Damage Assessment Workshop
Administration and Logistics

- Virtual Platform
- Emergency exits and procedures
- Locations of restrooms
- Communication devices (Cellphone, radio etc.)
- Breaks
- Questions
Welcome

• Welcome

• Introductions
  • Student Name
  • Agency/Position
Agenda

- Purpose/Course Goal
- Objectives
- Brief Discussion of Crisis Track
  - Tech Tools
- The Federal Declaration Process
  - Declared and Not Declared
- Preliminary Damage Assessment Process
  - Disaster Reports (DR1, DR2, DR3, DR4)
- Conducting the Initial Damage Assessment
- Public Assistance
  - Categories of Work A-G
- Individual Assistance and Public Assistance Matrix
- Degrees of Damage
- Scenario-Practical Exercises
  - Identifying damaged structure/area
- Check your knowledge
The primary purpose of this workshop is to give you a step-by-step process of identifying preliminary damages after an event, that will align with Stafford Act Presidential disaster declaration request requirements.

There are several terms in the “Damage Assessment” process:

- Preliminary Damage Assessment
- Initial Damage Assessment
- Joint Preliminary Damage Assessment
Objectives

• Define the purpose of damage assessment
  o Define basic terms related to damage assessment

• Explain the declaration process

• Roles and Responsibility
  o Identify members of a damage assessment team
  o Local Role, Area Coordinator’s role, etc...

• Identify personnel needed to build damage assessment team(s)

• Explain documentation and record-keeping methods for effective damage assessments
Workshop Goal

- The goal is to prepare local and state personnel to perform damage assessment on property or businesses after a disaster.

- Prepare participants to be able to input all damages into the software product called Crisis Track.
  - Crisis Track will be the mechanism to input damage assessment data
  - Crisis Track training will be offered to all local emergency managers, stakeholders, and MEMA Personnel
# Crisis Track Training

## Basic
- Use Crisis Track Application To Create And Manage Disaster Damage Assessment Operations
  - **Set-Up Account**
    - Crisis Track Mobile And Console Application Features And Navigation
    - Set Account Users And Permissions
    - Create An Incident Using Incident Wizard
  - Create Employee And Equipment Inventories
  - Add Incident Specific Employees And Equipment
    - Console
    - Mobile
  - Collect And Share Initial Damage Assessment Data
    - Individual Assistance
    - Public Assistance
      - Structures
      - Debris
      - Road Damage
  - Create Teams
  - Create Tasks
  - Export FEMA Street Sheet
  - Export FEMA 90-80/90-81
  - Export Disaster Summary

## Intermediate
- Use Crisis Track Application To Collect Information And Prepare All Documents Required For A FEMA Recovery Scoping Meeting
  - Optimize Crisis Track Account Settings
    - Align Jurisdiction Accounts To FEMA PA Process
    - Set Incident And Resident Self Report Notification Lists
  - Optimize Employee And Equipment Inventories
  - Configure Resident Self Report Intake Notification
    - Preconfigure Call Center Workflow
  - Prepare Recovery Scoping Meeting Documentation Using Data Collected In Crisis Track Mobile Application
    - Preconfigure And Conduct
      - Pre Event PA Facility Survey Tasks
      - Emergency Sheltering Tasks
      - Emergency Points Of Distribution Tasks
  - Comprehensive Debris Assessment
    - Cost Estimates
    - Debris
      - Leaners, Hangers
      - Stumps
    - Use Crisis Track To Collect Data And Prepare FEMA RSM Documents For:
      - Emergency Work
      - Category A
      - Category B
      - Permanent Work (Cat C-G) 1 Each

## Advanced
- Use Crisis Track Application To Collect, Prepared, And Submit All Required FEMA PA Project Worksheet Documentation
  - Configure Supporting And Cooperating Jurisdiction Accounts
  - Add Mutual Aid Guest Users
  - Preconfigure All Response And Short Term Recovery Teams And Tasks
    - Set Reentry Requests Workflows

- Use Crisis Track To Collect Data And Submit Project Worksheet Data Into FEMA PA Portal
  - County Wide Debris Operations
    - Estimation
    - Removal
    - Disposal
  - Comprehensive EPM
    - Evacuation
    - Sheltering
    - POD
    - Hasty Search
    - Situation Driven Response Actions

- Create FEMA Project Management Documents And Produce FEMA Project Worksheets Using Crisis Track Site Visit Data
  - FEMA 90/91 A-F
Tools needed to conduct damage assessments:

• Smart Phone
• Drones (Recommended but not required)
• Downloaded Crisis Track Application
  (Once damages are identified)
A Presidential disaster declaration through the Stafford Act triggers FEMA’s broad statutory authority to provide federal disaster assistance.
Local Role:
Local governments are the first line of defense for emergencies and are primarily responsible for managing the response to emergencies and disasters. If local government determines that the scope of the disaster is beyond their capabilities, then the request for additional assistance is made.

- Have damaged areas identified
- Provide personnel familiar with the damaged area (EMA staff, fire, police or building code officials)
- Conduct Windshield Assessment
- Support Initial Damage Assessment and Joint Preliminary Damage Assessment Teams
- Provide local maps and assessment resources

*DISASTERS BEGIN LOCALLY and END LOCALLY*
Area Coordinator’s Role:

• The Area Coordinator may respond to the affected county to assist the local Emergency Manager and serve as a liaison between the county and the state

• At the county’s request, the Area Coordinator may assist with the Initial Damage Assessment
Types of Damage Assessments

Windshield Assessment:
• The intent of the Windshield Assessment is to provide basic information on the extent of the impact, as well as to help with decision making concerning additional assistance
• These numbers are reported to MEMA on the DR-1
• The windshield assessment is generally done by county personnel

Initial Damage Assessment:
• The IDA is an organized assessment of the damaged areas. It will include addresses, levels of damage, type of structure and contact information. These numbers are reported to MEMA on the DR-2
• IDA phase requires more detailed inspection of the structure: front, back, sides, roof and inside if possible
There are several types of disasters:

**Catastrophic Disaster:** Any natural, technological, or civil emergency that causes damage of sufficient severity and magnitude to result in a declaration of emergency.

**Major Disaster:** A disaster that will likely exceed local capabilities and require a broad range of state and federal assistance.

**Minor Disaster:** A disaster that is likely to be within the response capabilities of local government and to result in only a minimal need for state or Federal assistance.
Types of Damages

Individual Assistance (IA): Damage to Homes and Individually Owned Businesses
- Destroyed
- Major
- Minor
- Affected
- Private Businesses
  - Individual Business Destroyed
  - Individual Business Major
  - Individual Business Minor

Public Assistance (PA): Damage to Public Structures
- Public Infrastructure (roads, bridges, culverts) and Government Buildings
  - Public Facility Destroyed
  - Public Facility Major
  - Public Facility Minor
- Houses of Worship (Churches)
Items to consider when preparing for the Initial Damage Assessment:

- Situational briefing
- Safety briefing
- Gather maps- if not already provided
- Determine assessment “zones”
- Determine number of teams needed
- Ensure all teams are prepared to conduct damage assessments
  - Smart device with downloaded crisis track application
  - Charging device
  - Local area maps of county downloaded (In the event of no cellular service)
  - Back-up damage assessment forms in the event of smart device is inoperable
- Ensure all teams know the team leader and their contact information
Conducting Initial Damage Assessments

• Receive “zone” map from team leader
• Local representative should be familiar with area and be able to guide you to damaged areas
• Make sure the address is correct and complete all information in crisis track
• Take photos of entire structure then of the damaged areas
• Ensure entire affected area in assigned “zone” is covered
• After completion of assessment in assigned “zone”, report back to pre-determined meeting area
• Team leader and Emergency Manager agree that all areas have been assessed and report numbers to MEMA
  o Submit an updated DR2 in WebEOC with your numbers from damage assessment
Conducting Damage Assessments

Information to Gather or Consider:

- Local phone books
- Recent newspapers with disaster info
- Real estate books
- Population information
- Family income information
- Home values
- Functional needs or vulnerable populations
- Deaths/injuries
- Economic impacts
- Average rent
- Are there any potential jurisdictional boundaries such as Tribal Nation impacts
Agriculture Damage Assessment Request

- Request from the local level through database to State EOC
- Emergency Contact Officers receive request in the State EOC
- ECO coordinates to fulfill requests with Team leaders
- Gain Mission Assignment for MSU Extension personnel and/or equipment
- Deploy resources
- Complete assignment and demobilize
What information is captured:

- Animals
  - Aquaculture
  - Cattle
  - Goats
  - Poultry
  - Sheep
  - Swine

- Companion Animals
  - Dogs
  - Cats
  - Horses
Agriculture in Disasters

What information is captured:

- Crops
  - Soybeans
  - Corn
  - Oats
  - Wheat
  - Barley
  - Rye
  - Rice
Agriculture in Disasters

What information is captured:

- Infrastructure
  - Structures
  - Barns
  - Storage Facility
  - Out Buildings
  - Mechanics Shops

- Stored Materials
  - Pesticides
  - Fuel
  - Animal Bedding
  - Animal medications
  - Stored Crops
  - Forages (Hay)
  - Feed commodities
  - Sorgum
Agriculture in Disasters

What information is captured:

- Machinery & Equipment
  - Vehicles
  - Tractors
  - Field Machinery
  - Tools & Supplies
  - Other Equipment
Public Assistance is a reimbursement program that reimburses state, local, tribal governments and certain types of private nonprofit organizations for eligible disaster related costs, NOT INDIVIDUAL OR COMMERCIAL COSTS. Following a disaster situation Mississippi Emergency Management and FEMA work with federal, state and local partners to initiate the disaster declaration process. This is the first step in the Public Assistance Grant Process. After an event like a hurricane, tornado, earthquake, flooding or wildfire, communities need help to cover their costs for debris removal, life-saving emergency protective measures, and restoring public infrastructure.
CATEGORIES OF WORK

Emergency Work – 6 Months from Declaration date to Complete
Category A: Debris Removal
Category B: Emergency Protective Measures

Permanent Work – 18 months from Declaration date to Complete
  Category C: Roads and Bridges
  Category D: Water Control Facilities
  Category E: Buildings/Equipment/Contents
  Category F: Public Utilities
  Category G: Recreational/Other

Category A – Debris Removal
Debris removal activities, such as clearance, removal, and disposal, will be considered during damage assessments and the removal is in the public interest. The types of debris considered include, but are not limited to, vegetative debris, construction and demolition debris, sand, mud, silt, gravel, rocks, boulders, vehicle/vessel wreckage, and contaminated debris.
CATEGORIES OF WORK (Continued)

Category A – Debris Removal
- Eliminates immediate threats to lives, public health, and safety.
- Eliminates immediate threats of significant damage to improved public or private property; or
- Ensures economic recovery of the affected community to the benefit of the community at large
CATEGORIES OF WORK (Continued)

CALCULATING CUBIC YARDS:

*In most incidents – 4 cubic yards = 1 ton

(Length X Width X Depth) divided by 27 = Cubic yds.

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<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Depth</th>
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<tbody>
<tr>
<td>10</td>
<td>10</td>
<td>8</td>
<td>29.63</td>
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</table>

8'

10'

10'
CATEGORIES OF WORK (Continued)

Example - Category A: – By Site, DDD/Countywide, and/or Citywide

- Vegetative debris on roadways:
  - Total miles of road impacted = 65 miles (map)
  - Average amount of debris per mile = 230 cy/mile (photographs and locations provided)
  - Cost for removal and disposal = $12/cy /FA Labor & Equipment and or (contracted work)
  - 75% work complete – locations of work to be completed provided (map)
  - Cost calculation = (65 mi x 230 cy/mile = 14,950 cy) x $12/cy = $179,400
  - Locations for reduction and disposal sites (map)
  - Photos needed for Virtual PDA’s
  - GPS Coordinates
  - Local Address / When possible
  - How was this reported damage estimated costs derived

Total estimated cost = $179,400
CATEGORIES OF WORK (Continued) – 205 FT Long x 40 FT Wide X 15 FT Height / by 27
CATEGORIES OF WORK (Continued)

Category B – Emergency Protective Measures / Citywide and or Countywide by Department
Emergency Protective Measures are actions taken before, during, and after a disaster to eliminate or lessen immediate threats to life, public health, or safety, or to eliminate or lessen immediate threats of significant additional damage to improved public and private property in a cost-effective manner.

Please note:
• Category B is only eligible with OT Labor Hours
• Please record the Equipment usage time with both recorded Regular and OT Hours
• Temporary repairs on a permanent facility can be noted within a Category B Work
CATEGORIES OF WORK (Continued)

Category B – Emergency Protective Measures

The following is a list of emergency protective measures often taken to save lives or protect public health or safety that may be considered. This list is not all-inclusive.

- Transporting and pre-positioning equipment and other resources for response
- Flood fighting
- Emergency Operations Center (EOC)-related costs
- Emergency Access
- Supplies and commodities
- Medical care and transport
- Evacuation and sheltering costs
- Childcare
- Safety inspections
- Search and Rescue
- Fire fighting
- Security, such as barricades, fencing, or law enforcement
- Use or lease of temporary generators for facilities that provide essential community services
- Dissemination of information to the public to provide warnings and guidance about health and safety hazards
CATEGORIES OF WORK (Continued)

Example - Category B - By Site, DDD/Countywide, and/or Citywide
Sandbagging of City Buildings
- FA labor - 60 overtime hrs. @ $35/hr. avg. = $2,100
- FA equipment - (1) 15 cy dump truck for 60 hrs. @ $65/hr. = $3,900
- Materials – sand and sandbags = 3,100
- Photos needed for Virtual PDA’s
- GPS Coordinates
- Local Address / When possible
- How was this reported damage estimated costs derived

Total estimated cost = $9,100
CATEGORIES OF WORK (Continued)

Category C – Roads and Bridges
Permanent Work required to restore roads (paved, gravel, and dirt), bridges, and their components to their pre-disaster design and function is considered unless the restoration falls under the authority of another/ another/ Another Federal Agency (OFA). Permanent restoration of private roads, including homeowners’ association roads, are not eligible for FEMA PA funding, and thus are not considered.
CATEGORIES OF WORK (Continued)

Category C – Roads and Bridges

Permanent restoration of private roads, including homeowners’ association roads, are not eligible for FEMA PA funding, and thus are not considered.

Road components include but may not be limited to:

- Surfaces
- Bases
- Shoulders
- Ditches
- Drainage structures, such as culverts
- Low water crossings
- Associated facilities, such as lighting, sidewalks, guardrails, and signs
CATEGORIES OF WORK (Continued)

Category C – Roads and Bridges

Bridge components include but may not be limited to:

- Decking
- Guardrails
- Girders
- Pavement
- Abutments
- Pier
- Slope protection
- Approaches
- Associated facilities, such as lighting, sidewalks, and signs
CATEGORIES OF WORK (Continued)

Category C – Roads and Bridges

Example - Category C – By Site/Name, DDD/Countywide, and/or Citywide
Lake Arnold Bridge Washout – CR 233 (map) DDD

- Two span, 80 ft long x 24 ft wide, concrete beam and deck structure
- Restoration cost Est = $240/sq. ft. (historic costs provided by county engineer)
- Cost calculation = 80 ft x 24 ft x $240/sq. ft = $460,800; engineering (15%) = $69,120; geotechnical (1.5%) = 6,912. Any engineers estimated soft costs will be removed from the PDA total reported costs
- Safety inspection and basis for historic cost estimate are available
- Photos needed for Virtual PDA’s
- GPS Coordinates
- Local Address / When possible
- Permits – Replace material dirt
- How was this reported damage estimated costs derived?

Total estimated cost = $536,832
CATEGORIES OF WORK (Continued)

Category C – Roads and Bridges

Example – Category C – By Site/Road Name, DDD/Countywide, and/or Citywide
What type of roadway – Gravel, Dirt and/or Asphalt? What caused the damage? What are the known impacts to the Resident(s) in the area? Is the roadway not in use (barricaded)? Have detour routes been established? How long are the detour routes in miles that the residents would not normally be required for egress and ingress to their Residence of Record (ROR)? Does the detour affect Emergency services, postal carriers, and school bus routes?

Material Loss:
- Length X Width X Depth – Surface material
- Length X Width X Depth – Subbase material
- Length X Width X Depth – Base material
- GPS coordinates by section of Roadway damaged
- Permits – Replace material dirt
- Photos indicating damaged area (s)
- How was this reported damage estimated costs derived
- Will this work be completed by F/A Labor/Equipment or Contracted Work
CATEGORIES OF WORK (Continued)
Category C – Roads and Bridges

Culvert Damage Category C – **Capture Separately by Site/Road Name, DDD/Countywide, and/or Citywide**

What type of culvert was in place at the time of the event? Are we going to reset the original culvert? Is the culvert damaged? What caused the damage. Are we changing any components from the original culvert size or materials?

Material Loss:
- Culvert – Length X Width/Round and type of culvert damaged
- Length X Width X Depth of the damaged area to reset to pre-disaster condition
- Length X Width X Depth – Surface material
- Length X Width X Depth – Subbase material
- Length X Width X Depth – Base material
- GPS coordinates by section of Roadway damaged
- Photos indicating damaged area(s)
- Permits – Replace material dirt
- Will this work be completed by F/A Labor/Equipment or Contracted Work
- A Hydrology and Hydrologic study might need to be completed (FEMA EHP)
- How was this reported damage estimated costs derived
CATEGORIES OF WORK

Category D – Water Control Facilities
Work done to restore publicly owned water control facilities that do not fall under the authority of any other Federal Agency may be considered. Water control facilities are those facilities built such as Dams and reservoirs, levees and floodwalls, canals, sediment and debris basins, storm water retention, irrigation facilities, pumping facilities, navigation and shipping channels.
Public Assistance

CATEGORIES OF WORK

Category D – Water Control Facilities
Work done to restore publicly owned water control facilities that do not fall under the authority of an OFA may be considered. Water control facilities are those facilities built for the following purposes:
- Channel alignment
- Recreation
- Navigation
- Land reclamation
- Irrigation
- Maintenance of fish and wildlife habitat
- Interior drainage
- Erosion prevention
- Flood control
- Storm water management
CATEGORIES OF WORK (Continued)

Category D – Water Control Facilities

They include:
- Dams and reservoirs
- Levees and floodwalls
- Lined and unlined engineered drainage channels
- Canals
- Aqueducts
- Sediment and debris basins
- Storm water retention and detention basins
- Coastal shoreline protective devices
- Irrigation facilities
- Pumping facilities
- Navigational waterways and shipping channels
CATEGORIES OF WORK (Continued)

Category D – Water Control Facilities

Example - Category D – By Site
Fish Creek Debris Basin Restoration
- Basin dimensions: 300 ft x 200 ft x 10 ft
- Estimated depth of debris = 1.5 ft
- Amount of debris attributable to flood = 80% (basin last cleaned 3 mo. earlier @ $20.00/cy)
- FA labor and equipment
- Cost calculation = 0.8 x (300ft x 200ft x 1.5 ft) x (1cy/27 cu ft) x $20.00/cy = $53,333
- Photos needed for Virtual PDA’s
- GPS Coordinates
- Local Address / When possible
- How was this reported damage estimated costs derived

Total estimated cost = $53,333
CATEGORIES OF WORK

Category E – Buildings and Equipment

*Buildings*

Work required to restore damaged buildings will be considered along with upgrades required by codes and standards. Environmental and historic preservation requirements are common to the restoration of public buildings. Potential applicants are encouraged to identify damaged facilities over 45 years old.

*Equipment*

Work required to restore damaged equipment will be considered. This includes any vehicles and construction equipment. When equipment is not repairable, potential applicants may use “blue book” values or similar price guides to estimate the cost of replacing the damaged equipment with equivalent items – similar age, condition, and capacity. Insurance should always be considered first for buildings and equipment.
Houses of Worship-Churches

- Churches and other places of worship may also be assessed as Public Assistance (PA), Non-profit.

- If the facility also serves as a business (i.e. daycare), it may also be assessed under PA, Individual Business
CATEGORIES OF WORK (Continued)

Category E – Buildings and Equipment

Example - Category E – By Site

Building #212 – 123 City Center (map)

- 4 stories ea. = 120 ft. x 100 ft
- Built 1998
- Basement and first floor flooding – flood debris removal, building mechanical systems, damaged furniture removal and replacement, interior wall repair and painting
- Repairs to be performed by contract services
- Estimated cost to repair = $840,000 (contract provided)
- Insurance = $700,000 (policy provided)/
- Photos needed for Virtual PDA’s
- GPS Coordinates
- Local Address / When possible
- How was this reported damage estimated costs derived
- Is this facility on the National Registrar/Historical (FEMA EHP)

Total estimated cost = $140,000
CATEGORIES OF WORK

Category F – Utilities
Work required to restore damaged utility facilities to pre-disaster design and function will be considered under Category F.
This includes:

- Water storage facilities, treatment plants, and delivery systems
- Power generation, transmission, and distribution facilities, including, but not limited to, wind turbines, generators, substations, and power lines
- Natural gas transmission and distribution facilities
- Sewage collection systems and treatment plants
- Communication systems
CATEGORIES OF WORK

Category F – Utilities
Example – Category F – By Site

Common Electric

- 14 utility poles destroyed – conductor will be re-hung (photos)
- FA labor, equipment, and materials
- Estimated cost of repair = $4,750/pole (historic cost)
- Work has begun on 5 of 14 poles
- Cost calculation = 14 poles x $4,750/pole = $66,500
- Photos needed for Virtual PDA’s
- GPS Coordinates
- Local Address / When possible
- How was this reported damage estimated costs derived

Total estimated cost = $66,500
Public Assistance

CATEGORIES OF WORK (Continued)

Category G – Parks, Recreation Facilities, and Other
Eligible publicly owned facilities in this category include:

- Mass Transit facilities such as railways
- Beaches
- Parks
- Playground equipment
- Swimming pools
- Bath houses
- Tennis courts
- Boat docks
- Piers
- Picnic tables
- Golf courses
- Ball fields
- Fish hatcheries
CATEGORIES OF WORK (Continued)

Category G – Parks, Recreation Facilities, and Other

Example - Category G – By Site

Springfield Park

- Clean/repair: 10 wood picnic tables, playground apparatus, 4 benches, 16 trash receptacles, 2 sets of bleachers (photos)
- Replace: 400 playground safety play surface tiles @ $24.50/tile - verbal quote (photos)
- FA labor = 20 regular hr. @ $25/hr. avg. (with benefits) = $500
- Playground safety tiles = 400 tiles at $24.50/tile = $9,800

Total estimated cost = $10,300
CATEGORIES OF WORK (Continued)

House of Worship-Churches
PNP (Private/Non-Profit)
Insurance Proceeds.

Duplication of Benefits

FEMA is legally prohibited from duplicating benefits from other sources. If the Applicant receives funding from another source for the same work that FEMA funded, FEMA reduces the eligible cost or de-obligates funding to prevent a duplication of benefits.

FEMA cannot provide PA funding that duplicates insurance proceeds. Consequently, FEMA reduces eligible costs by the amount of:

• Actual insurance proceeds, if known; or
• Anticipated insurance proceeds based on the Applicant’s insurance policy, if the amount of actual insurance proceeds is unknown. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives.

Public Assistance

Conduct Initial Damage Assessment
Local or tribal government collects data to estimate extent of damage

Send IDA Data
Local and tribal governments send data to state/territory – or, the tribe chooses not to participate in the state declaration and sends IDA data directly to FEMA

IDA Verification
State, territory, or tribe verifies IDA data

Request Joint PDA
State, territory, or tribe requests joint PDA with FEMA

Conduct Joint PDA
FEMA and SLTT Partner(s) conduct joint PDA to assess and validate damage
Dos of the PDA Process:

- Verify damages with visual inspection
- Determine Insurance Coverage
- Capture points of contact
- Be sensitive discussing damages with property owners
- Consider impacts to businesses and agriculture
- Ensure current assessments are accurate
- Balance your time, as efficiency is key
- Check with Coordinator on whether to wear government gear
- Know casualties in advance
- Use provided cost codes to validate claimed costs
- Stay in your lane when approached by media
- Confirm damage occurred within the applicable incident period
Don’ts of the PDA Process:

- Collect any personally identifiable information
- Drive through flood waters
- Wear open toe shoes
- Visit any sites that would put you in an unsafe situation
- Make eligibility determinations in the field without proper leadership reviews
- Conduct assessments on tribal property or culturally significant sites or items without permission
- Talk to anyone about something you are unsure about
- Wear government/state gear if it is unsafe to do so
- Smoke on-site inspections
- Wear excessive perfume or cologne when sharing vehicles
## IA PDA: Damage Category Assessment Matrix

### Non-Flood Event

<table>
<thead>
<tr>
<th>Affected</th>
<th>Minor</th>
<th>Major</th>
<th>Destroyed</th>
<th>Inaccessible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conventionally-Built Homes: Occupied Primary Residences at the Time of an Event</strong></td>
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</tr>
<tr>
<td>The residence has sustained a wide range of damage that does not affect structural integrity but could affect habitability. Water Level: Below 18 inches in essential living spaces.</td>
<td>No, residence requires extensive repairs.</td>
<td>Yes, with minor repairs.</td>
<td><strong>Water Level: Above 18 inches or the electrical outlets in essential living spaces.</strong></td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>The residence has sustained significant structural damage and requires extensive repairs. Water Level: Above 18 inches or the electrical outlets in essential living spaces.</td>
<td>No, residence is not feasible.</td>
<td>No, residence requires extensive repairs.</td>
<td>No, residence is not feasible.</td>
<td><strong>Water Level: Above Roofline</strong>.</td>
</tr>
<tr>
<td>The residence is a total loss; damaged to such an extent that repair is not feasible, requires demolition, and confirmed to be in imminent danger. Water Level: Above Roofline.</td>
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<tr>
<td><strong>Water Level: In Unfinished Basement</strong>.</td>
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<tr>
<td>The residence has sustained minimal cosmetic damage to the exterior and/or interior contents: Water Level: In Unfinished Basement.</td>
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<tr>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes, with minor repairs.</td>
<td><strong>Water Level: Below 18 inches in essential living spaces</strong>.</td>
<td>Not Applicable.</td>
</tr>
</tbody>
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### Flood Event

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<td>The residence has sustained a wide range of damage that does not affect structural integrity but could affect habitability. Water Level: Below 18 inches in essential living spaces.</td>
<td>No, residence requires extensive repairs.</td>
<td>Yes, with minor repairs.</td>
<td><strong>Water Level: Above 18 inches or the electrical outlets in essential living spaces.</strong></td>
<td>Not Applicable.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>The residence has sustained minimal cosmetic damage to the exterior and/or interior contents: Water Level: In Unfinished Basement.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes, with minor repairs.</td>
<td><strong>Water Level: Below 18 inches in essential living spaces</strong>.</td>
<td>Not Applicable.</td>
</tr>
</tbody>
</table>

---

**An essential living space** is a room within a home that serves the function of a bedroom, bathroom, kitchen, and/or living room that is regularly occupied or used by one or more members of the household and requires repair to bring its functionality back to the home. (Kitchens are considered essential only if there is not another undamaged kitchen in the home.)

**Finished Basement** contains essential living spaces: bathroom, occupied bedroom(s), living room, and/or kitchen.
### IA PDA: Damage Category Assessment Matrix

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected</td>
</tr>
<tr>
<td>Minor</td>
</tr>
<tr>
<td>Major</td>
</tr>
<tr>
<td>Destroyed</td>
</tr>
<tr>
<td>Inaccessible</td>
</tr>
</tbody>
</table>

#### Manufactured Homes: Occupied Primary Residences at the Time of an Event

<table>
<thead>
<tr>
<th>Non-Flood Event</th>
<th>Flood Event</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water Level: Below Floor System</td>
</tr>
<tr>
<td></td>
<td>Water Level: In Floor System</td>
</tr>
<tr>
<td></td>
<td>Water Level: In Living Space</td>
</tr>
<tr>
<td></td>
<td>Water Level: Above Roofline or Higher</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>The residence has cosmetic damage only</td>
</tr>
<tr>
<td>No damage affecting habitability; cosmetic damage only (Impacted skirting)</td>
</tr>
<tr>
<td>Residences with damage to a porch, carport, garage, and/or an outbuilding not for commercial use, etc.</td>
</tr>
<tr>
<td>Yes, with minor repairs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>The residence is damaged and requires minimal repairs to make habitable</td>
</tr>
<tr>
<td>There is no structural damage to the residence, and it has not been displaced from the foundation.</td>
</tr>
<tr>
<td>Some of the nonstructural components have sustained damage (windows, doors, wall coverings, roof, bottom board insulation, ductwork, and/or utility hookup).</td>
</tr>
<tr>
<td>Yes, with minor repairs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>The residence has sustained significant structural damage and requires extensive repairs</td>
</tr>
<tr>
<td>The residence has been displaced from the foundation, block, or piers, and other structural components have been damaged.</td>
</tr>
<tr>
<td>Fifty percent (50%) or more of nonstructural components (roof shingles, drywall, and utility hookup) have sustained significant damage.</td>
</tr>
<tr>
<td>No, residence requires extensive repairs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Destroyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The residence is a total loss</td>
</tr>
<tr>
<td>The residence's frame is bent, twisted, or otherwise compromised.</td>
</tr>
<tr>
<td>The majority of the structural framing of the roof system or walls has been compromised, missing, or collapsed exposing the interior.</td>
</tr>
<tr>
<td>No, a residence is a total loss</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inaccessible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage to the home cannot be visually verified because of disaster-related loss of access</td>
</tr>
<tr>
<td>Debris from landslides, mudslides, severe soil erosion, or blowdown is blocking access to residences by disrupting or destroying roads, bridges, or access routes so that the degree of damage cannot be visually verified.</td>
</tr>
<tr>
<td>A damage category may be assigned if damage can be clearly viewed from a safe distance. <strong>Can safely be reached by another route is not considered inaccessible.</strong></td>
</tr>
<tr>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

---

**Small Business Administration (SBA)**

**Major:** Three possible ways to have suffered major damage within the 45% rule:
- Damage to the "Fair Market Value (FMV) of the survivors' land, (flood, erosion, tornado, hurricane, fire, etc.)
- Damage to the "FMV of the survivors' structures on the property.
- Damage to the "FMV of the survivors' personal property, not including vehicles.

**Minor:** Disaster victim's property may have been totally destroyed, but if there was sufficient insurance or other recovery for the loss in dollars to be less than 40% of the "FMV, the property is counted in the minor category.

* There is no affected or "destroyed" categories for SBA in surveying damage and impact information.
* SBA's formula for determining major damage dictates that property that suffered 40% or more uninsured loss to its Fair Market Value.
* FMV is classified in the "Major" damage Category.

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Individual Assistance Branch, Recovery Division, FEMA Region IV  
July 2020
IA PDA: Damage Category Assessment Matrix

Standard Building Measurements

1. Door Height: 6’ 8”
2. Door knob: 36” from floor
3. Each Step: 7” high
4. Concrete Block: 8” high
5. Most Siding Section: 4” or 8” high
6. Brick: 2.5”

Electrical Outlet: 12” to 18” from floor

Average roof height—7’
Average ceiling height—8’
Total one-story height—15’

Elements of information collected during the Joint PDA

<table>
<thead>
<tr>
<th>Cause of Damage</th>
<th>Degree of Damage (Categories / Inaccessible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jurisdictions/Areas Impacted &amp; Concentration of Damage</td>
<td></td>
</tr>
<tr>
<td>Disaster Impacted Population Summary (income levels, vulnerability, access/functional needs)</td>
<td></td>
</tr>
<tr>
<td>Impact to Critical Community Infrastructure</td>
<td></td>
</tr>
<tr>
<td>Disaster-Related Deaths &amp; Injuries</td>
<td></td>
</tr>
<tr>
<td>Numbers, Types, and Homeownership Rate of Homes Impacted</td>
<td></td>
</tr>
<tr>
<td>Residency and Occupancy Statuses at the Time of Disaster</td>
<td></td>
</tr>
<tr>
<td>Percentage of Insured Homes with Damage Suitable to the Peril</td>
<td></td>
</tr>
<tr>
<td>Special Flood Hazard Areas, Coastal Barrier Resource System zones and Otherwise Protected Areas, and NFIP Sanctioned Communities</td>
<td></td>
</tr>
<tr>
<td>Available/Accessible Resources &amp; State/Tribal Government Assistance Programs</td>
<td></td>
</tr>
<tr>
<td>Other Relevant Data: loss of or possible loss of jobs; cultural/agricultural/natural resources; tourism; disaster related unemployment; cumulative effect of recent disasters; evacuations; lack of building materials/contractor shortages; extreme weather conditions/seasonal shifts; loss of affordable or subsidized housing, etc.</td>
<td></td>
</tr>
</tbody>
</table>
### IA PDA: HOUSING INSURANCE MATRIX

**IA INSURANCE MATRIX:** This table illustrates insurance assessment matrix for conventional structures and manufactured homes. The Joint Individual Assistance PDA teams utilize the following simple estimating strategies to assess damage to primary residence (non-commercial structures) and non-occupant damaged property.

- **Flood:**
  - Owners Only: All real property from the first floor above ground level; real property in basement below ground level necessary for habitability (e.g., structural wall, furnace, water heater, and main panel); separate structures, such as garage, boat house, pump house, etc.; retaining walls; and washouts (access).
  - Owners and Renters: Property in basement necessary for habitability (e.g., water heater and dryer), all personal property in dwelling and separate enclosed structures (see property not covered), and personal property stored away from premises.

- **Earthquake, Sewer Backup, & Other Risers:**
  - Owners: All real property, including separate structures; removal of debris, boil water advisory, or sewer backup caused by flood or sewage; all personal property, including personal property away from premises and ALEs.
  - Renters: All personal property, including personal property away from premises. Structural only coverage excludes personal property and ALE coverage.

- **Manufactured (Mobile) Home:**
  - Owners: Manufactured home, including separate structures; removal of debris, boil water advisory, or sewer backup caused by flood or sewage; all personal property, including personal property away from premises. Structural only coverage excludes personal property and ALE coverage.
  - Renters: As above.

- **Condominium:**
  - Owners: Structural elements not shared by other tenants or owned by the association, generally from the street in, including sheetrock, paneling, wall covering; ALE for covered property; all personal property, including personal property away from premises. Structural elements shared by owners or owned by the association, generally from the studs out.
  - Renters: As above.

### General Condition:
- **Flood:** General condition of flooding (overflow of inland or tidal waters, the unusual and rapid runoff or accumulation of surface waters from a source), mudflow/mudslide, and seepage caused by flood (ground saturation or seepage under doors from rising water).
- **Earthquake:** Note: Not all perils listed are included nationwide or in OCONUS areas; consult with local state or municipalities insurance commission for details.
- **Manufactured (Mobile) Home:**
  - Owners: Surface waters or flood; rain through doors, windows, or down spouts; sewerage; landslides; mudslides; earthquake; sewer backup.
  - Renters: As above.

### Perils Not Covered:
- **Flood:** Anything other than perils listed, e.g., NVD; landslide; sewer backup when no general flood exists; seepage not caused by flood (melting snow or wind driven rain blowing water under doors).
- **Earthquake:** Note: Not all perils listed are included nationwide or in OCONUS areas; consult with local state or municipalities insurance commission for details.
- **Manufactured (Mobile) Home:**
  - Owners: Sewer backup; leakage from rain, snow, or sleet; freezing or electrical failure; mudslide; earthquake; flood may or not be covered depending on the contract. Electrical failure does not pertain to power surge, only to situations where electrical service stops and no damage to the home.
  - Renters: As above.

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*Individual Assistance Branch, Recovery Division, FEMA Region IV*
Degrees of Damage

Affected: Conventional Home
Residences with minimal damage to the exterior and/or contents of the home. In a flood disaster, affected homes have minimal flooding with less than 3 inches of water in an occupied or required room.

- Partial missing shingles or siding (non-continuous/sporadic), home kept roof structure intact
- Cosmetic damage such as paint discoloration or loose siding
- Broken screens & Gutter damage
- Damage to an attached structure such as a porch, carport, garage, or outbuilding not for commercial use
- Damage to landscaping, retaining walls, or downed trees that do not affect access to the residence or has not collapse into residence
- Any water line in the crawl space or basement when essential living space or mechanical components are not damaged or submerged
Affected: Manufactured Home
This category includes residences with cosmetic damage only. No structural components damaged (windows, doors, roof, ductwork, bottom board, utility hook up)

The only damage is the missing skiriting.

There is no visible water line and only skiriting is missing or bent.
Degrees of Damage

Minor: Conventional Home
Damage to the home does not affect the structural integrity of the residence.

- Waterline up to 18 inches living space
- Flood damage to mechanical components (furnace, water heater, HVAC).
- Nonstructural damage to roof components over essential living space: roof covering, fascia board, soffit, flashing, and skylight
- Nonstructural damage to the interior wall to include drywall, insulation;
- Nonstructural damage to exterior components (missing doors, broken window framings)
- Multiple small vertical cracks in the foundation

- Damage to chimney to include, tilting, fallen, cracks, or separated from the residence
- Damage to mechanical components (furnace, water, HVAC)
- Damage or disaster related contamination to a private well or septic system
Degrees of Damage

Minor: Manufactured Home
The residence is damaged and requires minimal repairs
• Nonstructural components have sustained damage - e.g. windows, doors, wall coverings, roof, bottom board insulation, ductwork, and/or utility hook up
• Water line is below the floor system
• Skirting or HVAC is impacted by Flood
• There is no structural damage, nor is it displaced from foundation
Degrees of Damage

**Major: Conventional Home**
When the home has sustained significant structural damage and requires extensive repairs.

- Failure (or partial) of structural elements over required rooms (rafters, joists), framing, sheathing
- Failure (or partial) to foundations (crumbling, cracks more than 2”, shifting more than 6”.
- 18 inches or more of water on the first floor or water that covers the electrical outlets
- Homes with a basement may be considered for major damage if the waterline has compromised the structural integrity of the home

- Waterline above 18 inches in living space, above electrical outlets, or on first floor when basement is full
Degrees of Damage

**Major: Manufactured Home**

The residence has sustained structural or significant damage that requires extensive repairs

- The residence has been displaced from the foundation, block or piers, and other structural components have been damaged
- Water has come into contact with the floor system to include belly board insulation, ductwork, and subflooring
Degrees of Damage

Destroyed: Conventional Home

The residence is a total loss, or damaged to such an extent that repair is not feasible.

- Only foundation remains
- Will require demolition or removal because disaster-related damage or imminent danger (landslides, sinkholes)
- Complete failure of two or more major structural components due to flooding - e.g. collapse of basement walls, foundation, walls, or roof
Destroyed: Manufactured Home

Residence is a total loss

- The residence's frame is bent, twisted, or otherwise compromised
- The residence is missing the roof covering and the structural ribbing has collapsed for the majority of the roof system
Inaccessible

Homes that are inaccessible by reasonable means due to disaster related loss of access

- Bridge out
- Road flooded
- Blocked by landslide, mudslide, severe erosion, wash out, or debris

If the damage is viewable, it is preferable to assign an appropriate damage category as seen.
Floodplain

FEMA regulates certain homes located in a floodplain.

**Base Flood Elevation (BFE)** is the FEMA regulatory requirement for the elevation or flood proofing of structures.

https://www.fema.gov/base-flood-elevation   Mar. 05, 2020

- Elevated homes located in a designated floodplain without living space below the BFE may be assessed as Affected
- If they have damage to any living space (bedroom, bathroom) below the BFE, they can be assessed as Minor Damage
Degrees of Damage

Damage to non-habitable living space may only be assessed as AFFECTED (Garages & Carports)

- Garages, carports, and sheds of private homes are not considered habitable living space
- If damage is limited to these structures, it may only be assessed as AFFECTED
- If the structure is part of a business, the damage would be assessed under Individual Assistance (IA), Small Business Administration (SBA)
Degrees of Damage

Roads and Bridges

- Damage to Roads, Bridges, and Culverts are assessed under Public Assistance (PA). In Crisis Track, identify the damage as Public Business, Non-profit
• Federal, local and state
• Not limited to structural damage (homes and personal businesses)
• Can include landscaping, personal property and businesses
• Threshold of 25 homes (under or un-insured) with 40% or greater property value damage
• Large chain businesses may have a building destroyed; but is it 40% of entire business (chain)
• The Small Business Administration may also become involved in assessments.
• SBA assessments are a little different
• Make notes on assessment forms as you go to capture the different information for SBA in case it is needed in the future
Some general assumptions can be made regarding insurance:

- New construction = It’s probably insured (mortgage)
- Low income housing/mobile homes = probably uninsured or under-insured.
- Roof repairs being done quickly after damage = insured
- Renters generally do not have insurance
- Older homes that have the same owner for many years MAY be underinsured

Home Owners Insurance and Flood Insurance are not the same. If you are assessing flood damage and are told the home owner has insurance DO NOT assume they are referring to flood insurance. If they are not in a special flood hazard area, chances are they do not have flood insurance. If in doubt, ASK!
If a structure is more than 50% damaged and located in a special flood hazard area, the structure may be required to be brought up to code - no matter what type of disaster caused the damage.
Apartments

Apartment Complex
• Manager will have some information on tenants
• Individual units will count as one residence
• Upper-level units may be destroyed while lower-level units may have no damage
• Renter’s insurance
**Strip Malls**

- The mall owner may have damage to his business
- The individual shop owners may have damage to their inventory and personal property
- Most will be insured, but always ASK!
Water Damage
Advantages:
- Cover lots of ground in a short period of time
- Safety of Personnel
- The “Big Picture”
- High-Resolution Photos, videos, and mapping
Aerial Damage (Drones)

Disadvantages:
- Still requires face-to-face for IDA
- Fair weather only
- Limited flight time
- Airspace restrictions, waivers
- Start-up expense and licensing
General Knowledge
Turn Around Don’t Drown
The Road Ahead

CRISIS TRACK TRAINING
Questions