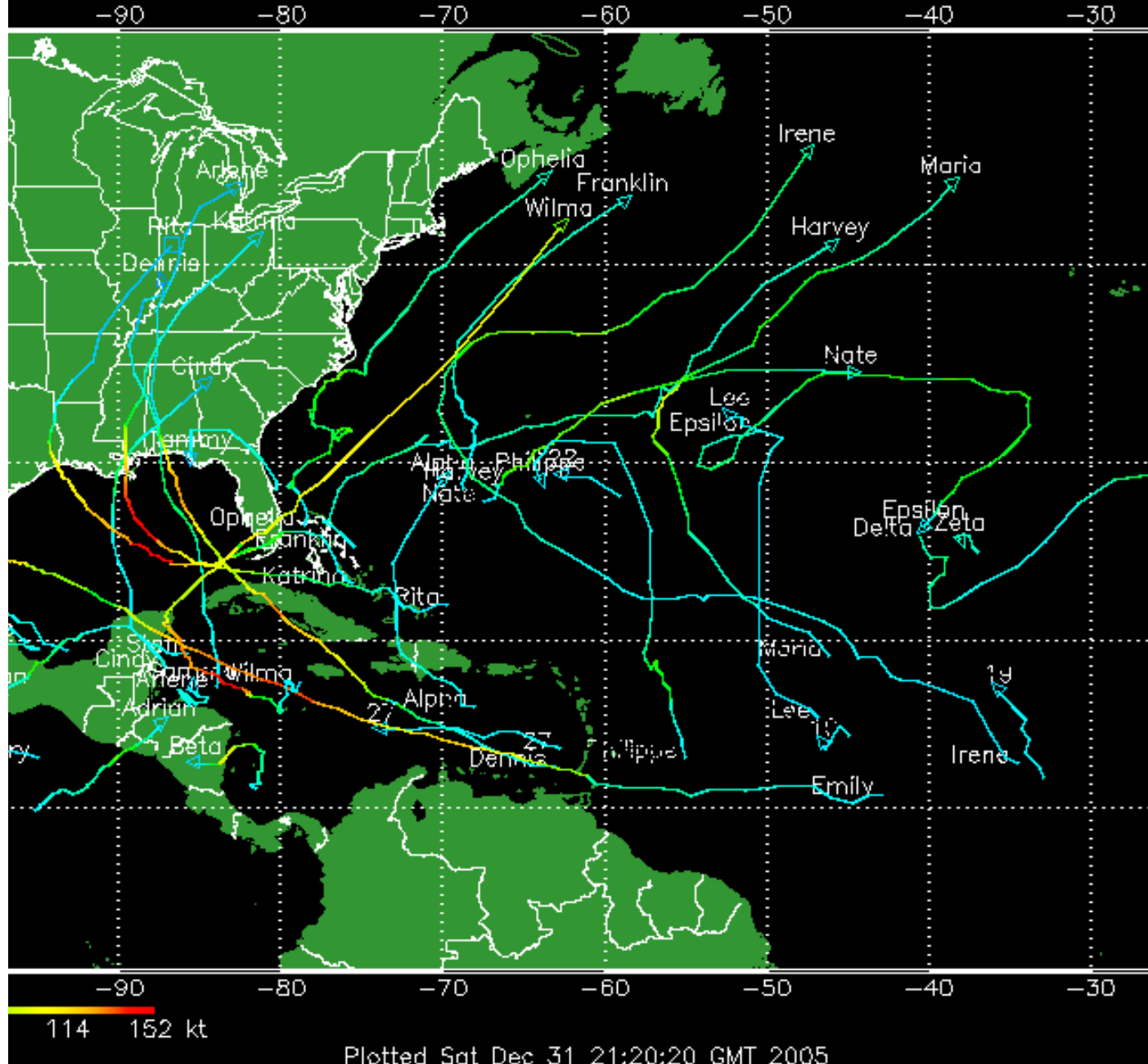


ALDOT OPERATIONS AND EXTREME WEATHER EVENTS

George Conner
Alabama DOT

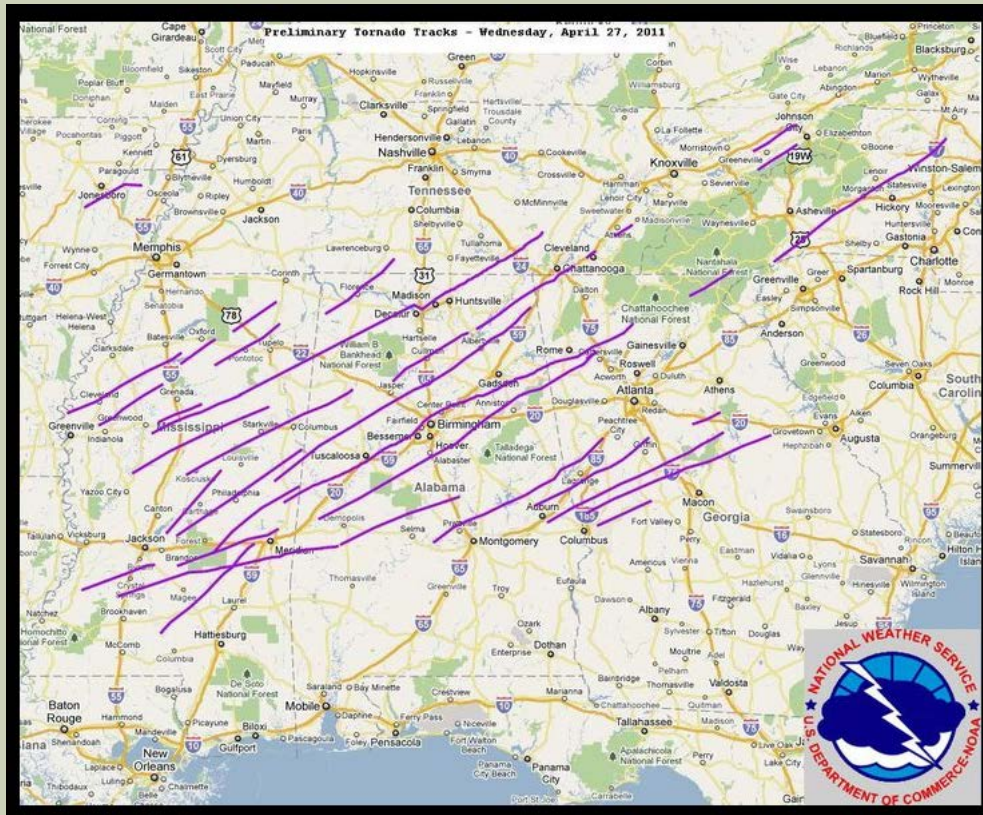
EXTREME WEATHER EVENTS AFFECTING ALABAMA

Atlantic Tropical Cyclones 2005
Details at <http://www.solar.ifa.hawaii.edu/Tropical/tropical.html>



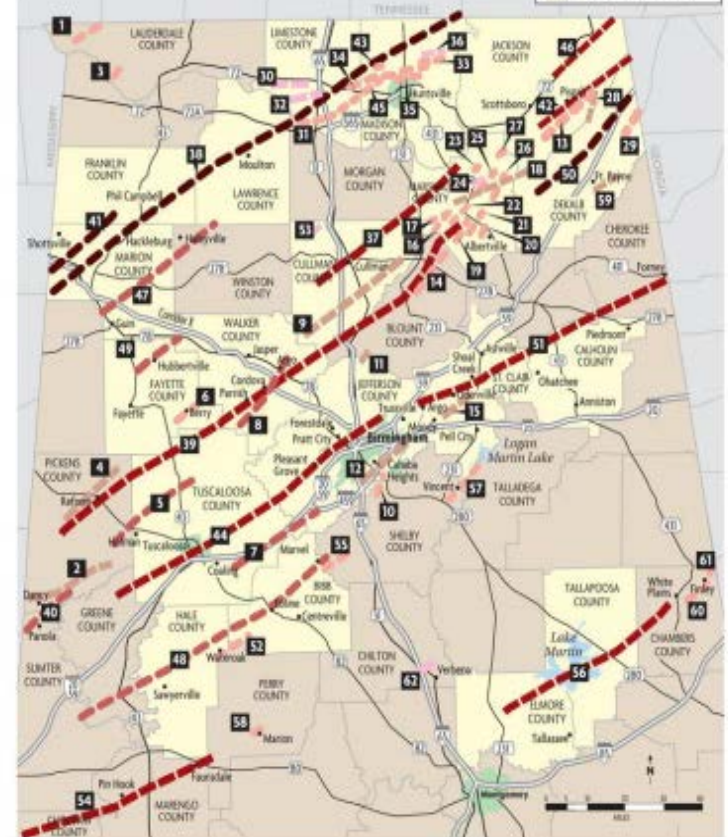
HURRICANES

TORNADOS



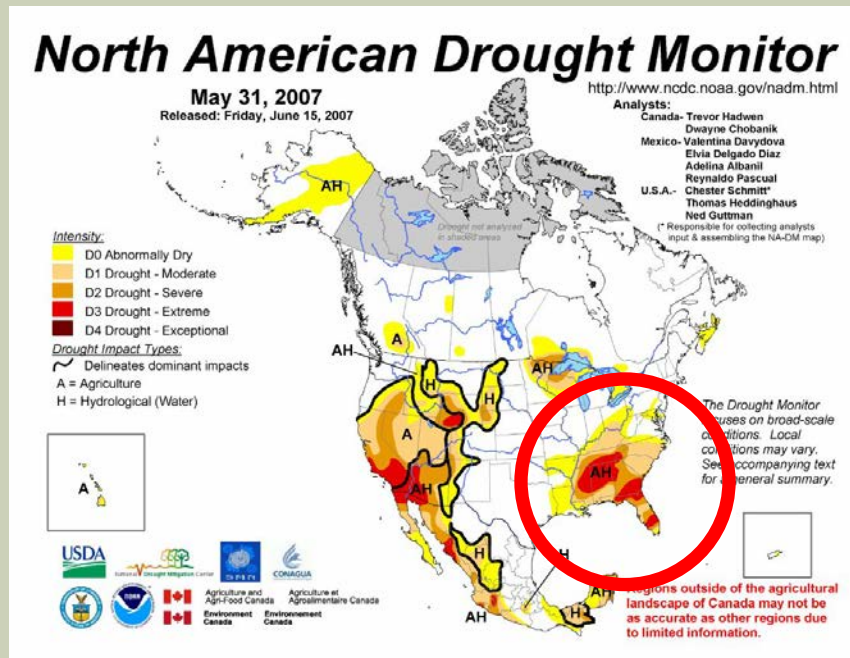
Final National
Weather Service
field report for
April 27, 2011

TRACKING THE TORNADOES' PATHS

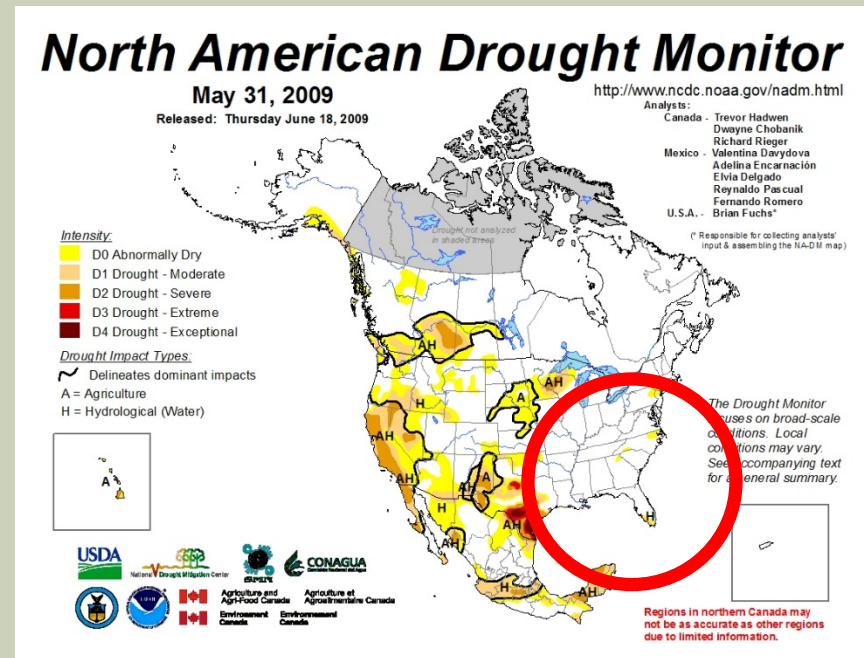


SIGNIFICANT WET AND DRY CYCLES

2007

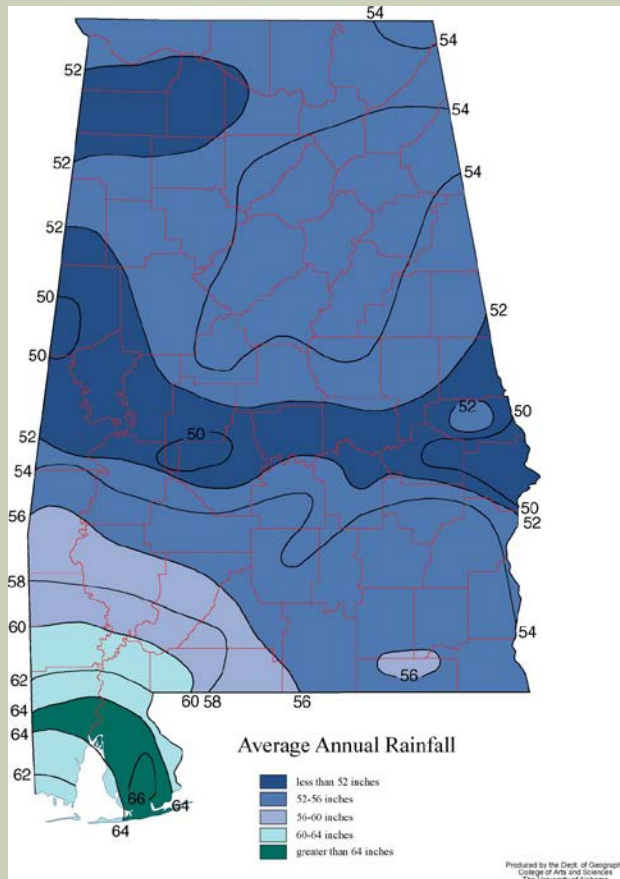


2009

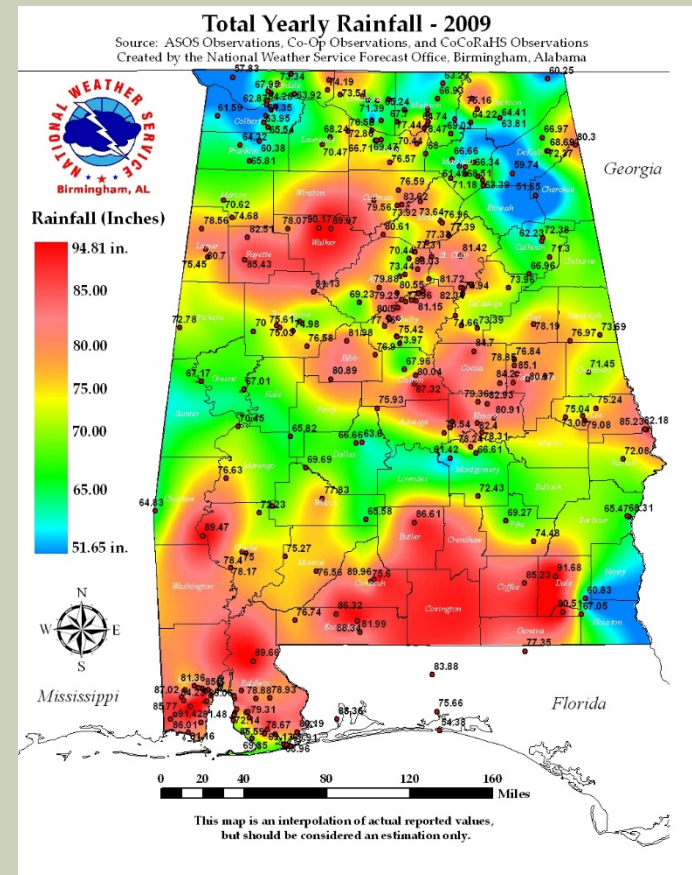


SIGNIFICANT WET AND DRY CYCLES

Average Annual Rainfall

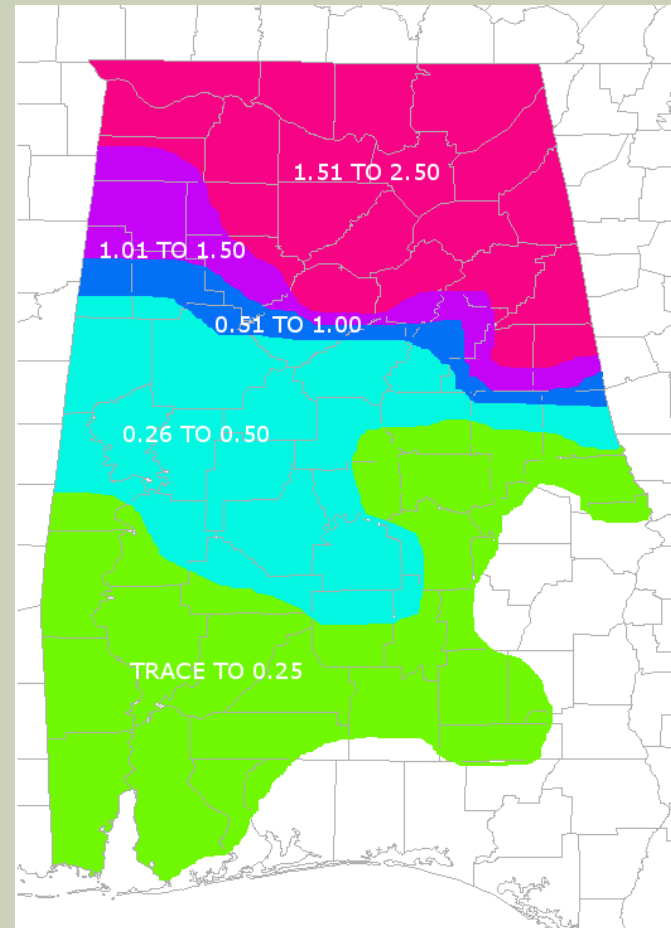


2009 Rainfall



SNOW AND ICE

- Small events compared to other states
- Huge impact within the state
- Tend to be icy events more than snow



IMPACT OF EXTREME WEATHER EVENTS ON ALDOT O&M

IMPACTS TO ALDOT O&M

- Pace of events has increased
- Severity of events has increased
- Public expectations have increased greatly
- Costs associated with events have risen
 - Impact of recovery costs on maintenance budgets continues to increase
- Impact of recovery effort on ability to perform regular operations has increased
 - Especially related to compliance with debris removal requirements
- Has forced Division and District personnel to gain experience and develop expertise in administering recovery efforts
- Impacted infrastructure directly impacts ALDOT O&M



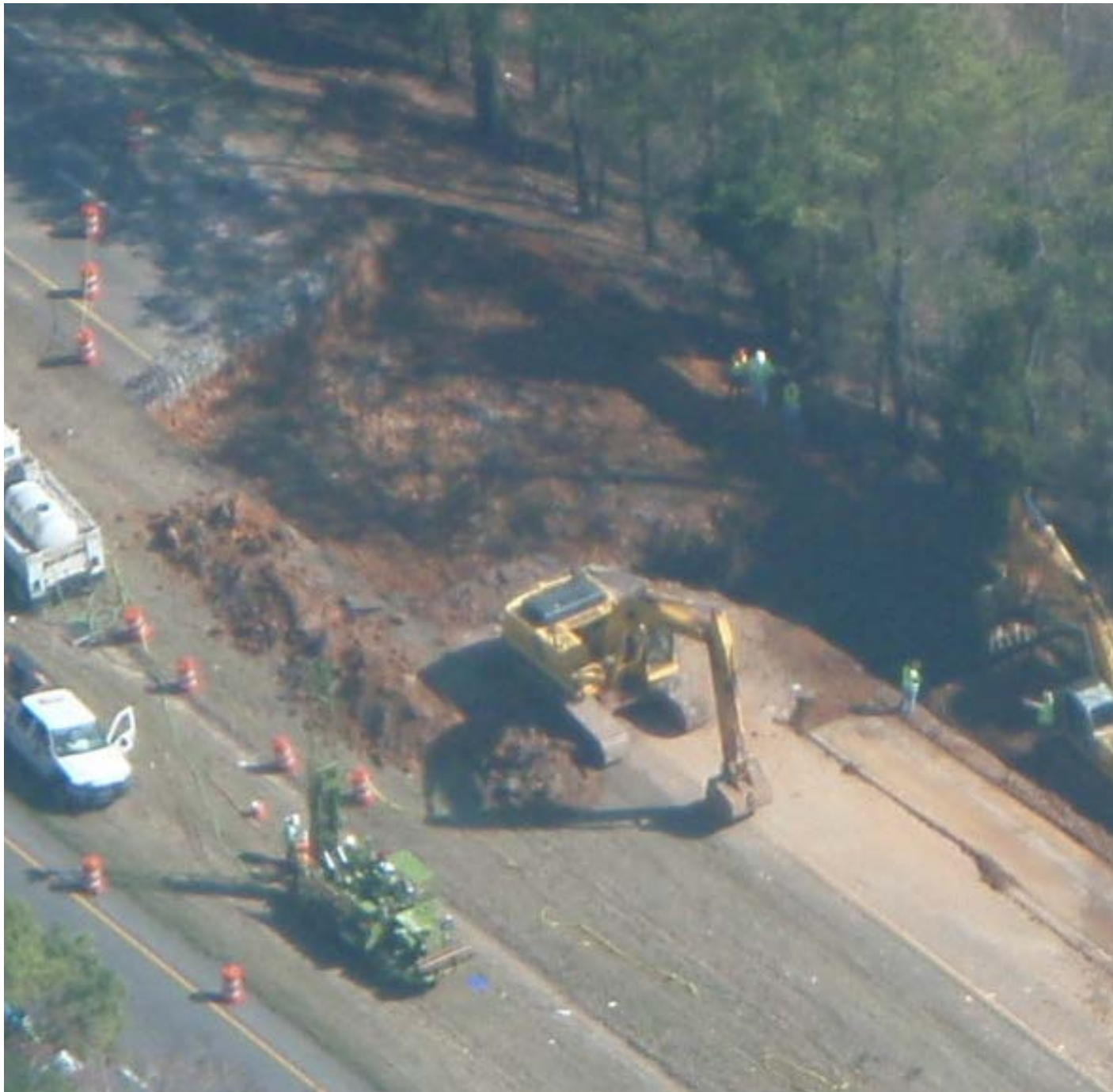
ROADWAY FAILURES

Hurricane Ivan



SINKHOLES

I-65 in Morgan
County



SINKHOLES

I-65 in Morgan
County



SLOPE FAILURES

Mobile County

ADJUSTMENTS TO O&M DUE TO EXTREME WEATHER

CHANGES TO ALDOT O&M

- Emergency Management has become a full time job
 - Was an additional duty for years
 - Now assigned to a full time staff member
 - Assistant Bureau Chief level – same as other maintenance functional areas
- Improved and strengthened relationship with State Emergency Management Agency
- Greatly increased need for recurring training in Divisions and Districts
- Focus on specific “smaller” solutions
 - Portable Highway Advisory Radios (HARs)
 - Coordination across and between Divisions
 - Less specialized equipment

O&M LESSONS LEARNED

“DESIGN” VERSUS “RESPONSE”

- Designing a transportation system to cover all extreme events at every location where one may occur falls between:
 - Impractical and wildly expensive
 - Impossible
- “Design vs. Response” decision is risk-based
 - Quantitative, formal process is sensitive to assumptions.
 - Qualitative, informal process is influenced by past response performance.
 - Alabama performed formal risk-based analysis with TSA. Only one asset was identified as a candidate for design-based mitigation of risk.
- DOTs tend to perform well in response-mode
 - Make use of that capability



**DON'T BE
SURPRISED
BY
ANYTHING**

Hurricane
Katrina

Floating oil
platform
wedged under
Cochrane
Bridge, Mobile
County

ALDOT O&M BEST PRACTICES

ALDOT O&M BEST PRACTICES

- Improved Program Management of Recovery Efforts
 - ER
 - FEMA
 - ALDOT Internal processes for managing events and post-event audits
- Full time Assistant Bureau Chief over Emergency Management
- Increased focus on continuance of operations
- Refined philosophy regarding response to an event versus designing for an event
- Revised practices for removing trees from ROW
- Use of expedited procurement practices (Code of Alabama)
 - Does not require Governor to issue a State of Emergency (SOE)

ALDOT O&M BEST PRACTICES

- Dissemination of Road Condition information
 - Everyday events
 - Large scale events (call center)
- Improved systems and practices for moving OS/OW traffic before, during and after an event
 - Reduced need for waivers and proclamations
- Better communication within ALDOT during an event
 - Video Conferences
 - Phone bridges
- Use of portable video surveillance equipment (EarthCam)



DEVELOPED CONTRA- FLOW PLAN

Not as helpful
as first
expected

Very difficult to
execute – must
exercise

Prepare to use
it, work like
crazy to avoid
it

QUESTIONS?