Addressing Planning Gaps: Identifying Climate Related Risks to Affordable Housing

Presentation to The Southeast Florida Climate Compact
RCAP Implementation Workshop June 28, 2023

CJ Reynolds, Director of Resilience and Disaster Recovery, Florida Housing Coalition
After Ian, river flooding menaces Florida inland towns

By ADRIANA GOMEZ LICON and CURT ANDERSON  October 1, 2022

2022
Hurricane Ian Cat. 5
Hurricane Nicole Cat. 1

Initial Damage Assessments

Residential
Destroyed  

_traffic_light_ 5,076

Major  

_traffic_light_ 13,533

Minor  

_traffic_light_ 14,418

Affected  

_traffic_light_ 17,287

Total  

_traffic_light_ 50,314
Losing Housing to Disasters and Disconnects

• Not replacing affordable and workforce units post-disaster.
• Multi-family properties lack flood insurance or are underinsured.
• Single-family residential insurance issues! Smaller/older homes in low-income areas receive smaller payouts. Substantial numbers of households with paid-off mortgages do not have insurance.
• Long Reconstruction and Development Timelines.
• Housing, resilience planning, development and capital budget alignment.
Impacts to Low Income Households More Devastating

Low-income households, particularly renters, have more difficulty obtaining adequate post-disaster housing assistance.

Often, lower-cost housing options are more vulnerable due to age and structure type.
What Can We Do?
Prepare for the Impacts of a Changing Climate

Define risks and develop programs to reduce impacts in all housing programs

- Supportive housing (units and services)
- Affordable rental housing
- Affordable home ownership

The Affordable Housing Continuum

Supportive Housing (Affordable Units + Services)
- Homeless
- Older adults
- People with disabilities
- Other special needs

Affordable Rental Housing
- Public Assisted/Subsidized (FHFC, HUD, USDA)
- Vouchers
- NOAH (Naturally Occurring Affordable Housing)

Affordable Home Ownership
- New affordable construction
- Rehab + weatherization programs
- Shared equity (e.g. community land trust)
- Low-interest loans
Community and Housing Vulnerability Assessment

1. Where is affordable housing located relative to flood hazards (an heat)?
2. Where are the flood hazard areas in relation to future residential development and special districts?
3. What housing is more vulnerable because of other factors? (structure type, age, subsidy expiration)?
4. Where are people that may be more vulnerable due to low-income, age, special needs?
5. How can housing and flood exposure characteristics inform mitigation and adaptation strategies?
Resilient Florida and State Policy

In 2021, FS. § 380.093 established statewide programs for adapting to flooding and sea level rise.

• FDEP Resilient Florida Program provides grants to counties, municipalities and others to conduct vulnerability assessments (VA), develop resilience plans, and fund adaptation of critical assets.
  
  "Affordable public housing" is defined as a critical asset.

• Local VA data and maps submitted to FDEP by 2023 or 2024.
  • You can easily integrate Assisted Multi-Family properties.
Defining Your Flood Risks

Floodplain managers, Planning, Housing staff, EM, and consultants collaborate to develop vulnerability assessment -- risks, exposure and vulnerability assessment of Assisted Multi-Family properties and LMI Neighborhoods

- **Flood risks**: Major rain events, surge, sea level rise, compound risks
- **Timeframes**: today, 2040 and 2070 (required by statute) and 2100
- **Zones**: NFIP (insurance) vs. evacuation
- **Parcel factors**: land elevation, soil, drainage, infrastructure
- **Building factors**: elevated, construction, year built
CLIMATE HAZARDS

Planning Horizon:
• Current, 2040, 2070 (FDEP required)
• 2100,
• Others as defined by planning requirements.

Flood Risks
• Sea Level Rise
  • NOAA 2017 Intermediate Low and Intermediate High
  • NOAA 2022 Intermediate Low/Intermediate High
  • Others per risk tolerance
• Surge
• High Tide
• Extreme flood events – 1% and 2%

Heat Hazards
• Follow State and Local Mitigation Strategy…Heat, Drought,
POPULATION VULNERABILITY

Data sets and tools – Census, CDC SVI etc.

FEMA Resilience and Analysis Planning Tool (RAPT)

Includes 27 demographic layers: 22 community resilience challenges indicators identified from peer-reviewed research. 26 available at county level, 19 at census tracts; 17 with Tribal boundaries.

https://rapt-fema.hub.arcgis.com/
PLACE VULNERABILITY

- Physical Location – special considerations
  - Barrier islands, coastal high hazard area, Flood Hazard Area
- Infrastructure proximity/functionality
- Access to Evacuation/Evacuation Level of Service
- Access to Parks, Open Spaces
- Access to healthy food, medical/dental care
HOUSING VULNERABILITY

Structural Vulnerability

• Repetitive Loss Properties
• Building Elevation
• Types of Structure
• Age of Structure
Creating a Regional Snap-Shot of Affordable Housing
Example: Seven Counties – Citrus to Sarasota in 2021

All Residential Parcels
~1.89 million residential units

Publicly Subsidized (AHI)
~48,000 AHI units

Affordable Market-Rate (NOAH)
~140,000 NOAH units

Mobile Home Parcels*
~151,800 mobile homes

* 2021 data, Does not include households with housing vouchers
Example: REACH Regional Housing Initiative

Collaboration between TBRPC, UF Shimberg Center Housing Studies, FHC, USF, United Way

Objective and Products:

Define publicly assisted housing and unassisted housing stock vulnerable to coastal flood hazards across the 7-county Resilience Coalition footprint

- Mapping tool to display affordable housing exposed to coastal flood hazards (https://arcg.is/1rXSLO)
- Enable housing characteristics to be queried, summarized, visualized, and downloaded for further analysis on the desktop
- Enable downloading of flood hazard and housing data layers for advanced analysis and incorporation with local data

Benefits:

- Includes regionally standardized flood hazard datasets, publicly assisted and unassisted/affordable housing (unique and useful) dataset for local governments
Flood Hazards Exacerbate Deficit of Affordable Housing

Potential Deficit of Affordable Units

Affordable Properties Exposed to 1+ Flood Hazards

66% of subsidized and 62% of market-rate affordable housing is in a flood hazard area (Tampa Bay Regional REACH analysis 2021)
Enhancing Regional and Local Understanding
REACH Flood Hazard Exposure Index (Cumulative, Both Scenarios, 2020-2070)

Quantify current and future coastal flood exposure using several hazard layers, including:

- FEMA floodplain (100, and 500-year)
- Storm surge (Cat 1-3 and Cat 4-5)
- Sea level rise*
- King tide flooding + SLR*
- 10-year storm surge + SLR*
- Post Hurricane Irma flooded lands

Includes 2 climate scenarios:

- NOAA 2017 intermediate-high (IH) and intermediate-low scenarios (IL)
- Years 2020, 2040, 2070

Overall exposure is a sum of values: None, Low, Medium, and High

- None = 0 flood hazards
- Low score = 1-7 flood hazards
- Medium score = 8-15 flood hazards
- High score = 16-23 flood hazards
## Example: REACH Flood Hazard Data Inputs

<table>
<thead>
<tr>
<th>Data Layer</th>
<th>Key Attributes</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Flood Insurance Rate Map (DFIRM)</td>
<td>100-year (1%) and 500-year (0.2%) floodplains</td>
<td>FEMA &amp; FGDL, 2020</td>
</tr>
<tr>
<td>National Storm Surge</td>
<td>High frequency (categories 1-3) and low frequency (cats 4&amp;5) surge</td>
<td>NOAA National Hurricane Center, 2018</td>
</tr>
<tr>
<td>King Tide + SLR</td>
<td>King tide inundation projections + all 6 SLR inundation projections</td>
<td>AECOM &amp; TBRPC, 2021</td>
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<td>Regional Storm Surge + SLR</td>
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<td>AECOM &amp; TBRPC, 2021</td>
</tr>
<tr>
<td>Post-Hurricane Irma Flooded lands</td>
<td>Coastal and inland flooded lands</td>
<td>Verisk’s Atmospheric and Environmental Research, 2017</td>
</tr>
</tbody>
</table>
## Example REACH: Data Inputs and Sources

<table>
<thead>
<tr>
<th>Housing + Households</th>
<th>Data Layers + Notes</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisted Housing + Households</td>
<td>Assisted Housing Inventory, Florida Housing Data Clearinghouse, accessed April 19, 2021</td>
<td>UF Shimberg Center for Housing Studies, 2021</td>
</tr>
<tr>
<td>All Residential Parcels</td>
<td>UF GeoPlan 2020 Statewide Parcel Data based on FDOR County and municipal property tax data</td>
<td>FGDL, Florida Department of Revenue (FDOR), 2020</td>
</tr>
<tr>
<td>Naturally Occurring Affordable Housing (NOAH)</td>
<td>Shimberg Center analysis of DOR residential parcel data to identify affordable market-rate properties (based on TBRPC regional average rent threshold and other spatial characteristics)</td>
<td>UF Shimberg Center for Housing Studies, 2021</td>
</tr>
<tr>
<td>NOAH Household Attributes</td>
<td>U.S. Census Bureau, 2015-2019 American Community Survey Details on population variables are available <a href="#">here</a></td>
<td>U.S. Census Bureau, 2019</td>
</tr>
<tr>
<td>Social Vulnerability</td>
<td>CDC Social Vulnerability Index and U.S. Census Bureau’s ACS Demographics</td>
<td>CDC, U.S. Census Bureau, 2018</td>
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UF Shimberg Housing Data Portal

State List – Assisted Housing Inventory
Sort by County and funding
http://flhousingdata.shimberg.ufl.edu/assisted-housing-inventory

Housing Needs Data Portal for Local Governments

• Tenure (renters and homeowners), income, AMI, cost burden, and demographics
• Occupations, average income, rent
• Assisted housing property details, funding program, tenant information
• Rental units above/below $1,000
• Affordable rental surplus/deficit
• Link: http://flhousingdata.shimberg.ufl.edu/reach
# Combining Indicator Sets for Decision Making

## Assessment Data Set by Development Type

<table>
<thead>
<tr>
<th>Alligation (existing)</th>
<th>Goal: Improve resiliency by improving existing housing</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>Structure</td>
<td>Place</td>
</tr>
<tr>
<td>Concentrations of Vulnerable Populations</td>
<td>Transportation Disadvantaged</td>
<td>Flood Zone</td>
</tr>
<tr>
<td>Vehicle Access</td>
<td>Year Built Structure</td>
<td>Transit Access (Commute Time) + Flood Zone</td>
</tr>
<tr>
<td>Household Income</td>
<td>Year Built Structure or Housing Condition</td>
<td>Non-Evacuation Zone</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Redevelopment (existing)</th>
<th>Goal: Improve resiliency by replacing existing housing</th>
<th>Place</th>
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<td>People</td>
<td>Structure</td>
<td>Place</td>
</tr>
<tr>
<td>Rent to Income Ratio (ALICE) or Housing Burden</td>
<td>Housing Type (ex: mobile home, wood frame multi-family, etc.)</td>
<td>Non-Evacuation Zone (lay development outside of the evacuation zone)</td>
</tr>
<tr>
<td>Ownership + Household Income</td>
<td>Housing Condition (Inspected, Insurance reduction, Insured status, maintenance calls)</td>
<td>Non-Evacuation Zone</td>
</tr>
<tr>
<td>Assisted Housing</td>
<td>Year Built</td>
<td>Non-Evacuation Zone</td>
</tr>
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<tr>
<th>New Construction</th>
<th>Goal: Locate new housing in more resilient context</th>
<th>Place</th>
</tr>
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<tr>
<td>People</td>
<td>Structure</td>
<td>Place</td>
</tr>
<tr>
<td>Diversity Index</td>
<td>Existing Infrastructure (sewer, water, etc.)</td>
<td>Property Value + Transportation Cost (VMT or length of transit time) + Non-Evacuation Zone</td>
</tr>
<tr>
<td>Household Income</td>
<td>Density of Services (schools, fresh food, health)</td>
<td>Level of Service</td>
</tr>
<tr>
<td>Neighborhood Poverty</td>
<td>Brownfield (redevelopment) + Proximity to Hazardous Site</td>
<td>Flood Zone</td>
</tr>
</tbody>
</table>
10 Principles for Resilient Housing Leadership

1. Know where your affordable housing stock is vulnerable to flooding.
2. Know who lives in assisted housing that is at risk.
3. Address environmental hazards and infrastructure factors to improve community health.
4. Ensure that county/city assisted multi-family properties are sufficiently insured.
5. Adequately fund and align SHIP, HHRP, and other public funding programs to implement resilient repairs and mitigation.
10 Principles for Resilient Housing Leadership

6. Resilient design and construction criteria are defined in RFPs and procurement documents for new development.

7. The local Affordable Housing Advisory Committee (AHAC) involves staff and stakeholders with expertise in resilience and sustainability.

8. Affordable housing stock is integrated in infrastructure planning.

9. Local Housing Action Plan acknowledges/integrates resilience and sustainability goals.

10. Local Disaster Recovery planning includes Housing Recovery chapter for all phases of disaster.
THANK YOU!!

FHC Guide: "Creating a Local Housing Disaster Recovery Strategy"

https://flhousing1.org/Local_Disaster_Housing_Strategy

Check out the Keep Safe Florida resources (upcoming session)

Important new tools to support portfolio and property risk-assessment tools for multi-family properties
FHC Technical Assistance

- Land-Use Planning, density
- Plan cross-walks/updates
- HUD Consolidated planning, SHIP & HHRP
- Vulnerability Assessments and Scenario Planning
- Community Land Trusts
- Disaster Preparedness and Recovery Planning
- Local Resilient Housing Workshops/Conferences
- Reducing Homelessness
- New Development

For more information, contact: Reynolds@flhousing.org