Disaster Damage Assessment

Virginia Department of Emergency Management

Recovery & Mitigation Division
Welcome & General Introduction
Workshop Topics

• Three types of disaster damage assessments

• Local responsibilities for Initial Damage Assessments

• Collecting & reporting information within FEMA required damage categories

• Disaster assistance program overview
3 Damage Assessment Types

- Rapid Needs Assessment (RNA)
- Initial Damage Assessment (IDA)
- Joint Preliminary Damage Assessment (PDA)
Assessment Purposes

- Assess threats to life safety to deploy all disaster response resources tactically.

- Assess local property and infrastructure damage and need for state assistance.

- Assess eligibility for federal recovery programs.
Rapid Needs Assessment (RNA)

- RNA’s focus on life safety, hazards and critical needs within first 24 hours.
- RNAs can be done by windshield in geographic sectors or flyover.
- RNAs happen during the **Response Phase** of disaster activity.
- RNA results are submitted to the Virginia Emergency Operations Center (VEOC) in the Situation Report.
RNA’s Evaluate Disaster Impacts:

1. Food and water
2. Evacuation & re-entry
3. Shelter issues
4. Medical emergencies
5. Hazardous material dangers
6. Disrupted transportation corridors
7. Utility restoration
Initial Damage Assessment (IDA)

The local government evaluation of disaster impacts. The objects of assessment are:

- Residences
- Businesses
- Public infrastructure
- Emergency activities
Initial Damage Assessment

- IDA’s determine if the Governor will request federal disaster aid.
- IDA’s belong to the *Recovery Phase* of disaster activity.
- Summaries should be submitted to the VEOC within 72 hours.
Joint Preliminary Damage Assessment

A Joint Preliminary Damage Assessment (PDA) is a local-state-federal damage evaluation that verifies the need for Federal recovery assistance.
Local Government Responsibilities

- Comprehensive damage assessment strategy in Emergency Operations Plan
- Team Composition
- Estimating damage categories/costs & insurance coverage
- Describe community impacts
- Submit IDA summary to the VEOC
Common Deficiencies in Strategy

• Community has not been prearranged into sectors.
• Characteristics of the damage areas not known.
• Not conducting pre-deployment briefings.
• Damage assessment team members not pre-determined or trained.
Team Composition

- **Who is on your team now?**
- **Ideal IDA Team Members**
  - Building and Fire Code Officials
  - Tax assessors
  - Planners
  - CERT Team Members
  - Elected Official’s Staff

*It is essential that team members are trained in damage assessment categories and use of the damage assessment form.*
Damage Assessment Go Kit

- Highway & GIS or topo maps
- Flashlights and Extra Batteries
- Reflective/Protective Vests/Rain gear/steel toe boots/gloves
- First Aid Kit/insect repellant/sunscreen
- Cell phone/radio
- Water and snacks
Damage Assessment Go Kit

- Measuring Tape
- Camera
- GPS
- Community Contact Names and Numbers
- Assessment Forms and Instructions
- Pens/Pencils/Clipboards
Disaster Response in the Commonwealth of Virginia

1. Local First Responders
2. Virginia Emergency Response Team
3. Virginia Emergency Declaration
4. Aid to Local Govt.
5. Presidential Declaration Request
6. Secretary DHS
7. Presidential Declaration
8. State of Emergency Declared
9. Resources Exceeded
10. City Manager/County Administrator
11. Emergency Manager
12. Request for Assistance
13. Virginia Emergency Operations Center
14. Federal Agencies JFO
Damage Assessment Process

• The Local Emergency Coordinator alerts damage assessment coordinator/teams and schedules a briefing:
  – Provide assignments for each damage assessment team
  – Review damage categories & forms
  – Emphasize safety issues
  – Establish call in and reporting procedures
Assignments

- Each team consists of at least two members.
- Each team tours areas assigned, inspects damage, completes forms and reports information rapidly.
- Each team member should have credentials of some type.
Deploying the Teams

Damage Assessment Teams should deploy as soon as possible but should not begin until:

- Areas are secure and safe
- Sufficient daylight is available for safe operations
- Severe conditions have dissipated
Deploying Teams

If in doubt, don’t go out. You are doing damage assessment. You are not a first responder!
Data Collection

Important Data Elements

- Category of Damage
- Primary or Secondary Residence
- Detached garages, sheds are not considered unless business-related
- Owner or Renter
- Special Needs – language, disability
- Accessibility – private bridges
  - Landscape, docks and piers, shorelines, and landslides are not considered
Estimating Insurance Coverage

• Only uninsured damages are relevant when seeking federal assistance.

• Type of disaster damage makes a difference for insurance purposes.
  – Wind or wind and driving rain
  – Flooding
  – Hurricane
Type of Insurance makes a difference

- NFIP for flood or hurricane prone areas
- Property (Does not cover flooding)
- Wind/Hurricane
- Contents coverage is an add-on
Estimating Damage Costs

An estimate helps characterize the severity of the event.

Clues:

• Use a standard damage percent and real estate assessment data.
• Use damage percent and census data.
• Use cost estimates where available

Be consistent!
**Sample: Local Government Caller Damage Report**

<table>
<thead>
<tr>
<th>LOCAL GOVERNMENT DAMAGE ASSESSMENT – TELEPHONE REPORT</th>
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<tbody>
<tr>
<td>1. CALLER NAME</td>
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<td>3. TELEPHONE NUMBER</td>
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<td>5. OWNERSHIP</td>
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<td>Home</td>
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<td>6. CONSTRUCTION TYPE</td>
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<td>7. TYPE OF INSURANCE</td>
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<td>Homeowner’s insurance</td>
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<td>8. DAMAGES (Check all that apply)</td>
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<td>10. Based on the damages reported, the property is currently</td>
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<td>11. CALLER’S ESTIMATE OF DAMAGES</td>
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<td>REPAIRS</td>
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<td>11. COMMENTS</td>
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<tr>
<td>12. CALL TAKER</td>
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</tbody>
</table>
DISCUSSION

&

BREAK
IDA Field Operations

Individual Assistance Program

Where the Boots Hit the Ground!
Accurate, factual damage assessment requires physical inspection of the structure...
Initial Damage Assessment
Individual Assistance Program

- Number of residential & Business structures: owner occupied - rented, by category of damage!
- Estimates of insurance coverage.
- Estimated costs to repair / replace structures.
- Any other contextual or background information that will help characterize disaster impacts to the community.
## Individual Assistance Damage Assessment Level Guidelines

<table>
<thead>
<tr>
<th>Damage Definitions</th>
<th>General Description</th>
<th>Things to Look For</th>
<th>Water Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DESTROYED</strong></td>
<td>Structure leveled above the foundation, or second floor is gone. Foundation or basement is significantly damaged. Structure leveled or has major shifting off it's foundation or only the foundation remains. Roof is gone, with noticeable distortion to walls.</td>
<td>More than 4 feet in first floor.</td>
<td>More than 2 feet in mobile home.</td>
</tr>
<tr>
<td><strong>MAJOR</strong></td>
<td>Walls collapsed. Exterior frame damaged. Roof off or collapsed. Major damage to utilities: furnace, water heater, well, septic system. Portions of the roof and decking missing. Twisted, bowed, cracked, or collapsed walls. Structure penetrated by large foreign object, such as tree.</td>
<td>2 to 4 feet in first floor without basement. 1 foot or more in first floor with basement. 6 inches to 2 feet in mobile home with plywood floors. 1 inch in mobile home with particle board floors.</td>
<td></td>
</tr>
<tr>
<td><strong>MINOR</strong></td>
<td>Interior flooring / exterior walls with minor damage. Tree(s) fallen on structure. Smoke damage. Shingles / roof tiles moved or missing. Many missing shingles, broken windows and doors. Loose or missing siding.</td>
<td>2 inches to 2 feet in first floor without basement. 1 foot or more in basement. Crawlspace – reached insulation. Sewage - in basement. Mobile home, &quot;Belly Board&quot; to 6 inches.</td>
<td></td>
</tr>
<tr>
<td><strong>AFFEKTED HABITABLE</strong></td>
<td>Chimney or porch damaged. Carpet on first floor soaked. Broken windows. Few missing shingles, some broken windows. Damage to air conditioning units / etc. Some minor basement flooding.</td>
<td>Less than 2 inches in first floor. Minor basement flooding. Mobile home, no water in &quot;Belly Board&quot;.</td>
<td></td>
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</tbody>
</table>

### IDA Tips: Estimating Water Depths

- **Brick** - 2 1/2 inches per course
- **Lap or aluminum siding** - 4 inches or 8 inches per course
- **Stair risers** - 7 inches
- **Concrete or cinder block** - 8 inches per course
- **Door knobs** - 36 inches above floor
- **Standard doors** - 6 feet 8 inches

Additional information is available at [www.VAEmergency.com](http://www.VAEmergency.com)  
Adapted from FEMA 9327.1-PR April 2005  
Revised 02/15/07 VDEM
## Destroyed

<table>
<thead>
<tr>
<th>Damage Definitions</th>
<th>General Description</th>
<th>Things to look for...</th>
<th>Where’s the water?</th>
</tr>
</thead>
</table>
| **Structure is a total loss.** | • Structure leveled above the foundation or second floor is gone.  
  • Foundation or basement damaged significantly. | • Structure is leveled or has Major shifting off its foundation or only the foundation remains.  
  • Roof is gone with noticeable distortion of the walls. | ![House icon] More than 4 feet on the first floor.  
  ![Train icon] More than 2 feet in the mobile home. |

*Not economically feasible to rebuild.*
Destroyed

Structure is a total loss.

Not economically feasible to rebuild.
Destroyed

Structure leveled above the foundation.
Roof is gone with noticeable distortion of the walls.

09/08/2006
Destroyed

Not economically feasible to rebuild
Roof is gone with noticeable distortion of the walls.

Structure is a total loss.
SOME DAMAGE IS MORE OBVIOUS THAN OTHERS...
<table>
<thead>
<tr>
<th>Damage Definitions</th>
<th>General Description</th>
<th>Things to look for. . .</th>
<th>Where’s the water?</th>
</tr>
</thead>
</table>
| Structure is currently uninhabitable. Extensive repairs are necessary to make it habitable. | •Walls collapsed.  
•Exterior frame damaged.  
•Roof off or collapsed.  
•Major damage to utilities: furnace, heater, water heater, well, septic system. | •Portions of roof & decking missing.  
•Twisted, bowed, cracked, or collapsed walls.  
•Structure penetrated by large object, such as tree.  
•Damaged foundation. | 2-4 feet in first floor.  
1 foot or more in first floor with basement. |
| Will take more than 30 days to repair. | | | 6 inches to 2 feet in mobile home with plywood floors – 1 inch with particle board floors. |
Major

6 inches to 2 feet in mobile home with plywood floors
1 inch with particle board floors.

Will take more than 30 days to repair.
Major

Water heater

Warrants closer exam

06/28/2006
Major

Water level

Damaged foundation

06/28/2006
<table>
<thead>
<tr>
<th>Damage Definitions</th>
<th>General Description</th>
<th>Things to look for...</th>
<th>Where’s the water?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure is damaged and uninhabitable. Minor repairs are necessary to make habitable.</td>
<td>• Interior flooring /exterior walls with some damage. • Tree(s) fallen on structure. • Smoke damage. • Shingles / roof tiles moved or missing.</td>
<td>• <em>Minor</em> shifting or settling of foundation. • Many missing shingles, broken windows and doors. • <em>Some</em> damage to septic system. • Loose or missing siding.</td>
<td>2 inches – 2 feet on the first floor without basement. 1 foot or more in the basement. Crawl space – reached insulation. Sewage in the basement. “Belly Board” to 6 inches in mobile home.</td>
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<tr>
<td>Will take <em>less than 30 days to repair.</em></td>
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</tbody>
</table>
Minor

Many missing shingles, broken windows and doors.

Loose or missing siding.
Minor

2 inches – 2 feet on the first floor without basement.

Will take less than 30 days to repair.
Minor

Tree(s) fallen on structure.
Minor

2 inches or less on the first floor (Affected).

Carpet on first floor soaked (Affected).

Crawl space – water reached insulation (Minor).
Minor

Less than 2 feet in first floor.
Minor

Some *minor* basement flooding (Affected).

Sewage in the basement  *(Minor).*

06/28/2006
## Affected

<table>
<thead>
<tr>
<th>Damage Definitions</th>
<th>General Description</th>
<th>Things to look for. . .</th>
<th>Where’s the water?</th>
</tr>
</thead>
</table>
| Structure has received *Minimal damage* and is *habitable without repairs.* | • Chimney or porch damaged.  
• Carpet on first floor soaked.  
• Broken windows. | • Few missing shingles, some broken windows.  
• Damage to air conditioning units, etc.  
• Some *minor* basement flooding. | • 2 inches or less on the first floor.  
• *Minor* basement flooding.  
• No water in “Belly Board” of mobile home. |
Affected

2 inches or less of water on the first floor.

Carpet on first floor soaked.

09/06/2006
Affected

Structure has received *Minimal* damage and is *habitable without repairs.*

*Note: spaces damaged are “Non-essential rooms or areas.”*
Inaccessible by *normal Means* due to disaster.

- Road flooded
- Severe erosion
- Bridge out
- Land slide
- Mud slide
- Wash out
- Etc.
IDA Tips

• Use the damage level guide.
• Destroyed and Major structures will usually have compromised structural components.
• Destroyed, Major, and Minor structures are uninhabitable.
• Choose the higher level of damage when in doubt between two levels.
• Provide descriptions with the numbers that will help visualize disaster impacts.
Multi-Family Buildings

Every unit impacted must be counted within its damage category.
IDA Tips: Estimating Water Depths

• Brick
  2 1/2 inches per course

• Concrete or cinder block
  8 inches per course

• Lap or aluminum siding
  4 inches or 8 inches per course

• Door knobs
  36 inches above floor

• Stair risers
  7 inches

• Standard doors
  6 feet 8 inches
### Part I: Private Property

<table>
<thead>
<tr>
<th>Type Property</th>
<th>Destroyed</th>
<th>Major Damage</th>
<th>Minor Damage</th>
<th>Affected</th>
<th>Dollar Loss</th>
<th>% Flood Insured</th>
<th>% Property Insured</th>
<th>% Owned</th>
<th>% Secondary</th>
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</thead>
<tbody>
<tr>
<td>Single Dwelling Houses</td>
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<td>Multi-Family Residences</td>
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<td>Manufactured Residences (Mobile)</td>
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<td>Business/Industry</td>
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<td>Non-Profit Org. Buildings</td>
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</tbody>
</table>

**TOTAL**

### Part II: Community Impacts

<table>
<thead>
<tr>
<th>NUMBER OF PRIVATE ACCESS ROADS &amp; BRIDGES:</th>
<th></th>
<th>Number of Households Impacted:</th>
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</thead>
<tbody>
<tr>
<td>NUMBER OF HOUSEHOLDS STRUCTURES WITHOUT UTILITIES:</td>
<td></td>
<td>Estimated Date for Utilities Restoration:</td>
</tr>
</tbody>
</table>

Additional Comments:
Initial Damage Assessment
Summary Reporting

• Return completed Assessment Forms to Local Emergency Coordinator

• Add disaster-specific comments or observations

• Coordinator compiles information and submits to VEOC
Submitting information to the VEOC

- Cumulative IDA summary data via local emergency coordinator,
- Use the on-line form in WebEOC or www.vaemergency.com/recovery center
- Submit Cumulative IDA results form to Local Liaison Section of the VEOC (804) 674-2400 or fax (804) 674-2419 or E-mail to veoc@vdem.virginia.gov.
| Jurisdiction: |  |
| Date/Time IDA Report Prepared: |  |
| Prepared By: |  |
| Call back number: |  |
| Fax Number: |  |
| Email Address: |  |

**Part I: Private Property CUMULATIVE DAMAGES**

<table>
<thead>
<tr>
<th>Type Property</th>
<th># Destroyed</th>
<th># Major Damage</th>
<th># Minor Damage</th>
<th># Affected</th>
<th>Dollar Loss</th>
<th>% Flood Insured</th>
<th>% Property Insured</th>
<th>% Owned</th>
<th>% Secondary</th>
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<tbody>
<tr>
<td>Single Dwelling Houses</td>
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<td>Multi-Family Residences</td>
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<td>Manufactured Residences (Mobile)</td>
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</table>

**Part II: Public Property (Includes eligible non-profit Facilities) CUMULATIVE DAMAGES**

<table>
<thead>
<tr>
<th>Type of Property</th>
<th>Estimated Dollar Loss</th>
<th>% Insured</th>
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</thead>
<tbody>
<tr>
<td>Category A (Debris Removal)</td>
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<tr>
<td>Category B (Emergency Protective Measures)</td>
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<td>Category C (Roads and Bridges)</td>
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<tr>
<td>Category D (Water Control Facilities)</td>
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<tr>
<td>Category E (Public Buildings and Equipment)</td>
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<td>Category F (Public Utilities)</td>
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<tr>
<td>Category G (Parks and Recreation Facilities)</td>
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<tr>
<td>TOTAL</td>
<td>$0.00</td>
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Additional Comments:
IDA RESULTS

• Assists local government priorities and decisions
• Informs Governor’s request for federal assistance based on IDA
• Governor specifies programs requested (IA, PA, HMGP) by City and County
QUESTIONS

BREAK