HARDEE COUNTY

ADAPTATION ACTION AREA PLAN #1 ZOLFO SPRINGS

Prepared By:
Kimley»Horn

HARDEE COUNTY CVA – AAA PROJECT

Adaptation Action Area Plan #1 Zolfo Springs

PREPARED FOR:

Central Florida Regional Planning Council
555 E Church St,
Bartow, FL 33830

Coastal & Heartland National Estuary Partnership
1050 Loveland Blvd,
Port Charlotte, FL 33980

Hardee County
412 W Orange St,
Wauchula, FL 33873

PREPARED BY:

Kimley-Horn and Associates, Inc.
200 S Orange Ave, Suite 600
Orlando, FL 32801

Registry No. 35106
June 2026
Orlando, Florida
249656005

Kimley»Horn

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Abbreviations

AAA	Adaptation Action Area
BFE	Base Flood Elevation
BMAP	Basin Management Action Plan
BOCC	Board of County Commissioners
CFRPC	Central Florida Regional Planning Council
CHNEP	Coastal & Heartland National Estuary Partnership
CIP	Capital Improvement Program
CVA	Comprehensive Vulnerability Assessment
DDCV	Double Detector Check Value
DOT	Department of Transportation
DRC	Disaster Recovery Centers
EPA	U.S. Environmental Protection Agency
FCMP	Florida Coastal Management Program
FDEP	Florida Department of Environmental Protection
FDEM	Florida Department of Emergency Management
FEDR	Florida Office of Economic and Demographic Research
FEMA	Federal Emergency Management Agency
FFE	Finished Floor Elevation
FMA	Flood Mitigation Assistance
GIS	Geographic Information System
I&I	Inflow and Infiltration
LDC	Land Development Code
LF	Linear Feet
LID	Low Impact Development
LMI	Low- and Moderate-Income
LMS	Local Mitigation Strategy
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
PROTECT	Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation
RAP	Reasonable Assurance Plan
RPC	Regional Planning Council
SFHA	Special Flood Hazard Areas
SWFWMD	Southwest Florida Water Management District
TMDL	Total Maximum Daily Load
USDA	U.S. Department of Agriculture
WWTF	Wastewater Treatment Facility

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Introduction

Hardee County (the County) received funding through the Coastal & Heartland National Estuary Partnership (CHNEP) to write three Adaptation Plans for the highest ranking Adaptation Action Areas (AAAs) within the County. This Adaptation Plan is a continuation of the work performed under the County Comprehensive Vulnerability Assessment (CVA) and the Identification and Ranking of AAAs. This Adaptation Plan has been developed for the Zolfo Springs AAA, the highest ranked AAA in Hardee County, to bridge the gap between identified vulnerable critical assets and the implementation of flood reduction solutions.

The County, Central Florida Regional Planning Council (CFRPC), and CHNEP staff assisted Kimley-Horn in each Adaptation Plan's development. This report outlines specific adaptive strategies, measures, and policies that were developed based on the Florida Adaptation Planning Guidebook and tailored to the unique needs and challenges of the Zolfo Springs AAA. A location map of the Zolfo Springs AAA is shown in **Figure 1.**

The objectives of this Adaptation Plan are:

- To highlight Hardee County's current capacity to address flood resiliency in the Zolfo Springs AAA.
- To propose implementable adaptation strategies that would reduce flood risk of identified critical assets.
- To rank proposed adaptation strategies based on their anticipated flood resilience improvements, costs, and feasibility.
- To develop preliminary (planning level) costs, descriptions, and conceptual representations for proposed projects.
- To highlight funding opportunities for the proposed adaptation strategies.

This study utilized the latest Florida Adaptation Planning Guidebook published in collaboration between Florida Department of Environmental Protection (FDEP), the Florida Coastal Management Program (FCMP), and National Oceanic and Atmospheric Administration (NOAA), to guide the development of methodologies, criteria and strategies for this Adaptation Plan.

Background

Critical assets include infrastructure, community and emergency facilities, transportation and evacuation routes, and natural, cultural, and historical resources that are essential for community function, safety, and resiliency. During the Hardee County CVA, critical assets were identified and evaluated for physical exposure to rainfall-driven flooding as well as for their social, environmental, and hazard sensitivity.

Based on the results of the CVA, the evaluated list of critical assets was refined to only include County-owned assets that experienced flooding in the 500-Year, 24-Hour 2040 Rainfall event, and did not currently have planned projects to improve flood resiliency. This refined asset list was used in the Identification and Ranking of AAAs project to define AAA boundaries that group critical assets most vulnerable to flooding. AAAs were geographically defined using ArcGIS based on flood extents, critical asset distribution, and municipal and parcel boundaries.

Once the AAA boundaries were identified, they were ranked using a multi-criterion weighted matrix. The criteria used in the matrix to rank the AAAs included:

- Exposure Analysis (100-Year, 24-Hour 2040 Rainfall)
- Exposure Analysis (500-Year, 24-Hour 2040 Rainfall)
- Sensitivity Analysis
- Asset Ownership
- Asset Relevancy
- Asset Group
- Length of Inundated Roadway
- Length of Inundated Bridges/Culverts
- Quantity of Public Comments

An explanation of the criteria, the scoring process, and the weighting factors applied to each criteria can be found in the Hardee County Identification and Ranking of AAA Technical Memorandum attached in **APPENDIX 1.** A location map of the identified Hardee County AAAs and their rank are shown in **Figure 2.**

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Figure 1: Zolfo Springs AAA with Vulnerable Critical Assets

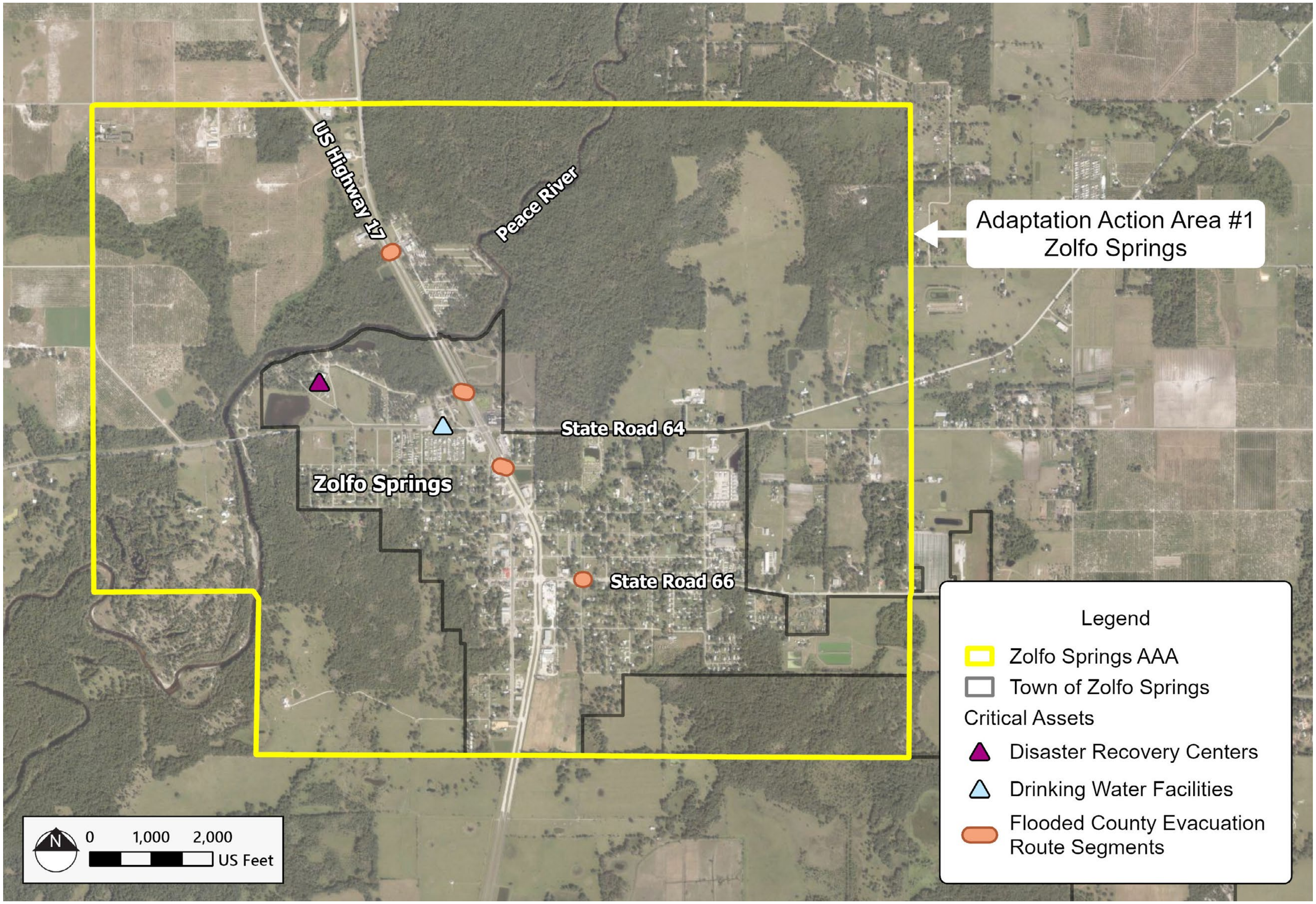

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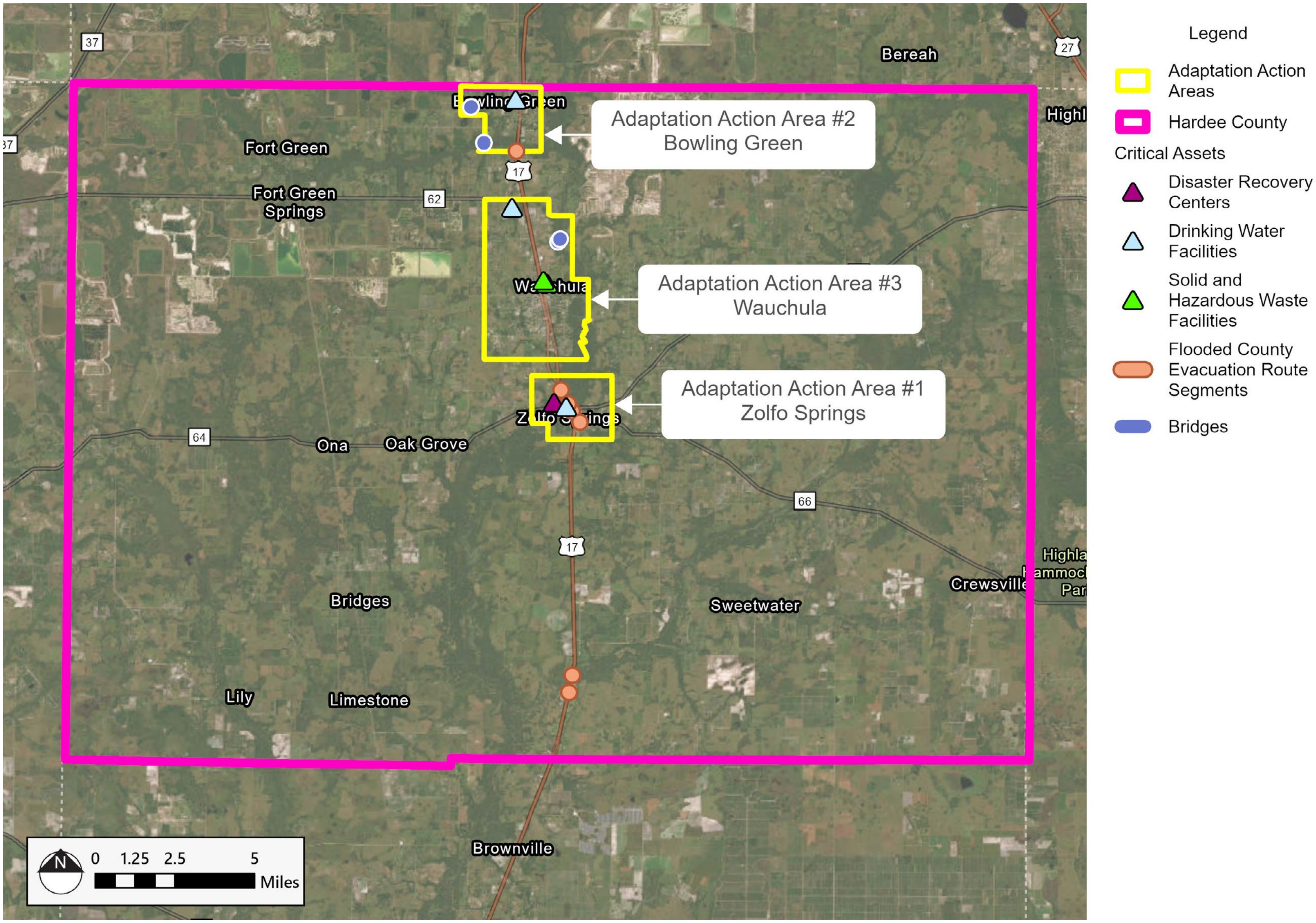
Figure 2: Location Map of Hardee County AAAs and their Rank



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Resiliency in Hardee County

Hardee County is a rural, non-coastal, agricultural hub that encompasses approximately 638 square miles. In recent years, Florida has seen more frequent and increasingly intense weather events, including heavy rainfall. Inland regions like the County are becoming more vulnerable to the effects of severe and prolonged rainfall. Such events lead to soil saturation, reduced infiltration, increased runoff, and general flooding. Severe flood events pose risks to property and public safety, while also causing disruptions to municipal infrastructure and affecting economic stability. Hardee County is vulnerable to a range of flooding hazards, including rainfall-induced flooding, riverine flooding, storm surge, and the long-term effects of sea level rise. While the county is inland, storm surge and sea level rise can influence water levels within the lower reaches of the Peace River watershed and its tributaries.

Recognizing these vulnerabilities, the County has taken proactive steps to identify threats, propose strategic actions, and outline a roadmap for building a more resilient future. The County is actively collaborating to implement adaptation strategies that not only strengthen level of service and mitigate flood risks but also enhance the overall wellbeing and sustained growth of the community.

This Adaptation Plan outlines specific adaptive strategies, measures, and policies that are tailored to the unique needs and challenges of the Zolfo Springs AAA and build upon existing initiatives such as the Hardee County CVA, Hardee County Local Mitigation Strategy (LMS), and the Hardee County Long Term Recovery Plan (LTRP).

Zolfo Springs

The Zolfo Springs AAA is located in the center of Hardee County and is bisected by US Highway 17. The AAA contains the Town of Zolfo Springs which has an approximate population of 1,750 people, and is known for its agriculture, phosphate mining, and position along the Peace River.

The AAA includes six critical assets, the Nickerson Ullrich disaster recovery center, the Zolfo Springs Water Treatment Plant, and four evacuation route segments shown to flood in the 500-Year, 24-Hour 2040 Rainfall event modeled during the County CVA. A total of 13 flood risk comments were received from public outreach meetings for locations within the AAA. A map of the Zolfo Springs AAA and the 500-Year, 24-Hour 2040 Rainfall flood depths are shown in **Figure 3.**

Assessment of Current Adaptive Capacity

Adaptive capacities are broadly defined by the Florida Adaptation Plan Guidebook to refer to how well a system can adjust and respond to changing conditions and challenges. Adaptive capacity for the County has been assessed in terms of:

- Regulatory and planning capacity,
- Administrative and technical capacity,
- Fiscal capacity, and
- Infrastructure status.

These four criteria capture the ability of the County and the Town of Zolfo Springs to implement, fund, and maintain adaptive strategies and interventions as described in further detail below.

Regulatory and Planning Capabilities

Current regulatory and planning capabilities within the Zolfo Springs AAA are governed by Hardee County, the Town of Zolfo Springs, and statewide regulations. Primary regulatory and planning documents applicable to the AAA include:

- Hardee County Comprehensive Plan (2030, as amended through November 2014)
- Hardee County Unified Land Development Code (adopted October 12, 2023)
- Hardee County Local Mitigation Strategy (effective March 27, 2025)
- Hardee County Capital Improvements Program (as adopted through the annual budgeting process)
- Town of Zolfo Springs Comprehensive Plan and Unified Land Development Code, as amended.
- Florida Building Code
- Federal Emergency Management Agency floodplain management requirements
- Hardee County Long Term Recovery Plan
- Hardee County Stormwater Master Plan

The County's adopted budget and capital programming framework further support implementation of infrastructure improvements through a structured, multi-year capital planning process.

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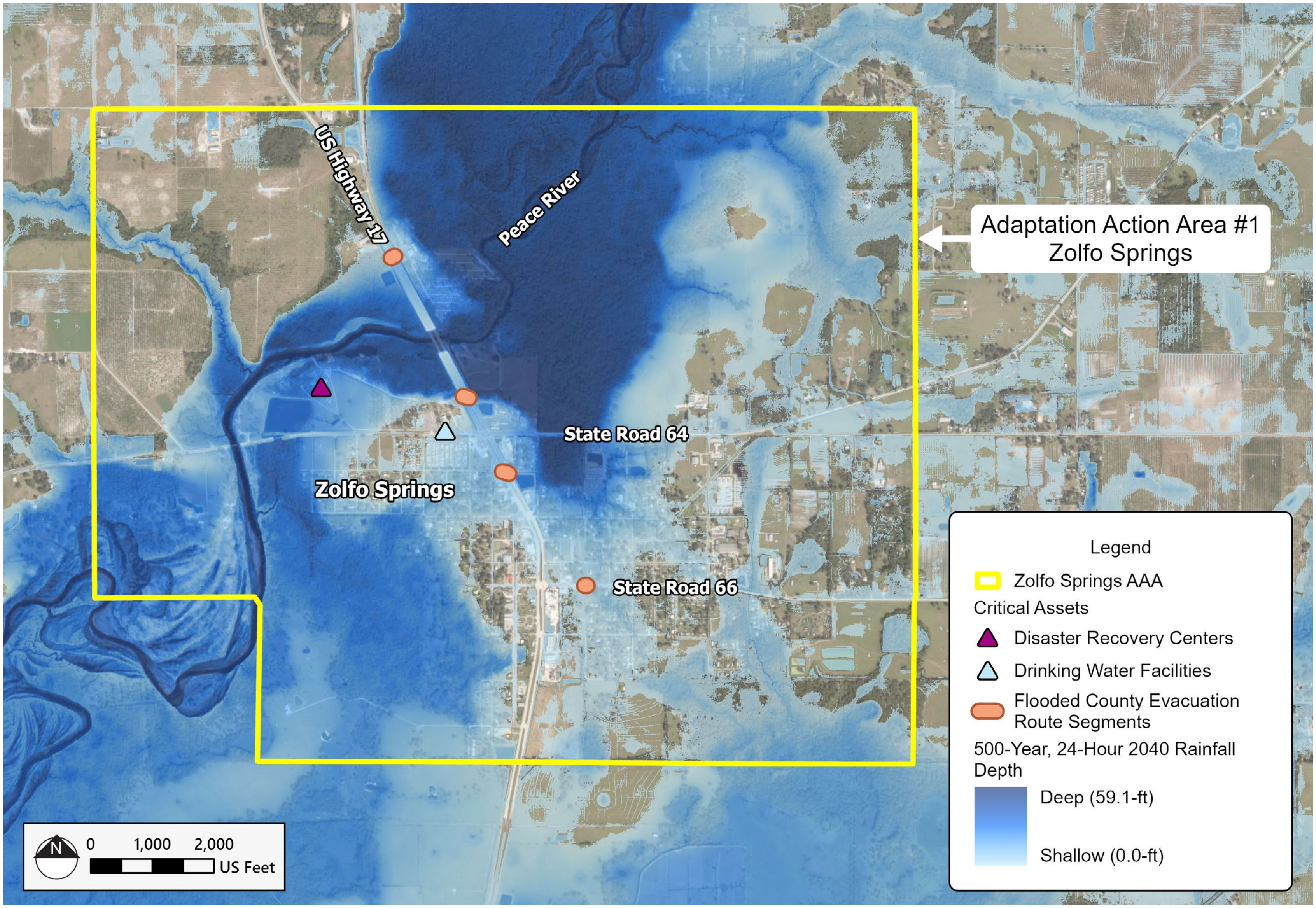
Figure 3: Zolfo Springs AAA 500-Year, 24-Hour 2040 Rainfall Flood Depths



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Comprehensive Plans

Long-range planning within the AAA is guided by both the Hardee County Comprehensive Plan (2030) and the Town of Zolfo Springs Comprehensive Plan, each adopted in accordance with section 163.3177, Florida Statutes. Together, these plans establish policy direction for land use, infrastructure, and growth management across jurisdictional boundaries.

Across both jurisdictions, the Comprehensive Plans support:

- Coordination between land use and infrastructure planning
- Intergovernmental coordination, and
- Consideration of environmental constraints in development decisions
- Planning for public facilities and capital improvements to support adopted level of service standards

The Hardee County Comprehensive Plan includes policies supporting intergovernmental coordination with municipalities, including the Town of Zolfo Springs, particularly in the provision of infrastructure, coordination of service delivery, and maintenance of adopted level of service standards.

Across both Hardee County and the Town of Zolfo Springs, the Comprehensive Plans include policies related to stormwater drainage, buffering of sensitive areas, and conservation of natural resources, which contribute to managing environmental constraints in development decisions.

Land Development Regulations

Across both Hardee County and the Town of Zolfo Springs, Unified Land Development Codes (ULDC) establish requirements for floodplain management, site design, and development intensity. These regulations collectively require:

- The elevation of structures within Special Flood Hazard Areas (SFHA) to be at least the Base Flood Elevation (BFE) as defined by FEMA
- Limitations on development within designated floodways
- Use of flood-resistant construction practices and materials

These provisions support compliance with the National Flood Insurance Program (NFIP) and provide a consistent baseline for reducing flood risk across the AAA.

In addition, both LDCs include development standards that influence stormwater management and site performance, including:

- Lot coverage or impervious surface controls, which regulate runoff generation
- Landscaping, buffering, and open space provisions, which can support infiltration and reduce runoff at the site scale
- Subdivision and site design standards, which influence roadway layout, drainage patterns, and the allocation of open space

These standards collectively affect how stormwater is generated, conveyed, and managed within development areas and are implemented in coordination with applicable state and regional permitting programs.

The Hardee County Land Development Code (Section 05.01.01) establishes flood-resistant construction standards consistent with the Florida Building Code and FEMA floodplain management requirements, supporting compliance with the NFIP.

Capital Improvement Program

Hardee County maintains a multi-year Capital Improvement Program (CIP) that identifies, prioritizes, and schedules capital investments for public infrastructure and facilities. The program includes projects related to water systems, stormwater management, transportation, and public facilities, and is used to guide funding decisions based on system needs, available resources, and long-term planning objectives. The County's adopted budget reflects the use of this program as a rolling multi-year planning tool to prioritize and fund infrastructure projects, including those related to stormwater management, transportation, and public facilities.

The Capital Improvements Element of the Comprehensive Plan provides the policy basis for the CIP, requiring that infrastructure improvements be planned to support existing and future development and maintain the adopted level of service standards.

The CIP functions as an implementation tool by translating planning policies into funded projects, including infrastructure upgrades, system maintenance, and capacity improvements that support continued service delivery and reduce vulnerability to system disruptions. The program also provides a mechanism for integrating external funding sources, including state and federal grants, into capital project delivery.

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Local Mitigation Strategy

The Hardee County LMS (effective March 27, 2025) is a multi-jurisdictional hazard mitigation plan developed and maintained at the local level in coordination with the Florida Division of Emergency Management (FDEM) and consistent with FEMA. Both Hardee County and the Town of Zolfo Springs participate in the LMS Working Group, which meets quarterly to:

- Assess hazards and vulnerabilities
- Identify and prioritize mitigation projects
- Coordinate implementation across jurisdictions

The LMS integrates planning mechanisms across both jurisdictions, including their respective Comprehensive Plans and Land Development Regulations, and coordinates with related efforts such as the Comprehensive Emergency Management Plan and post-disaster redevelopment planning.

Participation in the LMS is required to maintain eligibility for state and federal mitigation funding and supports implementation of capital-focused adaptation strategies, including flood protection measures, drainage improvements, and facility retrofits.

Long-Term Recovery Plan

Following Hurricane Ian, Hardee County and its municipalities, including the City of Bowling Green, the City of Wauchula, and the Town of Zolfo Springs, prepared the Hardee County Long Term Recovery Plan (LTRP) with support from FEMA Recovery Support Functions (RSFs) and other local, state, and federal partners. The LTRP was developed to support coordinated long-term recovery, prioritize recovery projects, and guide resilient redevelopment efforts across the County and its municipalities.

The LTRP identifies recovery and resilience projects related to infrastructure systems, stormwater drainage improvements, public facilities, housing, transportation, economic redevelopment, and community resilience. The plan identified ten projects within the City of Zolfo Springs, including projects related to infrastructure upgrades, park improvements, affordable housing, downtown revitalization, and public facilities. The plan also identifies implementation mechanisms, partnerships, and potential funding opportunities to support long-term recovery and future resilience efforts. The Hardee County Long-Term Recovery Plan is included in **APPENDIX 2.**

Hardee County Stormwater Master Plan

The recently awarded Hardee County Stormwater Master Plan will be a comprehensive, county-wide plan to mitigate flooding and manage water quality. Stormwater master plans aim to map and evaluate existing stormwater infrastructure including pipes, drop structures, channels, and other stormwater utilities. The collected data will be used by the County to target aging infrastructure for rehabilitation projects that will improve urban rainwater runoff and protect water quality. Stormwater master plans are vital to maintain an accurate inventory of County stormwater assets and plan for infrastructure projects.

Administrative and Technical Capabilities

Administrative and technical capabilities of the County are demonstrated by their respective local government departments, divisions, and committees and are defined as the staff available to maintain County operations and perform work. At the time of this assessment, the County employs approximately 189 people across 45 total departments.

In addition to public partnerships, the County maintains continuing service agreements with engineering and consulting firms for larger efforts including numerical modeling, design, permitting, and support services; grant writing and administration services; and Geographic Information System (GIS) support for data and asset management.

Fiscal Capacity

Current fiscal capacity was reviewed to identify the current measures that can be taken to pay for adaptation strategies and resiliency efforts. The largest sources of revenue for the County are from taxes and state grants which make up 15.5% and 58.2% respectively of the total revenue in the Fiscal Year 2025-2026 Budget Summary, based on the Hardee County Board of County Commissioners (BOCC). Additionally, most funds are allocated to public safety and the physical environment which make up 46.6% and 18.9% of the total annual expenditure respectively.

A potential funding matrix has been included in this adaptation plan to provide the County with recommendations for optimal funding opportunities tailored to each strategy. The funding matrix can be found in the Potential Funding Opportunities section of this report.

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Infrastructure

Current infrastructure capacity of the Zolfo Springs AAA was reviewed to identify potential assets that could benefit from adaptation strategies or interventions. The County identified six critical assets within the Zolfo Springs AAA for inclusion in this study, the Public Water Systems Plant, the Nickerson Ullrich building disaster recovery Center, and four evacuation route segments.

Drinking Water Facility

The Public Water Systems Plant is located approximately 0.3-mi from the Peace River along State Road 64. The asset is a double detector check valve (DDCV) used for fire sprinkler systems to prevent water from backflowing into the potable water supply at the County owned Pioneer Park (**Figure 4**). The asset was identified as having 0.24-ft of flood depth in the 500-Year, 24-Hour, 2040 Rainfall event. During the development of this Adaptation Plan a construction project was completed to elevate and protect this asset, therefore, no strategies targeting this asset were proposed.

Figure 4: Public Water Systems Plant DDCV

Disaster Recovery Center

The Nickerson Ullrich building (**Figure 5**) is located approximately 500-ft from the Peace River on Wilbur C King Boulevard. This asset was identified as having 9.24-ft of flood depth in the 500-Year, 24-Hour 2040 Rainfall event. The structure is used by FEMA during and after disaster events such as Hurricane Milton to distribute resources and assist residents during recovery.

Figure 5: Nickerson Ullrich Disaster Recover Center

Roadways and Evacuation Routes

The two primary roadways in the Zolfo Springs AAA are US Highway 17 and State Road 64 which run through the center of the AAA. Three of the identified evacuation route segments are on US Highway 17, and the last evacuation route segment within the AAA is at an intersection on State Road 66. The 100- and 500-Year, 24-Hour 2040 Rainfall flood depths for the four evacuation route assets are shown in **Table 1.** These evacuation route segments were included because of their proximity to or intersection with County roads, and therefore impact the accessibility of those County roads due to flooding at these locations. The four Evacuation Routes identified in Zolfo Springs are shown in **Figure 6** and **Figure 7**.

Table 1: Evacuation Route Flood Depths

Evacuation Route Intersection Street Names	100-Year, 24-Hour 2040 Rainfall Flood Depth (ft)	500-Year, 24-Hour 2040 Rainfall Flood Depth (ft)
US Highway 17 Turn Lane	1.441	4.62
River Rd & US Highway 17	1.871	5.80
Wilbur C King Blvd & US Highway 17	3.938	7.31
Palmetto St & State Road 66	0.021	1.35

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Figure 6: US Highway 17 Turn Lane (Top) and the Intersection of River Rd and US Highway 17 (Bottom)

Figure 7: The Intersection of Wilbur C King Blvd & US Highway 17 (Top) Palmetto St & State Road 66 (Bottom)

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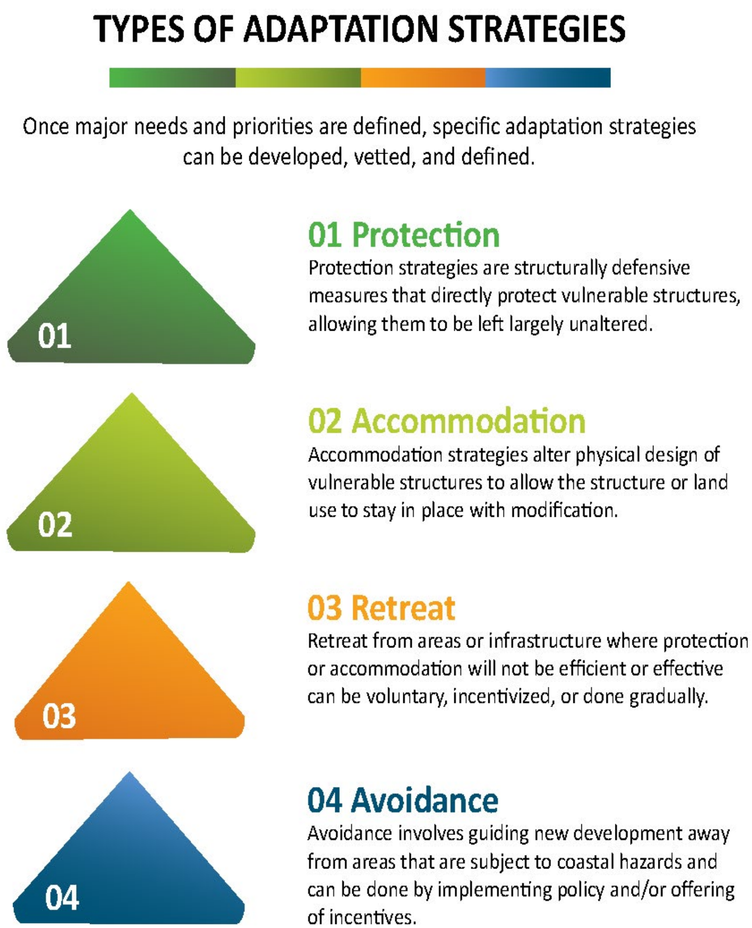
Identification of Adaptive Strategies

Adaptive strategies are proposed or planned solutions that aim to increase resiliency and strengthen the AAA against future high-intensity flooding events. Strategies were proposed based on the current adaptive capacity of the AAA and known threats and stressors. Per the Florida Adaptation Planning Guidebook, proposed adaptive strategies were classified as either protection, accommodation, retreat, or avoidance solutions (**Figure 8**).

Figure 8: Types of Adaptation Strategies



Protection

Protection strategies are structurally defensive measures that directly protect vulnerable structures, allowing them to be left largely unaltered. By prioritizing the protection of vulnerable areas and assets, these strategies help mitigate potential damage, preserve vital resources, and ensure the stability of communities in the face of evolving threats. Ultimately, protection strategies form the first line of defense, enabling a buffer against immediate risks while working towards long-term adaptation and sustainability goals.

Table 2 lists the protection strategies identified for the Zolfo Springs AAA. Short-term projects are those that could be implemented in five years or less, and long-term projects are those that require longer than five years to complete.

Table 2: Protection Strategies

Strategy	Term	Description
Install Deployable Flood Barriers at the Nickerson Ullrich Building	Short	Install portable flood barriers ahead of major storm events in front of/around the Nickerson Ullrich building to prevent floodwater from encroaching into the building.
Implement Roadside Swales or Detention Ponds at Intersection of Palmetto St and State Rd 66	Short	Implement engineered swales or detention areas that store runoff during peak storm events to protect major roadways.
Implement Roadside Swales or Detention Ponds at US Highway 17 Turn Lane	Short	Implement engineered swales or detention areas that store runoff during peak storm events to protect major roadways.
Bank Stabilization Along the Peace River	Short	Build up channel banks with structural reinforcements to reduce erosion, prevent slope failure, and increase storage.

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Accommodation

Accommodation strategies modify systems and structures to better cope with the impacts of environmental changes. These strategies focus on adjusting current infrastructure via retrofitting or re-design to reduce vulnerability and enhance resilience. Accommodation strategies alter the physical design of vulnerable structures to allow the element to stay in place with modification. This may involve enhancing infiltration and drainage, increasing storage capacity, or providing maintenance to improve flow or conveyance.

Table 3 lists the accommodation strategies identified for the Zolfo Springs AAA. Short-term projects are those that could be implemented in five years or less, and long-term projects are those that require longer than five years to complete.

Table 3: Accommodation Strategies

Strategy	Term	Description
Elevate Utility Infrastructure Vulnerable to Flooding	Short	Elevate infrastructure vulnerable to flooding to reduce flood service disruptions and protect utilities during major storm events.
Upsize Existing Drainage Infrastructure at Intersection of River Rd and US Highway 17	Long	Regrade and expand existing roadside ditches/swales along major roadways to reduce roadway inundation during major storm events and increase storage.
Retrofit Peace River Outfalls with Check Valves	Short	Retrofit stormwater infrastructure currently discharging to the Peace River with check valves to prevent backflow.
Elevate Wilbur C King and US Highway 17 Intersection	Long	Elevate major roadways vulnerable to flooding to reduce flood service disruptions during major storm events.

Retreat

Retreat strategies focus on relocating people, infrastructure and activities away from areas increasingly at risk due to environmental changes. Retreat strategies are often implemented where protection or accommodation will not be efficient or effective. These strategies involve phased retreat from vulnerable regions. By strategically withdrawing from high-risk areas, future damage can be mitigated, exposure hazards can be reduced, and lives and investments can be protected.

Table 4 lists retreat strategies identified for the Zolfo Springs AAA. Short-term projects are those that could be implemented in five years or less, and long-term projects are those that require longer than five years to complete.

Table 4: Retreat Strategies

Strategy	Term	Description
Relocation of the Nickerson Ullrich Building	Long	Demolish Nickerson Ullrich Building and relocate away from the Peace River.
Asset Abandonment	Short	County may abandon the Nickerson Ullrich Building in favor of more protected structure to use as a disaster recovery center and leave the existing building for the community to manage.

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Avoidance and Planning

Avoidance strategies focus on limiting development or expansion of infrastructure in areas prone to environmental risks. These strategies are typically implemented as policies and often incorporate an incentivization element to encourage participation and compliance. Common avoidance measures include revisions to land-use planning regulations and zoning laws, and enforcement of more restrictive building codes that direct new development away from vulnerable areas or hold them to a higher level of service. These proactive strategies not only help in minimizing future damage but also promote safer, more resilient community growth. By integrating avoidance strategies, adaptation plans can effectively manage risk and ensure that development aligns with long-term sustainability objectives.

Table 5 lists the avoidance and planning strategies identified for the Zolfo Springs AAA. Short-term projects are those that could be implemented in five years or less, and long-term projects are those that require longer than five years to complete. It should be noted that certain updates to comprehensive plans, land development codes, and other land review projects may be subject to restrictions under F.S. 252.422 and 553.902 as amended by SB 180 (2025).

Figure 9: Flooded roadway along River Road SW, Zolfo Springs

Table 5: Avoidance and Planning Strategies

Strategy	Term	Description
Low Impact Development (LID) Ordinance	Short	Develop an ordinance supportive of LID and green infrastructure practices that will result in increased water storage, decreased runoff, and water quality improvements.
Develop a Stormwater Engineering Standards Manual	Short	Develop a stormwater engineering standards manual to provide consistent infrastructure planning with clear guidelines to minimize the risk of poorly designed stormwater systems that could lead to excessive flooding.
Finished Floor Elevation (FFE) Ordinance	Short	Increase the minimum FFE to 1-ft above the BFE such that any building foundation must be constructed to a minimum standard elevation.
Encourage Development in Areas of Low Flood Risk	Long	Promote adaptive reuse and new development in areas with low flood risk by offering density bonuses for affordable housing projects.
Evacuation Route Drainage Infrastructure Inspections	Long	Phased inspections and improvements to drainage infrastructure adjacent to US Highway 17 and State Road 64 to identify areas of severe flooding and provide mitigation to the roadway.
County Land Acquisition Program	Long	Develop a program for the County to gradually acquire flood prone properties to limit development in locations vulnerable to flooding.

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Adaptive Capacity Scoring Criteria

Adaptive capacity scoring criteria were developed with guidance from the Florida Adaptation Planning Guidebook. Adaptive strategies with high scores are those that offer the maximum positive flooding resilience impact for the least cost. Definitions for the scoring criteria used are shown in **Table 6, Table 7, Table 8, Table 9,** and **Table 10**.

Figure 10: Flooding at Pioneer Park following Hurricane Ian

Table 6: Scoring Criteria – Resilience

Resilience Criteria	
3	Strategy is anticipated to greatly increase resilience to flooding
2	Strategy is anticipated to moderately increase resilience to flooding
1	Strategy is anticipated to minimally increase resilience to flooding

Table 7: Scoring Criteria – Implementation Costs

Implementation Costs Criteria	
3	Implementation costs are anticipated to be minimal
2	Implementation costs are anticipated to be moderate
1	Implementation costs are anticipated to be high

Table 8: Scoring Criteria – Life Cycle Costs

Life Cycle Costs Criteria	
3	Life cycle costs are balanced; provides significant resilience dividends
2	Life cycle costs are increased; provides significant resilience dividends
1	Life cycle costs are increased; provides minimal resilience dividends

Table 9: Scoring Criteria – Project Scale

Project Scale Criteria	
3	Strategy is anticipated to have a regional impact
2	Strategy is anticipated to have a local impact
1	Strategy is anticipated to only impact the target critical asset

Table 10: Scoring Criteria – Technically Feasible

Technically Feasible Criteria	
3	Strategy is anticipated to have minimal design constraints
2	Strategy is anticipated to have moderate design constraints
1	Strategy is anticipated to have high design constraints

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Ranking of Proposed Adaptive Strategies

A ranking matrix for proposed adaptive strategies is shown in **Table 11.**

Table 11: Ranking of Proposed Adaptive Strategies

Strategy Type	Strategy Name	Strategy Description	Resilience	Implementation Costs	Life Cycle Costs	Project Scale	Technically Feasible	Overall Score	Final Ranking
Avoidance and Planning	Develop a Stormwater Engineering Standards Manual*	Develop a stormwater engineering standards manual to provide consistent infrastructure planning with clear guidelines to minimize the risk of poorly designed stormwater systems that could lead to excessive flooding.	3	3	3	3	2	14	1
Avoidance and Planning	FFE Ordinance*	Increase the minimum FFE to 1-ft above the BFE such that any building foundation must be constructed to a minimum standard elevation.	2	3	3	3	3	14	1
Avoidance and Planning	Evacuation Route Drainage Infrastructure Inspections	Phased inspections and improvements to drainage infrastructure adjacent to evacuation routes to identify areas of severe flooding and provide mitigation to the roadway.	2	3	3	3	3	14	1
Avoidance and Planning	County Land Acquisition Program	Develop a program for the County to gradually acquire flood prone properties to limit development in locations vulnerable to flooding.	2	3	3	3	3	14	1
Protection	Install Deployable Flood Barriers at the Nickerson Ullrich Building	Install portable flood barriers ahead of major storm events in front of/around the Nickerson Ullrich building to prevent floodwater from encroaching into the building.	2	3	3	1	3	12	2
Accommodation	Retrofit Peace River Outfalls with Check Valves	Retrofit stormwater infrastructure currently discharging to the Peace River with check valves to prevent backflow.	3	2	2	3	2	12	2
Accommodation	Elevate Wilbur C King and US Highway 17 Intersection	Elevate major roadways vulnerable to flooding to reduce flood service disruptions during major storm events	3	1	3	3	2	12	2
Avoidance and Planning	LID Ordinance*	Develop an ordinance supportive of LID and green infrastructure practices that will assist in water storage and slowing of runoff.	2	3	3	2	2	12	2
Avoidance and Planning	Encourage Development in Areas of Low Flood Risk	Promote adaptive reuse and new development in areas with low flood risk by offering density bonuses for affordable housing projects.	1	3	3	2	3	12	2
Protection	Bank Stabilization Along the Peace River	Build up channel banks with structural reinforcements to reduce erosion, prevent slope failure, and increase storage.	3	1	2	3	2	11	3
Accommodation	Upsize Existing Drainage Infrastructure at Intersection of River Rd and US Highway 17	Regrade and expand existing roadside ditches/swales along major roadways to reduce roadway inundation during major storm events and increase storage.	2	1	3	3	2	11	3
Accommodation	Elevate Utility Infrastructure Vulnerable to Flooding	Elevate infrastructure vulnerable to flooding to reduce flood service disruptions and protect utilities during major storm events.	2	2	3	1	3	11	3
Protection	Implement Roadside Swales or Detention Ponds at Intersection of Palmetto St and State Rd 66	Implement engineered swales or detention areas that store runoff during peak storm events to protect major roadways.	3	1	2	2	2	10	4
Protection	Implement Roadside Swales or Detention Ponds at US Highway 17 Turn Lane	Implement engineered swales or detention areas that store runoff during peak storm events to protect major roadways.	3	1	2	2	2	10	4
Retreat	Relocation of the Nickerson Ullrich Building	Demolish Nickerson Ullrich Building and relocate away from the Peace River.	3	1	2	1	3	10	4
Retreat	Asset Abandonment	County may abandon the Nickerson Ullrich building in favor of more protected structure to use as a disaster recovery center and leave the existing building for the community to manage.	1	2	3	1	2	9	5

* It should be noted that certain updates to comprehensive plans, land development codes, and other land review projects may be subject to restrictions under F.S. 252.422 and 553.902 as amended by SB 180 (2026).

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Conceptual Planning

This section refines the proposed adaptive strategies with associated construction projects to bridge the gap between critical assets and flood reduction solutions. Proposed projects descriptions have been supplemented with preliminary costs, planning considerations, and conceptual representations. The adaptive strategies have been organized by the type of critical asset infrastructure they target.

These concepts are not intended to represent engineering designs, however, they provide a planning-level framework to support decision-making, prioritization, and future funding pursuits by translating high-level strategies into specific concepts that could be considered for design and implementation. Preliminary planning-level cost estimates for each strategy were derived from comparable completed projects and are presented as a conservative range encompassing construction costs. It should be noted that costs related to project design, required hydraulic modeling, and future assumptions of inflation, are not included in the cost estimates. A summary of the proposed adaptive strategy projects elaborated in this section is shown in **Table 12.** Short-term projects are those that could be implemented in five years or less, and long-term projects are those that require longer than five years to complete.

Table 12: Summary of Proposed Adaptive Strategy Projects

Strategy Name	Term	Planning Construction Cost
Install Deployable Flood Barriers at the Nickerson Ullrich Building	Short	$40,000-$75,000
Relocation of the Nickerson Ullrich Building	Long	$300,000-$600,000
Elevate Major Roadways Vulnerable to Flooding at Wilbur C King and US Highway 17 Intersection	Long	$300,000-$750,000
Upsize Existing Roadside Drainage Infrastructure at Intersection of River Rd and US Highway 17	Long	$250,000-$500,000
Implement New Roadside Swales or Detention Ponds at Intersection of Palmetto St and State Rd 66	Short	$30,000-$100,000
Implement New Roadside Swales or Detention Ponds at US Highway 17 Turn Lane	Short	$30,000-$120,000
Retrofit Peace River Outfalls with Check Valves	Short	$250,000-$750,000
Bank Stabilization Along the Peace River	Short	$900,000-$2,600,000

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Adaptive Strategies: Disaster Recovery Center

Install Deployable Flood Barriers at the Nickerson Ullrich Building

This strategy would include the design and installation of deployable flood barrier systems at the Nickerson Ullrich building to reduce floodwater encroachment during major storm events. The building functions as a critical community asset and disaster recovery center that consists of a concrete slab with open air pole barn structure. Although the structure is not fully enclosed, modeling efforts showed floodwaters have the potential for floodwaters to exceed the FFE and disrupt emergency operations, staging activities, and post disaster recovery functions. Deployable flood barriers are installed ahead of major storm events along identified low points, or the entire perimeter of the structure they are designed to protect. These barriers may include portable panel systems, water filled barriers, or similar temporary flood protection measures that can be installed and removed as needed.

Considerations would include identification of appropriate barrier extents based on observed flood pathways, assessment of compatibility given the open air nature of the structure, and maintaining safe access for emergency personnel during deployment and removal. When not in use, barrier components can be stored on site or at a nearby County facility to allow for rapid deployment prior to storm events. **Figure 11** shows a possible configuration of deployable flood barriers at the Nickerson Ullrich building.

Preliminary planning level costs for deployable flood barriers are primarily driven by the total linear footage (LF) of barrier required, barrier height, and system style (panelized systems versus water filled barriers). Based on vendor pricing for deployable flood barrier systems, costs typically range from \$35 to \$75 per LF for panelized systems. Based on a measured perimeter protection length between 800 and 1,000 LF, total capital costs are estimated to range from \$40,000 to \$75,000 inclusive of barrier materials, storage racks, and installation.

Ongoing maintenance costs are relatively low (between ~\$1,000-\$2,000 annually) as maintenance efforts are generally limited to periodic inspections, cleaning, and replacement of worn seals or components. Deployable systems require operational costs for deployment and removal during storm events. These costs are substantially lower than permanent flood protection measures and provide a cost effective solution for reducing flood risk at the existing facility. If the barriers are unable to be stored on site, additional costs related to storage and transportation to/from the facility would be incurred.

Figure 11: Visualization of Deployable Flood Barriers at the Nickerson Ullrich Building

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Adaptive Strategies: Disaster Recovery Center

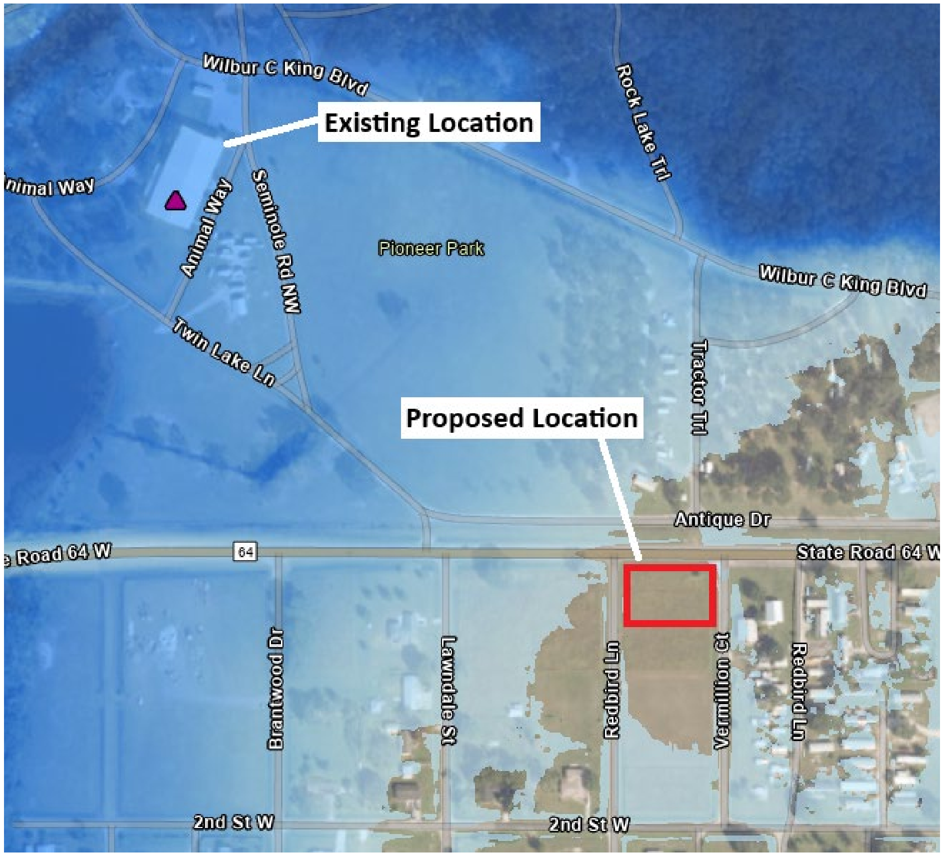
Relocation of the Nickerson Ullrich Building

This strategy would include the demolition and relocation of the Nickerson Ullrich building to a new site that is not vulnerable to flooding. While several protection and accommodation strategies are proposed to reduce flood impacts at the current site, the severity and frequency of flooding at this location present long term challenges to maintaining reliable disaster response operations. Flooding of the existing facility can limit accessibility during and immediately following emergency events, disrupt staging and coordination activities, and increase long term maintenance and recovery costs. Based on these considerations, relocation may be a preferred solution for maintaining continuity of disaster response activities.

A site suitability analysis is recommended to identify suitable parcels based on land use, ownership, flood exposure, and other considerations. Demolition of the existing facility would also provide an opportunity to restore floodplain adjacent to the Peace River by removing impervious area. The County could also consider adding storage to this location. A potential location for the relocated Nickerson Ullrich building on the same County-owned parcel above the generated 500-Year, 24-Hour 2040 flood depth level is shown in **Figure 12.**

Preliminary planning level costs for relocating the Nickerson Ullrich building include demolition of the existing structure, and construction of a new disaster recovery facility at a flood resilient location. Demolition of the existing facility is expected to cost between $4 to $10 per square foot. Additionally, the structure could be sold to the Town or remain as a County-owned recreational facility only. Based on similar disaster debris management facility FEMA projects, construction of a new structure of similar design to the existing Nickerson Ullrich building including design, permitting, site preparation, grading, concrete slab, and building construction has an estimated cost between $300,000 and $600,000. Additional costs may include land acquisition (if a County owned parcel is not available). Ongoing maintenance costs are expected to be comparable to existing conditions.

Figure 12: Potential Relocation Site Above the 500-Year, 24-Hour 2040 Rainfall Flood Depths



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Adaptive Strategies: Roadways and Evacuation Routes

Elevate Wilbur C King and US Highway 17 Intersection

This strategy would include elevating major roadways that are vulnerable to flooding to reduce service disruptions during major rainfall events. Roadway elevation increases the vertical clearance between the pavement surface and projected flood depths, thereby maintaining access for emergency responses, evacuation, and daily mobility during and after storm events.

Considerations would include assessment of roadway segments subject to frequent inundation, determination of target elevation increases based on modeled flood depths, and consideration of how the elevated section would tie into the existing system. Elevation measures may include regrading and raising the roadway base, reconstructing pavement sections, adjusting curb profiles, and modifying drainage infrastructure to maintain or improve surface water conveyance. Associated features such as sidewalks, driveways, utility crossings, and intersections would be evaluated and adjusted as needed to accommodate vertical changes while maintaining safety and accessibility. The boundary of the elevated roadway intersection of Wilbur C King and US Highway 17 is shown in **Figure 13**. It should be noted that the elevation of this intersection would likely require additional sections of US Highway 17 to be elevated which are not included in this cost estimate.

Preliminary planning-level costs for roadway elevation are primarily driven by the length of roadway, height of elevation increase, existing pavement structure, drainage modifications, and impacts to adjacent properties and utilities. Based on similar FDOT projects, costs for elevating a 2-lane roadway can range from approximately $2 million to $5 million per mile. The total length of the approaching turn lanes, the intersection, and the sections of Wilbur C King and US Highway 17 that will also be required to be elevated are approximately 0.15-mi long in total. The cost of elevating this evacuation route intersection is estimated to cost $300,000 to $750,000. Ongoing maintenance costs are expected to be comparable to existing conditions.

Figure 13: Boundary of Elevated Wilbur C King and US Highway 17 Intersection

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Adaptive Strategies: Roadways and Evacuation Routes

Upsize Existing Drainage Infrastructure at Intersection of River Rd and US Highway 17

This strategy would include the design and targeted upgrades of existing roadside drainage infrastructure along major roadways to improve stormwater storage capacity and reduce roadway inundation during major storm events. Based on the vulnerability assessment and flood depth maps, flooding along the evacuation corridors appear to be driven by limited roadside storage. The strategy includes expanding existing roadside ditches/swales along major roadways. By enhancing storage capacity at critical locations, this strategy would reduce the duration and depth of flooding within travel lanes and shoulders.

Considerations would include an evaluation of existing drainage corridors, identification of hydraulic bottlenecks, and reviewing compatibility with current roadway right of way constraints. Improvements should be designed to improve drainage capacity and improve long term system performance through more resilient drainage infrastructure. A visual representation of an upsized swale and new control structure at US Highway 17 and the River Valley Trailer Park is shown in **Figure 14**. The top figure displays existing conditions; the bottom figure illustrates the adaptive strategy.

Preliminary planning-level costs for upsizing existing roadside drainage infrastructure are primarily driven by length of improvements, and the number of inlets or culvert crossings requiring replacement. Based on similar FDOT stormwater infrastructure projects, upsizing stormwater pipes and culverts along roadway corridors generally range from $150 to $400 per LF, with higher costs associated with larger diameter pipes, deeper excavations, and work within constrained rights-of-way. Regrading and stabilizing roadside ditches will add additional costs related to earthwork, erosion control, and restoration but remains comparatively lower than closed-system pipe replacement.

Depending on the number of stormwater improvements and the extent of associated roadway restoration, project costs could range from $250,000 to $750,000. Ongoing maintenance costs are expected to be comparable to existing roadway maintenance activities and are anticipated to include periodic inspection, sediment removal, and debris clearing to maintain system capacity.

Figure 14: Visualization of Upsized Swale and New Control Structure at US Highway 17 and the River Valley Trailer Park

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Adaptive Strategies: Roadways and Evacuation Routes

Implement Roadside Swales or Detention Ponds

This strategy would include the design and implementation of roadside swales/ detention ponds to store and attenuate stormwater runoff during peak rainfall events. Open spaces near evacuation routes could be utilized for such infrastructure which would allow flows to be directly routed away from roads. These features can be designed to slow flow velocities, reduce peak discharge rates, and provide storage, thereby reducing the depth and duration of flooding on roadway surfaces.

Considerations include identification of locations along major roadways with sufficient right of way or County owned parcels to accommodate swales and detention facilities, as well as evaluation of existing drainage patterns and contributing drainage areas. Swales are graded to maintain drainage toward downstream conveyance systems, while detention ponds are designed to detain and release runoff at controlled rates that do not overwhelm downstream infrastructure. Where possible, these features could also be integrated with existing drainage systems to improve overall network performance.

Preliminary planning level costs for implementing roadside swales and detention ponds are primarily driven by the size of the proposed system, storage volume, land acquisition, design, permitting, and earthwork quantities. Based on similar FDOT stormwater infrastructure projects, small to mid sized detention ponds constructed adjacent to roadway corridors generally range from $45,000 to $150,000 per pond. Vegetated roadside swale construction costs typically range from $10,000 to $40,000 per installation, depending on length, grading complexity, land accessibility, right-of-way acquisition, and vegetation establishment.

<u>Intersection of Palmetto St and State Rd 66</u>

A visual representation of a roadside swale at the evacuation route intersection of Palmetto St and State Rd 66 is shown in **Figure 15**. The left figure displays existing conditions; the right figure illustrates the adaptive strategy.

For planning purposes, a series of strategically placed swales at the intersection of Palmetto St and US Highway 17 is estimated to cost between $30,000 to $120,000, depending on the number of ponds implemented and site specific conditions. Ongoing maintenance costs would consist primarily of lawn maintenance and mowing.

Figure 15: Visualization of Roadside Swale at the Evacuation Route intersection of Palmetto St and State Rd 66

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US Highway 17 Turn Lane

A visual representation of a roadside swale at the US Highway 17 turn lane is shown in **Figure 17**. The top figure displays existing conditions; the bottom figure illustrates the adaptive strategy.

For planning purposes, a series of strategically placed swales at the US Highway 17 turn Lane is estimated to cost between $30,000 to $120,000, depending on the number of swales implemented and site specific conditions. Ongoing maintenance costs would consist primarily of lawn maintenance and mowing.

Figure 16: Location of the US 17 Turn Lane

Figure 17: Visualization of Roadside Swale at the US Highway 17 Turn Lane

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Adaptive Strategies: AAA Resiliency

Retrofit Peace River Outfalls with Check Valves

This strategy would include the design and retrofitting of existing stormwater outfalls that discharge to the Peace River and adjacent wetlands with check valves or similar backflow prevention devices. In existing conditions, high water levels in the Peace River can backflow into upstream drainage infrastructure and flood critical assets or evacuation routes.

Considerations would include identification of priority outfalls based on proximity to critical assets and evacuation routes, evaluation of existing outfall configurations, and reviewing compliance with local, state, and federal permitting requirements due to the discharge to the Peace River or adjacent wetlands. A visual representation of the outfall structure located at the State Road 64 Peace River Bridge retrofitted with a check valve is shown in **Figure 18.** The top figure displays existing conditions; the bottom figure illustrates the adaptive strategy.

Preliminary planning level costs for check valve retrofits are primarily driven by the size and type of outfall, preferred valve type (flap gate, tide gate, or inline check valve), right-of-way constraints, and permitting requirements associated with work near the Peace River and adjacent wetlands. Based on costs from the St. Augustine city wide tide check valve retrofits, installation of check valves at existing outfalls may range from $25,000 to $75,000 per outfall, with higher costs associated with larger diameter pipes, submerged installations, locations requiring dewatering using cofferdams and/or bypass pumping, or projects which require enhanced erosion and sediment controls.

For planning purposes, a series of outfall retrofits along the Peace River within the Zolfo Springs AAA is estimated to cost between $250,000 to $750,000, depending on the number of check valves implemented and site specific conditions. Ongoing maintenance consists of routine inspection, debris removal, and periodic maintenance to ensure proper valve operation, with annual maintenance costs typically between $1,000 to $3,000 per outfall.

Figure 18: Visualization of Outfall Retrofitted with a Check Valve

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Adaptive Strategies: AAA Resiliency

Bank Stabilization Along the Peace River

This strategy would include the design and stabilization of slopes and channel banks along the Peace River using a combination of structural reinforcement and nature-based stabilization techniques to reduce erosion, prevent slope failure, and increase flood storage capacity. Engineered stabilization measures could include soil reinforcement, geotextiles, or rock toe protection, with native vegetation supporting the system. The length of bank stabilization between the Peace River Bridge and the Zolfo Springs Boat Ramp at Pioneer Park is shown in **Figure 19**.

Figure 19: The length of bank stabilization at Pioneer Park

Design considerations would include identification of priority erosion areas based on observed bank conditions. It is recommended that improvements should be designed to remain within existing channel and floodplain extents where feasible, minimizing impacts to surrounding land uses. Selection of native plant species suited for riparian environments should be based on suitability and maintenance requirements. A visual representation of a stabilized section of the Peace River using rock riprap and geotextiles is shown in **Figure 20**. The top figure displays existing conditions; the bottom figure illustrates the adaptive strategy.

Figure 20: Visualization of Stabilized Portion of the Peace River Banks Illustrating Multiple Strategies

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Preliminary planning level costs for bank stabilization along the Peace River are primarily driven by the channel length, slope geometry, land access and easements, and the stabilization selected. Hybrid stabilization methods that combine structural hardening (e.g rock toe protection, soil lifts, riprap, or geotextiles) with native vegetation typically range from $400 to $1,200 per LF based on living shoreline and hybrid stabilization projects completed by the FDEP. Lower costs are associated with vegetative and bioengineered techniques and higher costs are associated with rock armoring.

A preliminary cost for bank stabilization between the Peace River Bridge and the Zolfo Springs Boat Ramp at Pioneer Park is estimated to cost between $900,000 and $2.6 million for approximately 2,200 LF of improvement. Ongoing maintenance costs are expected to be moderate and primarily associated with vegetation establishment and inspection following high flow events, with maintenance needs for nature-based components decreasing over time as native plantings mature and stabilize the bank.

Figure 21: Storm damage and erosion along Highway 17, Zolfo Springs

Next Steps

This AAA Plan was developed to highlight existing flood vulnerabilities within the Zolfo Springs AAA, evaluate local adaptive capacity, identify feasible adaptive strategies, and bridge the gap between identified vulnerable critical assets and the implementation of flood reduction solutions. This plan provides Hardee County and the Town of Zolfo Springs with conceptual adaptive strategies to guide near and long term flood resilience improvements.

To advance the implementation of this plan, it is recommended that the County and Town of Zolfo Springs review the high scoring, near term adaptive strategies that score favorably across the flood resilience, implementation cost, and feasibility criteria. Next steps include refining identified projects to be included as County CIPs, advancing planning level strategies, and coordinating with regional and state partners to position projects for upcoming grant cycles.

A potential funding opportunities matrix has been developed to support implementation of the recommended adaptive strategies by identifying federal, state, regional, and local funding programs. The matrix is intended to serve as a planning and decision making tool that includes funding pathways, highlights application cycles, competitiveness, match requirements, and eligibility considerations. Funding opportunities are organized by primary, supporting, planning level, and conditional sources to help the County pursue grants.

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Potential Funding Opportunities

A funding matrix that highlights funding opportunities for the proposed adaptation strategies is shown in **Table 13, Table 14, Table 15, Table 16, Table 17,** and **Table 18.**

Table 13: Potential Funding Opportunities (Most Aligned with AAA Strategies)

Funding Opportunity	Funding Type	Funding Available	Competitiveness	Application Cycle	Match Requirements	Project Recommendations	Additional Considerations
FEMA - Building Resilient Infrastructure and Communities (BRIC)	Federal Grant	Up to tens of millions per project; varies based on national allocation and project type	High - Application requires cost-benefit analysis, and application process is exhaustive	Open: September Due to FDEM: November FDEM submits: January	30% Waived if under $200,000	Flood barriers; floodwalls along Peace River; roadside drainage upsizing; stormwater detention and swales; critical facility protection (DRC, water facilities)	**Purpose:** To increase resilience and public safety; reduce injuries, loss of life, and damage to infrastructure from natural hazards. **Funding Types:** Mitigation Plans, Project Scoping, Infrastructure Projects, Flood Risk Reduction. **Eligibility:** Local governments via FDEM; must be in LMS and meet FEMA Benefit-Cost Analysis (BCA) requirements.
FDEP - Resilient Florida Grants Program	State Grant	Varies annually based on appropriations and project type	Medium - Requires readiness to proceed	Varies every year Open: July Due: September (approx.)	50% - Cost-share may be reduced for rural communities	Targeted vulnerability assessments; feasibility analysis for WWTF and drinking water facilities; flood modeling; drainage system planning; infrastructure adaptation strategies	**Purpose:** Supports projects addressing flooding, rainfall, and climate impacts. **Funding Types:** Planning and Implementation tied to vulnerability assessments. **Eligibility:** Local governments; projects aligned with resilience priorities.
SWFWMD - Cooperative Funding Initiative	Regional Cost Share	Varies by project and funding cycle	Medium - Requires that project is ready for construction	Open: August Due: October	Typically ~50%	Roadside drainage improvements; culvert replacement; stormwater retrofits; Peace River outfall improvements (check valves); flood protection projects	**Purpose:** To provide funds for projects that assist in creating sustainable water resources and provide flood protection. **Funding Types:** Stormwater and watershed projects. **Eligibility:** Local sponsor required; must provide regional water resource benefit.
FDEP - Water Quality Improvement Grant Program	State Grant	Not reported	Medium - Requires that the project is ready to proceed and nutrient removal calculations	Varies every year Open: July Due: August (approx.)	Up to 50% (may be waived for rural communities)	Sanitary sewer re-routing (I&I reduction); WWTF upgrades; stormwater improvements improving water quality in Peace River/wetlands	**Purpose:** To address wastewater, stormwater, or nutrient sources in waterbodies. **Funding Types:** Implementation grants. **Eligibility:** Projects must improve waters not meeting standards, TMDLs, or within BMAP/RAP areas.
Florida Commerce - Small Cities CDBG	Federal (State-administered)	Varies based on state allocation and project type	Medium	Annual	Typically none or low	Drainage infrastructure; roadside drainage improvements; utilities; neighborhood-scale stormwater improvements	**Purpose:** Community development and infrastructure improvements. **Funding Types:** Public infrastructure and utilities. **Eligibility:** Non-entitlement communities; must meet Low- and Moderate-income (LMI) benefit criteria.

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Table 14: Supporting Funding Opportunities (Can fund portions of AAA projects depending on eligibility and project type)

Funding Opportunity	Funding Type	Funding Available	Competitiveness	Application Cycle	Match Requirements	Project Recommendations	Additional Considerations
Federal Emergency Management Agency - Flood Mitigation Assistance (FMA)	Federal Grant	Varies annually based on NFIP prioritization	High - Application requires cost-benefit analysis	Open: September Due to FDEM: November FDEM submits: January	Typically 30%	Elevation of drinking water facilities; floodproofing of critical structures; targeted facility protection	**Purpose:** Reduce repetitive flood damage to buildings and infrastructure. **Funding Types:** Planning, Infrastructure, Mitigation Projects. **Eligibility:** Must benefit NFIP-insured properties; must be in LMS.
FDEP - Non-Point Source Funds (319 Grants)	Federal and State Grants	Awards vary	Medium - Requires that project is ready to proceed and nutrient removal calculations	Rolling / periodic cycles	40% non-federal match (i.e., 60% federal share maximum)	Stormwater retrofits; LID/green infrastructure; runoff reduction projects; watershed improvements	**Purpose:** Reduce nonpoint source pollution from land use activities. **Funding Types:** Implementation grants. **Eligibility:** Local governments and water management entities; must demonstrate pollutant reduction.
US DOT - PROTECT Program	Federal Grant	Not reported	High - Application process is lengthy and detailed	Open: April Due: August (approx.)	Implementation: 20% Planning: 0%	Evacuation route drainage improvements (US 17, SR 64); roadway flood mitigation; resilience upgrades	**Purpose:** Strengthen transportation systems against flooding and extreme weather. **Funding Types:** Planning and infrastructure. **Eligibility:** All levels of government; must tie to transportation resilience.
US DOT - Rebuilding American Infrastructure with Sustainable and Equity (RAISE)	Federal Grant	Awards vary from $5,000,000 to $25,000,000	High - Application requires cost-benefit analysis	Open: November Due: February (approx.)	Typically 20%	Roadway drainage improvements; multimodal infrastructure supporting flood resilience	**Purpose:** Support transportation projects with regional impact. **Funding Types:** Planning and capital. **Eligibility:** Must demonstrate significant local or regional benefit.
Florida Commerce - Rural Infrastructure Fund (RIF)	State Grant	Funding awarded up to $300,000 - varies based on project scope and state funding availability	Medium	Opens: July Closes: September	Typically none	Water, wastewater, and stormwater infrastructure	**Purpose:** Support infrastructure tied to economic development. **Funding Types:** Planning, design, engineering, construction. **Eligibility:** Rural communities; must demonstrate economic benefit.

Table 15: Planning & Policy Funding Opportunities
(Funds planning, policy, and regulatory updates supporting AAA strategies)

Funding Opportunity	Funding Type	Funding Available	Competitiveness	Application Cycle	Match Requirements	Project Recommendations	Additional Considerations
Florida Commerce - Community Planning Technical Assistance (CPTA)	State Grant	Up to $75,000	Medium	Varies every year Due: May	Typically none	Engineering standards manual; LID ordinance; FFE ordinance updates; development policies for low flood risk areas	**Purpose:** Planning and policy development for resilience and growth management. **Funding Types:** Planning grants. **Eligibility:** Counties, municipalities, and RPCs.

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Table 16: Local Implementation Funding Source (Used to implement projects and meet match requirements)

Funding Opportunity	Funding Type	Funding Available	Competitiveness	Application Cycle	Match Requirements	Project Recommendations	Additional Considerations
Hardee County Capital Improvement Program (CIP)	Local Funding / Implementation	Varies annually based on County budget	Low	Annual budgeting	N/A	Local match funding; phased implementation of drainage, stormwater, and infrastructure projects	**Purpose:** Implement local infrastructure priorities. **Funding Types:** Capital projects. **Eligibility:** Determined by County priorities and budget.

Table 17: Loans/Financing Programs (Used for large capital projects where grant funding is insufficient; requires repayment)

Funding Opportunity	Funding Type	Funding Available	Competitiveness	Application Cycle	Match Requirements	Project Recommendations	Additional Considerations
EPA - Water Infrastructure Finance and Innovation Act (WIFIA)	Federal Loan	Not reported	High - Requires credit worthiness analysis, pro-formas and extensive review	Rolling (Letters of Interest accepted year-round)	Finances up to 49% of total project cost; requires application fee (which is used as a down payment for the loan)	Large WWTF upgrades; major stormwater systems; regional drainage infrastructure	**Purpose:** Large-scale water infrastructure. **Funding Types:** Low-interest federal financing for large-scale water infrastructure (design, construction, rehabilitation) **Eligibility:** Typically, >$20M projects; requires strong financial capacity. Application fee: $100,000 for most applicants and $25,000 for small communities (with population less than 25,000.)
Florida Commerce - Rural Community Development Revolving Loan Fund	State Loan	Varies based on project type	Medium	Rolling; Requests accepted quarterly	0% match; interest rates ~1-2.5%; up to 30-year terms	Water, wastewater, stormwater, generators	**Purpose:** Infrastructure projects. **Funding Types:** Low-interest state financing for infrastructure projects (planning, design, engineering, construction) **Eligibility:** Rural communities; repayment required.
USDA Rural Development	Federal Grant/ Loan	Varies by program and eligibility	Medium	Rolling / Annual	Varies	Water systems; public facilities; rural infrastructure	**Purpose:** Support infrastructure in rural communities. **Funding Types:** Loan and grant combinations for rural infrastructure (water, wastewater, public facilities) **Eligibility:** Rural areas; income thresholds apply.

Table 18: Additional Conditional Funding Opportunities (Not consistently available; dependent on disasters, special allocations, or timing

Funding Opportunity	Funding Type	Funding Available	Competitiveness	Application Cycle	Match Requirements	Project Recommendations	Additional Considerations
FEMA - Hazard Mitigation Grant Program (HMGP)	Federal Grant	Available only after federally declared disaster	Medium-High	Post-disaster only	Typically 25%	Property acquisition; relocation; elevation; drainage improvements (retreat strategies)	**Purpose:** Post-disaster mitigation funding. **Funding Types:** Post-disaster mitigation grants (property acquisition, elevation, infrastruc-ture mitigation). **Eligibility:** Only available after disaster; must be in LMS.
Florida Commerce - CDBG-MIT	Federal (State-administered)	Varies based on federal disaster allocation	High	Periodic / Program-specific	Varies	Regional drainage; large-scale mitigation infrastructure	**Purpose:** Long-term mitigation after disasters. **Funding Types:** Large-scale mitigation and infrastructure projects (state-administered federal disaster recovery funds). **Eligibility:** Only during active funding cycles.
FDOT Work Program	State Program	Not reported at project level; pro-grammed by FDOT priorities	Medium	Annual	None	Roadway drainage improvements along state corridors (US 17, SR 64)	**Purpose:** Maintain and improve state transportation infrastructure. **Funding Types:** State-programmed transportation and drainage improvements (not a competitive grant program) **Eligibility:** Limited to FDOT facilities.

This report was funded by the Coastal & Heartland National Estuary Partnership with funds from the U.S. Environmental Protection Agency (EPA). The views, statements, findings, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the EPA, the United States, or any of its sub-agencies.

APPENDIX 1

HARDEE COUNTY: IDENTIFICATION AND RANKING OF AAA - TECHNICAL MEMO

Under Separate Cover

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APPENDIX 2

HARDEE COUNTY: LONG-TERM RECOVERY PLAN

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