

# STATE OF FLORIDA 2019

## MITIGATION ACTION PLAN DRAFT

Submitted to the U.S.  
Department of Housing and  
Urban Development Block  
Grant-Mitigation (CDBG-MIT)  
program in response to  
Hurricanes Hermine (2016),  
Matthew (2016), and Irma (2017).



# MITIGATION ACTION PLAN DRAFT

## TABLE OF CONTENTS

<b>I.</b>	<b>DEFINITIONS, ACRONYMS &amp; ABBREVIATIONS .....</b>	<b>4</b>
<b>II.</b>	<b>LIST OF FIGURES &amp; LIST OF TABLES.....</b>	<b>6</b>
<b>III.</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>8</b>
<b>IV.</b>	<b>INTRODUCTION &amp; BACKGROUND.....</b>	<b>11</b>
	A. What is Hazard Mitigation? .....	11
	B. Recent Disasters.....	12
	C. Mitigation Allocation .....	16
<b>V.</b>	<b>RISK-BASED MITIGATION NEEDS ASSESSMENT.....</b>	<b>18</b>
	A. Introduction .....	18
	B. Data Sources .....	18
	1. Considered Resources .....	18
	2. State Hazard Mitigation Plans .....	19
	3. Florida Resilient Coastlines Program .....	19
	4. Wildfire Hazard Mitigation Plan Annex .....	19
	5. Southeast Florida Regional Climate Change Compact .....	19
	6. Florida Vulnerability Assessment: Climate-Sensitive Hazards in Florida .....	20
	7. Community Engagement .....	20
	C. Historic Damage Patterns .....	20
	1. Major Disaster Declarations .....	21
	2. Cost of Disasters .....	22
	3. National Flood Insurance Program .....	24
	D. Greatest Risk Hazards .....	24
	1. Flooding.....	27
	2. Tropical Cyclone Profile.....	31
	3. Severe Storms.....	34
	4. Wildfire Hazard.....	35
	5. Coastal Erosion .....	36
	E. Social Vulnerability .....	37
	1. Social Vulnerability Index .....	37
	2. Impact on Low-and-Moderate Income Populations .....	39
	3. Impact on Special Needs Populations .....	41

# MITIGATION ACTION PLAN DRAFT

F.	Community Lifelines .....	41
1.	Safety and Security .....	42
2.	Communications.....	42
3.	Food, Water, Sheltering.....	43
4.	Transportation .....	44
5.	Health and Medical.....	44
6.	Hazardous Material (Management) .....	44
G.	Mitigation Needs Problem Statements .....	45
1.	Mitigation Need: Operational Resilience.....	45
2.	Mitigation Need: Repetitive Flooding .....	45
3.	Mitigation Need: Resilient Infrastructure .....	46
<b>VI.</b>	<b>PROJECTS &amp; ACTIVITIES .....</b>	<b>47</b>
A.	Program Budget .....	47
B.	Mitigation Program Details .....	48
<b>VII.</b>	<b>CITIZEN PARTICIPATION .....</b>	<b>54</b>
A.	Publication.....	54
B.	Public Website .....	54
C.	Public Engagement .....	55
1.	Webinars .....	55
2.	Community Stakeholder Survey .....	55
3.	Regional Stakeholder Meetings.....	57
D.	Citizen Advisory Committee .....	59
E.	Website .....	59
F.	Additional Outreach.....	59
G.	Accessibility.....	59
H.	Receipt of Comments.....	60
I.	Public Comment and Substantial Amendments .....	60
J.	Complaints Process .....	61
K.	Citizen Participation and Applications for Assistance .....	61
<b>VIII.</b>	<b>GENERAL ACTION PLAN REQUIREMENTS .....</b>	<b>62</b>
A.	Implementation Plan and Capacity Assessment .....	62
B.	Projection of Expenditures and Outcomes .....	62

## MITIGATION ACTION PLAN DRAFT

C.	Program Income.....	62
D.	Plans to Minimize Displacement and Ensure Accessibility.....	63
E.	Protection of People and Property and Construction Methods.....	63
F.	Elevation Standards .....	64
G.	Natural or Green Infrastructure Standards .....	64
H.	Green Building Standards .....	64
I.	Operation and Maintenance Plans .....	65
J.	Cost Verification Procedures.....	65
K.	Monitoring Standards and Procedures .....	66
<b>IX.</b>	<b>CERTIFICATIONS OF CONTROLS, PROCESSES AND PROCEDURES.....</b>	<b>67</b>
A.	Certification of Controls, Processes and Procedures .....	67
<b>X.</b>	<b>CONCLUSION.....</b>	<b>70</b>
A.	Completeness and Compliance .....	70
<b>XI.</b>	<b>APPENDICES &amp; SUPPORTING DOCUMENTATION.....</b>	<b>71</b>
A.	Appendices .....	71



# MITIGATION ACTION PLAN DRAFT

## I. DEFINITIONS, ACRONYMS & ABBREVIATIONS

- **100-year flood plain**—the geographical area defined by FEMA as having a 1% chance of being inundated by a flooding event in any given year.
- **500-year flood plain**—the geographical area defined by FEMA as having a 2% chance of being inundated by a flooding event in any given year.
- **BRACE**—Building Resilience Against Climate Effects
- **CDBG**—Community Development Block Grant
- **CDBG-DR**—Community Development Block Grant - Disaster Recovery
- **CDBG-MIT**—Community Development Block Grant - Mitigation
- **DEO**—Department of Economic Opportunity
- **DEP**—Department of Environmental Protection
- **Designated area**—the land determined by the subrecipient that is eligible for mitigation assistance
- **DOB**—Duplication of Benefits is any assistance provided to subrecipients for the same purpose (i.e., for repair, replacement or reconstruction) as any previous financial or in-kind assistance already provided for the same. Rebuild Florida is prohibited from creating a DOB. This prohibition comes from the Robert T. Stafford Disaster Assistance and Emergency Relief Act (Stafford Act) and therefore, these other sources of funds must be deducted from any potential award.
- **DOH**—Department of Health
- **DEM**—Florida Division of Emergency Management
- **FEMA**—Federal Emergency Management Agency
- **HAZUS-MH**—Hazards U.S. Multi-Hazard
- **HMGP**—Hazard Mitigation Grant Program
- **HUD**—U.S. Department of Housing & Urban Development
- **IBC**—International Business Code
- **ICE**—Independent Cost Estimates
- **LMA**—Land Management Agencies
- **LMI**—Low to Moderate Income is an income of less than 50% to 80% of the local area median income.
- **LMH**—Low to Moderate Income Household is a household with an income of less than 50% to 80% of the local area median income (AMI).
- **LMS**—Local Mitigation Strategy
- **MIDs**—Most Impacted and Distressed areas

## MITIGATION ACTION PLAN DRAFT

- **NCEI**—National Centers of Environmental Information
- **NFIP**—National Flood Insurance Program.
- **SHMP**—State Hazard Mitigation Program
- **Subrecipient**— a city or a county that has applied for and been awarded a grant by the Florida Department of Economic Opportunity (DEO).
- **TBD**—To Be Determined
- **WMD**—Water Management District

## II. LIST OF FIGURES & LIST OF TABLES

### List of Figures

Figure 1: Benefit-Cost Ratio by Hazard and Mitigation Measure .....	12
Figure 2: Presidential Disaster Declarations by County for Hurricane Irma .....	15
Figure 3: Mitigation HUD and State MID Areas .....	17
Figure 4: Major Disaster Declarations by Type.....	21
Figure 5: Florida Losses for All Hazards, 1960-2012.....	24
Figure 6: Areas at Risk for Flooding.....	28
Figure 7: Total Population in 100-Year Floodplain .....	29
Figure 8: Facility Values within 100-Year and 500-Year Floodplains.....	30
Figure 9: Total Number of Hurricane Strikes .....	32
Figure 10: Probabilistic Hurricane Wind Damage .....	34
Figure 11: Severe Storm Hazard Ranking .....	35
Figure 12: Social Vulnerability Map .....	37
Figure 13: Community Lifeline Components .....	41
Figure 14: Mitigation Regional Workshops.....	58

# MITIGATION ACTION PLAN DRAFT

## List of Tables

<b>Table 1: List of Presidential Disaster Declarations .....</b>	<b>15</b>
<b>Table 2: HUD MID Counties and Zip Codes .....</b>	<b>16</b>
<b>Table 3: State MID Counties .....</b>	<b>17</b>
<b>Table 4: Non-MID Counties.....</b>	<b>17</b>
<b>Table 5: USDA Secretarial Disaster Declarations.....</b>	<b>22</b>
<b>Table 6: Monetary Losses Due to Natural Hazards .....</b>	<b>23</b>
<b>Table 7: HUD MID Areas - Identified Frequent Hazards (Below) .....</b>	<b>26</b>
<b>Table 8: State MID Areas - Identified Frequent Hazards (Right).....</b>	<b>26</b>
<b>Table 9: Annual Flooding Frequency .....</b>	<b>28</b>
<b>Table 10: Economic Impact of Storm Surge on Counties.....</b>	<b>33</b>
<b>Table 11: Demographic Profile of MID Areas.....</b>	<b>38</b>
<b>Table 12: LMI Population Summary of MID Counties.....</b>	<b>40</b>
<b>Table 13: Allocation of CDBG-MIT Funds .....</b>	<b>47</b>
<b>Table 14: General Infrastructure Program - At a Glance.....</b>	<b>49</b>
<b>Table 15: Public Safety Hardening Program - At a Glance .....</b>	<b>50</b>
<b>Table 16: Critical Facility Generator Program - At a Glance.....</b>	<b>51</b>
<b>Table 17: CDBG-MIT as Match - At a Glance.....</b>	<b>52</b>
<b>Table 18: Planning, Administration and Public Services Program - At a Glance ..</b>	<b>53</b>
<b>Table 19: Stakeholder Meetings with HUD-Identified MID Areas .....</b>	<b>58</b>



# MITIGATION ACTION PLAN DRAFT

## III. EXECUTIVE SUMMARY

Community Development Block Grant Mitigation (CDBG-MIT) funds represent a unique and significant opportunity for the state of Florida, in the areas most impacted by recent disasters, to carry out strategic and high-impact activities to minimize or eliminate risks and reduce losses from future disasters. In addition to mitigating disaster risks, the funds provide an opportunity to improve state and local planning protocols and procedures.

The Florida Department of Economic Opportunity (DEO) has led the state's efforts in creating this State Action Plan that provides a high-level strategy for how the funding will be used to address eligible communities' disaster mitigation needs. The State Action Plan has been developed in partnership with state agencies working on resiliency efforts, as well as with input from local communities and stakeholders to determine Florida's most critical disaster mitigation needs.

Florida's focus is to support data-informed investments through high-impact projects that will reduce risks attributable to natural disasters, with particular attention to repetitive losses of property and critical infrastructure. The state also supports the adoption of policies that reflect local and regional priorities that will have long-lasting effects on community risk reduction, to include the reduction of risk to community lifelines such as Safety and Security and Communications.

Due to its unique geography, the state of Florida is at risk of a variety of hazards including tropical winds, storm surge, flash flooding, sea level rise, extreme heat, drought and wildland fires. Florida has experienced more landfalling hurricanes than any other state in the nation. Winds can potentially affect any county in Florida and storm surge can impact all of Florida's coastal counties. In addition, according to the 2018 Florida Division of Emergency Management's State Hazard Mitigation Plan (SHMP), sea levels have been rising at a rate of about one foot per century in much of the United States. In combination with land subsidence, rising sea levels can affect drinking water supplies and infrastructure and can amplify storm surge risk and coastal erosion.

Florida has more than 11,000 miles of rivers, streams and waterways with 1,197 miles of coastline and 663 miles of beaches. Florida is also home to the 700-square mile Lake Okeechobee, the second largest freshwater lake in the United States. Of the state's 67 counties, 35 have coastlines bordering either the Atlantic Ocean or the Gulf of Mexico. These counties comprise approximately 1,350 miles of general coastline. When considering the intricacies of the Florida coastline, with its bays, inlets and waterways, there are more than 8,000 miles of coastline. All of these factors combine to create complex and interconnected disaster risks that require innovative approaches to mitigate.

This State Action Plan reflects local and regional priorities that will have long-lasting effects on community risk reduction, including risk reduction to Safety and Security and Communications lifelines. The goal is to maximize the impact of available funds by encouraging and leveraging private-public partnerships and coordinating with other Federal and state programs. States are expected to take steps to set in place policies that will enhance the impact of the U.S. Department of Housing and Urban Development's (HUD's) investments.

## MITIGATION ACTION PLAN DRAFT

HUD is providing the state of Florida with \$633,485,000 for mitigation activities in communities that experienced major declared disaster events during 2016 and 2017. DEO is the governor-designated state authority responsible for administering all long-term hazard mitigation and disaster recovery funds awarded to the state from HUD. This action plan details how this funding will be allocated to reduce effects of natural disasters and eliminate long-term risks to Floridians.

The purpose of this mitigation action plan is to detail a strategy that:

- Reduces risks and vulnerabilities of people in hazard-prone areas through current technology, better planning and mitigation activities;
- Reduces the potential impact of natural disasters on new and existing properties, infrastructures and local economies;
- Promotes education, outreach and research and development programs to improve the knowledge and awareness among the citizens and industry about hazards they may face and mitigation alternatives that can reduce vulnerabilities;
- Strengthens communication and coordination between public agencies, citizens, non-profit organizations and businesses; and
- Emphasizes long-term, maximum benefits to the public.

Florida's Mitigation Program planning goal is to work with federal, regional and local partners to safeguard against loss of life and injury, disruptions to essential public services and infrastructure, economic impacts to residents and businesses, and losses to civic, cultural, and environmental resources. Florida's Mitigation Strategy is built on a comprehensive Risk Based Mitigation Needs Assessment, presented in this Action Plan, that has identified flooding, severe storms, hurricanes, coastal erosion and wildfires as the most significant risks to Floridians. Further, Florida's mitigation planning strategy seeks to protect seven critical community lifelines:

1. Safety and Security
2. Food, Water and Shelter
3. Health and Medical
4. Energy
5. Communications
6. Transportation
7. Hazardous Material.

DEO, alongside other state agencies and local communities, has sought to engage with and seek input from local, state and federal partners on their disaster mitigation needs and priorities. DEO held statewide webinars, multiple regional workshops and sought input from community partners statewide through a survey to gather feedback from Florida communities on their mitigation priorities. This input was used to determine how to distribute the federal funds to help better protect Florida's communities from future disasters for this State Action Plan.

In response to the goals of risk reduction and increased resilience and in consideration of stakeholder and community input, the state of Florida is proposing the following five CDBG-MIT programs that will focus on three primary mitigation categories: infrastructure, use of CDBG-MIT as match and planning administration and public services.

## MITIGATION ACTION PLAN DRAFT

1. General Infrastructure
2. CDBG-MIT Federal Program Match
3. General Planning Support
4. Public Safety Hardening
5. Critical Facility Generators

The proposed allocations for each of the CDBG-MIT programs and their share of the total funding are presented below.

Allocation of Funds		
Program	Allocation	Percent of Funding
<b>Infrastructure</b>	<b>\$406,788,000</b>	<b>64%</b>
• General Infrastructure	\$315,500,000	49%
• Public Safety Hardening Program	\$64,288,000	11%
• Critical Facility Generator Program	\$27,000,000	4%
<b>CDBG-MIT as Match</b>	<b>\$100,000,000</b>	<b>16%</b>
• Non-Federal Cost Share	\$100,000,000	16%
<b>Planning and Administrative Costs</b>	<b>\$126,697,000</b>	<b>20%</b>
• General Planning Support	\$15,000,000	2%
• DEO Administration	\$31,674,250	5%
• DEO Planning	\$80,022,750	13%
<b>Total Allocation</b>	<b>\$633,485,000</b>	<b>100%</b>

Each program is further described in Section VI of this Action Plan. These proposed programs will aid the state of Florida in protecting all of its citizens, including those most vulnerable to hazards.

### IV. INTRODUCTION & BACKGROUND

#### A. What is Hazard Mitigation?

Hazard mitigation is defined as any action taken to reduce or eliminate the long-term risk to human life and property from man-made or natural hazards. A hazard is any event or condition with the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, environmental damage, business interruption or other structural or financial losses.

Hazard mitigation seeks to make human development and the natural environment safer and more resilient. The mitigation process generally involves enhancing the built environment to significantly reduce risks and vulnerability to hazards. Mitigation can also include removing the built environment from disaster prone areas and maintaining natural mitigating features, such as wetlands or floodplains. Hazard mitigation makes it easier and less expensive to respond to, and recover from, disasters by breaking the damage and repair cycle.

Examples of hazard mitigation measures include, but are not limited to, the following:

- Development of mitigation standards, regulations, policies and programs;
- Land use/zoning policies;
- Strong statewide building code and floodplain management regulations;
- Dam safety programs, seawalls and levee systems;
- Acquisition of flood prone and environmentally sensitive lands;
- Retrofitting/hardening/elevating structures and critical facilities;
- Relocation of structures, infrastructure and facilities out of vulnerable areas;
- Relocation of people who reside in high risk areas through voluntary home buyback programs;
- Public awareness/education campaigns; and
- Improvement of warning and evacuation systems.

Benefits of hazard mitigation include, but are not limited to, the following:






- Saving lives and protecting public health;
- Preventing or minimizing property damage;
- Minimizing social dislocation and stress;
- Reducing economic losses;
- Protecting and preserving infrastructure;
- Reducing legal liability of government and public officials; and
- Spending less on response and recovery efforts.

## MITIGATION ACTION PLAN DRAFT

According to a 2017 FEMA study<sup>1</sup> that reviewed the impacts of 23 years of federal mitigation grants provided by FEMA, the Economic Development Administration (EDA) and HUD, there is a national benefit of \$6 for every \$1 invested.

The study also found that the costs and benefits of designing all new construction that exceeded select International Building Code, International Residential Code and International Wildland Urban Interface provisions resulted in a national benefit of \$4 for every \$1 invested.

**Figure 1: Benefit-Cost Ratio by Hazard and Mitigation Measure**

<b>National Benefit-Cost Ratio (BCR) Per Peril</b> <i>*BCR numbers in this study have been rounded</i>		<b>Beyond Code Requirements</b>	<b>Federally Funded</b>
<b>Overall Hazard Benefit-Cost Ratio</b>		<b>\$4:1</b>	<b>\$6:1</b>
	<b>Riverine Flood</b>	<b>\$5:1</b>	<b>\$7:1</b>
	<b>Hurricane Surge</b>	<b>\$7:1</b>	Too few grants
	<b>Wind</b>	<b>\$5:1</b>	<b>\$5:1</b>
	<b>Earthquake</b>	<b>\$4:1</b>	<b>\$3:1</b>
	<b>Wildland-Urban Interface Fire</b>	<b>\$4:1</b>	<b>\$3:1</b>

Source: FEMA, "Natural Mitigation Saves Lives", Retrieved from [https://www.fema.gov/media-library-data/1528727738945-e9805d8703ed4a1b02c5e2861b7ac65a/MitigationSaves\\_FEMA\\_180611\\_508.pdf](https://www.fema.gov/media-library-data/1528727738945-e9805d8703ed4a1b02c5e2861b7ac65a/MitigationSaves_FEMA_180611_508.pdf)

### B. Recent Disasters

#### *Hurricane Hermine*

In late August 2016, Hurricane Hermine made landfall at its peak intensity, just east of St. Marks, Florida. Hermine brought moderate storm surge to coastal areas with the highest measured storm surge of 7.5 feet above normal tide levels, which occurred at a National Ocean Service gauge on Cedar Key. The combined effect of surge and tide produced maximum inundation levels of four to seven feet above ground level to the east of Hermine's landfall location along the coastlines in Dixie, Jefferson, Levy and Taylor Counties.

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<sup>1</sup> FEMA, "Natural Mitigation Saves Lives", Retrieved from [https://www.fema.gov/media-library-data/1528727738945-e9805d8703ed4a1b02c5e2861b7ac65a/MitigationSaves\\_FEMA\\_180611\\_508.pdf](https://www.fema.gov/media-library-data/1528727738945-e9805d8703ed4a1b02c5e2861b7ac65a/MitigationSaves_FEMA_180611_508.pdf)

## MITIGATION ACTION PLAN DRAFT

Hermine produced heavy rainfall across much of western and northern Florida. The maximum reported storm-total rainfall was near Tarpon Springs, in Pinellas County, where 22.36 inches was measured between August 30 and September 2, 2016. More than 10 inches of rain were reported at other sites along the west coast of Florida, including Charlotte, Manatee and Pasco counties. The heavy rainfall caused flooding of streets and low-lying areas near the west coast of Florida and on several rivers in northern Florida.

Within four hours of landfall, Hermine's winds dropped below hurricane force as the storm crossed into Georgia. Then Florida Governor, Rick Scott, declared a state of emergency for 51 counties. A major disaster was declared on September 28, 2016. According to a 2017 report from the Florida Office of Insurance Regulation, insured losses to property in Florida reached \$139 million with 19,699 claims.

### *Hurricane Matthew*

In October 2016, after causing catastrophic category five-level damage in Haiti and severe damage in the Bahamas, Hurricane Matthew tracked northwest and paralleled the coast of the southeastern United States for 36 hours. It gradually weakened and remained just offshore before making its final landfall over near McClellanville, South Carolina as a Category 1 hurricane on the morning of October 8. Although many lives were spared because of proper planning and execution of hurricane plans, Florida nevertheless saw significant storm surge and high winds, which caused damage to infrastructure, homes and businesses.

As Matthew approached, states of emergencies were declared along Florida's eastern coast and widespread evacuations were ordered for extensive areas. High wind speeds and flooding, especially in the Jacksonville metropolitan area were anticipated. In Florida, over one million people lost power as the storm passed to the east.

In total, Matthew killed 47 people in the US, including 12 in Florida. As the storm traveled northeast, it hit close to the eastern coasts of Florida, Georgia, North Carolina and South Carolina. On October 7 in Fernandina Beach, Florida, there was a peak surge of 9.88 feet above normal. Additionally, in the St. Augustine area, water was reported to be 2.5 feet above ground.

In Jacksonville there was major sand dune damage on the coast and flooding of the St. Johns River. In the Flagler Beach area, a portion of Florida State Road A1A was washed away. At the Kennedy Space Center, winds reached 80 mph at ground level while a gust of 136 mph was observed atop a 500-foot tower. The facility sustained millions of dollars' worth of damage.

In addition to flooding, many homes were damaged by the combination of wind and rainfall. This complicated the recovery process because wind and rain damages can only be assessed on a case-by-case basis with areal flooding impacts more easily ascertained for larger areas at once. Portions of the state saw high amounts of rainfall with several regions receiving more than 10 inches of rain in a 24-hour period. Orlando received nearly nine inches of rain, Jacksonville nearly seven inches and Daytona Beach almost six inches.



## MITIGATION ACTION PLAN DRAFT

Storm surge flooding affected the St. Augustine area, including major flooding on Anastasia Island where water was reported to be 2.5 feet above ground level. To the south, in nearby Flagler Beach, parts of Highway A1A were washed out by the storm surge. Some of the highest inundation occurred farther inland, away from the immediate coast, on smaller back bays and inland waterways. The St. John's River in northeast Florida was flooded by storm surge of up to 4.3 feet. A major disaster was declared on October 11, 2016.

### *Hurricane Irma*

Approximately one year after Hermine and Matthew left their trails of destruction, Hurricane Irma, a Category 4 storm, made landfall on September 10, 2017 in the midst of the Florida Keys. Irma devastated coast lines, infrastructure and homes. Irma then turned northward, making a second landfall near Marco Island in southwest Florida and then progressed in a northeasterly direction through the center of the state. Hurricane force winds pummeled southeast Florida and portions of the center of the state. The northern portions of Florida were affected by tropical storm force winds.

Storm surges impacted the state's coastal areas from the Florida Keys all the way to the northern border of Florida. South Florida counties saw surges of more than eight feet, with Monroe and Miami-Dade recording observed surges of more than 15 feet. Surges along the St. Johns River and its tributaries were also extreme. Fresh water outflows from rivers slowed retreat of the storm surges in Jacksonville, lengthening the flooding period over the days following Irma's passage.

Irma produced moderate rainfall across much of western and central portions of Florida. The maximum reported storm-total rainfall was nearly 16 inches in Fort Pierce. In Oviedo (north of Orlando), a measurement of 14.6 inches was recorded. The entire southwestern seaboard of Florida received between six and 14 inches of rain and there was localized heavy rainfall in Pasco and Polk counties as Irma moved northward.

The most significant concentration of Irma-related damage however, occurred in the Florida Keys, where Irma made landfall. The storm left this chain of islands, which was connected by a span of 40 bridges, with 1,200 destroyed homes and an additional 3,000 significantly-damaged homes.<sup>2</sup> Many bridges, roadways and state beaches were severely damaged.

A major disaster declaration was issued by the President for Hurricane Irma on September 10, 2017. The declaration encompassed all 67 of Florida's counties; 49 with Individual and Public Assistance designations and 18 with Public Assistance only designations. (Individual designations allow assistance to individuals and families that have sustained disaster-related losses. Public assistance can fund the repair, restoration, reconstruction or replacement of a public facility or infrastructure that was damaged or destroyed by a disaster.) The Florida designation breakdown is outlined in **Table 1** and **Figure 2**.

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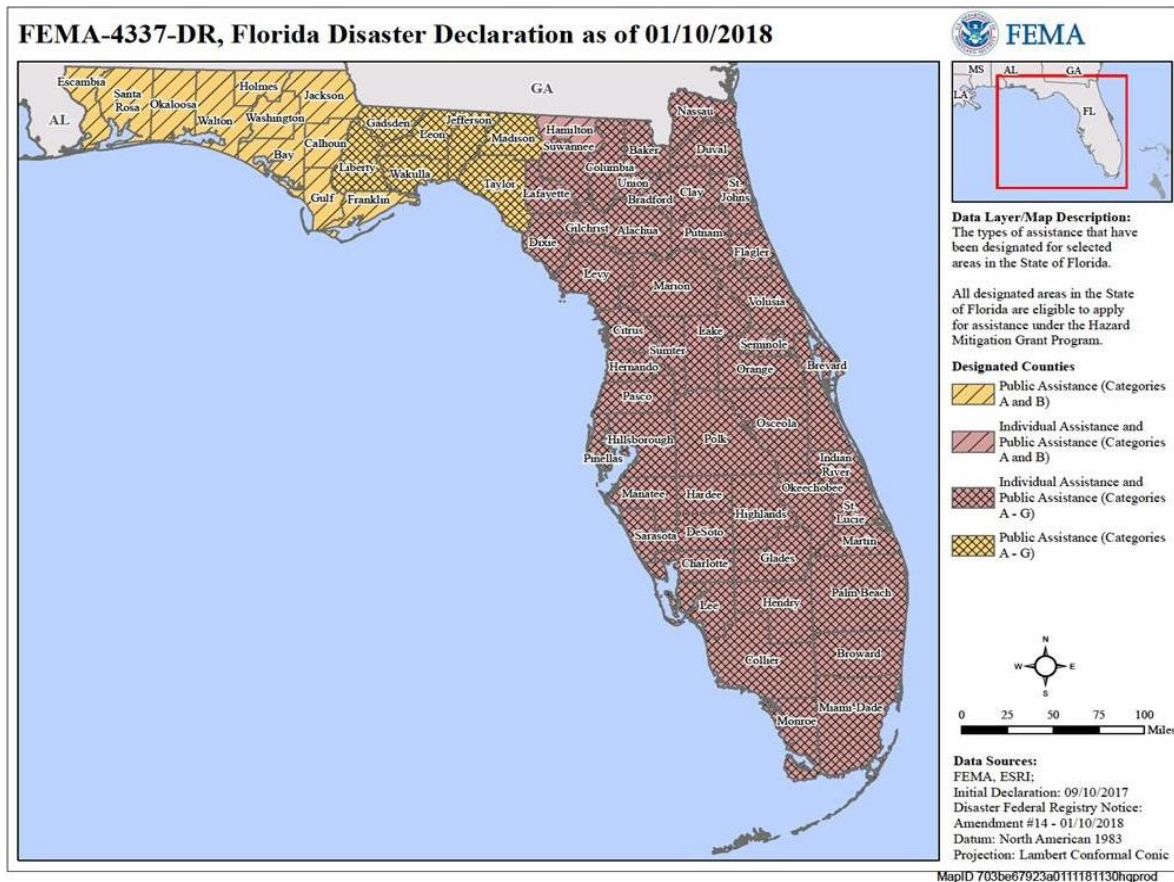
<sup>2</sup> Monroe County, "Approximate Damage Assessment results", Retrieved from <https://www.monroecounty-fl.gov/DocumentCenter/View/12459/Approximate-Damage-Assessment-Results?bidId=>

# MITIGATION ACTION PLAN DRAFT

**Table 1: List of Presidential Disaster Declarations**

FEMA Declaration Type	Counties
Individual Assistance (IA) and Public Assistance (PA)	Alachua, Baker, Bradford, Brevard, Broward, Charlotte, Citrus, Clay, Collier, Columbia, DeSoto, Dixie, Duval, Flagler, Gilchrist, Glades, Hardee, Hamilton, Hendry, Hernando, Highlands, Hillsborough, Indian River, Lafayette, Lake, Lee, Levy, Manatee, Marion, Martin, Miami-Dade, Monroe, Nassau, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, Sarasota, Seminole, St. Johns, St. Lucie, Sumter, Suwannee, Union, Volusia
Public Assistance Only (PA)	Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Madison, Okaloosa, Santa Rosa, Taylor, Wakulla, Walton, Washington

**Figure 2: Presidential Disaster Declarations by County for Hurricane Irma**



Source: FEMA, retrieved from <https://www.fema.gov/disaster/4337>

## MITIGATION ACTION PLAN DRAFT

Combined and within a two-year period, Irma and Hermine made landfall in Florida and Matthew skirted the state's eastern coast. These three storms accounted for more than 90 fatalities, massive infrastructure damage, demolished homes and personal property and widespread and prolonged power outages. The flooding and high winds left more than \$63 billion in damages in their wake.<sup>3</sup>

### C. Mitigation Allocation

In April 2018, the U.S. Department of Housing and Urban Development (HUD) announced that the state of Florida's Department of Economic Opportunity (DEO) would receive \$633,485,000 in funding to support long-term mitigation efforts following Hurricane Irma through HUD's Community Development Block Grant Mitigation (CDBG-MIT) Program.

The national objectives of this HUD program include providing benefits to low-to-moderate (LMI) persons by addressing severe and recently-arising urgent community welfare or health needs. CDBG-DR and CDBG-MIT grants have a statutory focus on targeting the most impacted and distressed (MID) areas. A minimum of 50% (\$316,742,500) is to be spent to benefit LMI persons in the MID areas.

This funding is designed to address needs that remain after other assistance has been exhausted, including federal assistance and private insurance. DEO is the lead agency and responsible entity for administering the CDBG-MIT funds allocated to the state. The state of Florida's Action Plan details how this funding, along with subsequent allocations, will be apportioned to address remaining unmet needs in Florida that represent targeted strategic investments for grantees based on current or foreseeable risks.

As required by the Federal Register, Vol. 84, No. 45838, the state will designate at least 50% of the CDBG-MIT allocation to address mitigation and resiliency needs in the HUD-identified Most Impacted and Distressed (MID) areas.

**Table 2: HUD MID Counties and Zip Codes**

HUD MID Counties	Brevard, Broward, Clay, Collier, Duval, Hillsborough, Lee, Miami Dade, Monroe, Orange, Osceola, Palm Beach, Polk, St. Johns, St. Lucie, and Volusia
HUD MID Zip Codes	32084, 32091, 32136, 32145, 32771, 33440, 33523, 33825, 33870, 32068, 33935, 34266

The remaining 50% can be spent on state-identified MID areas that were declared disaster areas eligible for both individual and public assistance.

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<sup>3</sup> The NOAA National Centers for Environmental Information, "National Hurricane Center Tropical Cyclone Reports", Retrieved from <https://www.nhc.noaa.gov/data/>

# MITIGATION ACTION PLAN DRAFT

**Table 3: State MID Counties**

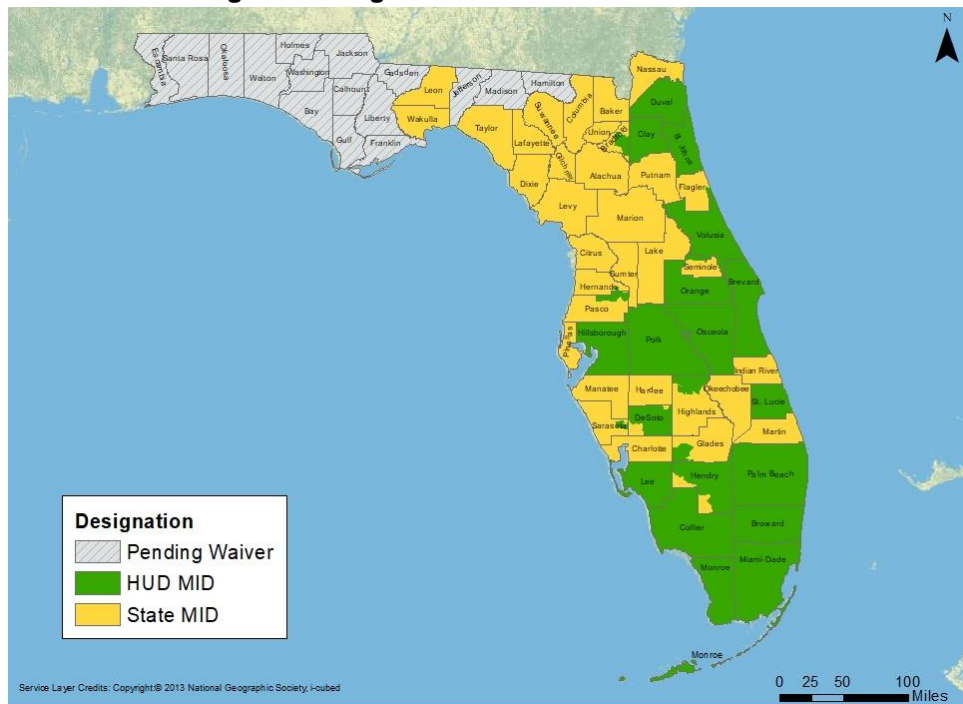
State MID Counties	Alachua, Baker, Bradford, Charlotte, Citrus, Columbia, DeSoto, Dixie, Flagler, Gilchrist, Glades, Hardee, Hendry, Hernando, Highlands, Indian River, Lafayette, Lake, Leon, Levy, Manatee, Marion, Martin, Nassau, Okeechobee, Pasco, Pinellas, Putnam, Sarasota, Seminole, Sumter, Suwannee, Union
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**Table 4: Non-MID Counties**

<p>Non-MID Counties*</p> <p>* As of <b>Month XX, XXX</b>, the State has requested a waiver to include these non-MID counties</p>	Bay, Calhoun, Gadsden, Gulf, Franklin, Hamilton, Holmes, Escambia, Jackson, Jefferson, Liberty, Madison, Okaloosa, Santa Rosa, Walton, Washington
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**Figure 3** shows HUD-designated MIDs in green, Florida-designated MIDs in gold and Non-MID Counties in gray. The counties illustrated in gray were not originally designated as HUD or state MID counties. However, given the nature of the CDBG-MIT funding, the state of Florida is requesting a HUD waiver to include every Florida county. The state will ensure that at least 50% of the CDBG-MIT allocation will address only HUD MIDs. Including all Florida counties will allow the state to employ a truly statewide approach to hazard mitigation.

**Figure 3: Mitigation HUD and State MID Areas**



Source: Department of Economic Opportunity, Retrieved from RebuildFlorida.com

### V. RISK-BASED MITIGATION NEEDS ASSESSMENT

#### A. Introduction

The state of Florida's Department of Economic Opportunity (DEO) has completed this risk-based mitigation needs assessment to identify and analyze all significant current and future disaster risks that provide a substantive basis for the activities proposed in Section VI, Projects & Activities. This assessment utilizes the findings of Florida's State Hazard Mitigation Plan, data and research acquired from essential data resources, and consultation with public, private and non-profit stakeholders to arrive at a thorough assessment of the hazards which pose substantial risk of loss of life, injury, damage and loss of property, along with suffering and hardship.

To both ensure sufficient clarity of this Action Plan and address current risks, future risks and the mitigation needs of the state, this assessment:

1. Discusses historic damage patterns statewide;
2. Utilizes the state and local Hazard Mitigation Plans to inform risk analysis;
3. Assesses hazards in accordance with local and regional plans, research and data;
4. Assesses current and future risks to critical service areas or community lifelines; and
5. Addresses unmet mitigation needs in response to identified current and future risks.

#### B. Data Sources

A variety of resources were utilized to advise the findings of the risk-based mitigation needs assessment. DEO has sought to use all available mitigation plans, research and analyses to inform the development of the mitigation needs assessment.

##### 1. Considered Resources

DEO certifies that, in responding to this Action Plan requirement and presenting the required information, the Agency has reviewed and considered sources including, but not limited to:

- The FEMA Hazard Mitigation Plan Resources website:  
<https://www.fema.gov/hazard-mitigation-planning-resources>;
- The FEMA State Mitigation Planning Resources website:  
<https://www.fema.gov/state-mitigation-planning-resources>;
- FEMA State Mitigation Planning Key Topics Bulletins:  
[https://www.fema.gov/medialibrary/assets/documents/il\\_5780](https://www.fema.gov/medialibrary/assets/documents/il_5780);
- The FEMA Local Mitigation Planning Resources website:  
<https://www.fema.gov/local-mitigation-planning-resources>;
- The U.S. Forest Service's wildland fire resources:  
<https://www.fs.fed.us/managing-land/fire>
- The National Interagency Coordination Center (NICC):  
<https://www.nifc.gov/nicc/>; and
- HUD's CPD Mapping Tool:  
<https://egis.hud.gov/cpdmaps/>.



# MITIGATION ACTION PLAN DRAFT

## 2. State Hazard Mitigation Plans

The state of Florida's 2018 Enhanced Hazard Mitigation Plan is the most recent risk assessment completed through the FEMA HMP process and is the starting point for the Action Plan's risk-based mitigation needs assessment. The State Hazard Mitigation Plan (SHMP) was completed by the Florida Division of Emergency Management's (FDEM's) Mitigation Team and serves as the FEMA-approved SHMP. It provides the factual basis for developing a mitigation strategy for the state. The purpose of the SHMP is to reduce death, injuries and property losses caused by natural hazards in Florida. The 2018 Plan identifies hazards based on the history of disasters within the state and lists goals, objectives, strategies and actions for reducing future losses.

## 3. Florida Resilient Coastlines Program

The Florida Resilient Coastlines Program is the Department of Environmental Protection's (DEP's) effort to synergize community resilience planning, natural resource protection tools and funding to prepare Florida's coastline for the effects of climate change, especially rising sea levels<sup>4</sup>. DEP's vision is that Florida's coastal communities are resilient and prepared for the effects of rising sea levels, including coastal flooding, erosion and ecosystem changes. Through the Florida Resilient Coastlines Program, DEP continues its efforts to ensure collaboration among Florida's coastal communities and to offer technical assistance and funding to coastal communities dealing with increasingly complex flooding, erosion and habitat shifts.

## 4. Wildfire Hazard Mitigation Plan Annex

The Wildfire Hazard Mitigation Plan Annex to the SHMP was a coordinated effort led by the Florida Forest Service (FFS), formerly known as the Division of Forestry, involving a wide variety of organizations throughout the state and funded by FEMA. The Annex is a comprehensive strategy for addressing Florida's wildfire hazard and it expands upon the SHMP's discussion of pre- and post-disaster mitigation. The Annex was developed to serve as an expanded wildfire hazard mitigation plan that will enable the state and local governments to prioritize future projects to better prepare for and mitigate wildfire risk in their communities<sup>5</sup>. The plan identifies high-risk areas of the state, describes available capacity for minimizing risk and includes specific state, regional and local implementation strategies.

## 5. Southeast Florida Regional Climate Change Compact

The Southeast Florida Regional Climate Change Compact was executed by Broward, Miami-Dade, Monroe and Palm Beach Counties in January 2010 to coordinate climate mitigation and adaptation activities across county lines. The four Compact counties have advanced local and regional responses to, and preparations for, the effects of climate

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<sup>4</sup> Florida Department of Environmental Protection, "Florida Resilient Coastlines Program", Retrieved from <https://floridadep.gov/ResilientCoastlines>

<sup>5</sup>Florida Department of Agriculture and Consumer Affairs, Florida Division of Emergency Management; Retrieved from [https://www.floridadisaster.org/contentassets/c6a7ead876b1439caad3b38f7122d334/appendix-g\\_wildfire-hazard-mitigation-plan-annex.pdf](https://www.floridadisaster.org/contentassets/c6a7ead876b1439caad3b38f7122d334/appendix-g_wildfire-hazard-mitigation-plan-annex.pdf)



## MITIGATION ACTION PLAN DRAFT

change, including sea level rise, flooding, and economic and social disruptions. The Regional Climate Action Plan (RCAP) is the Compact's guiding tool for coordinated climate action in Southeast Florida. The first RCAP was published in 2012 after a two-year planning process. RCAP 2.0, launched in December 2017, reflects the lessons learned and actions taken in the first five years of implementation. Since its inception, the Compact has expanded to work with a growing number of federal, state, regional, municipal, nonprofit, academic and private sector partners. The Compact represents a new form of regional climate governance designed to allow local governments to set the agenda for adaptation, while providing state and federal agencies with access to technical assistance and support.

### 6. Florida Vulnerability Assessment: Climate-Sensitive Hazards in Florida

The Building Resilience Against Climate Effects (BRACE) Program at the Florida Department of Health (DOH) is working to improve the ability of the public health sector to respond to health effects related to weather variability. As part of the Centers for Disease Control and Prevention's Climate-Ready states and Cities Initiative, the BRACE Program, along with internal and external partners, is implementing the five-step BRACE Framework. As part of BRACE step one, forecasting climate impacts and assessing vulnerabilities, DOH collaborated with the University of South Carolina Hazards and Vulnerability Research Institute to produce the Florida Vulnerability Assessment<sup>6</sup> which focused on climate-sensitive hazards in Florida.

### 7. Community Engagement

In anticipation of the release of the Federal Register, DEO conducted a survey in which state-wide jurisdiction representatives, private businesses and citizen stakeholders participated to discuss their current mitigation barriers and needs. The mitigation needs reflected in the survey helped to inform this mitigation strategy. Questions asked in the survey are included in Appendix A. In addition, DEO held seven regional workshops prior to the Public Comment Period to answer questions and solicit input and feedback from various MID communities.

## **C. Historic Damage Patterns**

Historically, Florida has been no stranger to hazards and disaster events. Common hazards within the state include severe thunderstorms, wind, lightning, tornadoes, tropical storms and floods. In many cases, these hazards outnumber similar events across the country in frequency, magnitude and impacts. This section provides background into historic patterns of damage in Florida.

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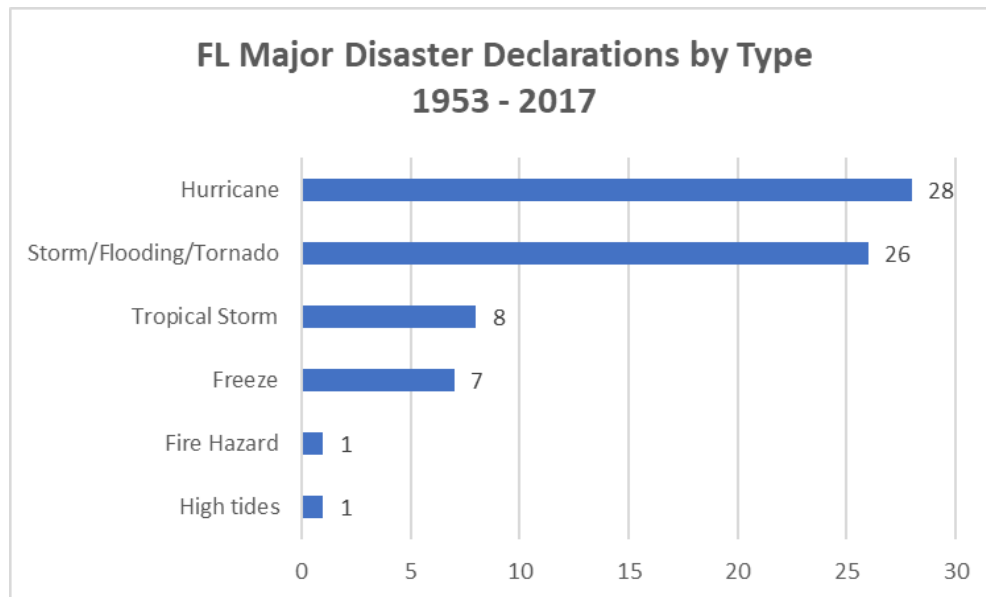
<sup>6</sup> Emrich, et al. and Hazards and Vulnerability Research Institute, "Climate-Sensitive Hazards in Florida Identifying and Prioritizing Threats to Build Resilience against Climate Effects", Retrieved from <https://flbrace.org/fl-vulnerability-assessment.html>

# MITIGATION ACTION PLAN DRAFT

## 1. Major Disaster Declarations

Florida has had 71 Major Disaster Declarations since 1953, when these federal declarations began, through 2017<sup>7</sup>. **Figure 4** demonstrates the types of disasters that have received a Major Disaster Declaration, by type, from 1953 until 2017. Wildfires and floods are among the most common hazards in Florida, but hurricanes have historically inflicted the most catastrophic destruction.

**Figure 4: Major Disaster Declarations by Type**



Source: FEMA, Retrieved from <https://www.fema.gov/disasters>

Wildfires are not commonly declared as a major disaster, but rather as a Fire Management Assistance Declaration. From 1953 through 2017, there were 59 wildfires that received the Fire Management Assistance Declaration. Only one wildfire was declared a major disaster in Florida.

Agricultural disruptions are also not commonly declared as major disasters, but rather as a Secretarial Disaster Declaration by the USDA. **Table 5** illustrates the number of primary counties that were declared and the contiguous counties that were also declared from 2012 through 2018<sup>8</sup>.

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<sup>7</sup> FEMA, Retrieved from <https://www.fema.gov/disasters>

<sup>8</sup> U.S. Department of Agriculture, Retrieved from <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/disaster-designation-information/index>

# MITIGATION ACTION PLAN DRAFT

**Table 5: USDA Secretarial Disaster Declarations**

USDA Secretarial Disaster Declarations		
Year	Primary Counties	Contiguous Counties
2012	63	4
2013	33	18
2014	12	22
2015	4	12
2016	18	31
2017	61	5
2018	12	16

Source: U.S. Department of Agriculture, Retrieved from <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/disaster-designation-information/index>

## 2. Cost of Disasters

Hurricanes and tropical storms represent the costliest hazard in Florida's history, accounting for 86% of the state's total hazard losses from 1960 to 2012<sup>9</sup> (inflation-adjusted for 2012). **Table 6** illustrates monetary losses and casualties by hazard type for the 53-year period. Measured by injuries, impacts from hurricanes and tropical storms are second only to tornadoes. In examining total fatalities however, lightning and combined coastal hazards (including storm surge and rip currents) represent the deadliest hazards in the state.

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<sup>9</sup> Hazards & Vulnerability Research Institute, 2013

# MITIGATION ACTION PLAN DRAFT

**Table 6: Monetary Losses Due to Natural Hazards**

Monetary Losses Due to Natural Hazards			
Hazard Type	(2012 adjusted)	Fatalities	Injuries
Hurricane/Tropical Storm	\$ 87,373,452,167	148	2,940
Wind	\$ 3,932,003,179	86	473
Flooding	\$ 3,436,397,989	19	5
Winter Weather	\$ 2,354,049,615	36	2
Tornado	\$ 2,044,959,759	168	3,070
Wildfire	\$ 834,628,358	0	255
Severe Storm	\$ 740,811,980	47	228
Hail	\$ 592,629,556	10	31
Coastal	\$ 555,793,597	296	349
Lightning	\$ 119,672,074	458	1,564
Fog	\$ 2,350,860	6	47
Heat and Drought*	\$ 129,666,151	12	10
<b>TOTAL</b>	<b>\$102,116,415,285</b>	<b>1,288</b>	<b>8,974</b>

Source: Hazards and Vulnerability Research Institute, "Climate-Sensitive Hazards in Florida" Report, Retrieved from: <https://flbrace.org/images/docs/climate-sensitive-hazards-in-florida-final-report.pdf>

Temporal trends for all hazard losses in Florida are generally concurrent with those tabulated throughout the United States<sup>10,11</sup>, representing an increasing and unsustainable pattern of damage. **Figure 5** illustrates the long-term trend of hazard losses for Florida, which suggests an overall increase in annual total costs over time. This tendency relates to both an increase in hazard frequency and an ever-inflating coastal population, leaving more people and infrastructure exposed to future disasters<sup>12</sup>.

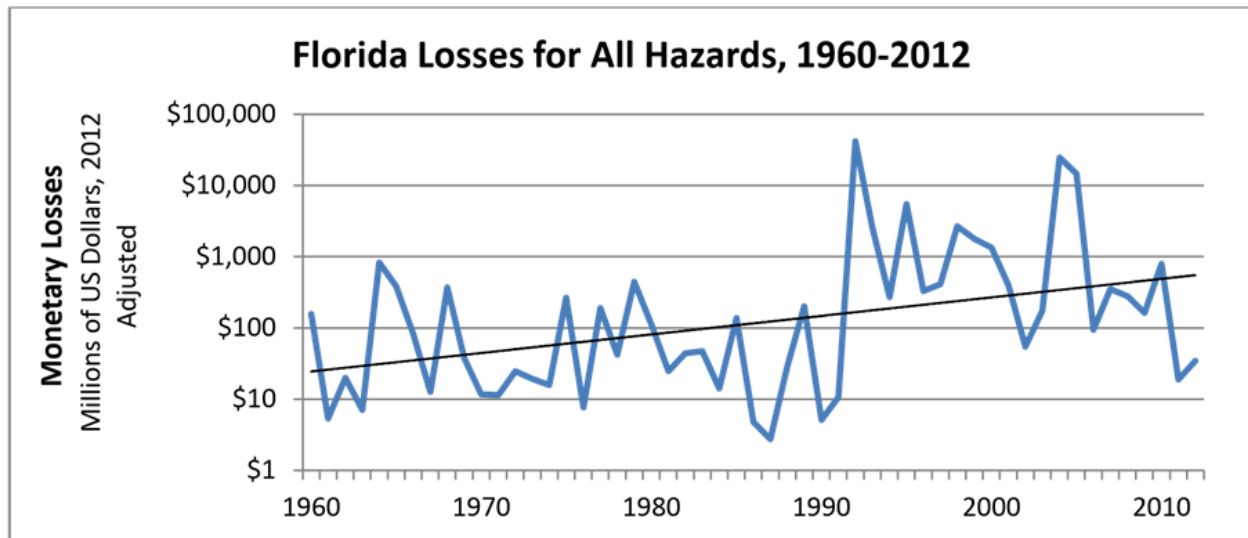
<sup>10</sup> Cutter, S. L., & Emrich, C. (2005). "Are natural hazards and disaster losses in the U.S. Increasing?" Eos, Transactions American Geophysical Union, 86(41), 381. doi: 10.1029/2005eo410001

<sup>11</sup> Gall, M., K.A. Borden, C.T. Emrich, and S.L. Cutter. 2011. "The Unsustainable Trend of Natural Hazard Losses in the United States." Sustainability no. 3:2157-2181. doi: 10.3390/su3112157.

<sup>12</sup> Malmstadt, J., K. Scheitlin, and J. Elsner. 2009. "Florida Hurricanes and Damage Costs." Southeastern Geographer no. 49:108-131. doi: 10.1353/sgo.0.0045.

# MITIGATION ACTION PLAN DRAFT

Figure 5: Florida Losses for All Hazards, 1960-2012



Source: Hazards and Vulnerability Research Institute, "Climate-Sensitive Hazards in Florida" Report, Retrieved from: <https://flbrace.org/images/docs/climate-sensitive-hazards-in-florida-final-report.pdf>

### 3. National Flood Insurance Program

As of January 2018, Florida had 1,738,149 National Flood Insurance Program (NFIP) policies, equaling approximately 35% of all policies in the nation. Total premiums equal an annual amount of \$950,483,682. These policies cover more than \$423 billion in property<sup>13</sup>.

Over the past 40 years, Florida has contributed to the NFIP fund an average of nearly 10 times the amount of premiums paid than the state has received in closed paid NFIP claims. As with much of the nation, flooding represents the most damaging natural hazard in the state. As of January 2018, Florida has had 3,925 repetitive loss properties that have been mitigated and 14,887 repetitive loss properties that have not been mitigated. Moreover, there are 657 mitigated and non-mitigated properties that are considered severe repetitive loss. Clearly a strong mitigation program is still necessary in Florida. The state currently has 468 communities (local governments) that participate in the NFIP.

### D. Greatest Risk Hazards

Of the hazards that have the potential to place the lives and property of Floridians at risk, five natural hazards are identified as major priorities in this risk-based needs assessment.

Floods were found to be the highest risk to the state, followed by tropical cyclones, severe storms, wildfires and coastal erosion. These hazards have been selected based largely on the 2018 SHMP's vulnerability assessments. SHMP's examination is based on past disasters, frequency of occurrence, probability of occurrence, possible impacts, analysis of individual LMS hazard rankings and jurisdiction and state vulnerability. The

<sup>13</sup> State Hazard Mitigation Plan, p. 45

## MITIGATION ACTION PLAN DRAFT

prioritization of these hazards in many mitigation plans and programs throughout the state are indicative of the breadth and depth their impacts.

This section addresses quantitative and qualitative descriptions of these hazards and their projected current and future risk to the state of Florida, particularly in MID-identified areas. Each hazard profile includes a description of the hazard, discussion of hazard exposure to people and assets, and when possible, a discussion of vulnerability.

Climate change is a key overarching challenge which threatens to compound the extent and effects of hazards<sup>14</sup>. These events are likely to include increases in wind, rain and storm surges linked with rising atmospheric and sea surface temperatures, and an overall rise in sea level<sup>15</sup>. As such, throughout this section, climate change is discussed in relationship to its potentially aggravating outcomes on future vulnerabilities.

The 2018 SHMP planning team reviewed all available county Local Mitigation Plans to make comparisons possible across identified hazards to jurisdictions. The method chosen to align these plans was a ranking system based on frequency of occurrence.

**Key for Local Mitigation Plan Identified Frequent Hazards**

Key		
Ranking Level	Code	Description
High Hazard Ranking	H	One or more occurrences each year
Medium/High Hazard Ranking	MH	One occurrence every 3 years
Medium Hazard Ranking	M	One occurrences every 5 – 7 years
Low Hazard Ranking	L	One occurrence every 10 years
Not Identified	-	-

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<sup>14</sup> Fourth National Climate Assessment (NCA4), Retrieved from <https://science2017.globalchange.gov/>

<sup>15</sup> Ingram, K.T., K. Dow, and L. Carter. 2012. "Southeast Region Technical Report to the National Climate Assessment." Gainesville, FL: United State Global Change Research Program. Accessed Mar 14, 2013. Retrieved from [http://downloads.usgcrp.gov/NCA/Activities/NCA\\_SE\\_Technical\\_Report\\_FINAL\\_7-23-12.pdf](http://downloads.usgcrp.gov/NCA/Activities/NCA_SE_Technical_Report_FINAL_7-23-12.pdf).



# MITIGATION ACTION PLAN DRAFT

Floods, tropical cyclones and severe storms present high risks throughout the entire state, inflicting deaths and causing great damage to physical assets. Impact from wildfires and coastal erosion hazards emphasizes risk concentrated in certain geographical regions. However, their consequences to life and critical assets are high and are also subject to cascading effects as a resulting risk of other hazards.

**Table 7: HUD MID Areas - Identified Frequent Hazards (Below)**

HUD MID Areas – Frequent hazards					
County	Flooding	Hurricane	Severe Storm	Wildfire	Erosion
Brevard	H	H	H	MH	MH
Broward	H	MH	H	MH	MH
Clay	H	M	H	H	-
Collier	MH	MH	H	H	H
Duval	H	H	H	H	-
Hillsborough	H	MH	H	H	L
Lee	M	M	H	H	H
Miami Dade	H	H	H	L	M
Monroe	H	MH	H	MH	H
Orange	H	H	H	H	-
Osceola	H	H	H	H	-
Palm Beach	H	H	H	L	L
Polk	H	MH	H	H	-
St. Johns	H	H	H	H	M
St. Lucie	H	H	H	M	H
Volusia	H	H	H	H	H

**Table 8: State MID Areas - Identified Frequent Hazards (Right)**

State MID Areas- Frequent Hazards					
County	Flooding	Hurricane	Severe Storm	Wildfire	Erosion
Alachua	MH	M	M	H	-
Baker	H	H	H	H	-
Bradford	H	H	H	MH	L
Brevard	H	H	H	MH	MH
Broward	H	MH	H	MH	MH
Charlotte	H	M	H	M	M
Citrus	H	H	H	H	-
Clay	H	M	H	H	-
Collier	MH	MH	H	H	H
Columbia	M	M	H	M	M
DeSoto	H	MH	H	M	-
Dixie	H	H	M	M	L
Duval	H	H	H	H	-
Flagler	H	H	H	H	MH
Gilchrist	H	M	H	H	-
Glades	H	H	H	H	-
Hardee	H	MH	H	H	-
Hendry	M	H	H	H	-
Hernando	H	H	H	H	M
Highlands	H	H	H	H	-
Hillsborough	H	MH	H	H	L
Indian River	H	H	H	M	H
Lafayette	M	MH	H	H	M
Lake	M	M	H	M	L
Lee	M	M	H	H	H
Leon	M	L	H	M	-
Levy	H	M	-	H	M
Manatee	H	H	H	H	M
Marion	H	L	-	M	L
Martin	H	M	H	M	M
Miami-Dade	H	H	H	L	M
Monroe	H	MH	H	MH	H
Nassau	-	L	M	L	L
Okeechobee	M	H	M	H	L
Orange	H	H	H	H	-
Osceola	H	H	H	H	-
Palm Beach	H	H	H	L	L
Pasco	MH	M	H	H	M
Pinellas	M	H	H	M	H
Polk	H	MH	H	H	-
Putnam	MH	M	H	MH	-
Sarasota	H	H	H	H	H
Seminole	H	H	MH	MH	-
St. Johns	H	H	H	H	M
St. Lucie	H	H	H	M	H
Sumter	H	M	H	H	-
Suwannee	H	H	H	H	H
Union	H	H	H	H	L
Volusia	H	H	H	H	H

# MITIGATION ACTION PLAN DRAFT

## 1. Flooding

Flooding refers to the general or temporary conditions of partial or complete inundation of normally dry land areas resulting from the overflow of inland or tidal water and surface water runoff from any source. In Florida, where severe thunderstorms, tropical cyclones, seasonal rains and other meteorological conditions produce excessive water and wind, floods are common and pose an exceptionally high risk. Florida's low-lying topography and subtropical climate, combined with its rapid urbanization, results in increased impervious surface areas such as asphalt roads and concrete areas. If local conditions cannot accommodate intense precipitation through a combination of infiltration and surface runoff, water may accumulate and cause flooding. Flooding occurs in several variations due to weather-related conditions: two main categories are inland flooding (rivers, dams/dikes and flash floods) and coastal flooding (storm surge and tidal flooding).

Heavy precipitation may result in designated and natural drainage systems exceeding carrying capacities and resulting in riverine flooding. Flash floods are most often caused by slow-moving thunderstorms or tropical cyclones and tend to be exceptionally dangerous because of their rapid onset, high velocity and debris load. These floods can develop quickly depending on the intensity and duration of the storm, the topography of the area, soil conditions and ground cover. Rapid urbanization and the increase of impervious surfaces such as roads and sidewalks, has led to increased levels of flash flooding during weather events<sup>16</sup>. The failure of a dam or dike can also produce a flood event that presents a potential hazard to downstream areas. High-risk dams and dikes are those in which failure or operational error results in loss of human life and poses significant risks to lifeline facilities.

Coastal flooding is usually the result of a weather system such as a severe thunderstorm, hurricane or tropical storm with high winds. Storm surge occurs when water is driven ashore by the wind resulting in a rise of water over and above regular tides. The damaging effects to structures in beach areas are caused by a combination of higher levels of storm surge, winds, waves, rains, erosion and battering by debris. During a hurricane, this is often the greatest threat to life and property along the coast. King tides, which are higher than normal tides and usually occur in autumn months, can be worsened in the overlapping hurricane season, compounding its effects.

Florida's geography also makes it very susceptible to the threat of severe repetitive loss. As sea levels rise, several consequences, including increasing the salt content (salination) of fresh water sources, land loss and increases in storms and flooding can occur. Water inundates and erodes coastal wetland ecosystems such as mangroves and salt marshes. Higher water levels wash away wetlands and flood previously dry land<sup>17</sup>. These coastal wetland ecosystems are crucial to absorbing the impact of tropical storms and providing a breeding ground for a significant proportion of sea life.

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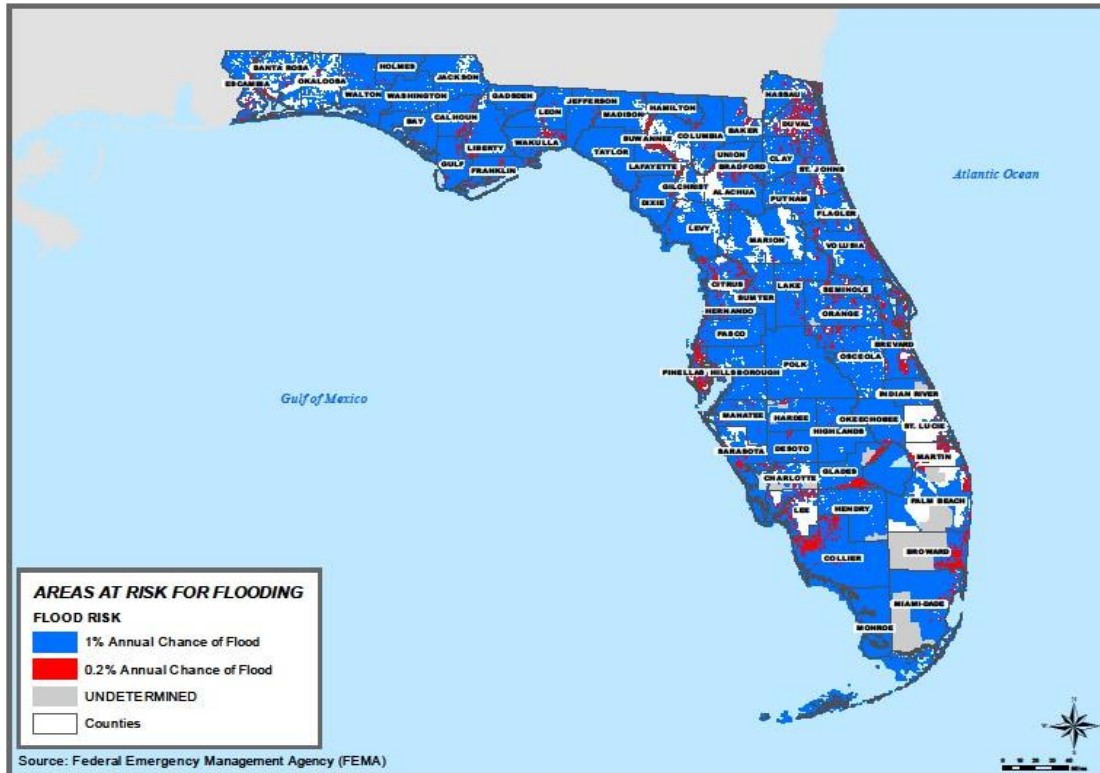
<sup>16</sup> State Hazard Mitigation Plan, p. 181

<sup>17</sup> State Hazard Mitigation Plan, p. 106

## MITIGATION ACTION PLAN DRAFT

**Figure 6** depicts floodplains; geographic areas that are recognized as being susceptible to increased levels of flood risk. The area in blue represents the 1% floodplain, also known as the base flood or the 100-year flood, which is the level of a flood that has a 1% probability of occurring in any given year. In red is the 2% flood or 500-year floodplain, which has a 2% chance of annual inundation.

**Figure 6: Areas at Risk for Flooding**



Source: State Hazard Mitigation Plan, p. 109

Based on historical knowledge and an understanding of floodplains, it is believed that Florida will continue to experience flooding events on an annual basis. Specific probability is difficult to determine; however, 100-year and 500-year estimates help provide a baseline understanding. It is likely that Florida will continue to be impacted by flooding due to any number of causes annually. The SHMP's analysis of 2012 to 2016 in Florida, from the National Centers of Environmental Information (NCEI), indicates that there are about nine to 10 coastal floods, 16 flash floods and 19 to 20 inland floods each year in Florida.

**Table 9: Annual Flooding Frequency**

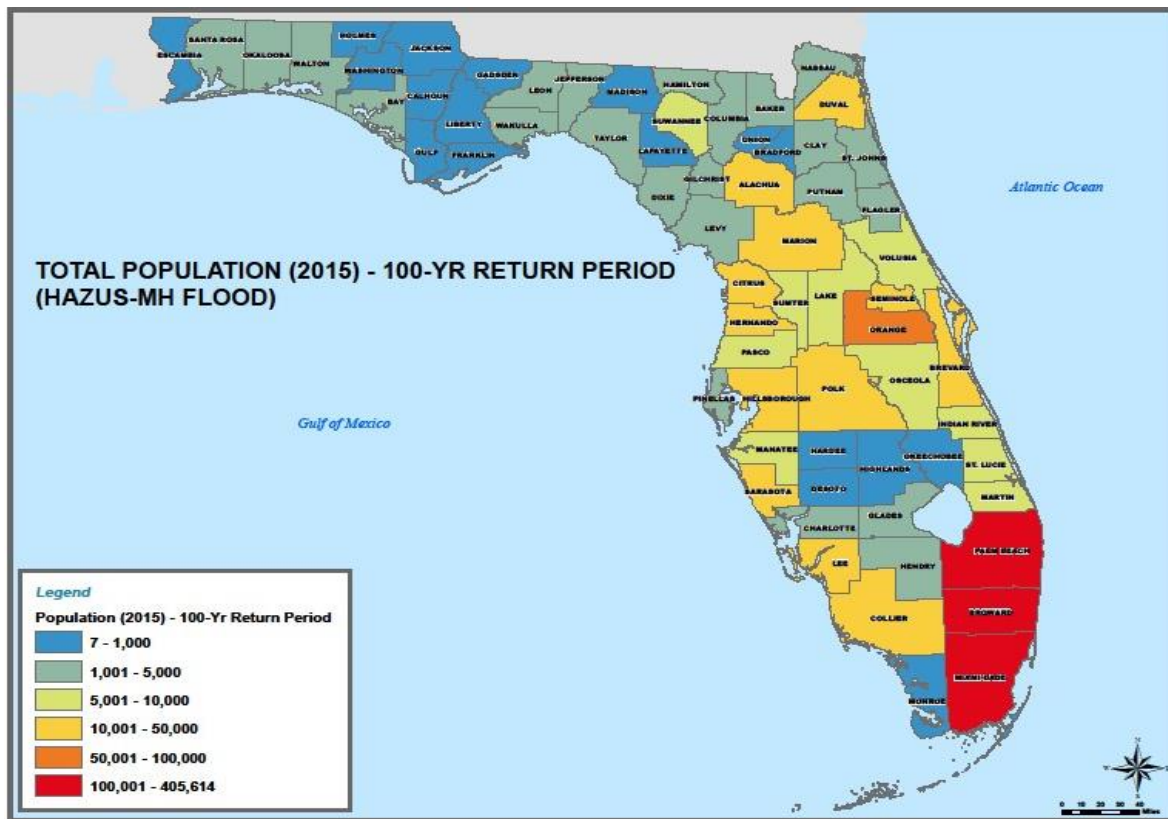
Type of Flood	NCEI Reports	Average per Year
Coastal Flood	48	9.6
Flash Flood	81	16.2
Inland Flood	98	19.6
Total	227	45.4

Source: State Hazard Mitigation Plan, p. 117

## MITIGATION ACTION PLAN DRAFT

A large segment of the population of Florida is exposed to flooding risk. According to the SHMP analysis based on data from the Hazards U.S. Multi-Hazard (HAZUS-MH) flood model and the 2015 American Community Survey, more than 1.3 million people live within flood zones with a 100-year return period (1% flood zone) and more than 1.5 million live in a 500-year flood return period (2% floodplain). Of these exposed populations, HUD MID jurisdictions make up 1.1 million (83.8%) and 1.3 million (84.6%) respectively. Of the eight counties with more than 10,000 people at risk, only one county, Pinellas, is not an identified HUD MID area<sup>18</sup> but it has been designated a state MID area in response to Hurricane Irma. The map in **Figure 7** depicts HAZUS-MH data.

**Figure 7: Total Population in 100-Year Floodplain**



Source: State Hazard Mitigation Plan, p. 122

Based on the state facility database and the HelpFL inland flood data, there are nearly 4,000 state facilities in the 100-year floodplain and more than 700 additional state facilities in the 500-year floodplain. There are 11 counties with more than 100 state facilities in the 100-year floodplain. These include Broward, Collier, Franklin, Gulf, Lee, Miami-Dade, Monroe, Palm Beach, Pinellas, Polk and St. Johns. Miami-Dade County has the most,

<sup>18</sup> State Hazard Mitigation Plan, "Appendix E – Risk Assessment Tables", Retrieved from <https://www.floridadisaster.org/dem/mitigation/statemitigationstrategy/state-hazard-mitigation-plan/>

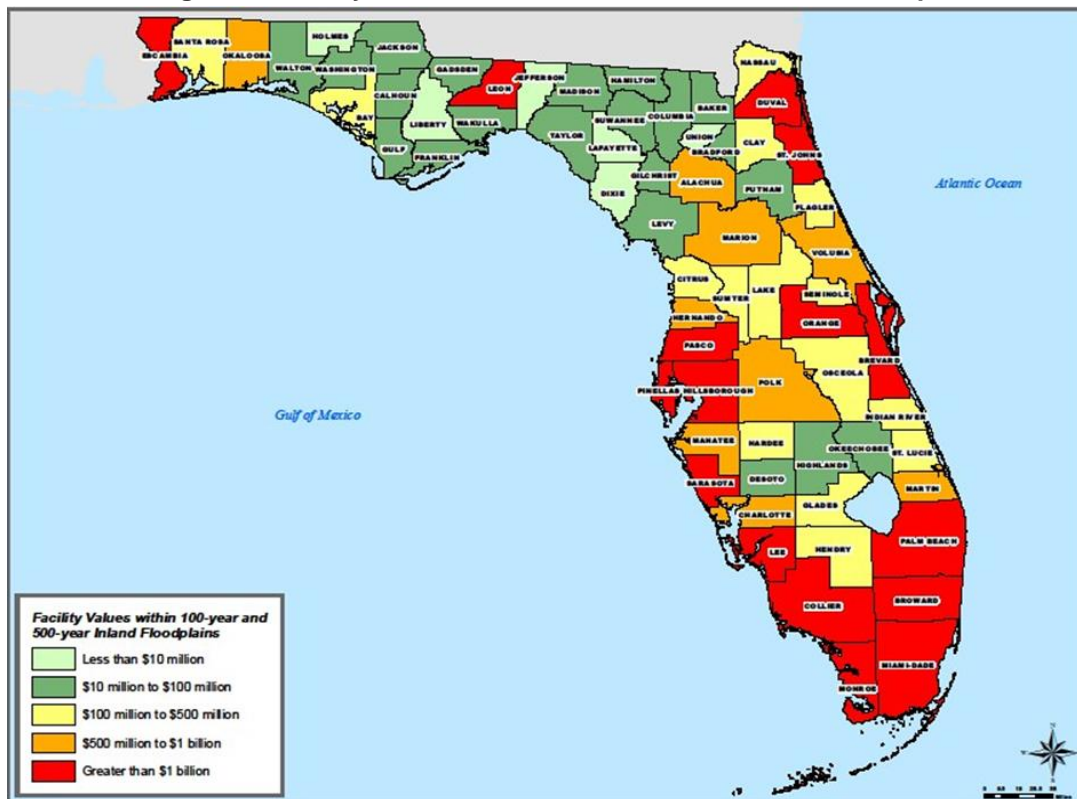
## MITIGATION ACTION PLAN DRAFT

with almost 700 state facilities in the 100-year floodplain. Broward County is the only County with an additional 100 or more state facilities in the 500-year floodplain.

An analysis of county facilities within the 100-year and 500-year return flood zones estimates 15 counties with more than \$1 billion worth of public facilities at risk, including Brevard, Collier, Duval, Escambia, Hillsborough, Lee, Leon, Orange, Pasco, Pinellas, Sarasota and St. Johns. Of these, only four counties are not in HUD MID areas. These public facilities include hospitals, fire stations, police stations and other types of county facilities.

According to data analysis conducted using the HAZUS software, the total potential direct economic loss due to a 100-year and 500-year flood is \$8,896,289,000 and \$12,597,571,000 respectively<sup>19</sup>. Three counties would have more than \$500 million in assets at risk in a 100-year flood zone. There are 11 counties; Brevard, Citrus, Collier, Hillsborough, Indian River, Lee, Marion, Orange, Pasco, Seminole and Suwannee, that have between \$100 million and \$500 million worth of assets at risk.

**Figure 8: Facility Values within 100-Year and 500-Year Floodplains**



Source: State Hazard Mitigation Plan, p. 124

<sup>19</sup> State Hazard Mitigation Plan, "Appendix E – Risk Assessment Tables", Retrieved from <https://www.floridadisaster.org/dem/mitigation/statemitigationstrategy/state-hazard-mitigation-plan/>; Note: "Direct economic losses were calculated in HAZUS-MH by taking the general building stock (Residential, Commercial, Industrial, etc.) that intersected a given Census Block and applied damage curves within the model based on the depth of flood inundation from the model's derived 100-year and 500-year return periods that were generated based on a Digital Elevation Model and calculated reaches within a County. The data for these figures can be found in."

## MITIGATION ACTION PLAN DRAFT

Within the 500-year flood zone, Broward, Miami-Dade and Palm Beach counties have more than \$500 million in assets at risk. There are also 15 counties that could experience between \$100 million and \$500 million in losses due to flooding damage within the 500-year flood zone. These counties are; Brevard, Citrus, Collier, Duval, Hillsborough, Indian River, Lee, Marion, Orange, Pasco, Polk, Santa Rosa, Sarasota, Seminole, Suwannee, and St. Lucie counties.

### 2. Tropical Cyclone Profile

A tropical cyclone, also known as a tropical storm or hurricane, is a rotating, organized system of clouds and thunderstorms that originates over tropical or subtropical waters and has a closed low-level circulation. A hurricane is a tropical cyclone which occurs in the Atlantic Ocean and northeastern Pacific Ocean, and a typhoon occurs in the northwestern Pacific Ocean; in the south Pacific or Indian Ocean, comparable storms are referred to simply as "tropical cyclones" or "severe cyclonic storms."

The entire state of Florida is subject to the effects of tropical cyclones, but some areas are more vulnerable than others due to the state's large expanses of coastal shorelines on the Atlantic and Gulf Coasts<sup>20</sup>. The diameter of hurricane force winds averages 100 miles and tropical storm force winds extend out up to 400 miles. At the same time, there is no point within Florida that is more than 70 miles from either the Atlantic Ocean or the Gulf of Mexico.

Flooding from tropical cyclones poses the greatest threat for people who live inland. Rainfall can cause flash flooding and flooding on rivers and streams that can persist for several days after the storm. Rainfall amounts are related to the speed and size of tropical cyclones rather than the intensity. A slower moving and larger tropical cyclone has a longer and larger capacity to produce rainfall.

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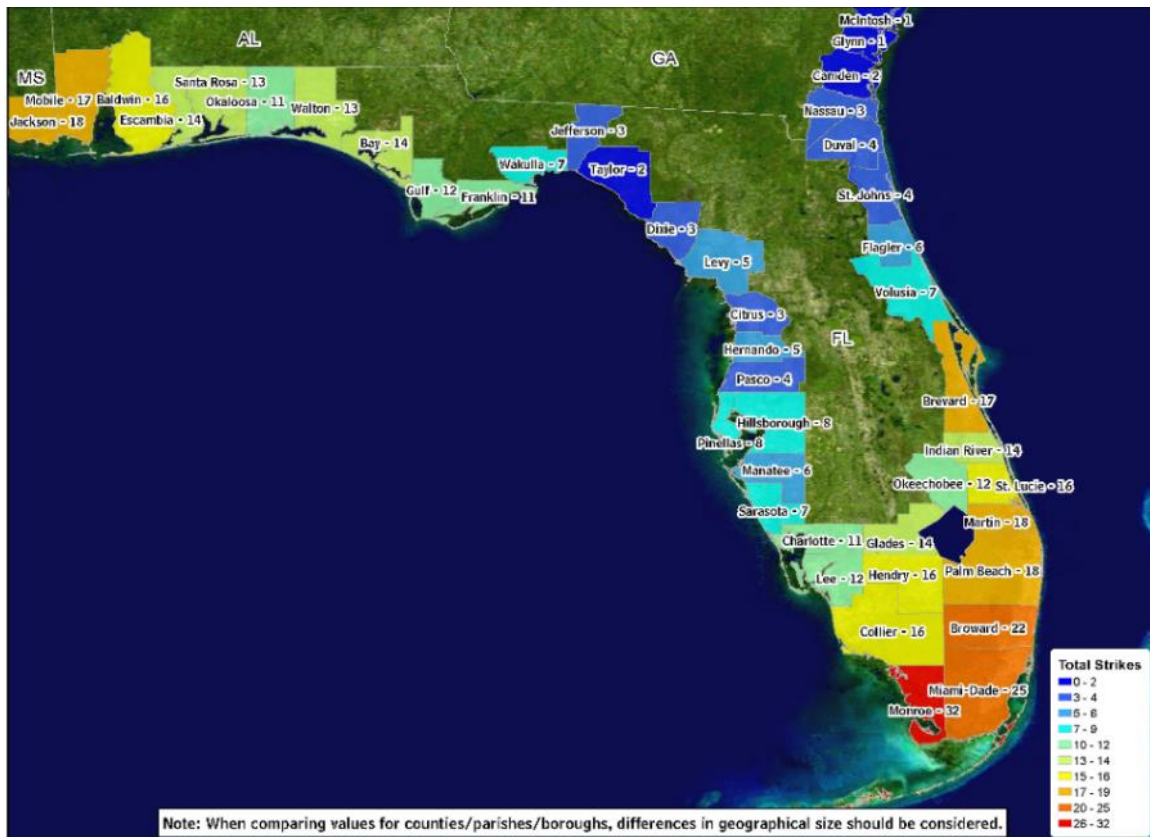
<sup>20</sup> Nation Oceanic and Atmospheric Administration, Retrieved from [https://www.nhc.noaa.gov/climo/images/strikes\\_egulf.jpg](https://www.nhc.noaa.gov/climo/images/strikes_egulf.jpg)



# MITIGATION ACTION PLAN DRAFT

**Figure 9** illustrates the location and number of hurricane strikes in Florida between 1900 and 2010.

### Figure 9: Total Number of Hurricane Strikes



### Total number of hurricane strikes by counties/parishes/boroughs, 1900-2010

Data from NWS NHC 46: Hurricane Experience Levels of Coastal County Populations from Texas to Maine. Jerry D. Jarrell, Paul J. Hebert, and Max Mayfield. August, 1992, with updates.

**Source: National Oceanic and Atmospheric Agency, Retrieved from:**  
**[https://www.nhc.noaa.gov/climo/images/strikes\\_egulf.jpg](https://www.nhc.noaa.gov/climo/images/strikes_egulf.jpg)**

Storm surge is perhaps the most dangerous aspect of a hurricane. It occurs when the winds and forward motion associated with a tropical cyclone accumulate water as it moves toward shore. The SHMP presents data on land areas that would be impacted by storm surge coastal flooding due to a Category 2 Hurricane or a Category 5 Hurricane based on the Sea, Lake and Overland Surge from Hurricanes (SLOSH) maps, flood depth grids from the State Regional Evacuation Studies and census block data. In total, more than 1.8 million people are living in coastal areas are positioned to be impacted by a Category 2 Hurricane storm surge, whereas 5.8 million people could be impacted by a Category 5 Hurricane storm surge.

There are five counties with more than 100,000 people living in the storm surge zone of a Category 2 Hurricane: Collier, Hillsborough, Lee, Miami-Dade and Pinellas. There are 14 counties with more than 100,000 people living in the storm surge zone of a Category 5 hurricane: Brevard, Broward, Charlotte, Collier, Duval, Hillsborough, Lee, Manatee, Miami-Dade, Pasco, Pinellas, St. Johns, Sarasota and Volusia. With 1.5 million people,

## MITIGATION ACTION PLAN DRAFT

Miami-Dade County has the highest population in the Category 5 Hurricane storm surge zone.

In addition to people being vulnerable to the hazards associated with tropical cyclones and the storm surges they generate, thousands of structures, worth billions of dollars, are also at risk. **Table 10** illustrates modeling of the total value of county and state facilities exposed to the storm surge of Category 2 and Category 5 storms. County facilities include, but are not limited to, commission-owned buildings such as offices, parks, and libraries. State facilities include, but are not limited to, state government offices and properties, detention facilities and state parks. Tropical cyclones can produce very strong and destructive winds that can persist for great distances and durations, even after landfall. In recent years, much of the wind damage from hurricanes has been attributed to tornadoes and has been the result of down bursts, which are strong downdrafts that cause damaging winds on or near the ground.

**Table 10: Economic Impact of Storm Surge on Counties**

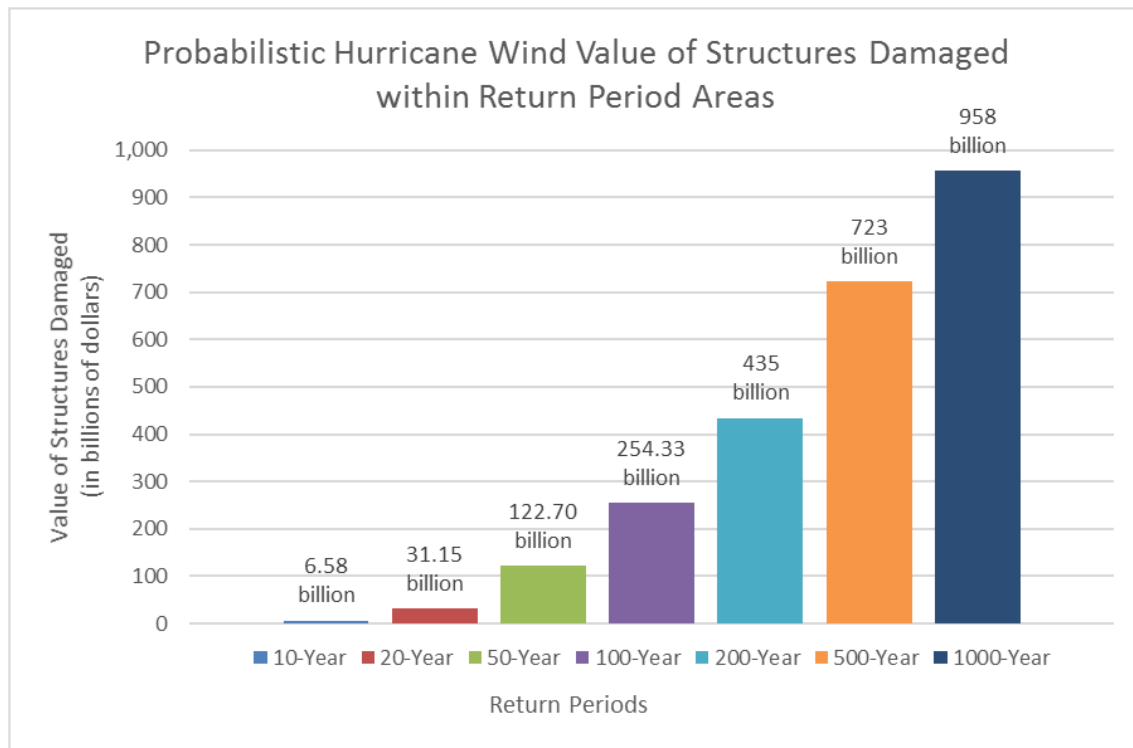
Hurricane Category and MID Designation	Storm Surge Asset Impacts by Dollar
<b>County Facilities</b>	
Category 2	\$4,490,862,602
HUD MIDs	\$ 3,150,980,788
State MIDs	\$ 917,124,475
Non-MIDs	\$ 422,757,339
Category 5	\$17,745,539,113
HUD MIDs	\$ 14,781,649,517
State MIDs	\$ 1,678,520,521
Non-MIDs	\$ 1,285,369,075
<b>State Facilities</b>	
Category 2	\$ 4,384,342,330
HUD MIDs	\$1,139,326,862
State MIDs	\$652,959,480
Non-MIDs	\$ 2,592,055,988
Category 5	\$ 9,870,824,374
HUD MIDs	\$ 2,778,683,185
State MIDs	\$ 1,115,840,487
Non-MIDs	\$ 5,976,300,702

**Source: Data used for this table was taken from State Hazard Mitigation Plan Appendix E**

**Figure 10** shows the value of damaged structures within probabilistic return period areas for hurricane winds. This shows that while the value of structures that would be damaged from hurricane winds in the 10-year return period area is \$6.58 billion, that number increases exponentially to \$958 billion in the 1,000-year return period area.

# MITIGATION ACTION PLAN DRAFT

**Figure 10: Probabilistic Hurricane Wind Damage**



**Source: State Hazard Mitigation Plan, p. 167**

### 3. Severe Storms

A thunderstorm is a local storm that produces lightning and thunder and varies in type depending on its size and organization. Florida is considered the thunderstorm capital of the United States as no other part of the nation has more thunderstorm activity. The National Weather Service considers a thunderstorm “severe” if it produces hail at least one inch in diameter, winds of 58 mph or stronger or a tornado.

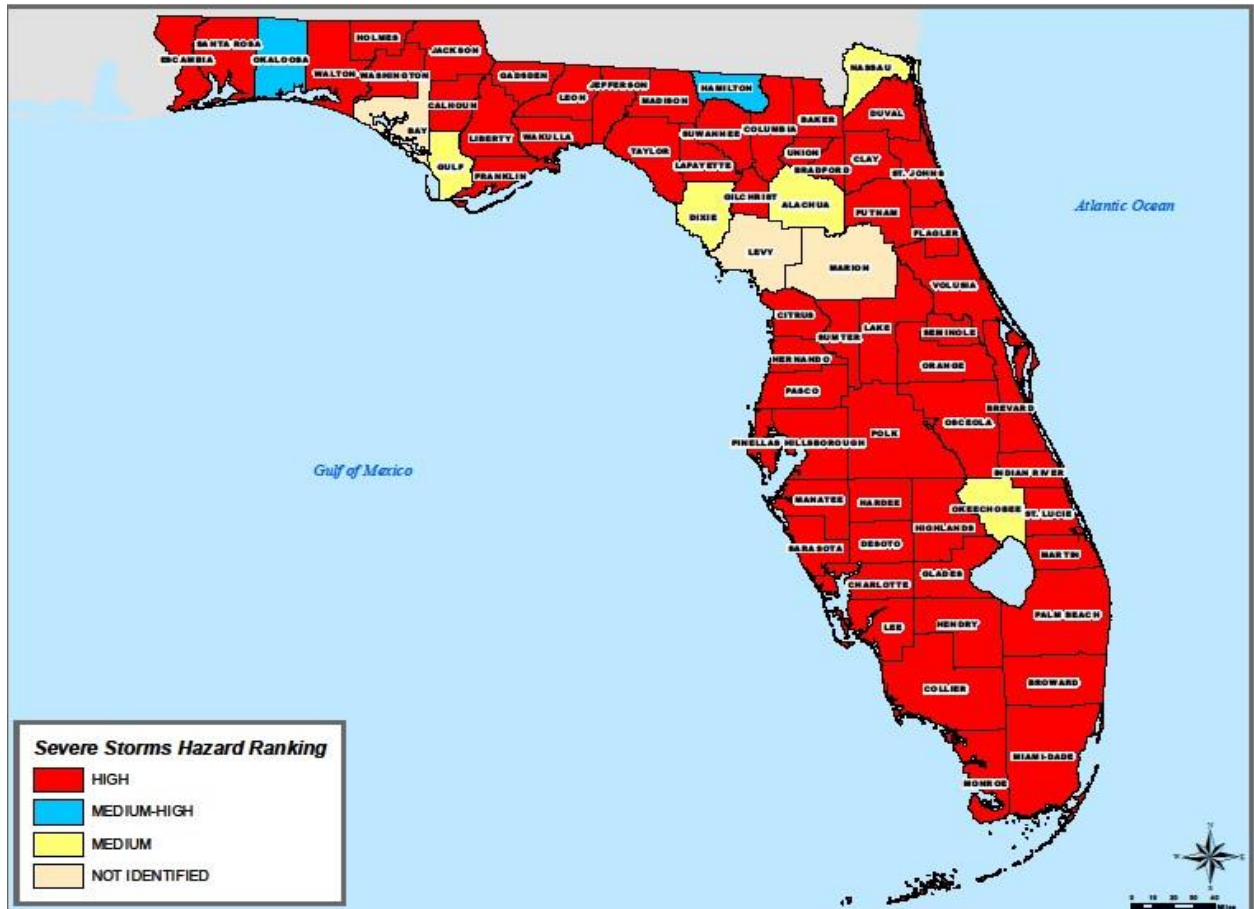
Severe storms are highly likely in Florida, particularly in the Panhandle and the northern, central and southeast regions of the state. Approximately half the state is likely to have three to 18 severe storm warnings each year<sup>21</sup>. In a typical year, the western half of the Florida peninsula experiences more than 80 days with thunder and lightning. Severe thunderstorms and tornadoes can occur anywhere throughout the state. As the number of structures and population increases, the probability that a severe storm or tornado will cause property damage or human casualties likewise increases. **Figure 11** displays the jurisdictional rankings for the severe storms hazard included in the SHMP. Fifty-seven of Florida’s 67 counties have a high-risk of severe storms hazards; two counties have medium-high-risk; five are medium-risk; and three do not identify severe storms as a risk.

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<sup>21</sup> State Hazard Mitigation Plan, page 395

# MITIGATION ACTION PLAN DRAFT

Figure 11: Severe Storm Hazard Ranking



Flash flooding caused by thunderstorm rainfall causes more deaths annually than hurricanes, tornados or lightning. Lightning is one of the deadliest weather phenomena. Between 2009 and 2018, Florida had 49 lightning deaths, ranking it first in the U.S.<sup>22</sup>. Lightning is also responsible for many fires<sup>23</sup>. Strong (up to more than 120 mph) straight-line winds associated with thunderstorms knock down trees, power lines and mobile homes. Tornadoes (with winds up to about 300 mph) can destroy all but the best-built man-made structures.

#### 4. Wildfire Hazard

Wildfire, or wildland fire, are fires started by lightning or by humans in an area with vegetation. Wildfires occur in Florida every year and at all times of the year and are part of the natural cycle of Florida's fire-adapted ecosystems. Between 2006 and 2016, about

<sup>22</sup> National Weather Service, Retrieved from <https://www.weather.gov/safety/lightning-media>

<sup>23</sup> The National Severe Storms Laboratory, Retrieved from <http://www.nssl.noaa.gov/education/svrwx101/hail/>

## MITIGATION ACTION PLAN DRAFT

70% to 80% of Florida's wildfires were caused by humans, including arson, burning debris or accidents, 20% to 30% of were caused by lightning and about 9% were the result of prescribed fires<sup>24</sup>.

Environmental short-term loss caused by a wildland fire can include the destruction of wildlife habitat and watersheds. Long-term effects include reduced access to affected recreational areas, destruction of cultural and economic resources and community infrastructure and vulnerability to flooding due to the destruction of watersheds. Based on the LMS plans, the majority of counties have identified wildfires as one of their hazards: 42 as high-risk; six as medium-high-risk; 15 as medium-risk; and four as low-risk. Approximately 9.8% of the population of Florida (1,848,396 people) reside in an area of high wildfire risk and 11.2% of the state's population (2,112,245 people) live in medium-risk wildfire areas<sup>25</sup>.

Hurricanes increase wildfire risk when they flatten forests and leave giant swaths of dead trees in their wake. After Hurricane Michael hit in 2018, 350,000 acres of forest were devastated leaving 100 tons of dead wood per acre behind, which is approximately 10 times more than the annual debris accumulation in a non-storm year. An additional 4.6 million acres sustained lesser damage<sup>26</sup>.

### 5. Coastal Erosion

Coastal erosion is the wearing away of land or the removal of beach or dune sediments by wave action, tidal currents, wave currents or drainage. Some erosion changes are slow, inexorable and gradual. However, the changes on a beach can happen overnight, especially during a storm. According to the Beach Management Funding Assistance Program (formerly the Beach Erosion Control Program) within Florida Department of Environmental Protection, there are many stretches of shoreline that have been critically-eroded. Critically-eroded beaches are those in which there is a threat to, or loss of, upland development, recreation, wildlife habitat and/or important cultural resources. Non-critically-eroded beaches are those in which there may be significant erosion conditions, but there is no current public or private interest threatened.

Approximately half (420 of 825 miles) of the state's coastline fronting the Atlantic Ocean, the Gulf of Mexico and the Straits of Florida is critically-eroded<sup>27</sup>. Both global eustatic sea level rise (the distance from the earth's center to the surface of the sea) and the increased frequency of higher intensity hurricanes can affect coastal erosion. Continued atmospheric warming could also increase rates of global eustatic sea level rise. In the

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<sup>24</sup> State Hazard Mitigation Plan, p. 210

<sup>25</sup> State Hazard Mitigation Plan, "Appendix G: Wildfire Hazard Mitigation Plan Annex", Retrieved from [https://www.floridadisaster.org/contentassets/c6a7ead876b1439caad3b38f7122d334/appendix-g\\_wildfire-hazard-mitigation-plan-annex.pdf](https://www.floridadisaster.org/contentassets/c6a7ead876b1439caad3b38f7122d334/appendix-g_wildfire-hazard-mitigation-plan-annex.pdf)

<sup>26</sup> National Association of State Foresters, "Wildfire Prevention After Hurricane Michael", Retrieved from <https://www.stateforesters.org/wp-content/uploads/2019/04/Hurricane-Michael-TPs.pdf>

<sup>27</sup> Division of Water Resource Management Florida Department of Environmental Protection; "Critically Eroded Beaches in Florida", Retrieved from <https://floridadep.gov/sites/default/files/FDEP-Critically-Eroded-Beaches-2019.pdf>



# MITIGATION ACTION PLAN DRAFT

absence of offsetting changes in natural sediment supply, sand beaches will erode more rapidly as the rate of sea level rise increases.

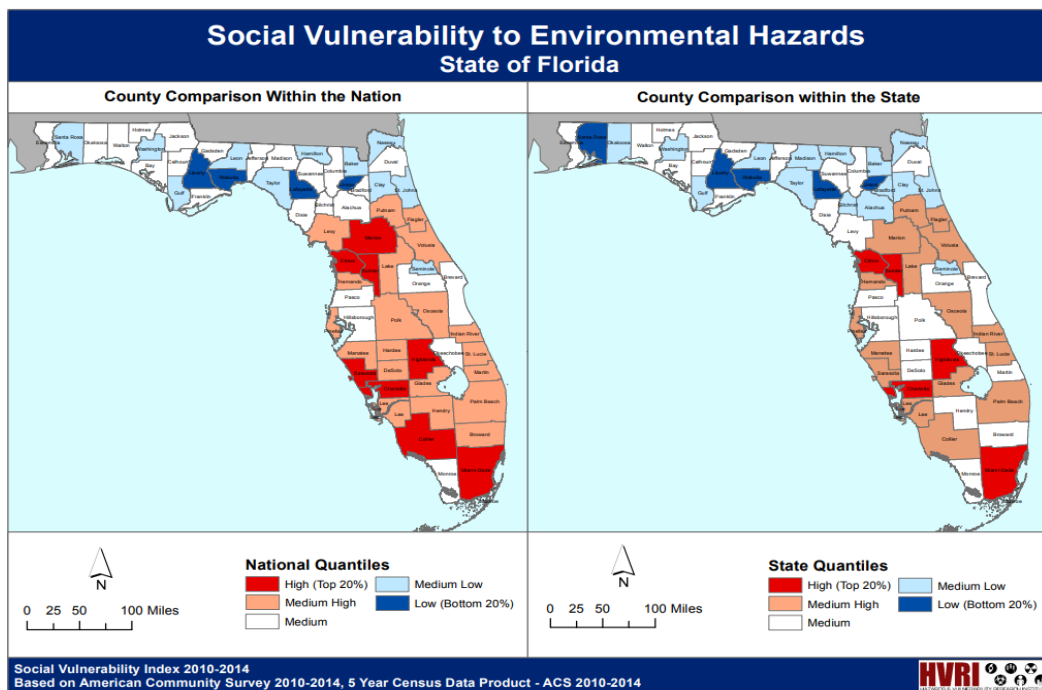
## E. Social Vulnerability

If a holistic understanding of disaster risk is to be achieved, it is important to incorporate aspects of multiple hazards (natural systems), social vulnerability (social systems) and built-environment vulnerability (human-constructed systems). Hazards that are uniform across considerable distances often result in widely divergent impacts and recovery rates for those who are affected. Social vulnerability describes this differential susceptibility of people based on social, economic, political and institutional factors.

### 1. Social Vulnerability Index

The Hazard and Vulnerability Research Institute's Social Vulnerability Index (SoVI) measures the social vulnerability of U.S. counties to environmental hazards. This index synthesizes 29 socioeconomic variables that impact a community's ability to prepare for, and respond to, disasters<sup>28</sup>. The index of variables includes, but is not limited to, age, sex, race, income and unemployment rate. A full list of variables is located in Appendix B. **Figure 12** features a map depicting data compiled and processed by the Hazards and Vulnerability Research Institute (SoVI). Several Florida counties face a medium to high risk of environmental hazard issues when compared nationally and locally. The state is considering data from SoVI regarding its planning and allocation initiatives.

**Figure 12: Social Vulnerability Map**



**Source: Hazards Vulnerability Research Institute, Retrieved from:**  
**<http://artsandsciences.sc.edu/geog/hvri/sovi%C2%AE-2010-2014-state-maps>**

<sup>28</sup> Hazards & Vulnerability Research Institute, "Social Vulnerability Index for the United States - 2010-2014" Retrieved from <http://artsandsciences.sc.edu/geog/hvri/sovi%C2%AE-0>



## MITIGATION ACTION PLAN DRAFT

In addition to the information provided by SoVI, the state is considering demographic characteristics and their connection to risk during disasters in state and HUD MID areas. Communities with higher percentages of socially-vulnerable residents are impacted adversely at a rate that is higher than state-wide averages. These demographics are presented in **Table 11**.

**Table 11: Demographic Profile of MID Areas**

<b>Demographic Profile Information - American Community Survey (2018)<sup>29</sup></b>		
<b>Socio-Demographic Characteristics</b>	<b>Designated MID Area Average<sup>30</sup></b>	<b>Florida</b>
<b>Population</b>		
Population estimates, July 1, 2018, (V2018)	20,321,514	21,299,325
<b>Age and Sex</b>		
Persons under 5 years, percent	5.18%	5.40%
Persons under 18 years, percent	19.81%	19.90%
Persons 65 years and over, percent	22.63%	20.50%
<b>Race</b>		
White alone, percent	81.50%	77.30%
Black or African American alone, percent	13.24%	16.90%
American Indian and Alaska Native alone, percent	0.69%	0.50%
Asian alone, percent	1.90%	3.00%
Native Hawaiian and Other Pacific Islander alone, percent	0.11%	0.10%
Two or More Races, percent	2.06%	2.20%
Hispanic or Latino, percent	18.55%	26.10%
White alone, not Hispanic or Latino, percent	65.08%	53.50%
<b>Population Characteristics</b>		
Veterans, 2013-2017	1,318,833	1,454,632
Foreign born persons, percent, 2013-2017	12.71%	20.20%
Language other than English spoken at home, percent of persons age 5 years+, 2013-2017	18.63%	28.70%
<b>Education</b>		
High school graduate or higher, percent of persons age 25 years+, 2013-2017	84.40%	87.60%
Bachelor's degree or higher, percent of persons age 25 years+, 2013-2017	21.75%	28.50%
<b>Health</b>		

<sup>29</sup> Margin of Error: All ACS estimates published on AFF have Margins of Error calculated at the 90% confidence level.

<sup>30</sup> This column depicts data averages across MID areas.

## MITIGATION ACTION PLAN DRAFT

With a disability, under age 65 years, percent, 2013-2017	10.22%	8.60%
Persons without health insurance, under age 65 years, percent	16.39%	16.00%
<b>Economy</b>		
In civilian labor force, total, percent of population age 16 years+, 2013-2017	52.40%	58.40%
Median household income (in 2017 dollars), 2013-2017	\$47,193.58	\$ 50,883.00
Per capita income in past 12 months (in 2017 dollars), 2013-2017	\$25,697.50	\$ 28,774.00
Persons in poverty, percent	17.98%	13.60%

**Source: American Community Survey (2018), U.S. Census Bureau, Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>**

As illustrated in **Table 11**, the areas at a higher risk of impacts from disasters have a higher percentage of elderly residents (22.6%) per county as compared to the state average (20.5%). On average these counties also have more people with disabilities, more uninsured residents, lower median income households, lower per capita incomes and more people living in poverty than the state as a whole. Poverty is an indicator of places that might see greater impacts from disasters because of a general lack of ability to prepare and plan for shocks and stresses.

### 2. Impact on Low-and-Moderate Income Populations

All projects supported by HUD Community Development Block Grant (CDBG) assistance must meet one of the program's three National Objectives: (1) benefiting low-and-moderate income (LMI) persons, (2) aiding in the prevention or elimination of slums or blight, or (3) meeting a particularly urgent need.

Low-and Moderate-Income households are defined as households that do not exceed 80% of the median income for their area, as determined by HUD. These income categories are grouped into the following classifications:

- Very low income: with an annual income at 30% or below the area median income
- Low income: with an annual income at 31% of up to 50% of the area median income
- Moderate income: with an annual income at 50% to 80% of the area median income

For the purpose of the CDBG-MIT programs, 50% of funds must benefit LMI persons. Every Florida county has areas that fall within the threshold of LMI income households. In **Table 12**, data regarding the LMI income population estimates are based upon HUD's LMI Summary Data (2011-2015 ACS). Attention will be paid to how programs and project benefits will directly meet the needs of these populations.

# MITIGATION ACTION PLAN DRAFT

**Table 12: LMI Population Summary of MID Counties**

Table Key							
LOW				Low Income			
LOWMOD				Low and Moderate Income			
LOWMOD_PCT				Percentage of the eligible population <sup>31</sup> who are LMI			
State MID Areas							
HUD MID Areas							

Low and Moderate-Income Populations Summary (ACS 5-Year 2011-2015)							
NAME	LOW	LOWMOD	LOW MOD PCT	NAME	LOW	LOWMOD	LOW MOD PCT
Alachua County	79,229	114,030	47.9%	Leon County	85,050	125,365	46.55%
Baker County	6,320	10,085	40.98%	Levy County	9,845	17,175	43.74%
Bradford County	6,125	9,090	38.12%	Manatee County	87,505	148,010	43.64%
Brevard County	124,830	223,160	40.79%	Marion County	71,645	127,110	38.74%
Broward County	513,920	855,715	46.84%	Martin County	27,255	50,355	34.05%
Charlotte County	32,415	63,510	39.13%	Miami-Dade County	918,603	1,418,853	54.73%
Citrus County	30,005	53,120	38.66%	Monroe County	21,600	36,455	49.52%
Clay County	37,380	67,660	34.5%	Nassau County	15,945	29,660	39.43%
Collier County	84,240	146,720	43.55%	Okeechobee County	10,595	18,775	52.01%
Columbia County	15,330	25,270	40.08%	Orange County	303,619	512,634	42.86%
DeSoto County	9,025	15,675	50.14%	Osceola County	81,065	145,325	48.71%
Dixie County	3,645	6,255	42.93%	Palm Beach County	370,370	612,920	45.1%
Duval County	240,430	397,200	45.57%	Pasco County	107,225	195,210	41.35%
Flagler County	20,365	37,460	37.36%	Pinellas County	210,105	364,484	39.87%
Gilchrist County	5,135	7,755	49.29%	Polk County	134,999	239,760	39.15%
Glades County	2,795	5,715	47.92%	Putnam County	22,815	34,550	48.58%
Hardee County	7,510	13,040	51.46%	St. Johns County	34,380	60,890	29.29%
Hendry County	10,360	16,370	45.4%	St. Lucie County	70,630	122,035	42.82%
Hernando County	43,970	78,125	45.23%	Sarasota County	80,980	149,210	38.61%
Highlands County	22,155	40,680	42.09%	Seminole County	79,220	143,535	33.12%
Hillsborough County	304,965	522,705	40.78%	Sumter County	16,580	31,210	31.68%
Indian River County	33,665	59,450	42.08%	Suwannee County	11,510	18,730	44.56%
Lafayette County	1,905	2,740	39.17%	Union County	2,355	4,160	41.52%
Lake County	66,025	122,220	39.86%	Volusia County	112,750	202,905	41.13%
Lee County	154,249	273,063	41.77%				

**Source: HUD, ACS 5-Year 2011-2015 Low- and Moderate-Income Summary Data, Retrieved from: <https://www.hudexchange.info/programs/acs-low-mod-summary-data/>**

<sup>31</sup> Eligible population: The Community Planning and Development Office uses the Census Bureau's definition of persons eligible, which removes persons in group housing such as college students, jails and nursing homes.

## MITIGATION ACTION PLAN DRAFT

### 3. Impact on Special Needs Populations

Individuals with functional needs will require assistance with accessing and/or receiving mitigation benefits and resources. These individuals could be children, older adults, pregnant women, individuals from diverse cultures, people who are transportation-disadvantaged, the homeless and individuals with chronic medical disorders and/or a pharmacological dependency. These individuals could also have disabilities, live in institutions, have limited English proficiency or be non-English speaking.

Specialized resources may include, but are not limited to, public or private social services, accommodations, information, transportation or medications to maintain health. Regardless of the nature of the need, care must be taken to ensure that all special need individuals are beneficiaries of mitigation activities.

The LMI Summary Data may be used by CDBG grantees to determine whether a CDBG-funded activity qualifies as meeting the LMI national objective. The LMI percentages are calculated at various principal geographies provided by the U.S. Census Bureau.

### F. Community Lifelines

HUD requires that grantees assess their mitigation needs in a manner that effectively addresses risks to indispensable services. To accomplish this, the community lifeline construct is used to enable decision-makers to characterize and identify the root causes of priority issue areas and to create effective solutions. Community lifelines enable the continuous operation of government functions and critical businesses that are essential to human health and safety or economic security<sup>32</sup>. Community lifelines are made up of the seven critical service areas displayed in **Figure 13**. Each of these lifelines are discussed with relevance to state capabilities and critical facilities.

Figure 13: Community Lifeline Components



Source: FEMA, “Community Lifelines Implementation Toolkit: Comprehensive Information and Resources for Implementing Lifelines During Incident Response”

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<sup>32</sup> FEMA, “Community Lifelines Implementation Toolkit: Comprehensive information and resources for implementing lifelines during incident response”, February 2019, Retrieved from [https://www.fema.gov/media-library-data/1550596598262-99b1671f270c18c934294a449bcc3ce/Tab1b.CommunityLifelinesResponseToolkit\\_508.pdf](https://www.fema.gov/media-library-data/1550596598262-99b1671f270c18c934294a449bcc3ce/Tab1b.CommunityLifelinesResponseToolkit_508.pdf)

# MITIGATION ACTION PLAN DRAFT

## 1. Safety and Security

Government services, law enforcement and search and rescue teams are key entities in the network of operators who deliver robust safety and security capabilities. Disaster conditions can greatly impact the capabilities of response activities necessary to stabilize the conditions of safety and security. Floods and severe winds can have major impacts on emergency operation centers and the infrastructure needed to deliver necessary resources to rescue survivors of life-threatening circumstances. For instance, several days after Hurricane Michael passed through the state, multiple public safety facilities still had limited functionality which hampered their ability to service their communities<sup>33</sup>.

Several jurisdictions throughout the state have emergency operations centers which are outdated and vulnerable to hazards. In the aftermath of Hurricane Michael, nearly 2,000 additional law enforcement personnel and 437 additional ambulances were deployed to the Panhandle to assist with emergency lifesaving missions<sup>34</sup>. Further development of capacity and resources will minimize loss of life by mitigating threats to operations of response and recovery teams.

## 2. Communications

Communication is critical in times of disaster response and recovery. Failures in communications during disasters are most commonly due to physical damage to the devices or communication components of network infrastructure. Resilient telecommunications services can be the difference between life and death for both disaster victims and emergency response teams.

During Hurricane Irma, one of the costliest storms to hit Florida, the communications sector did not fare well immediately after the storm. Communications to intelligent transportation system infrastructure and devices along state highways were sporadic at best. Traffic signal system infrastructure was devastated in the urbanized areas. At one point, more than 27% of cell towers across the state were out of service, with several counties (Collier, Hendry, Highlands, Lee, Miami-Dade and Monroe), experiencing outages of 50% or more<sup>35</sup>. While public and private response efforts proved resilient (within a week wireless service in the state was back up to 97%), more than a year later, in the aftermath of Hurricane Michael, communications continued to pose a major problem. Wireless carriers and internet service providers, including the Florida Department of Transportation's wireless/cellular and internet service providers, continued to experience widespread outages. With no critical communications available to or from the Northwest Florida Regional Transportation Management Center, emergency

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<sup>33</sup> The Florida State Emergency Response Team, "Current Disaster Updates: Situation Report No. 7", Retrieved from <https://floridadisaster.biz/ManageContent?PageID=CURRENT+DISASTER+UPDATES>

<sup>34</sup> The State Emergency Response Team, "Hurricane Michael: After Action Report and Improvement Plan", Retrieved from <https://portal.floridadisaster.org/SERT/AfterActionReports/Real-World%20AARs/Hurricane%20Michael%20AAR-IP%201-7-19.pdf>

<sup>35</sup> Federal Communications Commission, "Communications Status Report for Areas Impacted by Hurricane Irma September 11, 2017", Retrieved from <https://docs.fcc.gov/public/attachments/DOC-346655A1.pdf>

## MITIGATION ACTION PLAN DRAFT

responders were forced for some time to rely on the personal cellphone of one consultant for much of their critical communications<sup>36</sup>.

Past events indicate that there is a rapid recovery capability within the communications sector but the high susceptibility to damage and outages poses significant risk to response and recovery efforts.

### 3. Food, Water, Sheltering

Coordination of food, water and shelter resources in major hazard events can be difficult, especially when the location of impact is wide-spread or uncertain. During hurricanes, stores have been severely limited in their ability to supply food along regular distribution lines. Stoppages and outages along highways and roads commonly result in the spoilage of perishable food. Analysts explain that Irma's size and path made it the perfect storm to cripple Florida's grocery supply lines impacting both suppliers and consumers<sup>37</sup>.

Hurricane Irma's path crossed some of Florida's most productive agricultural landscapes and consequently caused major losses to all segments of agriculture production. Total crop losses from Hurricane Irma were estimated at \$2 billion, while total losses to agriculture production were estimated at \$2.5 billion<sup>38</sup>. Half of Miami-Dade's agricultural crops were affected, resulting in damages of \$245 million.

Widespread damage to homes in Florida placed significant burdens on the emergency shelters positioned across the state. During Hurricane Irma, an estimated 6.5 million residents were ordered to evacuate; the largest evacuation in Florida history. Throughout the state, approximately 700 emergency shelters were opened, which collectively housed nearly 192,000 people<sup>39</sup>. The 2018 state-wide Emergency Shelter Plan shows that, though regional deficits still exist, on a state-wide aggregate basis, Florida has eliminated the deficit in general population public hurricane evacuation shelter space. However, a deficit of special needs shelter spaces continues to exist<sup>40</sup>. As the Florida population continues to increase, there will be an on-going need to maintain and continue to support hurricane evacuation shelter space.

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<sup>36</sup> Florida Department of Transportation, "One FDOT! Hurricane Michael Preparation, Response, and Recovery, Part I", *Transportation Systems Management & Operations Disseminator*, Retrieved from [https://transops.s3.amazonaws.com/uploaded\\_files/TSMO%20DISSEMINATOR.pdf](https://transops.s3.amazonaws.com/uploaded_files/TSMO%20DISSEMINATOR.pdf), p. 5

<sup>37</sup>CNA Analysis and Solutions "Supply Chain Resilience and the 2017 Hurricane Season", Retrieved from [https://www.cna.org/CNA\\_files/PDF/IRM-2018-U-018098-Final.pdf](https://www.cna.org/CNA_files/PDF/IRM-2018-U-018098-Final.pdf)

<sup>38</sup> Her, Y.G. et al., "Hurricane Impacts on Florida's Agriculture and Natural Resources", Retrieved from <http://edis.ifas.ufl.edu/ae528>

<sup>39</sup> The State Emergency Response Team, "Hurricane Irma: After-Action Report/Improvement Plan", Retrieved from <https://portal.floridadisaster.org/SERT/AfterActionReports/Real-World%20AARs/Irma%20AAR-IP%20Final.pdf>

<sup>40</sup> The State Emergency Response Team, "Statewide Emergency Shelter Plan", Retrieved from [https://www.floridadisaster.org/globalassets/dem/response/sesp/2018/2018-sesp-a1-main-plan-text\\_final\\_1-30-18.pdf](https://www.floridadisaster.org/globalassets/dem/response/sesp/2018/2018-sesp-a1-main-plan-text_final_1-30-18.pdf)



# MITIGATION ACTION PLAN DRAFT

## 4. Transportation

Florida has a large transportation network that consists of airports, major highways, passenger railroads, marine ports and pipelines. These systems provide lifeline services for communities and are vitally important for response and recovery operations. In Florida, heavy rainfall events can disrupt transportation services and damage infrastructure and facilities. During or following periods of heavy rainfall, inundation and washouts can block transportation routes, damage facilities and interrupt power supplies.

Tropical cyclones can damage critical infrastructure such as roads and bridges, causing delays in critical response services and the ability to move throughout the state. For instance, during Hurricane Matthew, areas along the Atlantic coast sustained major infrastructure damage, including the main A1A highway, as multiple feet of storm surge and waves led to substantial coastal impacts<sup>41</sup>.

Of the more than 12,000 bridges that stretch across Florida, 376 of them are designated as structurally deficient (SD), a classification used to identify bridges that need repair or replacement are at risk<sup>42</sup>.

## 5. Health and Medical

Health and Medical lifeline components include medical care, patient movement, public health, fatality management and the health care supply chain. These critical public health and medical services are necessary in order to reduce the potential for adverse health outcomes during an event. The capacity of facilities to cope with hazard impacts directly and to manage under the duress of providing increased service to those in need places a significant strain on the critical health and medical community lifeline. For example, according to the Florida Health Care Association<sup>43</sup>, 150 of the state's 700 nursing homes still lacked full power three days after Irma struck. Meeting the needs of persons with access needs and functional needs during or following a disaster is a key component of public health and medical preparedness planning. Direct vulnerability of health and medical centers also pose significant challenges. With more than 300 hospitals and more older adults than in any other state, emergency plans for Florida's hospitals are a critical issue facing mitigation planners.

## 6. Hazardous Material (Management)

A hazardous material is any substance that poses a threat to humans, animals or the environment. Hazardous materials generally refer to hazardous substances such as petroleum, natural gas, synthetic gas and acutely toxic chemicals. The threat that

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<sup>41</sup> Florida Department of Environmental Protection, "Hurricane Damage Assessment report for 2016 Florida's Beaches and Dunes", Retrieved from [https://floridadep.gov/sites/default/files/HurricaneDamageAssessmentReport\\_2016\\_0.pdf](https://floridadep.gov/sites/default/files/HurricaneDamageAssessmentReport_2016_0.pdf)

<sup>42</sup> Florida Department of Transportation, "Bridge Inventory 2019 Annual Report", Retrieved from [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/maintenance/str/bi/florida\\_bridge\\_inventory\\_2019\\_annual\\_report.pdf?sfvrsn=1d855ba0\\_0](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/maintenance/str/bi/florida_bridge_inventory_2019_annual_report.pdf?sfvrsn=1d855ba0_0)

<sup>43</sup>Florida Hospital Association, Retrieved from <http://www.fha.org/facts.html>

## MITIGATION ACTION PLAN DRAFT

hazardous materials pose to the health and safety of the environment and its inhabitants can be enhanced due to the destruction wrought by serious hazards. Exposure to contaminated water commonly affects communities hit by a hurricane or tropical storm. In the area hit, water treatment plants may not be operating.

Energy and electricity facilities, as well as transmission and distribution lines, are among the most critical of the lifelines<sup>44</sup>. Essential elements of this lifeline include the power grid and its critical facilities, including fuel supply lines. During Hurricane Matthew, Florida Power and Light reported that nearly 1.2 million customers across Florida lost power as a result of the storm<sup>45</sup>. When Hurricane Irma struck the state, it knocked out power to an estimated 6.7 million utility customers<sup>46</sup>. At its peak, Hurricane Michael caused more than 400,000 power outages throughout the Panhandle. Impacts on the state's energy grid places heavy strain on all sectors. During disasters, the continuity of energy access for the most critical facilities and operations is a high mitigation priority.

### **G. Mitigation Needs Problem Statements**

#### **1. Mitigation Need: Operational Resilience**

Public safety facilities enable first responders and emergency management staff to efficiently coordinate and navigate response and recovery efforts across Florida. Billions of dollars' worth of state and county facilities are vulnerable to hazard impacts of tropical cyclones, such as strong winds and flooding. Feedback from stakeholders across the state highlight the conditions of multiple Emergency Operations Centers, many of which have been identified as being inadequate in terms of meeting public safety needs. Older buildings, which are not up to code or are otherwise unprepared for weather hazard impacts, create increased risks for the populations they serve.

#### **2. Mitigation Need: Repetitive Flooding**

One of the most significant challenges faced by Florida communities is the threat of repetitive flooding. Maintaining current levels of flood risk in Florida is unsustainable and threatens the state's ability to provide critical services, preserve critical service areas and maintain long-term community and ecosystem viability and resilience. Flooding has been identified as one of the most destructive hazards in terms of loss of human life, injury and property damage. Florida's population is largely concentrated in coastal areas, which presents a difficult logistical challenge in the years to come and a strong need for implementation of mitigation projects. Coastal erosion, sea-level rise and destructive winds and storm surge will cause increasing dangers to coastal communities. Enhancing the function of natural flood mitigation features such as streams and wetlands to ensure that conveyed water makes it to rivers and other water bodies is increasingly important.

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<sup>44</sup> National Association of Counties, "Improving Lifelines: Protecting Critical Infrastructure for Resilient Counties", Retrieved from [https://www.naco.org/sites/default/files/documents/NACo\\_ResilientCounties\\_Lifelines\\_Nov2014.pdf](https://www.naco.org/sites/default/files/documents/NACo_ResilientCounties_Lifelines_Nov2014.pdf)

<sup>45</sup> Florida Power and Light, Retrieved from <https://www.fpl.com/landing/thank-you.html?cid=HB1>

<sup>46</sup> U.S. Energy Information Administration, "Hurricane Irma cut power to nearly two-third of Florida's electricity customers", Retrieved from <https://www.eia.gov/todayinenergy/detail.php?id=32992>

## MITIGATION ACTION PLAN DRAFT

Storm water management is also a major issue for inland communities. Funding for implementing flooding mitigation projects is critical to achieving the state's lifeline objectives.

### 3. Mitigation Need: Resilient Infrastructure

There is a great need for the implementation of infrastructure mitigation projects that will improve resiliency to hazard impacts. In many communities, essential mitigation projects have gone unimplemented due to a lack of the funding necessary to complete them. Aging infrastructure across the state is vulnerable to the effects of hazard impacts such as flooding and damaging winds. If infrastructure failure was to occur during a disaster event, a critical situation could evolve into a crisis. Resilience of the power grid, especially to critical facilities such as medical centers and other public services, is recognized as a prevalent problem during most Florida hazards. Severe storms and tropical cyclones can have a devastating effect on the power grid, disrupting residents for a couple hours or for as long as several weeks.

# MITIGATION ACTION PLAN DRAFT

## VI. PROJECTS & ACTIVITIES

### A. Program Budget

DEO's Office of Disaster Recovery is the lead agency and is the responsible entity for administering more than \$633 million in funds allocated to the state for mitigation and resiliency efforts through the Community Development Block Grant Mitigation program. In accordance with the Federal Register, DEO's aggregate total for indirect costs and administrative and technical assistance expenditures will not exceed 5% of its total grant (\$31,674,250) plus program income. Planning costs are subject to the 15% cap (\$95,022,750) defined in 42 U.S.C. 5305(a)(12).

Eligible project delivery costs are presumed included as a portion of the overall CDBG-MIT grant funding allocation provided to each subrecipient. DEO will limit spending to a maximum of 20% of the total grant amount on a combination of planning and indirect and direct program administration costs. Subrecipients will be responsible for properly tracking and monitoring the expenses that may not be included as part of the overall grant award to each individual project or individual applicant as applicable.

**Table 13: Allocation of CDBG-MIT Funds**

<b>Allocation of CDBG-MIT Funds</b>		
Program	Allocation	Percent of Funding
<b>Infrastructure</b>	<b>\$406,788,000</b>	<b>64%</b>
• General Infrastructure	\$315,500,000	49%
• Public Safety Hardening Program	\$64,288,000	11%
• Critical Facility Generator Program	\$27,000,000	4%
<b>CDBG-MIT as Match</b>	<b>\$100,000,000</b>	<b>16%</b>
• Non-Federal Cost Share	\$100,000,000	16%
<b>Planning and Administrative Costs</b>	<b>\$126,697,000</b>	<b>20%</b>
• General Planning Support	\$15,000,000	2%
• DEO Administration	\$31,674,250	5%
• DEO Planning	\$80,022,750	13%
<b>Total Allocation</b>	<b>\$633,485,000</b>	<b>100%</b>

# MITIGATION ACTION PLAN DRAFT

## B. Mitigation Program Details

DEO proposes five mitigation programs that will focus on three primary mitigation categories including infrastructure, use of CDBG-MIT as match and planning administration and public services. All programs include investment in risk reduction for all hazards identified in the preceding mitigation needs assessment. Those hazards include flooding, severe storms, tropical cyclones, coastal erosion and wildfires.

The program areas in this CDBG-MIT grant include:

### 1. Infrastructure Programs

- General Infrastructure;
- Public Safety Hardening; and
- Critical Facility Generator Program.

### 2. CDBG-MIT as Match

- Non-Federal Project Match

### 3. Planning, Administration and Public Services

- General Planning Support;
- DEO Administration; and
- DEO Planning.

Each of the programs listed above is summarized in what follows. Further details, including program maximums and minimums, any local funding contributions and application processes and requirements, will be detailed in a forthcoming Policies and Procedures Manual.

### 1. Infrastructure Programs

Infrastructure is the largest program area and is comprised of three separate programs: General Infrastructure, Public Safety Hardening and Critical Facility Generator. These three infrastructure programs will account for 62% of the total CDBG-MIT allocation. Each program is detailed below.

- General Infrastructure Program

The General Infrastructure Program will account for 47% of the total CDBG-MIT grant funding. It is the broadest, most flexible and most impactful of proposed programs. The General Infrastructure Program will fund large scale and high impact local, multi-jurisdictional and regional investments that include: upgrading of water, sewer, solid waste, communications, energy, transportation, health and medical and other public infrastructure projects that will reduce the hazard risks identified in the Mitigation Needs Assessment portion of this Action Plan.

General Infrastructure dollars will allow local and regional units of government to address their most pressing hazard mitigation needs and will require subgrantee applicants to document how their proposed projects will meet hazard reduction needs of their most

## MITIGATION ACTION PLAN DRAFT

vulnerable citizens and identify which critical lifelines are protected by each proposed project. Other considerations such as multi-use facilities and natural infrastructure developments will be encouraged through the subgrantee application process. Program-specific details such as funding maximum and minimum, application process, applicant eligibility and other program details, will be addressed in program policies and procedures documents.

**Table 14: General Infrastructure Program - At a Glance**

<b>General Infrastructure Program At a Glance*</b>	
Funding Dollars	\$315,500,000
Funding Percentage	49%
Application Type	Subrecipient
Applicant Eligibility	TBD
Geographic Eligibility	HUD and State designated MIDS
National Objectives Fulfilled	LMI
Hazard Risks Addressed	Flooding, Severe Storms, Hurricanes, Coastal Erosion, Wildfires
Lifelines Protected	Safety and Security, Food, Water and Shelter, Health and Medical, Energy, Communications, Transportation, Hazardous Materials

\* Program-specific details such as funding maximum and minimum, application process, applicant eligibility and other program details, will be addressed in program policies and procedures documents.

- **Public Safety Hardening Program**

The Public Safety Hardening Program will allow units of local government to harden critical buildings that serve a public safety purpose for local communities. This program will enable local police, fire, shelters and local emergency management facilities to better withstand the effects of the previously-identified hazard risks. Examples of hardening against flood, fire, storms and coastal erosion include, but are not limited to, dry proofing, wet proofing, anchoring roof-mounted heating, shelters, ventilation and air conditioning units and retrofitting building exteriors with hazard-resistant materials in accordance with national safety standards.



# MITIGATION ACTION PLAN DRAFT

**Table 15: Public Safety Hardening Program - At a Glance**

<b>Public Safety Hardening Program At a Glance*</b>	
Funding Dollars	\$64,288,000
Funding Percentage	10%
Application Type	Subrecipient
Applicant Eligibility	TBD
Geographic Eligibility	HUD and State designated MIDS
National Objectives Fulfilled	LMI
Hazard Risks Addressed	Flooding, Severe Storms, Hurricanes, Coastal Erosion, Wildfires
Lifelines Protected	Safety and Security, Health and Medical, Energy, Communications

\* Program-specific details such as funding maximum and minimum, application process, applicant eligibility and other program details, will be addressed in program policies and procedures documents.

- **Critical Facility Generator Program**

The Critical Facility Generator Program will allow units of local government to ensure that the most critical facilities in their communities have access to power throughout an emergency when local sources of power are down. Critical facilities include, but are not limited to, potable water facilities, waste water facilities, police departments, fire departments, emergency operation centers and shelters. Local units of government that apply for this program will need to identify critical facilities that have a need to update existing generators or purchase new power generators that will allow critical facilities to safely maintain power during emergencies.

# MITIGATION ACTION PLAN DRAFT

**Table 16: Critical Facility Generator Program - At a Glance**

<b>Critical Facility Generator Program At a Glance*</b>	
Funding Dollars	\$27,000,000
Funding Percentage	4%
Application Type	Subrecipient
Applicant Eligibility	TBD
Geographic Eligibility	HUD and State designated MIDS
National Objectives Fulfilled	LMI
Hazard Risks Addressed	Flooding, Severe Storms, Hurricanes, Coastal Erosion, Wildfires
Lifelines Protected	Safety and Security, Food, Water and Shelter, Health and Medical, Energy, Communications, Transportation, Hazardous Materials

\* Program- specific details such as funding maximum and minimum, application process, applicant eligibility and other program details, will be addressed in program policies and procedures documents.

## 2. CDBG-MIT as Match Program Area

The Non-Federal Project Match Program has a total set aside of \$100,000,000. Match Program funding will be used for the non-federal portion of federal projects that meet local mitigation needs. Federal projects in HUD and state-identified MID areas administered through FEMA and the United States Army Corps of Engineers that require local and state match dollars (up to \$250,000) are eligible to receive CDBG-MIT Match funding only if they are eligible mitigation projects that reduce hazard risks.

# MITIGATION ACTION PLAN DRAFT

**Table 17: CDBG-MIT as Match - At a Glance**

<b>Non-Federal Project Match At a Glance*</b>	
Funding Dollars	\$100,000,000
Funding Percentage	16%
Application Type	Subrecipient
Applicant Eligibility	TBD
Geographic Eligibility	HUD and State designated MIDS
National Objectives Fulfilled	LMI and Urgent Need
Hazard Risks Addressed	Flooding, Severe Storms, Hurricanes, Coastal Erosion, Wildfires
Lifelines Protected	Safety and Security, Food, Water and Shelter, Health and Medical, Energy, Communications, Transportation, Hazardous Materials

\* Program-specific details such as funding maximum and minimum, application process, applicant eligibility and other program details, will be addressed in program policies and procedures documents.

### **3. Planning, Administration and Public Services Program Area**

The General Planning Support Program has a set aside of \$15,000,000 (of the \$126,697,000 designated in the DEO planning allocation) to support local, regional and statewide mitigation planning efforts. Planning funding can be used for: land use planning, hazard mitigation planning, modernization and resiliency planning, upgrading mapping capabilities, and other plans or capabilities to better understand evolving disaster risks, and planning to reduce flood insurance premiums through the NFIP Voluntary Community Rating System Incentives Program. Public service activities like education and outreach that aim to support local, regional and statewide mitigation efforts and encourage best mitigation practices are also included in the General Planning Support Program.

## MITIGATION ACTION PLAN DRAFT

**Table 18: Planning, Administration and Public Services Program - At a Glance**

<b>General Planning Support Program At a Glance*</b>	
Funding Dollars	\$15,000,000
Funding Percentage	2%
Application Type	Subrecipient
Applicant Eligibility	TBD
Geographic Eligibility	HUD and State designated MIDS
National Objectives Fulfilled	LMI
Hazard Risks Addressed	Flooding, Severe Storms, Hurricanes, Coastal Erosion, Wildfires
Lifelines Protected	Safety and Security, Food, Water and Shelter, Health and Medical, Energy, Communications, Transportation, Hazardous Materials

\* Program-specific details such as funding maximum and minimum, application process, applicant eligibility and other program details, will be addressed in program policies and procedures documents.

## MITIGATION ACTION PLAN DRAFT

### VII. CITIZEN PARTICIPATION

The citizen participation plan for the CDBG-MIT allocation will provide a reasonable opportunity of at least 45 days for citizen comment and ongoing citizen access to information about the use of grant funds. Before DEO adopts this Action Plan or any substantial amendment to this Plan, DEO will publish the proposed Plan or Amendment on [floridajobs.org/rebuildflorida/mitigation](http://floridajobs.org/rebuildflorida/mitigation), DEO's main CDBG-MIT website. DEO and/or subrecipients will notify affected citizens through electronic mailings, press releases, statements by public officials, media advertisements, public service announcements, newsletters, contacts with neighborhood organizations and/or through social media. DEO will ensure that all citizens have equal access to information about the programs, including persons with disabilities (vision and hearing impaired) and limited English proficiency (LEP). A Spanish and Creole version of the Action Plan will be available.

DEO's website includes an Interpretive Translation Notice informing citizens in 15 different languages that translation services are available upon request. DEO consulted the "Final Guidance to Federal Financial Assistance Recipients Regarding Title VI, Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons," published on January 22, 2007, in the Federal Register (72 FR 2732), in order to comply with citizen participation requirements. Upon subsequent publication of the Action Plan or substantial amendments, DEO will provide a reasonable opportunity of at least 45 days and have a method for receiving comments.

DEO will take comments via USPS mail or email at:

Attention: Office of Disaster Recovery  
Florida Department of Economic Opportunity  
107 East Madison Street  
The Caldwell Building, MSC 160  
Tallahassee, Florida 32399-2100  
[cdbg-mit@deo.myflorida.com](mailto:cdbg-mit@deo.myflorida.com)

#### A. Publication

Before its adoption, the proposed Action Plan was published on the DEO website, [floridajobs.org/rebuildflorida/mitigation](http://floridajobs.org/rebuildflorida/mitigation) for a 45-day citizen comment period. DEO published a notice of the posting in the Florida Administrative Register (FAR) on Month XX, XXXX. DEO incorporated and addressed citizen comments received during that period into the final Action Plan.

#### B. Public Website

DEO will maintain a public website that provides information accounting for how all grant funds are used and managed/administered, including: links to all Action Plans, Action Plan Amendments, CDBG–MIT program policies and procedures, performance reports, citizen participation requirements, and activity/program information for activities described in its action plan, including details of all contracts and ongoing procurement policies.

## MITIGATION ACTION PLAN DRAFT

DEO will make the following items available on <http://floridajobs.org/rebuildflorida/mitigation> (1) the Action Plan (including all amendments); each Quarterly Performance Report (QPR) as created using the DRGR system; (2) procurement, policies and procedures; (3) executed CDBG-MIT contracts; and (4) status of services or goods currently being procured by DEO (e.g., phase of the procurement, requirements for proposals, etc.).

In addition to the specific items listed above, DEO will maintain another comprehensive website regarding all mitigation activities assisted with these funds. This includes reporting information on DEO's main website and additional in-depth program information on a separate site dedicated specifically to long-term disaster recovery and mitigation, [rebuildflorida.gov](http://rebuildflorida.gov). Both websites will be updated on a regular basis to reflect the most up-to-date information about the use of these funds and any changes in policies and procedures.

### C. Public Engagement

Seeking input from stakeholders and communities around the state is an important component of the planning process. DEO used a variety of methods to inform local officials and the public on the purpose and goals of mitigation, understanding risks, threats and hazards in the MID areas and gathering feedback on how to craft programs that will meet the needs of communities as quickly as possible. In addition to gaining feedback, this process helped local stakeholders and members of the public understand what to expect from CDBG-MIT funding and allowed them to play a key role in shaping the outcomes of this plan. The outreach methods, along with the feedback obtained, are included below.

#### 1. Webinars

Over the course of the planning period, DEO conducted two webinars to keep stakeholders informed of the process and to solicit feedback.

- The first webinar was held on October 16, 2019. There were 145 participants. The purpose of this live webinar was to provide an orientation and education regarding the state Action Plan planning and implementation process for CDBG-MIT professional partners and to set the stage for upcoming visits to communities.
- The second webinar was held on November 26, 2019 to provide an overview of the CDBG-MIT program for the general public. A Spanish language version of this webinar was also made available.
- DEO will continue to hold webinars in response to participant feedback to promote an open line of communication with stakeholders.

#### 2. Community Stakeholder Survey

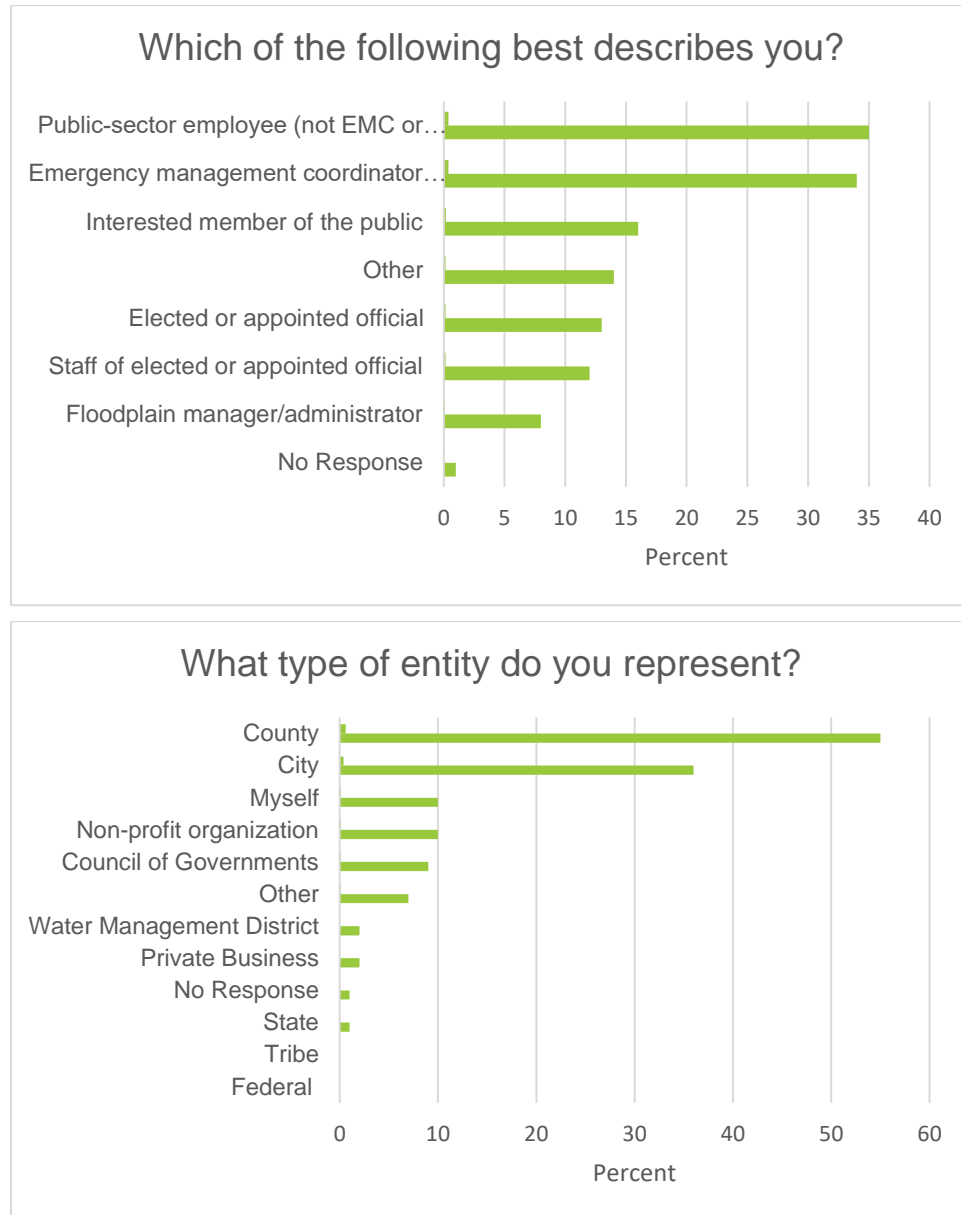
Prior to the publication of the Federal Register [Docket No. FR-6109-N-02], DEO developed a survey to capture feedback from communities that were in the HUD-identified MIDs and to allow for additional input from communities that were not able to attend stakeholder meetings. The survey was opened on May 31, 2019 and closed November 30, 2019. The survey gathered feedback from Florida communities regarding their



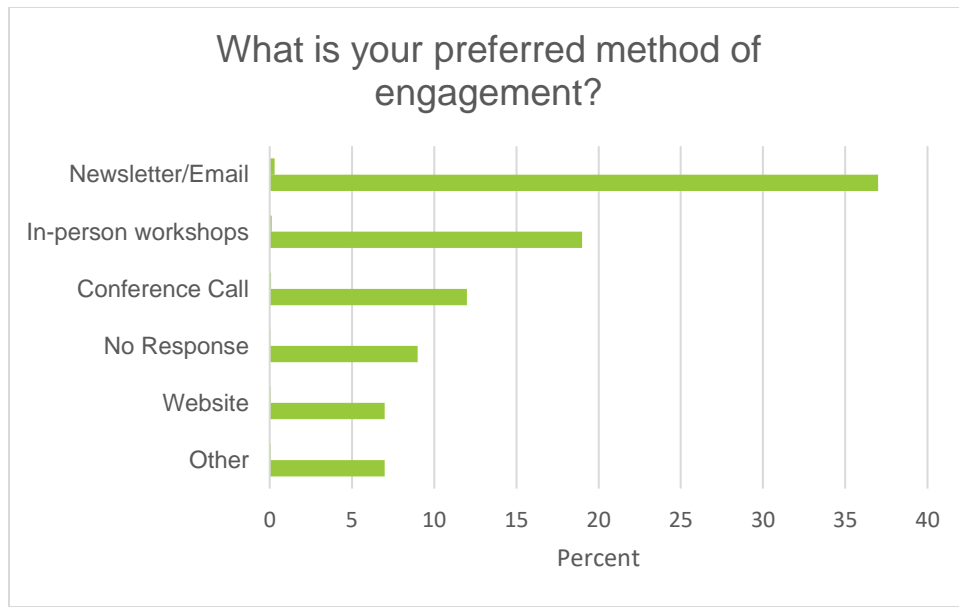
## MITIGATION ACTION PLAN DRAFT

mitigation needs and priorities. In addition, survey respondents were asked to rank various mitigation program needs based on risks, hazards and threats. They were also given an opportunity to suggest additional program ideas.

The cumulative results from the initial outreach survey follow:



## MITIGATION ACTION PLAN DRAFT



As displayed in preceding tables of the 133 initial survey respondents, most are those who described themselves as public-sector employees (26%). The second most common type of respondent were Emergency Management Coordinators. Most of the respondents represent their counties (41%); cities were the second-most represented (27%). The preferred method of communication is via webinar (32%) followed closely by newsletter or email (28%). These preliminary statistics are considered with the recognition that certain groups were underrepresented, as is the limitation of public participation efforts. During the public comment period DEO will endeavor to incorporate feedback particularly from those who were not reached during initial engagement efforts.

### 3. Regional Stakeholder Meetings

DEO, in partnership with MID communities, conducted regional workshops across the state to provide resources for long-term mitigation to local governments, businesses and other organizations. Seven regional workshops were held prior to the Action Plan's 45-day public comment period. CDBG-MIT information was presented to community members and an opportunity was provided to ask questions about the program and application processes. In addition to providing outreach to communities, these meetings provided DEO with an opportunity to focus on regionally-specific issues and challenges.

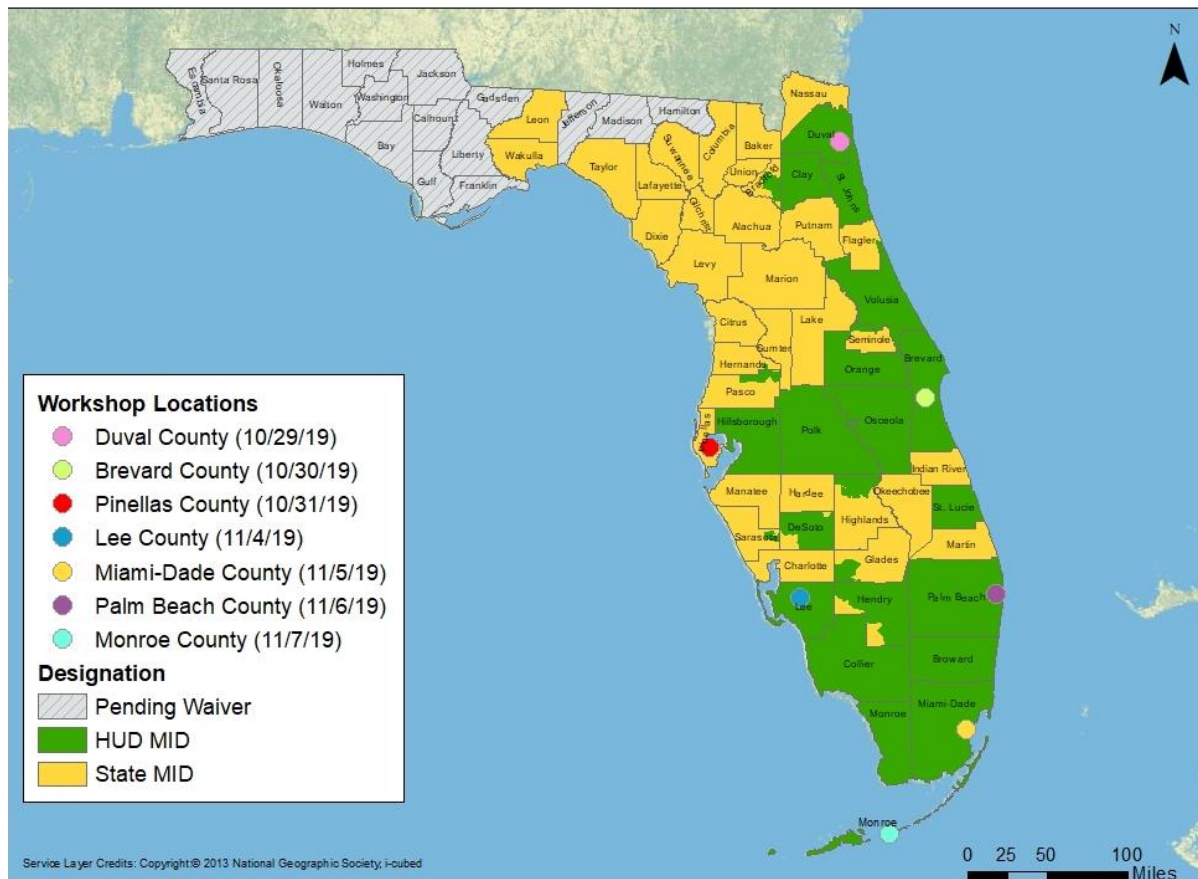
DEO staff traveled throughout the state and visited several of the HUD-identified MID areas. The state hosted one meeting for local leadership officials and members of the public in each region. At these meetings, participants were given a brief overview of the program with an opportunity to ask questions. The meetings were open dialogues with local government staff and question and answer sessions. Risks, hazards and threats were assessed, and DEO staff suggested various program options that may be available to strengthen those vulnerabilities. Community members also offered suggestions under various program planning categories provided by the DEO Mitigation Team. **Table 19** and **Figure 14** contains the dates and locations for each of these meetings.

# MITIGATION ACTION PLAN DRAFT

**Table 19: Stakeholder Meetings with HUD-Identified MID Areas**

Location	Date
Duval County	October 29, 2019
Brevard County	October 30, 2019
Pinellas County	October 31, 2019
Lee County	November 4, 2019
Miami-Dade County	November 5, 2019
Palm Beach County	November 6, 2019
Monroe County	November 7, 2019

**Figure 14: Mitigation Regional Workshops**



**Source: Department of Economic Opportunity**

During the regional workshops, DEO staff responded to each comment and question as thoroughly as possible. Participants were provided information on how to remain in

## MITIGATION ACTION PLAN DRAFT

contact with the Mitigation Team to ensure open lines of communication between state and local partners throughout each phase of the program. Overall, concerns were outlined regarding a wide range of topics including, but not limited to, climate change considerations, hardening of establishments, subrecipient eligibility and composition of the Citizen Advisory Committee. DEO has recorded and considered all observations from these meetings in the Action Plan.

### **D. Citizen Advisory Committee**

The CDBG-MIT program will have an additional body of representatives who will provide increased transparency in the implementation of CDBG-MIT programs. They will solicit and respond to public comments regarding all mitigation activities and serve as an on-going public forum resource. Information regarding the selection process for committee members will be made available on the DEO website.

### **E. Website**

DEO posts important information regarding the CDBG-MIT program on its website at [www.floridajobs.org/CDBG-MIT](http://www.floridajobs.org/CDBG-MIT). This includes links to the Federal Register, short informative summaries and overviews and webinar recordings for individuals who could not participate or may want reminders on program specifics.

### **F. Additional Outreach**

In addition to the outreach described above, DEO had many one-on-one discussions with community members by phone. DEO also sent out emails with Federal Register content summaries and other information. Staff plans to facilitate the following outreach opportunities:

- Application Workshop for Subgrantees;
- Citizen Advisory Committee Trainings;
- CHNEP Conference Call;
- Governor's Hurricane Conference;
- Newsletters; and
- Press Releases

DEO will continue to conduct outreach with communities in partnership with other organizations throughout the implementation of this Action Plan to ensure that all stakeholders are aware of the opportunities that exist and have an opportunity to provide feedback along the way.

### **G. Accessibility**

The Action Plan was made available in English, Spanish and Creole and was posted on the DEO website, which has embedded technology to provide accessibility to the visually-impaired. DEO also posted a Babel Notice informing individuals of the interpretive and translational services available upon request. DEO will ensure that all citizens have equal

## MITIGATION ACTION PLAN DRAFT

access to information about the programs, including persons with disabilities and Limited English Proficiency (LEP) and that program information is available in the appropriate languages for the geographic area served by the jurisdiction.

Florida is committed to providing all citizens with equal access to information about the mitigation program, including persons with disabilities and Limited English Proficiency (LEP). Florida follows HUD's regulation, 24 CFR Part 1, "Nondiscrimination in Federally Assisted Programs of the Department of Housing and Urban Development Effectuation of Title VI of the Civil Rights Act of 1964," which requires all recipients of federal financial assistance from HUD provide meaningful access to LEP persons.

Persons who do not speak English as their primary language and who have a limited ability to read, write, speak or understand English, may be entitled to language assistance with respect to a particular type of service, benefit or encounter. To address this need, DEO developed and implemented a Language Access Plan, which details how Florida will address the needs of LEP individuals.

The state of Florida Action Plan, any ensuing amendments, outreach materials, the application and related guidance materials will be published in languages selected based on the entire eligible area of the CDBG-MIT funds and a natural break in the numbers of LEP individuals. Recognizing there may be a need for individuals to have access to the document in additional languages, DEO will supply needed translation services to provide personalized translations of the Action Plan upon request.

### **H. Receipt of Comments**

DEO will consider and respond to all written comments regarding the Action Plan or any Substantial Amendment.

DEO will provide a 45-day timeframe for receiving public comments to the draft Action Plan and obtained comments via an e-mail address published on the mitigation website.

A summary of the public comments submitted on the draft Action Plan, as well as DEO's response to comments, will be included in Appendix C.

### **I. Public Comment and Substantial Amendments**

DEO will engage citizens throughout the grant process to maximize the opportunity for input on proposed program changes that result in a substantial amendment. Program changes result in a substantial amendment when there is:

- a change in program benefit or eligibility criteria;
- the addition or deletion of an activity; and
- the allocation or reallocation of more than 10% of the original appropriation.

Citizens will be provided with no less than 30 calendar days to review and provide comments on proposed substantial changes. A summary of all comments received will be included in the final Substantial Amendment submitted to HUD for approval.

## MITIGATION ACTION PLAN DRAFT

When DEO develops a Technical Amendment or Non-Substantial Amendment, DEO will notify HUD, but is not required to undertake public comment. HUD will be notified at least five business days before the Amendment becomes effective.

Every Amendment to the Action Plan (substantial and non-substantial) will be numbered and posted on the DEO website.

### **J. Complaints Process**

DEO will handle citizen complaints and inquiries through a Constituent Services Management staff. All complaints and inquiries received by the state, its contractor and/or other program sources, will be reviewed by the Constituent Services Management staff for:

- Investigation, as necessary;
- Resolution; and
- Follow-up actions.

Citizens may file a written complaint or inquiry through the DEO mitigation email at [CDBG-MIT@deo.myflorida.com](mailto:CDBG-MIT@deo.myflorida.com) or submit by postal mail to the following address:

Attention: Rebuild Florida Constituent Services  
Florida Department of Economic Opportunity  
107 East Madison Street  
Caldwell Building, MSC 400  
Tallahassee, FL 32399

The state will make every effort to provide a timely written response within 15 working days of the receipt of complaint, where practicable. The aim of the state will be to resolve complaints in a manner that is sensitive to the complainant's concerns and achieves a fair result.

Constituent Management staff will maintain files that include:

- The name of the person who filed the complaint;
- The date the complaint was received;
- A description of the complaint;
- The name of each person contacted in relation to the complaint;
- A summary of the results of the review or investigation of the complaint; and
- An explanation of the resolution (e.g., the reason the file was closed).

### **K. Citizen Participation and Applications for Assistance**

Local governments are responsible for notifying citizens of planned or proposed mitigation activities and for obtaining citizen input in accordance with their Citizen Participation Plan. All beneficiaries applying for direct assistance must qualify as LMI as defined by the U.S. Department of Housing and Urban Development. Citizens can access the data via the HUD User Internet website at: <https://www.huduser.gov/portal/datasets/il.html>.



### VIII. GENERAL ACTION PLAN REQUIREMENTS

#### A. Implementation Plan and Capacity Assessment

As directed, in conjunction with this Action Plan, the state submitted to HUD its Implementation Plan. The Implementation Plan outlines the following:

- Procedures to collect timely information on application status;
- A capacity assessment;
- Staffing plan;
- Procedures ensuring internal and interagency coordination;
- Procedures to provide technical assistance; and
- Accountability procedures.

#### B. Projection of Expenditures and Outcomes

As directed, in conjunction with this Action Plan, the state submitted to HUD a projection of expenditures and anticipated outcomes, broken down on a quarterly basis. These projections include measures to ensure compliance with the following:

- Requirement to expend at least 50% of funds to the benefit of LMI persons
- Requirement to expend at least 50% of funds to the benefit of HUD MIDs
- Requirement to expend 50% of CDBG-MIT funds within six years of HUD's execution of the grant agreement and 100% of CDBG-MIT funds within 12 years of HUD's execution of the grant agreement

#### C. Program Income

The state understands that when implementing certain activities with CDBG-MIT funds, there is potential for generating program income. When implementing activities that could generate program income, the state will develop and adopt program income policies and procedures for the specific program. The state does not anticipate program income from the administration of the projects and programs in this Action Plan, however any program income generated by CDBG-MIT funds under this grant will be returned to DEO, unless otherwise specified in program policies and procedures.

Program income may be retained by local government subgrantees for the repair, operation and maintenance of publicly-owned and operated projects with CDBG-MIT funds, provided that (1) the agency that owns and operates the project has entered into a written agreement with the grantee that commits the agency to providing not less than 50% of funds necessary for the annual repair, operating and maintenance costs of the project; and (2) the grantee adopts policies and procedures to provide for the grantee's regular, on-site inspection of the project in order to ensure its proper repair, operation and maintenance. As a state grantee, DEO retains the right to request a waiver from HUD at a later date for the use of program income for this purpose.

## MITIGATION ACTION PLAN DRAFT

### **D. Plans to Minimize Displacement and Ensure Accessibility**

The state will minimize displacement of persons or entities as a result of the implementation of CDBG-MIT projects by ensuring that all programs are administered in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA) of 1970, as amended (49 CFR Part 24) and Section 104(d) of the Housing and Community Development Act of 1974 and the implementing regulations at 24 CFR Part 570.496(a), subject to any waivers or alternative requirements provided by HUD. While nonstructural mitigation (such as elevations, buyout and/or acquisition) programs may be necessary to achieve flood risk mitigation goals and may cause displacement, the majority of the programs detailed in this Action Plan will be implemented with the goal of minimizing displacement of families from their homes, whether rented or owned. Moreover, in the event displacement does occur, DEO will take into consideration the functional needs of the displaced persons in accordance with guidance outlined in Chapter 3 of HUD's Relocation Handbook.

### **E. Protection of People and Property and Construction Methods**

The state intends to promote high quality, durable, sustainable, mold resistant and energy efficient construction methods for all activities funded with CDBG-MIT resources as applicable. These include the following minimum standards:

- Construction standards will be based on the Florida Building Code and must meet or exceed applicable requirements;
- Construction will comply with the Green Building Standard for all new construction of residential buildings and for all replacement of substantially damaged residential buildings (i.e., where repair costs exceed 50% of replacement cost) under the Florida Green Building Coalition; and
- For rehabilitation construction, the state will follow the Green Building Retrofit Checklist to the extent applicable to the rehabilitation work undertaken, including the use of mold resistant products when replacing surfaces such as drywall. When older or obsolete products are replaced as part of the rehabilitation work, rehabilitation is required to use ENERGY STAR-labeled, WaterSense-labeled, or Federal Energy Management Program (FEMP)-designated products and appliances or other equivalent.

DEO has established compliant standards for construction. Construction contractors will be qualified through an invitation to bid process. To ensure full and open competition, through an invitation to bid process, DEO will follow 24 CFR 570.489(g) at a minimum. Contractors will comply with Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1700lu) and its implementing regulations at 24 CFR part 153. Contractors selected under DEO will ensure, to the greatest extent feasible, that employment and business opportunities will be directed to qualified low- and very low-income persons and business concerns that provide economic opportunities to low-income persons. Contractors will make every effort to recruit, target, and direct opportunities to Section 3 residents and businesses as well as notifying Section 3 residents about training opportunities. DEO will provide Contractors with helpful

## MITIGATION ACTION PLAN DRAFT

resources to maximize these efforts including, but not limited to, a Section 3 Business Registry and examples of training and employment opportunities. Contractor procurement procedures will be monitored by DEO.

### **F. Elevation Standards**

As applicable, the state will, at a minimum, adhere to the advanced elevation requirements established in section V.B. I.D. of the FRN, subtitled “Elevation standards for new construction, repair of substantial damage, or substantial improvement.” Future property damage will be minimized by requiring that any rebuilding be done according to the best available science for that area with respect to base flood elevations.

As applicable and within its policies and procedures on a program-by-program basis, the state or its subgrantees will document decisions to elevate structures. This documentation will address how projects will be evaluated and how elevation costs will be reasonably determined relative to other alternatives or strategies, such as the demolition of substantially-damaged structures with reconstruction of an elevated structure on the same site, property buyouts, or infrastructure improvements to reduce the risk of loss of life and property.

### **G. Natural or Green Infrastructure Standards**

The state recognizes that natural or green infrastructure methods provide drainage functions to reduce storm water runoff while offering low-cost and attractive site design options. All commercial or institutional construction or retrofitting funded through programs within this Action Plan must utilize one of the following green infrastructure strategies to reduce runoff, retain water and improve water quality on the subject site:

- Retaining or planting native vegetation;
- Removing existing impervious surface area or utilizing pervious pavement;
- Installing bioswales or other retention areas;
- Collecting rainwater for non-potable uses; and
- Installing green roofs.

### **H. Green Building Standards**

All new construction of residential buildings or replacement and/or reconstruction of substantially damaged buildings must incorporate Green Building Standards and rehabilitation of non-substantially damaged residential buildings must follow guidelines in the HUD CPD Green Building Retrofit Checklist. Any construction subject to the Green Building Standards must meet an industry-recognized standard and achieve certification under at least one of the following programs:

- ENERGYSTAR;
- Enterprise Green Communities;
- LEED;

## MITIGATION ACTION PLAN DRAFT

- ICC-700 National Building Standard;
- EPA Indoor AirPlus; and
- Any other equivalent comprehensive green building program deemed acceptable to HUD and approved by DEO.

For construction projects completed, under construction or under contract prior to the date that assistance is approved for the project, adherence to the applicable standards to the extent feasible is encouraged, but not required.

All state-administered programs may use a third-party inspection service to ensure that Green Building Standards are met using standardized checklists developed from the above-listed programs.

### **I. Operation and Maintenance Plans**

FRN-6109-N-02 allows for flexibility in the use of program income to address on-going operations and maintenance of mitigation projects. Such eligible uses include repair, operation, and maintenance of publicly owned projects financed with CDBG–MIT funds. The state will request an appropriate waiver in order to avail itself of this flexibility for itself and subgrantees as appropriate.

Because site-specific mitigation projects are not included in this Action Plan and are addressed as an anticipatory activity in Section VI, and in furtherance of the state's mission and in accordance with federal requirements, the state will address the following requirements within its policies and procedures on a program-by-program basis, including specific benchmarks instituted to ensure operations and maintenance requirements are met:

- State or local resources must be identified for the operation and maintenance costs of projects assisted with CDBG-MIT funds;
- If operations and maintenance plans are reliant on any proposed changes to existing taxation policies or tax collection practices, those changes and relevant milestones must be expressly addressed; and
- Any public infrastructure or facilities funded with CDBG-MIT resources must illustrate their ability to account for long-term operation and maintenance needs beyond an initial investment of CDBG-MIT funds.

### **J. Cost Verification Procedures**

All construction activities that utilize CDBG-MIT funds must be reasonable and consistent with market costs at the time and place of construction. To comply with this requirement, the state will utilize and document independent cost estimates (ICEs) within each of its programs. Specific parameters regarding ICE requirements will be outlined within policies and procedures on a program-by-program basis. More detailed cost verification requirements for Covered Projects will be provided by the state in accordance with Section V.A.2.H. of the FRN, as applicable.

## MITIGATION ACTION PLAN DRAFT

### **K. Monitoring Standards and Procedures**

The state has adopted monitoring standards, including procedures to ensure program requirements (including non-duplication of benefits) are met, and to provide for continual quality assurance and adequate program oversight. These standards and procedures are included in the pre-award Implementation Plan as required by the Federal Register. Monitoring will be conducted by DEO, which will be supported by an external vendor procured through competitive solicitation to ensure that program activities progress toward timely completion and to allow for the early identification of potential issues and problems so they can be prevented or corrected. Monitoring will also include environmental compliance under 24 CFR Part 58. DEO currently has staff that will oversee environmental compliance. Additionally, the current staff will be augmented by external vendors procured through competitive solicitation.

The DEO Office of Disaster Recovery monitoring program includes desk monitoring and onsite monitoring with priority and frequency based on the results of a risk assessment of each subrecipient. The purpose of the risk assessment is to define the scope and focus of the monitoring efforts, including establishing a framework for determining the appropriate level of monitoring consistent with available resources. In addition, the risk assessment will be required each state fiscal year to guarantee continuous review of risks. DEO monitoring is based on criteria consistent with HUD guidance in assessing program risk. The risk assessment provides the basis for developing individual monitoring strategies and documents the decisions and recommendations regarding where to apply staff and travel resources for monitoring, training and/or technical assistance.

The Florida Auditor General and staff will act as the state's independent auditor and conduct financial audits of the accounts and records of state agencies. When applicable, accounting policies and procedures of DEO will mirror the requirements of the Office of Auditor General.

The state of Florida is dedicated to the prevention of fraud, waste and abuse. DEO's Office of the Inspector General serves as DEO's internal auditor. Internal audit functions associated with Mitigation funding may be supported by external vendors procured through competitive solicitation. All suspected cases of fraud will be taken seriously, and complaints will be reported to DEO's Office of the Inspector General at [OIG@deo.myflorida.com](mailto:OIG@deo.myflorida.com) or 1-855-456-0650. If the Office of Inspector General has reasonable grounds to believe there has been a violation of criminal law, the Office will report expeditiously to the appropriate law enforcement agency.

## IX. CERTIFICATIONS OF CONTROLS, PROCESSES AND PROCEDURES

### A. Certification of Controls, Processes and Procedures

The State of Florida Department of Economic Opportunity submitted the Certification and Risk Analysis Documentation to HUD on December 6<sup>th</sup>, 2019 as required.

#### 1. CDBG-MIT Certifications

24 CFR 91.225 and 91.325 are waived. Each grantee receiving a direct allocation of CDBG-MIT funds must make the following certifications with its action plan:

- a. The grantee certifies that it has in effect and is following a residential anti-displacement and relocation assistance plan in connection with any activity assisted with CDBG-MIT funding.
- b. The grantee certifies its compliance with restrictions on lobbying required by 24 CFR part 87, together with disclosure forms, if required by part 87.
- c. The grantee certifies that the action plan is authorized under State and local law (as applicable) and that the grantee, and any entity or entities designated by the grantee, and any contractor, subrecipient, or designated public agency carrying out an activity with CDBG-MIT funds, possess(es) the legal authority to carry out the program for which it is seeking funding, in accordance with applicable HUD regulations and this notice. The grantee certifies that activities to be undertaken with CDBG-MIT funds are consistent with its action plan.
- d. The grantee certifies that it will comply with the acquisition and relocation requirements of the URA, as amended, and implementing regulations at 49 CFR part 24, except where waivers or alternative requirements are provided for CDBG-MIT funds.
- e. The grantee certifies that it will comply with section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) and implementing regulations at 24 CFR part 135.
- f. The grantee certifies that it is following a detailed citizen participation plan that satisfies the requirements of 24 CFR 91.115 or 91.105 (except as provided for in notices providing waivers and alternative requirements for this grant). Also, each local government receiving assistance from a State grantee must follow a detailed citizen participation plan that satisfies the requirements of 24 CFR 570.486 (except as provided for in notices providing waivers and alternative requirements for this grant).  
Start Printed Page 45870
- g. State grantee certifies that it has consulted with affected local governments in counties designated in covered major disaster declarations in the non-entitlement, entitlement, and tribal areas of the State in determining the uses of funds, including the method of distribution of funding, or activities carried out directly by the State.



## MITIGATION ACTION PLAN DRAFT

- h. The grantee certifies that it is complying with each of the following criteria:
- Funds will be used solely for necessary expenses related to mitigation activities, as applicable, in the most impacted and distressed areas for which the President declared a major disaster in 2015, 2016, or 2017 pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1974 (42 U.S.C. 5121 et seq.);
  - With respect to activities expected to be assisted with CDBG-MIT funds, the relevant action plan has been developed to give priority to activities that will benefit low- and moderate-income families;
  - The aggregate use of CDBG-MIT funds shall principally benefit low- and moderate-income families in a manner that ensures that at least 50 percent (or another percentage permitted by HUD in a waiver published in an applicable Federal Register notice) of the CDBG-MIT grant amount is expended for activities that benefit such persons; and
  - The grantee will not attempt to recover any capital costs of public improvements assisted with CDBG-MIT funds by assessing any amount against properties owned and occupied by persons of low- and moderate-income, including any fee charged or assessment made as a condition of obtaining access to such public improvements, unless: (a) CDBG-MIT funds are used to pay the proportion of such fee or assessment that relates to the capital costs of such public improvements that are financed from revenue sources other than under this title; or (b) for purposes of assessing any amount against properties owned and occupied by persons of moderate income, the grantee certifies to the Secretary that it lacks sufficient CDBG funds (in any form) to comply with the requirements of clause (a).
- i. The grantee certifies that the grant will be conducted and administered in conformity with title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), the Fair Housing Act (42 U.S.C. 3601-3619), and implementing regulations, and that it will affirmatively further fair housing.
- j. The grantee certifies that it has adopted and is enforcing the following policies, and, in addition, must certify that they will require local governments that receive grant funds to certify that they have adopted and are enforcing:
- A policy prohibiting the use of excessive force by law enforcement agencies within its jurisdiction against any individuals engaged in nonviolent civil rights demonstrations; and
  - A policy of enforcing applicable State and local laws against physically barring entrance to or exit from a facility or location that is the subject of such nonviolent civil rights demonstrations within its jurisdiction.
- k. The grantee certifies that it (and any subrecipient or administering entity) currently has or will develop and maintain the capacity to carry out mitigation activities, as applicable, in a timely manner and that the grantee has reviewed the respective requirements of this notice. The grantee certifies to the accuracy of its Public Law 115-56 Financial Management and Grant Compliance certification checklist, or other recent certification submission, if approved by HUD, and related supporting

## MITIGATION ACTION PLAN DRAFT

documentation referenced at section V.A.1.a of this notice and its implementation plan and capacity assessment and related submissions to HUD referenced at section V.A.1.b.

- I. The grantee certifies that it considered the following resources in the preparation of its action plan, as appropriate: FEMA Local Mitigation Planning Handbook: [https://www.fema.gov/media-library-data/20130726-1910-25045-9160/fema\\_local\\_mitigation\\_handbook.pdf](https://www.fema.gov/media-library-data/20130726-1910-25045-9160/fema_local_mitigation_handbook.pdf); DHS Office of Infrastructure Protection: <https://www.dhs.gov/sites/default/files/publications/ip-fact-sheet-508.pdf>; National Association of Counties, Improving Lifelines (2014): [https://www.naco.org/sites/default/files/documents/NACo\\_ResilientCounties\\_Lifelines\\_Nov2014.pdf](https://www.naco.org/sites/default/files/documents/NACo_ResilientCounties_Lifelines_Nov2014.pdf); the National Interagency Coordination Center (NICC) for coordinating the mobilization of resources for wildland fire: <https://www.nifc.gov/nicc/>; the U.S. Forest Service's resources around wildland fire (<https://www.fs.fed.us/managing-land/fire/>); and HUD's CPD Mapping tool: <https://egis.hud.gov/cpdmaps/>.
- m. The grantee certifies that it will not use CDBG-MIT funds for any activity in an area identified as flood prone for land use or hazard mitigation planning purposes by the State, local, or tribal government or delineated as a Special Flood Hazard Area (or 100-year floodplain) in FEMA's most current flood advisory maps, unless it also ensures that the action is designed or modified to minimize harm to or within the floodplain, in accordance with Executive Order 11988 and 24 CFR part 55. The relevant data source for this provision is the State, local, and tribal government land use regulations and hazard mitigation plans and the latest-issued FEMA data or guidance, which includes advisory data (such as Advisory Base Flood Elevations) or preliminary and final Flood Insurance Rate Maps.
- n. The grantee certifies that its activities concerning lead-based paint will comply with the requirements of 24 CFR part 35, subparts A, B, J, K, and R.
- o. The grantee certifies that it will comply with environmental requirements at 24 CFR part 58.
- p. The grantee certifies that it will comply with applicable laws.

**The Florida Department of Economic Opportunity hereby certifies the above, as authorized by the Executive Director.**

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**DEO Executive Director**

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**Date**

2. SF-424

DEO submits this Action Plan to HUD along with a completed and executed Federal Form SF-424.

## MITIGATION ACTION PLAN DRAFT

### **X. CONCLUSION**

#### **A. Completeness and Compliance**

This plan will be reviewed for completeness and compliance by HUD as part of the approval process.

##### **1. DEO Implementation**

A copy of the state Mitigation Program Implementation Timeline and other important information will be posted to DEO's website at the following location: [www.floridajobs.org/CDBG-MIT](http://www.floridajobs.org/CDBG-MIT) once the action plan has been approved.

##### **2. Pre-Award, Pre-Agreement and Reimbursement**

The provisions of 24 CFR 570.489(b) and 570.200 (h) permit a state to reimburse itself for otherwise allowable costs incurred by itself or its recipients or subrecipients on or after the incident of the covered disaster. The provisions at 24 CFR 570.200(h) and 570.489(b) apply to grantees reimbursing costs incurred by itself or its recipients or subrecipients prior to the execution of a grant agreement with HUD. This includes, but is not limited to, activities supporting program development, Action Plan development and stakeholder involvement support, and other qualifying eligible costs incurred in response to an eligible disaster covered under Public Law 115-254.

DEO incurred pre-award costs and is seeking reimbursement for those costs that are reasonable and allowable under this regulation. DEO intends to recover the pre-award costs consistent with the authority cited in this section. These costs include the cost for salary, employer fringe benefits, and direct operating costs for each employee based on his or her individual percentage of time spent on the planning of the CDBG-MIT program during a pay period. Any cost associated with the mitigation efforts will be allocated based on the total time spent on CDBG-MIT activities versus other duties within a particular month.

The total cost of the contractors that assist DEO with mitigation research and analysis and help prepare the Risk-based Mitigation Needs Assessment and Action Plan, along with other costs associated with meetings, community outreach, and any other direct costs associated with the Action Plan, will be reimbursed by this CDBG-MIT grant. Additionally, once contracted, DEO may allow the drawdown of pre-agreement costs associated with eligible mitigation activities dating back to the date of the disaster(s) for subrecipients and DEO with appropriate documentation.

## **XI. APPENDICES & SUPPORTING DOCUMENTATION**

Appendices are included herein as separate documents. These Appendices are referenced, in order, throughout this Action Plan.

### **A. Appendices**

- Appendix A: Community Engagement Survey Questions;
- Appendix B: List of SoVI variables; and
- Appendix C: Public Comments.

# MITIGATION ACTION PLAN DRAFT

## Appendix A

### List of Survey Questions Asked

1. Which of the following best describes you?
  - a. Elected or appointed official
  - b. Staff of elected or appointed official
  - c. Floodplain manager/administrator
  - d. Emergency management coordinator (EMC)
  - e. Public-sector employee (not an EMC or floodplain manager)
  - f. Interested member of the public
  - g. Other
2. What type of entity do you represent?
  - a. City
  - b. County
  - c. Council of Governments
  - d. Federal
  - e. Myself
  - f. Non-profit organization
  - g. Private Business
  - h. State
  - i. Tribe
  - j. Water Management District
  - k. Other
3. Which locality (city/town/county) are you associated with? (only answer if you work for or are directly associated with a city/town/county, otherwise skip)
4. What is the current status of your community's Local Hazard Mitigation Strategy?
  - a. Current
  - b. Being Revised
  - c. Expired with no plan to revise
  - d. No plan
  - e. I don't know
5. What is your biggest barrier to implementing hazard mitigation projects?
  - a. Capacity/staffing
  - b. Funding
  - c. Legal impediments (e.g., property rights, regulatory barriers)
  - d. Other

## MITIGATION ACTION PLAN DRAFT

6. Please indicate which staff members your jurisdiction currently employs [Select all that apply]:
  - a. Planners
  - b. Public works officials
  - c. Engineers
  - d. Emergency managers
  - e. Floodplain managers/admins
  - f. Grant managers      Land surveyors
  - g. Environmental scientists
  - h. Personnel skilled in Geographic Information Systems (GIS)
  - i. We contract out these services
  - j. None of the above
  
7. Taking into consideration your community's past experiences with natural hazards, please rate, on a scale from 1 to 4, your community's interest in pursuing the following activities (1 = Least Important, 4 = Most Important)
  - a. Preparedness, Coordination and Response Actions. (Examples: Implement or enhance communication infrastructure, such as radio and cell towers or tree maintenance where power and phone lines existed.)
  - b. Education and Awareness Programs. (Examples: Hazard safety education programs - home emergency kits, publicizing the location of the local emergency shelter, "Get A Plan" PSAs.)
  - c. Structure and Infrastructure Projects. (Examples: New stormwater systems, storm-proofing windows, elevating buildings, roads, etc.)
  - d. Local Plans and Regulations. (Examples: Development restrictions in flood zones, capital planning for mitigation projects, and revising building codes.)
  - e. Comment
  
8. If additional, limited funding becomes available, please rate the following mitigation activities according to your community's current priorities: (1 = Most Important, 2 = Somewhat Important, 3 = Not Important)
  - a. Develop or refine an evacuation plan
  - b. Enhance the function of natural flood-mitigation features (e.g. streams, wetlands, etc.)
  - c. Enhanced maintenance of vulnerable utilities
  - d. Fortify critical facilities (e.g. transportation networks, hospitals, fire stations, etc.)
  - e. Improve community awareness of hazard risks
  - f. Prevent development in hazardous areas such as floodplains through buyouts/acquisitions
  - g. Replace inadequate or vulnerable bridges and causeways
  - h. Strengthen emergency services (e.g. Police, Fire, EMS, etc.)



## MITIGATION ACTION PLAN DRAFT

9. Which, if any, planning, mitigation or protection activities has your community or jurisdiction implemented recently (i.e. in the past five years)? [Select all that apply]

- a. Coastal resilience
- b. Construction of a community hazard shelter
- c. Dry brush removal
- d. Encouraging purchase of flood insurance (i.e. participation in the NFIP)
- e. Flood-proofing and/or flood retrofits
- f. Levees, flood walls, or related infrastructure
- g. Local channel conveyance improvements
- h. Local drainage improvements
- i. Natural hazard/disaster awareness training and/or education
- j. Natural hazard/disaster warning system
- k. Property buyouts or relocations
- l. Property elevation
- m. Reconstruction of noncompliant structures
- n. Roadway bridges, culverts, and other forms of stormwater conveyance
- o. Updated building codes
- p. Updated land development ordinances
- q. I don't know
- r. Other

10. Which, if any, planning, mitigation, or protection activities has your community or jurisdiction identified as needed but not yet implemented? [Select all that apply]

- a. Coastal resilience
- b. Construction of a community hazard shelter
- c. Dry brush removal
- d. Encouraging purchase of flood insurance (i.e. participation in the NFIP)
- e. Flood-proofing and/or flood retrofits
- f. Levees, flood walls, or related infrastructure
- g. Local channel conveyance improvements
- h. Local drainage improvements
- i. Natural hazard/disaster awareness training and/or education
- j. Natural hazard/disaster warning system
- k. Property buyouts or relocations
- l. Property elevation
- m. Reconstruction of noncompliant structures
- n. Roadway bridges, culverts, and other forms of stormwater conveyance
- o. Updated building codes
- p. Updated land development ordinances
- q. I don't know
- r. Other

## MITIGATION ACTION PLAN DRAFT

11. Are you currently, or have you in the past, coordinated with regional partners (neighboring communities and regional organizations such as Councils of Governments) to develop and implement hazard mitigation activities?
- Yes
  - No
  - I don't know
  - Comment
12. If your Local Hazard Mitigation Strategy was completed prior to your community experiencing hurricane impacts in 2015-2017, are your prioritized mitigation activities still aligned with your community's needs?
- Yes, our priorities are still aligned with the community's needs
  - No, our community's needs have changed
  - I don't know
  - N/A
  - Other
13. Which of the following describes your funding sources for natural hazard/disaster mitigation activities? [Select all that apply]
- Federal Funding      State General Revenue Funds
  - Bond Program
  - Grant Funding
  - Impact/Permitting Fees      Special Tax Districts
  - We do not have a local funding source for mitigation activities
  - I don't know
  - Other
14. Are there any hazard issues specific to your community or region that you would like to emphasize, e.g. repetitive flooding at specific locations?
15. If you are interested in remaining informed of the state's development and implementation of the State Mitigation Action Plan, what is your preferred method of engagement?
- Conference Call
  - In-person workshops
  - Newsletter/ Email
  - Webinar
  - Website
  - Other
16. If you would like to be included in future communications related to the State Mitigation Action Plan, please include your contact information below.
- First Name

## MITIGATION ACTION PLAN DRAFT

- b. Last Name
- c. Company Name
- d. Work Phone
- e. Email Address
- f. Address 1
- g. Address 2
- h. City
- i. State/Province (US/Canada)
- j. Postal Code
- k. FL County

# MITIGATION ACTION PLAN DRAFT

## Appendix B

**List of SoVI® 2006-10 Variables (n=29). Daggers notate new variables added.**

**SoVI® 2010-14 uses the same list of variables.**

VARIABLE	DESCRIPTION
QASIAN	Percent Asian
QBLACK	Percent Black
QSPANISH	Percent Hispanic
QINDIAN	Percent Native American
QAGEDEP	Percent Population under 5 years or 65 and over
QFAM†	Percent Children Living in Married Couple Families
MEDAGE	Median Age
QSSBEN	Percent Households Receiving Social Security Benefits
QPOVTY	Percent Poverty
QRICH	Percent Households Earning over \$200,000 annually
PERCAP	Per Capita Income
QESL	Percent Speaking English as a Second Language with Limited English Proficiency
QFEMALE	Percent Female
QFHH	Percent Female Headed Households
QNRRES	Nursing Home Residents Per Capita
HOSPTPC	Hospitals Per Capita (County Level ONLY)
QNOHLTH†	Percent of population without health insurance (County Level ONLY)
QED12LES	Percent with Less than 12 <sup>th</sup> Grade Education
QCVLUN	Percent Civilian Unemployment
PPUNIT	People per Unit
QRENTER	Percent Renters
MDHSEVAL	Median Housing Value
MDGRENT	Median Gross Rent
QMOHO	Percent Mobile Homes
QEXTRCT	Percent Employment in Extractive Industries
QSERV	Percent Employment in Service Industry
QFEMPLBR	Percent Female Participation in Labor Force
QNOAUTO†	Percent of Housing Units with No Car
QUNOCCHU†	Percent Unoccupied Housing Units

# MITIGATION ACTION PLAN DRAFT

## **Appendix C:** Public Comments