



Damage Assessment Workshop

Presenters:

James Bailey &

Josh Heiland



May 30, 2024

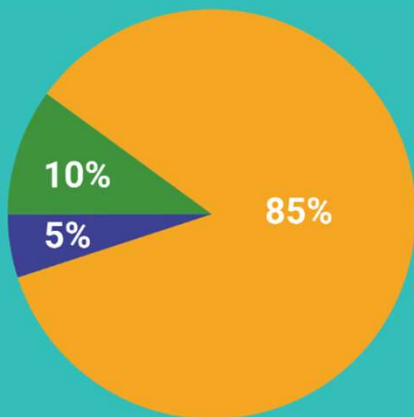
Agenda



- 2024 Hurricane Season Prediction
- Terms
- EM Phases
- FEMA PA & IA Programs
- PDA
- Damage Assessment Methods
- Degrees of Damage
- Field Work
- Mobile Home Parks
- Hurricane Ian and Nicole



2024 Atlantic Hurricane Season Outlook



■ Above normal ■ Near normal ■ Below normal

Season probability

Named storms

17 - 25

Hurricanes

8 - 13

Major hurricanes

4 - 7

Be prepared: Visit hurricanes.gov and follow @NWS and @NHC_Atlantic on X.

May 2024



NOAA predicts aggressive Atlantic Hurricane season



We are just days away from the start of hurricane

Pause (k)



0:00 / 2:17

Scroll for details
v



Atlantic Tropical Cyclone Names

2024

Alberto

Gordon

Milton

Tony

Beryl

Helene

Nadine

Valerie

Chris

Isaac

Oscar

William

Debby

Joyce

Patty

Ernesto

Kirk

Rafael

Francine

Leslie

Sara



Setting Terms

Emergency: A dangerous event that *generally* can be managed at the local level.

Disaster: A dangerous event that causes significant human and economic loss and demands a crisis response beyond the scope of any single agency or jurisdiction.

Hazard: A dangerous event or circumstance that has the potential to lead to an emergency or disaster.

- Natural (Tree limbs, water, wind, etc.)
- Adversarial/human-caused includes Technological (caused by the tools, machines, substances used in everyday life)

Events with Warning: The damage happens either over time or we have notice of the event for some time before it does. There is time to plan and stage resources.

- *Examples: Hurricanes, Tropical Storms, Wildfires, Flooding*

Events without Warning (Sudden): Damage happens suddenly and without much forewarning. We must react and respond in a very short time.

- *Examples: Tornadoes, Wind Events, Sinkholes, Hazardous Material Spills, Terrorist/Trauma Events*



Phases of Emergency Management

The purpose behind emergency management is simple: the *Continuity of Government* (COG) and *Continuity of Operations* (COOP).

Government and community services need to function uninterrupted as much as possible. While the process is quite generic, the actions taken are specific to the threats and vulnerabilities identified in each community.

Mitigate



Mitigation Activities

- Occur before the emergency or disaster
- Eliminate/reduce the probability of occurrence
- Include actions to postpone, dissipate, or lessen the effect

Changes depending on your Role.

- **Emergency Management:** Coordination of resources to identify hazards, develop a mitigation strategy, and implement the strategy.
- **Disaster Resistant Community:** One in which significant steps and measures have been taken to reduce the community's risk to flooding, earthquakes, hurricanes, wildfires, and other natural disasters

Prepare



- Minimize disaster damage
- Enhance disaster response operations
- Prepare organizations and individuals to respond





Respond

- Provide emergency assistance
- Reduce probability of additional injuries or damage
- Speed recovery operations

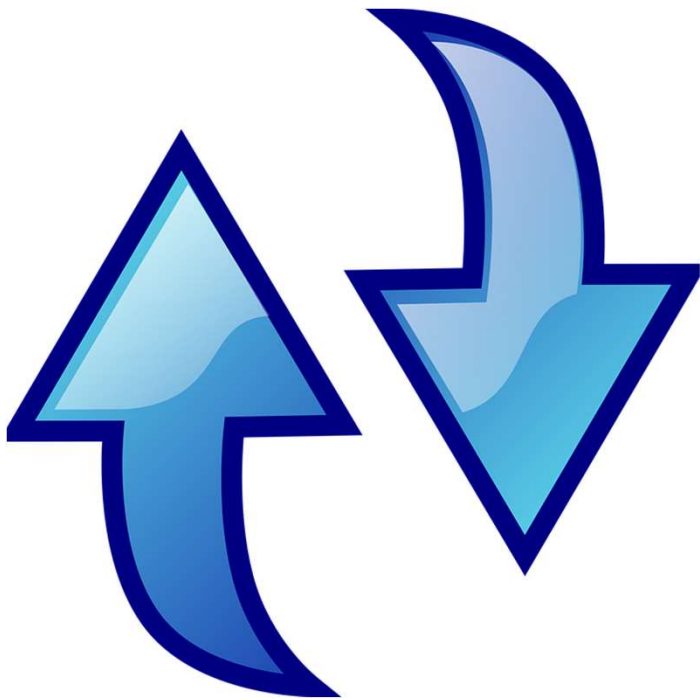
Recover



- Return systems to normal levels
- **Short-term:** Vital systems, approximately two weeks
- **Long-term:** Stabilizes all systems, can take years



Implementation Patterns



Top-Down Approach: Federal or National Government level

Bottom-Up Approach: Starts at local level and expands as needed

- *The first thing to say in this regard about **U.S. emergency management** is that **in many aspects it employs a “bottom-up” approach as opposed to one that is “top-down”** as in some other countries.*
- *In essence, this means that we rely heavily on **building local** emergency management capabilities as **opposed to a reliance on a national or centralized emergency management corps.***

Initial Damage Assessment Process



Local

- Conducts an Initial Damage Assessment.
- Provides a rough estimate of the extent and location of damages.
- Notifies the State of unmet needs in the community.
- Requests a Joint PDA.
- Coordinates Local Team Members.



State

- Request FEMA to perform a Joint PDA.
- Governor makes request for a Presidential Declaration through FEMA within 30 days of the incident.



FEMA

- Coordinates Federal Team Members for the Joint PDA.
- Reviews the Governors Request for a Presidential Declaration.
- FEMA makes recommendation to the President.



President

- The President makes a decision to issue a Presidential Declaration, Emergency Declaration, or Deny the request.

The Declaration Process

FEMA Recovery Programs

◦ Public Assistance (PA) Program

- The Public Assistance program gives extra funding to communities for emergency actions taken during a disaster and repairing or replacing damaged public infrastructure.
- Funding is provided as a reimbursement for incurred costs.
- The PDA process assesses the costs associated with Emergency Protective Measures, Debris Removal, and Infrastructure Restoration to pre-disaster condition.
- Insurance and federal program payments are deducted from the total costs.
- If the costs exceed the state's ability to provide assistance, the incident may become eligible for a Public Assistance declaration based on the current fiscal year threshold developed by FEMA.

Fiscal Year (FY): 2024

Statewide Indicator: **\$1.84** x (Statewide Population) = State Threshold Amount

Countywide Indicator: **\$4.60** x (Countywide Population) = County Threshold Amount

Local/County PA Damage Assessment Team Member(s)

Representatives usually are:

- County personnel
(*accounting/finance, sheriff, fire ,
public works, utilities,
infrastructure*)
- City personnel (*city managers,
police, fire, public works, utilities,
infrastructure*)

Should be familiar with the type of work being evaluated and be able to collect information and supporting documentation.

Type		Category of Work
Emergency Work:	A	Debris Removal
	B	Emergency Protective Measures
Permanent Work:	C	Roads and Bridges
	D	Water Control Facilities
	E	Buildings and Equipment
	F	Utilities
	G	Parks, Recreation and Other



After an event, the VCPA needs your estimates for these categories ASAP! This will help determine if Volusia County would be eligible for the Public Assistance Declaration.

FEMA Recovery Programs



Individual Assistance (IA) Program

- Funding or direct assistance to individuals, families, and businesses in an area whose property has been damaged or destroyed and whose losses are not covered by insurance.
- It is meant to help with critical expenses that cannot be covered in other ways.
- This assistance is not intended to restore damaged property to its condition prior to the disaster.



Local/County IA Damage Assessment Team Members

Representatives usually are:

- Property Appraiser Staff
- City Personnel

Team members should be trained in gathering information related to location, ownership, occupancy and insurance coverage of impacted residences and categorizing damage according to the criteria established by FEMA

Initial Damage Assessment

The effort by local authorities to collect data related to the extent of damage within a jurisdiction.

Joint Preliminary Damage Assessment

The coordinated effort by local, state, and federal authorities to validate damage data previously identified by state and local authorities to inform Presidential disaster declaration requests and federal disaster grant determinations.



Conduct Initial Damage Assessment (IDA)

- Damage Assessment Teams collect data to estimate the extent of damage

Send IDA Data

- Property Appraiser personnel sends data to state

IDA Verification

- State verifies the IDA data

Request Joint PDA

- State requests joint PDA with FEMA

Conduct Joint PDA

- FEMA, State, and Damage Assessment Teams conduct joint PDA to assess and validate damage

The PDA Process

Damage Assessment Methods

- Self-Reporting
 - Through VCPA website
- Door to Door Assessments
- Windshield Surveys
- IDAM Software





Safety Considerations

- Ask about safety considerations at the damage pre-briefing
- Be aware of your surroundings at all times
- If a situation appears dangerous, back out
- Use good judgment, emergency personnel may be delayed
- For all medical emergencies, call 9-1-1 immediately



Some Do's and Don'ts of the IDA/Joint PDA Process

Do

- Verify damage with visual inspection
- Only record disaster-related damages
- Determine insurance coverage
- Be sensitive with owners
- Consider impact to businesses
- Balance your time
- Be objective (*don't downplay, don't exaggerate*)
- Confirm damage occurred within the applicable incident period
- Look for waterline or debris line to determine water depth

Don't

- Collect any personally identifiable information
- Drive through flood waters
- Wear open toe shoes
- Visit sites that would put you in an unsafe situation
- Talk to anyone about something you are unsure about
- Smoke on site inspections
- Wear excessive perfume when sharing cars
- Drive or park in the yard



Old damage



Irrelevant Damage



Flood Line

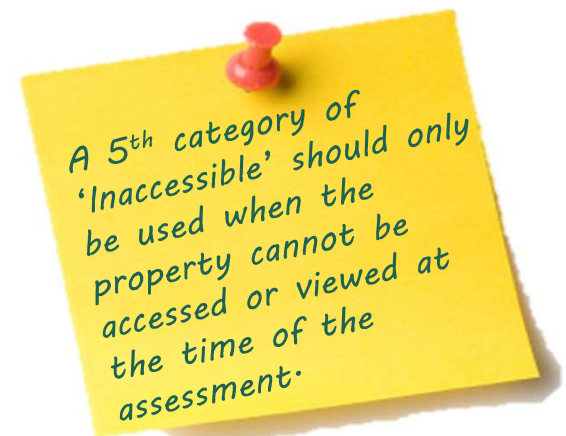
Damage Level Definitions

In order to standardize damage assessment vocabulary, FEMA has established four categories to describe damage to homes:

1. **Affected** – damage is mostly cosmetic
2. **Minor** – repairable non-structural damage
3. **Major** – structural damage that requires extensive repairs
4. **Destroyed** – total loss



These damage categories are not intended to align with other types of local assessments such as red or yellow tagging of damaged homes.



BIZ = Business



Affected Damage

Conventionally-Built Home

Minimal damage to the exterior and/or contents of the home.

- No damage affecting habitability.
- Water line in the crawl space or basement; essential living space or mechanical components are not damaged or submerged.
- Partial missing shingles or siding.
- Cosmetic damage (paint discoloration or loose siding).
- Broken screens, gutter damage and debris.
- Damage to an attached structure (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.

Habitability

FEMA defines “habitable” as safe, sanitary, and functional. “Safe” refers to being secure from disaster-caused hazards or threats to occupants, “sanitary” refers to being free of disaster-caused health hazards, and “functional” refers to an item or home capable of being used for its intended purpose.

Habitability

Safe – Sanitary - Functional



Conventionally Built Homes

- Missing shingles or siding
- Broken screens
- Cosmetic damage to siding
- Damage to attached structure
- Damage to landscaping, retaining walls, or downed trees that do not affect access to home

Affected *Wind* *Damage*



Conventionally Built Homes

- Any waterline in crawl space or basement when essential living space or mechanical components are not damaged or submerged
- Cosmetic (paint discoloration or loose siding)
- Broken screens, gutter damage and debris
- Damage to attached structure

Affected Flood



Minor Damage

Conventionally-Built Home

Wide range of damage that does not affect the structural integrity of the residence.

- Water line up to 18 inches in an essential living space.
- Damage to mechanical components (furnace, boiler, water heater, HVAC, etc.).
- Nonstructural damage to:
 - Roof components over essential living space (shingles, roof covering, fascia board, soffit, flashing, and skylight).
 - Interior wall components to include drywall, insulation.
 - Exterior components.
- Multiple small vertical cracks in the foundation.
- Damage to chimney to include, tilting, fallen, cracks, or separated from the residence.
- Damage or disaster related contamination to a private well or septic system.

Minor Wind Damage



Conventionally Built Homes

- Non-structural damage to roof components over essential living spaces
- Non-structural damage to exterior components
- Damage to chimney

Minor Flood



Conventionally Built Homes

- Waterline $\leq 18''$ in an essential living space
- Damage to mechanical components
- Non-structural damage to the interior wall component to include drywall, insulation
- Non-structural damage to exterior components
- Multiple small vertical cracks in the foundation
- Damage/disaster related contamination to private well or septic system

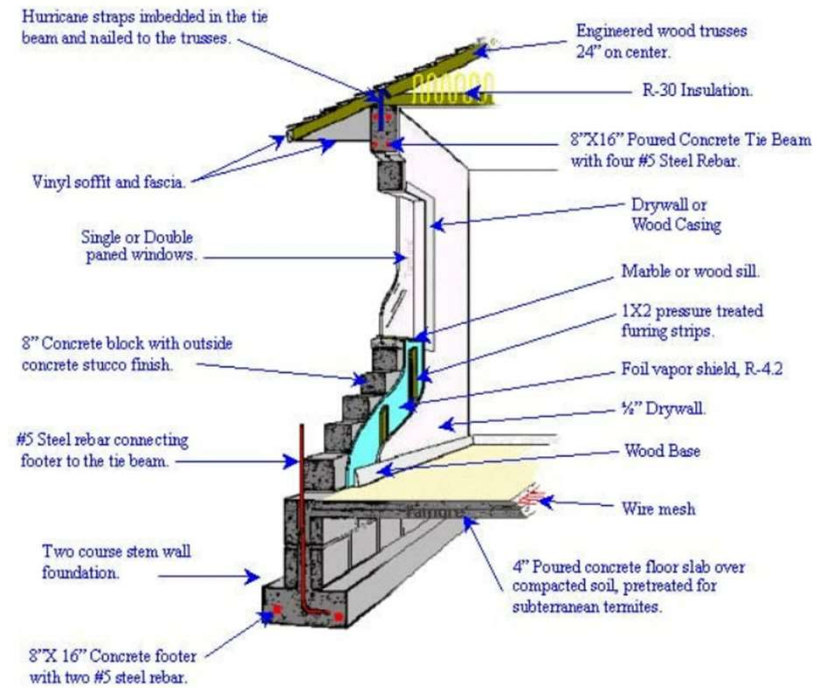
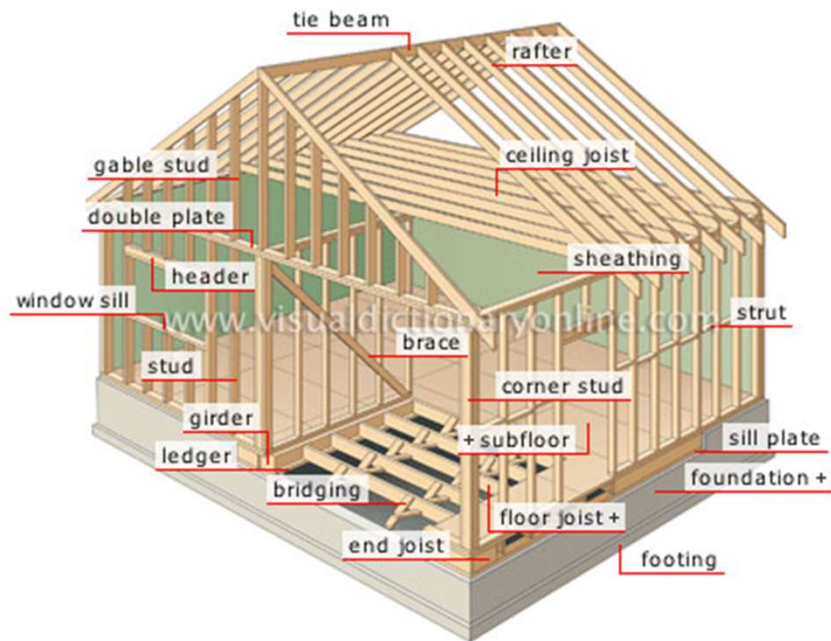


Major Damage

Conventionally-Built Home

Residence has sustained significant structural damage and requires extensive repairs.

- Water line is:
 - Above 18 inches in an essential living space.
 - Above the electrical outlets.
 - On the first floor of a residence with a basement.
- Failure/partial failure to structural elements of the roof over required rooms (rafters, ceiling joists, ridge boards, etc.).
- Failure/partial failure to structural elements of the walls to include framing, sheathing, etc.
- Failure/partial failure to foundation to include crumbling, bulging, collapsing, horizontal cracks of more than two inches, and shifting of the residence on the foundation of more than 6 inches.





Major Wind Damage

Conventionally Built Homes

- Failure or partial failure of structural elements of the roof and/or exterior walls
- Failure or partial failure to foundation to include $> 2''$ horizontal cracks or $> 6''$ foundation shifts



Major Flood Damage

Conventionally Built Homes

- Waterline > 18" in an essential living space, a waterline above the electrical outlets, or a waterline on the first floor of a residence when basement is completely full
- Failure or partial failure to structural elements of the walls to include framing, sheathing, etc.
- Failure or partial failure to foundation to include crumbling, bulging, collapsing, horizontal cracks > 2", and shifting of the residence on the foundation > 6"



Destroyed Damage 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 major structural components (e.g., collapse of basement walls/foundation, walls, or roof)
- Only foundation remains.
- A residence that will require immediate demolition or removal because of disaster-related damage or confirmed imminent danger (e.g., impending landslides, mudslides, or sinkholes).



Destroyed Wind Damage

Conventionally Built Homes

- Complete failure of 2 or more structural components
- Only foundation remains
- Require demolition or removal because of disaster related damage or confirmed imminent danger (impending slope failure or ground collapses)



Destroyed Flood

[illegible]

FEMA Field Sheet Guidelines

- Fill in the event name, current date, and your team member names on ALL sheets
- Write using ALL CAPS so it is easier to read
- Fill in the property address. Include the direction if any. It is also helpful to put in the city initials
- Enter alternate key number, if known. If not, leave blank
- Record the Type, Occupancy, Insurance and Low-Income information under the damage category you have assigned
- Always annotate in inches for flood depth

FEMA Field Sheet - TYPE

Initial Damage Assessment Housing and Business - Field Sheet

Event: _____ As of: _____ Team Member(s): _____ Page _____

VOLUSIA COUNTY PROPERTY ADDRESS				ALTERNATE KEY	AFFECTED				MINOR				MAJOR				DESTROYED				INACCESSIBLE	SECONDARY	FLOOD DEPTH	
HSE/BIZ #	DIR	STREET NAME	CITY		TYPE	O	R	INS	LO	TYPE	O	R	INS	LO	TYPE	O	R	INS	LO	TYPE				O

SF

- **Single Family (SF):** A residential structure designed to host one family, sharing no walls or structural elements with another dwelling.

- **Multi-Family (MF):** A residential structure designed to host more than one family, potentially sharing walls or structural elements with another dwelling.

- **Mobile Home (MH):** A residential structure with no permanent foundation that may be readied for mobile transport.

- **Business (BIZ):** A structure whose sole use is that of a commercial, industrial or professional enterprise.

MF

MH

BIZ

FEMA Field Sheet – Occupancy Types

Volusia County
FLORIDA

Event: _____
As of: _____

Initial Damage Assessment Housing and Business - Field Sheet

Team Member(s): _____

Page _____

VOLUSIA COUNTY PROPERTY ADDRESS				ALTERNATE KEY	AFFECTED				MINOR				MAJOR				DESTROYED				INACCESSIBLE	SECONDARY	FLOOD DEPTH									
HSE/BIZ #	DIR	STREET NAME	CITY		TYPE	O	R	I	N	S	LO	TYPE	O	R	I	N	S	LO	TYPE	O				R	I	N	S	LO	TYPE	O	R	I

- **Owner (O):** Person who owns and lives on property
- **Renter (R):** Person who lives on property rents from the owner of the property
- **Secondary:** Person who owns property, only occupies the property part-time in addition to his/her primary residence (*ex. beach-front homes, vacation properties*)

Assistance estimates often depend on whether they own the structure in which they reside and have no other home to return to, thus it is key to assess property ownership

FEMA Field Sheet – Assistance Types

Volusia County
FLORIDA

Event: _____
As of: _____

Initial Damage Assessment Housing and Business - Field Sheet

Team Member(s): _____ Page _____

VOLUSIA COUNTY PROPERTY ADDRESS				ALTERNATE KEY	AFFECTED				MINOR				MAJOR				DESTROYED				INACCESSIBLE	SECONDARY	FLOOD DEPTH
HSE/BIZ #	DIR	STREET NAME	CITY		TYPE	O	I	INS LO	TYPE	O	I	INS LO	TYPE	O	I	INS LO	TYPE	O	I	INS LO			

Insured (INS): A structure covered by an insurance policy for the type of event which caused damage

- Renters and low-income residents are less likely to have insurance
- Homeowners with mortgages are required to have wind insurance
- Older neighborhoods may not have insurance
- Most new homes around a large body of water have flood insurance
- When talking to survivors, first ask if they own the home (*indicates wind insurance*), then ask if they have flood insurance

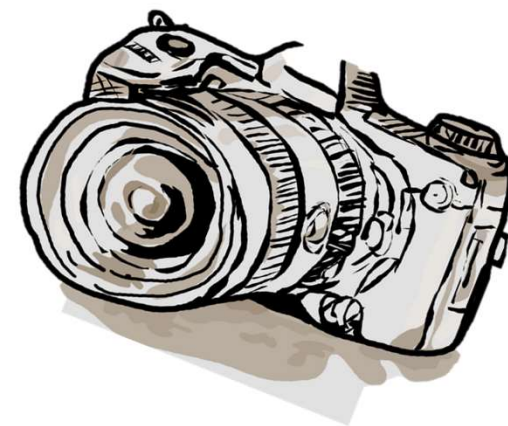
Low-Income (LO): A structure whose occupant has limited resources to assist in their recovery

- Don't ask survivors if they are low-income (*offensive*)
- Make best judgment based on area statistics

Best Practices for Damage Photographs

- Take a reference photo with the address number visible or with GPS coordinates
- Take photos and close-ups that would be clear indicators of the assigned level of damage
 - Do **not** include photos that are not of damage (*exc. Reference photos*)
 - Do **not** include photos that contain faces
- Take close-up photos to show damage details (*ex. High water lines on walls for flood events, missing shingles for wind events, etc.*)
- Take a photo that shows the scale and extent of the damage relative to an object of known size (*sometimes close-up photos do not allow for perspective*)
- Ensure lighting and perspective allow a viewer to clearly see damages

****Photo is required for all properties marked as 'Major' or 'Destroyed'****



Important Notice



IMPORTANT

When assigning damage levels, it is important to recognize that FEMA assistance is not intended to restore damaged property to its pre-disaster condition but rather to provide survivors with a safe, sanitary and functional dwelling from which they can continue their recovery.

Mobile Homes within Mobile Home Parks



- Individual mobile homes within a mobile home park (MHP) have separate field forms that should be used to capture damage estimates
- VCPA will provide you with the field forms for each of the MHPs within your city at the pre-briefing
- You should ride through each MHP and record any damages you find for each of the addresses on your field form
- **If no damages are found in the MHP, please indicate “no damages” on your field form**
- Turn in all completed MHP field forms whether there are damages or not to the Property Appraiser’s office at the end of each day
- VCPA will calculate the amount of damages within the park, based on data received



Affected Damage

Manufactured Home

Minimal damage to the exterior and/or contents of the home.

- No damage affecting habitability.
- The dwelling's frame is not bent, twisted, or otherwise compromised.
- No structural components of the dwelling have been damaged.
 - Such as windows, doors, wall coverings, roof, bottom board insulation, ductwork, and/or utility hook up.
- Damage to an attached structure such as a porch, carport, garage, or outbuilding not for commercial use.



Minor Damage Manufactured Home

The residence is damaged and requires minimal repairs.

- Water line is below the floor system.
- Skirting or HVAC is impacted.
- There is no structural damage to the residence, and it has not been displaced from the foundation.
- Nonstructural components have sustained damage (windows, doors, wall coverings, roof, bottom board insulation, ductwork, and/or utility hook up).
- Skirting or HVAC is impacted.



Major Damage Manufactured Home

The residence has sustained structural or significant damage that require extensive repairs.

- Water has come into contact with the floor system.
- The residence has been displaced from the foundation, block or piers and other structural components have been damaged.



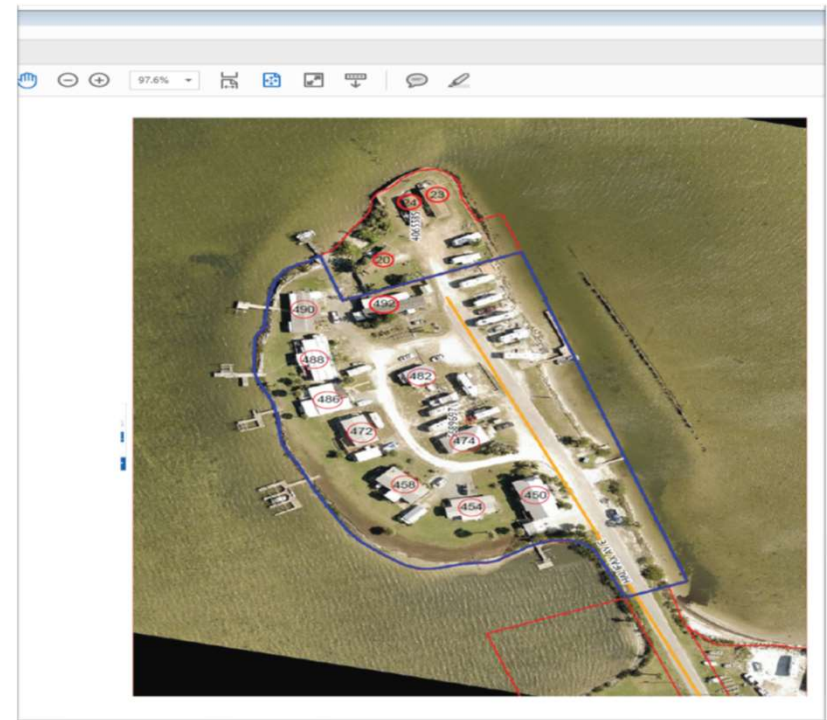
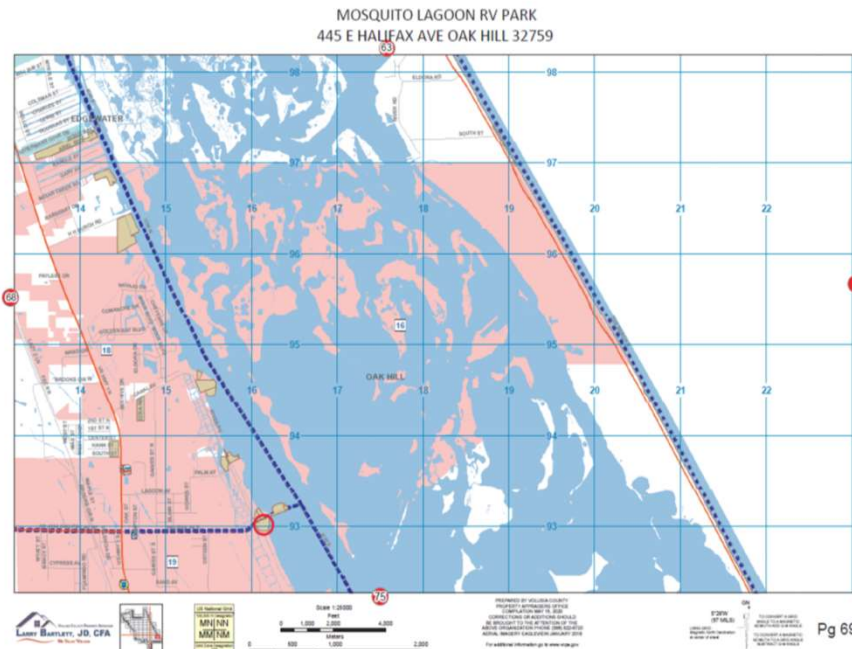
Destroyed Damage Manufactured Home

The residence is a total loss.

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

Mobile Home Park – Location on Map

Mobile Home Park - Aerial with Address Point



MOBILE HOME DAMAGE ASSESSMENT FIELD SHEET																						
IF DAMAGED MOBILE HOME IS NOT LISTED HERE, USE BLANK MOBILE HOME DAMAGE SHEET AND LIST - ONE SHEET PER MOBILE HOME PARK																						
AK #	PID	NBHD	MILL	GRP	LUC	PARK NAME	UNIT	HOUSE NUMBER	DIR	STREET NAME	STREET TYPE	CITY NAME	TYPE	AFFECTED	MINOR	MAJOR	DESTROYED	INACCESSIBLE	FLOOD DEPTH	OWN/RENT	INSURANCE	LOW INC
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		6	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		10	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		12	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		13	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		14	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065386	950400000012	7460	604	3601		Mosquito Lagoon RV		20	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065387	950400000012	7461	605	3602		Mosquito Lagoon RV		23	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065388	950400000012	7462	606	3603		Mosquito Lagoon RV		24	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		402	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		403	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		409	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		450	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		454	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		458	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		472	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		474	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		482	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		486	E	Halifax	Ave	Oak Hill	DW:Double Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		488	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		490	E	Halifax	Ave	Oak Hill	SW:Single Wide									
4065385	950400000012	7459	603	3600		Mosquito Lagoon RV		492	E	Halifax	Ave	Oak Hill	SW:Single Wide									

Mobile Home Park – Pre-populated Field Form

A DJI Phantom 4 Pro drone is shown in flight, centered in the frame. The drone is black with four propellers. A camera is mounted underneath. The background is a solid dark green color. The text "Hurricanes Ian and Nicole" is overlaid in white, centered horizontally and partially covering the drone.

Hurricanes Ian and Nicole

2022 SEASON



DeLand



Deltona





30SEP2022
09:06:36
UTC-4.0

MAN

Daytona Beach

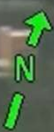
EOW

9W

DFLT

AUTO
50

∞



00-

-01-

-02-

W : OFF - DISARM

ACFT
29:11:21N 044°
81:01:55W 1025FT

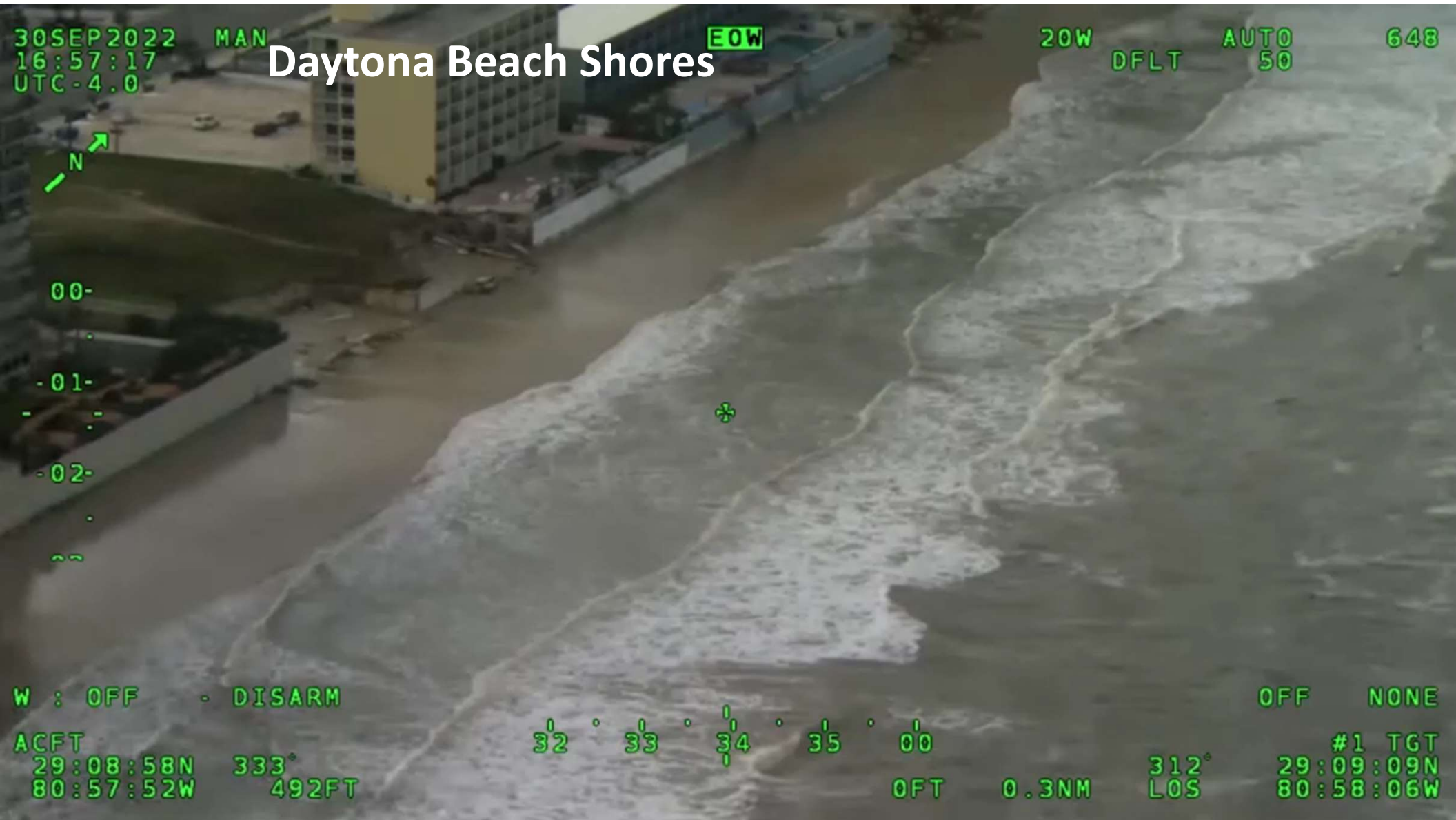
28 29 30 31 32

8FT 0.6NM

344°
LOS

#1 TGT
29:11:56N
81:02:07W

OFF NONE



Daytona Beach Shores

30SEP2022
16:57:17
UTC-4.0

MAN

EOW

20W

DFLT

AUTO
50

648

N

00-

-01-

-02-

~

W : OFF - DISARM

OFF NONE

ACFT
29:08:58N 333°
80:57:52W 492FT

32° 33° 34° 35° 00°

0FT 0.3NM

312°
LOS
#1 TGT
29:09:09N
80:58:06W

Ponce Inlet







01OCT2022
14:50:38
UTC+0.0

MAN

SPA

EOW

9W

AUTO

∞

Baxter Point (10/01/22)

DFLT

50



-010°



053°

W : OFF - DISARM

OFF NONE

ACFT
28:37:07N 170°
80:58:02W 574FT

2FT 0.3NM

221°
LOS #1 TGT
28:36:54N
80:58:15W



James Bailey or Josh Heiland

jamesbailey@volusia.org

jheiland@volusia.org