

Homeland Security S&T Summit (South Central)

Arkansas-Louisiana-New Mexico-Oklahoma-Texas

Topic: “The Role of S&T in Natural Disasters”

Title: **How Tech Tools Helped Hurricane Ike Response:
A State Perspective**

Speaker: **David S. Martin**
Project Coordinator
Texas Task Force 1

Date: February 9, 2010



Texas Task Force 1
TEEX – Urban Search & Rescue
Texas A&M University System

How Tech Tools Helped Hurricane Ike Response:



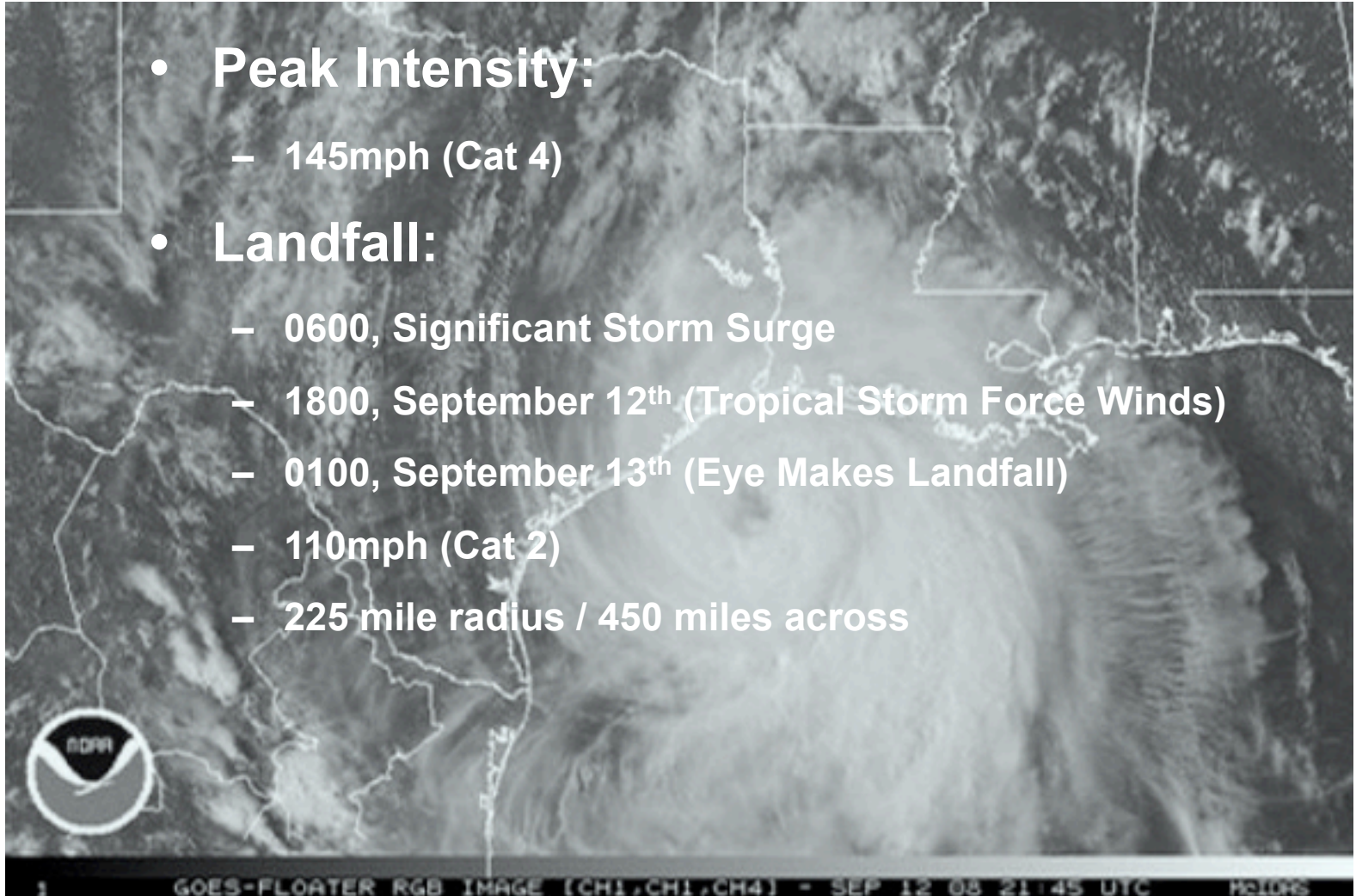
Texas Task Force 1

- **70 member Type 1 US&R Task Force Completely Self-Sufficient**
- **Member of FEMA US&R System**
- **State of Texas Search & Rescue Asset**
- ***Home of Disaster City Training Facility***
- **TEEX US&R trains technical rescue teams from around the world.**
- **Beta testing of emerging technologies**



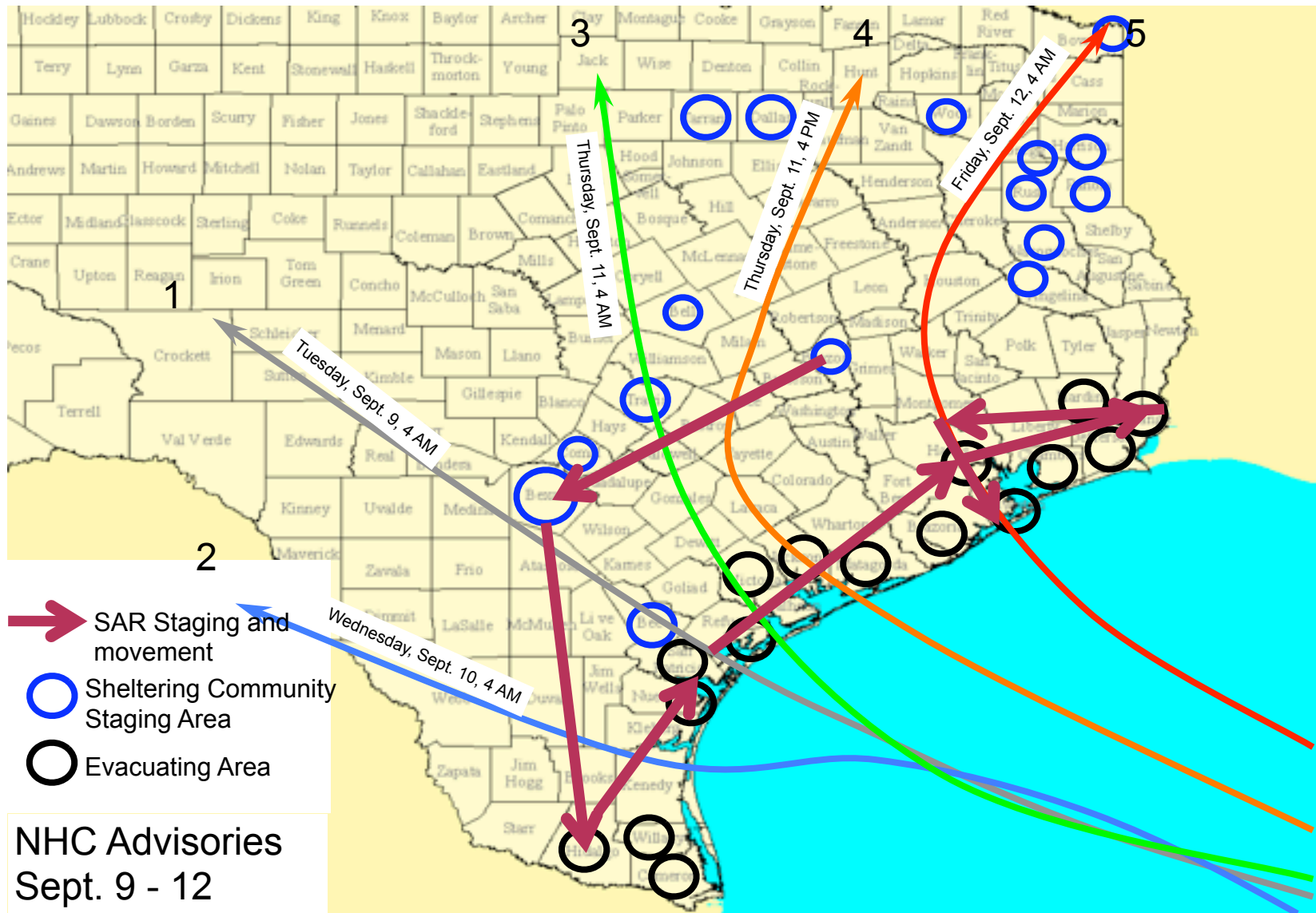
Ike

- **Peak Intensity:**
 - 145mph (Cat 4)
- **Landfall:**
 - 0600, Significant Storm Surge
 - 1800, September 12th (Tropical Storm Force Winds)
 - 0100, September 13th (Eye Makes Landfall)
 - 110mph (Cat 2)
 - 225 mile radius / 450 miles across

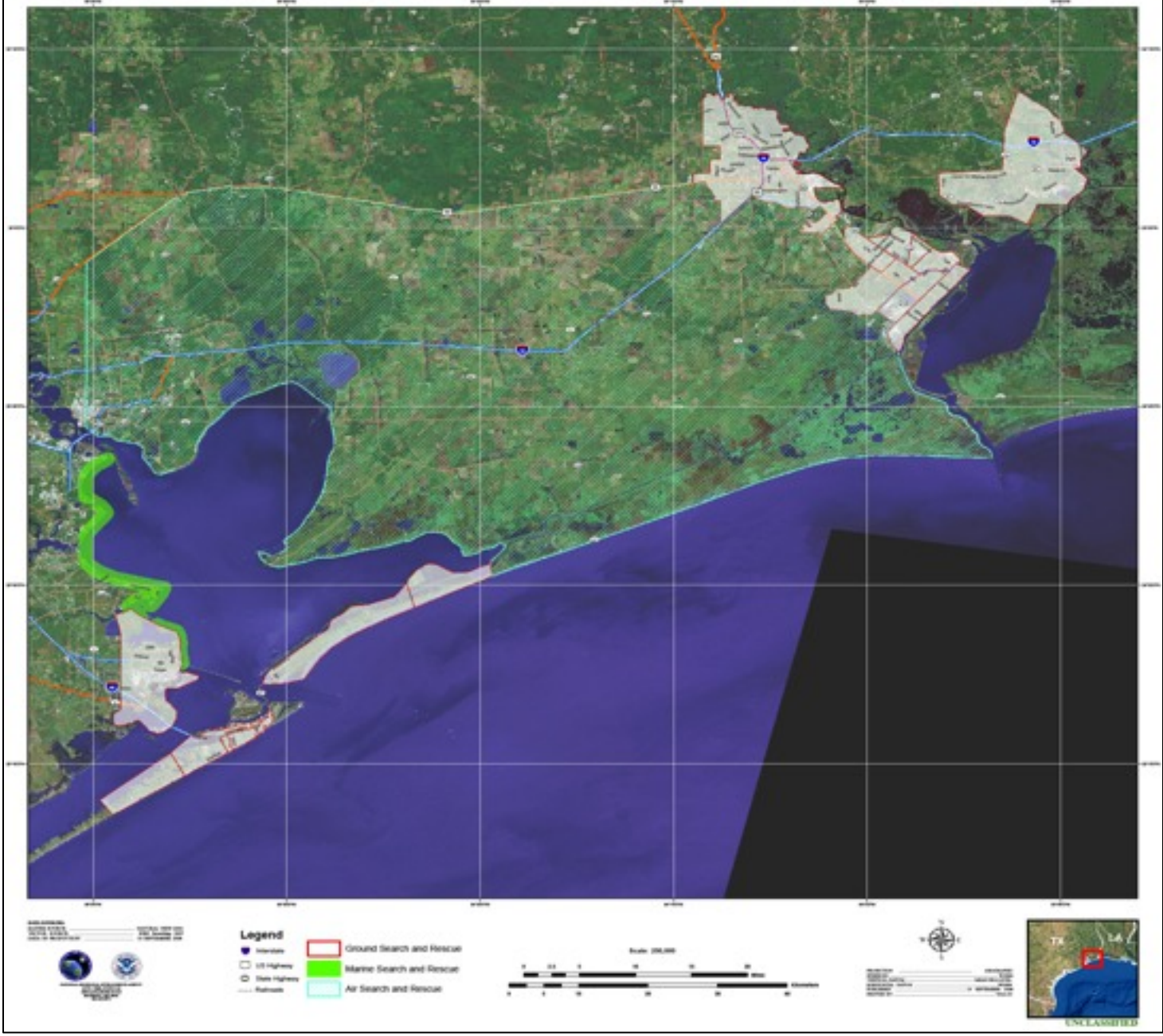


TRAIN • SERVE • RESPOND

Chasing Ike



HURRICANE IKE US&R AREA OF OPERATIONS



Bolivar Peninsula

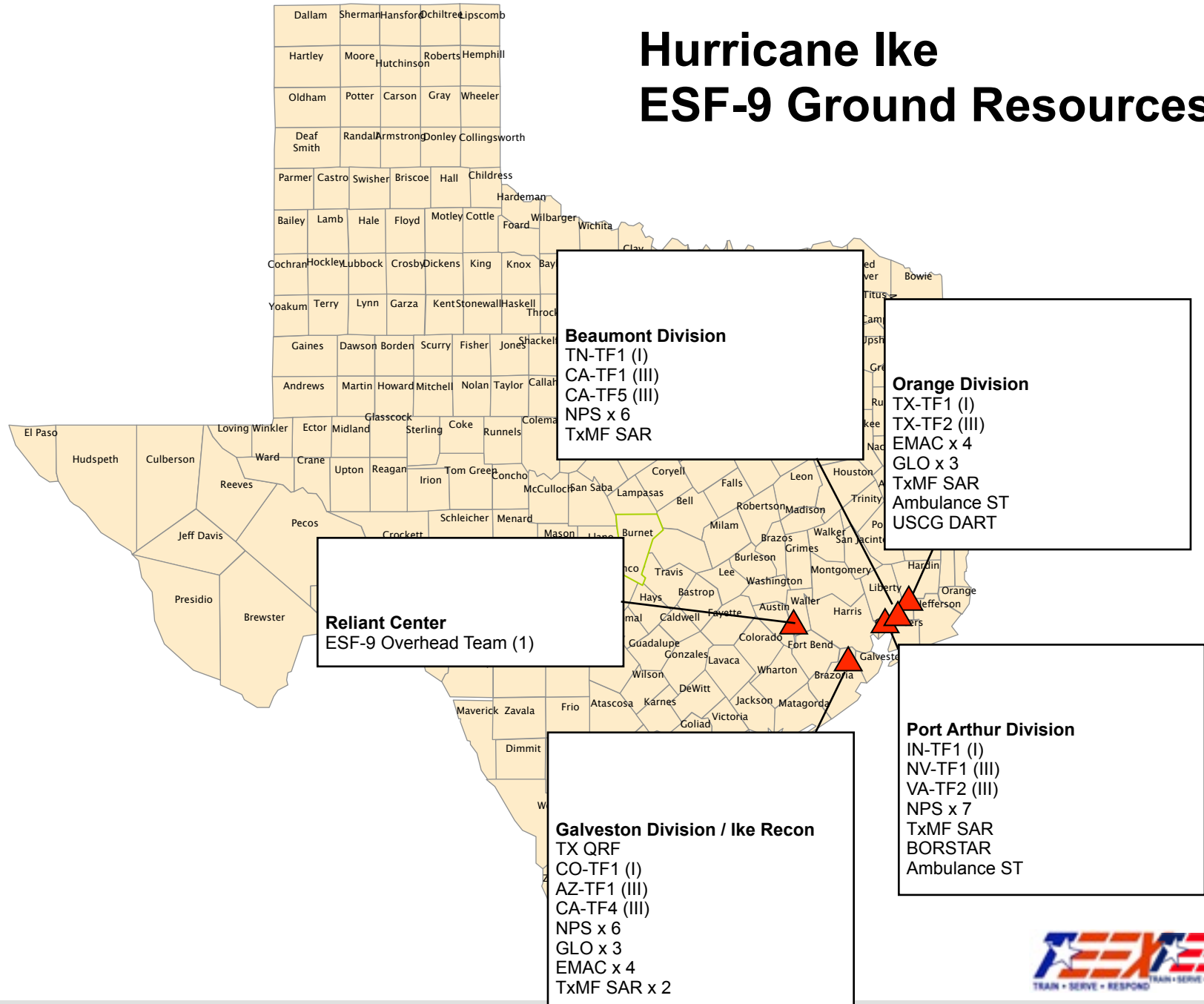
Storm Surge 17hrs. Before Landfall



Bolivar Peninsula: Crystal Beach Before & After



Hurricane Ike ESF-9 Ground Resources



The Communications Challenge

- 11 Urban Search & Rescue Teams
- 100+ SAR aircraft
- 300+ watercraft
- 1300+ personnel
- 5000 square miles
- Cellular and RF Communications Infrastructure Destroyed



Comms Technology Solutions

- MSAT Radio/Phones
- “Communicators”
 - UHF/VHF
 - MSAT
 - Tactical Switch
- Tactical Communication Units
 - Pneumatic telescoping masts
 - Satellite Data Capability
 - WiFi



The Challenge of Search Navigation



Bolivar Peninsula &
Galveston Island



Search Navigation Challenges

- Response routes impassable
- Location landmarks missing
- Coordination with air assets.
- Documentation of search.



Search Technologies Utilized

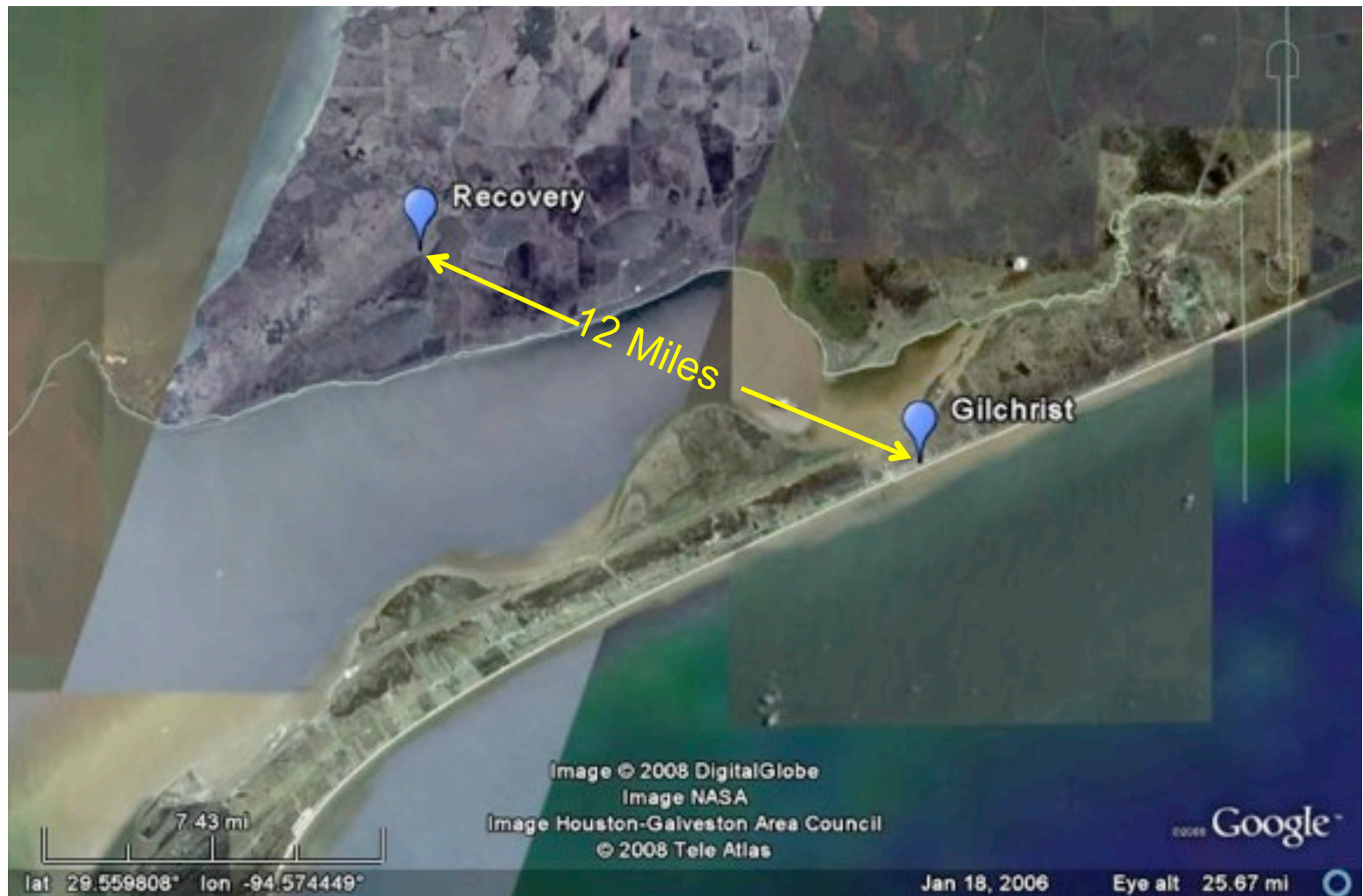
- GPS
 - Routes to search areas
 - Coordinates for air assets
 - Documentation of search
- Satellite Imagery
 - Provides storm surge and flood zone intel
 - Useful in planning of search ops.
- Mapping Technology
 - Interface with GPS
- Search Cameras
- Acoustic Detection Devices



Search & Rescue



Search & Rescue



Ike Stats

- Total SAR Contacts: **9,338**
- Rescues/Evacuation: **3,540**
 - Air: **601**
 - Ground/Water: **2939**

Note: 634 of the total were pre-landfall

- Assisted without evacuation: **5,798**
- Total Air Sorties: **665**
- Property Damage: **\$25 Billion**
- Deaths: Approx. **75 (in Texas)**



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Title: How Tech Tools Helped Hurricane Ike Response:

A State Perspective

Summary: Communications , GPS and mapping technologies played a crucial role in expediting the search & rescue response for Hurricane Ike.

Take-Aways:

- Communications and GPS technologies made rapid response and effective search possible in Hurricane Ike.
- Emerging US&R technologies focused on technical search tools.