City of Foley, Alabama
Resilient Housing Plan

Ensuring a Resilient Future

Contents

1.0 Acknowledgements

The City of Foley would like to thank all who made the development of this plan possible including:

- Smart Home America for their diligent leadership and work across the Gulf South to improve housing resilience.
- The Gulf Coast Community Design Studio for their invaluable expertise and assistance in providing mapping and GIS analysis for the project.
- Allen Engineering and Science, Inc. for their guidance and leadership in the development of the Plan.
- The department heads and staff of the City of Foley who answered questions, provided guidance, and who work diligently every day to make Foley a more resilient city.
- The City administration who consistently supports the programs and policies necessary to allow the City of Foley to continue to improve its level of resiliency.

2.0 Executive Summary

This City of Foley Resilient Housing Plan was made possible through a pilot program grant funded through the Environmental Protection Agency in support of Smart Home America's Community Resilient Housing Guide. The purpose of the pilot program is to "test" the guide through real-world applications and to provide the pilot communities with the opportunity to discover and implement strategies to improve the resilience of their housing stock.

The project was a collaborative effort that included the City of Foley, Smart Home America, Mississippi State University's Gulf Coast Community Design Studio, the Mississippi Department of Marine Resources, and Allen Engineering and Science, Inc.

The overarching objective of this plan is to aid the City of Foley in creating a more resilient housing stock by providing a better understanding of areas of potential risk for housing development. Conversely, the plan seeks to reduce risks associated with housing development by providing a better understanding of areas of the City that present less risk regarding housing development. By gaining a better understanding of the relationship between risk and resilience, this plan seeks to provide residential developers and future homeowners with the tools necessary to invest with confidence in the City of Foley.

In the discovery and analysis phases of the planning process, one fact became very obvious. That fact is that the City of Foley does resilience well. Understanding that fact presented clear challenges to the identification of specific strategies as the central focus of the plan. As the planning process continued, three issues of concern became apparent. These issues included:

1. The existence of residences located within the FEMA-designated floodplain, many of which were built pre-FIRM and not subject to current design standards and regulations.
2. The existence of residences affected by flooding that are outside the FEMA-designated floodplain.
3. The absence of a City of Foley-specific Multi-hazard Mitigation Plan.

With the acknowledgment of these three issues, the plan focuses on associated mitigation strategies, funding strategies, and outreach strategies intended to reduce the risks associated with these issues, thereby increasing the level of the City of Foley's housing resiliency.

3.0 Introduction

3.1 Plan Background and Purpose

Hurricane Sally made landfall on September 16, 2020, as a strong Category 2 hurricane with sustained winds of 105 mph. Sally was an unusually slow-moving hurricane, prolonging and exacerbating the local impacts. Sally was moving at approximately 5 mph at landfall, resulting in a long duration of tropical storm and hurricane-force winds, storm surge, and flooding from long-term torrential rainfall. The impacts of Hurricane Sally on the City of Foley were significant and long-term and highlighted the need for a more diligent and sustainable approach to community resilience and hazard preparedness. Since 2020, the City has developed a Coastal Flood Response Plan and has adopted the Coastal Construction Code Supplement to the 2018 International Residential Building Code. These efforts combined with significant population growth in recent years highlighted the need to take a focused approach to ensure the resiliency of the City's housing stock.

To that end, the City was selected as a pilot community to develop a Resilient Housing Plan as part of an EPA-funded project titled: "Community Resilience Housing Guide: Creating a Stronger Post-Disaster Housing Framework for the Gulf Coast." As a pilot community, Foley received technical assistance from a project team consisting of Smart Home America, Mississippi State University's Gulf Coast Community Design Studio, and the Mississippi Department of Marine Resources. The pilot program also provided the City with resources to hire a planning consultant to assist with the development of the Resilient Housing Plan that follows the general direction of the draft Resilient Housing Planning Guide developed by the core project team.

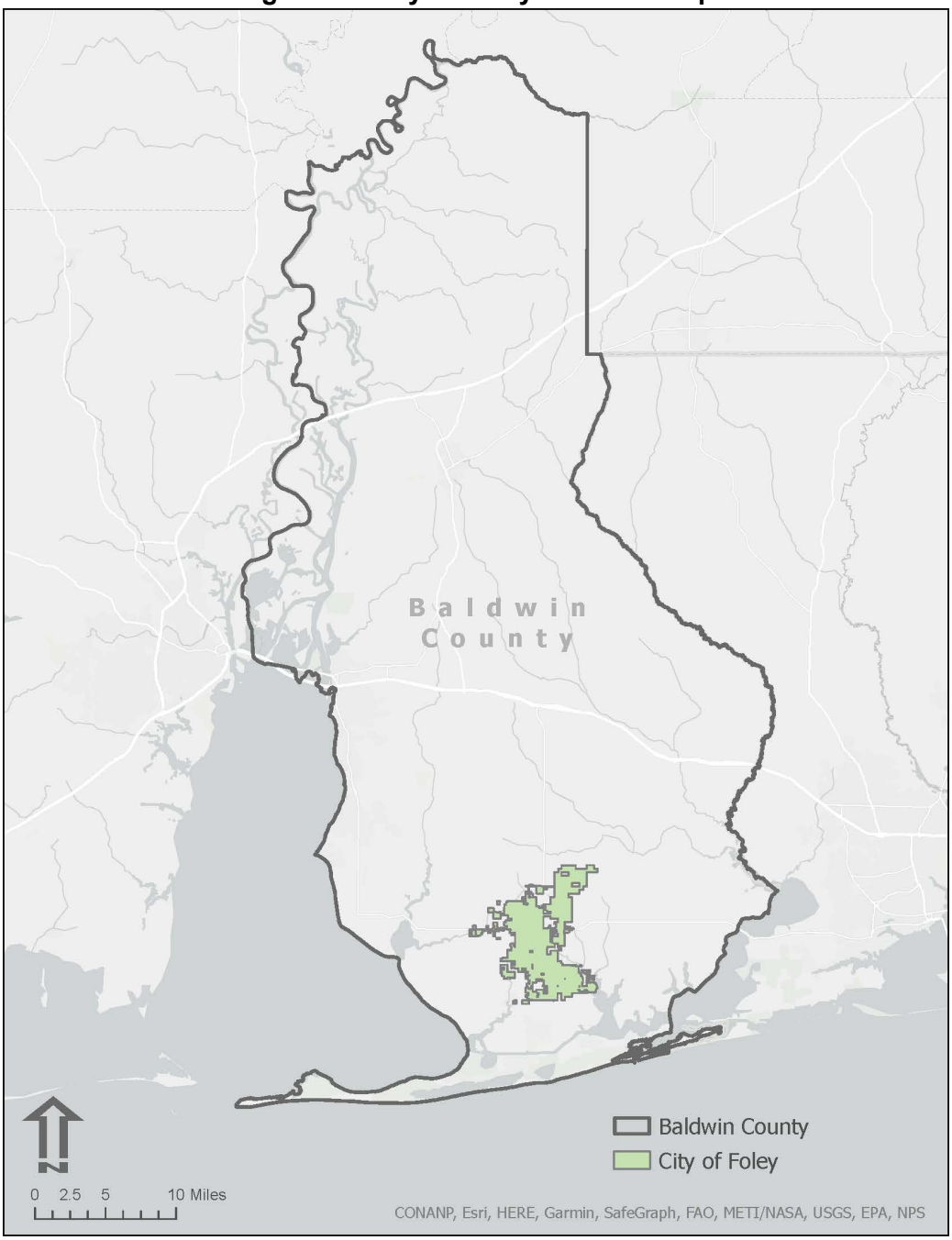
The City of Foley Resilient Housing Plan will be used by the City in several ways, including:

- The Plan will be used to recommend changes to the City's Comprehensive and Future Land Use Plans to shift housing development away from high-risk areas to lower-risk areas. These potential changes will also generate important policy discussions related to housing density and housing types as future housing developments are considered within the City.
- The Plan will be used as a guide for future development. Recent development activity in Foley is evidence that progressive developers are interested in and willing to invest in Foley. The Plan will help these developers make decisions that minimize long-term risks and ensure the long-term value of their investments.
- Generally speaking, the integration of a Resilient Housing Plan will assist a community with the integration of improved construction standards such as FORTIFIED Construction and Coastal Construction Code Supplements. To Foley's credit, the City was a relatively early adopter of both of these policies. According to Smart Home America, the top ten cities with the most FORTIFIED Home™ designations are all in Mobile and Baldwin Counties in Alabama with Foley as number 3 on the list. The adoption of this Plan will hopefully serve to encourage and promote resilient construction practices by those working to provide housing in the City.
- The Plan includes a brief section specific to disaster recovery housing that will integrate closely with the City's emergency response plans and policies. This section will focus on emergency preparedness to help the City better understand its disaster housing needs before the next storm event.
- The Plan will also provide Foley with a mechanism to secure additional external funding to further expand its resiliency and sustainability goals. Generally speaking, grant funding is more readily accessible and more easily obtainable when a plan exists that is consistent with the grantor's goals and objectives.

3.2 Introduction to the City of Foley

The City of Foley, Alabama is located in southern Baldwin County with the intersection of Highways 98 and 59, locally referred to as the "Crossroads" located approximately eleven miles north of the Gulf of Mexico. The City was incorporated in 1915 and quickly became the economic hub of South Baldwin County with an emphasis on warehousing and shipping locally produced agricultural products. While agriculture remains an important part of the local economy, additions of the Tanger Outlets of Foley, OWA Parks and Resort, and the Foley Sports Tourism program have strengthened and diversified Foley's economy. **Figure 3.0** illustrates the location of the City of Foley in Baldwin County.

Figure 3.0 City of Foley Location Map



The population and housing stock in the City continue to grow at levels consistent with the surrounding metropolitan area. Based on population estimates from the U.S. Census Bureau, Baldwin County's population increased by 2.6% from 2020-2021 ranking it as the 16th largest metropolitan area in the nation. As indicated below, Foley's growth is growing at rates at least consistent with the surrounding region with an increase of 50.93% from 2010-2020.[1]

Table 3.1 City of Foley Population Trends

	1990	2000	2010	2020	2022 (Est)
Population	5,778	7,590	14,618	20,335	22,063
Increase		31.36%	92.59%	39.10%	8.49%

The City's housing stock growth has been consistent with its population growth as evidenced by the following data:

Table 3.2 City of Foley Occupied Housing Trends

2000	
Total Housing Units	3,245
% Manufactured Housing	12.78%
% Owner Occupied	60%
% Renter Occupied	40%
2010	
Total Housing Units	7,359
% Manufactured Housing	8.8%
% Owner Occupied	59.9%
% Renter Occupied	40.1%
2021 (5-yr est)	
Total Housing Units	9,243
% Manufactured Housing	7.4%
% Owner Occupied	73.6%
% Renter Occupied	26.4%

Further evidence of Foley's growth and diverse economy and an indicator of future growth is seen in traffic counts along Highway 59. Traffic counts from counters starting at the northernmost point at the intersection of Highway 59 and Peachtree Avenue to the southernmost point south of the intersection of Highway 59 and County Road 12 have remained consistent from 2015 to 2021.

[1] U.S. Census Bureau 2020 Census Data: www.census.gov

Table 3.3 Select Annual Average Daily Traffic Counts (Highway 59)[2]

Counter ID Baldwin 164 South of Peachtree Avenue		
Year	**AADT**	**Average**
2015	26,810	26,753
2016	27,410	
2017	27,810	
2018	26,347	
2019	26,847	
2020	25,753	
2021	26,296	
Counter ID Baldwin 802 North of Highway 98		
Year	**AADT**	**Average**
2015	29,630	29,524
2016	30,360	
2017	30,710	
2018	29,349	
2019	29,936	
2020	27,946	
2021	28,740	
Counter ID Baldwin 572 North of W. Michigan Ave.		
Year	**AADT**	**Average**
2015	36,430	35,962
2016	37,320	
2017	37,750	
2018	36,015	
2019	36,015	
2020	33,858	
2021	34,348	
Counter ID Baldwin 118 North of County Road 12		
Year	**AADT**	**Average**
2015	42,010	42,349
2016	43,040	
2017	43,530	
2018	41,405	
2019	42,233	
2020	41,910	
2021	42,316	
	7-Year Average (All Counters)	**33,647.29**

[2] ALDOT Traffic Data: https://aldotgis.dot.state.al.us/TDMPublic/

4.0 Existing Housing Assessment

4.1 Existing Housing Overview

The 2021 American Community Survey indicates that the City of Foley contains 9,243 total housing units. Of that total, approximately 74% is owner-occupied and 26% is renter-occupied. Additionally, approximately 7% of the total housing inventory in Foley is comprised of manufactured housing, and 93% is developed through conventional construction practices. The current housing inventory reflects the significant growth trend experienced by Foley and is an increase of approximately 185% from the year 2000.

Housing in Foley is disbursed throughout the City and does not necessarily follow a discernable pattern, allowing for ease of access to goods and services from nearly all residential areas in the City. Pockets of more densely developed residential areas do exist and follow those zoning classifications that allow for more compact housing development which includes the majority of Foley's residential zones except for the most restrictive zones including all R-1 Zones. A more detailed discussion of the regulatory framework for residential development follows.

4.2 Residential Development Regulatory Framework

The City of Foley has several policies, plans, and ordinances in place that determine how and where housing can be developed in the City. While these regulations are often restrictive, they are intended to ensure orderly development that is protective of human health and safety and are designed to ensure orderly and logical development within the City. The following sections will outline the various applicable regulations, specifically addressing the context of resilience.

4.2.1 City of Foley Zoning Ordinance (2022)

As stated, the City of Foley's Zoning Ordinance exists to, "promote the public health, safety, morals, and general welfare of the people, the community, and the area. The Ordinance is also designed to provide for the orderly development and growth in Foley; to avoid congestion of the public roads and streets, to conserve life, property, natural resources, and public funds; to allow for and encourage the most advantageous uses of land, resources, and properties for the general good and benefit to the people of Foley, Alabama." Per the laws of the State of Alabama, the Zoning Ordinance is supported by the City's Comprehensive Plan and the Official Zoning Map The Zoning Ordinance establishes twenty-four (24) land use districts or "Zones" that outline what types of land uses are allowed in which areas of the City. The Zones also outline development density, the height of structures, setbacks from public streets, and other development elements that establish the nature of various neighborhoods and districts within the City. Of the twenty-four established land use zones in the Ordinance, twenty allow some form of residential land use. The four that exclude residential land uses are:

- PID Planned Industrial District
- PO Preferred Office District
- M-1 Light Industry
- OSP Open Space/Preservation District

Density requirements for single-family residential zones range from 1.4 units per in Zone R-1R (Single Family Restricted) to 8 units per acre in Zones GPH-1 (Residential Garden Patio Homes) and MH-1 (Mobile Home / Park Subdivision).

4.2.2 Foley Forward Comprehensive Plan (2018)

The City of Foley's Comprehensive Plan consists of six sector plans with an understanding that each identified sector has a unique set of assets, opportunities, and needs. The sectors are geographically defined by the intersection of Highways 59 and 98 and include:

- Downtown Foley at the immediate intersection of Highways 59 and 98
- The Northwest Quadrant,
- The Northeast Quadrant,
- The Southwest Quadrant,
- The Southeast Quadrant, and
- The Highway 59 Corridor.

Each sector was considered an independent planning unit and the six sector plans were combined into a single plan at the end of the planning process. The Plan emphasizes common themes of connectivity, preservation, and enhancement of community character, utilization of green infrastructure and sustainable development, and the promotion of compatible land uses. These common themes, combined with enhanced and strengthened building codes and discussed in a later section of this plan provide a solid foundation for a more resilient and sustainable City of Foley as a whole, which in turn translates into a more resilient housing stock.

4.2.3 Foley Flood Damage Prevention Ordinance

The City of Foley's Flood Damage Prevention Ordinance, as updated and adopted in 2022, provides the standards and guidelines for residential and non-residential development within FEMA-designated Special Flood Hazard Areas (flood zones). The general purpose of the ordinance is to protect properties developed in flood zones from flooding hazards; to provide protection against development activities in flood zones that may adversely affect existing structures and properties; and to protect natural flood plains, stream channels, and natural barriers that perform important flood attenuation functions.

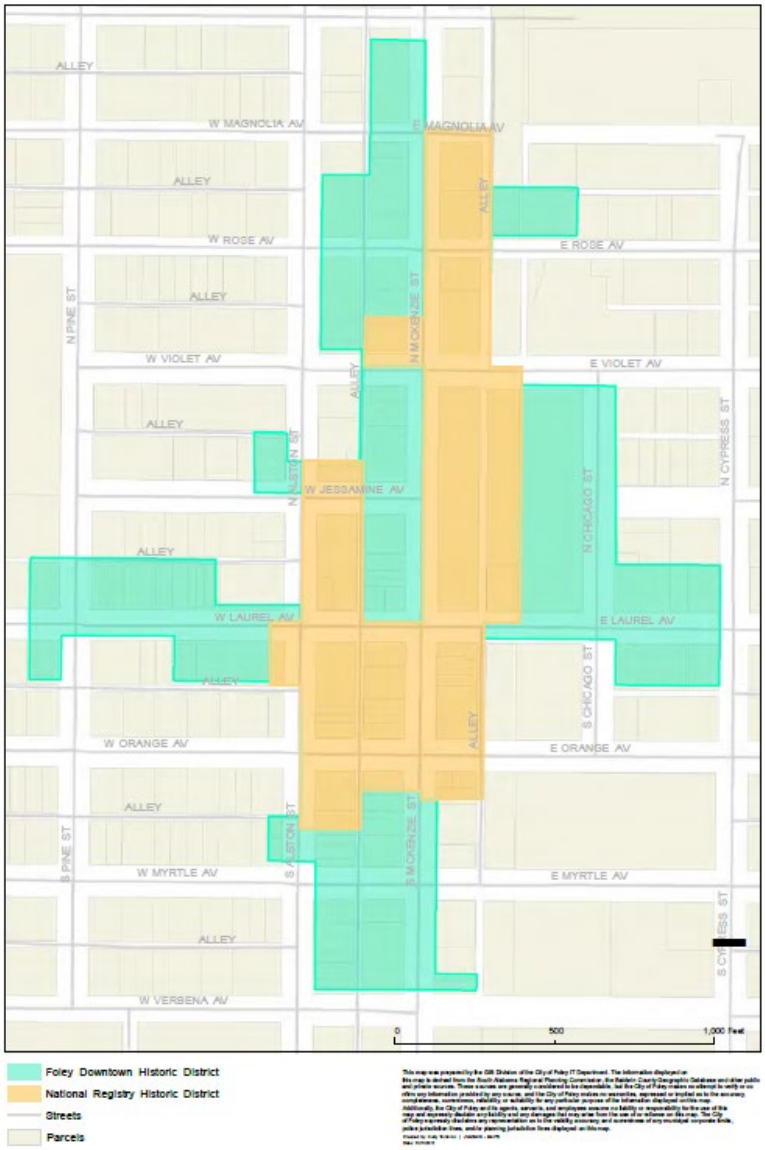
Article 4 – Provisions for Flood Hazard Reduction of the Ordinance is of particular importance within the context of this Plan as it provides general and specific standards for the development and redevelopment of residential and non-residential structures in Special Flood Hazard Areas. Highlights of this article are provisions that require:

- Subdivisions to have public utilities located and constructed to minimize flood damage,
- Subdivisions to have adequate drainage to reduce exposure to flood hazards,
- Design of water and wastewater systems to minimize flood water infiltration,
- Requirements for a 2-foot freeboard above established or determined base flood elevations.
- Adequate anchoring of manufactured housing,
- Prohibition of development within designated floodways,
- Subdivisions are required to limit peak runoff from the site to predevelopment levels for the one, ten, and 100-year rainfall events.
- All subdivision lots must have minimum buildable areas large enough to accommodate the primary structure and associated structures outside of the 1% (100-year) chance annual floodplain.

4.2.4 Foley Historic Preservation Ordinance

The Historic Preservation Ordinance and associated Downtown District Historic Review Guidelines apply to a specifically defined area of the City centered around the City's historic Downtown District. The larger historic district contains two designations including a Downtown Historic District and a National Register Historic District. The overarching purpose of the ordinance and guidelines is to protect the City's unique and valuable historic resources. Given that the City's Foley Forward Comprehensive Plan encourages in-fill and adaptive reuse of properties in the Downtown District and the City's Zoning Ordinance allows for joint residential and commercial uses by-right in the Downtown Overlay District, it is important to ensure that a delicate balance is achieved between maintaining the historic integrity of the District and ensuring the structural integrity and resilience of buildings retrofitted for residential uses within the designated historic district.

Figure 4.0
City of Foley Downtown Historic District



4.2.5 Foley Subdivision Regulations

The City of Foley Subdivision Regulations outline how subdivisions are developed and expanded to regulate lot sizes and the planning and construction of what will ultimately become public streets, drainage infrastructure, and utilities. Subdivisions are unique in that they are initially developed with private funding and the core components (i.e. streets, drainage, and utilities, etc.) are typically dedicated to the public realm upon completion. Given this "standard" practice, it is important to ensure that the initial development of subdivisions is conducted in a way that ensures efficient and effective long-term management and maintenance with public funds. The City's Subdivision Regulations are also intended to ensure that land is subdivided in a way that it can be used safely without danger to public health and safety from fires, floods, or other hazards. The regulations are also written to ensure that provisions are in place to ensure proper traffic flow, proper stormwater drainage, adequate water supply, and efficient and effective wastewater management.

4.2.6 Foley Building Codes

The City of Foley Building Codes are a key element in the City's ongoing efforts to strengthen its level of housing resiliency. On June 1, 2015, the City adopted the Coastal Supplemental Code as an enhancement to its standard (International Building Code 2018 Edition) code. The Coastal Supplemental Code is intended to increase community resilience and reduce future damage from hurricanes, high winds, and wind-driven rain by focusing primarily on construction methods relative to residential roof systems. Adoption of the Coastal Supplemental Code aligns the City's local building codes with FEMA's P-804 Wind Retrofit Guide for Residential Buildings. Since the adoption of the Coastal Supplemental Code in 2015, a total of 3,155 new single-family residential permits have been issued by the City of Foley Building Permit Department. This number represents approximately 34% of the total housing stock in the City of Foley. Construction of residential structures according to the Coastal Supplemental Code standard equates to a reduction of losses during severe weather events, significantly reduced damage, lowered insurance costs, and reduced storm debris cleanup costs. All of this equates to an overall higher level of community resilience for the City of Foley.

4.2.7 Baldwin County Hazard Mitigation Plan

The Southwest Alabama Regional Multi-Jurisdictional Hazard Mitigation Plan identifies and details hazards that affect the Alabama Emergency Management Agency's Division A which includes Baldwin County and the City of Foley. The Plan includes a detailed risk assessment, mitigation strategies, and community action plans with the City of Foley's located in **Appendix A, Section A.6**. The City of Foley Community Action Plan identified the following objectives, many of which the City has either accomplished or is actively pursuing:

- Comprehensive Plans and Smart Growth: Establish an active comprehensive planning program that is consistent with Smart Growth principles of sustainable community development.
- Geographic Information Systems: Maintain a comprehensive database of hazard locations, socio-economic data, infrastructure, and critical facilities inventories.
- Planning Studies: Conduct special studies, as needed, to identify hazard risks and mitigation measures.
- Zoning: Establish effective zoning controls, where applicable, to vulnerable land areas to discourage environmentally incompatible land use and development.
- Open Space Preservation: Minimize disturbances of natural land features and increased stormwater runoff through regulations that maintain critical natural features such as open space for parks, conservation areas, landscaping, and drainage.

- Flood Plain Management Regulations: Effectively administer and enforce local floodplain management regulations.
- Building and Technical Codes: Review local codes for the effectiveness of standards to protect buildings and infrastructure from natural hazard damages.
- Landscape Ordinances: Establish minimum standards for planting areas for trees and vegetation to reduce stormwater runoff and improve urban aesthetics.
- Stormwater Management: Manage the impacts of land development on stormwater runoff rates and natural drainage systems.
- Dam Safety Management: Establish a comprehensive dam safety program.
- Community Rating System Program: Increase participation of NFIP member communities in the CRS program.
- Critical Facilities Assessments: Perform assessments of critical facilities (hospitals, schools, fire, and police stations, emergency operations centers, special needs housing, and others) to address building and site vulnerabilities to hazards, identify damage control and retrofit measures to reduce vulnerability to damage and disruption of operations during severe weather and disaster events.
- Building Relocation: Relocate buildings out of hazardous flood areas to safeguard against damages and establish permanent open space.
- Acquisition: Acquire flood-prone buildings and properties and establish permanent open space.
- Building Elevation: Elevate buildings in hazardous flood areas to safeguard against damages.
- Flood Proofing: Encourage floodproofing of buildings in hazardous flood areas to safeguard against damages.
- Flood Control Measures: Small flood control measures built to reduce/prevent flood damage.
- Building Retrofits: Retrofit vulnerable buildings to protect against natural hazard damages, including flooding, high winds, tornadoes, hurricanes, severe storms, and earthquakes.
- Hazard Insurance Awareness: Increase public awareness of flood insurance and special riders that may be required for earthquakes, landslides, sinkholes, and other damages typically not covered by standard property protection policies.
- Critical Facilities Protection: Protect critical facilities from potential damages and occupants from harm in the event of hazards through retrofits or relocations of existing facilities located in high-risk zones or the construction of new facilities for maximum protection from all hazards.
- Back-Up Power: Ensure uninterrupted power supply to critical facilities during emergency events.
- Map Information: Increase public access to Flood Insurance Rate Map (FIRM) information:
- Outreach Projects: Conduct regular public events to inform the public of hazards and mitigation measures.
- Real Estate Disclosure: Encourage real estate agents to disclose floodplain locations for property listings.
- Library: Use the local library resources to educate the public on hazard risks and mitigation alternatives.
- Education Programs: Use schools and other community education resources to conduct programs on topics related to hazard risks and mitigation measures.
- Community Hazard Mitigation Plan Distribution: Distribute the hazard mitigation plan to elected officials, interested agencies and organizations, businesses, and residents, using all available means of publication and distribution.
- Technical Assistance: Make qualified local government staff available to advise property owners on various hazard risks and mitigation alternatives.

- Mass Media Relations: Utilize all available mass media, such as newspapers, radio, TV, cable access, internet blogs, podcasts, video sharing, and online social networking to increase public awareness and distribute public information on hazard mitigation topics.
- Weather Radios: Improve public access to weather radios.
- Disaster Warning: Improve public warning systems.
- Drainage System Maintenance: Improve maintenance programs for streams and drainage ways.
- Community Shelters and Safe Rooms: Provide shelters from natural disasters for the safety of community residents.

5.0 Housing Idealization Plan

5.1 Housing Idealization Plan Overview

In the most simple terms, the goals of this plan are to identify those areas of the City of Foley where the existence or potential existence of housing poses the greatest risk, to identify those areas of the City of Foley where the existence or potential existence of housing poses the least risk, and to implement and adjust policies and programs accordingly. To achieve the stated goals of this plan, a considerable amount of time and attention was given to gathering and analyzing spatial data specific to the City's existing and potential future housing conditions. Through this process of discovery and analysis, the conclusion was reached that the City of Foley does a very good job of integrating the concepts of resilience into its programs and policy in a very comprehensive manner. However, the process did reveal specific areas where improvements can be made that will strengthen the City's overall level of resilience concerning housing. The following sections will outline and detail those specific areas and provide recommendations for the City to continue its efforts to become a more resilient city.

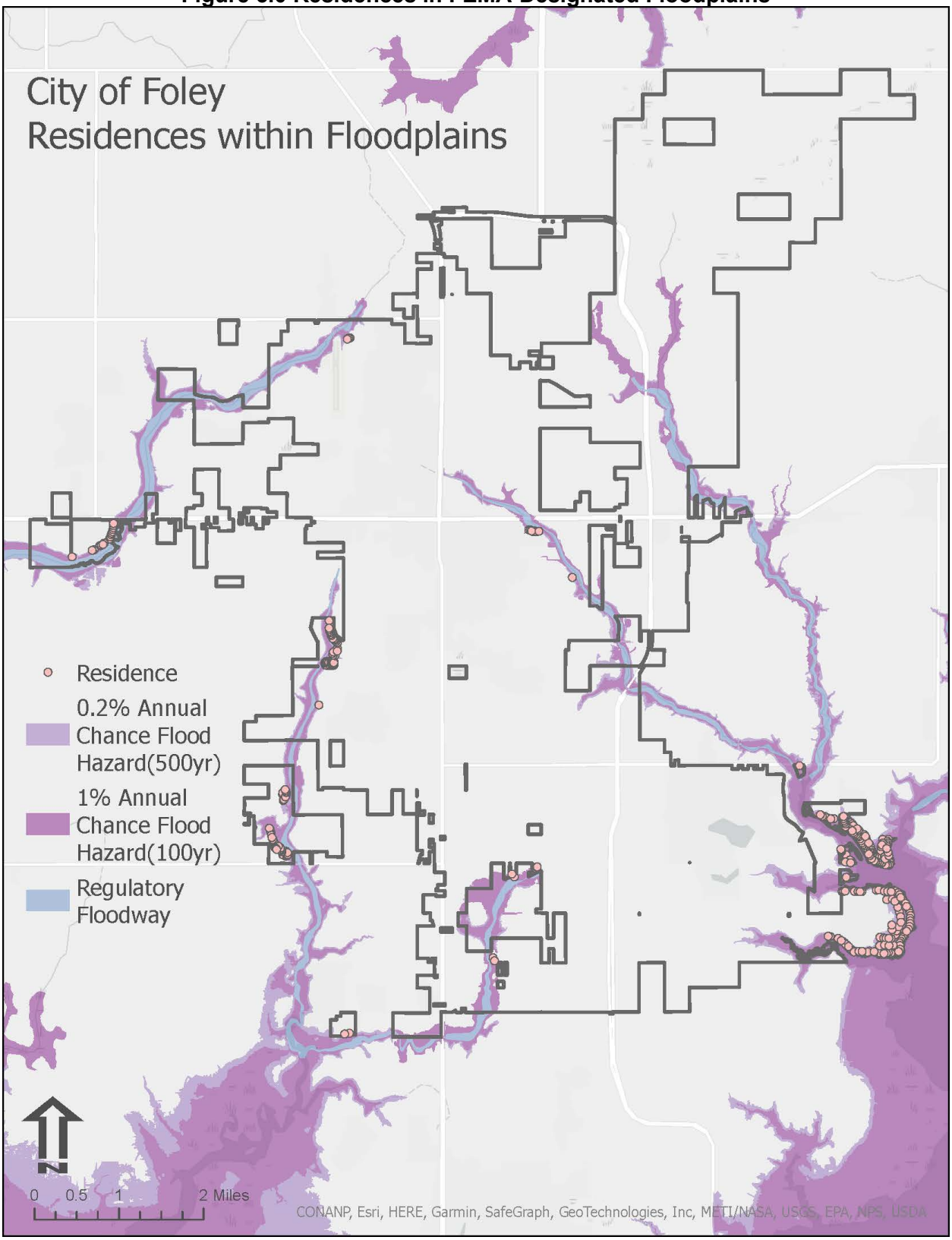
5.2 Structures in the FEMA-Designated Floodplain

Approximately 6.67% of the total land area of the City of Foley is considered a FEMA-designated floodplain. The designated floodplains in the City are primarily associated with the following streams, creeks, rivers, and water bodies:

- Graham Bayou
- Bon Secour River
- Wolf Creek
- Boggy Branch
- Sandy Creek
- Wolf Bay
- Magnolia River
- Unnamed Tributaries

There are approximately 303 residences located within a FEMA-designated floodplain in the City of Foley. **Figure 5.0** shows FEMA-designated floodplains in the City and the location of housing within the floodplain. While this only represents approximately 3.3% of the City's housing stock, it represents significant potential hazard losses and does not account for houses that are located near designated floodplains, placing them at higher-than-average risk of flood damage. While it is unreasonable to believe the City can eliminate all residential structures from the floodplain, there are steps it can take to mitigate the present circumstances, reduce the potential risks, and increase its resilience.

Figure 5.0 Residences in FEMA-Designated Floodplains



5.2.1 Mitigation Opportunities

There are three particular mitigation options that the City and homeowners can employ to address residences located in FEMA-designated floodplains. These include:

- Elevation of structures above the base flood elevation,
- Public acquisition of residential structures to create permanent conservation areas, and
- Floodproofing.

Each of these options has the potential to be complicated and costly, however, they each have the potential to provide benefits extending beyond the specific residential structure in question. By reducing the structural footprint in the floodplain, floodwaters are allowed to spread naturally and are less impacted by artificial barriers. It is also important to note that many of the mitigation measures currently outlined in the Southwest Alabama Regional Multi-Jurisdictional Hazard Mitigation Plan specific to the City of Foley (**Section 4.2.7** of this Plan) are consistent with these recommendations.

To fully understand the mitigation opportunities that exist in Foley it is important to have a basic understanding of the types of FEMA flood zones that exist in the City and the terminology associated with each. The flood zones present in Foley include:

- Zone A: Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
- Zone AE: These are the same as Zone A but include sufficient detail to provide base flood elevations.
- Zone VE: Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
- Zone X: Areas of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone X is the area determined to be outside the 500-year flood and/or protected by a levee from the 100-year flood.[3]

For clarification, the base flood elevation is defined as the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.

5.2.2 Elevation of Structures Above the Base Flood Elevation

It is reasonable to assume that a certain percentage of the residences that are located in a designated floodplain are built at or above the base flood elevation. However, many of these structures predate the FIRM maps and FEMA flood studies or were built under the County's jurisdiction and annexed by the City at a later date. It is safe to also assume that many of the residences located in the floodplain are not elevated above the base flood elevation. At the time of this writing, sufficient data does not exist to provide an accurate count of the residents in the floodplain that are built below the base flood elevation, determining the exact number and location will require additional investigation. However, for this plan, a discussion of structural elevation as a mitigation strategy is appropriate.

Elevation of residential structures is an eligible activity potentially funded through a variety of FEMA Hazard Mitigation Assistance (HMA) that involves physically raising an existing structure to a level at or above the base flood elevation as required by FEMA or local ordinance. Elevation

[3] Definitions of FEMA Flood Zone Designations: https://snmapmod.snco.us/fmm/document/fema-flood-zone-definitions.pdf

of residential structures can be achieved through a variety of methods including elevating on continuous foundation walls, on open foundations such as piers or posts, and elevating on fill material. Regardless of the method employed, all utilities must be equally elevated and all elevation projects must be designed according to the American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI) 25-05, Flood Resistant Design and Construction.

5.2.3 Public Acquisition of Residential Structures

Voluntary public acquisition of hazard-prone properties from private owners is another mitigation strategy that is potentially funded through the HMA program. Through the program, state, tribal, or local governments are granted funding for the acquisition of flood-prone properties. Through the Disaster Recovery Reform Act of 2018, the relevant funded entity must maintain the acquired property as open space in perpetuity. Allowable uses post-acquisition include parks for outdoor recreation, wetlands management, nature reserves, and unimproved, unpaved parking lots. The program generally does not allow acquired properties to be used for flood control structures, walled buildings, paved surfaces, and off-site fill.

Acquisition is not a simple process and not every property in a flood-prone area will necessarily qualify for acquisition. If a home is determined to be eligible for acquisition, a pre-disaster fair-market value must be established by a certified appraiser. Any funds received and not used to repair the home through the FEMA Individual Assistance Program or flood insurance will be deducted from the fair market value. Additionally, and balance owed on a mortgage will be paid to the lienholder. After all required payments have been made, the structure is then demolished and the land is deeded to the local government with its use restricted as open space.

5.2.4 Floodproofing

Floodproofing refers to any number of structural and non-structural changes or adjustments to structures that reduce or eliminate flood damage to improved property, structures, and their contents. Floodproofing is more commonly utilized in non-residential structures and is not permitted in Coastal High Hazard Areas (Zone V, VE, or V1-30). FEMA recommends that floodproofing be implemented up to one foot above the base flood elevation for a factor of safety and full flood insurance rating credit. It should also be noted that floodproofing is generally not a consideration for new construction or residential structures undergoing substantial improvements (equalling or exceeding 50% of the market value). In 2014, Congress passed the Homeowner Flood Insurance Affordability Act (HFIAA). Section 26 of the Act establishes guidelines for property owners that:

- Provide mitigation methods other than building elevation designed to reduce flood risks to residential structures that cannot be elevated because of their structural characteristics.
- Inform property owners about how these alternative mitigation methods may affect their flood insurance premiums under the NFIP.

Floodproofing is a complex matter and should be undertaken in consultation with the local building department, a registered design professional, and the insurance agent providing flood insurance for the property. Additional details are available through a FEMA Fact Sheet titled, "Reducing Flood Risk to Residential Buildings that Cannot be Elevated". The Fact Sheet discusses multiple issues that should be thought through when considering floodproofing such as:

- Wet floodproofing: Making portions of your home resistant to flood damage and allowing water to enter during flooding.
- Dry floodproofing: Sealing your home to prevent floodwaters from entering.

- Flood damage-resistant materials: Any building product capable of withstanding direct and prolonged contact with floodwaters without sustaining significant damage.

5.2.5 Considerations and Recommendations

As previously stated, it is unreasonable to believe the City can eliminate all residential structures from the floodplain. However, there are steps it can take to mitigate the present circumstances, reduce the potential risks, and increase its resilience. The preceding sections have provided mitigation options for the City to consider in addressing residential structures that currently exist within the FEMA-designated floodplain. This is not a "one size fits all" approach and a comprehensive mitigation approach will likely require a combination of these options to allow the City to achieve its resilience goals. **Section 9.0** of this plan will provide a more comprehensive overview of the funding mechanisms for the mitigation options described in this section.

5.3 Structures Outside the FEMA-Designated Floodplain

In recent years, multiple events, including Hurricane Sally have caused flood damage to residential structures in the City of Foley that lie outside of FEMA-designated floodplains. In some cases, single residential structures have received damages from multiple events. Because these properties are outside of designated floodplains, they are typically not covered through the National Flood Insurance Program (NFIP), leaving affected homeowners with few options for recovery of losses from damages incurred during these flood events. Because of the apparent repetitive nature of losses in these areas, it is logical to consider the need for additional studies to determine the need for either expansion of existing floodplains within the City or the addition of new areas of regulatory floodplain in the City. To further explore these options, it is important to understand the process FEMA undertakes to determine the designation of areas as regulatory floodplains.

5.3.1 The FEMA Flood Map and Floodplain Designation Process

FEMA flood maps are regulatory tools used to inform communities about local flood risks and help communities set minimum floodplain standards for safe and resilient development. By establishing levels of relative risk, flood maps determine the cost of insurance, thereby helping property owners financially protect themselves against flooding. Generally speaking, the lower the degree of risk, the lower the flood insurance premium will be. If lenders are involved in the purchase of a property located in areas with a high risk of flooding, flood insurance will likely be a requirement.

The process of modifying a community's flood maps often begins with an acknowledgment of changing local conditions revealed through increased population growth and development, better science revealed through local plans or engineering studies, or changing environmental or ecological conditions. Once this acknowledgment is determined, the investigation and study process is generally as follows:

1. FEMA, state, and local officials develop partnerships and identify data to be used to aid in discussions related to flood risks in the watershed.
2. The partnerships work together to collect current and historic flood-related data including:
    a. Hydrology,
    b. Infrastructure,
    c. Hydraulics,
    d. Land use,
    e. Existing map data.

3. If the collected data supports the need for map modifications, a series of community meetings are conducted, and the data are further refined to identify areas more prone to flooding and provide spatial orientation to project planners.
4. Preliminary maps are produced and presented to the community for a 90-day public comment and appeals process.
5. At the end of the public comment period, the map is finalized, and the local community begins a six-month adoption and compliance period that allows time for the amendment of local floodplain regulations to make them consistent with the new map products. At the end of these six months, the maps officially become part of the regulatory environment.

5.3.2 City of Foley Damage Reports

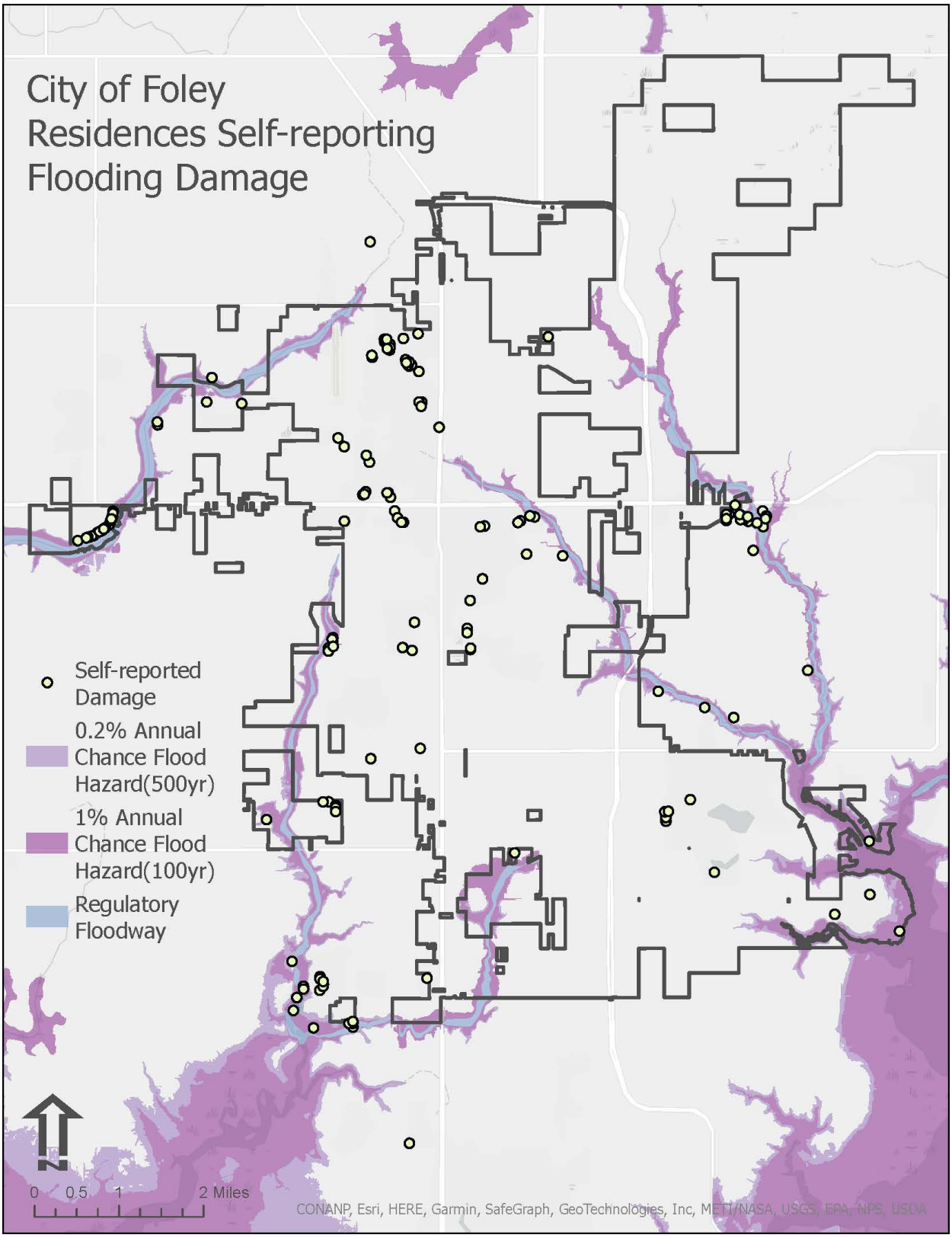
The City of Foley has documented residential flood damages from two separate events including a flash flooding event that occurred in April 2014 and Hurricane Sally in 2020. Damages from the flash flood event affected 233 individual properties and damages from Hurricane Sally affected 175 properties. Some of the damages from flooding affected properties located within FEMA-designated floodplains. However, many of the affected properties are located either completely outside of the floodplain or in proximity to the floodplain. It is a safe assumption that some of the damages may have been caused by poorly functioning manmade drainage systems. However, an analysis of mapping data showing the location of damaged properties in proximity to waterways and other water bodies indicates that many of the damaged properties are located in proximity to streams, bayous, and other natural waterways that are not designated as part of the floodplain by FEMA.

April 2014 Flood Event

A slow-moving cold front generated a historic rainfall event in southern Baldwin County during the evening hours of April 29, 2014. Flash flooding occurred over coastal Alabama as 3-8" of rain fell during the first round of storms on April 28. The second round of storms was more impactful with local rainfall levels exceeding 20" over 24 hours on April 29th leading to disastrous flooding throughout southern Baldwin County.[4] In the aftermath of this event, the City of Foley received reports of 233 residences receiving damages from flooding. A significant number of these damaged residential structures are located outside of the FEMA-designated floodplain resulting in limited options for the homeowners to financially recover from the damages. **Figure 5.1** illustrates the location of residential structures damaged by the 2014 flood event.

[4] National Weather Service: https://www.weather.gov/mob/2014_April29_FlashFlood#:~:text=Round%20%231%20began%20Monday%20night,around%207am%20Tuesday%2029%20April

Figure 5.1 Foley Flood Damage Locations



Hurricane Sally

Hurricane Sally made landfall in Gulf Shores, AL at 5 a.m. on Wednesday, September 16, 2020 as a strong Category 2 hurricane with maximum sustained winds of 105 mph. Sally produced widespread wind, storm surge, and freshwater flooding across coastal AL and the western Florida Panhandle. Flood and wind damage also extended well inland into inland southwest Alabama and south central Alabama. Sally was an extremely slow-moving hurricane, which prolonged and exacerbated the local impacts. The storm was moving at less than 5 mph at the time of landfall, resulting in a long duration of tropical storm and hurricane-force winds, storm surge, and torrential rainfall.

Hurricane Sally's storm surge and the resultant damages were widespread and significant from Baldwin County eastward to Okaloosa County. The highest surge occurred in the bays and sounds of Alabama and the western Florida Panhandle, with generally lower values and lesser impacts on the immediate Gulf-facing shores. A peak inundation of 7 to 9 feet above ground level was officially surveyed across some locations in the back bays and sounds of southeast Baldwin County, as well as the northern end of Escambia and Blackwater Bays. A larger area was impacted by 3 to 6 feet of inundation, including along the immediate Gulf-facing shores. It should be noted that the extremely heavy rainfall (more details to follow) likely exacerbated the total water levels, although it is difficult to determine the exact extent. Regardless, thousands of structures along coastal areas were flooded by the surge.

The very slow movement of Sally resulted in rainfall totals of 15 to 30 inches across Baldwin County into the western Florida Panhandle. 7 to 15 inches of rain fell across parts of inland southwest Alabama, along and east of Interstate 65, and south central Alabama. This torrential rain resulted in major river and flash flooding, especially in Baldwin County eastward into the Florida Panhandle. Thousands of water rescues were conducted during the storm due to rapidly rising water and many homes were flooded. Road closures were extensive, especially in Baldwin County east into the western Florida Panhandle and some roads were damaged or washed out. Several rivers reached moderate to major flood stage and some crested within the top 5 of their historical crests.[5] Hurricane Sally resulted in Federal Disaster Declaration DR-4563-AL with 14 Alabama counties receiving FEMA post-disaster assistance including a state-wide total of nearly $72 million in housing assistance.[6] **Figure 5.2** illustrates the location of residences in the City of Foley that were damaged by the flooding effects of Hurricane Sally.

5.3.3 Considerations and Recommendations

The April 2014 flood event and Hurricane Sally both had significant public and private financial impacts on the City of Foley and both affected how the City approaches the issue of resilience as a mechanism for the continued protection of public health, safety, and welfare. Through the development of this Plan, a significant amount of spatial data has been collected and analyzed. This data will prove useful to the City in its ongoing resilience efforts and with some additional study will provide a solid foundation to engage FEMA and the community in conversations related to modifications to the FEMA flood maps relative to providing needed protections to properties that have experienced flood losses outside of the FEMA-designed floodplain. It is recommended that the City engage the appropriate officials with the Alabama Emergency Management Agency and FEMA to begin the process of determining the feasibility of modifying Foley's flood maps to potentially include flood-prone areas in an official FEMA floodplain designation.

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[5] National Centers for Environmental Information: https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=516848

[6] FEMA: https://www.fema.gov/disaster/declarations

Figure 5.2 Hurricane Sally Flood Damage Reports

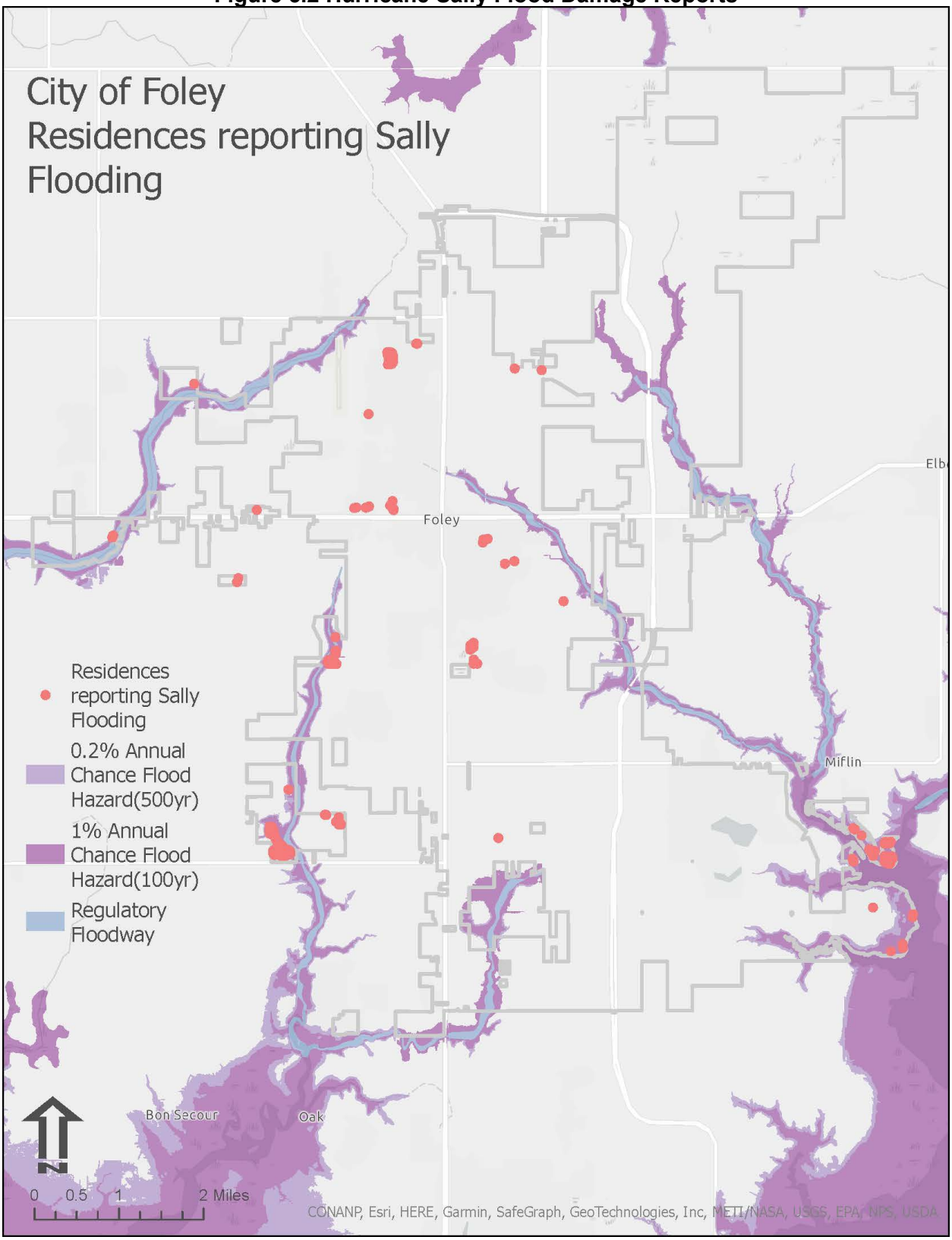
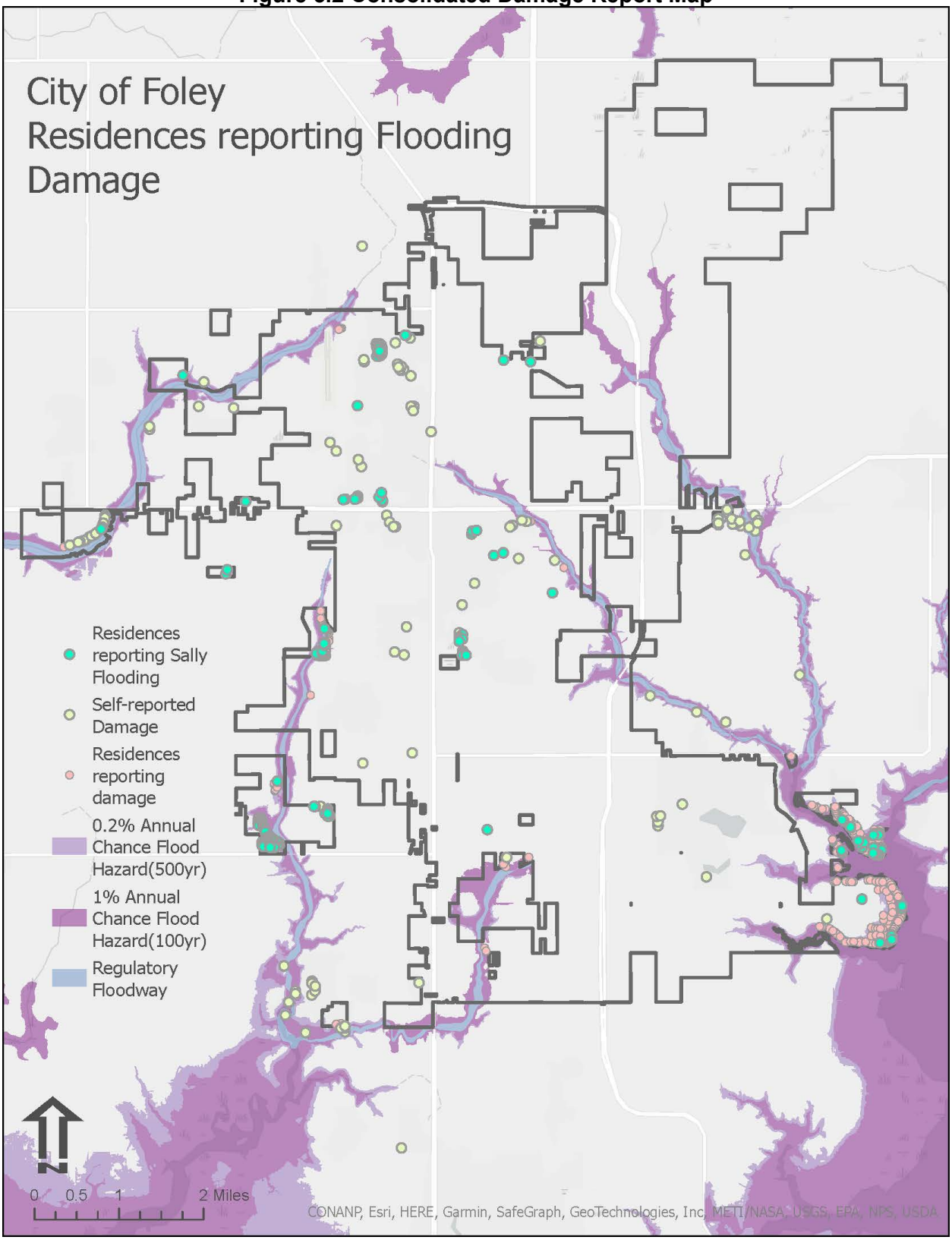


Figure 5.2 Consolidated Damage Report Map



5.4 Housing Idealization Conclusion

In the early sections of the Plan, it was stated that the Plan would be used to inform decision-making concerning future residential land uses to shift housing development away from high-risk areas and to encourage residential development in lower-risk areas. In that context, two elements of risk were considered, wind and flooding. The example events discussed in the plan were selected for inclusion primarily because those two events were both landmark events in the minds of residents and because of the significant impacts they had on the residential landscape in the City of Foley. An analysis of the wind hazard zones in Foley indicates that the wind risk is homogenous throughout the City, meaning that there is no real distinction between low and high-risk areas regarding wind risk within the City of Foley. The fact that Foley has incorporated the Coastal Supplemental Code into its standard building codes will help continue to mitigate the wind risk.

The analysis of flood risk tells a very different story. The City has four FEMA-designated flood zones including a section of coastal velocity zone along the banks of Wolf Bay. The City's flood risk is compounded by flooding from two major flooding incidents in 2014 and 2020 of several residences in areas not included in the FEMA-designated floodplains. The simple conclusion is that the City should continue to discourage residential development in areas that are within the floodplain, which includes these two areas. It is recommended that the City seek FEMA HMA funding to mitigate residential structures that are currently within the FEMA-designed floodplain through elevating, acquisition, or floodproofing. It is also strongly recommended that the City initiate discussions with FEMA to modify the FEMA floodplain to consider and include those areas affected by both the 2014 flood event and Hurricane Sally in 2020. Doing so will afford protection to those homeowners potentially affected by future floods in those areas through the NFIP. However, it is important to note one particular caveat: Any property owner can purchase flood insurance as long as their community participates in the NFIP regardless of the location of their property. It is also important to note that flood insurance premiums are based on risk. Properties outside of FEMA-designated floodplains are likely to have lower flood insurance premiums than properties located within a floodplain. It is recommended that the City expand its public outreach and education program to help residents understand that they are eligible to purchase flood insurance regardless of the location of their property.

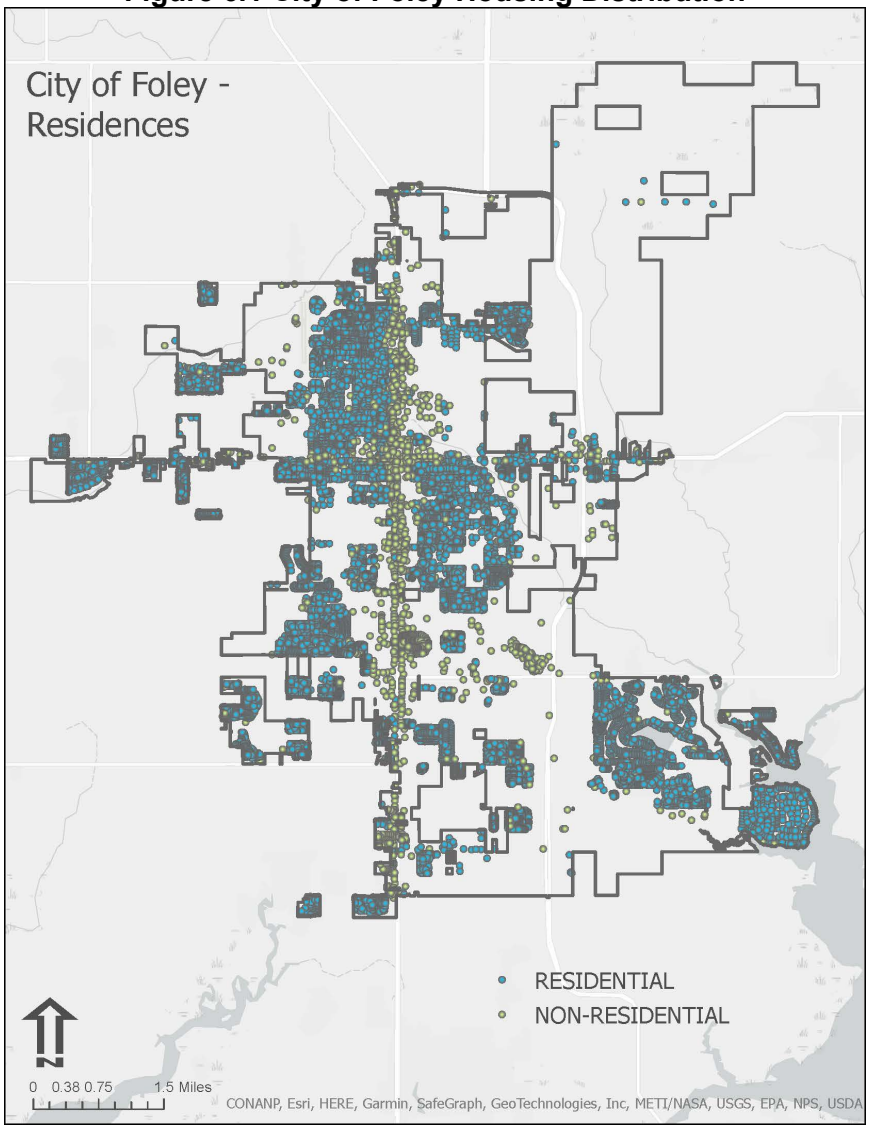
6.0 Damage and Loss Reduction Plan

Discussions of increasing a community's resilience are often directly related to discussions of decreasing a community's level of risk. The two issues are typically inversely proportional. In other words, the lower a community's risk is to the effects of natural hazards, the greater its resilience typically is. As previously mentioned, the City of Foley's housing is somewhat evenly dispersed throughout the City with some areas where residential development is more dense than others. From a zoning and land use perspective, twenty out of Foley's twenty-four zoning districts allow some form of residential land use. The four zoning districts that specifically exclude residential land uses include:

- PID Planned Industrial District
- PO Preferred Office District
- M-1 Light Industrial
- OSP Open Space/Preservation District

Figure 6.1 illustrates the general distribution of housing throughout the City.

Figure 6.1 City of Foley Housing Distribution



One of the goals of this plan is to recommend changes to the City's Comprehensive and Future Land Use Plans to shift housing development away from high-risk areas to lower-risk areas. These potential changes will also generate important policy discussions related to housing density and housing types as future housing developments are considered within the City. The first step in achieving the stated goal is to conduct a review of relevant Municipal ordinances and policies as detailed in **Section 4.2: Residential Development Regulatory Framework**. The review of the City's existing regulatory framework revealed that the City's ordinances and policies typically exceed the minimum standards established by agencies that would typically guide specific policies (i.e. FEMA for Flood Damage Prevention Ordinance). Given Foley's tendency to exceed the minimum standards in its resilience or risk minimization regulatory mechanisms, it is then necessary to consider other planning documents such as the City's Comprehensive Plan and Future Land Use Plan.

The Foley Forward Comprehensive Plan (2022) is organized by sectors or quadrants and considers six distinct areas of the City including:

- The Downtown District,
- The Southeast Quadrant,
- The Southwest Quadrant,
- The Northeast Quadrant,
- The Northwest Quadrant, and
- The Alabama Highway 59 Corridor

The majority of Foley's housing is located in the first five of these "quadrants" and the Foley Forward Plan is relevant to the City's resilience plans as it relates to residential development in those quadrants. The Foley Forward Plan consistently communicates a policy of "Encouraging infill and redevelopment in strategic locations that provide accessibility and a mix of uses". This policy, appropriately applied to residential development, will provide for increased residential development density, provide better access to goods and services, and increase resilience if applied in the appropriate locations throughout the City (i.e. outside of floodplains and flood-prone areas).

During the regulatory review process, the Southwest Alabama Regional Multi-Jurisdictional Hazard Mitigation Plan was reviewed. The purpose of that Plan is to evaluate and identify all prioritized hazards that have the potential to affect Baldwin, Choctaw, Clarke, Conecuh, Escambia, Mobile, Monroe, and Washington Counties and associated municipalities. The Plan also identifies potential mitigation strategies for each entity addressed in the Plan that may help reduce or eliminate the impacts of identified natural hazards on the region. The Plan is very comprehensive and accomplishes its stated purpose well. However, the City of Foley would be well served in developing its own, single-jurisdiction Hazard Mitigation Plan. Doing so would allow for a more concentrated planning effort focused on the City of Foley with a higher level of local input than a regional plan allows for. Funding for the Plan is available through the FEMA Hazard Mitigation Grant Program (HMGP) and is authorized through Section 409 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-228, as amended). Development of a locally-specific Hazard Mitigation Plan would also ensure Foley's continued eligibility for non-emergency federal disaster assistance including the HMGP, Pre-Disaster Mitigation Assistance (PDM), and Flood Mitigation Assistance (FMA) program funds.

7.0 Disaster Recovery Housing Plan

As with most coastal communities, there is an understanding in Foley that there will eventually be another hurricane that will have a significant impact on the City and its residents. One of the take-home messages from this plan is that the City of Foley does resilience well. In **Section 4.2** the City's regulatory environment relative to residential development was reviewed and analyzed within the context of resilience. It is noted that with all of these regulatory mechanisms, the City's adopted policies exceed the recommended minimum standards. For example, FEMA typically recommends that Cities require the lowest finished floor of structures within a floodplain to be built one foot above the base flood elevation. Foley has exceeded this requirement by requiring structures to have the lowest finished floor constructed at two feet above the base flood elevation. Examples of this type exist throughout the City's regulatory structure. Most notably, in 2015, the City of Foley adopted the Coastal Supplemental Building Code.

Adoption of the Coastal Supplemental Code aligns the City's building codes with FEMA's P-804 Wind Retrofit Guide for Residential Buildings. To date, approximately 34% of the City's total housing stock has been built to the Coastal Supplemental Code. The relevance of this statistic to this section of the Plan is that 34% of the City's housing stock is significantly more resilient to the devastating effects of a major hurricane. Structures built to the Coastal Supplemental Code standard are much more likely to survive a hurricane with minimal damage, greatly reducing the need for temporary or permanent replacement housing in Foley.

Generally, disaster recovery housing consists of four primary elements:

1. Storm Shelters
2. Temporary Housing
3. Repairs to Existing Housing
4. Replacement Housing

The City's primary strategy in advance of a hurricane's approach is evacuation. The City has two primary evacuation routes including Highway 59 and the Foley Beach Expressway, both of which provide direct access to Interstate 10. The City does not have significant sheltering capacity and relies on effective communication for evacuation and controlled reentry after a storm event.

Repairs to existing housing and replacement housing affected by a major hurricane or flood event will likely be financially supplemented by FEMA resources through the FEMA Individual Assistance program providing the event triggers a federal disaster declaration. Given the rate of residential development in the City, access to resources (contractors and developers) should be adequate to meet the demand over time. However, efforts related to pre-disaster mitigation and increased resiliency into continued strengthening the City's housing stock will minimize the post-disaster efforts needed to recover. The strategies included in this plan that include elevation of residential structures in the floodplain, acquisition and relocation, floodproofing, and expanded flood studies will serve to increase the City's housing resilience.

To facilitate a quick return to normalcy after a storm event, the City should encourage local businesses to develop and adopt Continuity of Operations Plans (COOPs). COOPs provide businesses with specific strategies to prepare for and respond to storm events, allowing them to protect critical assets and data resources and return to regular business operations as quickly as possible following an event that disrupts normal business operations. This return to normal business operations not only facilitates rapid redevelopment in a community but also provides important social structures that people need to regain a sense of normalcy following a catastrophic event.

8.0 Community and Stakeholder Engagement Plan

The City of Foley engages in a wide range of planning and community development activities including comprehensive planning, natural resource and environmental management planning, and planning related to the management of grant-funded projects. While many of these planning efforts may be issue-specific, they are all connected by the fact that they are intended to promote and ensure the continued orderly growth and development of the City. However, there seems to be a common paradox among growing cities in that as they grow, community engagement becomes more of a challenge. Generally, aside from normally scheduled public meetings such as those for the City County, Planning Commission, and others, getting the public to engage in other public meetings is challenging. Perhaps a more effective strategy is to engage community members on issues in places where they are gathering for other purposes such as community festivals, farmers' markets, and other community events. In other words, take the message to people where they are rather than expect them to come to you.

Another key to effective engagement is to find those impassioned stakeholders in the community who will help spread your message. Every community has individuals who are passionate about the various issues that are key to the community's success. They are at Council meetings, and Planning Commission meetings, and are always looking for an opportunity to grab a few minutes of the Mayor's time or a key department head's time. Identify these individuals, bring them into the communication fold, and let them help you get the word out to the community via their circles of influence.

9.0 Strategic Funding Plan

The City of Foley Resilient Housing Plan identifies specific strategies intended to provide the City with the means to improve the resilience of its housing stock. These strategies include:

4. Mitigation of residences located within the FEMA-designated floodplain through:
    a. Elevation of existing structures,
    b. Acquisition and relocation of existing structures, and
    c. Floodproofing of existing structures.
5. Mitigation of residences affected by flooding that are outside the FEMA-designated floodplain through modification of the FEMA Flood Insurance Rate Maps (FIRMs).
6. Development and implementation of a City of Foley-specific Multi-hazard Mitigation Plan.

Each of these strategies has specific funding opportunities and mechanisms associated with them that the City can take advantage of to facilitate strategy implementation. The following will provide a brief overview of each funding opportunity as well as available resources for additional information.

9.1 FEMA Hazard Mitigation Assistance Program

FEMA's hazard mitigation assistance program provides financial assistance for eligible mitigation measures that effectively reduce disaster losses. FEMA defines "Hazard Mitigation" as any sustainable action that reduces or eliminates long-term risk to people and property from future disasters. Mitigation planning and implementation of mitigation measures break the cycle of disaster damage, reconstruction, and repeated damage. Hazard mitigation includes long-term solutions that reduce the impact of disasters in the future.[7]

The FEMA Hazard Mitigation Program takes many different forms depending on the need to be met. These various forms include:

- **The Hazard Mitigation Assistance Grant Program (HMGP) is** intended to rebuild communities after a major disaster in a way that reduces future disaster losses.
- **The Building Resilient Infrastructure and Communities (BRIC) Program** is designed to help communities reduce risks from future disasters and natural hazards.
- **The Flood Mitigation Assistance Program (FMA)** assists in reducing the risk of flood damage to NFIP-insured buildings.
- **The Pre-Disaster Mitigation Program (PDM)** provides funding for the implementation of Congressionally approved community projects that prioritize sustainable and cost-effective measures to reduce risk and reliance on federal disaster funding.
- **Community Development Block Grant Disaster Recovery and Mitigation Programs (CDBG-DR and CDBG-MIT)** provide funding for communities to address long-term unmet disaster recovery needs in disaster-affected areas. The funding is also available for assistance in areas impacted by recent disasters to carry out strategic and high-impact activities to mitigate disaster risks and to reduce future losses.

More information about each of these programs is available through FEMA's website here: www.fema.gov/grants/mitigation. Information about the CDBG programs is available through the following websites: www.https://www.hudexchange.info/programs/cdbg-mit/ and www.hudexchange.info/programs/cdbg-dr/

[7] FEMA Grants: https://www.fema.gov/grants/mitigation

Of the options listed above, the Flood Mitigation Assistance Program is most applicable to address the mitigation of existing residences within the FEMA-designated floodplain. The Hazard Mitigation Assistance Grant Program may be utilized to provide cost-share assistance to the City in the development of a Hazard Mitigation Plan. With either of these programs, the process should begin with a discussion with the Mitigation Division of the Alabama Emergency Management Agency. Once the City has developed and adopted a Hazard Mitigation Plan, it may rely on a combination of the above-mentioned grant sources to assist with the implementation of mitigation strategies identified in the Hazard Mitigation Plan.

Addressing the mitigation of flood-prone residences located outside of the FEMA-designated floodplain should also begin with a discussion with the Alabama Emergency Management Agency. The assistance provided by the State and by FEMA will likely be in the form of technical assistance as opposed to a grant.