The FDOT is a Decentralized Organization Consisting of:
1. The Central Office
2. Seven Districts
3. The Turnpike

The Central Office is Responsible for Setting Policy and Procedure

The District Offices are Responsible for Operations
The FDOT Operations Ultimate Goal Consist of:
90% Work Performed under Contract
10% Work Performed by State
A Partial List of Hurricanes Impacting Florida

Camille Andrew Bonnie Charlie Frances Ivan Jeanne Katrina Irma
Every Hurricane Manifests Unique Attributes Creating Its Own “Personality”

These Attributes Create a “Stress Test” for the Affected Facilities
Camille
Andrew
Bonnie
Charlie
Frances
Ivan
Jeanne
Katrina
Irma

Better Building Codes

25,000+ Homes Destroyed
100,000+ Homes Damaged
<table>
<thead>
<tr>
<th>Camille</th>
<th>Andrew</th>
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<tbody>
<tr>
<td>Bonnie</td>
<td>Charlie</td>
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<td>Frances</td>
<td>Ivan</td>
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<td>Jeanne</td>
<td>Katrina</td>
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<tr>
<td>Irma</td>
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**Sign Design**
Camille
Andrew
Bonnie
Charlie
Frances
Ivan
Jeanne
Katrina
Irma

Wave Vulnerability
Hurricane IVAN Wave Vulnerability Phenomena

Bridge Damage due to Wave Action:

I-10 Bridge over Escambia Bay was severely damaged during Ivan. Bathymetric Research and Structural Analyses to determine cause. Factors involved in phenomena are bay bathymetry, storm surge (storm direction, duration, fetch, and tides), current, restrictions, etc. Cause for bridge damage: storm surge, uplift and horizontal force. Existing FDOT Bridges cannot be strengthened to resist wave action.
Hurricane IVAN Wave Vulnerability Phenomena

Actions Moving Forward:

**New Bridges:** Perform site specific bathymetric study
Design new bridge superstructures to clear storm surge or to resist wave action forces

**Existing Bridges:** Screen to determine which bridges are vulnerable
Develop ERPs to plan for damage or loss of existing bridges
ERPs include: detour plans, emergency contacts, utility disruption, boat landing/ferry slip and airport locations, resource availability, etc.
Organizational Flexibility

Camille
Andrew
Bonnie
Charlie
Frances
Ivan
Jeanne
Katrina
Irma
Hurricane Irma’s Track across Florida
Hurricane IRMA

Issues Encountered:

Logistics during Storm Event:

CO Essential Personnel deploy to SEOC

CO Maintenance Structures coordinates deployment of in-house and consultant bridge assessment (cursory inspection) crews

Cut and Toss Crews clear I-4, I-75 and I-595 for 1200 FPL Trucks

Mission Statements are developed and coordinated thru FDOT EMO

Interagency cooperation at SEOC include: FDEM, FDOT, FHP, FEMA, FHWA, Homeland Security, National Guard, Coast Guard, Navy, etc.
Florida’s State Emergency Operations Center (SEOC) in Tallahassee
Florida’s State Emergency Operations Center (SEOC) in Tallahassee
Tampa Bay during Irma
Great job today by Deputies Mizner and Hart as they helped rescue two Manatees that were stranded in receding water.
Hurricane IRMA

Problem Areas:

Keys:

No immediate communication available in Keys after the storm passed.

Initial plan was to use military transports to fly fully-equipped self-sufficient bridge inspection crews to Key West and work east.

Other bridge inspection crews would work from east to west.

CO Structures Maintenance was able to tag on to a Navy Predator reconnaissance mission to survey the Keys roadway and bridges.

East-west bridge inspection crews completed assessment within 1 day.
Predator Reconnaissance Drone
National Guard helping out in the Keys
Hurricane IRMA

Problem Areas due to Flooding:

Northeast Florida:

Northeast Florida, particularly City of Jacksonville and Alachua County, sustained little wind damage, but had significant flooding.

The Santa Fe River in Alachua County nearly overtopped I-75.

Nearly all bridges or bridge embankments on the detour routes around the I-75 bridge over the Santa Fe River were overtopped.

If the I-75 bridge over the Santa Fe River had been overtopped, the detour route would have been I-95 on the east side of the state.
Flooding in Jacksonville
I-75 Bridge over the Santa Fe River during Irma
Alachua County Local Government Bridge Collapse
Hurricane IRMA Here, There, and Everywhere

What Worked Well:

Statewide Emergency H-Contracts were a Good Resource

GIS Application for Updating Work Status
(worked well once people got used to it)

All Districts Cooperated in releasing Contract Crews to work in Impacted Area(s)
Pre-Storm Lessons

Create a stand-alone H-Contract for removal of Ancillary Structures

Pre-deployment of Inspection Crews too early may be problematic

Each Inspection Crew should have a Smart Phone

Cell Service may be unavailable, so have alternative Communication

Ensure the Inspection Consultants or Debris Removal Crews are not “double booked” in Multiple Districts
Pre-Storm Lessons

Don’t use the Emergency Event to “roll out” new technology, without prior training

Conduct a Pre-Season Meeting with Staff to relearn Response Plan

Keep Overweight Permit Authorization Letters up to date
During and Immediately After the Event

Expect In-House Crews to reach the sites faster than Consultants

Satellite Phones will probably be necessary if cell service is lost, which will require prior training to avoid field delays

Good communication with Law Enforcement is key to expediting the reopening of bridges

Have a clear Plan for prioritizing Bridge Inspections

Be aware of what Bridges will not need an Inspection Crew, due to minimum impact and/or minimum risk from the storm
QUESTION

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