# RESILIENT HOUSING FOR SWLA

Safer housing is a critical issue for this region. An easy to use guide can help.

# **OVERVIEW**

The Resilient Housing for SWLA project seeks to expand resilient and affordable housing for the region. One element of the project is a toolkit with practical strategies to help homeowners, builders, and organizations build new homes and retrofit existing homes that are stronger and safer against future storms. There are many resources for builders and homeowners who are building or rebuilding in the region, but they are often long and technical, requiring a high level of understanding about building and retrofitting. The Resilient Housing toolkit focuses on being accessible, while directing people to more detailed resources to learn more. The toolkit also includes a wider look at regional housing challenges, including strategies to mitigate flood insurance costs, the idea of middle neighborhoods and how to support neighborhoods before they begin to decline, and different types of housing to provide more choic-





es than larger single family detached homes on individual lots.

The Resilient Housing for SWLA project has three parts, the printing and distribution of the guide; the idea of a demonstration project, a neighborhood where people can see strategies from the toolkit in action; and long-term uptake and use of the toolkit. A potential demonstration site is located at Fitzenreiter Road and Pear Street, owned by the affordable housing non-profit Project Build A Future.

# WHY IS THIS IMPORTANT?

- Residents are facing the high cost of flood insurance, rising sale prices and rents, and insufficient practices in rebuilding post-disaster.
- Flood insurance is a significant cost to homeowners, a significant barrier to home ownership, and homeowners need to understand which decisions can impact flood insurance premiums under FEMA's Risk Rating 2.0.
- How we repair our homes and how we build can make a significant impact on the health of the region.

# UNDERSTANDING THE TOOLKIT

The toolkit is broken into three parts, New Construction, Retrofitting, and Resources.

New construction starts with how to select the best site for a new home, focusing on the **base flood elevation**, **design flood elevation**, how far a home may be from a flooding source, and the development rules in place around the home. It then goes into different ways to get housing, including a list of common questions to ask your contrac-



tor, and a primer on modular and manufactured housing. Beyond that, it talks about the design of the housing itself, from the massing to the details to other types of housing beyond detached single family homes. The retrofitting section focuses on existing homes, what to do immediately after a storm, and measures that people can take to strengthen their homes before the next storm. Resources begin to look at housing challenges through a wider lens, including how to pay less for flood insurance, supporting middle neighborhoods, and sections on understanding affordability and policy.

Base Flood Elevation (BFE):
A flood has a 1% chance of getting to this height each year. It is indicated on a community's Flood Insurance
Rate Map (FIRM).

Design Flood Elevation (DFE)
Communities choose this height
in feet for themselves based on
past floods, or expecting more
frequent or higher levels of
flooding in the future.

This will help residents feel prepared and have a path forward.

# **PLAN TOPIC AREAS**

#### **Plan Topics**

The Resilient Housing for SWLA project has elements that focus on community planning, housing, and economic development. It is a guide that:

# Community Planning

- Considers community-wide strategies that make new and renovated housing safer. Some community-wide techniques in the toolkit include each of the communities choosing design flood elevations based on previous storms, understanding proximity of new development to a source of flooding, and analyzing how some foundation techniques can contribute to flooding on other properties.
- Includes tools to help support middle neighborhoods. Middle neighborhoods are where families who make median incomes with average priced homes live. They require support from a policy level in order to keep them stable and strong.

# Housing (

- Provides tools to make new and existing housing stronger and safer. The toolkit includes a retrofit section, specifically focused on existing houses, both right after a storm, and beyond to prepare for the next one.
- Describes types of housing that can increase the number of homes for families in new and existing neighborhoods. Increasing housing

supply is critical in the region. Providing that housing in a wide variety of scales ensures choices for families of different sizes, incomes, and preferences, while providing more access to everyone.

# **Economic Development**

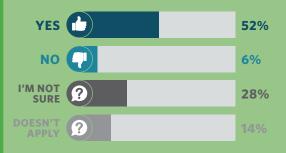
• Supports the development of the housing supply that is critical for local jobs, businesses, and economic development opportunities to thrive. Without a substantial increase in housing stock, new industries and employers don't have access to top talent, and the region is unable to benefit from people living, shopping, dining, and paying taxes in the local area.



The cover of the Resilient Housing Toolkit for SWLA

# HIGHLIGHTING COMMUNITY SUPPORT

I would use the Resilient Housing Toolkit



I think this project will benefit SWLA.









# **USING THE TOOLKIT**

The Resilient Housing for SWLA toolkit helps make existing information more accessible in an informal and easy to understand way. One of the goals of the Resilient Housing for SWLA catalytic project is adoption by homeowners, builders, and organizations, not only to use the techniques described in the kit but to recommend it to others and share it.

#### **Appealing to Homeowners**

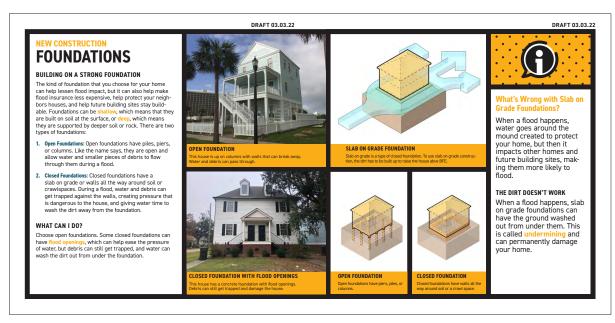
The toolkit is written with property owners in mind, especially the sections on retrofitting and resources. The retrofitting section focuses on small steps that can be taken before the next storm or during clean-up. It gives homeowners a starting line so they can feel empowered with access to information that is often overwhelming in the face of recent disaster.

One of the most important sections for homeowners includes a checklist of questions to ask a builder or contractor. Having an easy checklist of what to ask helps an owner take control of the resilient future of their home.

Another critical spread is in the resources section and it lays out the recent changes to the National Flood Insurance Program (NFIP). The changes in the program focus on a property's unique flood risks, but there are actions that homeowners can take called mitigation credits that could reduce flood insurance premiums.



The National Flood Insurance Program (NFIP) changed significantly in 2022. An important topic for the region is how to pay less for flood insurance. A resource in the toolkit breaks down what is changing and mitigation credits to pay as low a premium as possible under the new regulations.



Slab-on-Grade foundation types have become more common in southwest Louisiana. Builders and homeowners will often create a mound of earth to create a concrete slab that is above the base flood elevation. This practice has many consequences that are illustrated in the toolkit to encourage builders to use pier and beam construction.

#### **Appealing to Builders**

Many of the techniques in the toolkit would be executed by builders for new construction and retrofitting. The toolkit helps emphasize better techniques for building a more resilient home, from the foundation to the roof.

## **Appealing to Policy Makers**

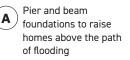
The toolkit also includes elements that look at housing in the region more broadly, beyond modifications to a single home.

- Other Types of Homes: Other types of homes focuses on choices in housing types beyond single-family detached homes on large lots. Cottage courts, small apartments made to look like a larger home, and attached townhouses are ways to create more housing in new and existing neighborhoods.
- Supporting Middle Neighborhoods: Middle neighborhoods are neighborhoods where people of middle income live. They are neighborhoods that are often strongly contextual to the area, holding much of the history and memories, but they are also often overlooked in terms of policy support. These neighborhoods often need additional support to avoid decline.
- Affordability: The affordability section helps explain what is affordable for housing in the region.
- Why Should I Care? (Policy): This section focuses on what sorts of policies individuals may want to support to help implement techniques in the toolkit.



#### A More Resilient House







Secondary water barrier to resist water leaking through the roof



B Flood damage resistant materials



Roof to foundation connections for wind resistance

CONSTRUCTION TECHNIQUE	CONVENTIONAL CONSTRUCTION	RESILIENT CONSTRUCTION	WHAT'S THE COST DIFFERENCE?	
Slab on Grade Foundation vs. Pier and Beam Foundation	+/- \$162/Square Foot	\$169+/Square Foot	\$7+/Square Foot	
2" Rigid Insulation	N/A	\$4+/Square Foot	\$4+/Square Foot	
Closed Cell Foam at Subfloor	N/A	\$2+/Square Foot	\$2+/Square Foot	
Ice and Water Shield as Secondary Roof Membrane	N/A	\$1+/Square Foot	\$1+/Square Foot	
Wind-Rated Nailing Pattern	N/A	\$1+/Square Foot	\$1+/Square Foot	
Wind-Rated Strapping	N/A	\$3+/Square Foot	\$3+/Square Foot	

It is approximately \$18-40+/SF more expensive to construct a more resilient home. For a 1,400 SF home, that's a \$25,000-\$55,000 increase over conventional construction.

<sup>\*</sup>Numbers are estimates from July 2022 and subject to change

# **CASE STUDY:** A DEMONSTRATION NEIGHBORHOOD

Project Build a Future owns an approximately 4.4 acre piece of property at the corner of Fitzenreiter Road and Pear Street. The site has great access to Combre-Fondel Elementary School, the Martin Luther King Junior Center, and is close to Riverside Park and Wal-Mart. While many of the lots in the surrounding neighborhood have encumbrances and may be tied up in the adjudication process, this parcel is developable and could increase the number of affordable homeowners in the area. In order to make the development viable and to maximize the number of homes, new roads and utilities would need to be extended into the site. Partnership and gap funding are necessary to subsidize the infrastructure costs as well as increased costs to build the houses to a higher standard of resiliency.

#### **New Homes**

One potential idea for the property would be a demonstration project. Approximately 21 new homes would be built using strategies from the Resilient Housing for SWLA toolkit. This would include elevating the homes using pier and beam foundations, using flood damage resistant materials, and securing the roof to the studs for maximum resistance against high winds. While these improvements increase the resilience of the homes, they also increase construction costs. Partners and sources of subsidies will be needed to keep the homes affordable, while ensuring they are flood damage and wind-resistant.





An example of what a site plan could look like for the Fitzenreiter Road site

## A Good Example

# THE CEDARS AT CARVER PARK

#### WHAT?

- 120 new resilient rental homes in Galveston, TX
- Different kinds of homes to fit into the surrounding neighborhood
- All homes are raised a full story with parking and access on the ground floor

#### HOW?

- Funded through state recovery funding, FEMA funding, and Low Income Housing Tax Credits (LIHTC).
- 51% of the homes are affordable to a range of incomes, and 49% are at market rate rent.



Smaller buildings around a park



Entry to the leasing office

#### A Good Example

# **VILLAS ON THE STRAND**

#### WHAT?

- 160 new resilient rental homes in Galveston, TX
- Different kinds of homes to fit into Downtown Galveston
- All homes are raised a full story with parking and access on the ground floor

#### HOW?

- Funded through state recovery funding, FEMA funding, and Low Income Housing Tax Credits (LIHTC).
- 51% of the homes are affordable to a range of incomes, and 49% are at market rate rent.



All buildings have floodable space and parking on the ground level



Homes on Mechanic Street in Galveston

#### **Closing the Financing Gap**

The cost of housing of any kind is increasing all over the region. Affordable housing non-profits like Project Build a Future struggle with gaps in funding to provide quality housing. Adding additional resiliency measures to the construction increases that gap.

- +/- \$205,000 is the cost to build a Project Build a Future 3-bedroom, 2-bath home with no profit margin.
- +/- \$150,000 is the target cost to sell the home as a first home purchase for a family.
- +/- \$55,000 is the typical gap between the cost to build the home and the price that a family is able to pay.

Additional resiliency measures including:

- · Pier and beam foundations
- Flood damage resistant materials
- Secondary water barrier
- Roof to foundation connections for wind resistance

And other factors, like additional windows and front porches to encourage a neighborly streetscape, will further increase construction costs by another \$55,000. That would mean that for each home, the support of partners would be needed to close a gap of \$110,000 per home. This does not include the cost of infrastructure improvements to develop the site and each lot.

## Zoning

The proposed plan diverges from the existing Residential District zoning related to front and rear setbacks. Rather than pursue variances, a project of this scale could go through the Planned Unit Development (PUD) to create a specific neighborhood plan and subdivide the lots for these 20+ houses. The planned unit development should include neighborly streets, urban setbacks with space for front porches, and rear yards. The recommended dimensions include:

- Front Setback: 15' A 15-foot setback that allows for encroachment of a porch and access stair helps create a consistent street wall and provides ample space in the backyard for families.
- **Rear Setback: 5'** Reducing the rear setback to 5 feet (for garages or carports only) helps maintain usable backyard space.



A diagram of potential setback dimensions to create a more neighborly street

#### Infrastructure Needs

The Fitzenreiter Road site would require infrastructure for development, including new streets, water, and sewer lines. Beyond the basic infrastructure needs, the demonstration project could show best practices for better stormwater management techniques in the street, like tree trenches with subsurface drainage rock, and in a small stormwater management pocket park.

## **Enterprise Boulevard Extension**

An important future infrastructure consideration for the Fitzenreiter Road site is a potential extension of Enterprise Boulevard. Because Enterprise Boulevard has a larger Right-of-Way than Fitzenreiter Road, it is likely that the site would be impacted. A larger street would also necessitate modifying the conceptual site plan to address the new character of the proposed street.

# A Case Study

The Fitzenreiter Road site was tested as a potential demonstration project, but other or multiple locations in the region could also fill the role of a demonstration site. While each area may have unique constraints regarding zoning and infrastructure needs, the gap remains between the cost of building a home and what a first-time homebuyer can afford to pay.



INFRASTRUCTURE NEEDS	LENGTH/AREA	COST	TOTAL COST
52' ROW 2 11' Concrete Lanes On-Street Parking (1-side) with curbs 5' Sidewalks and 6' Tree Lawns	+/- 680 Linear Feet	\$380/Linear Foot	\$254,400
Stormwater Enhancement: Street-Side Tree Trench with Subsurface Drainage Rock	+/- 680 Linear Feet	\$125/Linear Foot	\$85,000
Stormwater Pocket Park	+/- 12,500 Square Feet	\$25/Square Foot	\$312,500
Water (8-inch main)	+/- 680 Linear Feet	\$65/Linear Foot	\$44,200
Sewer (8-inch gravity collection)	+/- 680 Linear Feet	\$95/Linear Foot	\$64,600
Contingency (30%)*			\$226,500
TOTAL			\$991,200

<sup>\*</sup>Numbers are estimates from May 2022 and subject to change

## **ACTION STEPS**

#### **Distribute and Share**

The Resilient Housing for SWLA project has three goals, printing and distributing the toolkit in the short term, funding and implementing a demonstration project at Fitzenreiter Road and Pear Street, and using the toolkit to build new and repair existing homes over the long term.

# **1** Distribute the Toolkit

The Resilient Housing for SWLA toolkit is currently available online. The digital resource is the easiest to share broadly, and sharing it through as many channels as possible is critical to its long-term use. Individuals, builders, and non-profit organizations may also benefit from having a printed copy. Establishing partnerships for printing copies, especially immediately following storms, would help support use and wider adoption.

# **Resilient Housing for SWLA**

# **Action Steps**

- Distribute and share the Resilient Housing for SWLA toolkit
- 2 Fund infrastructure for a demonstration pocket neighborhood on Fitzenreiter Road
- 3 Provide subsidy for enhanced resilience features in the demonstration neighborhood
- Build a pocket neighborhood of ~20 single family houses that demonstrate the principles in the Resilient Housing for SWLA toolkit
- Use the Resilient Housing for SWLA project to build infill houses, repair homes, and make housing more resilient

Individuals, builders, and organizations will use the techniques in the toolkit to build more housing that is stronger and safer. A demonstration neighborhood helps inspire new projects.

It could be adopted into building codes as a requirement to minimize damage in future storms.

Many people are at a loss when it comes to these things: how they work, what's offered, and how to navigate in general. Having this I feel would be a huge plus to help.

DISTRIBUTE & SHARE

0 (years)

START

**FUND** 

**IMPLEMENT** 

198

(vears) 5

**END** 

#### Fund

# 2 Fund the Infrastructure for a Demonstration Project

The first step for a viable demonstration project at Fitzenreiter Road would be infrastructure. Building the new streets and having sewer and water infrastructure in place allows for sitework to begin on the lots themselves. The funding gap for each house does not include infrastructure costs, so having the infrastructure in place is crucial to the success of the project.

# 3 Subsidize Enhanced Resilience Features for the Demonstration Project

The demonstration project would require the support of partners to close the gap between the cost of construction and what would be affordable for homeowners to pay. The cost of construction would increase from the typical baseline with additional resilient features, but the increased resilient features would be essential to the successful demonstration.

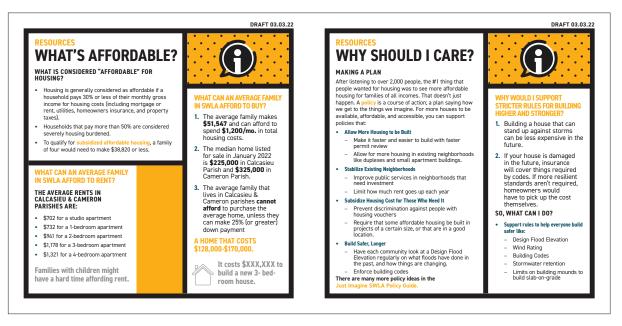
# Implement

# 4 Build a Pocket Neighborhood Demonstration Project

The next step would be constructing the houses with the techniques in the Toolkit. The construction itself could be used as a learning lab for area builders to come and see the resilient construction in action.

# 5 Use the Resilient Housing for SWLA project to build infill houses, repair homes, and make housing more resilient

As uptake of the toolkit continues to grow, people could be encouraged to use the techniques for retrofitting their homes to be stronger and safer. Following storms, it could be a priority to send the toolkit around, digitally and printed, to give access to as many people as possible.



The Resilient Housing for SWLA toolkit includes strategies for preserving middle neighborhoods, those where middle and workingclass families live that are not currently growing, but need support so to prevent decline.



## **Potential Partners**

- State of Louisiana OCD
- Louisiana Housing Corporation (LHC)
- City of Lake Charles
- Project Build a Future
- Churches and non-profits that build housing
- Homebuilders of SWLA
- Calcasieu and Cameron parishes
- Associated Builders and Contractors Southwest Training Center
- Mortgage lenders
- Insurance industry
- Center for Planning Excellence (CPEX)
- SBP USA (formerly St. Bernard Project)



# **Potential Funding Sources**

- City of Lake Charles CDBG and HOME allocations
- LHC CHDO Annual Awards Program (CHAAP)
- LHC CHDO Single Acquisition Rehabilitation (CSAR) Program
- LHC Homeownership assistance
- Philanthropy
- Bank CRA & CDFI funding
- Restore LA Homeowner Assistance Program
- State Capital Outlay budget
- LA DOTD Safe Routes to Public Places (LA Complete Streets Program)
- Infrastructure Investment and Jobs Act (IIJA) competitive grants
- NEA Creative Placemaking grants





# IMPLEMENTATION

HOW?	COST	TIME FRAME	POTENTIAL FUNDING SOURCES	LEAD ENTITY	SUPPORTING PARTNERS/ENTITIES
Printing and distribution of the Resilient Housing Toolkit	\$10,000	0-1 year	<ul><li>LA GOHSEP</li><li>LA OCD</li></ul>	LA GOHSEP LA OCD	Community Foundation SWLA Visit Lake Charles
Fund and build sustainable infrastructure where needed for demonstration projects and resilient, affordable infill housing	\$150 to \$300 per linear foot of new or improved infra- structure (streets, utilities, drainage, etc.)	1-5 years	<ul> <li>State Capital Outlay budget</li> <li>LA DOTD Safe Routes to Public Places (LA Complete Streets Program)</li> <li>Infrastructure Investment and Jobs Act (IIJA) competitive grants</li> <li>NEA Creative Placemaking grants</li> </ul>	Approving body (municipality or parish) for the infill housing location identified	LA DOTD  Regional Planning and Development Commission
Build a pocket neighborhood of ~20 single family houses that demonstrate the principles in the Resilient Housing Toolkit, provide subsidy for enhanced resilience features	\$200,000+ per house (structure only, assuming finished lots delivered to builders)	1-5 years	<ul> <li>LHC — CHAAP and CSAR programs</li> <li>HOME</li> <li>CDBG</li> </ul>	Non-profits building affordable homeown- ership Market rate builders and developers	Community Foundation SWLA OCD/LHA Municipalities and parishes