

EMERGENCY RESPONSE SYSTEM: HURRICANES

Florida is one of the fastest-growing states in the nation. As communities and infrastructure expand, changing hurricane paths and increasing storm intensity will present new challenges for the state.



HURRICANE STRENGTH AND INFRASTRUCTURE

With its extensive coastline and densely populated coastal cities, Florida is particularly vulnerable to hurricanes. The growing unpredictability of storm frequency and intensity has amplified these risks. Hurricanes strain the state's emergency response systems, logistic networks, and transportation infrastructure, all of which serve as a critical lifeline during evacuation and recovery.

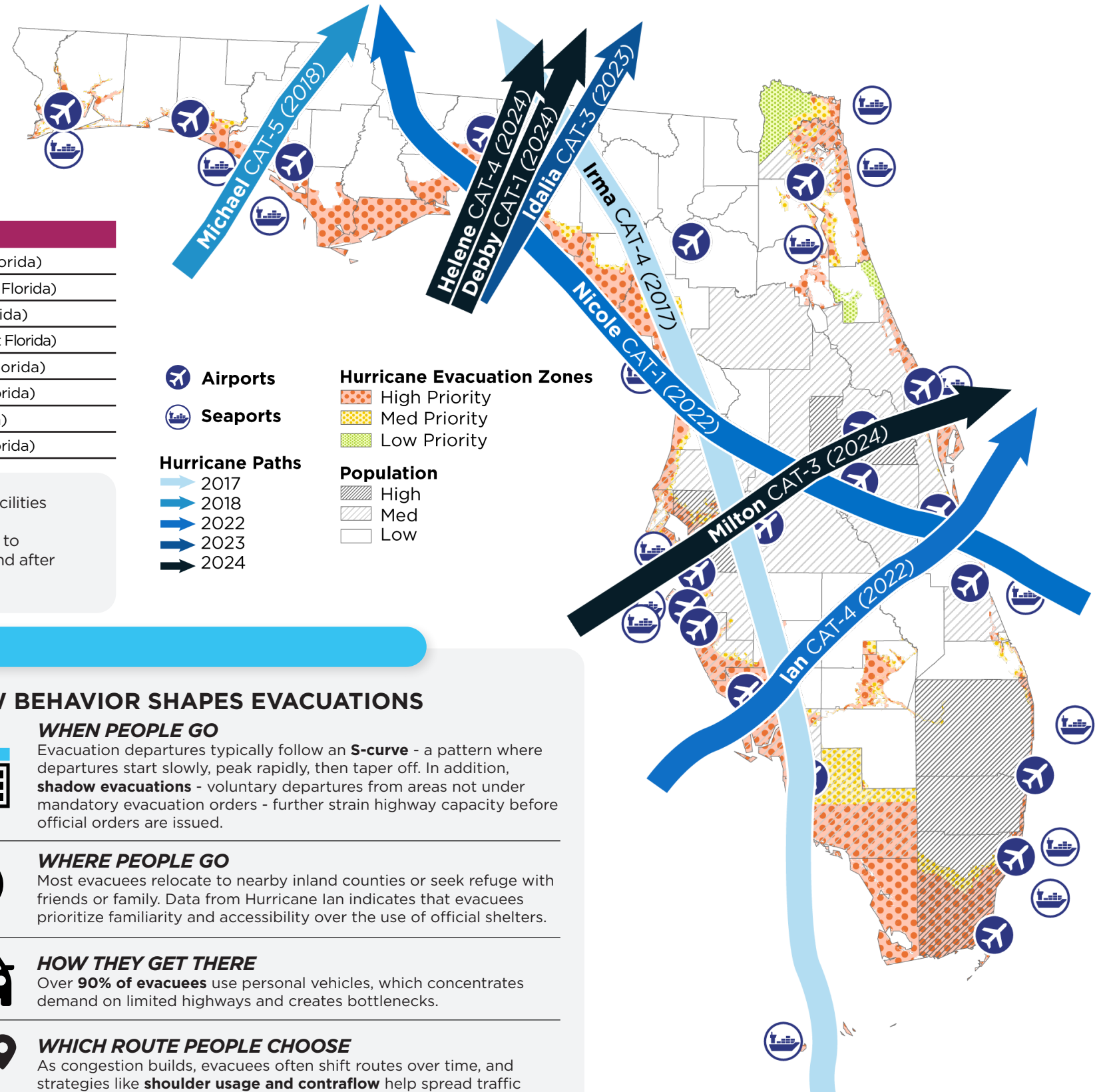
Beyond property damage, hurricanes disrupt tourism, fuel distribution, supply chains, employment, and tax revenues creating ripple effects that impact Florida's economy.

STORM	CATEGORY	LANDFALL DATE	INTENSITY (KNOTS)	LANDFALL LOCATION
IRMA	4	Sep 10, 2017	115	Cudjoe Key, Monroe County (Southwest Florida)
MICHAEL	5	Oct 10, 2018	140	West of Mexico Beach, Bay County (Northwest Florida)
IAN	4	Sep 28, 2022	130	Cayo Costa, Lee County (Southwest Florida)
NICOLE	1	Nov 10, 2022	60	North Hutchinson Island, Indian River County (East Florida)
IDALIA	3	Aug 30, 2023	100	Keaton Beach, Taylor County (Northwest Florida)
DEBBY	1	Aug 5, 2024	70	Steinhatchee, Taylor County (Northwest Florida)
HELENE	4	Sep 27, 2024	120	Perry, Taylor County (Northwest Florida)
MILTON	3	Oct 9, 2024	105	Siesta Key, Sarasota County (Southwest Florida)

Evacuation Zones: Designated geographic areas along coastal regions and the Everglades from which residents may be ordered to evacuate during emergencies.

Evacuation Routes: Main transportation corridors, primarily major interstates, designated for movement of populations away from hazard areas.

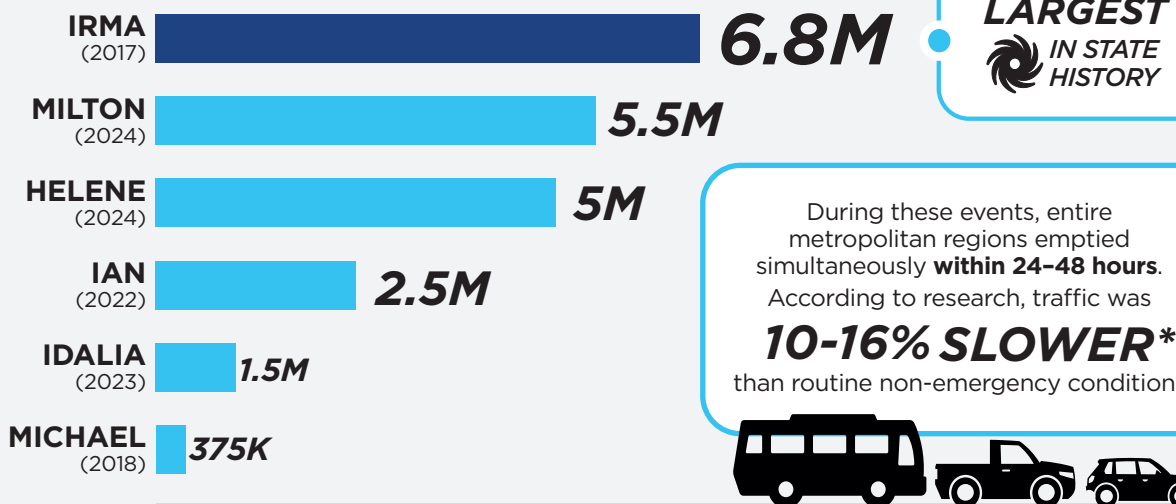
Emergency Relief Centers: Facilities established to provide shelter, supplies, and support services to affected populations during and after emergency events.



EVACUATION TRENDS AND HUMAN BEHAVIOR

MILLIONS ON THE MOVE

Recent hurricanes in Florida have prompted mass evacuations:



During these events, entire metropolitan regions emptied simultaneously **within 24-48 hours**. According to research, traffic was **10-16% SLOWER*** than routine non-emergency conditions.



*Note: Numbers subject to hurricane predictability/land cover.

HOW BEHAVIOR SHAPES EVACUATIONS

- WHEN PEOPLE GO**
 Evacuation departures typically follow an **S-curve** - a pattern where departures start slowly, peak rapidly, then taper off. In addition, **shadow evacuations** - voluntary departures from areas not under mandatory evacuation orders - further strain highway capacity before official orders are issued.
- WHERE PEOPLE GO**
 Most evacuees relocate to nearby inland counties or seek refuge with friends or family. Data from Hurricane Ian indicates that evacuees prioritize familiarity and accessibility over the use of official shelters.
- HOW THEY GET THERE**
 Over **90% of evacuees** use personal vehicles, which concentrates demand on limited highways and creates bottlenecks.
- WHICH ROUTE PEOPLE CHOOSE**
 As congestion builds, evacuees often shift routes over time, and strategies like **shoulder usage and contraflow** help spread traffic and reduce bottlenecks.

AGENCY RESPONSE & MITIGATION

Mitigation efforts happen at every level: the state sets policies and funding priorities, counties focus on risk assessments and infrastructure improvements, and cities address local vulnerabilities through zoning, emergency planning, and community engagement.



HURRICANE IMPACTS

BILLIONS IN ECONOMIC LOSSES



From 2017 to 2024, major hurricanes generated insured losses ranging from **\$10.5-\$57 BILLION PER EVENT**. Hurricane Ian (2022) and Hurricane Irma (2017) rank among the costliest.



Major hurricanes frequently result in **1-3+ MILLION POWER OUTAGES** statewide, with utilities restoring the majority of service within the first few days.

FUEL SHORTAGES

NEARLY 90% of Florida's refined petroleum products arrive by ship from Gulf Coast refineries, with an average **414,000 barrels per day**.

During Hurricane Milton, fuel station outages peaked at **30% STATEWIDE** with 50% of Tampa-Sarasota stations running dry. Even though Port Tampa Bay **reopened within three days** after Milton, full fuel supply recovery took a week.

CLOSED AIRPORTS

Port Canaveral and Sarasota-Bradenton International Airport reopened within days of Hurricane Milton.

Note: recovery timelines vary based on infrastructure damage and weather conditions.



[Sources]

MOBILIZING THOUSANDS

DISASTER RESPONSE FORCES

Post-storm recovery commonly includes clearing tens of thousands of cubic yards of debris and reopening hundreds to thousands of miles of roads to restore mobility and public access.

Florida often deploys **20,000-45,000** emergency and utility crews after major storms, including out-of-state mutual-aid teams.

EMERGENCY FUEL OPERATIONS

Florida pre-stages large fuel supplies for major hurricanes—often over **400,000 gallons of diesel** and **150,000 gallons of gasoline**.

Florida and FEMA have moved **700,000 GALLONS OF DIESEL & 600,000+ GALLONS OF GAS** during recent storms, including free public fueling sites.

THE FASTEST RECOVERY IN FLORIDA HISTORY

RAPID HURRICANE RESPONSE: DEBBY, HELENE, & MILTON

31,000 MILES OF ROAD CLEARED

PRE-STAGED EMERGENCY CREWS CLEARED I-10 WITHIN 6 HOURS OF HURRICANE HELENE'S ARRIVAL

77,000 CUBIC YARDS OF SAND REMOVED

REBUILDING THE ECONOMIC ENGINE

INVESTMENTS THAT PAY FOR THEMSELVES

Every state dollar invested in port infrastructure returns over **\$7 DOLLARS** IN STATE & LOCAL TAXES, making recovery at seaports a key investment in Florida's robust economy.

Florida prioritizes recovery efforts ensuring that investments made today strengthen communities and deliver lasting returns.

\$253 MILLION HUD grant to Manatee County (largest grant in department history) as \$1.2 billion in recovery requests submitted within 3 weeks of HUD grant announcement.

\$1.7+ BILLION FEMA has provided more than \$1.7 billion in grants to survivors of 2024 storms for rental assistance, home repair, and other disaster-related needs.

\$1.4+ BILLION Small Business Administration disaster loans approved \$1.4 billion in total, with \$460+ million to businesses and \$1+ billion to homeowners and renters.

\$7.6+ BILLION National Flood Insurance Program claims paid to policyholders.