Damage Assessment Training
1-2 November 2016
Agenda

• The Process:
  • Local Initial Damage Assessment (LIDA)
  • Joint Preliminary Damage Assessment (Joint PDA)
  • State/Federal Declaration

• Methods of Damage Assessment

• Classifications of Damages (IA & PA)

• Damage Assessment Forms

• Practical Exercise

• Hot Wash
The Declaration Process

1. **Incident Occurs**
2. **Local Initial Damage Assessment Teams**
   - Assess Damage and report to the County EOC
3. **County aggregates data and submits it to the State**
4. **State aggregates data and, if warranted, requests a Joint PDA with FEMA**
5. **Joint PDA is conducted with FEMA, State, and Local Representatives**
6. **If Warranted, the Governor makes a request to the President through the Region**
7. **FEMA Region reviews the request and prepares their recommendation**
8. **FEMA HQ reviews the request and Region Recommendation and coordinates with DHS**
9. **President determines whether or not to declare the disaster**
Local Initial Damage Assessment (LIDA)
LIDA Purpose

• First step in recovery process

• Determines the magnitude of damages and economic losses on local and state levels

• Identifies local, State and Federal resources necessary for recovery

• Supports the request for a Joint Preliminary Damage Assessment

• Identifies areas of concentrated damage to facilitate effective Joint PDAs
Team Composition

- Tax Appraisers (Insurance information for Joint PDA)
- Public Works
- Engineers
- Real Estate Boards
- Building and Codes
- Others deemed appropriate by *local jurisdiction*
Initial Team Notification

- Get as much information as possible on situation
- Contact team members
- Determine meeting location and time
- Ensure that team members have taken care of their families and/or property
Pre-Deployment Checks

• Brief team on purpose of the mission
• Identify geographic areas of responsibility when two or more teams are activated (maps with GIS overlays are recommended)
• Dress appropriately for the weather and terrain
• Redundant communications plan
  • Test communications systems before departure
  • Cell-Primary, Radio – Alternate, Procedural - Tertiary
• Arrange for appropriate transportation (e.g. 4 wheel drive, passenger van)
• Equipment and supplies for the assessment
• Set an “end time” for the mission
Deployment Phase

• Use appropriate forms and employ standardized electronic and hard copy labeling and filing standards
• Maintain photographic documentation (geotagging is preferred)
• Prepare a summary of the findings
• Brief appropriate local officials on findings
• Provide DA report to county EOC
• County EOC will forward information to SCEMD
• Be prepared to participate in joint verification
Deployment Considerations

**Assessment Considerations:**
- Distressed or curious citizens
- Accurate location of damaged properties for verification purposes
- Maintaining positive contact with Team Leader and EOC
- Changes to mission assignment
- Team fatigue, stress and emotional impacts

**Safety Considerations:**
- Isolated and/or not readily accessible areas
- Extreme weather
- Limited communication
- Large debris piles
- Flooding and swift water
- Downed power lines and cables
- Gas leaks
- Natural and wildlife hazards
- Hazardous material
PDA Etiquette

Do:
• Refer media inquiries to the County EM PIO
• Refer legislative inquiries to County EM
• Provide Entrance and Exit Briefs
• Communicate with EOC
• Be keenly aware of the environment – Safety First

Dont:
• Summarize the extent of disaster for the applicant (e.g. not much; probably won’t get declared”)
• Create false expectations with applicants (e.g. Looks like enough for a declaration/reimbursement)
• Speak on subjects that you are not an expert or have knowledge
Joint Preliminary Damage Assessment (Joint PDA)
Team Composition

- Federal - FEMA
- State - SCEMD or other State Agencies as required
- Local - municipality, county
- Others as required - DNR, PRT, Department of AG, etc.
- Small Business Administration
- Farm Service Agency
Types of Joint PDAs

• Individual Assistance
  • No set criteria
  • Damage eligibility based on the home and utilities only
  • Insurance, social-economic factors, demographics, availability of public services taken into consideration

• Public Assistance (*criteria changes each federal FY*)
  • $3.57/capita for counties
  • $1.41/capita for State (includes State agencies and counties)

• Small Business Administration
  • Provide loans to individuals and small businesses
  • 25 homes/renters/businesses with > 40% uninsured losses
Local PDA Responsibilities

• Identify and train PDA members

• Work with technical experts to identify impacts

• Obtain initial estimates for private and public sector

• Report assessments to SCEMD

• Track expenditures

• Participate in Joint PDA
Joint PDA Process

State aggregates local damage assessment data and, if warranted, requests a Joint PDA with FEMA

FEMA and State coordinate to establish a PDA briefing time/location and develop a PDA plan

State coordinates with local officials to schedule field assessments

Local officials identify personnel to participate in the damage assessment

Joint PDA is conducted with FEMA, State, and Local Representative

FEMA will compile their findings and provide a PDA report to the State

If Warranted the Governor requests a major disaster declaration
Dissenting Opinions

If there is a significant difference of opinion regarding the level of damage (e.g. destroyed vs. minor) every effort should be made to come to an agreement in the field.
Damage Assessment Methods
Self-Reporting

Primarily conducted at the local or county level to develop initial damage information and may use one or more intake systems including phone banks, web-based forms, paper forms, mobile apps, etc.

• **Benefit**: allows community members to rapidly conduct initial damage assessments and can be tailored to collect more granular information

• **Drawback**: Information will need to be confirmed and intake system must be in place pre-disaster to be effective
**Fly-Over**

**Benefit:** Allows rapid Assessment of Damage

**Drawback:** Damage must be easily observable from the air. Quality of information may not be adequate to assess IA damage or estimate the cost of PA projects without follow-up.
Windshield Survey

**Benefit:** Efficient field-level assessment method

**Drawback:** Damage must be easily observable from the road
Door-to-Door/ Site Assessment

Benefit: Highly accurate

Drawback: Time and labor intensive
GIS Analysis

**Benefit:** Allows rapid assessment of damage and enhances analysis

**Drawback:** GIS Capabilities vary and Federal resources are often required for geospatial analysis. It can be difficult to discern specific damage details from GIS Imagery. Imagery needs to be taken pre and post incident to make a comparison.
**Modeling**

**Benefit:** Allows rapid identification of potentially damaged areas

**Drawback:** Federal resources are often required to develop models and damage will need to be confirmed through ground-level assessments in most cases.
Classification of Individual Assistance Damages
Classifications

• Affected

• Minor

• Major

• Destroyed

• Inaccessible
Affected: Manufactured Home

The residence has cosmetic damage only. It also applies to homes with damage to a porch, carport, garage, and/or outbuilding.
Affected: Conventionally Built Home

The residence has minimal damage to the exterior and/or non-essential basements

- Partial missing shingles or siding (non-continuous/sporadic) roof structure intact
- Cosmetic damage such as paint discoloration or loose siding
- Broken screens and/or gutter damage and debris
- Damage to an attached structure (e.g. porch, carport, garage, outbuilding etc.)
- Damage to landscaping, retaining walls, or downed trees that don’t affect accessibility
- Any waterline in the crawl space or basement when essential living space or mechanical components are not damaged or submerged
Minor: Manufactured Home

The residence is damaged and requires minimal repairs

- Nonstructural damage (e.g. to windows, doors, and wall coverings, roof, bottom board insulation, ductwork, or utility hookup) without displacement from the foundation
- Water line below the floor system
- HVAC interior mechanical unit is impacted
Minor: Conventionally Built Home

The residence has damage that does not affect its structural integrity

- Nonstructural damage to
  - Roof components over essential living space (e.g. large areas of shingles, roof covering, soffit)
  - Interior wall components (e.g. drywall) or Exterior wall components (e.g. missing doors, vinyl, etc.)
- Multiple small vertical cracks in the foundation or damage to chimneys (e.g. tilting, fallen, cracked)
- Damage to or submersion of mechanical components (e.g. HVAC units, hot water heater)
- Damage or disaster related contamination to a private well or septic system
- Water line less than 18” in an essential living space *Finished Basements – if a basement contains any of the following essential rooms; bedroom, bathroom, kitchen, and/or living room consider it to be minor damage if the water line is less than 18” above the floor
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
Major: Conventionally Built Home

The residence has sustained significant structural damage and requires extensive repairs

- Failure or partial failure of
  - Structural elements of the roof (e.g. rafters, ceiling joists, ridge boards, etc.)
  - Structural elements of the walls (e.g. framing, sheathing, etc.)
  - The foundation (e.g. crumbling, bulging, collapsing, 2” and larger horizontal cracks, shifting of the residence on the foundation of more than 6”)

- Water line 18” above the floor in an essential living space, above the electrical outlets, or a water line on the first floor when a basement is completely full

*Finished Basements* – if a basement contains any of the following essential rooms; bedroom, bathroom, kitchen, and/or living room consider it to be major damage if the water line is 18” above the floor
Destroyed:
Manufactured Home

The 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
Destroyed: Conventionally Built Home

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

- Complete failure of two or more structural components (e.g. collapse of basement walls, foundation, load-bearing walls, or roof)
- Only the foundation remains
- A residence that is in imminent threat of collapse because of disaster-related damage or confirmed imminent damage (e.g. impending landslides, mudslides, or sinkholes)
Inaccessible

Residences that are inaccessible by reasonable means, due to disaster-related loss of access (e.g. washed out road, bridge out, road flooded or blocked by landslide, etc.)

- Individual apartment units that are not habitable due to damage to lower floors should also be included in the assessment

- **Additional Guidance for Teams** - Take reasonable and safe measure to be able to see the damage when possible. If the PDA team still cannot gain access, estimate the number of inaccessible homes using information from local officials, flyovers or other technology. If the team can gain access but residents reasonably cannot, then mark the damage level seen for destroyed, major, and minorly damaged homes only. DO NOT MARK INACCESSIBLE. **For affected homes that are also inaccessible to the resident, mark inaccessible rather than affected**, to err on the side of the applicant.
Public Assistance Categories of Work
# PA Categories of Work

<table>
<thead>
<tr>
<th>Type</th>
<th>Category of Work</th>
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</thead>
<tbody>
<tr>
<td>Emergency Work</td>
<td>A  Debris Removal</td>
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<tr>
<td></td>
<td>B  Emergency Protective Measures</td>
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<tr>
<td>Permanent Work</td>
<td>C  Roads and Bridges</td>
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<td>D  Water Control Facilities</td>
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<td>E  Buildings and Equipment</td>
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<td>F  Utilities</td>
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<td>G  Parks, Recreation, and Other</td>
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</table>
Cat A: Debris Removal

Activities such as clearance, removal, and disposal of debris that is in the public interest. Public interest is based on whether the work:

• Eliminates immediate threat to lives, public health, and safety;
• Eliminated 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
Cat B: Emergency Protective Measures

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. Examples include but are not limited to:

- Search and Rescue
- Firefighting
- Safety Inspections
- Flood Fighting
- Medical Care and Transport
- Evacuation and Sheltering Costs
Cat C: Roads and Bridges

Permanent work done to restore roads (paved, gravel, and dirt), bridges, and their components to their pre-disaster design and function.

Example Road Components
- Surfaces
- Bases
- Shoulders
- Ditches
- Culverts
- Low water crossing
- Sidewalks
- Guardrails
- Signs

Example Bridge Components
- Decking
- Guardrails
- Girders
- Pavement
- Abutments
- Pier
- Slope protection
- Approaches
- Sidewalks
- Signs
Cat D: Water Control Facilities

Work done to restore publicly-owned water control facilities. 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 damage
- Erosion prevention
- Flood control
- Storm water management
Cat E: Buildings and Equipment

Activities such as but NOT limited to:

• Repair and replacement of buildings including furnishings and interior systems such as electrical work
• Replacement of library books and publications
• Repair of vehicles and other equipment
Cat F: Utilities

Work required to restore damaged utility facilities to pre-disaster design and function to include:

- Water storage facilities, treatment plants, and delivery systems
- Natural gas transmission and distribution facilities
- Communication systems
- Sewage collection systems and treatment plants
- Power generation, transmission, and distribution facilities (e.g. wind turbines, generators, substations, and power lines)
Cat G:
Parks, Recreation, and Other

Activities such as but NOT limited to:
• Repair and restoration of parks, playgrounds and equipment, pools, cemeteries, golf courses and beaches
• Work or facility not characterized by categories A-F
Damage Assessment Forms
Field Note Forms

- Descriptive form used to record information like open shelters, housing resources etc.

- Recorded information used in preparation of the Regional Summary to FEMA

**PRELIMINARY DAMAGE ASSESSMENT FIELD NOTES**

1. County: ___________ City / Town: ___________ State: ___________
2. Collection of: Maps ___________ Newspapers ___________
3. State / Local Official: ___________ Phone: ___________
4. Type of damages – Description:
   
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

5. Disaster Unemployment - Industry Impact – Narrative:
   
   ____________________________________________________________
   ____________________________________________________________

6. Insurance Coverage - Narrative: general information on insurance coverage, ALE, etc:
   
   ____________________________________________________________
   ____________________________________________________________

7. Available Resources – Narrative: general information on available housing resources:
   
   ____________________________________________________________
   ____________________________________________________________

8. Other – Narrative: Special Needs Populations, Language Barriers, Elderly, etc:
   
   ____________________________________________________________
   ____________________________________________________________

9. Emergency response: Facts / Figures:
   
   Shelters Open: _______ Persons in Shelters: _______ Feeding Stations: _______
   Medical Impact: Injuries _______ Deaths _______ Missing _______
   Local Representative: __________________________ Date: ___________

   ____________________________________________________________
   ____________________________________________________________
Local Initial Damage Assessment Form

- Primary document for identifying and documenting local damage
- Used for reporting local damage to the State
- Quickly documents the initial impact
- Churches and private non-profit organizations considered businesses
- Supplemental sheets used for additional information if needed
- If possible, provide addresses on supplemental sheets

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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</table>
| I: Basic Information | County: \(\text{City} \)  
| Incident Type | Incident Period |  
| Date of Survey | Assessment Team Leader: |  
| Contact Information Phone | Contact Information Email |  
| II: General Situation |  
| III: House and Business | Structure Type: Family, Multi Family, Mobile Homes, Businesses | Affected, Minor Damage, Major Damage, Destroyed | Total Estimated Damages |  
| IV: Public Facilities | Facility Type: State Government, Local Government, Private Non-Profit Business | Total Number Damaged, Category A, B, C-G | Total Estimated Damages |  
| VI: Roads and Bridges | Roads/Streets, Bridges, Damaged, Blocked or Destroyed, Damaged but Unable, Destroyed or Unusable |  
| VII: Dams and Levees | Dam/Levee Location, Threatened, Damaged, Destroyed |  
| VIII: Total Damages | Homes, Businesses, Public Facilities, Grand Total |  

*Units of measure for SBA criteria (408 or greater covered damage):*$

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Note: The table and form layout may not be fully visible in this text representation.
Housing and Business Supplemental - IA

- To be used for a more detailed assessment of damaged areas

- This will be used, as needed, to supplement initial damage assessment form, especially for address information

- If damage is close to thresholds, this document may be critical to declaration decision

- Provides specific information to support request for PDA
## Supplement to Local Initial Damage Assessment – Housing and Businesses

**Note:** The number in parentheses corresponds to the paragraph number in the instructions.

<table>
<thead>
<tr>
<th>(1) Page</th>
<th>(3) Incident Type</th>
<th>(6) Assessment Team Members</th>
<th>(7) Phone #</th>
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<tbody>
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(2a) County: 

(2b) Municipality: 

<table>
<thead>
<tr>
<th>Name of Occupant/Business if Known (8)</th>
<th>Physical Address/ GPS Coord. (9)</th>
<th>Home</th>
<th>Structure Type</th>
<th>Status</th>
<th>% Damages</th>
<th>Initiated Y or N</th>
<th>Water Level in Structure (ft)</th>
<th>Replacement Cost*</th>
<th>Est. Dollar Loss*</th>
<th>Insurance</th>
<th>Meets SBA** Criteria Y or N (see note below)</th>
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**SBA Criteria:** "YES" indicates 40% or greater uninsured damage, "NO" indicates less than 40% uninsured damage
Public Assistance Supplemental Form

- Document damages to local infrastructure
- Used, as needed, to supplement initial damage assessment form, especially for location information
- If damage is close to thresholds, this document may be critical to declaration decision
- Provides specific information to support request for PDA
Public Assistance Supplemental Form

Supplement to Local Initial Damage Assessment – Public Assistance

<table>
<thead>
<tr>
<th>(1) Page</th>
<th>(2a) County</th>
<th>(2b) Municipality</th>
<th>(3) Incident Type</th>
<th>(4) Incident Period</th>
<th>(5) Date of Survey</th>
<th>(6) Assessment Team Members</th>
<th>(7) Phone #</th>
<th>(18) Total</th>
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<tr>
<th>Name/Location (Physical Address or GPS Coord.)</th>
<th>Description Of Damage</th>
<th>Emergency Work*</th>
<th>Permanent Restoration*</th>
<th>Total Estimated Damages in Dollars*</th>
</tr>
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<tbody>
<tr>
<td>A Debris Removal</td>
<td>B Protective Measures</td>
<td>C Roads, Signs, Bridges</td>
<td>D Water Control</td>
<td>E Blgs. &amp; Equip.</td>
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1/29/2016

*Figures in estimated dollars
Practical Exercise
Scenario

Hurricane Zeta at CAT II storm made landfall in Savannah, GA. Debris crews have opened safe lanes into the area and the utilities have rendered safe all down lines. Your team has been assigned to conduct damage assessment of area A22. Conduct your team briefing and move to your assigned structures to conduct the assessment.
Urban Graphic:
Building 1: Exxon Station
Building 2: ACE Hardware
Building 3: Opti Care
Building 4: Community Center
Building 5: Apartment Complex
Building 6: Bayview Towers
Building 7: Urgent Care
Hot Wash
Resources

- [http://www.scemd.org](http://www.scemd.org)
  - FORMS – Damage Assessment
    - Local Damage Assessment Forms & Instructions
- [http://www.scemd.org/Recover/ia.html](http://www.scemd.org/Recover/ia.html)
- [http://www.scemd.org/Recover/pa.html](http://www.scemd.org/Recover/pa.html)
  - FEMA-required forms for Disaster-related costs
    - Force Account Labor
    - Equipment Summary
    - Material Costs
    - Contract Costs
    - Employee Benefits Worksheet
Online Training

• **IS-7 - A Citizen's Guide to Disaster Assistance**
  • Local, State and Federal roles & responsibilities in providing disaster assistance

• **IS-403 - Intro to Individual Assistance (IA)**
  • Basic knowledge of the Individual Assistance program and activities

• **IS-630 - Intro to the Public Assistance (PA)**
  • Intro to FEMA's Public Assistance program for emergency management staff

• **IS-631 - Public Assistance (PA) Operations I**
  • Local, Tribal, State, Federal and contractors with responsibilities in FEMA's Public Assistance Program