



Hurricanes Katrina & Rita August 29 & Sept. 24, 2005

Transportation Response

Cedric S. Grant, Deputy Secretary
Louisiana Department of Transportation
and Development

cedricsgrant@dotd.la.gov



Topics of Discussion

- Destruction
- Pre-Storm Responsibilities
- Post Storm Responsibilities
- Effects on the Economy
- Lessons Learned

Overall Destruction



**255,000 homes
severely destroyed**

**81,000
businesses
impacted**

**1,800
deaths**

**650,000 residents
displaced**

Transportation Related Destruction

1.3 million
people
evacuated

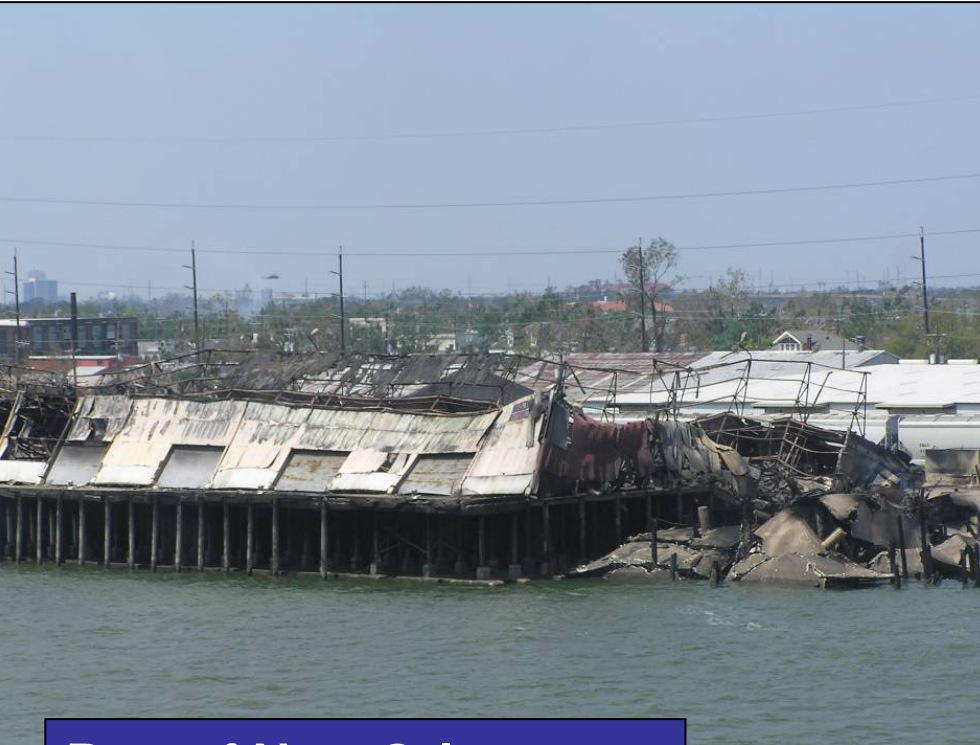
3.6 million cubic
yards of debris
removed

2,000 miles of
roads submerged

\$1.3 Billion in
transportation
damages

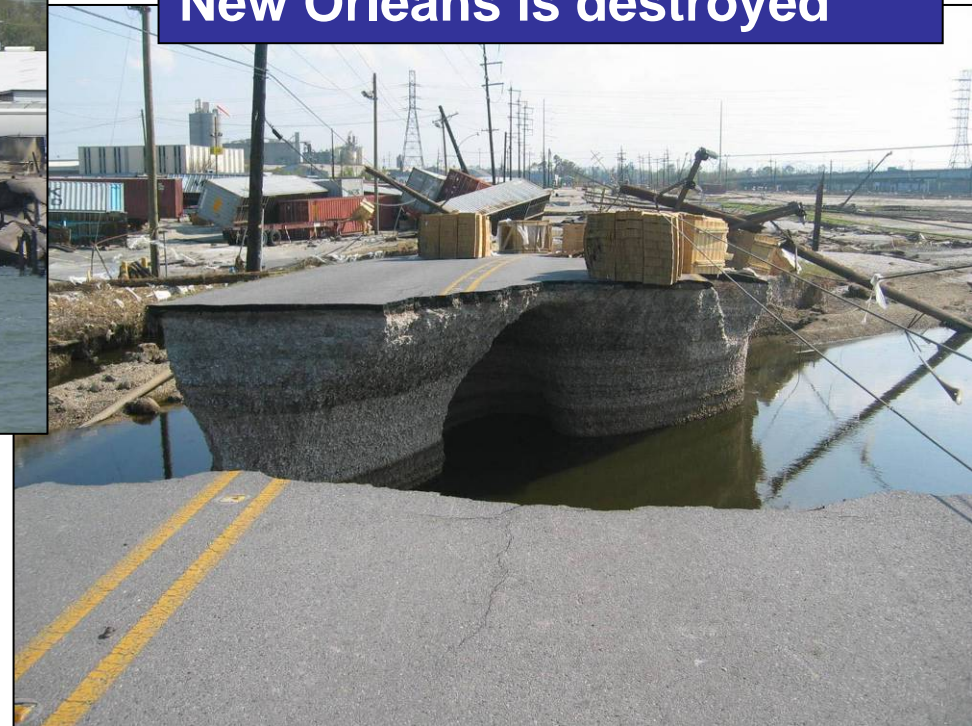
169 miles of levees
damaged

Katrina moves across Southeastern Louisiana



Port of New Orleans docks are flattened

Almonaster Boulevard in New Orleans is destroyed



Storm surge floods coastline & a major energy corridor

Fishing boats are tossed onto LA 23



LA 1, the only route out of lower Lafourche Parish, is submerged as Katrina churns inland.

New Orleans freeways under water



June 16, 2001

Hurricane Rita

Holly Beach Before



September 28, 2005

And After



A Perspective on Transportation Responsibilities

Pre-Storm Responsibilities

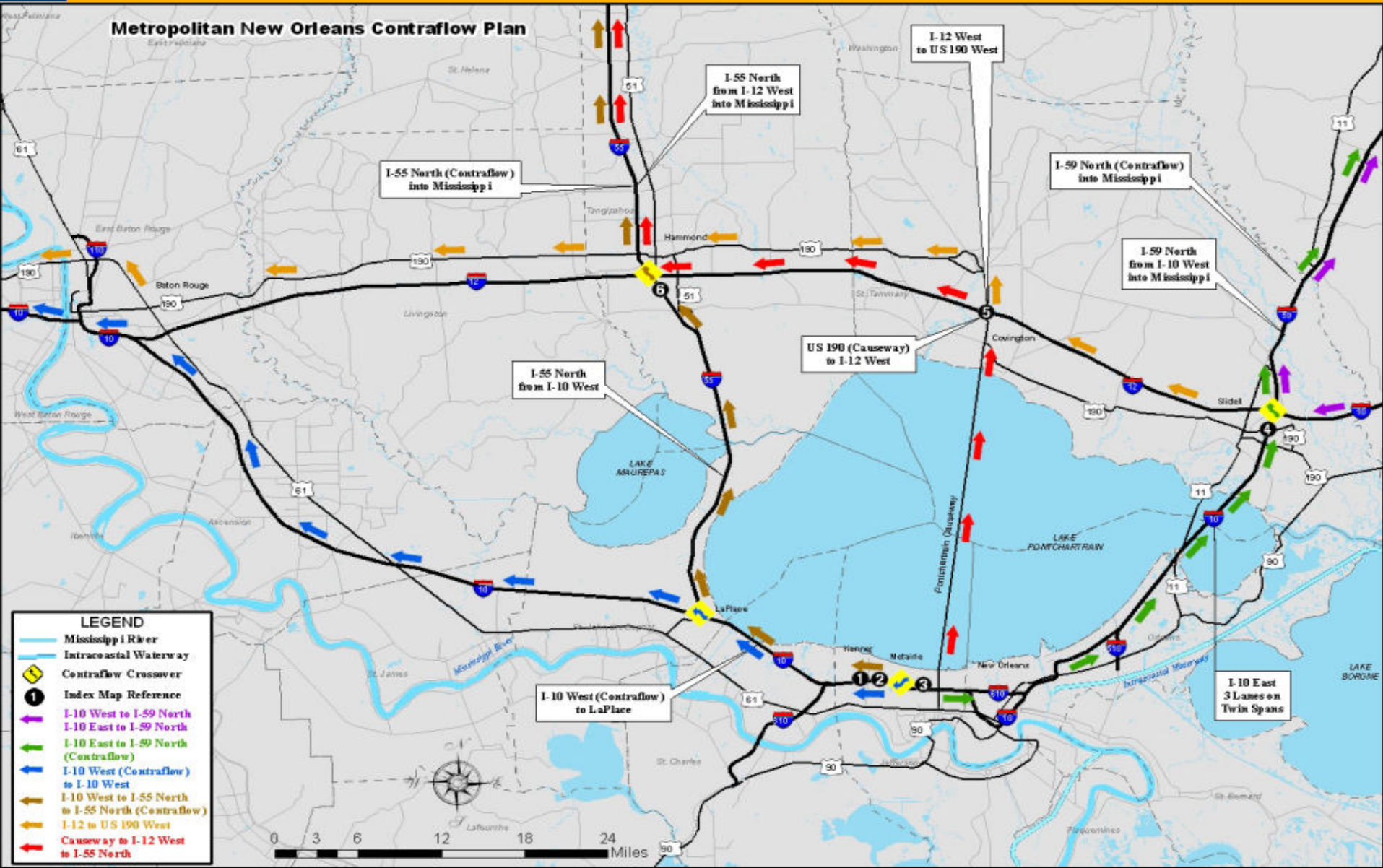
- Activate Emergency Operations
- Evacuation (Contraflow - reversed lane flow)
- Traffic Management
- Communications

Evacuation begins for Hurricane Katrina

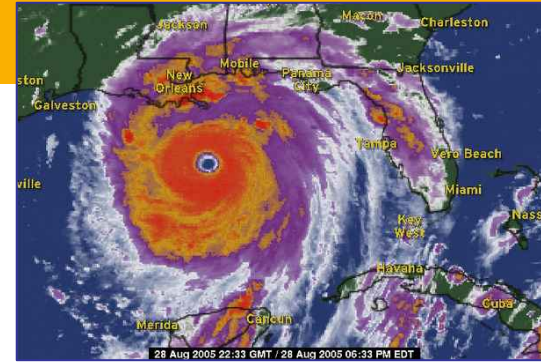


Contraflow traffic operations begin on Saturday afternoon in New Orleans metropolitan area

Contraflow Plan for Katrina



Results of the Contraflow Plan for Hurricane Katrina



Operated for 25 hours

Over 1 million (est.) evacuated

Longest delay: 2 – 3 hours

Successes

- Activated & operated the Traffic Control Center
- Had an experienced Contraflow Team, that included the states of Mississippi and Texas, with clear lines of responsibility among all parties
- Educated & continuously informed public

Contraflow Plan

Lessons Learned from previous storms

- Coordinated evacuations
- Phased evacuations
- Increased highway efficiency
- Recognized congestion is inevitable
- Educated/Informed public
- Provided real-time information

Traffic Management

- **30 variable message boards**
- **17 dynamic message boards statewide**
- **28 locations - adjust signal timing**
- **10 motorist assistance patrol vehicles & tow trucks**
- **25 traffic cameras**

Intentions are to increase the volume of traffic management tools in the future

Communications

Tools used during the storm

- 700 MHz frequency radios
- Mobile phones
- Blackberry devices
- Satellite phones

Communication Lessons Learned

Blackberry's e-mail feature worked better than mobile phones

- Equipped more personnel with Blackberry devices

Satellite phones worked well

- Key personnel have these

Established a Call Center for road closure information and emergency numbers

- 12,000 calls taken during Katrina

Interoperability

Post Storm

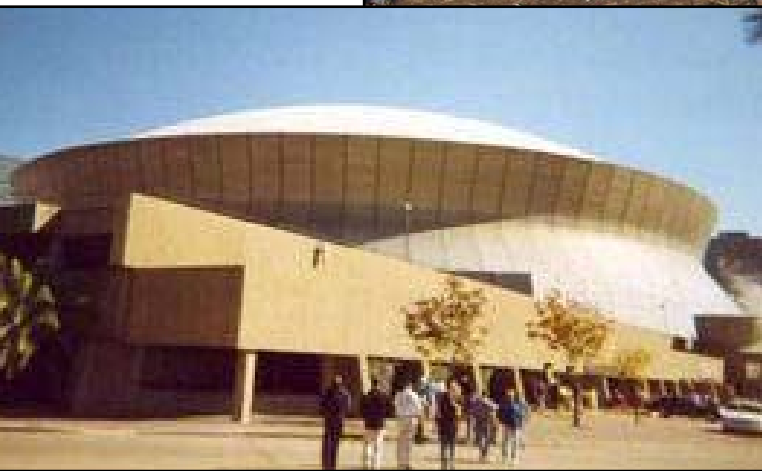
- **Search & Rescue**
- **Debris Removal**
- **Infrastructure**

Search & Rescue

6,000+ stranded storm victims are rescued on DOTD ferry boats



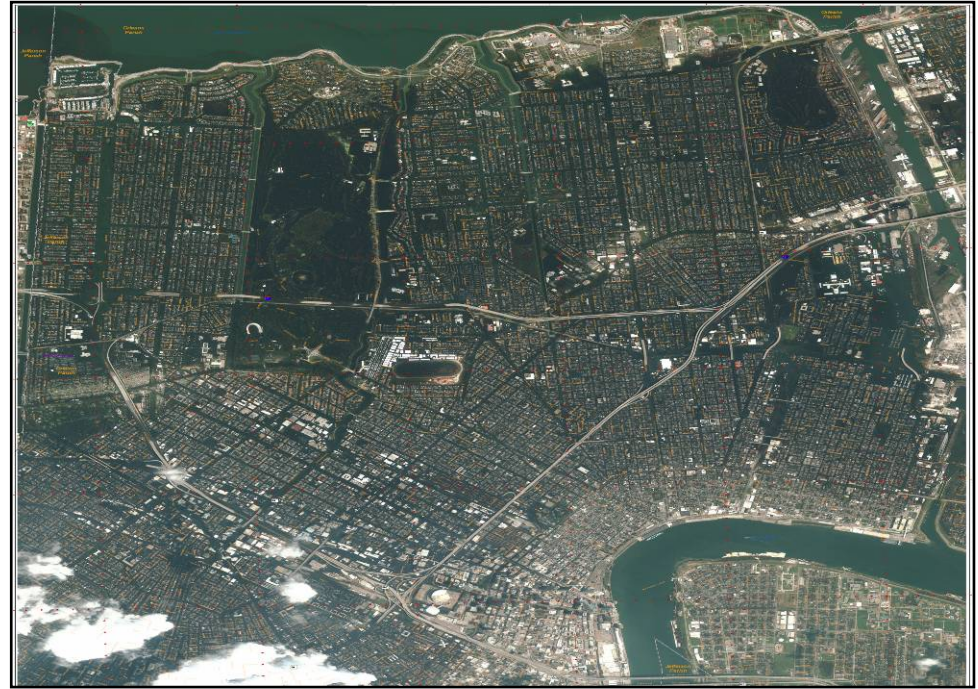
Tons of Debris



DOTD alone could have filled the Superdome with debris

Infrastructure

- Assess damage
- Inspection of bridges
- Levees
- Pump stations
- Repair damaged roads and bridges



2,000 miles of submerged roadways

Assessing the Damage



Inspecting the bridges

DOTD employees answer the call

23e Congrès mondial de la Route - **Paris 2007**

Levees broken



**A National Guard
helicopter drops sandbags
at the 17th Street Canal
levee breach**

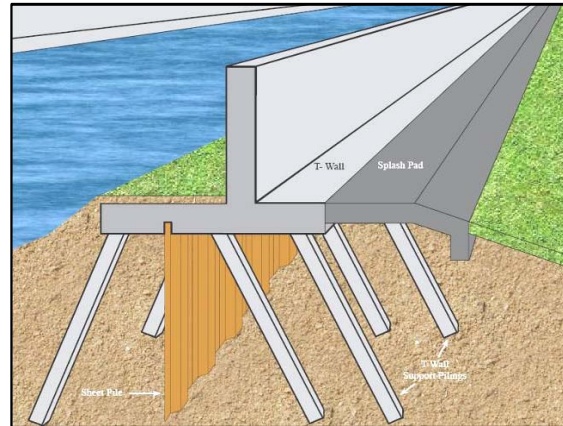
Levees repaired



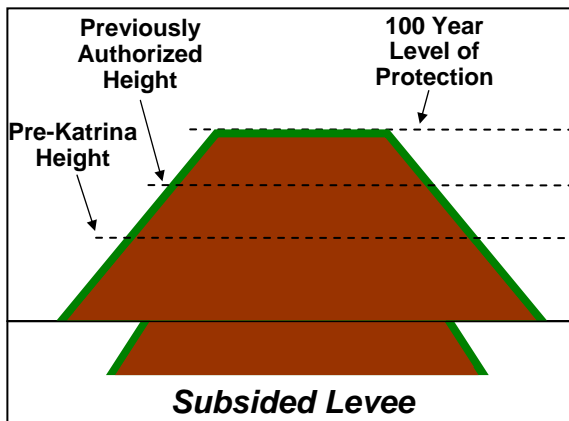
Hurricane Protection System: System Improvements



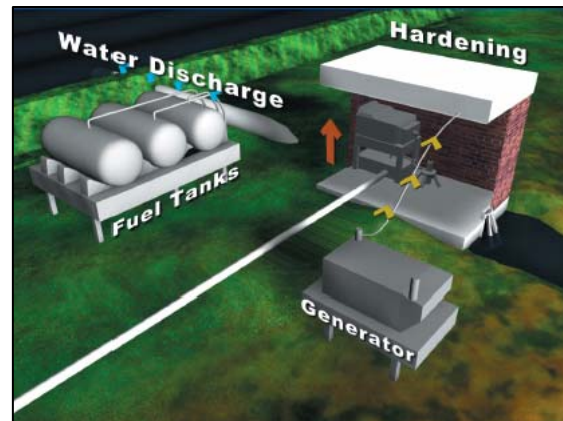
Repair



Correct Floodwall Deficiencies



Restore Complete Certify



Improve

Navigable Floodgates

Permanent Pump Stations

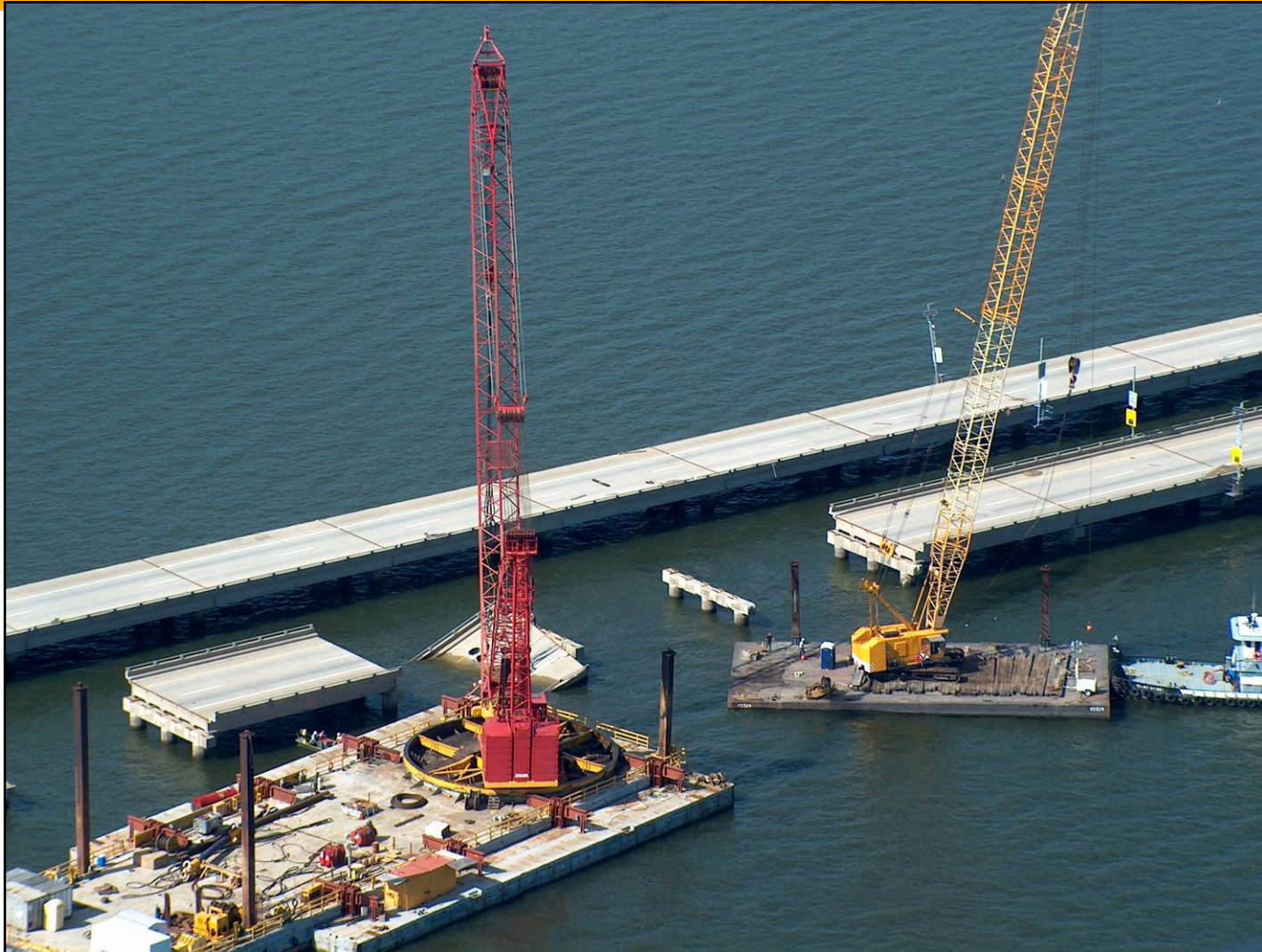
Storm Proof Pump Stations

Katrina Casualty

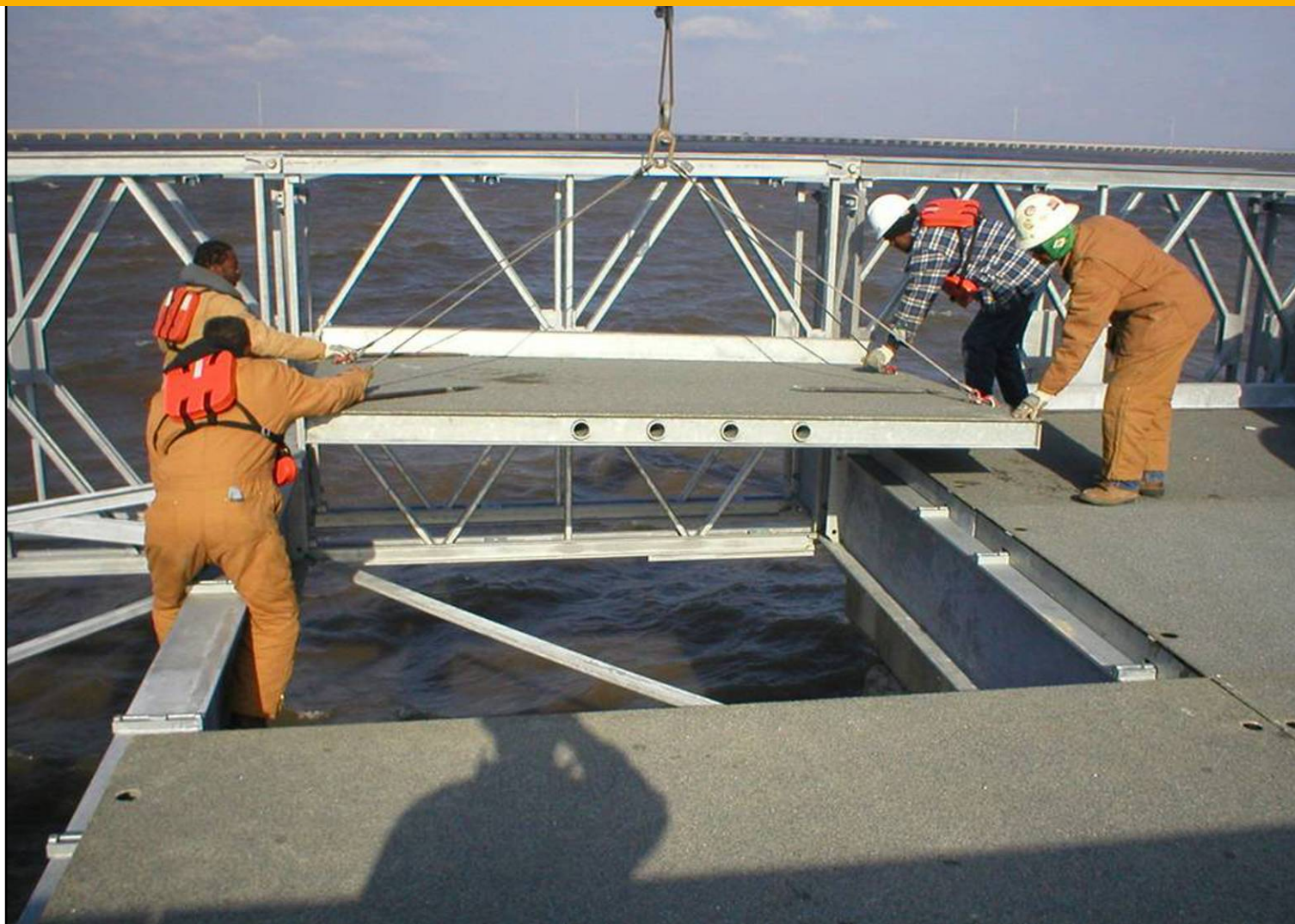
Storm claims I-10 Twin Span Bridge



Repairs begin on Twin Span Bridge



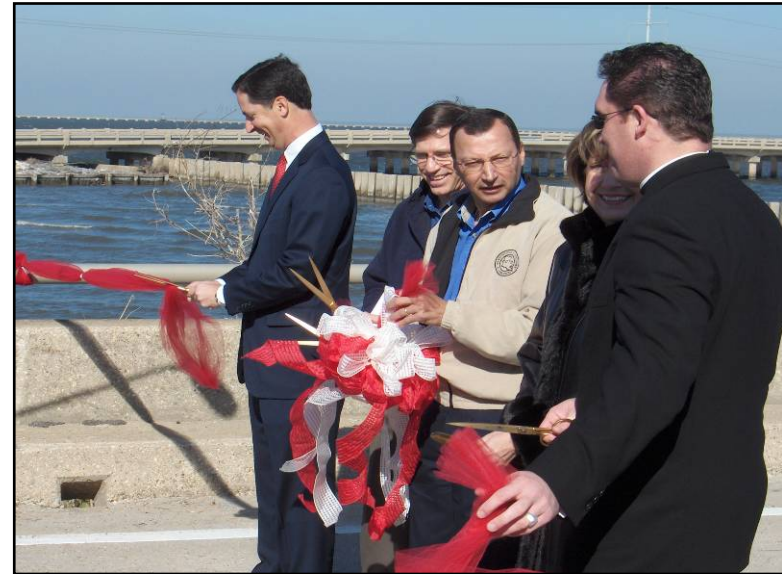
Repairing the Bridge



I-10 Twin Span Bridges - Phase I & 2



October 14, 2005



January 5, 2006

DOTD demonstrated a new way of doing things by reopening the bridge 28 days after the hurricane.

Ahead of Time, Under Budget I-10 Twin Span Bridge re-opens



Building a 22nd century bridge



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Jumpstarting the Economy

Free bus service gets people back to work.



Camp DOTD



Trailers on DOTD property house
DOTD employees and families

DEC 14 2005

Lessons Learned

Emergency Plan in place (all governmental agencies)

- Practice
- Assess
- Follow-through

Prepared to sustain staff & operations w/out assistance from outside services for at least one week

- Water
- Food
- Fuel
- Communications

Lessons Learned

Have a plan to maintain operations

Coordinating agencies must Communicate

Have contracts in place for:

- Mobilizing resources
- Debris removal
- Emergency repair



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