Certified Floodplain Manager Program

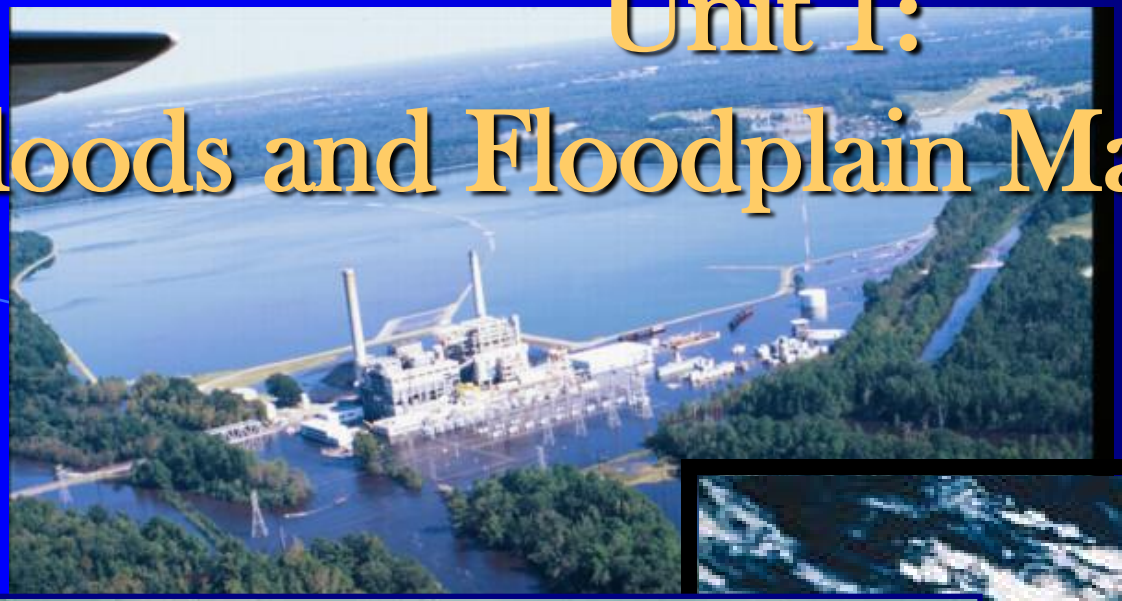
Training Course

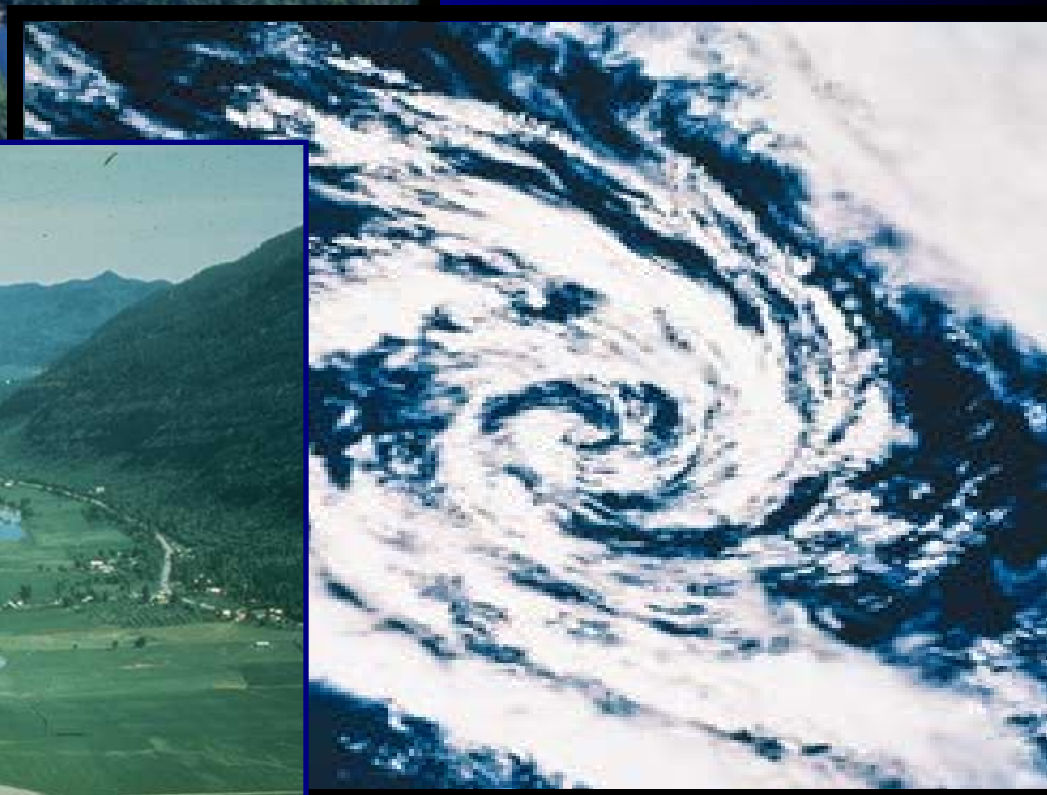
Using the EMI 1S-9 Manual

Presented by

Jennifer Marcy

Unit 1:
Floods and Floodplain Management





Unit 1
Floods and Floodplains

Flooding Types

Riverine, Coastal, Shallow

- What type of flooding ranks first as the cause of flood-related deaths in the U.S.?
- What is the difference between a storm surge and a tsunami?
- What is the difference between sheet flow and ponding?

Unit 1
Flooding and Floodplains

Special Flood Hazards

Closed Basin Lakes, Uncertain Flow Paths, Dam Breaks, Ice Jams, Mudflows

- Note the hazards of alluvial fan flooding
- Ice jams cause increased flooding ***up*stream** at first and ***down*stream** after the jam breaks
- Mudflows typically cause more damage than clear-water flooding, but are not addressed by the NFIP

Unit 1
Floods and Floodplains

Natural and Beneficial Functions

Natural, Biological, Societal

- Floodplains have many functions that would be important to you as a local official in charge of floodplains

Unit 1
Floodplain Development

Floodplain Development Dynamics

Riverine, Watersheds, Coasts

- Storm sewers/urban drainage systems can speed flood flows
- Paved areas are less permeable than natural ground and will increase runoff in a rain event

Unit 1
Floodplain Development

Flood Damage

Hydrodynamic/Static,Debris, Soaking, Sediment, Safety and Health Hazards

- How many feet of standing water can collapse the walls of a typical frame house?
- You should be able to list at least three safety hazards that occur during and after a flood event

Unit 1
Floodplain Management

Evolution/History

Evolution of the NFIP

- Note the transition from structural flood control measures to non-structural flood control measures
- You should be able to list 5 non-structural flood control measures

Unit 1
Floodplain Management

Floodplain Management Strategies

Human susceptibility, Impacts of Flooding, Flood Control, and Natural Resources

- Note again that preserving and restoring the natural and beneficial functions of floodplains is important in this manual.

End Unit 1

Unit 2:
The National Flood Insurance Program

NFIP

National Flood Insurance Program
Administered by FEMA

Unit 2
The NFIP

How it Works

Mapping, Insurance, Regulations

- Structural to Preventative
- What will eventually happen to homes in the SFHA?
- If a community refuses to enforce their floodplain regulations, what can happen?

Unit 2
The NFIP

Roles and Responsibilities

Community Role

- What does a community commit itself to when it joins the NFIP?
- Note the three recourses for non-compliance

Unit 2
The NFIP

Roles and Responsibilities

State and Federal

- Coordinating Agencies' responsibilities
  - States
- FEMA's responsibilities
  - Federal

Unit 2
The NFIP

Community Participation

Joining the NFIP

- "Voluntary Partnership" vs. "Mandatory Compliance"
- Floodplain Management Ordinance
- Introduction of the CRS

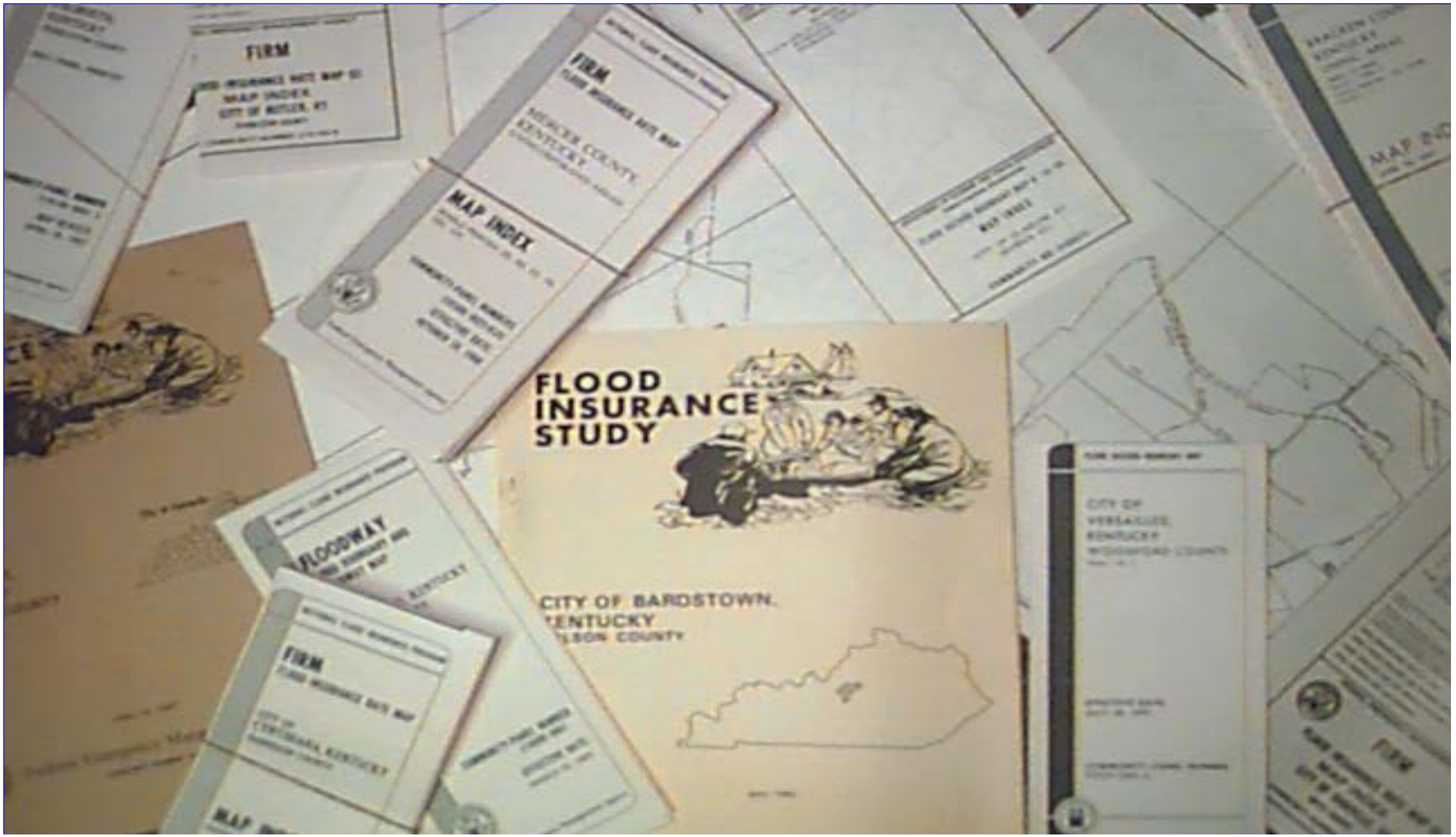
Unit 2
The NFIP

Community Participation
Not Joining the NFIP

- Sounds like "Mandatory Compliance" to me!
  - No flood insurance available
  - No federal grants/loans available in identified flood hazard areas
  - No disaster assistance
  - No Federal mortgage or loan guarantees in identified flood hazard areas
  - Banks and lenders must notify applicants of flood hazard and that there is no insurance or disaster relief available

End Unit 2

Unit 3:
NFIP Flood Studies and Maps



Unit 3
NFIP Flood Studies and Maps

Flood Studies

Terminology

- Flood studies are used to determine *flood prone areas* and *flood risk zones*; you should know this terminology
- Note that the 100-year flood (1% annual chance) does not have to occur only once every 100 years

Unit 3
NFIP Flood Studies and Maps

Riverine Studies

Hydrology, Hydraulics, Cross Sections, Profiles, Maps, and Floodways

- A bridge would cause higher water levels upstream or downstream?
- You should know and be able to explain how the floodway boundaries are calculated

Unit 3
NFIP Flood Studies and Maps

Coastal Flood Studies

Storm Surges, Waves, Hydraulics, V Zones, Maps

- Riverine studies use cross sections and coastal studies use transects

Unit 3
NFIP Flood Studies and Maps

Coastal Flood Studies

Storm Surges, Waves, Hydraulics, V Zones, Maps

- Coastal High Hazard Areas (V Zones) are typically the area between the shoreline and the most seaward of what three points?

Unit 3
NFIP Flood Studies and Maps

Shallow Flooding and Approximate Studies

- Note that sheet flow is not always AO and ponding is not always AH
- Note: We usually use the term “A Zone” to mean approximate A Zone. This manual will only mean “approximate” if they specifically say “unnumbered A Zone” or “ Approximate A Zone”

Unit 3
NFIP Flood Studies and Maps

NFIP Maps

General Map Features

- 1986 is NOT the magical year
- You should know what a reference mark looks like on a FIRM panel, and be aware that this training manual wants you to use the closest one shown on the FIRM
- ***Know your zones*** (especially A, AE, V, AH, and AO)

Unit 3
NFIP Flood Studies and Maps

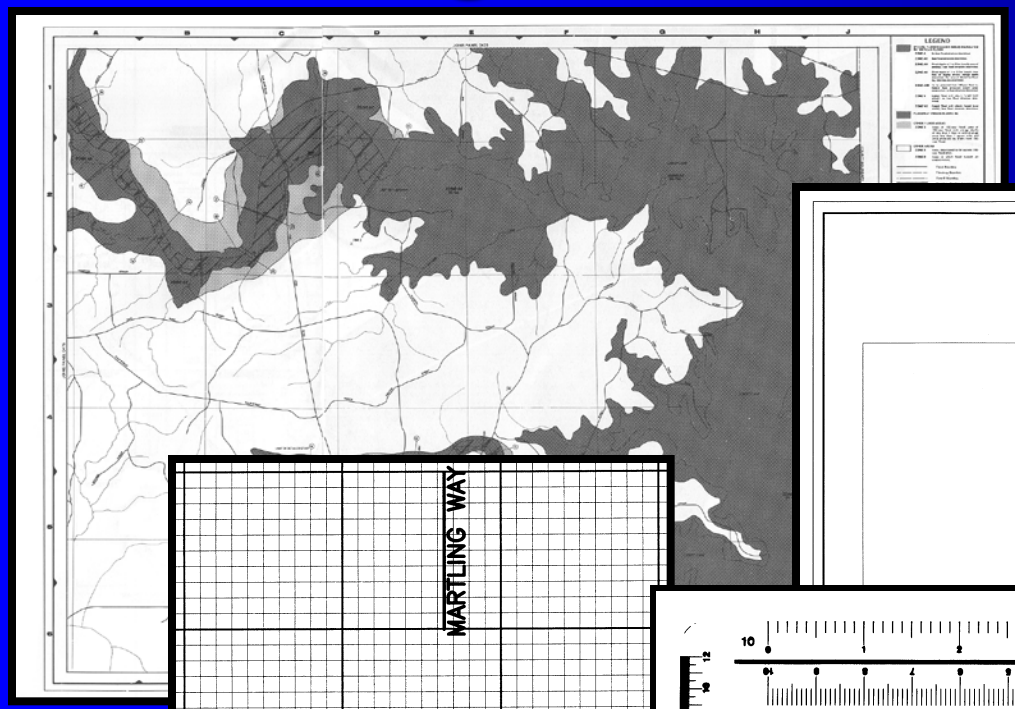
NFIP Maps

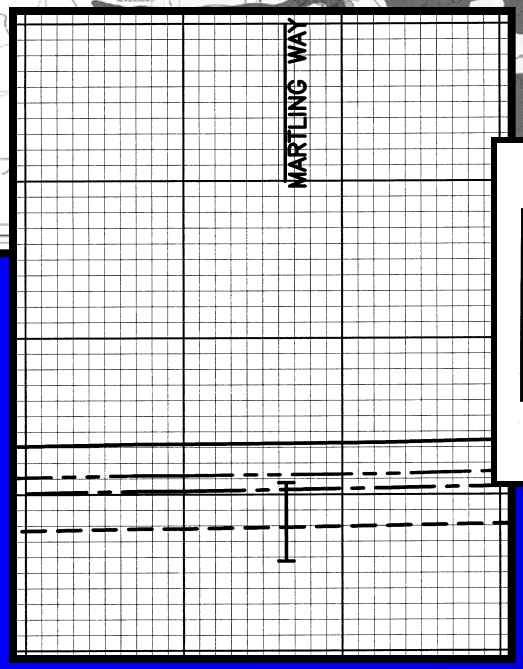
General Map Features

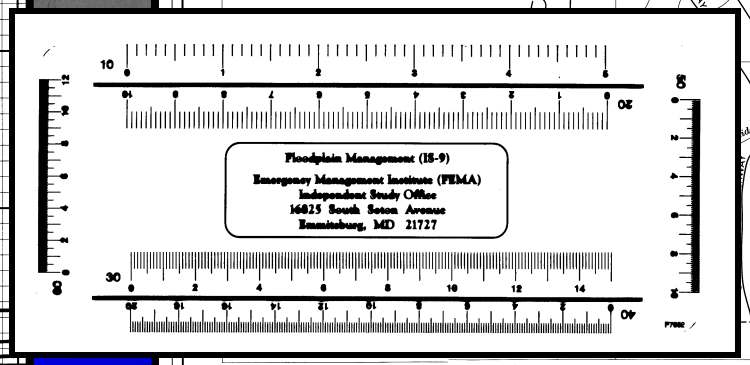
- DFIRMs and Q3 Data

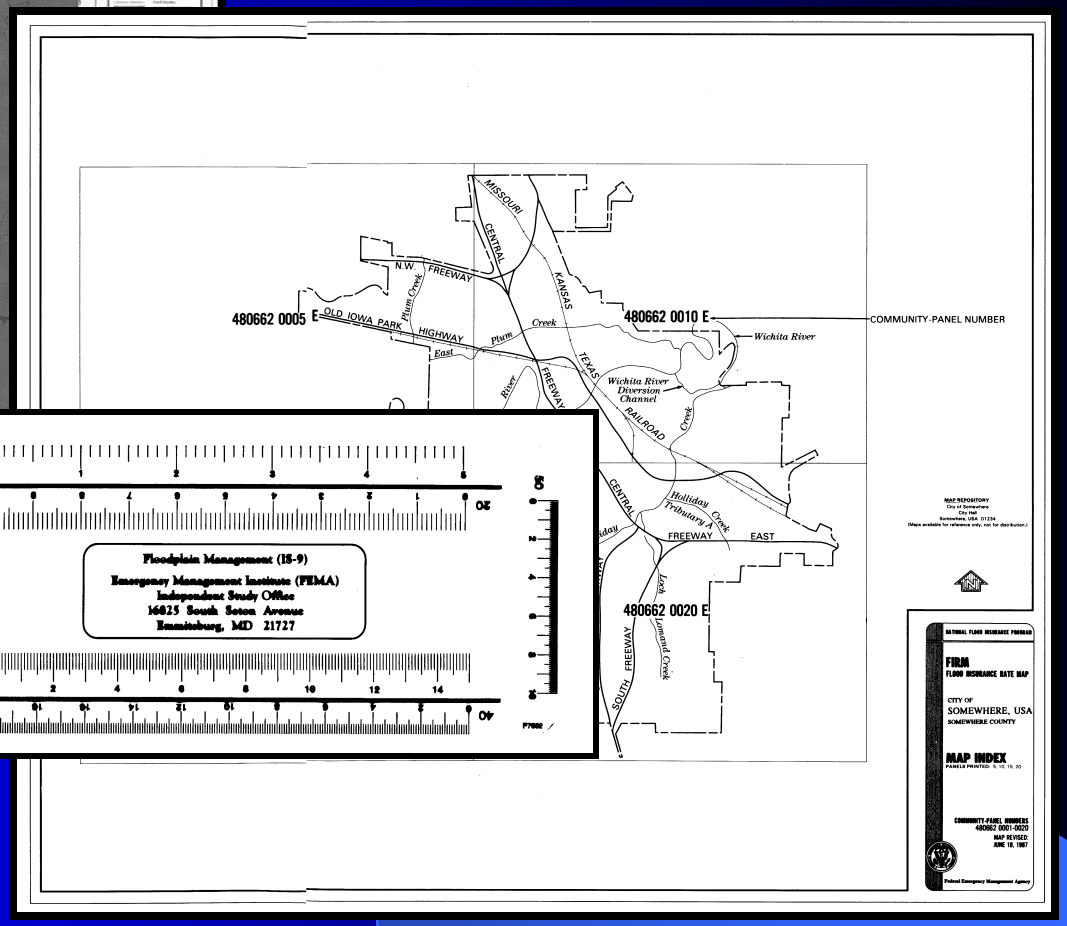
End Unit 3

Unit 4:
Using NFIP Studies and Maps









Unit 4
Using NFIP Studies and Maps

Using FIS Reports
Contents, Tables, Relating Information

- Know what data you can find in an FIS report
- Floodway Data Tables
  - Floodway widths, Regulatory elevations
- Coastal vs. Lake BFEs
- What is the order of precedence in obtaining a BFE?
- Using your discretion

Unit 4
Using NFIP Studies and Maps

Using Flood Maps

Locating, Stationing, BFEs, Floodways

- How did you do?

Unit 4
Using NFIP Studies and Maps

Using Profiles

Features, BFEs, Relation to FIRM

- What features are shown on the profile?

Unit 4
Using NFIP Studies and Maps

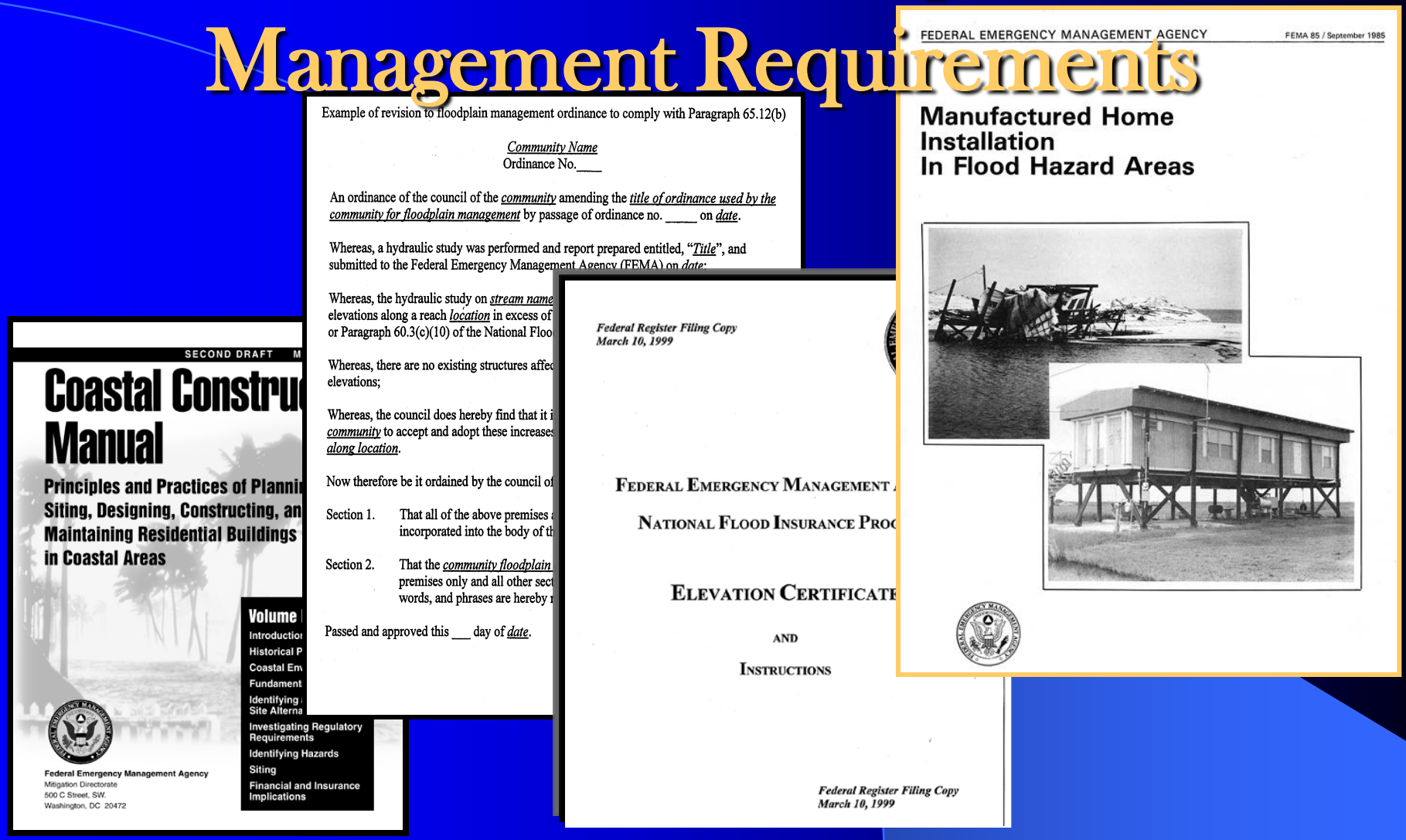
Maintaining and Revising Maps

Ordering, Changing, Types of Changes, Maps and Letters, Requesting Changes

- Reminded of your obligation as a partner in the NFIP to submit new information no later than 6 months after it becomes available
- Know the different types of map change

End Unit 4

Unit 5:
The NFIP Floodplain Management Requirements



Unit 5
NFIP Floodplain Management Requirements

NFIP Regulations

44CFR, Community Types

- Parts 59 and 60 are the most relevant
- 60.3
  - a, b, c, d, e

Unit 5
NFIP Floodplain Management Requirements

Maps and Data

FIRMs and BFEs

- Occasions when community may vary from FIS data
- Draft Revised Data
  - FIRM shows no BFEs; Draft shows BFEs
  - FIRM shows BFEs; Draft increases BFEs or Floodway width
  - FIRM shows BFEs; Draft decreases BFEs
  - FIRM shows B, C, or X Zone

Unit 5
NFIP Floodplain Management Requirements

Maps and Data

A Zones

- Where to get A Zone information
  - Must reasonably reflect base flood conditions;
  - be technically correct;
  - and represent the best available data.
- 50 lots or 5 acres
- Protection to **5 feet** above grade

Unit 5
NFIP Floodplain Management Requirements

Permit Requirements

Development Permits, Permits From Other Agencies

- Definition of "Development"
- 60.3 (a)(1)
  - Why shouldn't (a) communities be (a) communities for long?
- Other Agencies Requirements 60.3 (a)(2)
  - Examples of activities that may require a state permit
  - Examples of common Federal regulations requiring permits

Unit 5
NFIP Floodplain Management Requirements

Encroachments

Floodways, Review, No Floodways, Increases in Flood Heights

- Encroachment Review
  - Encroachment Certification
- Conveyance Shadow
  - Upstream ratio
  - Downstream ratio
- AE Zone with no Floodway
- Allowable Increases in Flood Heights

Unit 5
NFIP Floodplain Management Requirements

New Buildings in A Zones

Buildings, and the Elevation of

- Definition of Building or Structure
- 60.3 (c)(2) can be confusing!
- Elevation
  - Fill, Piles, Piers, Posts, or Columns
  - Walls or Crawlspace
    - Openings

Unit 5
NFIP Floodplain Management Requirements

New Buildings in A Zones

Reference Level Lowest Floor

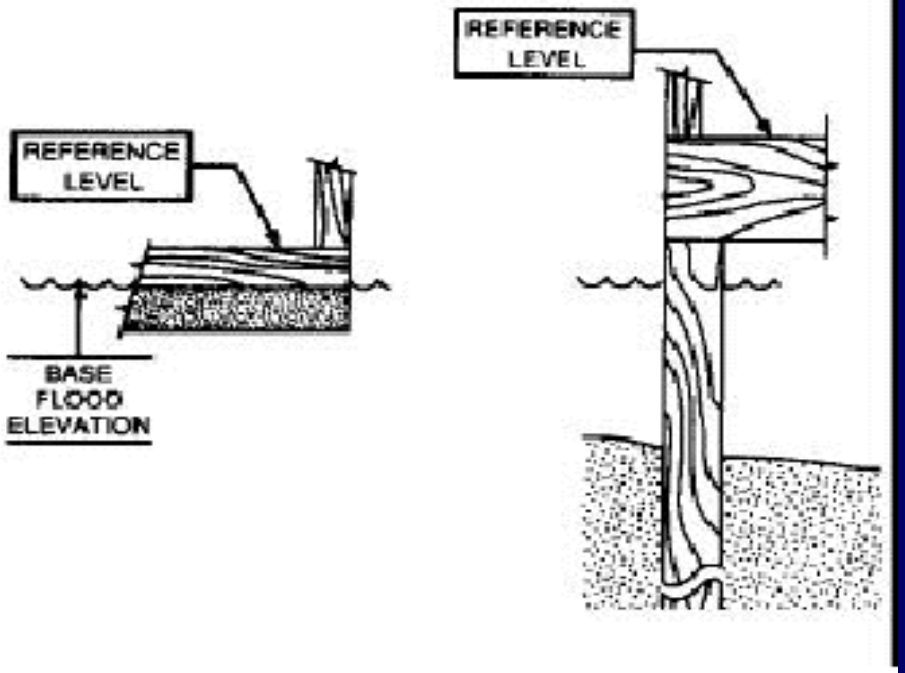


Figure 5-11. In A Zones: the top of the floor is the reference level

Unit 5
NFIP Floodplain Management Requirements

New Buildings in A Zones

Enclosures and other Requirements

- Elevation Certificate Requirement
- Enclosures
  - Legal Uses
    - 3 Uses
  - Utilities
    - Requirements
  - Openings
    - Requirements

Unit 5
NFIP Floodplain Management Requirements

Floodproofing Requirements

. . . And other Agreements

- Floodproofing
  - 3 Requirements
- 60.6 (c)
- Know your forms
  - No-Rise or Encroachment
  - Non-Conversion Agreement
  - Elevation Certificate
  - V Zone Certification

Unit 5
NFIP Floodplain Management Requirements

Anchoring, Flood Resistant Materials, and Accessory Structures

- Where to anchor?
- Flood Resistant Materials
  - Use common sense
- Accessory Structures
  - Variance – more about variances in Unit 7
  - Adequate Openings
  - Wet floodproofed

Unit 5
NFIP Floodplain Management Requirements

Manufactured Homes and Recreational Vehicles

Elevation and Anchoring

- Same protection as non-manufactured homes
  - Exemption
    - 3 feet above grade
- Anchoring
  - Permanent Foundations
- Recreational Vehicles
  - Definition
  - SFHA regulations

Unit 5
NFIP Floodplain Management Requirements

AO, AH, A99 and AR Zones

Requirements

- AO – lowest floor elevated above HAG
  - At least as high as Zone designation
  - 2 feet if no designation
- AH – adequate drainage paths
- A99 and AR – treated as SFHAs until taken out of the SFHA

Unit 5
NFIP Floodplain Management Requirements

V Zone Requirements

- Location, Location, Location. . .
- All must be elevated on pilings, posts, piers, or columns – NO FILL, NO FLOODPROOFING
- Lateral forces, Wind and Water loads
- V-Zone Certification

Unit 5
NFIP Floodplain Management Requirements

New Buildings in V Zones

Reference Level Lowest Floor

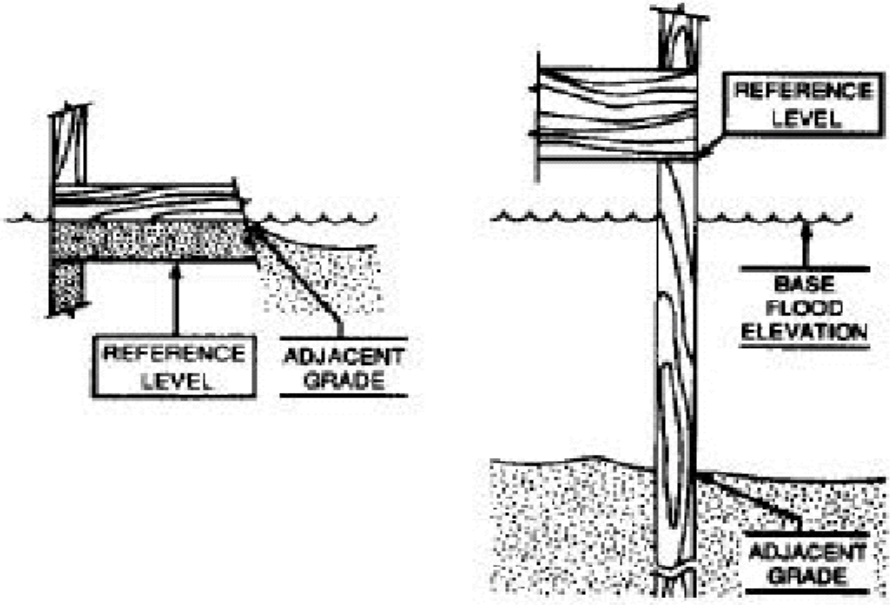


Figure 5-15: In V Zones, the lowest floor is measured from the bottom of the lowest horizontal structural member

Unit 5
NFIP Floodplain Management Requirements

More V Zone Requirements

- Breakaway Walls
- Enclosures beneath the lowest floor must be no larger than 300 feet^2

Unit 5
NFIP Floodplain Management Requirements

Other Requirements

Subdivisions, Water and Sewer Systems, and Watercourse Alterations

- Floodprone Subdivisions should minimize flood damage to:
  - Structures, Utilities, and Property
- Sewers
  - Flood waters should not infiltrate system and no discharges into the floodwaters
- Watercourse Alterations
  - Notify other communities, the State, and FEMA
  - Assure the flood carrying capacity is maintained

End Unit 5

Unit 6:
Additional Regulatory Measures

CTP Cooperating Technical Partners

BE FLOOD ALERT

NATIONAL FLOOD INSURANCE PROGRAM

NFIP/CRS

Unit 6
Additional Regulatory Procedures

Taking

- Taking
- Eminent Domain
- Inverse Condemnation

Unit 6
Additional Regulatory Procedures

Taking Continued

- Performance-oriented standards of the NFIP have never been ruled as a taking
  - Due to the public purpose involved
- Regulatory standards should be:
  - Reasonable;
  - Tied to the flood hazard; and should
  - Support public objectives.

Unit 6
Additional Regulatory Procedures

State Regulatory Standards

- Examples of State Standards include
  - < 1 foot floodway rise
  - Prohibition of all buildings in floodways
  - Restricted shoreline or lakeshore development
  - Additional freeboard
  - Storm water storage requirements
  - Erosion/sediment control
  - Setbacks
  - Hazmat standards
  - Public health standards

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

- 60.22
  - Planning Considerations for Floodprone Areas

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Location Restrictions

- Floodway restrictions
- Hazardous areas
- Subdivision design
  - No structures isolated by floodwaters
  - Open space and cluster design, Planned Unit Developments

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Location Restrictions Continued

- Setbacks
  - Vertical heights OR horizontal differences
- Natural Areas Preservation
- Low Density Zoning

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Building Requirements

- Freeboard
  - Encouraged to adopt at least 1 foot of freeboard
  - What are some benefits of requiring freeboard?
- Foundation Standards
  - Have the adequacy to withstand flooding certified
  - Construction Standards in flood zones (V standards in A Zones)

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Safety Requirements

- Critical Facilities
  - Four kinds of Critical Facilities
- Dry Land Access
  - Roads surrounding critical facilities be at or above BFE

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Encroachment Standards, Compensatory Storage, and Stormwater Management

- Requiring Smaller Floodway Surcharges
- Compensatory Storage
  - Prohibit buildings placed on fill
  - excavating to the hydraulic equivalent
- Stormwater Management
  - Efforts to reduce the impact of increased runoff
  - Retention vs. Detention
- Temporary Moratoriums

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Flood Hazards of Special Concern

- Coastal Erosion
  - 60.5 and 60.24 are advisory until mapped
- Tsunami Hazards
  - Short warning times and deep flooding
  - Regulatory Approaches
- Closed Basin Lakes
  - Regulatory approaches

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Flood Hazards of Special Concern

- Uncertain Flow Paths
  - Regulatory Approaches
- Dam Breaks
  - Regulatory Approaches
- Ice Jams
  - Regulatory Approaches
- Mudflows
  - Regulatory Approaches

Unit 6
Additional Regulatory Procedures

Higher Regulatory Standards

Environmental Protection Measures

- Can help to gain community support of floodplain management measures
  - Preservation and Restoration
- Federal Regulations
  - NEPA
  - EO 11988
  - Clean Water Act
  - Endangered Species Act
  - Sewage disposal system regulations
  - Haz Mat Facilities Site restrictions

End Unit 6

Unit 7: Ordinance Administration

Building Permit Number: _____

Applicant's Name:	Owner's Name:
Site Address, Tax #, Parcel #:	Address:
Telephone:	Telephone:

I. All development - Base Flood Elevati Data provided.

A. The as-built elevation certification from a regi re land surveyor professional engineer has been sub ted?
B. The lowest floor elevation is at or above the required low
C. Electrical, heating, ventilation, plumbing, air conditioning duct work) and other service facilities are located above

II. Development in Zones A, AE, A1-A30 and AH.

A. *Solid foundation perimeter walls located below BFE.:*
1. There are at least two (2) openings?
2. Square footage of enclosed area subject to flooding
3. Square inches of venting required
4. Square inches per opening (multiply l by w)
5. Number of required vents (3 above divided by 4 abo
6. Foundation contains the minimum number of vents?
7. The bottom of each opening is no higher than one (1)
8. Any cover on openings will permit the automatic flow in both directions?

B. *Base flood elevation and/or floodway data not available*
1. The lowest floor is at least three (3) feet above the hig
2. The development meets the setback requirements of
3. If 2 above was "no", has a No-Rise Certification been
Reviewer's Name: _____ Date reviewed:

C. *Floodway data is provided.*
1. Did this development encroach in the floodway?
2. Do the actual field conditions meet the proposed actic data requirements?
3. If C1 was "yes", has a No-Rise Certification been su
Reviewer's Name: _____ Date reviewed:

III. Development in Zones V, VE, and V!-V30, VO (Coastal Hi
A. Development location complies with all coastal setback
B. Structure is securely anchored to pilings or columns and registered, professional architect or engineer has been s
Reviewer's Name: _____ Date reviewed:
C. Walls permitted below the base flood elevation consist o or, where permitted, are breakaway and have been cert professional architect or engineer?
Reviewer's Name: _____ Date reviewed:

Local Administrator's Signature: _____

Application # ____
Page 1 of 4

SAMPLE
FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

This form is to be filled out in duplicate.

SECTION I: General Provisions (APPLICANT to read and sign):

1. No work of any kind may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Compliance is i
5. The permit will expire if no work is commenced within six months of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill lo regulatory requirements.
7. Applicant hereby gives consent to the Local Administrator or his/her re reasonable inspections required to verify compliance.
8. THE APPLICANT, CERTIFY THAT ALL STATEMENTS HEREIN AND TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLE ACCURATE.

(APPLICANT'S SIGNATURE) _____ D

SECTION 2: Proposed Development (To be completed by APPLICANT)

NAME ADDRESS

APPLICANT

BUILDER

ENGINEER

PROJECT LOCATION:

To avoid delay in processing the application, please provide enough information to eas location. Provide the street address, lot number or legal description (attach) and, ou distance to the nearest intersecting road or well-known landmark. A sketch attach showing the project location would be helpful.

No. _____

FLOODPLAIN DEVELOPMENT PERMIT

Specify for what purpose the permit is issued—
New construction, alterations, fill, excavation, other

ISSUED TO: _____

ADDRESS: _____

PROJECT ADDRESS: _____
(if different from permittee's address)

ISSUED BY: _____
Floodplain Management Administrator

DATE: _____
(This permit expires 180 days from this date)

THIS PERMIT MUST BE POSTED ON THE PREMISES IN A CONSPICUOUS PLACE SO AS TO BE CLEARLY VISIBLE FROM THE STREET.

Unit 7
Ordinance Administration

The Ordinance

Statutory Authority

- Ordinance – law passed by a local government
- No NFIP specific requirements on how to administer your ordinance
  - Needs to be legally enforceable and enforced uniformly
- State's Role
  - Five responsibilities
- Dillon's Rule
- Home Rule

Unit 7
Ordinance Administration

The Ordinance

Types of Ordinances

- Zoning Ordinance
  - Regulates development by dividing community into Zones
    - Separate Districts and Overlay Zoning
- Building Codes
  - Establishes construction standards for new buildings
    - National Models available

Unit 7
Ordinance Administration

The Ordinance

Types of Ordinances

- Subdivision Regulations
  - Govern the division of land into single lots
- Sanitary Regulations
  - For the water and sewage protection regulations of the NFIP
- Stand Alone Ordinance
  - Includes all NFIP requirements

Unit 7
Ordinance Administration

The Ordinance
Ordinance Provisions Should Include

- Purpose
- Definitions
- The adoption of flood data
  - Including revisions, LOMRs…
- Development Permit Process
- Construction Standards and Building Protection Standards
  - Including Standards for Mobile or Manufactured Homes
  - Including Zone requirements (V and A, floodways)
- Subdivision Standards

Unit 7
Ordinance Administration

The Ordinance

. . . Ordinance Provisions Should Include (Continued)

- Water and Sewer Standards
- Watercourse Alteration rules
- Designation of FPA
- Appeals/Variance Process
- Enforcement Procedures
- Abrogation and Greater Restriction
- Severability

Unit 7
Ordinance Administration

The Administrator
Duties

- Understanding the Regs
- Ensure that Permits are applied for
- Correct any Violations
- Coordination with Other Offices, Departments, and Programs
- Inspections
- Enforcement Actions
- Record Keeping
- Updating the FEMA maps
  - And Ordinance Updates

Unit 7
Ordinance Administration

The Administrator

Qualifications, Training, Liability

- Qualifications
  - CFM?
- Training
  - Knowing data sources
    - EMI, Regional Office…
- Liability
  - Protecting yourself from lawsuits

Unit 7
Ordinance Administration

Development Permits

Requirements, Exemptions, Forms and Reviews

- Know the Definition of Development
- Exemptions
  - Local ordinances may not hold precedence over Federal or State activities
  - Insignificant activities are also exempt
- Forms
  - And Reviews for Completeness

Unit 7
Ordinance Administration

Inspections

Types of Inspection

- First Inspection
  - When?
    - What are you checking for?
- Second Inspection
  - When?
    - What are you checking for?
- Third Inspection
  - When?
    - What are you checking for?

Unit 7
Ordinance Administration

Enforcement

Voluntary Compliance, Administrative Steps

- Voluntary Compliance
- Administrative Steps
  - Telephone
  - Writing
  - Violation Notice on the Property
  - If During Construction
    - Stop Work Orders
    - Revocation of the Permit
    - Withhold Certificate of Occupancy

Unit 7
Ordinance Administration

Enforcement

Legal Recourse, Section 1316

- Legal Recourses
  - Fines – per day
  - Recordation – harder to buy and sell property
  - Injunction – court order to stop further noncompliance
  - Housing Court
- Section 1316
  - Denies Flood Insurance to properties in violation

Unit 7
Ordinance Administration

Appeals, Special Uses, and Variances

Variance Requirements

- NFIP Variance Requirements
  - Must be unique to the property
  - Must pertain to the land, not owners or structure
  - Good and Sufficient Cause
  - Hardship
  - Must not create threats to public safety
  - Must not fraud or victimize the public
  - Should only allow minimum deviation necessary
  - Flood Insurance Rates cannot be waived

Unit 7
Ordinance Administration

Appeals, Special Uses, and Variances

Legal Variances

- Historic Buildings
- Functionally Dependent Use
- Records of Variances

Unit 7
Ordinance Administration

Records

Permit File

- NFIP Requirement
  - No statute of limitations
- Elevation Certificates
- Annexations
  - Know how to fill out the EC in annexation cases
- Floodproofing Certificates
- V Zone Certification
- No-Rise

Unit 7
Ordinance Administration

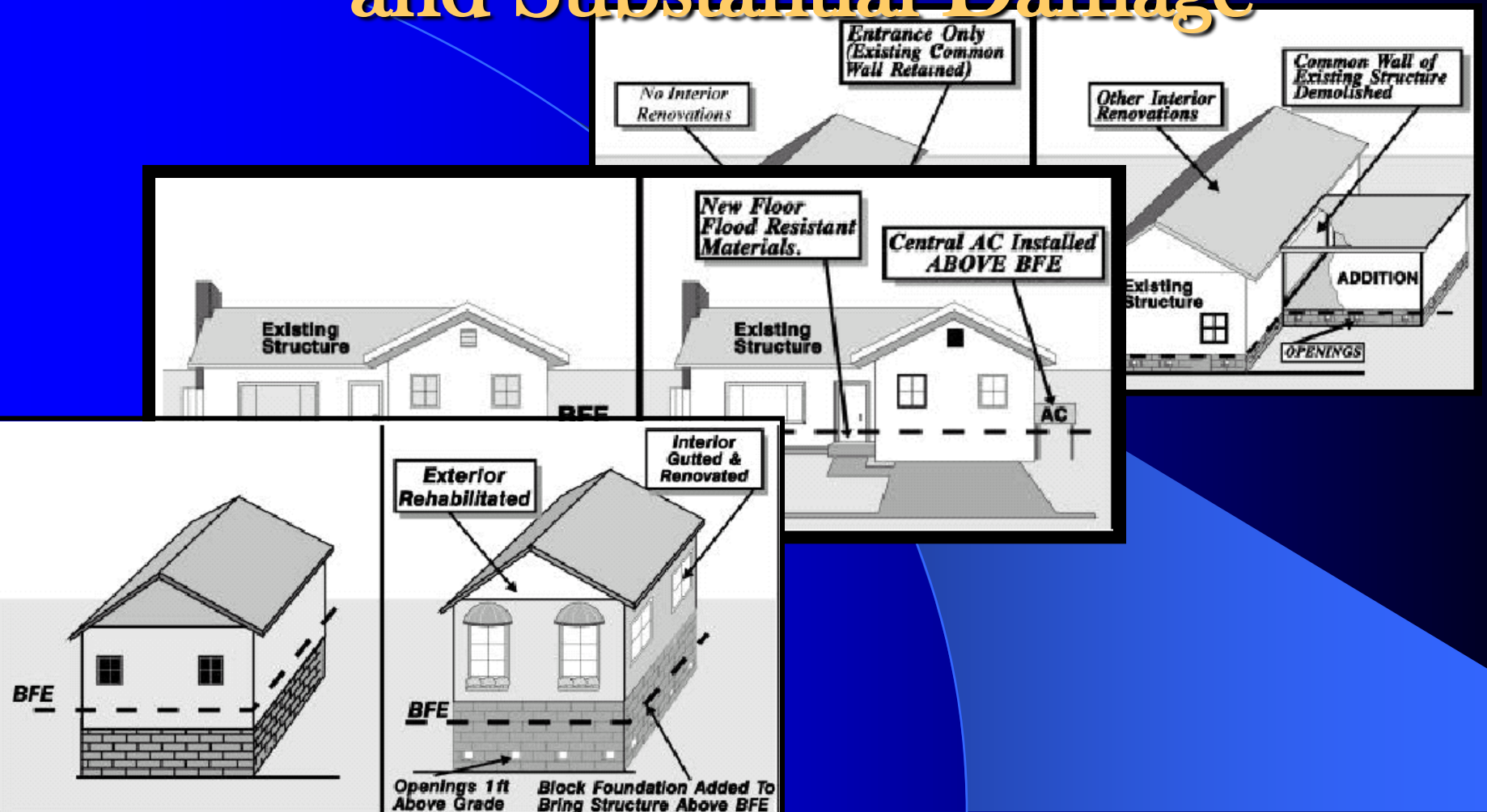
Records

Biennial Report

- Every two years
  - Annexations
  - Physical flooding changes
  - Amendments to the ordinance
  - Number of building permits
  - Number of Variances
  - Number of people/buildings in the floodplain
  - Whether you are in need of assistance

End Unit 7

Unit 8: Substantial Improvement and Substantial Damage



Unit 8
Substantial Improvement and Substantial Damage

Substantial Improvement

Projects Affected, The Formula

- All projects worthy of a permit
  - If not permit worthy alone, but a portion of what's being done with a permit, then it is calculated
- One year = One project?
- Not only post FIRM buildings
- The Formula:

$$\frac{\text{Cost of improvement project}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

Unit 8
Substantial Improvement and Substantial Damage

Substantial Improvement

Cost, Market Value

- Costs Include all Structural Costs
- Market Value
- Estimates
  - Professional Appraiser
  - Actual Cash Value
  - Replacement cost of the building minus depreciation
  - Tax Assessor
  - NFIP Claims Data
  - Local building/planning office

Items to be included in calculation:

- All structural elements, including:
  - Spread or continuous foundation footings and pilings
  - Monolithic or other types of concrete slabs
  - Bearing walls, tie beams and trusses
  - Floors and ceilings
  - Attached decks and porches
  - Interior partition walls
  - Exterior wall finishes (brick, stucco, siding) including painting and moldings
  - Windows and doors
  - Reshingling or retiling a roof
  - Hardware
- All interior finishing elements, including:
  - Tiling, linoleum, stone, or carpet over subflooring
  - Bathroom tiling and fixtures
  - Wall finishes (drywall, painting, stucco, plaster, paneling, marble, etc.)
  - Kitchen, utility and bathroom cabinets
  - Built-in bookcases, cabinets, and furniture
  - Hardware
- All utility and service equipment, including:
  - HVAC equipment
  - Plumbing and electrical services
  - Light fixtures and ceiling fans
  - Security systems
  - Built-in kitchen appliances
  - Central vacuum systems
  - Water filtration, conditioning, or recirculation systems
- Cost to demolish storm-damaged building components
- Labor and other costs associated with moving or altering undamaged building components to accommodate improvements or additions
- Overhead and profits

Items to be excluded from calculation:

- Plans and specifications
- Survey costs
- Permit fees
- Post-storm debris removal and clean up
- Outside improvements, including:
  - Landscaping
  - Sidewalks
  - Fences
  - Yard lights
  - Swimming pools
  - Screened pool enclosures
  - Detached structures (including garages, sheds and gazebos)
  - Landscape irrigation systems

Unit 8
Substantial Improvement and Substantial Damage

Substantial Improvement

Examples

- Minor Rehabilitation
  - Does not affect the external dimensions
- Substantial Rehabilitation
  - House elevated or basement filled
- Lateral Addition – Residential
  - Increases the square footage of the structure
  - Common Wall

Unit 8
Substantial Improvement and Substantial Damage

Substantial Improvement

Examples

- Lateral Addition – Non Residential
  - Not allowed in V Zones
  - Common wall and addition must be floodproofed
- Vertical Addition – Residential
  - Entire structure elevated
- Vertical Addition – Non Residential
  - Entire structure elevated or floodproofed

Unit 8
Substantial Improvement and Substantial Damage

Substantial Improvement

Examples

- Post-FIRM, minor addition
- Post-FIRM, Substantial Improvement
  - Must meet current ordinance requirements

Unit 8
Substantial Improvement and Substantial Damage

Substantial Damage

Cost

- Damage can be from any cause
- Applies to all buildings in SFHA, whether insured or not
- Cost *to* repair
  - Not cost *of* repair
  - Cost of bringing building back to pre-damaged state
- Be objective
  - Third parties and Computer Programs
  - Help the owner to find funding
  - Educate the public

Unit 8
Substantial Improvement and Substantial Damage

Substantial Damage

Examples

- Reconstruction
  - Built on existing foundation or slab or moved to a new site
  - Treated as a new structure
- Substantially Damaged Structure
  - Floor must be elevated to BFE
- ICC
  - Up to $30,000 to cover costs
  - Not dependant on the community receiving a disaster declaration
  - Limitations

Unit 8
Substantial Improvement and Substantial Damage

Substantial Damage

Examples

- Exempt Activities
  - Plans and Specs; surveying; permit fees; emergency repairs; improvements to land or unattached structures
  - Historic Structures
  - Code Violations
    - To *Correct* an ***Identified*** violation using the ***Minimum*** to correct it.

End Unit 8

Unit 9: Flood Insurance and Floodplain Management

BUILDING COVERAGE	Basic Insurance limits	Additional insurance limits	Total Insurance Limits
Single-family dwelling	$ 50,000	$200,000	$250,000
2-4 family dwelling	$ 50,000	$200,000	$250,000
Other residential	$135,000	$115,000	$250,000
Nonresidential	$135,000	$365,000	$500,000
CONTENTS COVERAGE			
Residential	$ 15,000	$ 85,000	$100,000
Nonresidential	$115,000	$385,000	$500,000

	A, AE, A1-A30, D Zones		V, VE, V1-V30 Zones		B, C, X Zones	
Building type	Building	Contents	Building	Contents	Building	Contents
No basement	.68/.20	.79/.36	.68/ .51	.79/.90	.31/.09	.50/.16
With basement	.73/.36	.79/.36	.73/1.29	.79/.90	.36/.19	.58/.31
With enclosure	.73/.28	.79/.36	.73/. 90	.79/.90	.36/.14	.58/.26
Mobile home	.68/.20	.79/.35	.68/2.48	.79/.90	.31/.19	.50/.16

Unit 9
Flood Insurance and Floodplain Management

Flood Insurance Policies

Who's Involved, Coverage

- Write Your Own Policies
  - Local agents, Local companies
- Coverage
  - Building Coverage
  - Contents coverage
- Basements
  - Limited Coverage

Unit 9
Flood Insurance and Floodplain Management

Flood Insurance Policies

Coverage

- Enclosures
  - Limited Coverage
- Amount of Coverage
  - Basic and Additional Layers:

BUILDING COVERAGE	Basic Insurance limits	Additional insurance limits	Total Insurance Limits
Single-family dwelling	$ 50,000	$200,000	$250,000
2-4 family dwelling	$ 50,000	$200,000	$250,000
Other residential	$135,000	$115,000	$250,000
Nonresidential	$135,000	$365,000	$500,000
CONTENTS COVERAGE			
Residential	$ 15,000	$ 85,000	$100,000
Nonresidential	$115,000	$385,000	$500,000

Unit 9
Flood Insurance and Floodplain Management

Flood Insurance Policies

Coverage, Mandatory Requirement

- Waiting Period
  - 30-days
- Mandatory Purchase Requirement
  - Federally Secured loans (FDIC)
  - When loans are made, increased, renewed or extended
  - Secondary mortgage market

Unit 9
Flood Insurance and Floodplain Management

Flood Insurance Policies

How it Works

- Lender's determination, Lender's prerogative
- Ratings
  - Based on the risk of flooding and flood damage
  - Pre-FIRM and Post-FIRM
  - Based on Lowest floor vs. BFE
  - Submit to Rate
  - Floodproofing
  - Approximate A Zones
  - Premiums

Unit 9
Flood Insurance and Floodplain Management

The Community Rating System

- Benefits of CRS
  - Recognition
  - Assistance
  - Better Floodplain Management
  - Lower insurance premiums
- Activities
  - Public Information, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness
    - What happens counts, not who does it

Unit 9
Flood Insurance and Floodplain Management

Coastal Barrier Resource System

COBRA Zones

- Revision of
  - Congressional Action
  - Fish and Wildlife Service
- No policies in COBRA Zones
  - Even if mistake is found after a claim is made, policy is cancelled

End Unit 9

Unit 10:
Disaster Operations and Hazard Mitigation

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Operations

Emergency Operations

- Assessing the situation
- Emergency Manager's Responsibilities
- Your role

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Operations

Permit Requirements and Enforcement

- Permits Required When…
- Emergency Repairs
- Enforcement
  - Inspections
  - Posting
  - Follow up

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Operations

Flooded Buildings, Contractor Control

- Inspecting Flooded Buildings
  - May be more difficult to see damage
- Contractors
  - Warn homeowners about predatory behaviors

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Operations

Administration

- Permit Forms
  - Give all affected owners all of the forms they need
  - Keep records for each structure
    - Keep with data already compiled (EC, Building Permit, etc.
- Public Information Campaigns
- Providing Technical Assistance
  - Knowing your sources of information

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Operations

Emergency Operations

- Staff Assistance
  - Knowing your resources

Unit 10
Disaster Operations and Hazard Mitigation

Hazard Mitigation

Mitigation Measures

- Flood Hazard Mitigation
  - "All actions that can be taken to reduce property damage and the threat to life and public health from flooding"
- Mitigation Measures
  - Prevention
  - Property Protection
  - Protection of Natural Resources

Unit 10
Disaster Operations and Hazard Mitigation

Hazard Mitigation

Mitigation Measures

- Mitigation Measures Continued . . .
  - Emergency Services
  - Structural Projects
  - Public Education Campaigns

Unit 10
Disaster Operations and Hazard Mitigation

Mitigation Planning

- Benefits of Planning
- Planning Process
  - Most important thing in this section is to get everyone involved!

Unit 10
Disaster Operations and Hazard Mitigation

Mitigation Assistance Programs

FMA Grants – No Disaster Declaration Necessary

Flood Mitigation Assistance (FMA):

Funding for cost-effective measures that reduce or eliminate the long-term risk of flooding

Unit 10
Disaster Operations and Hazard Mitigation

Mitigation Assistance Programs

FMA Grants

- FMA Planning Grants
  - For the development or updating of your mitigation plan
- FMA Project Grants
  - Acquisition; relocation; demolition; elevation, floodproofing, or other measures for insured structures; beach nourishment projects, other projects not covered by other Federal Agencies
- FMA Technical Assistance Grants
  - Given only to State Agencies that provide assistance that provide community assistance, not to communities

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Assistance

After Declared Disaster

Stafford Act:

Only applies after a Presidentially Declared Disaster

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Assistance

Stafford Act

- After the declaration
  - Set up of Disaster Field Office
- Technical Assistance
  - The field officers may provide technical assistance to you and your staff as well as property owners in the area during this time

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Assistance

Stafford Grants Available

- Public/Infrastructure Assistance Grants
  - Up to 75% of the cost of repair/restoration to PUBLIC AGENCIES as well as CERTAIN PRIVATE NON-PROFITS
  - These grant monies are subject to the deductible – this is the amount of insurance coverage the structure SHOULD HAVE HAD even if the building was not insured at the time of the flood
  - Money awards can be increased (through FEMA) if mitigation measures are introduced that were not in place prior to the disaster

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Assistance

Stafford Grants Available

- Human Services Program Grants
  - Provides for temporary housing, unemployment aid, food stamps, and grants/loans for RESIDENTS and BUSINESS OWNERS
  - Individual Family Grant
    - Designed to help disaster victims pay for unmet needs; given to INDIVIDUALS

Unit 10
Disaster Operations and Hazard Mitigation

Disaster Assistance
Stafford Grants Available

- Hazard Mitigation Programs (HMGP funds)
  - Section 404 Grants
    - Monies to help reduce the susceptibility to damage from a future disaster
    - 75% of the cost of mitigation projects deemed to be cost-effective and in line with state recommendations
    - Projects may also mitigate hazards other than the hazard that caused the disaster
    - Projects include relocation; acquisition; elevation; and minor drainage improvements
    - You may be eligible without a disaster declaration if your State has received one

End Unit 10