

# Post Disaster Emergency Housing



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# Our Thanks to the Florida Housing Catalyst Program



**AFFORDABLE HOUSING CATALYST PROGRAM**

**Sponsored by the Florida Housing  
Finance Corporation**



we make housing affordable™



## 22/23 Catalyst Training Schedule

SPONSORED BY THE STATE OF FLORIDA, THROUGH THE  
FLORIDA HOUSING FINANCE CORPORATION'S  
AFFORDABLE HOUSING CATALYST PROGRAM



# 22 23 Catalyst Training Schedule

Download at

<https://flhousing.org/wp-content/uploads/2022/08/Catalyst-Training-Schedule-2022-23-2022-08-02.pdf>

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# AHAC Orientation Part 1



August 24 at 2 pm

[https://us02web.zoom.us/webinar/register/WN\\_tGGTUohvRiS7WFBICBGKdQ](https://us02web.zoom.us/webinar/register/WN_tGGTUohvRiS7WFBICBGKdQ)



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# AHAC Orientation Part 2



September 16 at 10 am

[https://us02web.zoom.us/webinar/register/WN\\_2\\_mfjvxdRNqiludbuJiU4w](https://us02web.zoom.us/webinar/register/WN_2_mfjvxdRNqiludbuJiU4w)



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# And Now...

## The Posting of the PowerPoint

PowerPoint and Evaluation  
are available in Chat



# Join Us! Weekly Hurricane Update

**Webinars** on Fridays 1:30- 2:30

Register at

<https://www.flhousing.org/events/>



# Diverse Topics Addressed on the Weekly Update

- Do hurricanes contribute to gentrification and loss of affordable housing?
- How the world's first Chief Heat Officer plans to keep Miamians cool
- Florida Housing's Business Continuity Planning: maintaining operations following a disaster
- Hurricane Michael green certified rebuilding funding
- Chipola Area Habitat for Humanity celebrates the completion of four Rural Studio homes



# Overview of Today's Webinar

- FDEM's Statewide Planning for Post-Disaster Temporary Housing
- Local Level: Post-Disaster Rapid Deployment of Emergency Housing Supply
- Advanced Component Construction from Rural Studios at Auburn University
- Crisis Housing Solutions

# Emergency Housing is Needed During Response Phase of Disaster Management

- **Planning:** pre-disaster recovery planning
- **Mitigation:** reduce future vulnerability, lessen the impact of disasters
- **Response:** actions that must be carried out when an emergency exists or is imminent
- **Recovery:** bring a community back to a new normal after disaster

# FDEM's Statewide Planning for Post-Disaster Temporary Housing



Ian Ohlin

State Individual Assistance Officer

Florida Division of Emergency

Management

[Ian.Ohlin@em.myflorida.com](mailto:Ian.Ohlin@em.myflorida.com)

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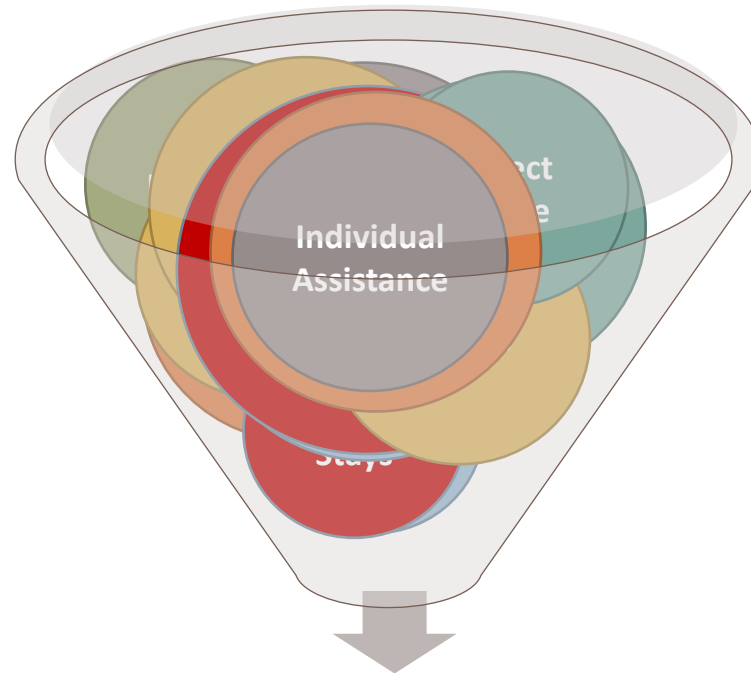


# What is Disaster Housing?

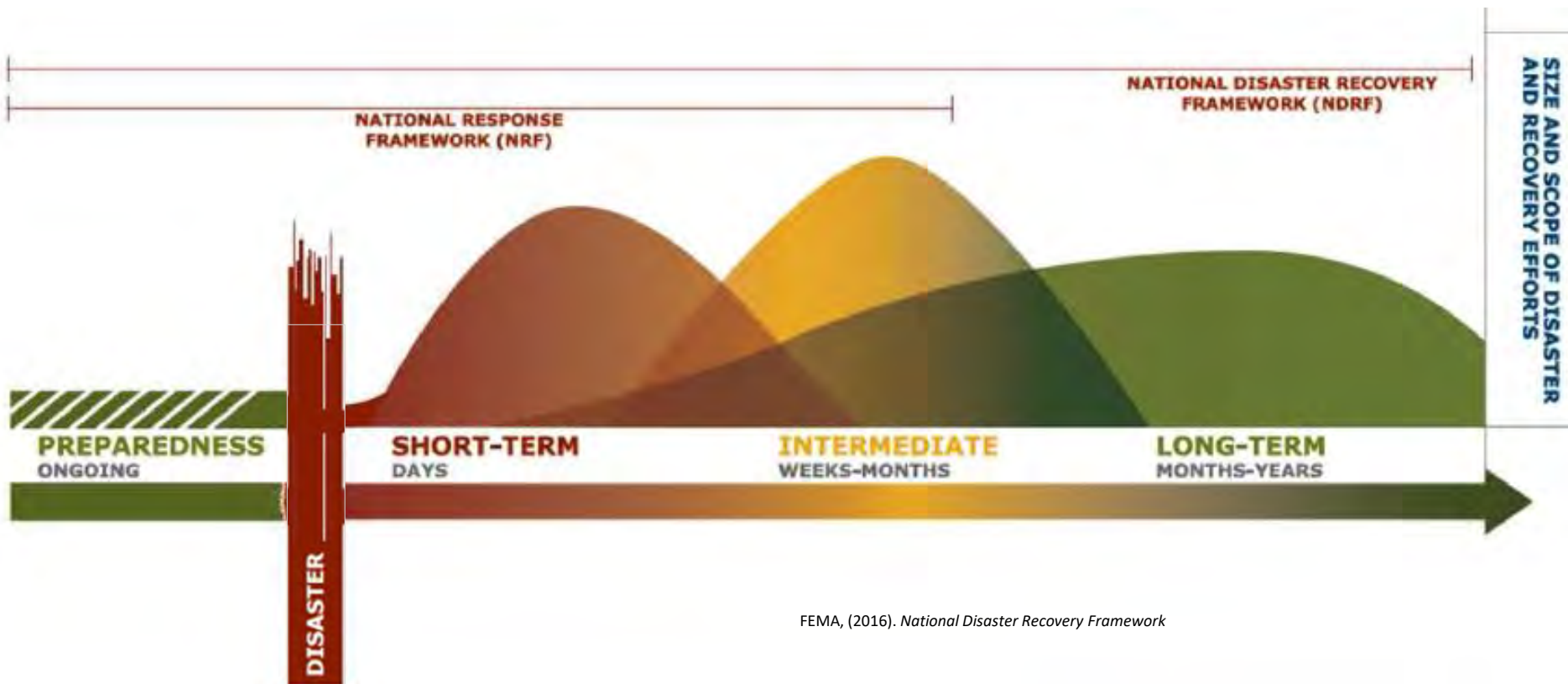




# What is Disaster Housing?

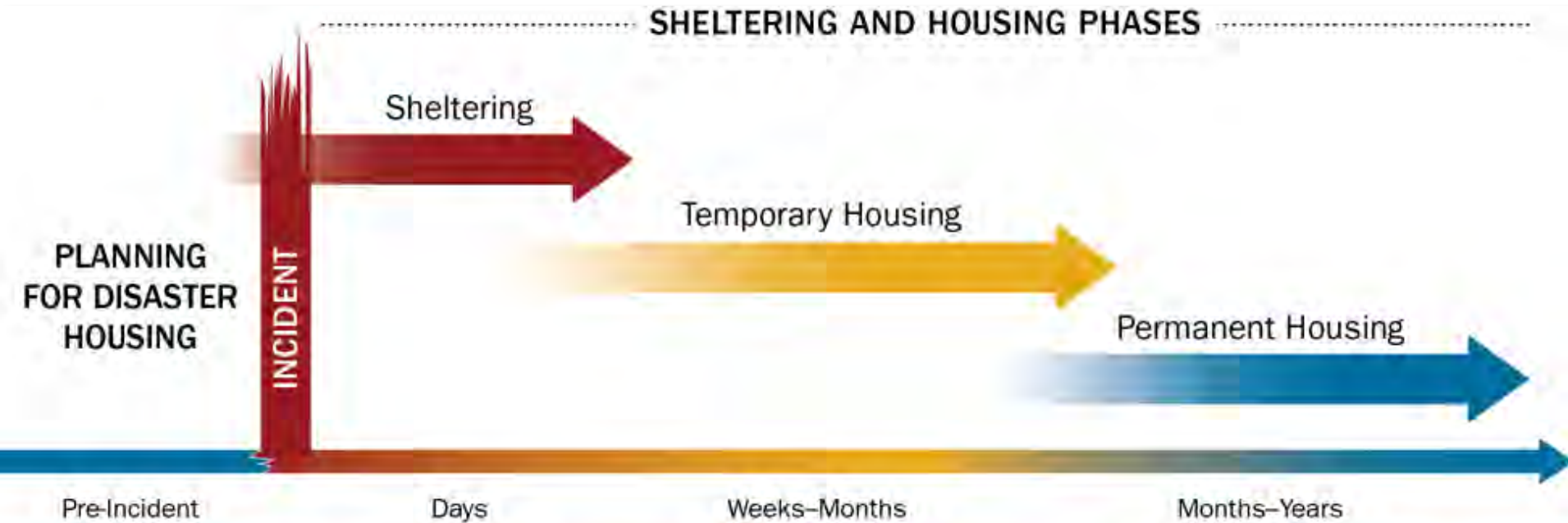


**Housing is a Need**



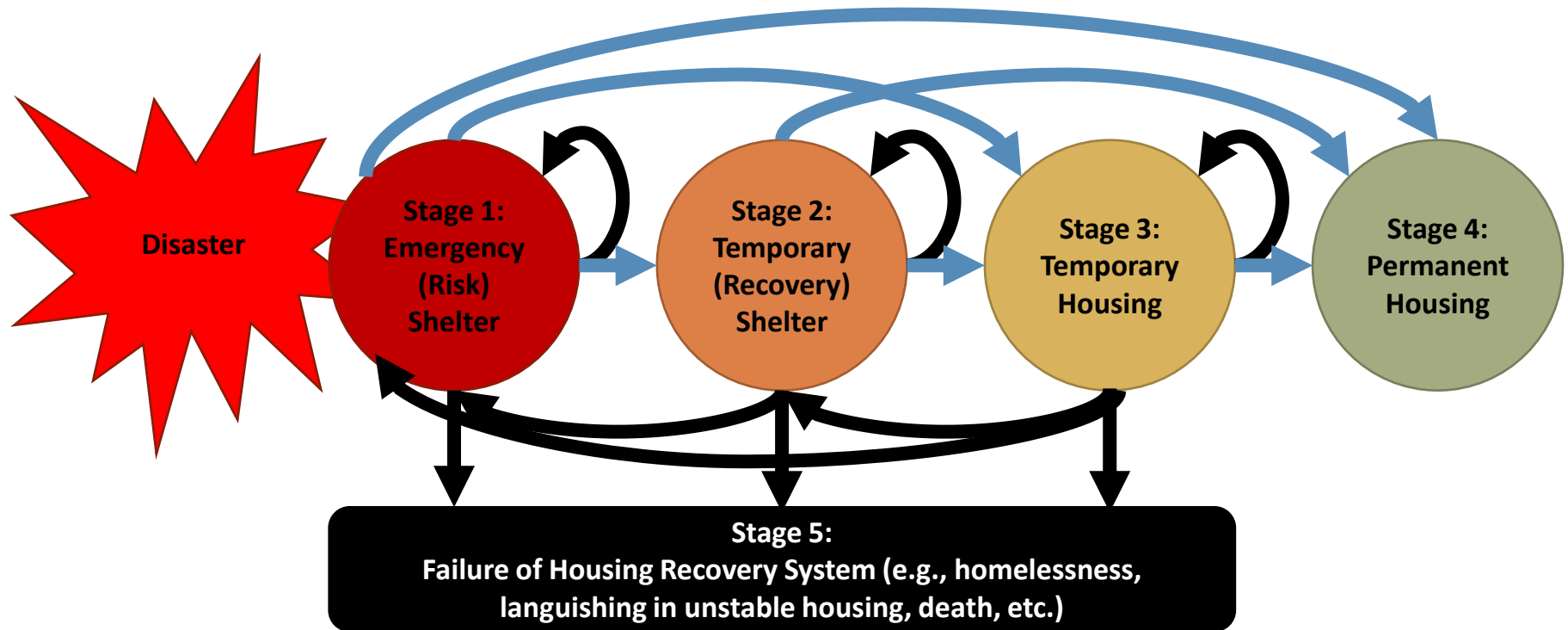
FEMA, (2016). *National Disaster Recovery Framework*

# Disaster Sheltering and Housing Phases



FEMA, (2020). *Planning Considerations for Disaster Housing*

# Disaster Housing is not Linear – it's a Continuum



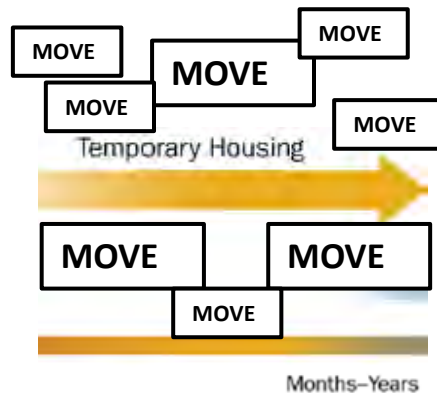
Adapted from Sutley and Hamideh (2020). *Postdisaster Housing Stages: A Markov Chain Approach to Model Sequences and Duration Based on Social Vulnerability*. *Risk Analysis*, Vol. 40, No. 12.



# Temporary Housing

## PHASE 4 SHELTER CLOSES

- Residents choose appropriate housing solution



### What are the types?

- Hotels
- Motels
- Short-term rentals
- Long-term rentals

### How do you get them?

- Financial Assistance
- Repair
- Replace
- VOAD Support
- Private Sector Support

### What are the barriers?

- Lack of permanent housing stock
  - Apartments
  - Condominiums
  - Houses
- Restrictive Zoning
- Updated Building Codes

### ***Catastrophic event options:***

- Transitional Sheltering Assistance (TSA)
- Manufactured Homes
- Recreational Vehicles (RVs)

**Case Management!**



- Construction of kit homes
- Lease or purchase of single or multifamily homes, apartments or condominiums
- Modular, manufactured or panelized housing
- Rehabilitated single or multifamily homes
- Permanent housing construction

**Survivors decide when they are in permanent housing.**

# Why is Disaster Housing Important?

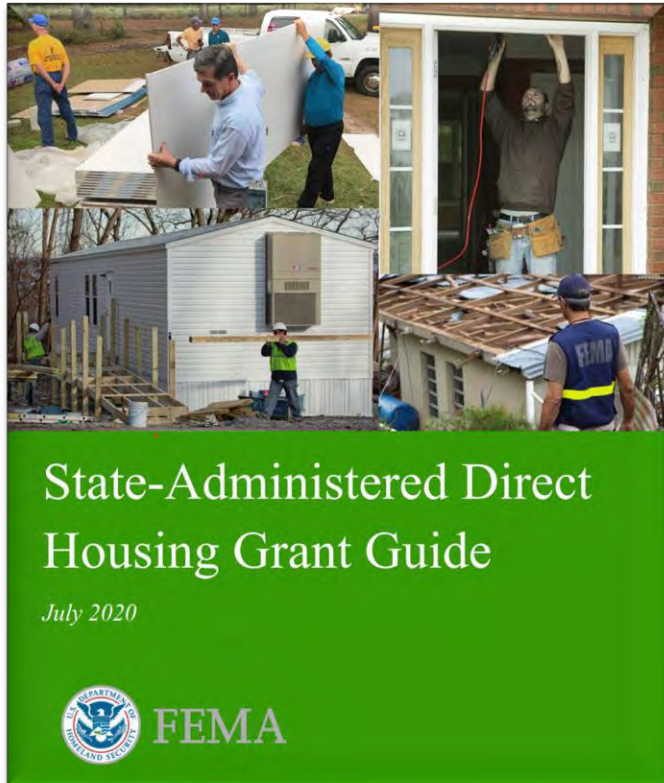


# Case Study: Hurricane Michael (DR-4399-FL)





# State Administered Direct Housing



- In the Disaster Recovery Reform Act of 2018, FEMA developed a pilot program whereby States can administer their own housing missions.
- Florida participated in this pilot in order to utilize FEMA's technical assistance to develop our State Housing Strategy and Administrative Plan.

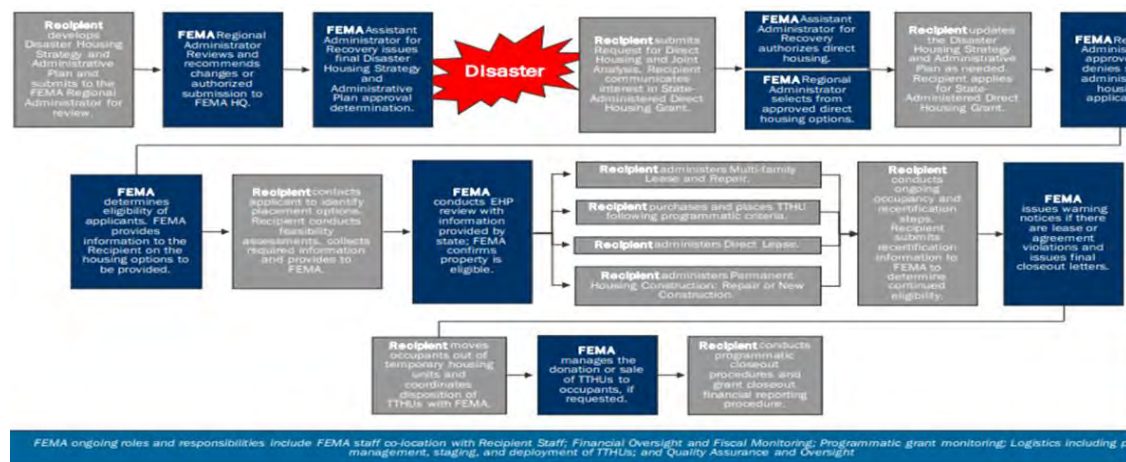


Figure 7: Recipient and FEMA Roles and Responsibilities Flowchart

# State Administered Direct Housing

- In preparation for future State-Administered Direct Housing programs, the State of Florida issued a Request for Proposals to vendors in Jan. 2021 for temporary and innovative housing solutions to provide to survivors following a disaster.

<u>Vendor Responsibilities</u>	<u>State &amp; FEMA Responsibilities</u>
<ul style="list-style-type: none"><li>• Working with the State and local governments to identify sites to place temporary units</li></ul>	<ul style="list-style-type: none"><li>• Identifying the need for disaster housing and evaluating requests for DH missions</li></ul>
<ul style="list-style-type: none"><li>• Developing Group Sites as necessary</li></ul>	<ul style="list-style-type: none"><li>• Activating housing vendors and determining the location for sites</li></ul>
<ul style="list-style-type: none"><li>• Hauling and installing units</li></ul>	<ul style="list-style-type: none"><li>• Performing recertifications of occupants</li></ul>
<ul style="list-style-type: none"><li>• Project management of all units deployed</li></ul>	<ul style="list-style-type: none"><li>• Assisting occupants find permanent housing plans</li></ul>
<ul style="list-style-type: none"><li>• Ongoing maintenance of the trailers when they are occupied</li></ul>	<ul style="list-style-type: none"><li>• Grant management of the State Administered Direct Housing Funds</li></ul>
<ul style="list-style-type: none"><li>• Demobilizing temporary units after the mission has ended</li></ul>	<ul style="list-style-type: none"><li>• Program closeout</li></ul>

## Housing Solutions



# Pre-covery Activities

Gladys Cook, Disaster Resilience and Recovery  
Director at the Florida Housing Coalition

- Identification of Vacant Building Sites
- Pre-Bid & Pre-Order
  - Pre-bid structurally insulated panels (SIPS) & related equipment
- Stockpile Component Materials
  - Local community stores posts, beams, roofing materials (ex: metal), concrete
  - Local community prepares wet core (bath & kitchen) components for storage
- Pre-Organized Labor
  - Identify skilled and semi-skilled workforce in community

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# Defining the Context



Source: <https://www.bcworkshop.org/posts/tag/Rapido>

- Preparedness = resilient housing
- Housing is **local**
- Temporary vs. Permanent
- Temporary Core by FEMA
- Permanent Home by HUD/Other... quickly!

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# Advanced Component Construction



Source: Auburn University College of Architecture, Design, and Construction. Rural Studio-Front Porch Initiative. "The Reverend's Home"  
<http://ruralstudio.org/the-reverends-home/>

- Post-and-Beam Structure
  - Poured Concrete Foundation
- Thermal Envelope Under Roof
  - SIPS
- Wet Core Component
  - Bath & Kitchen

# Mobilization

- **Post-Disaster**
  - Mass care mission is ending, residents return home
  - Homeowners clear homesite of all debris and former home
- **Advanced Component Construction Begins**
  - Pour concrete foundation
  - Erect post and beam structure
  - Build free-standing thermal envelope under roof structure
  - Install wet core kit
- **FEMA Mission is Complete**
- **Long-Term Recovery Operation Completes the Home**

# Advantages of Advanced Component Construction Method

- Start ASAP!
- Requires simple, basic materials locally available
- Can be assembled by semi-skilled local labor
- Practical opportunity for *pre-covery* planning
  - Avoid materials and equipment shortages
  - Presumably lower costs
- High performance components-durable, resilient, energy efficient
- **Flat-packing SIPS for efficient shipping**
- Reduce displacement by rapid occupancy

# Getting to Scale

- More Research and Development required
- Design concepts need to be explored
- Transport considerations
- Stockpile considerations
- Procurement considerations
- Codes and permit flexibility



Source:  
<https://flhousing.org/publications/>

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# Advanced Component Construction from Rural Studios at Auburn University



Rusty Smith  
Associate Director, Rural Studio  
Auburn University School of Architecture,  
Planning, & Landscape Architecture  
[smithr5@auburn.edu](mailto:smithr5@auburn.edu)

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**Pre-covery is Mitigation:  
Mitigation can result in significant  
savings in terms of safety, preventing  
property loss, and preventing  
disruption of day-to-day life. For  
example, exceeding building codes on  
average **saves \$4 per \$1 spent.****

National Institute of Building Sciences





**Resilience is the ability of a system, entity, community, or person to **withstand shocks** while still maintaining its essential functions. Resilience also refers to the ability to **recover quickly** and effectively from catastrophe and the capability to **endure greater stress**.**

Definition from Rockefeller Foundation 100 Resilient Cities

## Protection of **Occupant**

[Building Codes]

**Federal, State,  
& Municipality**



**FEMA P-361  
ICC 500**

## Protection of **Asset**

[Insurance]

**Private Entities  
(Insurance Companies)**

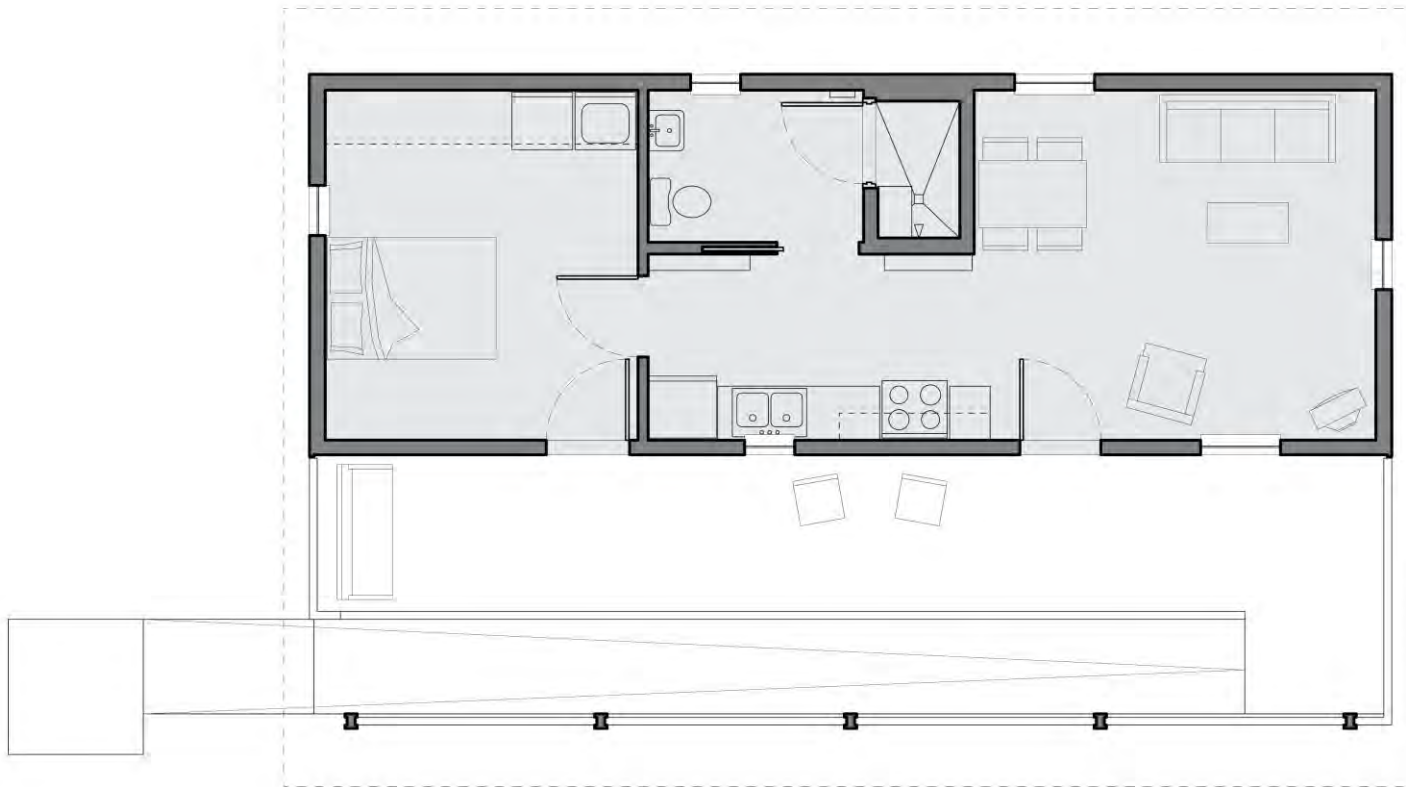


**IBHS  
FORTIFIED Standard**

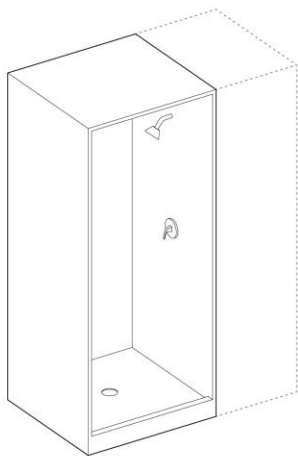




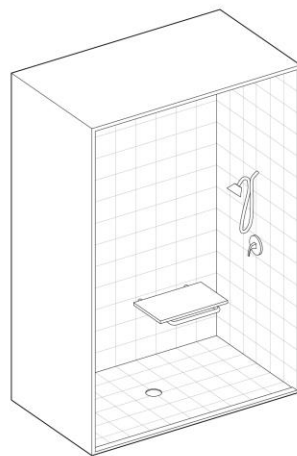




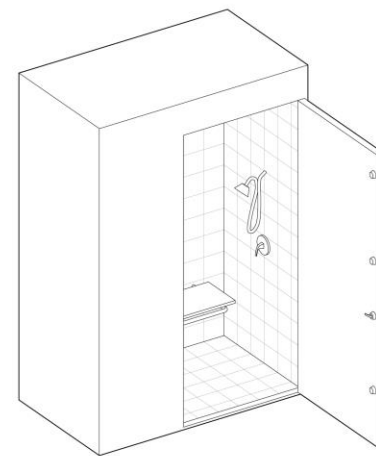




**STANDARD SHOWER**



**ACCESSIBLE SHOWER**



**ACCESSIBLE SHOWER SAFE ROOM**



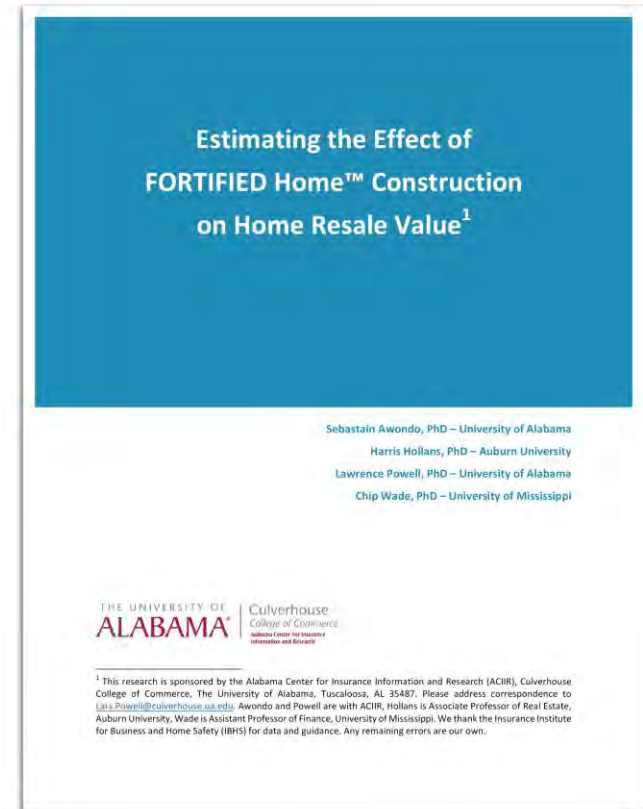


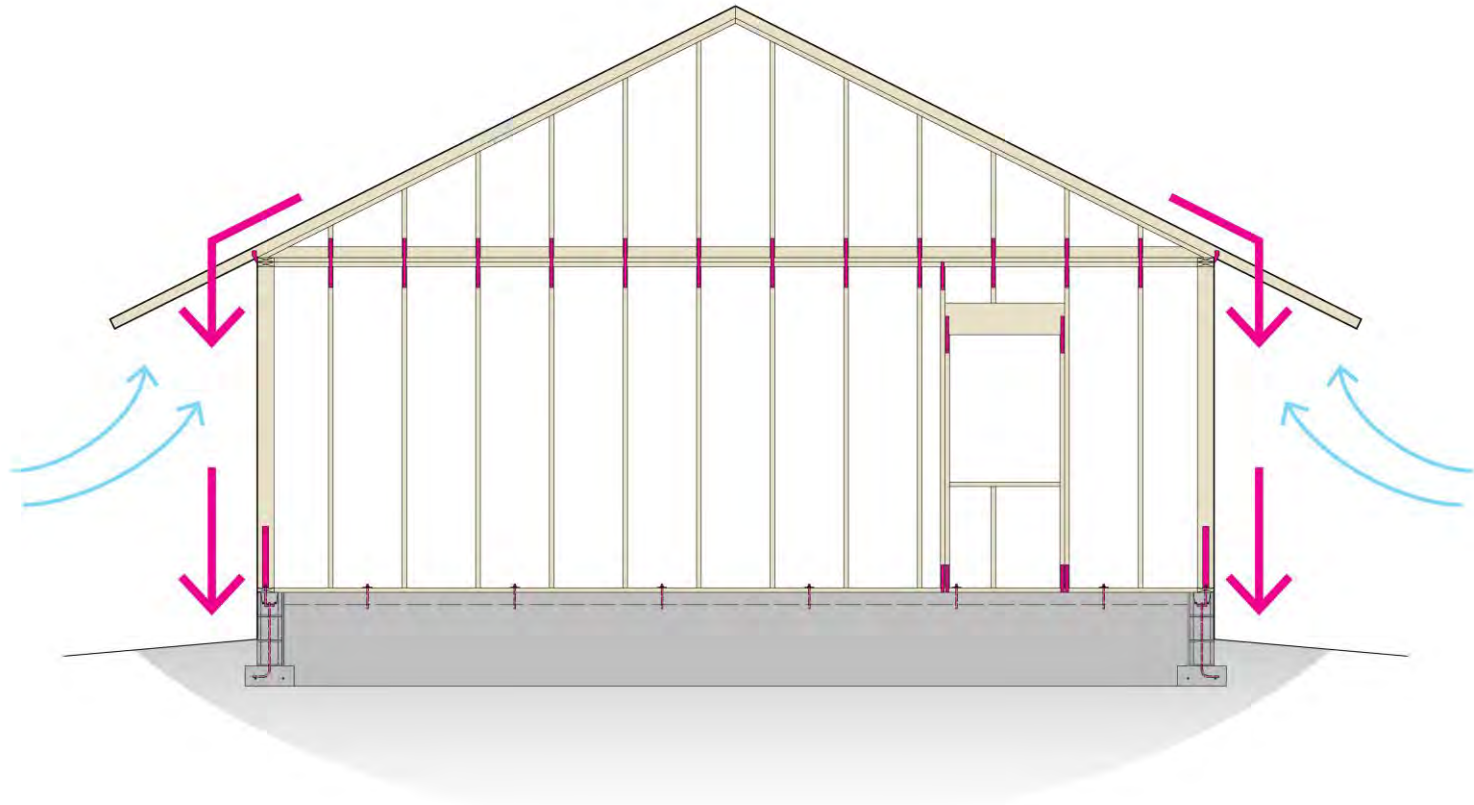




A survey of homes in Alabama saw a **6.8% increase** in resale value when the home was designated as FORTIFIED.

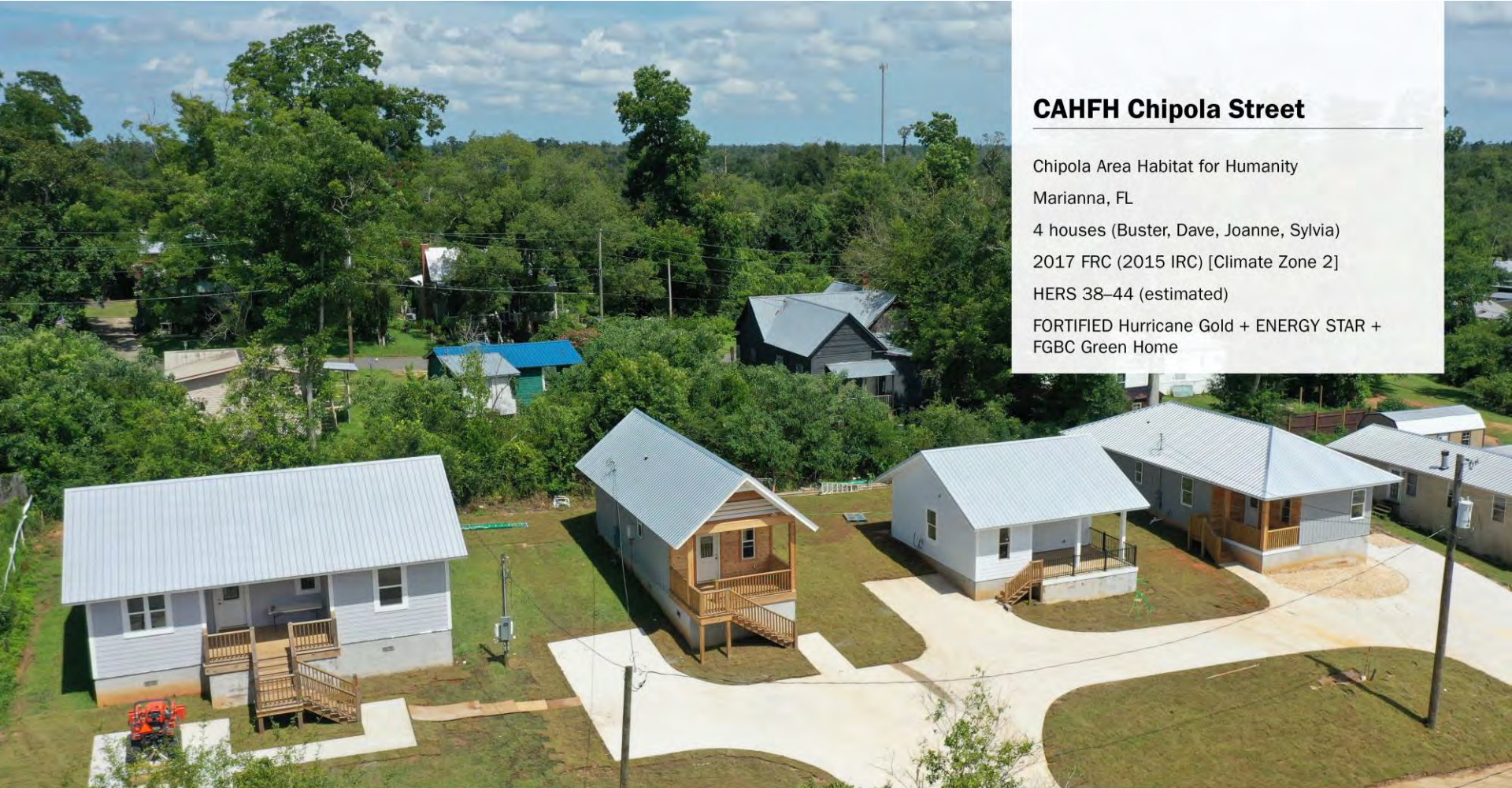
Alabama Center for Insurance Information & Research











## CAHFH Chipola Street

Chipola Area Habitat for Humanity

Marianna, FL

4 houses (Buster, Dave, Joanne, Sylvia)

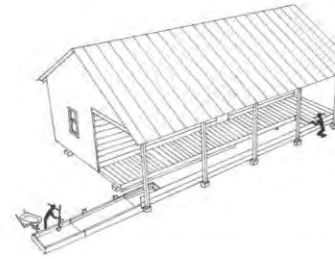
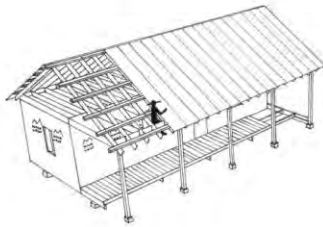
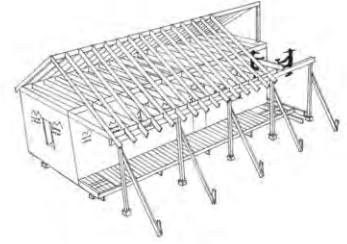
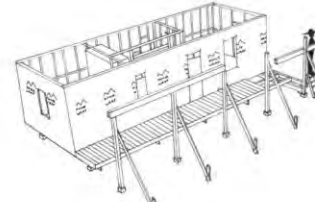
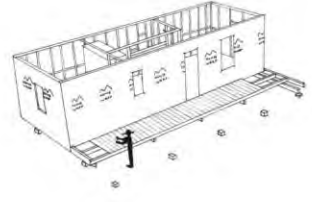
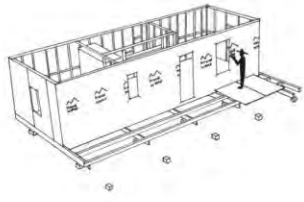
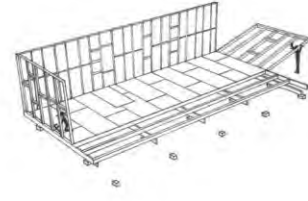
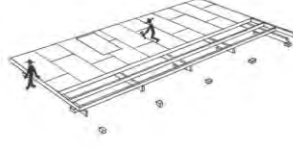
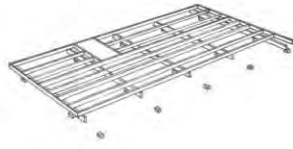
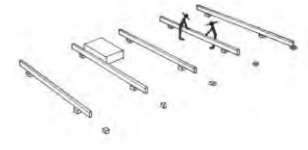
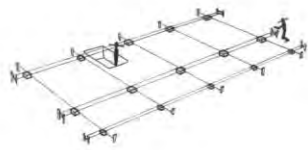
2017 FRC (2015 IRC) [Climate Zone 2]

HERS 38–44 (estimated)

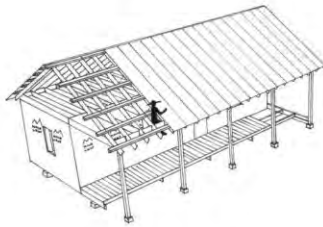
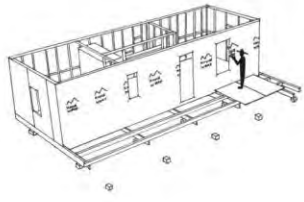
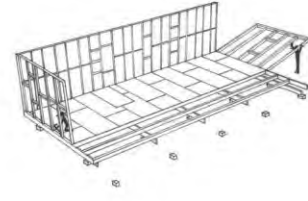
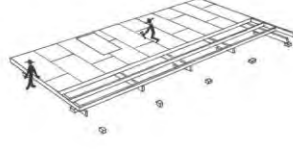
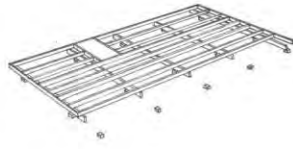
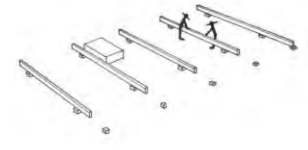
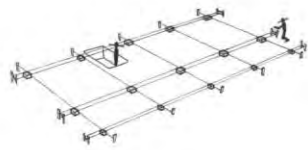
FORTIFIED Hurricane Gold + ENERGY STAR +  
FGBC Green Home

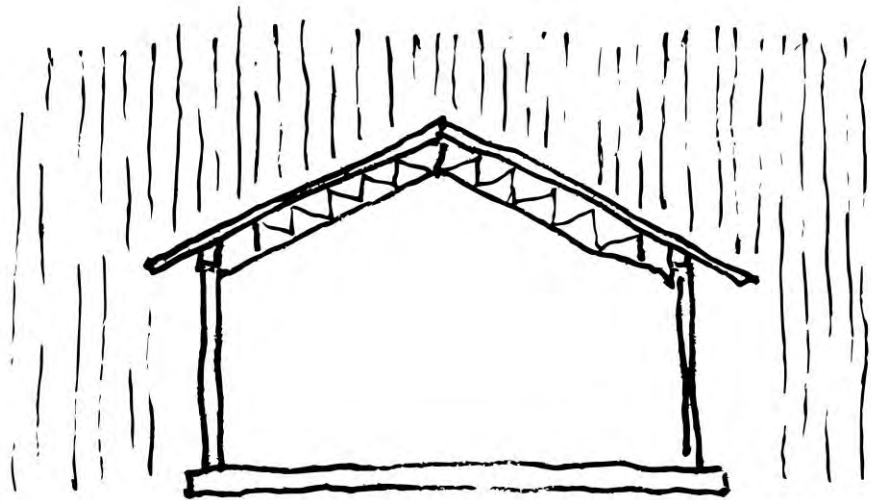




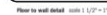
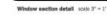
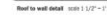


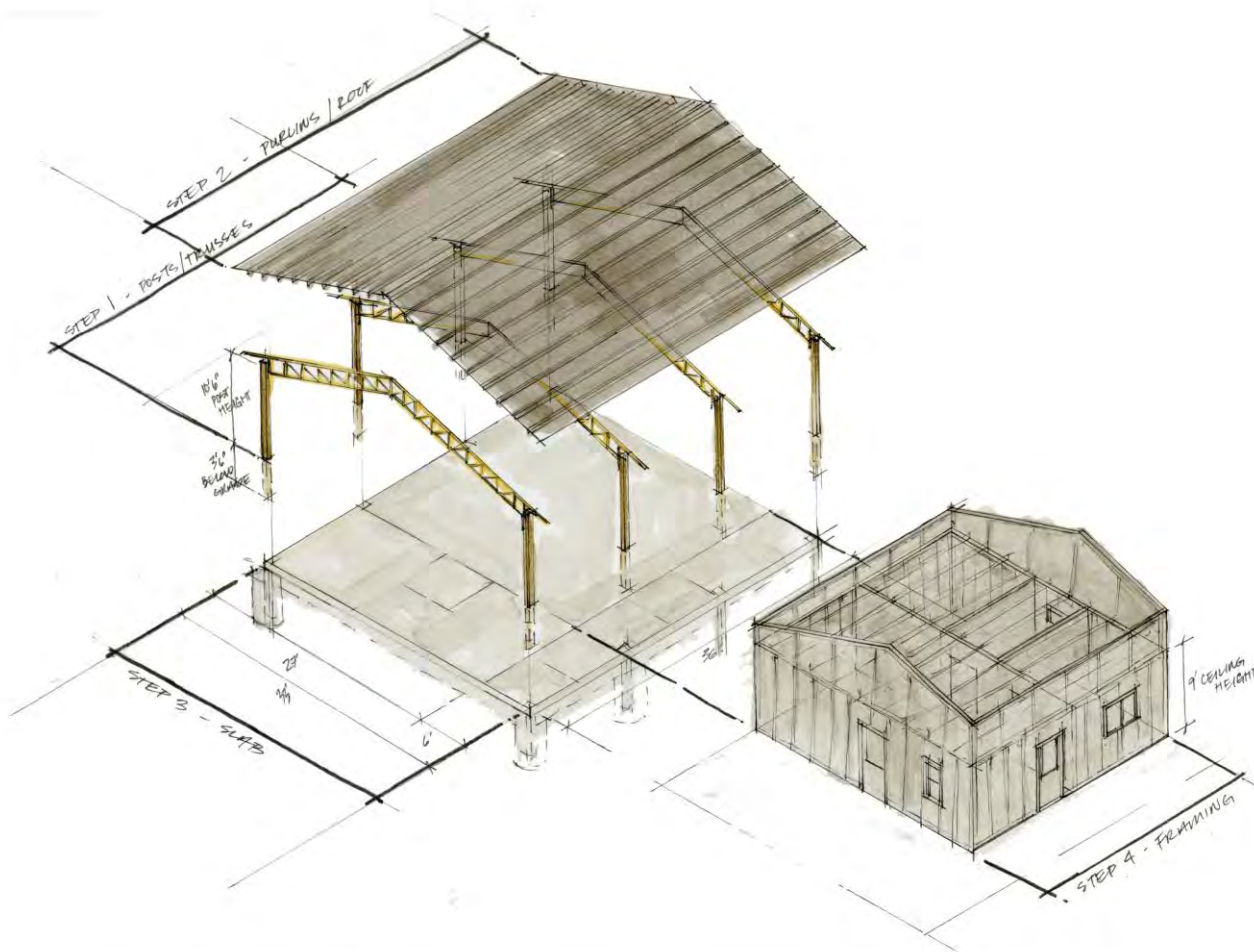




















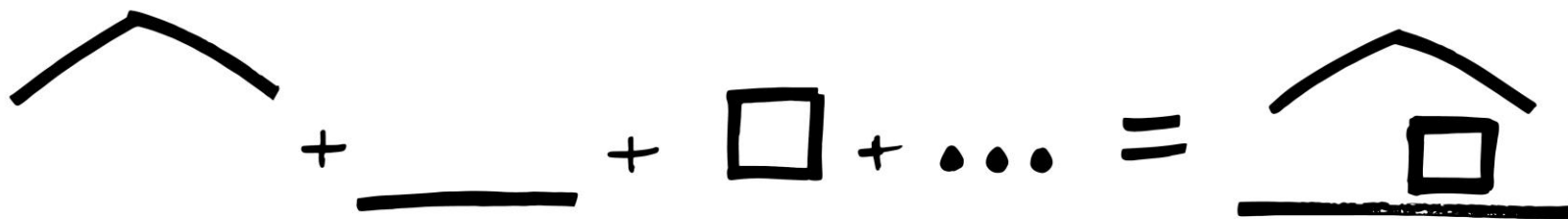




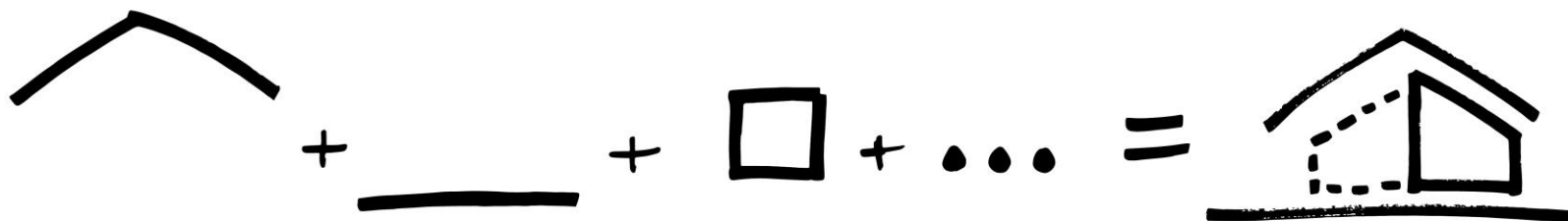












Retired couple (Margie & Andrew) move into their new one-bedroom home.



Margie's older brother joins them. An additional bedroom is added to accommodate.



The couple's adult daughter moves back to town. Another bedroom is added.



The couple's grandson comes to live with them as well. A fourth bedroom is added.

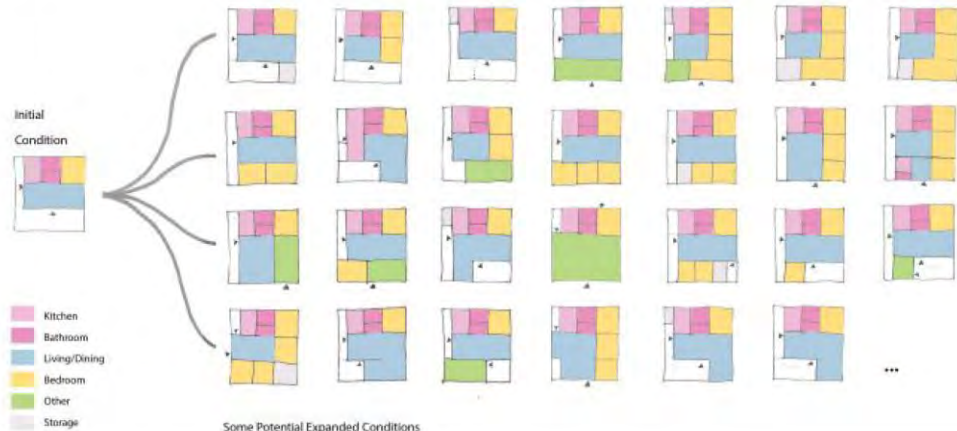


### Sample Expansion Scenario

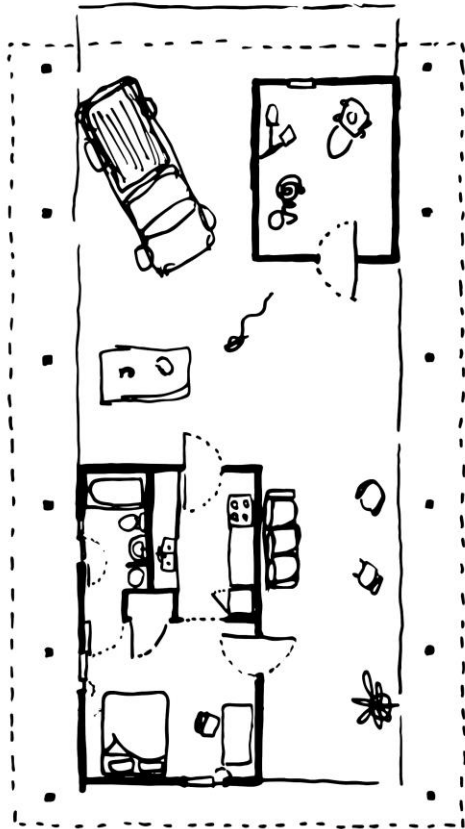
The diagram above is a snapshot imagining the life of one family as they live in the home and modify it over time.

### A Framework for Possibility

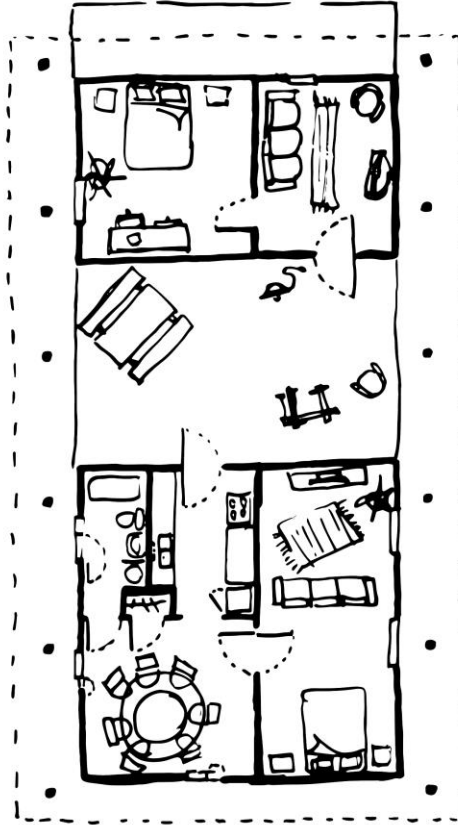
While we imagined many potential lives of the home, we recognize that we can't possibly anticipate all the needs or desires of potential home owners. Rather than attempting to prescribe uses, we have opted to create a **FLEXIBLE FRAMEWORK** that can easily be infilled in innumerable ways.



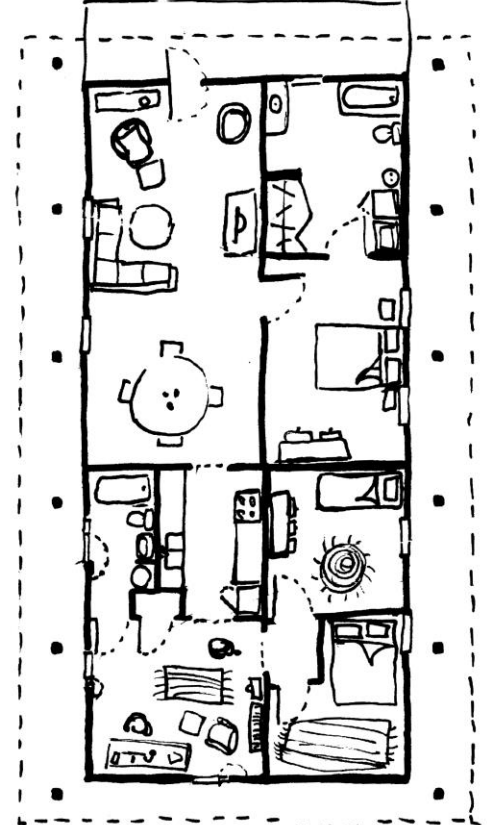
Rapid Rehousing: Minimize Displacement



Conversion: Permanent Occupancy



Long-Term: Adaptability



















# Crisis Housing Solutions

## Post-Disaster Temporary Housing

Craig Vanderlaan,  
Executive Director  
Crisis Housing Solutions  
[@em.myflorida.com](mailto:@em.myflorida.com)



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# Components of the House

# Crisis Housing Solutions

## Post-Disaster Temporary Housing Unit



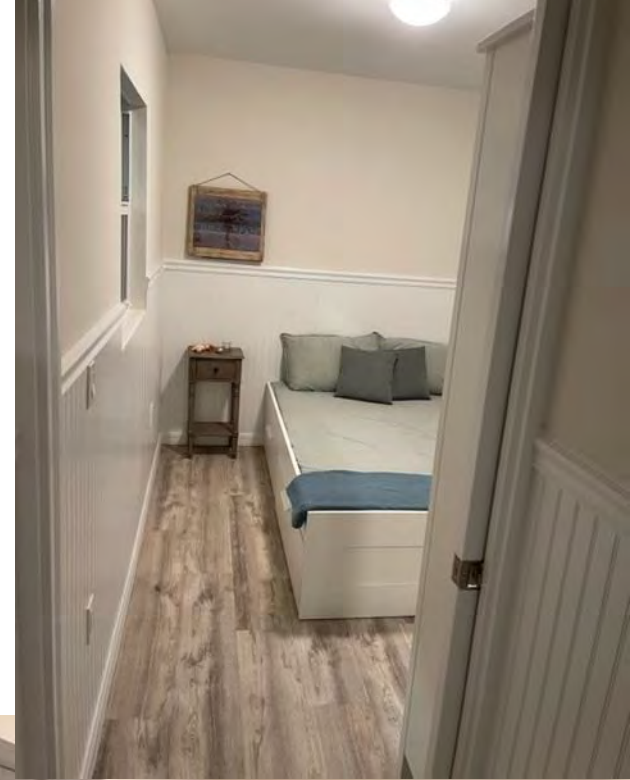


# Types of Modular Builds

- ADU – (Accessory Dwelling Units, Mother-in-law, Granny flats)
- Single-family
- Multi-family apartments
- Commercial Mixed-use
- Temporary Post-Disaster
- Permanent Post-Disaster
- Coastal Models

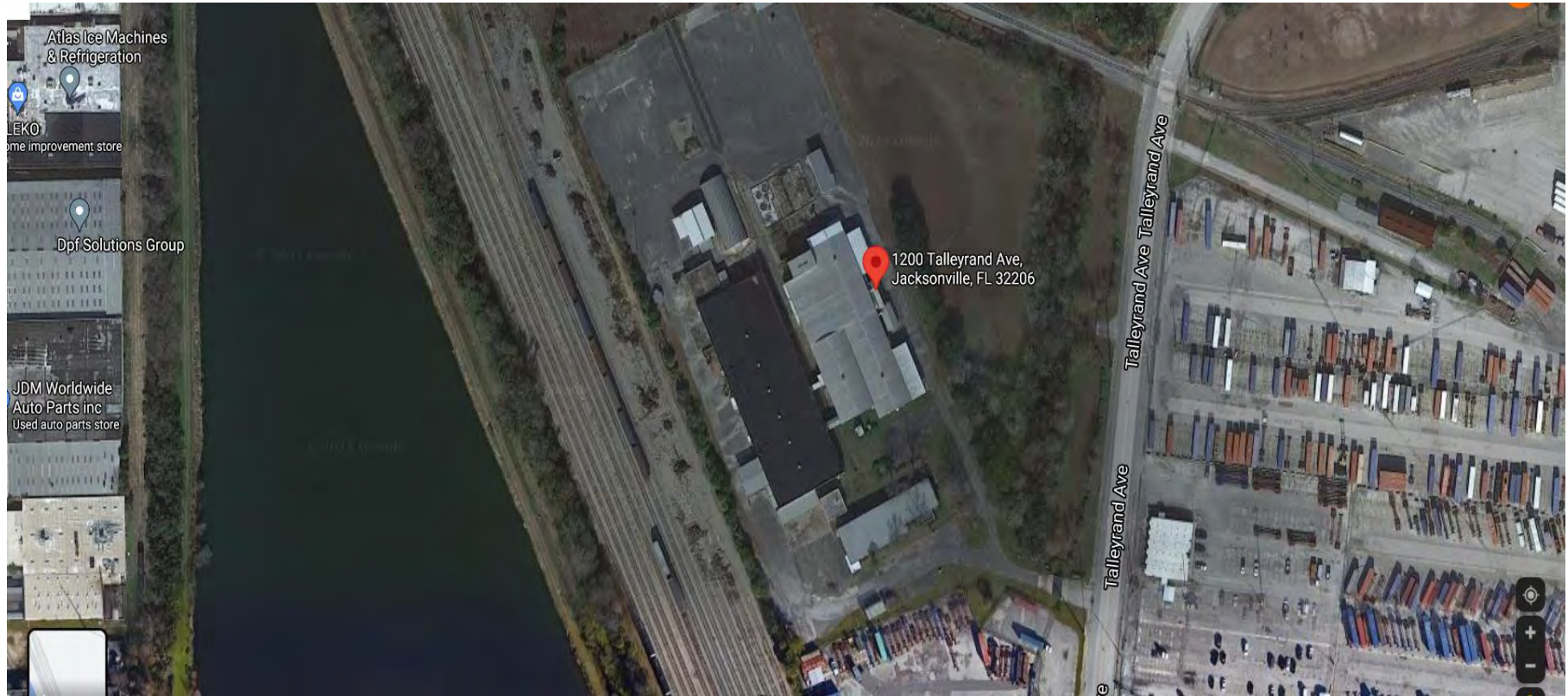


# Easy to Transport by Road, Rail, and Sea





# Creating a Factory in Jacksonville



**Crisis Housing Solutions**  
**Housing Factory of Innovation and Green Techno**  
**Site Location: Jacksonville, Florida – Historic Eastside**



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# Installation Requirements



- Two people can install
- Requires electric and sewer hook ups.



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# One Staging Option for Temporary Housing



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# The Price



- \$60,000 to 70,000
- ADA Compliant models are more
- Price may come down with 2023 factory efficiencies.



# How are They Stored?

Long-term  
Goal:  
Refurbish  
them and  
stage them  
for the next  
storm.



# Questions and Answers

Please complete Evaluation

# Technical Assistance is Available

Available Daily: 1 (800) 677-4548

## Options for Further Assistance Include:

Phone and Email consultation

Site Visits

Register at [www.flhousing.org](http://www.flhousing.org) for:

Workshops

Webinars



THE FLORIDA HO





**GLADYS COOK**



**MICHAEL CHANEY**



**DAYNA LAZARUS**



**KODY GLAZER**



**ELISSA PLANCHER**

**THE FHC  
DISASTER  
RESILIENCY AND  
RECOVERY  
TEAM THANKS  
OUR WEBINAR  
PANELISTS AND  
GUESTS**