

Pinellas County 2024 Hurricane Season Hurricanes Debby, Helene, and Milton After-Action Report Overview

The 2024 hurricane season was challenging, with three storms, two occurring within two weeks of each other. Each storm devastated many communities. The collaboration and partnerships built over the years were evident in the colossal efforts demonstrated during the preparedness, response, and recovery efforts of thousands of partners and community members.

- Hurricane Debby in August highlighted the need to prepare for localized impacts, such as severe marine conditions for boaters, and flash flooding from rainfall.
- Hurricane Helene in September emphasized the devastating impact of storm surge flooding, even when a storm doesn't make landfall in Pinellas County.
- Hurricane Milton in October illustrated the need to be prepared for multiple impacts and cascading incidents. Impacts from Helene were exacerbated by Hurricane Milton, even though monumental efforts were made to clean up and restore critical infrastructure immediately after Hurricane Helene. Assessments for substantial damage determinations were cumbersome and complex.

This is a summary of the key actions taken, lessons learned, and improvements planned based on the official After-Action Report developed after the hurricane season.

Emergency Operations Center (EOC) Activation

The County EOC was activated for 154 days in response to multiple storm threats throughout the 2024 hurricane season. Activation levels were adjusted based on the severity of the weather events, ensuring appropriate staffing and coordination. The EOC was the central hub for operational decisions, resource management, and communications among various partners.

Improvement Actions:

- *Pinellas County Emergency Management is increasing seating and conference room capacity in the County EOC.*
- *Pinellas County Emergency Management is increasing display and conference capabilities in County EOC conference rooms.*

Interagency Coordination

Pinellas County Emergency Management collaborated with local municipalities, State agencies, the National Weather Service, and other partners. Unified messaging and planning were emphasized to streamline efforts across jurisdictions. Over 70 situation reports, and numerous daily conference calls helped keep stakeholders informed and aligned. As of May 2025, Pinellas County continues to work with local, state and federal partners to support recovery efforts and prepare for the 2025 hurricane season.

Improvement Actions:

- *Pinellas County Emergency Management is working with municipal emergency management to increase municipal training, workshops and planning meetings.*

- *Countywide coordination meetings for Public Works, Utilities and Hospitals to discuss challenges and identify solutions.*
- *The County is working with municipalities in refining processes for working with mutual aid and outside response teams coming in to ensure coordination, command and control, and support.*

Logistics

During hurricanes Debby, Helene, and Milton, 4,228 logistics missions were processed, with hundreds escalated to the State for fulfillment. Challenges arose in verifying mission completion and coordinating requests. To improve future operations, Pinellas County is implementing enhanced tracking and approval processes and continuing successful practices, such as the establishment of staging areas, a base camp, and State-supported logistics assistance. Local communities need to identify locations for community services and have contracts to enhance or provide services for their residents.

Community Points of Distribution (POD) sites were set up in numerous communities. The greatest challenge was that impacts were across many communities and spread out geographically. Roving distribution methods were implemented utilizing Florida National Guard and other outside personnel, such as the Florida Division of Emergency Management Human Needs Assessment Teams that canvassed neighborhoods to assess unmet needs and helped deploy commodities such as food, water and cleanup kits. The County and municipalities set up comfort, cooling and respite centers and mass feeding operations serving tens of thousands of meals. The County worked with municipalities, faith-based organizations, feeding partners and more to accept and distribute public donations. Twenty-five public donation centers were set up, and commodities were provided to various agencies around the county to distribute to the public.

Improvement Actions:

- *Pinellas County Emergency Management updated the internal resource request process and WebEOC boards for logistics.*
- *Pinellas County Emergency Management has increased training for partner agencies.*
- *The County is adding a real estate function to EOC Logistics to streamline requests for lots, hotels, and other facilities.*

Public Communication and Outreach

Alert Pinellas & Community Notifications

The County used the Alert Pinellas system, social media platforms, and traditional media to keep residents updated. This included 171 notifications to the public through Alert Pinellas. Notifications included evacuation orders, shelter openings, storm updates, and recovery information. Through Facebook, Instagram and X outreach efforts, the County reached millions of residents with life-saving information. More than 916,000 people interacted with these posts to find evacuation zones, receive real-time updates and begin

recovery. The County also provided updates in multiple languages to reach a broader audience.

Improvement Actions:

- *Pinellas County Emergency Management will provide additional training and refresher courses on Everbridge (Alert Pinellas) to partner agencies.*

County Information Center

The County Information Center (CIC) was activated for 82 days to support the three storms. The CIC received 36,137 calls and 10,489 Live Chat inquiries. Before storm impacts, the main topics of calls were for Special Needs Evacuation Program registration, sandbags, public shelter openings, and to help determine the resident's risk to determine their need to evacuate. After storm impacts, the topics of calls included questions about debris pickup, Federal Emergency Management Agency (FEMA) assistance, substantial damage determination and permitting.

Improvement Actions:

- *The County and partners are increasing public messaging on how to determine risk, proper use of sandbags and other flood barriers and proper debris sorting.*
- *The County will develop simple messaging for how the public can best access FEMA Individual Assistance.*
- *Each jurisdiction should develop clear public messaging on their permitting process.*

Public Information Improvements

Pinellas County held 32 media briefings and press conferences and distributed 118 press releases to the media. County staff and partners identified the need for more targeted public education on inland flooding, clearer coordination of messaging across jurisdictions, and pre-scripted critical advisories like boil water notices to streamline emergency communications. The County will continue successful practices such as daily media briefings with subject matter experts and community outreach teams with flyers with resources.

Improvement Actions:

- *Additional coordination across jurisdiction to ensure consistent messaging and increase support for vulnerable populations like residents in 55+ high-rises.*
- *The County will formalize Community Outreach Teams to deploy into the field and to provide information on available resources after storm impacts.*
- *Pinellas County Emergency Management partnered with Seniors in Service to distribute guides in mobile home parks.*
- *To bridge language barriers for Spanish-speaking residents, hosted the first ever Hispanic Preparedness Day.*

Evacuation and Shelter Operations

Evacuation Orders and Transportation

Mandatory evacuation orders were issued for specific zones based on storm surge projections for hurricanes Helene and Milton. Pinellas County used GIS tools to identify vulnerable populations and coordinate transportation for individuals without access to vehicles. First responders in evacuation zones identified that evacuation compliance was low for Hurricane Helene. Evacuation for Hurricane Milton was more successful with fewer people observed in evacuation zones. During listening sessions after the hurricanes, some people identified that they were hesitant to evacuate or did not understand that transportation assistance was available.

Improvement Actions:

- The County is working with the University of South Florida on a behavioral study and will review and refine public messaging to help the community understand the risk, and the appropriate actions to take.*
- The County will increase public information on evacuation transportation resources, such as the Special Needs Evacuation Program and free rides to shelters from PSTA and other ride-sharing options.*

Shelter Operations

Community shelters were on standby for Hurricane Debby and made available for 13 people who wished to evacuate. For Hurricane Helene, six shelters opened with 1,946 people and 97 pets. For Hurricane Milton, twelve shelters opened with 11,942 people and 1,386 pets. Back-to-back storms complicated staffing. Sheltering operations, including step-down locations, ran for over 50 days. Many people with pets came without crates or supplies.

Improvement Actions:

- Pinellas County Emergency Management created a Shelter Staff Task Force and updated shelter staff training materials including a training video based on feedback.*
- The Convention & Visitors Bureau (Visit St. Pete-Clearwater) has created a booking engine that will not show hotels in evacuation zones.*
- For future storms like Debby, especially with the heavy rainfall predictions, a community center will be opened to support those who do not feel comfortable staying in their homes.*
- The projected shelter space per person is being assessed and adjusted by Pinellas County Emergency Management depending on how much evacuees bring with them.*
- Pinellas County Emergency Management will work with municipalities for additional community sites to be used as step-down shelters. This is critical to facilitate the reopening of schools.*
- Pinellas County Emergency Management is working with municipalities and appointing authorities to recruit more staff and volunteers for shelters.*

- *The County will increase contract capacity to bring in additional shelter staff for larger and longer operations.*
- *The County will increase messaging for pet owners on supplies they will need to bring to shelters.*

Rescues and Fatalities

During hurricanes Debby, Helene, and Milton, emergency personnel conducted hundreds of water rescues across Pinellas County as widespread storm surge and flash flooding inundated neighborhoods. Tragically, 14 fatalities occurred during Helene and Milton.

Improvement Actions:

- *First responder agencies are refining the water rescue plans, identifying all local assets and additional capabilities that may be needed for future events.*
- *Pinellas County Public Works is getting additional water level and precipitation gauges to help with modeling and messaging.*

Post-Storm Recovery

Debris Removal

In total, over 7,240,000 cubic yards of debris were cleared from all areas of Pinellas County. The Florida Division of Emergency Management and the Florida Fish and Wildlife Conservation Commission removed over 8,400 cubic yards of waterway debris and over 100 derelict vessels from Pinellas County. Pinellas County faced several debris management challenges, including contract pricing issues, limited debris site availability, and complex FEMA guidelines that delayed operations, prompting efforts to streamline processes, coordinate regional procurement, and improve public communication. Successful practices such as State-assisted marine debris removal, sand sorting on barrier islands, and the use of public dashboards for tracking progress will be continued to support efficient and transparent cleanup efforts.

Improvement Actions:

- *The County is reviewing the debris management contract that many municipalities participate in.*
- *The County will work with municipalities for pre-determined and approved debris monitoring sites and public drop-off locations for debris removal.*
- *Pinellas County Emergency Management added guidance on how to sort debris to the 2025 Hurricane Guide.*

Utilities

Pinellas County and partners identified the need for clearer public communication and coordination with utility providers during service shutdowns. The storm surge threshold of wastewater treatment facilities needs to be identified and used to make protective

measure determinations. Public education on tree trimming to prevent damage to underground and overhead infrastructure is needed.

Improvement Actions

- *Pinellas County Utilities established a multijurisdictional Utilities Working Group and sustain best practices for future rapid emergency repairs by water, sewer and electrical providers.*

Damage Assessment

Damage assessment teams were deployed immediately after the storm passed. Rapid assessments enabled faster access to federal and State aid. The three storms damaged 46,728 homes. Pinellas County identified the need to streamline the damage assessment process from preliminary damage assessment through substantial damage assessment.

Improvement Actions:

- *The County will improve damage assessments by updating collection and estimating tools, incorporating interior inspections, drone, and resident-submitted imagery and documents.*
- *The County will be identifying contracts for post-storm services such as building code administration, code enforcement, and floodplain management ordinance administration and enforcement that municipalities will be able to contract with.*

Permitting

Pinellas County focused on streamlining storm repair approvals by creating an in-person permitting hub that issued over 3,500 permits, enabling same-day service for homeowners. Challenges included inconsistencies across 25 jurisdictions, a lack of electronic systems in some jurisdictions, and limited personnel for inspections and reviews, prompting the need for clearer public protocols, mutual aid, and vendor contracts. Lessons learned included valuation processes for housing types such as single-family homes, mobile/manufactured homes, and multifamily units.

Improvement Actions:

- *The County will use criteria to expedite permitting for homes with less than 12 inches of water inside.*
- *All jurisdictions should provide public information to help homeowners, starting with the muck and dry out process, then inspections before moving forward with repairs.*
- *All jurisdictions should provide information to homeowners on what they can provide for permitting applications and appointments, so they don't have to wait for the determination.*

Housing

Over 3,335 residential structures were evaluated in unincorporated areas using FEMA's Substantial Damage Estimator tool, with 13% initially deemed substantially damaged and

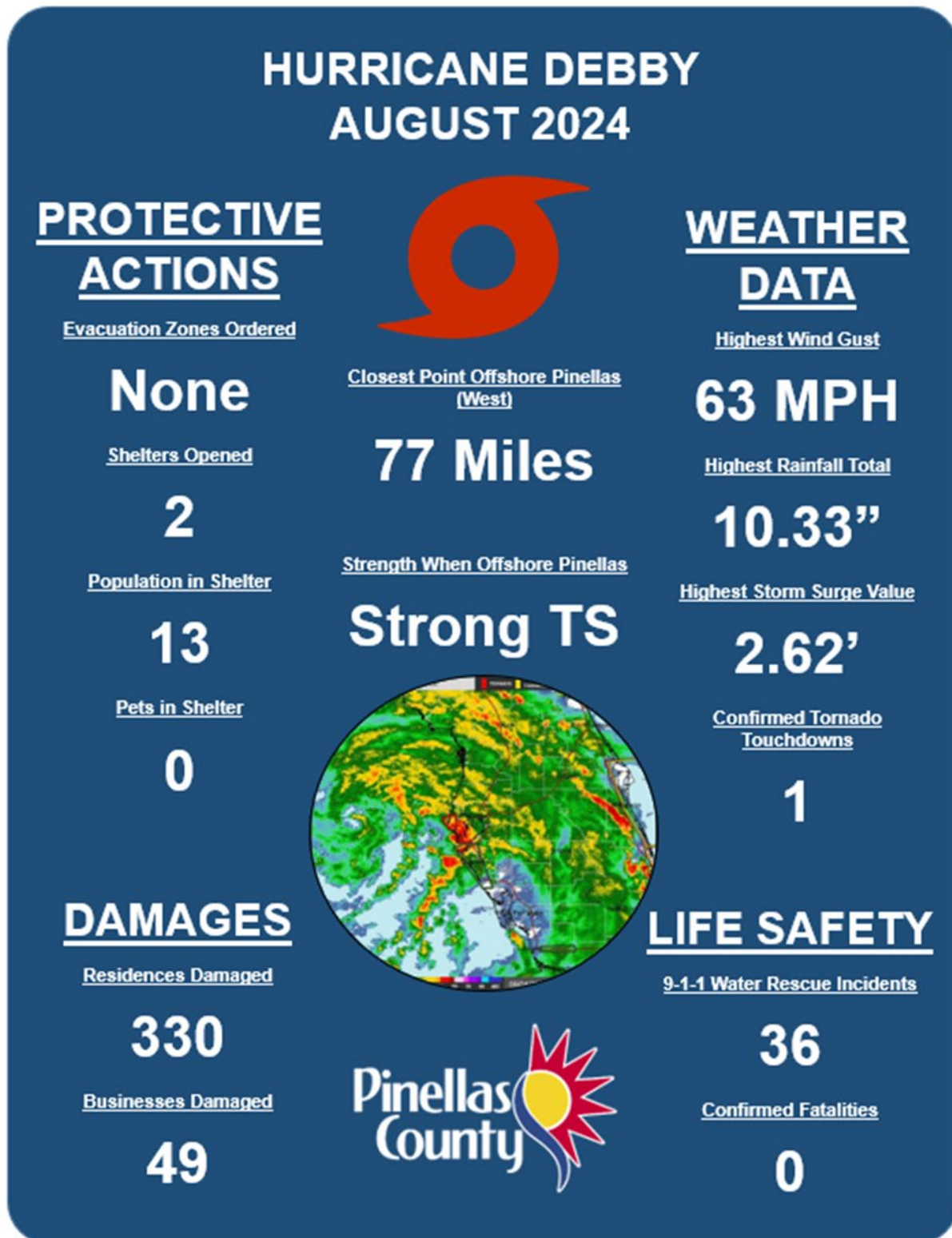
over 95% of 1,407 mobile homes meeting the same threshold. To support displaced residents, more than 3,900 households—totaling over 7,500 people—were housed in over 100 hotels under FEMA’s Transitional Sheltering Assistance and the State’s Non-Congregate Sheltering programs. As of June 2025, over 75 households remained in these programs, with about 200 awaiting FEMA Direct Housing Assistance placement. The County and municipalities worked with FEMA and the State for placement of travel trailers and mobile home units at private sites, and existing commercial parks.

Permitting was one of the largest hurdles to getting people back in their homes. Unincorporated Pinellas County issued over 4,500 storm repair permits and created an in-person permitting hub to accelerate rebuilding. The County also launched the Income Eligible Hurricane Home Repair Program, offering up to \$30,000 in grants, and received \$813 million in federal Community Development Block Grant Disaster Recovery (CDBG-DR) funds (plus \$160 million for St. Petersburg) to support long-term recovery. Over 3,500 county residents applied to the State’s Elevate Florida program for mitigation and reconstruction support, with project implementation expected in the summer of 2025.

Improvement Actions:

- *Pinellas County was granted over \$813 million in Community Development Block Grant funding from the U.S. Department of Housing and Urban Development and has submitted an action plan to prioritize people first and support those impacted by the storms.*
- *Voluntary Organizations Active in Disasters (VOAD) continue to work with residents with unmet needs.*

Incident Metrics



HURRICANE HELENE SEPTEMBER 2024

PROTECTIVE ACTIONS

Evacuation Zones Ordered

A

Shelters Opened

6

Population in Shelter

1,700

Pets in Shelter

97

DAMAGES

Residences Damaged

33,566

Businesses Damaged

689

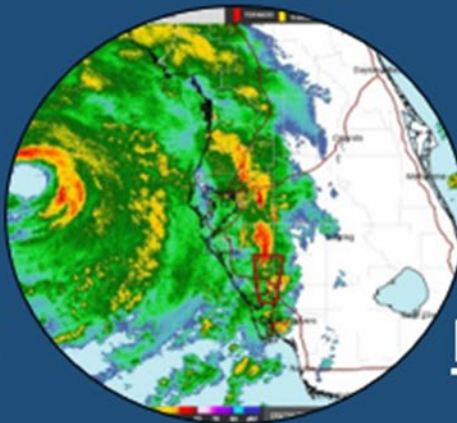


Closest Point Offshore Pinellas
(West)

105 Miles

Strength When Offshore Pinellas

Category 3



WEATHER DATA

Highest Wind Gust

82 MPH

Highest Rainfall Total

3.06"

Highest Storm Surge Value

6.67'

Confirmed Tornado
Touchdowns

0

LIFE SAFETY

9-1-1 Calls for Water Rescue

1,400

Confirmed Fatalities

12

HURRICANE MILTON OCTOBER 2024

PROTECTIVE ACTIONS

Evacuations Zones Ordered

A, B, C

Shelters Opened

14

Population in Shelter

12,000

Pets in Shelter

1,386

DAMAGES

Residences Damaged

12,832

Businesses Damaged

430

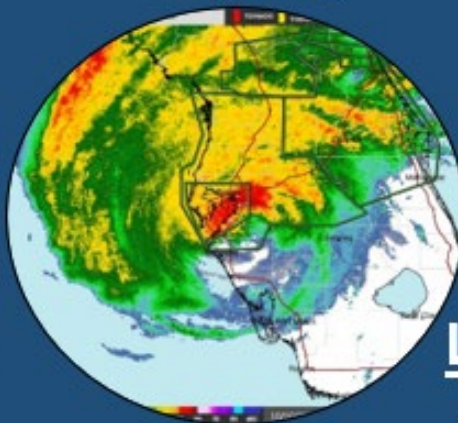


Closest Point Offshore Pinellas
(South)

28 Miles

Strength When Offshore Pinellas

Category 3



WEATHER DATA

Highest Wind Gust

101 MPH

Highest Rainfall Total

20.40"

Highest Storm Surge Value

1.3'

Confirmed Tornado
Touchdowns

0

LIFE SAFETY

9-1-1 Calls for Water Rescue

237

Confirmed Fatalities

2