Volusia County, FL Hurricane Disaster Plan

(December 4, 2023, Hurricane Idalia Category 4, Florida)

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Preface

The entire State of Florida is at risk of natural disasters, with pronounced vulnerability due to the increase of climatological events. However, some areas are much more vulnerable than others due to Florida's vast shorelines bordering the Atlantic Ocean and Gulf of Mexico. Of the state's 67 counties, 35 have coastlines bordering either the Atlantic Ocean or the Gulf of Mexico.[10] For as long as records have been kept, there has been flooding, tropical storms, hurricanes, tornados and fire hazards in Florida, but data indicate that climate change is leading to increased adverse climate-related outcomes.[10] As the fourth largest state by population with over 18 million residents according to the 2010 U.S. Census, Florida's population is particularly vulnerable to hazards because 38 percent of the population is composed of minors and senior citizens (approximately 26% of the population is 65 years of age or older) and a sizable percent live in nursing homes or assisted living facilities compared to the rest of the country. Florida is home to four metropolitan areas with over one million residents, three of which lie on the coast.[10]

Flooding poses one of the greatest risks of any natural hazard in Florida, threatening even non-coastal communities. The impact of flooding is substantial, including loss of personal property, housing, and even life. Flooding can cause massive disruptions within communities, disabling businesses, utilities, and transportation.[7] Floodwaters can further present a public health hazard when they inundate water and waste treatment facilities. The entire state of Florida is at extremely high risk of flooding due to numerous factors, including its extensive coastline, low elevations, and heavy annual rainfall. Florida experiences intense thunderstorms, which can bring copious amounts of rain in a short period time.[7] However, the storm surge from tropical storms frequently threaten flooding emergencies. In fact, even low risk, category 2 hurricanes can bring several feet of storm surge. Unfortunately, flooding is expected to be a worsening issue for Florida due to climate change. The expected rising sea level and increased tropical storms will worsen the impact of flooding in the region.

Damage by wind and tornadoes present another threat in Florida due to hurricanes. While tornadoes in Florida occur perennially, they are far more common with hurricanes and tropical weather. Again, the threat of climate change means Floridians will likely be forced to face more intense windstorms, more frequently. Given the numerous dangers posed by the threat of hurricanes and their expected increased impact with climate change, Florida must be prepared. Tackling this challenge will require diligent preparation and systematic coordination to minimize the negative impacts to Florida communities.

Signature Page

The below parties confirm that they have reviewed the following document [Hurricane Disaster Plan for Volusia County, Florida] and approve the contents thereunto.

_____   Date: _____

State of Florida Director of Emergency Management

_____   Date: _____

Director of Department of Health

                                                   Date: _____

_____

Volusia County Director of Emergency Management

                                                   Date: _____

_____

State of Florida Public Health Director

                                                   Date: _____

_____

Mayor - Daytona Beach

                                                   Date: _____

_____

Florida State Governor

Mission of the Florida Department of Health

The mission of the Florida Department of Health is to provide accurate, timely, and important public health information to allow Florida residents to make informed decisions for their personal and community health. Through integrated state, county, community, and partner efforts the facility develops and implements various health initiatives and campaigns. The Florida Department of Health has a strategic plan that operates on a three-year cycle that aims to meet goals prioritized by the state and national government. The facility oversees several programs, including Emergency Preparedness and Response.[9]

Purpose

The purpose of the Volusia County Disaster Plan is to provide information, comprehensive steps, and organize the multi-player and multi-level actors and organizations involved in dealing with a hurricane event in Volusia County. It is designed to provide general information to mitigate and efficiently deal with hurricanes. Additionally, to describe how to prepare for and solve unique issues faced by Volusia County in recent years such as how to address and prepare for storm surge, resulting storm surge complications, and address barriers preventing previous and current disaster plans from most effectively serving the Volusia County population.

Authorities

- Bureau of Public Health Laboratories
- FEMA
  - Emergency Action Plan required by some businesses under 29 CFR 1910.38
  - Presidential Policy Directive/ PPD-8: National Preparedness
- Florida Department of Agriculture and Consumer Services
  - Florida Comprehensive Emergency Management Plan
    - ESF 17
- Florida Division of Emergency Management
- U.S. Department of Defense
- U.S. Department of Labor
  - OSHA
- USDA Disaster Assistance Programs
- USDA Disaster Recovery Information

Communication Plans

Volusia County must respond to hurricane events or any related emergencies or disasters (directly or indirectly caused by these events) that have the potential to impact the county or any of its citizens. The National Weather Service and/ or National Hurricane Center is responsible for alerting the state of Florida and consequently, Volusia County, when a hurricane is at least 36 hours from a predicted landfall. The state Assistance Information line (800) 342-3557 is available for Volusia County residents in need of additional resources in case of a hurricane event or related emergency. Wireless Emergency Alerts are broadcasted from cell towers from authorized authorities from various local, state, and federal levels. When response or recovery for Volusia County has anticipated or unanticipated needs that arise or are predicted from the event, other levels of government, jurisdictions, and mutual aid partners are expected to respond with appropriate resources and services. Communication plans for the deaf and hard-of-hearing are moderated and handled by the National Association of the Deaf. Volusia County has a "text-to-911" system where people can text for emergency services. Additionally, these individuals can use a telecommunications relay service such as Video Relay Service or Internet Protocol Relay where those who use American Sign Language can communicate through a phone using video. For residents who are hard of hearing services such as CapTel amplifies voice and offers text support such as captioning. Communication plans for this population require access to a working TV and/or a phone with service.[11]

Mutual Aid Agreement
- Agency for Health Care Administration
- Agency for Persons with Disabilities
- American Red Cross
- FEMA
- Florida Assisted Living Association
- Florida Association of Community Health Centers
- Florida Health Care Association
- National Hurricane Center
- National Weather Service
- State Fire Marshal
- Surrounding county governments and neighboring state governments for animal services and citizen evacuation centers (Brevard County, Seminole County, Mario County, Lake County)
- Volusia County Sheriff's Office
    - Community watch Committee leaders

5

- Volusia County Government
  - Animal Services

Public Health Concept of Operations

Needs assessment of the affected and vulnerable population:

- The needs of the Volusia County residents include emergency communications, evacuation assistance and transportation, sheltering, road maintenance assistance, traffic control, mosquito control, transportation efforts including those for the county's vulnerable population, environmental management, fire services, utility department assistance, medical services, search and rescue, hazardous material management, damage assessment, and animal protection/ movement services.[4]

- Due to the large number of individuals in Volusia County who are elderly and given the complexity of storm surge a plan must be in place to evacuate and provide necessary care for all home-health recipients, nursing homes, and assisted living facilities. The vulnerable population extends to individuals with developmental, cognitive, and physical disabilities; as well as those living in geographic isolation who are unable to leave their homes in the event of severe flooding or storm surge. The vulnerable population also includes those who are medically dependent, unhoused, children, and families with livestock or multiple pets without means of transportation. When considering the vulnerable population, registration and record keeping in the county needs to be regularly updated.

- Areas in and around the Tomoka River Basin, Spruce Creek, Ponce DeLeon Inlet, Mosquito Lagoon, and Indian River are reported to experience the most severe flooding associated with hurricanes and tropical storms.[5]
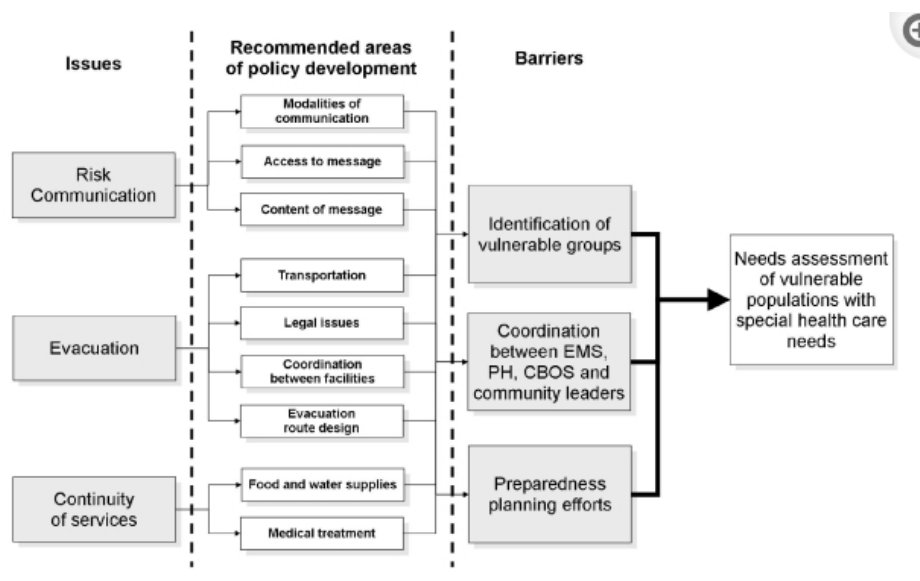
Matching available resources to the needs and how the needs of vulnerable populations will be met

Hurricanes are disastrous, with adverse impact associated with storm surge, wind damage, rip currents and flooding. Hurricanes are more prevalent in Florida than other states in the US due to its unique geography and long coastline. Hurricanes are responsible for many deaths in the United States. Therefore, it is crucial to address the needs of the vulnerable populations in Florida.[1]

Hurricanes Katrina and Rita showed the gaps in emergency preparedness and also highlighted the inequalities in population. Many vulnerable groups of individuals   were stranded when waiting for help to evacuate.[3] They were refused by organizations that were unprepared and many had difficulty accessing emergency services themselves. The vulnerable groups include, elderly, young, people with disabilities, those with pre-existing health conditions and people with addictions. Additionally, many people in Florida are not proficient in English, may have less geographic knowledge, and may also be culturally isolated.[3]

[Fig 2] is the representation of the issues, barriers and recommended areas of policy development that can help address the needs of vulnerable populations. The main issues are risk communication, evacuation, and continuity of services. There are recommended areas of policy development such as modalities of communication, access to message and content of message that can help with alerting the population.[3] There should be access to transportation, coordination between facilities, proper evacuation routes designed to help with the evacuation efforts. Lastly, the continuity of service is a big issue and a possible policy development would be to provide food and water supplies and medical treatment to be prepared. These are the essentials to addressing the needs of vulnerable populations in a disastrous event.[3]

 (Figure 2- Issues, barriers and policy development areas in emergency planning for populations with special health care needs).[3]

Evaluating the Effectiveness of the disaster response

When a hurricane has passed, recovery and cleanup efforts begin. When reaching this stage, the initial disaster response plan can be evaluated by considering the following:

- Was the vulnerable population properly identified?
- Were the needs of vulnerable populations met?
- Was the community prepared?
- Were evacuation routes efficient?
- What preventable damages occurred?
- What could have been done differently?

By assessing damages that did or did not occur, the disaster response plan can be modified so that damages may be spared from future hurricanes in the area, as well as identify other possible evacuation routes if needed. Additional education or warnings regarding preparedness for the storm may also be beneficial for residents who chose to stay in the area instead of evacuating.

Annex I – Threat and Hazard Identification and Risk Assessment (THIRA) of Hurricanes in Florida by the Florida Division of Emergency Management (FDEM), Florida, USA

Natural	Technological	Human-caused
Resulting from acts of nature	Involves accidents or the failures of systems and structures	Caused by the intentional actions of an adversary

⚠ **Hurricane-Force Winds**
Sustained winds and gusts cause extensive property damage, reduced accessibility to emergency services (due to downed trees and powerlines), and even death. With the increased warming of the ocean[12], National Oceanic and Atmospheric Administration (NOAA) predicts more powerful hurricanes more frequently, with increasing devastating wind speeds.

⚠ **Storm Surge and Flooding**
Increased flooding results in increased risk for both direct cause mortality and indirect cause mortality, due to reduced accessibility to clean water, food, and emergency services. Downed powerlines and other debris in flood water may present further hazards to public safety. Excessive flooding can lead to contaminated water sources, by damaging water systems or overwhelming municipal water treatment facilities.
With the continual rise of sea-levels[13] and predicted increase in hurricane season length and severity[14], flooding events will likely increase in frequency and severity.

⚠ **Disruption of Electric Utilities**
Utilities outages pose potentially life-threatening risks to vulnerable populations, including patients admitted to healthcare facilities with inadequate backup power access, individuals vulnerable to extreme temperatures and/or dehydration (i.e. older individuals or those with chronic illnesses), and individuals requiring refrigerated medications. Furthermore, poor lighting due to loss of electricity presents an additional threat to older adults vulnerable to falls. Given the advanced age (65+) of nearly 5 million Floridians, about 22.5% of all state citizens,[15] the population of Florida is especially at risk for these hazards.

⚠ **Carbon Monoxide Poisoning**
Studies have shown that unintentional CO poisoning deaths were most common in Florida.[16] During hurricanes, increased use of generators and other carbon monoxide-producing equipment (portable gas stoves) in poorly ventilated areas create a major risk for injury and death.

⚠ **Fire Hazards**
Fire hazards pose an increased threat during power outages due to many factors including unattended candles, overloaded or damaged electrical systems,

⚠ **Looting and Theft**
Natural disasters like hurricanes provide increased opportunities for theft due to disruptions to power and surveillance, reduced security presence and emergency services, and evacuation of residents and businesses. Depending on the socioeconomic structure of the community and reconstruction time, increased crime may continue to plague damaged, unrestored communities for several weeks.[18,19]

⚠ **Increased Domestic Disputes**
Florida already faces higher than the national average rates of domestic violence (37.9%),[20] and hurricanes may indirectly exacerbate domestic crimes. Increased stress during and after hurricanes (due to property loss, financial strain, and other hurricane-related lifestyle disruptions) can result in increased domestic disputes and violence within households.[21]

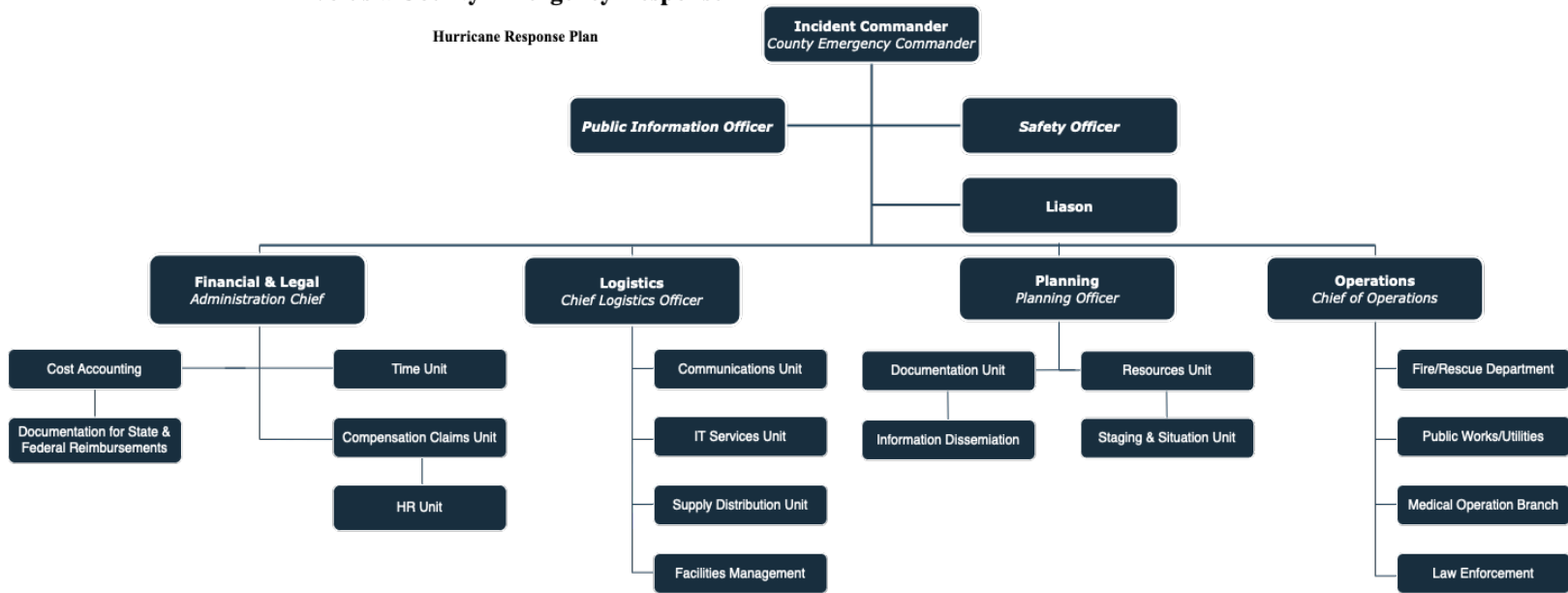|		
	employment of unsafe cooking practices, and unattended evacuated homes. ⚠ **Disrupted Internet Access and Cellular Communication** Loss of communication eliminates the ability for citizens to request assistance, leading to unaided and exacerbated emergencies. Hurricane-force winds and flooding can physically damage communication infrastructure necessary for Internet Service Providers (ISPs). Power outages and generator failures provide additional challenges to maintaining functional ISPs. During storm recovery ISPs can partially mitigate these disruptions via "cell-on-wheels" (COW) or "cell-on-light-truck" (COLT) mobile units that provide temporary communication infrastructure.[17] However, flooding and damage to roads can impede accessibility of this solution even during recovery efforts and continue to delay access to emergency assistance.	

Annex 2

Volusia County Emergency Response

Hurricane Response Plan

Incident Commander
County Emergency Commander

Public Information Officer

Safety Officer

Liason

Financial & Legal
Administration Chief

- Cost Accounting
- Documentation for State & Federal Reimbursements
- Time Unit
- Compensation Claims Unit
- HR Unit

Logistics
Chief Logistics Officer

- Communications Unit
- IT Services Unit
- Supply Distribution Unit
- Facilities Management

Planning
Planning Officer

- Documentation Unit
- Information Dissemiation
- Resources Unit
- Staging & Situation Unit

Operations
Chief of Operations

- Fire/Rescue Department
- Public Works/Utilities
- Medical Operation Branch
- Law Enforcement

Annex 3: Mitigation Strategy

Training Seminar: Evacuation of Volusia County Residents Experiencing Storm Surge/ Flood– Severe Hurricane	
Objectives of your Training Seminar (What mitigation strategy are you advocating?)	Knowing what to do in event of severe flooding including when to evacuate the flooded dwelling, how to evacuate, and where to go/ how to get help in the middle of a hurricane event
Estimate Length of Training	3 hours
Target Audience and max size of audience.	Family members of elderly citizens in flood risk areas of Volusia County, home health aids, individuals and caregivers of deemed vulnerable population defined in the Concept of Operations, max. 375 attendees
Who would be a good candidate (e.g., structural engineer, health dept. official, first responder?) as Facilitator of this session? Why?	A team comprised of a director from The Flood Mitigation Assistance Program and a member from Elder Source of The Area Agency on Aging of Northeast Florida. Elder source is an expert on the safety of the aging population in Volusia county and can speak from a lens of expertise and understanding of the vulnerable population. A director from The Flood Mitigation Assistance Program would bring the expertise that could comfort the community and has the ability to assist individuals with a plan to move through the process of this kind of disaster, including those with animals.
What do you want community members to do as a result of their attending this session?	1. Strengthen social ties by forming support networks 2. Have 4-6 individuals identified and notified as the team responsible for assisting the elderly, disabled, and vulnerable escape flood waters 3. Leave with a written plan to distribute to the support system to each vulnerable individual 4. Develop and practice disaster plan 5. Understand safe practices for dealing with storm surge in case of delayed emergency response while hurricane activity is active 6. Understand who and how to help in case of emergency and if it is safe to step in
Strategies to increase community uptake of your mitigation	1.Provide Pamphlet with infographics showing how to safely exit a dwelling actively filling with water and describing at what point individuals need to exit the home 2.Provide numbers of who to contact in the community for animal transportation pre-storm 3.Organize attendees into discussion support groups based on residential area 4.Provide emergency preparedness kit including laminated numbers to call and safe places to wait for rescue, flashing light devices, and personal flotation devices

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