.

- e. If necessary, the number of meals served on site per day?
- 150 # of meals per day

How will meals will be provided, and for what meals (breakfast, lunch, dinner, and for which shift)?

Local eateries are not 24 hour operations, thus the lunch meal on the night shift will need to be catered and, for consistency, the lunch meal on the day shift should also be catered. Breakfast and dinner for both shifts are at the discretion of the individual prior to starting shift and after ending shift. There are many caterers/delicatessens/restaurants in the local area that could provide a variety of delivered foods for one or both meals.

f. Facility requirements for auxiliary power sources (generators)

1,500 KVA power requirement (maximum)

1,000 KVA critical load (on UPS)

1250 eKW / 1563KVA generator capability/capacity

26 hours duration (hours, days, weeks) (minimum)

Based upon the refueling of the fuel tank(s) each day (24 hours).
Recommend ensuring there are at least 3 fuel suppliers in different localities to ensure servicing of the fuel tank during any power outage contingency.

g. Auxiliary power fuel requirement

Estimating Rule of Thumb: 0.08 gallons / KW / hour

100 # gallons per hour (1250 KW x 0.08 gallons / KW / hour)

22 hours duration capability (full tanks – hours, days, weeks)
(with day tank 80% full)

Increase fuel capacity with another tank or use a portable tank during the peak summer months when the maximum load is expected to occur.

Alternately, during an exercise ensure this COOP site is fully functional and measure actual load to better understand consumption and duration capability. Adjust capacity requirements accordingly.

h. Parking requirement

0 Unsecured stalls

0 Secured stalls

447 in front & 155 in rear Total stalls available (therefore no parking problem even if all Emergency Relocation Personnel bring a POV)

i. Vehicle fuel requirement

0 # gallons per day (*all vehicles to be refilled at local gas stations*)

j. Water requirement

112.5 to 22,500 # gallons per day

Estimating Rules of Thumb:

2-quarts - 2 gallons per person per day for consumption/minimal washing

50 gallons / person / day for personal use (drinking, washing, flushing, food prep)

100 gallons / person / day for all building uses

150-160 gallons / person / day for water production

Cooling Tower evaporates 3 gallons / minute / 100 tons of air conditioning or 4,320 gallons per day / 100 tons of air conditioning. Cooling Tower sumps for these size units contain 150-300 gallons. Thus without water supply, cooling towers can last about 50-100 minutes before they have insufficient water to operate properly (piping not filled)

Estimated consumption using Rules of Thumb:

75 CI/BC employees + 150 Emergency Relocation Group personnel = 225

225 persons x 0.5 = 112.5 gallons / day minimum for consumption/minimal washing

225 persons x 100 = 22,500 gallons / day for all building uses

Available water if water main shut off:

Bottled water = 5 dispensers x 3 spare jugs x 5 gallons per jugs = 75 gallons, up to 100 gallons if each dispenser has a new jug.

NOTE: Will have to arrange additional bottled water and reserves to supply COOP operation.

k. Radio requirement

None

l. Satellite communication requirement

A satellite link is needed for secure and non-secure worldwide communications as a backup to telephone landlines. This may already be in the ERG Office Go Kit.

m. Other requirement

None listed.

3. FEMA 452 Risk Assessment Database v3.0

Checklist Questions – Section 14 COOP Facility: Additional Concerns

- 14-1: **Essential Functions:** Have the essential functions been identified and prioritized to establish the planning parameters for the alternate operating facility?
- 14.2: **Essential Functions:** Have reliable processes and procedures been established to acquire resources necessary to continue essential functions and sustain operations until normal business activities can be reconstituted, which could be up to 30 days?
- 14-3: **Communications:** Does the alternate operating facility provide interoperable communications, including a means for secure communications, with all identified essential internal and external organizations, customers, and the public?
- 14-4: **Communications:** Have the internal and external communications capabilities at the alternate operating facility been validated quarterly?
- 14-5: **Communications:** Does the COOP facility have wireless / cell phone capability? Have wireless and cell phone providers been reviewed and compared to ensure the best service is provided? Are services available / compatible within the building to support essential functions and missions?
- 14-6: **Test, Training, and Exercises:** Has there been annual testing of primary and backup infrastructure systems and services at alternate operating facilities (e.g., power, water, fuel)?
- 14-7: **Test, Training, and Exercises:** Have physical security capabilities been tested / exercised annually and shown to be able to be in place within 12 hours of COOP plan activation?
- 14-8: **Planning Requirements:** Is the alternate operating facility located in an area where power, telecommunications, and internet grids are distinct from those of the primary facility?
- 14-9: **Planning Requirements:** Is the distance between the primary facility and the alternate operating facility sufficient to allow it to continue essential agency functions?
- 14-10: **Planning Requirements:** Has the organization identified which essential services and functions that can be continued from remote locations (e.g., home facilities or other alternative workplaces) and those that need to be performed at a designated department or agency operating facility?
- 14-11: **Planning Requirements:** Does the alternate facility have detailed site preparation and activation plans or have pre-positioned supplies and resources in order to achieve full operational capability within 12 hours of notification?
- 14-12: **Planning Requirements:** Is the COOP facility able to accommodate all emergency relocation group members in a safe and efficient manner?

- 14-13: **Planning Requirements:** Does the COOP facility contain the sufficient amount of phones, computers, and necessary equipment needed to sustain COOP operations?
- 14-14: **Vital Records:** Has the organization identified vital records needed to perform its essential functions during a COOP event?
- 14-15: **Vital Records:** Do emergence response group members have access to their vital records at the alternate facility? Are they available within 12 hours or less of a COOP plan activation.
- 14-16: **Vital Records:** Are periodic review / updates of the vital records program conducted to address any new security issues, identify problem areas, and identify additional vital records that may result from new agency programs or functions?
- 14-17: **Vital Records:** Are there separate COOP servers? Are they placed in a secure area? Are there backup procedures?
- 14-18: **Vital Records:** Has a risk assessment of vital records been performed to determine:
- a. Identify risks involved if vital records are retained in their current location and medium, and the difficulty reconstituting them if they are destroyed.
 - b. If off site storage is necessary?
 - c. Determine if alternative storage media is advisable?
 - d. Determine if it is necessary to duplicate records to provide a vital records copy?
- 14-19: **Human Capital:** Is adequate Personal Protective Equipment available for all emergency response group members while on-site?
- 14-20: **Human Capital:** Are there sufficient quantities of Personal Protective Equipment for emergency response group members to sustain operations for 30 or more days?
- 14-21: **Human Capital:** Are medical facilities, proper caregivers, and first aid kits available for emergency response group members if and when needed?
- 14-22: **Human Capital:** Is there access to essential resources such as food, water, fuel, and municipal services at the facility?
- 14-23: **Security:** Does the site provide physical security that meets all requirements established by annual threat assessments and physical security surveys?

4. Glossary of COOP Terminology **FEMA Independent Study (IS) 546** *Continuity of Operations (COOP Awareness Course)*

Alternate communications: Provide for the capability to perform essential functions, in conjunction with other agencies, until normal operations can be resumed.

Continuity of Government Plans: Developed and implemented in the event of a catastrophic emergency to ensure that our government continues to exist and function.

Continuity of Operations: A Federal initiative, required by Presidential Directive, to ensure that Executive Branch departments and agencies are able to continue their essential functions under a broad range of circumstances.

Delegations of Authority: Formal documents that specify who is authorized to act on behalf of the agency or other key officials for specific purposes.

Devolution: The capability to transfer statutory authority and responsibility for essential functions from an agency's primary operating staff and facilities to other employees and facilities.

Essential Functions: Those functions that enable an organization to provide vital services, exercise civil authority, maintain the safety of the general public, and sustain the industrial or economic base during an emergency. Essential functions must continue with no or minimal disruption.

Exercises: Events that allow participants to apply their skills and knowledge to improve operational readiness. Exercises also allow planners to evaluate the effectiveness of previously conducted tests, training, and exercises.

Federal Preparedness Circular 65: Issued by FEMA to provide specific and detailed guidance regarding COOP capabilities.

Full-Scale Exercise: Test the agency's total response capability for COOP situations. These exercises are as close to reality as possible, with personnel being deployed and systems and equipment being implemented.

Functional Exercise: Simulate a function (e.g., alert, notification) within a real incident. Functional exercises test a single part of COOP activation to be tested independently of other responders.

"Go Kit": A kit that should be assembled by each employee and his or her family and should include personal items and necessities, financial and legal documents, and the name and phone number of an out-of-area contact.

Hands-On Training: Can provide practice in specialized skills (e.g., notification procedures), allow for practice of newly acquired skills, and help maintain proficiency at infrequently used skills.

Multi-Year Strategy and Program Management Plan: The long-term plan for keeping the COOP up to date.

Occupant Emergency Plans: Intended to ensure the safety of personnel in the event of an incident inside or immediately surrounding an agency's building.

Orders of Succession: Provide for the orderly and predefined assumption of senior agency offices during an emergency in the event that any officials are unavailable to execute their legal duties. All orders of succession should include the conditions under which succession will take place, the method of notification, and limitation on delegations of authority by successors.

Orientations: The first type of training conducted in an exercise program. Orientations are usually conducted as briefings and are a good way to introduce the general concepts of a COOP plan; announce staff assignments, roles, and responsibilities; present general procedures; and describe how the COOP plan will be tested and exercised and within what timeframes.

Presidential Decision Directive 67: Issued by former President Bill Clinton, requiring all Federal departments and agencies to develop plans in response to all hazards and a full spectrum of threats.

Reconstitution: The process by which surviving and/or replacement agency personnel resume normal agency operations from the original or replacement primary facility.

Relocation: Involves the actual movement of essential functions, personnel, records, and equipment to the alternate operation facility. Relocation may also involve transferring communications capability to the alternate facility, ordering supplies and equipment that are not already in place at the alternate facility, and other planned activities, such as providing network access.

Tabletop Exercise: A simulation activity in which a scenario is presented and participants in the exercise respond as if the scenario was really happening.

Test: An evaluation of a capability against an established and measurable standard.

Test, Training, and Exercise Program (TT&E): Includes measure to ensure that an agency's COOP program is capable of supporting the continued operation of its essential functions throughout the duration of a COOP situation. TT&E program should be a blend of test, training, and exercise events to ensure that it is comprehensive in that it includes all three components and reflects lessons learned from previous TT&E events.

Training: Instruction in core competencies and skills and is the principal means by which individuals achieve a level of proficiency.

Vital Records: Records that are vital to an agency and its operations. The records include emergency operating records and legal and financial records.

5. Alternate Facility Selection Factors
FEMA Independent Study (IS) 547
Introduction to Continuity of Operations

Factor	Explanation
Location	Select a site that provides a risk-free environment, if possible, and is geographically dispersed from the primary work location. This will reduce the chance that the site will be affected by the same event that required COOP activation.
Construction	The alternate facility should be constructed so that it is relatively safe from the high-risk hazards in the area.
Existence of an MOU/MOA	The General Services Administration may have space available that is suitable for an alternate facility. Another option may be to enter into a Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) with another agency to share space during COOP activation.
Space	The alternate facility must have enough space to house the personnel, equipment, and systems required to support all of the organization's essential functions.
Billeting and Site Transportation	Billeting and site transportation should be available at or near the alternate facility. Sites that are accessible by public transportation and that provide billeting or are near hotels offer important advantages.
Communication	The site will need to support the agency's COOP information technology and communication requirements. The agency will need to acquire any capabilities not already in place.
Security	Security measures, such as controlled access, should be an inherent part of the alternate facility.
Life Support Measures	Access to life support measures—food, water, and other necessities—should be available onsite or nearby.
Site Preparation Requirements	The amount of time, effort, and cost required to make the facility suitable for the agency's needs is critical. The more "turnkey" the facility is, the better.
Maintenance	Consider the degree of maintenance required to keep the facility ready for COOP operations. Lower-maintenance facilities offer a distinct advantage in case of no-warning COOP activation.

6. Components of an Effective Vital Records Program
FEMA Independent Study (IS) 547
Introduction to Continuity of Operations

Component	Description
Vital Records Directive	<p>A directive from senior leadership that establishes the vital records program and assigns responsibility for vital records management. The directive should:</p> <ul style="list-style-type: none"> <li style="padding-left: 40px;">Specify the purpose and scope of the program. <li style="padding-left: 40px;">Assign roles and responsibilities. <li style="padding-left: 40px;">Provide for staff training. <li style="padding-left: 40px;">Require periodic review and testing of the program.
Appropriate Medium	<p>The determination of an appropriate medium for each type of vital record to enable the Emergency Relocation Group (ERG) to access the records within 12 hours, or less, as required, of activation. Agencies should strongly consider:</p> <ul style="list-style-type: none"> <li style="padding-left: 40px;">Multiple redundant media for storage of vital records. <li style="padding-left: 40px;">Methods to facilitate the rapid recovery of records necessary to ensure business survival.
Records Inventory	<p>A complete inventory of the records identified as vital to agency operations. The inventory should include:</p> <ul style="list-style-type: none"> <li style="padding-left: 40px;">The location of the records. <li style="padding-left: 40px;">Complete access information.
Risk Assessment	<p>An assessment that:</p> <ul style="list-style-type: none"> <li style="padding-left: 40px;">Identifies the risks involved if the vital records are retained in their current locations and in their current media—and the difficulty of reconstituting them if they are destroyed. <li style="padding-left: 40px;">Determines the level of physical security and confidentiality of the records. <li style="padding-left: 40px;">Determines offsite storage—perhaps in a regional office or in commercial storage. <li style="padding-left: 40px;">Identifies whether alternate storage media are advisable. <li style="padding-left: 40px;">Determines whether duplication may be required for records that will be stored off site, are static, or are available in hardcopy only.

Records Protection Methods	<p>The selection of appropriate protection methods for all vital records, including whether:</p> <ul style="list-style-type: none">Dispersal to other locations may be required. If records are to be dispersed, the site must have controlled access separately from the site where the records were created or used regularly.Special media protection methods are required.
Update Procedures	<p>Procedures for routinely updating vital records so that they always contain the most current information.</p>
Recovery Strategy	<p>The identification of records recovery experts and vendors who can assist with the recovery of vital records in the event of damage or loss.</p>
Vital Records Packet	<p>A packet that includes:</p> <ul style="list-style-type: none">A list of key personnel and disaster staff including up-to-date telephone numbers or other contact information.A complete inventory of the vital records and their precise locations.Necessary keys and/or access codes for the records.The locations of alternate operating facilities. <p>The packet should be reviewed periodically to ensure that the information is current.</p>
Training	<p>A training program for all staff involved in the vital records program. Training for vital records should focus on the vital records policies and procedures as well as personnel responsibilities.</p>
Review Program	<p>A strategy for periodic review of all vital records. The program should:</p> <ul style="list-style-type: none">Address new security issues that have been identified since the last review.Update information in the vital records as necessary.Identify additional vital records.Provide an opportunity to familiarize staff with the program.
Testing Capabilities	<p>A testing strategy that evaluates capabilities for:</p> <ul style="list-style-type: none">Protecting classified and unclassified vital records and databases.Providing access to vital records from alternate facilities. <p>Testing is required semiannually.</p>

7. FPC-65 COOP Testing Requirements

(Potential impact on alternate facility indicated by *bold italics*)

Testing is an important part of COOP readiness. By testing, agency personnel can tell if the policies and procedures work as they should, when they should. Testing is critical for:

Alert, notification, and *activation procedures*.

Communications systems.

Vital records and databases.

Information technology systems.

Major systems at the alternate facility (e.g., power, water).

Reconstitution procedures.

FPC-65 requires testing of certain aspects of the COOP plan. The agency test program must include:

Quarterly testing of alert, notification, and *activation procedures*.

Semiannual testing of plans for the recovery of vital classified and unclassified records and critical information systems, services, and data.

Quarterly testing of communications capabilities.

Annual testing of primary and backup infrastructure systems and services at alternate operating facilities (e.g., power).

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