2006 AICP Symposium

Disaster and Displacement One Year Later:
Housing and Community Building Post Hurricanes Katrina, Rita

www.planning.org

National Community Planning Month
October 26, 2006
AICP Symposium
Planning and Design in Recovery Following Hurricane Katrina
October 26, 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
Sustainable Disaster Recovery: Operationalizing an Existing Agenda

- Policy Framework
  - Sustainable Development
    - Linkage to disaster recovery literature
  - Advocacy Coalition Framework

- Application to Practitioners

Sustainable 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
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

Dependent Variable: Sustainable Community Disaster Recovery
Variation in SLOSH Model Storm Surge Elevations at Developed Shoreline

Shoreline Locations - Not to scale

PRELIMINARY
source: FEMA MAT, 2-26-06
## Housing Damage – Owner Occupied

(Hancock, Harrison and Jackson Counties)

<table>
<thead>
<tr>
<th>Housing Damage</th>
<th>Insurance Status</th>
<th>Owner-Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hazard &amp; Flood</td>
<td>Hazard Only</td>
</tr>
<tr>
<td>Flood Damaged Homes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>212</td>
<td>1,313</td>
</tr>
<tr>
<td>Major Damage</td>
<td>4,761</td>
<td>11,317</td>
</tr>
<tr>
<td>Severe/Destroyed</td>
<td>3,583</td>
<td>2,412</td>
</tr>
<tr>
<td>Subtotal</td>
<td>8,556</td>
<td>15,042</td>
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<tr>
<td>Homes with wind damage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>888</td>
<td>18,742</td>
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<tr>
<td>Major Damage</td>
<td>246</td>
<td>4,122</td>
</tr>
<tr>
<td>Severe/Destroyed</td>
<td>376</td>
<td>402</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1,510</td>
<td>23,266</td>
</tr>
<tr>
<td>TOTAL</td>
<td>10,066</td>
<td>38,308</td>
</tr>
</tbody>
</table>

Total Owner Occupied 93,823

Percent Damage 64%
## Housing Damage – Renter Occupied

(Hancock, Harrison and Jackson Counties)

<table>
<thead>
<tr>
<th>Types of Structure</th>
<th>Single Family</th>
<th>Multifamily &lt; 10</th>
<th>Multifamily &gt; 10</th>
<th>Renter Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Flood Damaged Homes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Minor Damage</td>
<td>1,032</td>
<td>178</td>
<td>915</td>
<td>2,125</td>
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<tr>
<td>Major Damage</td>
<td>5,867</td>
<td>830</td>
<td>3,533</td>
<td>10,230</td>
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<tr>
<td>Severe/Destroyed</td>
<td>2,736</td>
<td>362</td>
<td>1,605</td>
<td>4,703</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>9,635</td>
<td>1,370</td>
<td>6,053</td>
<td>17,058</td>
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<tr>
<td><strong>Homes with wind damage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>7,394</td>
<td>788</td>
<td>4,444</td>
<td>12,626</td>
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<tr>
<td>Major Damage</td>
<td>1,614</td>
<td>220</td>
<td>1,494</td>
<td>3,328</td>
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<tr>
<td>Severe/Destroyed</td>
<td>529</td>
<td>69</td>
<td>354</td>
<td>952</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>9,537</td>
<td>1,077</td>
<td>6,292</td>
<td>16,906</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>19,172</td>
<td>2,447</td>
<td>12,345</td>
<td>33,964</td>
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<tr>
<td>Total Renter Occupied</td>
<td></td>
<td></td>
<td></td>
<td>42,288</td>
</tr>
<tr>
<td><strong>Percent Damage</strong></td>
<td></td>
<td></td>
<td></td>
<td>80%</td>
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</table>
Issues and Opportunities: Sustainable Disaster Recovery in Mississippi?

- 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
Issues and Opportunities

- Integrating Hazard Mitigation into Planning Practice
  - Floodplain Management
    - Advisory Base Flood Elevation Maps
    - Flood Damage Prevention Ordinance
  - Multi-Objective Planning and Sustainable Recovery and Redevelopment
- Avoiding Misinformation and Poor Decision Making
  - Avoiding “Moral Hazard” (Platt)
    - Post-Disaster Urban Planning and Floodplain Management
    - Role of Post-Disaster Financial Assistance
Role of Design in Recovery

- Building Codes
- Rapid Delivery of Housing
  - Transitional Housing – Alternative to FEMA Travel Trailer
    - Mississippi Cottage, Modular Town Home, Green Architecture
  - Modular Construction
- Recapturing Coastal Architecture
  - Pattern Book for Gulf Coast Neighborhoods
- Coastal Construction
  - Coastal Construction Manual
  - Mitigation Assessment Team
Home Builder’s Guide to Coastal Construction
Technical Fact Sheet Series
FEMA 499 / August 2005
FEMA
Summary Report on Building Performance
Hurricane Katrina 2005
FEMA 548 / April 2006
NFIP prohibits fill for structural support in V zones, allows in A zones.

Consider use of non-structural fill to facilitate access and improve aesthetics of highly elevated buildings.

Community-wide approach preferable.

Technical, economic, and environmental evaluations required.

Corps of Engineers Study.
Delivery of Multiple Housing Types
- Single Family Detached Units
- Multi-Family
  - Rental
  - Owner Occupied
  - Condominiums
  - Worker Housing

Availability of Suitable Land for Development
- Wetlands
- Infrastructure
- Geography of Disaster
  - High Hazard Areas (Coastal Construction)
  - New Communities
Role of Planning in Recovery

- Governor’s Commission on Recovery and Renewal (policy planning)
  - 9 Policy Committees
  - Business Leadership
  - After Katrina: Building Back Better that Ever
    - 263 Policy Recommendations
    - Road Map to Accountability
    - MississippiRenewal.com

- Congress for the New Urbanism (design-based plans)
  - 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
Charter of the New Urbanism

- Restoration of Existing Urban Centers and Towns
- Conservation of Natural Environments
- Preservation of our Built Legacy
- Diversity of Neighborhoods
- Pedestrian Orientation
- Creation/Preservation of Public Spaces
- Design that Celebrates Local History, Climate, Ecology and Building Practices
Durability: Elevation & Hardening

Drawing Title:

Architecture

Drawing Type:
- Analytical
- Proposal

Timing:
- Immediate
- Medium Term
- Long Term

Urban Scale:
- Street, Block, Building
- Neighborhood, District, Corridor
- Region

Implementation Through:
- Design
- Policy
- Management

Gulfport Casino
Opening Date: 16 October 2005

Cara
Michael Imber
Name of Contact for Additional Information

NARRATIVE:
This illustration is a Gulfport casino that utilizes both elevation and structural hardening to achieve durability. The lower levels are parking to reach the FEMA height requirements.
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
  - Limited Cadre of Disaster Recovery Experts

- Local Recovery Committees
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
“Layer Cake” Theory of Recovery Assistance

- Funding, Policies and Technical Assistance
  - Federal Government
    - Stafford Act
    - Congressional Appropriations
  - State Government
  - Local Government
  - Foundations
  - Businesses
    - Corporations
    - Consultants
  - Professional Associations
    - APA, AIA, CNU
  - Nations
  - Non-Profits
    - Church Groups
    - Governor’s Commission of Recovery and Renewal
- Emergent Groups
Disaster Assistance

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

- Repair of damaged infrastructure
  - Roads, bridges, schools, critical facilities
  - 406 Mitigation
  - Coordination with Regional Water and Wastewater Program

- Debris Removal
  - Over 99% complete
  - Over 20 million cubic yards removed (3 coastal counties)
  - 45 million cubic yards statewide
- Advisory Base Flood Elevation Maps
  - 3-8 foot change in flood elevation (pre-Katrina FIRM)

- Post-Disaster Recovery Tool

- Link to Federal Housing Assistance
<table>
<thead>
<tr>
<th>Community</th>
<th>Planned Elevation Strategy for Rebuilding</th>
<th>Building Codes</th>
<th>CRS Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackson County</td>
<td>Adopted ABFE’s</td>
<td>2003 ICC</td>
<td>Considering Application</td>
</tr>
<tr>
<td>Gautier</td>
<td>5’ freeboard inside SFHA; ABFE outside</td>
<td>2003 ICC</td>
<td>Class 8</td>
</tr>
<tr>
<td>Moss Point</td>
<td>Adopted ABFE’s</td>
<td>2003 ICC</td>
<td>Considering Application</td>
</tr>
<tr>
<td>Jackson County</td>
<td>ABFE’s become effective on June 1</td>
<td>2003 ICC</td>
<td>Developing Application</td>
</tr>
<tr>
<td>Ocean Springs</td>
<td>ABFE’s + 1’ Freeboard</td>
<td>2003 ICC</td>
<td>Class 8</td>
</tr>
<tr>
<td>Community</td>
<td>Elevation Standards</td>
<td>Building Codes</td>
<td>CRS Status</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------</td>
<td>-----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Harrison County</td>
<td>Adopted ABFE’s</td>
<td>2003 IBC</td>
<td>Class 8</td>
</tr>
<tr>
<td>Biloxi</td>
<td>3’ freeboard inside SFHA; ABFE outside</td>
<td>1997 Standard Building Code</td>
<td>Class 7</td>
</tr>
<tr>
<td>D'Iberville</td>
<td>4’ Freeboard in V-zone; 3’ Freeboard</td>
<td>1997 Standard Building Code</td>
<td>Considering Application</td>
</tr>
<tr>
<td>Gulfport</td>
<td>No Action</td>
<td>2003 ICC</td>
<td>Class 8</td>
</tr>
<tr>
<td>Long Beach</td>
<td>3’ Freeboard inside SFHA; ABFE outside</td>
<td>2003 ICC</td>
<td>Class 8</td>
</tr>
<tr>
<td>Pass Christian</td>
<td>Adopted ABFE’s + 1’ Freeboard</td>
<td>2003 ICC</td>
<td>Class 6</td>
</tr>
<tr>
<td>Community</td>
<td>Elevation Standards</td>
<td>Building Codes</td>
<td>Status of CRS</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------------------------------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Hancock County</td>
<td>4’ Freeboard inside SFHA</td>
<td>2003 IBC</td>
<td>Considering Application</td>
</tr>
<tr>
<td>Bay St. Louis</td>
<td>4’ Freeboard SFHA/CFHA *outside SFHA’s</td>
<td>2003 ICC</td>
<td>Class 7</td>
</tr>
<tr>
<td>Waveland</td>
<td>4’ Freeboard SFHA</td>
<td>2003 ICC</td>
<td>Class 6</td>
</tr>
</tbody>
</table>
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
- Building Local Capability
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
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
Future Challenges and Opportunities

- Increased Hazard Vulnerability
  - Coastal Development
  - Increasing Hurricane Frequency and Severity

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
  - Federal, State, and Local Governments
  - Non-profits, Associations
Sustainable Recovery Implementation Framework

Training, Research and Education
- Recovery Planning
  - ESF-14
- Research: DMA assessment; Nationwide Assessment of Recovery Planning
- Disseminate Findings to Practitioners

Policy Change
- Advocacy Coalition Framework/Policy Learning
  - Federal, State, and Local Officials
  - Multinational Organizations (World Bank, OAS, UN)
  - Hazards Researchers
- Disaster Recovery Act?
  - Reworking Federal-State-Local Partnership (shared governance)
  - Local Capacity Building

Creation of Sustainable Recovery Ethic
- Reducing Moral Hazard: Disaster Resilience
- Beyond Liberal Bias: Self-Reliance
- Multi-objective Planning (coalition building)