



Hazards Research and Applications Workshop

Proposed Model of Disaster Recovery and It's Application
Following Hurricane Katrina in Mississippi

July 10, 2006

- ▶ Proposed Model of Disaster Recovery
 - Disaster Characteristics
 - Pre-Disaster, Community-Level Contextual Variables
 - Facilitators and Impediments of Sustainable Disaster Recovery
 - Dependent Variable: Sustainable Community Disaster Recovery

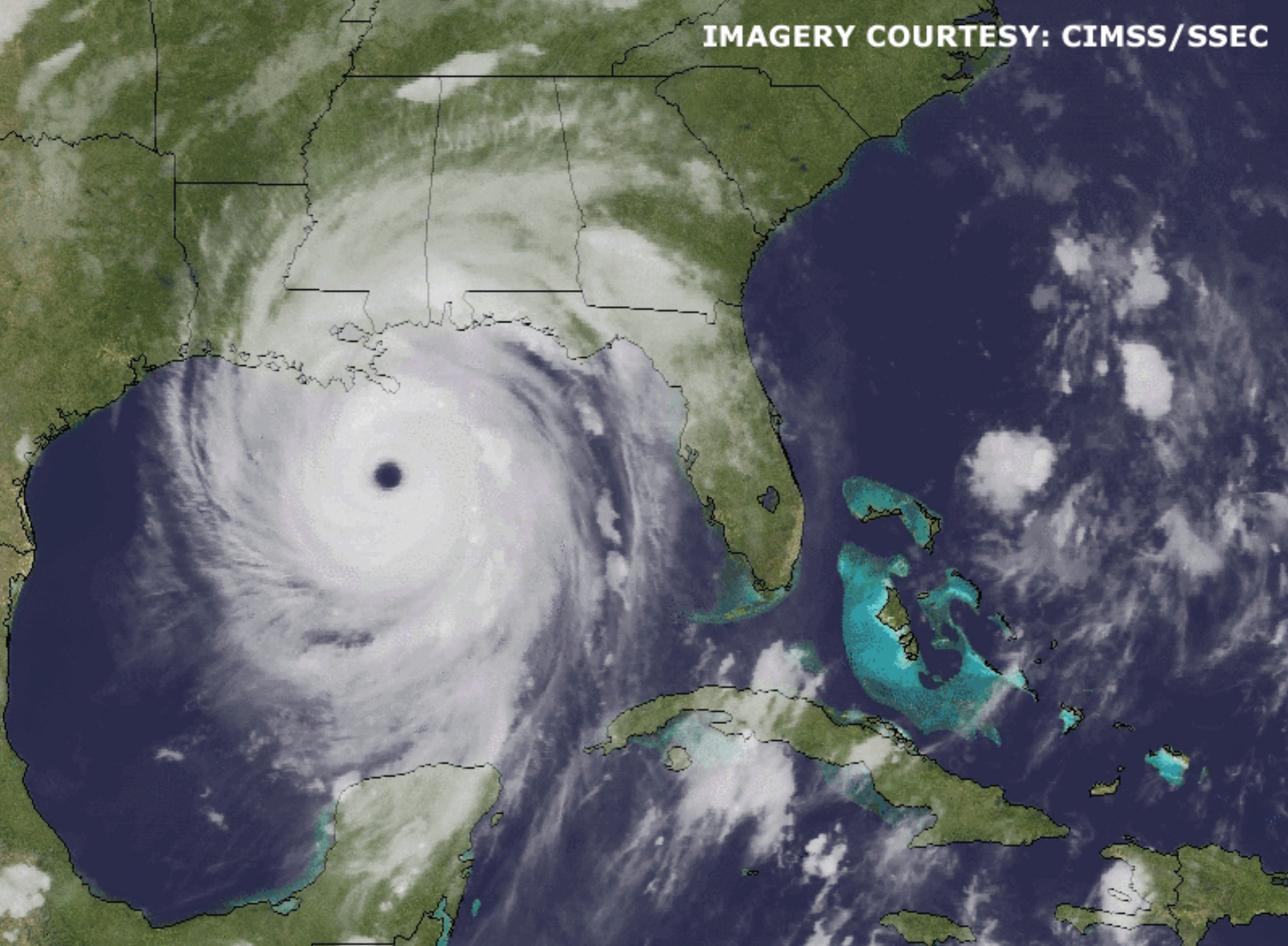
- ▶ Issues and Opportunities: Sustainable Disaster Recovery in Mississippi?
 - The Role of Planning and Design in Recovery
 - Disaster Recovery Policies, Funding Sources, and Technical Assistance
 - Implications of Proposed Model of Disaster Recovery
 - Achieving a Sustainable Recovery in Mississippi

- ▶ Disaster Recovery: The differential process of restoring, rebuilding, and reshaping the physical, social, economic, and natural environment through pre-event planning and post event actions

- ▶ Pre-Disaster Community-Level Contextual Variables
 - Local Capacity (population size, economic vitality)
 - Previous Disaster Experience
 - Leadership and Advocacy
 - Horizontal and Vertical Integration
 - Local Government Viability and Effectiveness
 - Local Public Participation and Collective Action
 - Condition of Critical Infrastructure and Housing
 - Local Disaster Vulnerability

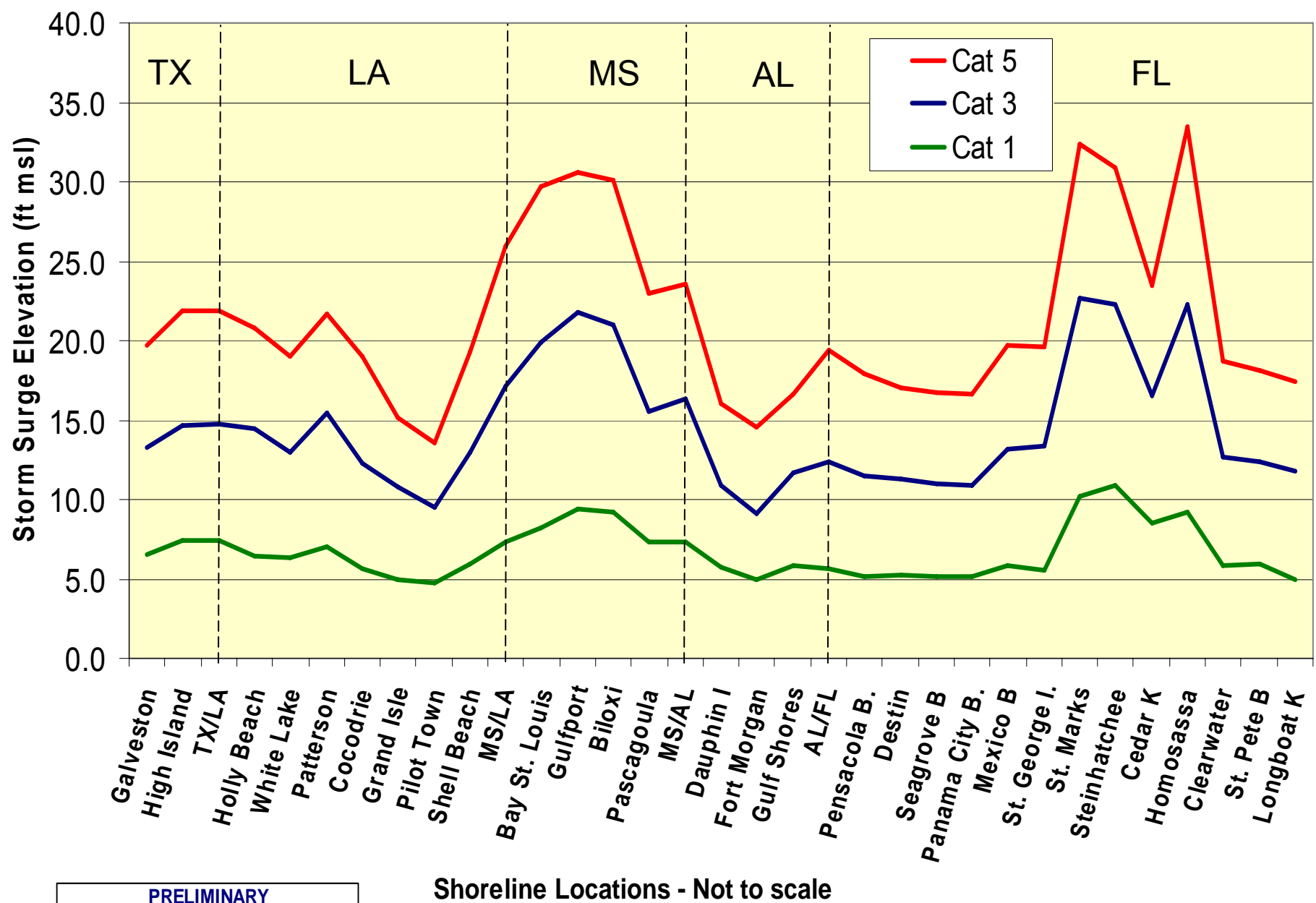
- ▶ Characteristics of Disaster
 - Intensity
 - Scope
 - Speed of Onset
 - Adequacy of Warning
 - Duration of Impact

IMAGERY COURTESY: CIMSS/SSEC



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Variation in SLOSH Model Storm Surge Elevations at Developed Shoreline



PRELIMINARY

source: FEMA MAT, 2-26-06

Shoreline Locations - Not to scale



Housing Damage – Owner Occupied

(Hancock, Harrison and Jackson Counties)

	Insurance Status			Owner-Subtotal
	Hazard & Flood	Hazard Only	No Insurance	
Flood Damaged Homes				
Minor Damage	212	1,313	288	1,813
Major Damage	4,761	11,317	2,566	18,644
Severe/Destroyed	3,583	2,412	1,358	7,353
Subtotal	8,556	15,042	4,212	27,810
Homes with wind damage				
Minor Damage	888	18,742	5,602	25,232
Major Damage	246	4,122	1,679	6,047
Severe/Destroyed	376	402	477	1,255
Subtotal	1,510	23,266	7,758	32,534
TOTAL	10,066	38,308	11,970	60,344
Total Owner Occupied				93,823
Percent Damage				64%

► Sustainable Development Post-Disaster

- Window of Opportunity
- Economic Well Being
- Social Justice
- Environmental Stewardship
- Quality of Life
- Hazard Mitigation
- Multi-Objective Planning and Policymaking
 - Planning and Design

▶ Role of Design in Recovery

- Rapid Delivery of Housing
 - ▶ Transitional Housing – Alternative to FEMA Travel Trailer
 - Mississippi Cottage
 - ▶ Modular, Panelized, Kit-Based Construction
- Recapturing Coastal Architecture
 - ▶ Pattern Book for Gulf Coast Neighborhoods
- Coastal Construction
 - ▶ Coastal Construction Manual
 - ▶ Mitigation Assessment Team

- ▶ Role of Design in Recovery
 - Transitional Housing: Mississippi Cottage
 - ▶ 400 Million Dollars
 - ▶ Replacement of Travel Trailers
 - 38,241 Temporary Housing Units
 - ▶ Initial Focus in Velocity Zone
 - ▶ Speed of Delivery, Set Up and Removal
 - ▶ Transportability
 - ▶ Compliance with ABFE's and IRC





Single-Family Home Success

► Role of Planning In Recovery

- Governor's Commission on Recovery and Renewal
 - 9 Policy Committees
 - Business Leadership
 - After Katrina: Building Back Better than Ever
 - 263 Policy Recommendations
 - Road Map to Accountability
 - MississippiRenewal.com
- Congress for the New Urbanism
 - Coastal Plans
 - Visionary: Make no Small Plans?
 - Design-Based Plans
 - Integrating Hazard Mitigation into Design Practice
 - Pattern Book
 - Smart Code: Design with Nature?
 - Regional Planning Issues: Transportation, Environmental, Architecture
 - On-going Charretts

SMART CODE

V 7.6



► Role of Planning in Recovery

- Hazard Mitigation Plans
 - Policies and Projects
 - Capability Assessment
 - Vulnerability Assessment
 - Link to Pre and Post-disaster Assistance
 - Limited number of plans in place prior to Katrina
- Long-term Recovery Plans (FEMA ESF-14)
 - Operational
 - Policies and Projects
 - Identification of Funding Sources

▶ Governor's Office of Recovery and Renewal

- Implementation Focus
- Institutionalizing State and Local Capability
- Four Objectives
 - ▶ Identification of Funding
 - ▶ Policy Counsel
 - ▶ Implementation of the Governor's Commission Recommendations
 - ▶ Education, Outreach and Training
- Governorbarbour.com/recovery

► Disaster Assistance

- Public Assistance Program
- Community Development Block Grant Program
- Hazard Mitigation Grant Program
- National Flood Insurance Program

- ▶ Community Development Block Grant Program (Homeowners Program)
 - 4 Billion Dollars
 - Phase 1 Criteria
 - Later Phases
 - ▶ Inside Floodplain
 - ▶ Uninsured/Underinsured
 - ▶ Low/Mod Housing Assistance
 - Water and Wastewater Program
 - Windpool Rate Reduction

► Hazard Mitigation Grant Program

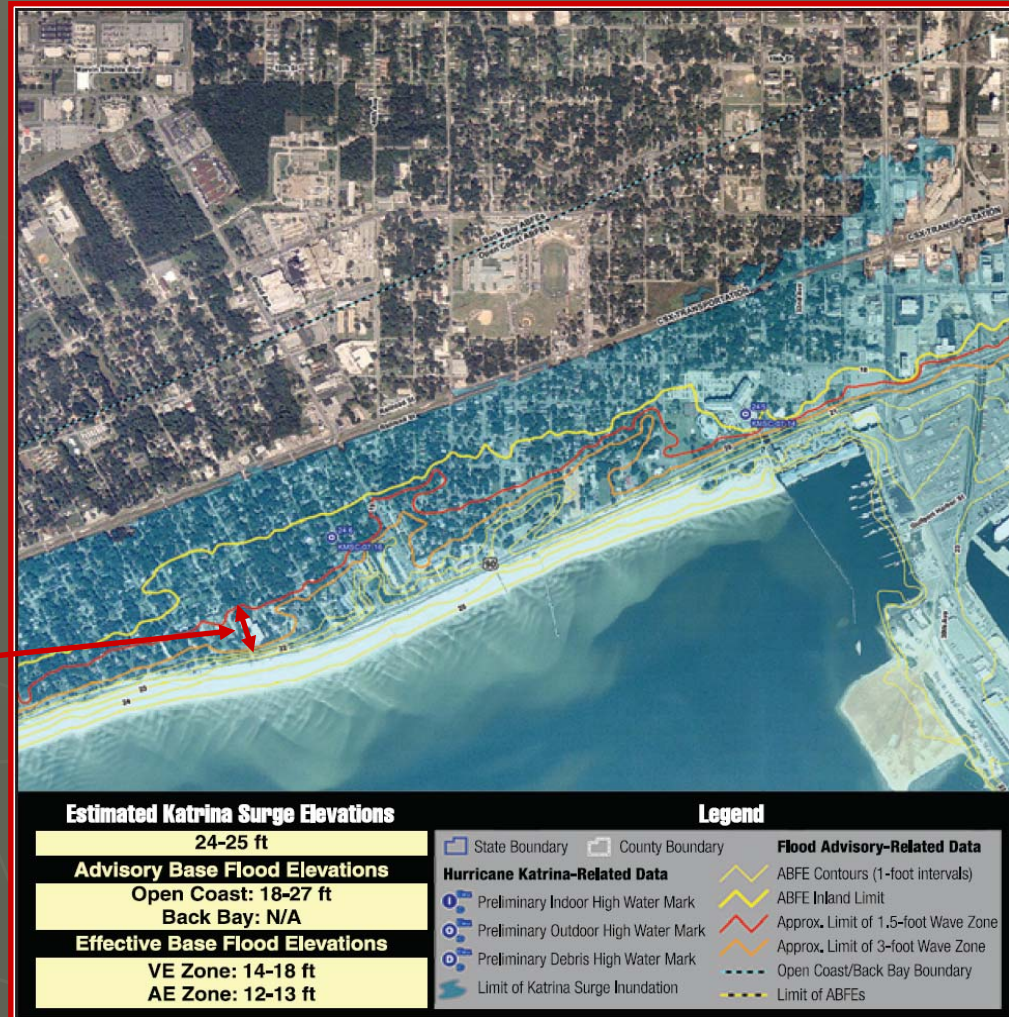
- Reconstruction Grants
- 400 Million Dollars
- 150,000 cap + 30,000 to elevate
- Cost-Effective
- Focus in Floodplain
- Global Match

- ▶ National Flood Insurance Program
 - ▶ Over 2 Billion Dollars in Paid Claims
 - ▶ Local Flood Damage Prevention Ordinance
 - Local Building Official
 - ▶ Flood Insurance Rate Map
 - ▶ Advisory Base Flood Elevation Map

Haley Barbour

MISSISSIPPI'S GOVERNOR

- ▶ Advisory Base Flood Elevation Maps
 - 3-8 foot change in flood elevation (pre-Katrina FIRM)
- ▶ Post-Disaster Recovery Tool
- ▶ Link to Federal Housing Assistance



Community	Elevation Standards	Building Codes	CRS Status
Harrison County	Adopted ABFE's	2003 IBC	Class 8
Biloxi	3' freeboard inside SFHA; ABFE outside	1997 Standard Building Code	Class 7
D'Iberville	4' Freeboard in V-zone; 3' Freeboard	1997 Standard Building Code	Considering Application
Gulfport	No Action	1997 Standard Building Code	Class 8
Long Beach	3' Freeboard inside SFHA; ABFE outside	2003 ICC	Class 8
Pass Christian	Adopted ABFE's + 1' Freeboard	2003 ICC	Class 6

► Factors Affecting Success

- Integration of Planning and Policymaking
- Integration of Visionary and Operational Plans
 - CNU Plans
 - Long-Term Recovery Plans
 - Hazard Mitigation Plans
 - Floodplain Management Plans
 - Local, State and Federal Capability
- Linkage to Identified Funding Sources, Technical Assistance and Policies

► Layer Cake Theory of Recovery Assistance

- Funding, Policies and Technical Assistance
 - Federal
 - Stafford Act
 - Congressional Appropriations
 - State
 - Non-Profits
 - Foundations
 - Corporations
 - Associations
 - Nations
 - Governor's Fund

► Proposed Model of Disaster Recovery

■ Facilitators:

- Importance of Political Leadership and Power
- Federal and State Commitment to Sustainable Disaster Recovery
- Capacity Building
- Use of Dispute Resolution Techniques
- Role of Planning
- Leveraging Resources
- Multi-Party Recovery Committees
- Identification of Local Needs
- Program Flexibility

■ Impediments:

- Disaster Recovery Programs
 - As Entitlement
 - Over Reliance
 - Narrowly-Defined
- Lack of Planning
- Low Capability and Commitment

- ▶ Sustainable Recovery Implementation Framework
 - ▶ Training, Research and Education
 - Recovery Planning
 - Research: DMA assessment; Nationwide Assessment of Recovery Planning
 - Disseminate Findings
 - ▶ Policy Change
 - Advocacy Coalition Framework
 - Disaster Recovery Act
 - ▶ Creation of Sustainable Recovery Ethic
 - Reducing Moral Hazard: Disaster Resilience
 - Beyond Liberal Bias: Self-Reliance

- ▶ Technical Assistance / Training In Mississippi
 - ▶ CDBG 5 Million Dollars – Building Inspectors and Permit Officials
 - ▶ National Emergency Grant – Planners and Grants Managers
 - ▶ FEMA Recovery Implementation Managers
 - ▶ Community College System / Mississippi Department of Employment Security
 - ▶ Technical Training – Builders, Architects, Engineers, Elected Officials
 - ▶ Hurricane Recovery Centers
 - ▶ Disaster Recovery Expo

ACHIEVING A SUSTAINABLE RECOVERY

Governor's Commission

**Governor's Office of
Recovery & Renewal**

**Congress of New
Urbanism**

**4 Objectives
Implementation**

**Visionary Planning and
Design**

Design and Planning Tools

- LTR Plans
- Mitigation Plans
- Mississippi Renewal Forum

Environmental Factors

**LOCAL
RECOVERY**

Layer Cake
-Funding
-Policy
-Technical Assistance

**LOCAL
RECOVERY**

► Future Challenges and Opportunities

- Increased Hazard Vulnerability
 - Coastal Development
 - Increasing Hurricane Frequency and Severity
- Unprecedented Role of Design and Planning In Recovery
 - Coastal Design (architecture and engineering)
 - Coastal Planning (mitigation and recovery)
 - Implementation Key to Success
- Future Implications and Outcomes
 - All Hazards Insurance?
 - Federal Assistance Limitations/Requirements: Disaster Recovery Act?
 - Linkage to Pre-Disaster Recovery Planning?
 - Institutionalizing Design and Planning in Future Recovery Operations and Disasters