

# LOUISIANA'S DESIGNS AND SPECIFICATIONS FOR PERFORMANCE

REBUILDING AFTER  
KATRINA

LUANNA CAMBAS  
LADOTD MATERIALS

# LOUISIANA ASPHALT

- FLOOD OF INFORMATION
- DELUGE OF DESIGNS
- STORM OF SPECIFICATIONS
  - And BREACHES
- KATRINA-MODIFIED ASPHALT



# FLOOD OF BASIC INFORMATION





# BASIC DATA 2005

- USED 2,200,00+ TONS OF ASPHALT
- ASPHALT PAVING BUDGET  
\$100,000,000
- AVERAGE COST OF MIX JUMPED  
FROM \$40/TON TO \$50/TON

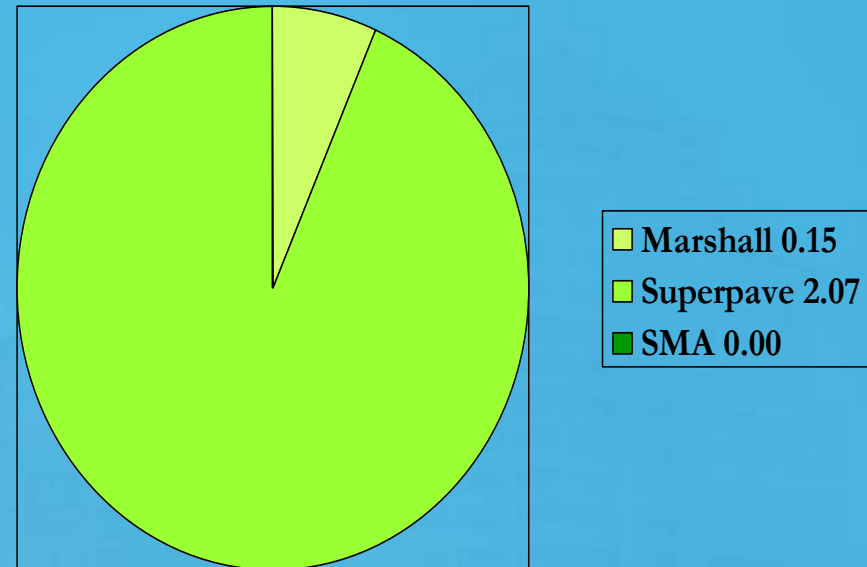
**ADDED PAY INCENTIVES 2004**

# Breakdown by Type

2005

Marshall, 7%  
150,000 tons

Superpave, 93%  
2,100,000 tons



IMPLEMENTED SUPERPAVE  
2003

# BASIC INFO

2005

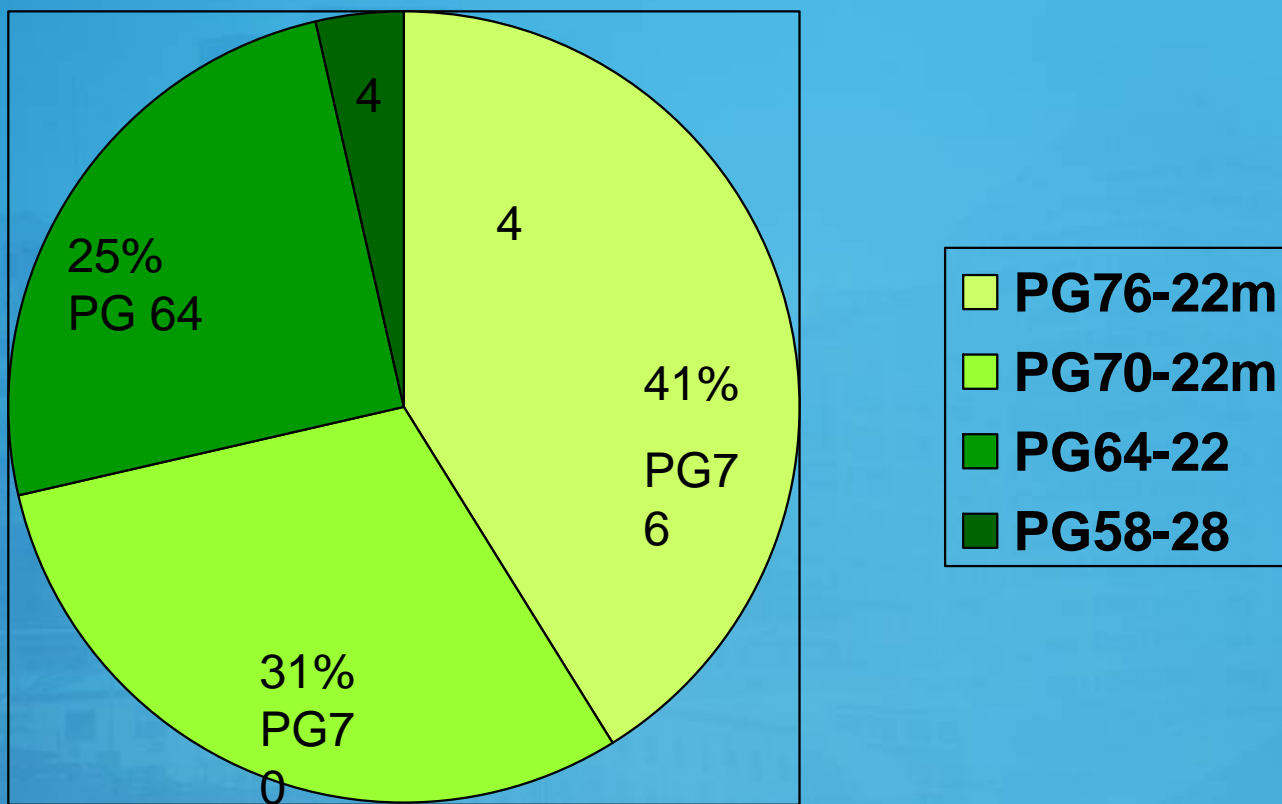
- USED 102,000+ TONS LIQUID AC
- 72,600 tons (71%) HAS POLYMER

**(6/95 First required polymer in LA mixes)**

# SUPERPAVE ASPHALT USAGE

Level 1 (Low Traffic)	Wearing Binder	PG 70-22M
	Base	PG 64 - 22
Level 2 (High Traffic)	Wearing Binder	PG 76-22M
Level A (Incidental)	(driveway curb,etc.)	PG 70-22m can often substitute PG 64-22

# AC BY TYPE



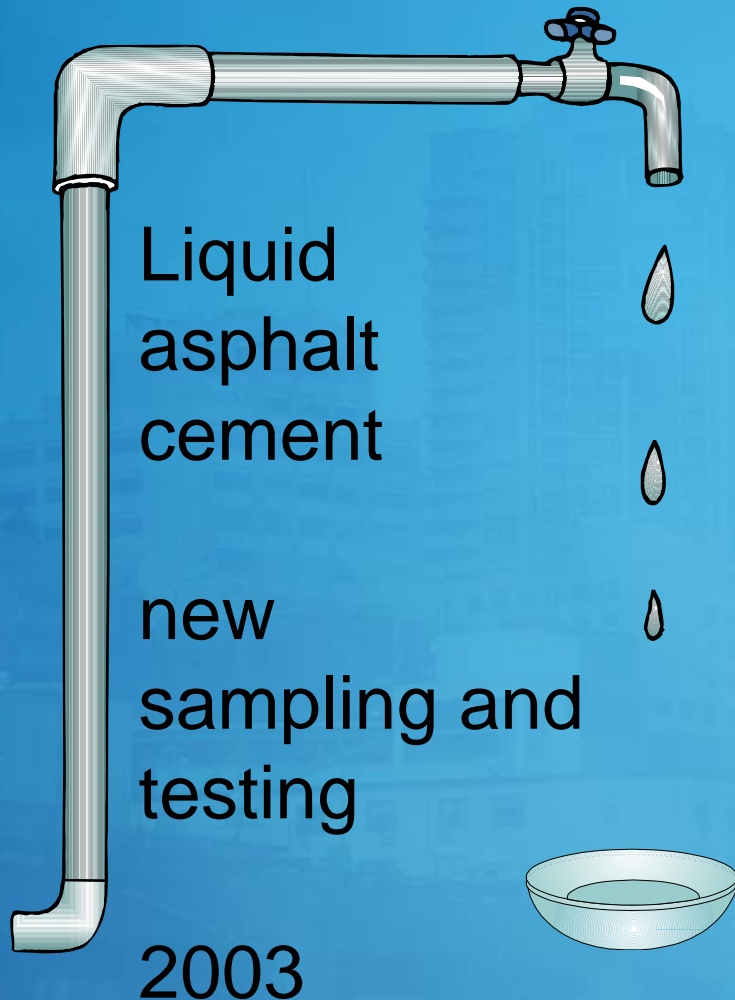


# CONTRACTORS

- 46 ASPHALT PLANTS
- 25 ASPHALT CONTRACTORS
- 5 ACTIVE AC SUPPLIERS

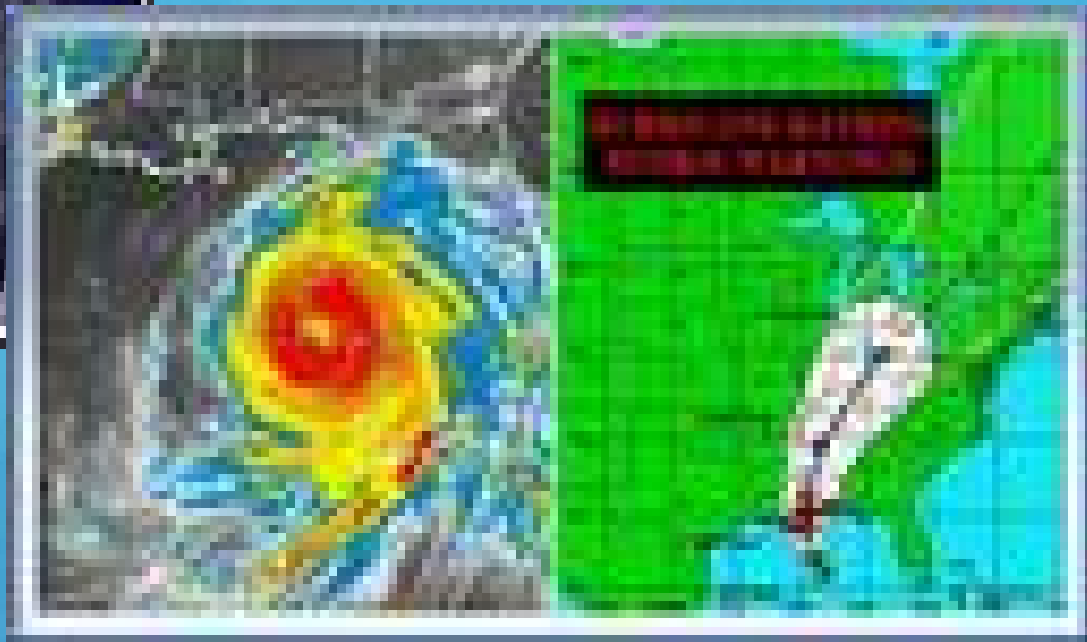


# SELF-CERTIFICATION



- Refinery Self-Test and send us results
- Sample 1 transport per project minimum
- Sample working tank 1 per day

# STORM OF SPECIFICATIONS



# NEW SPEC BOOK – June 06

- ABSON specs removed until new one
- At asphalt plant, paddle mixers required on new asphalt tanks
- At asphalt plant, strainers and screens required between tanks and drum

# PG76-22m Original Binder

- Rotational Viscosity @ 135°C 3.0min Pa-s
- Dynamic Shear  $G^* \sin \Delta$ , kPa 1.00+ 10rad/s,
- Flash Point, °C 232+
- Solubility, % 99.0+



# PG76-22m Original Binder

- Separation of Polymer 2-  
163°C, 48 hrs, ring and ball, top to bottom
- Force Ductility Ratio 0.30+  
4°C, 5 cm/min, 30cm elongation, kg  
**(Except the 2nd peak is defined as the stress at 30cm elongation)**

# PG76-22m

## ROLLING THIN FILM OVEN RESIDUE

- Mass Loss, % 1.00-
- Dynamic Shear 2.20+  
10 rad/s,  $G^* \sin \Delta$ , kPa
- Elastic Recovery 60+  
25°C, 10 cm elongation, %

PG76-22m

## **PRESSURE AGING VESSEL**

- Dynamic Shear 5000-  
25°C, 10 rad/s,  $G^* \sin \Delta$ , kPa
- Bending Beam Creep Stiffness 300-  
S, MPa @ -12°C
- Bending Beam Creep Slope 0.300+  
M value, @ -12°C

# AND SPECIFICATION BREECHES...



# SPECIFICATION “BREECHES”

- 1005 working tank samples tested (DSR) with 19 failures (1.9%)

From project investigations ---

Anti-strip contamination due to close proximity to AC sampling spigot causing backfeed.



# TRANSPORT SAMPLES

- 44 TRANSPORT SAMPLES WITH 1 FAILURE, (2.3%)



# KATRINA-MODIFIED ASPHALT



# KATRINA-MODIFIED ASPHALT

- ROADWAY DAMAGE
  - NEED REPAIRS
  - NEED MONEY
  - NEED TIME

# ROADWAY DAMAGE

- Study to show that submerged for extended periods of time are damaged.



# MONEY NEEDED

- 500 miles of federal-aid highways - \$360 million
- 1500 miles of non-federal-aid roads in 4 parishes - \$200 million



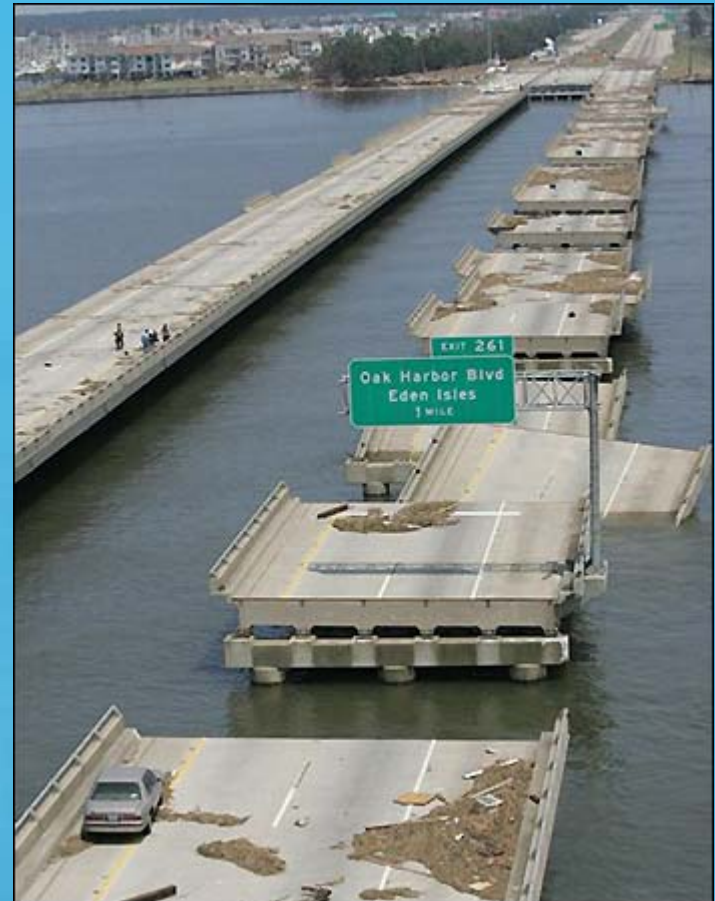
# ROADWAY MONEY PROMISED

- RECEIVED \$75 MILLION – no state match required
- \$1.048 BILLION IS ON THE WAY



# Ports and Bridges

- Damage repairs to public ports, airports, transit, and rail - Public Ports = \$487 million damage estimate
- Twin Spans - \$600 Million needed



# ASPHALT held up better than the CONCRETE



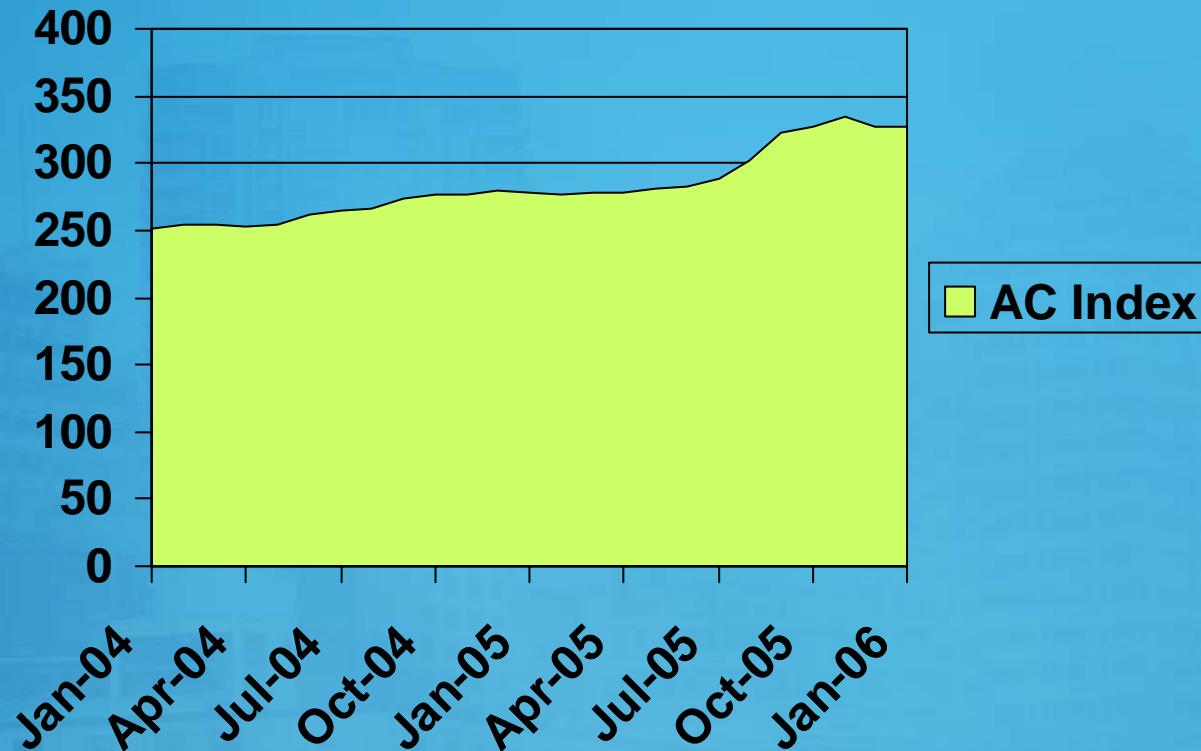
# CONSTRUCTION WOES...

- HIGHER CONSTRUCTION COSTS

- MATERIALS, FUEL
- DELIVERY COSTS
- LABOR COSTS

(LA1 bid received at 50% over estimates)

# ASPHALT CEMENT INDEX



JAN 04 \$251      JAN 05 \$278      JAN 06 \$327  
(PER TON AC)



# CONSTRUCTION WOES...

- DELAYS

Delivery  
problems,  
trucking,  
lack of labor



Result in delayed lettings – lack of money

# POPULATION SURGE

- The mass evacuation of the New Orleans Metropolitan area resulted in a surge in population in other cities in Louisiana.



# TRAFFIC

- Immediate transportation improvements are needed to address the added congestion



# OLD GANG OFFICE





# PUMP STATION

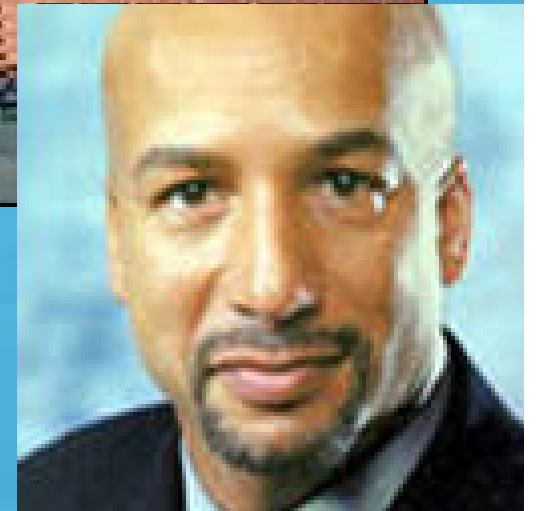


# VISION FOR FUTURE

- The use of DMA to characterize the aging of asphalt binders
- Performance-related tests for asphalt emulsions
- Investigation of the Behavior of Asphalt Tack Coat Interface Layer
- Sasobit Study – extend compaction time
- Trackless Tack

# HERSHEY'S Chocolate Dome

new orleans  
the chocolate city







01/01/2006