

# Fort Lauderdale Extreme Rainfall – April 2023

Convective, stationary storms with moist inflow produced over 21 inches (533mm) in 12 hours around Broward County, Florida, according to data from the National Weather Service. Precipitable water was high, and extended wet weather resulted in saturated antecedent conditions for a favorable meteorological environment.

The area around the international airport, and port received the greatest falls with two separate periods of over 4 inches (100mm) in one hour. Standing water varied between 1-2 feet (0.31 to 0.62 metres). The highest intensities came close to the USA record for 10 minutes with 38mm. The event was estimated at having a 1:1000 annual chance of occurrence.

The international airport was closed for 41 hours and passengers remained on site during this period. 1119 flights were cancelled.

Port Everglades, that manages supplies gasoline for 40% of Florida shut down and within 2 days much of Southern Florida was short of fuel. This took over a week to resolve after a release of emergency fuel by the Federal Govt. Local and Statewide emergency declarations occurred.

A detailed spatial and temporal pattern of the storm is available for modelling along with an economic assessment and mock exercise based on this scenario.



Source: US Coast Guard

## Resources available

- Rainfall data – official
- Media coverage
- Economic impact assessment
- Mock exercise

## Useful to

- Logistics
- Insurance
- Government
- Dam owners
- Critical infrastructure
- Disaster planners
- Boards

Do supply chains depend on single points of failure? Is that within our risk appetite? What are the alternatives?

What assumptions are there in recovery plans that maybe problematic due to the event?

Have we included a short notice, extreme situation in continuity/recovery plans?

## Governance Questions

What natural hazard scenarios may occur that could impact reputation?

Is there a common understanding of terminology for natural hazards?

## Learnings Checklist

Category	Event	Learning/prevention activity	Question?
Operational risk and incident response planning	Closure of Fort Lauderdale Int. Airport for 41 hours. (Weather Channel). Flight disruption, infrastructure impacts and stranded passengers within the flooded airport. Flash flooding was forecast.	Major impacts can occur over stationary thunderstorms in the right meteorological conditions.	Are systems and processes ready should situation develop with little notice?
Operational risk and stakeholder risk	Flash flooding was well forecast by the National Weather Service.	Flash flooding ranges from driveway runoff to major suburb inundation. It's unlikely there will be much warning of these situations.	What does flash flooding mean to stakeholders and what is assumed internally?
Operational risk	Flood impacts at Port Everglades disrupted fuel imports. Panic buying resulted post rain event with recovery taking a week (NY Times)	Planning can consider lack of critical goods and services from single distribution points of failure.	What locations are relied upon for business logistics and supply? Are these considered in response plans?
Response planning	Intense rainfall with significant flood depth on flat terrain. 279 homes flooded with major damage (CBS)	Drainage systems are unlikely to function well in flat terrain with intense rainfall. This may surprise emergency managers and the public in such extreme situations.	Should intense rainfall be considered as a separate hazard for flat terrain?
Recovery planning	Large number of abandoned vehicles across Broward County (CBS). Clearance of abandoned vehicles became a focus for immediate response to assist in recovery (Mayor).	Reliance on roads for recovery plans that maybe blocked or impacted.	Are there inherent assumptions in plans around access?