STEERING COMMITTEE MEETING #5

December 10, 2019

Joseph L. Waitz Building
Office of Homeland Security and Emergency Preparedness
101 Government Street, Gray LA
Presented by: Jennifer C. Gerbasi
I. Welcome and Introductions
II. Meeting 4 Notes Review
III. Subcommittee Discussion Update
IV. Strategy Discussion – FEMA Priorities
V. Project Prioritization Methodology
VI. Goals and Objectives and Revisions Review
VII. Project List Review
VIII. Conclusion
III. PLANNING PROCESS

Review
- Organize and Convene Community
- Research and Review of Data

Revise
- Update Risk Assessment
- Assess the Potential Losses

Reset
- Set Goals – Standard for Protection
- Update Mitigation Strategy
III. PLANNING PROCESS (contd.)

- **Write**
  - Draft Updated Plan – Vet Publicly
  - Submit to State and FEMA

- **Ratify**
  - Revise as Necessary
  - Adopt through Council

- **Revisit**
  - Yearly Maintenance
Master plan may lower flood depths up to 10 feet. 2017
Coastal Land Loss

Projected Relative Sea Level Rise

Percent Land Below Sea Level by Parish Through 2100

- Orleans: 54.1% (2010), 73.2% (2050), 85.3% (2100)
- Jefferson: 34.0% (2010), 43.7% (2050), 68.3% (2100)
- Plaquemines: 26.9% (2010), 46.4% (2050), 62.9% (2100)
- St. Bernard: 18.7% (2010), 35.7% (2050), 53.2% (2100)
- Terrebonne: 10.4% (2010), 29.7% (2050), 60.9% (2100)
- Lafourche: 11.1% (2010), 25.4% (2050), 60.6% (2100)
- St. Charles: 11.7% (2010), 20.3% (2050), 61.8% (2100)
- St. Mary: 14.7% (2010), 22.3% (2050), 29.3% (2100)
- Cameron: 7% (2010), 11% (2050), 15.4% (2100)
- Vermilion: 6.5% (2010), 7% (2050), 13.1% (2100)
- Iberia: 3.8% (2010), 6.2% (2050), 16.8% (2100)
- Assumption: <12% (2010), 7% (2050)
- Calcasieu: <3% (2010)
- Iberville: <2% (2010)
- Jefferson Davis: <1% (2010)
- Lafayette: <0% (2010)
I. Welcome and Introductions
II. Meeting 4 Notes Review
III. Subcommittee Discussion Update
IV. Strategy Discussion – FEMA Priorities
V. Project Prioritization Methodology
VI. Goals and Objectives and Revisions Review
VII. Project List Review
VIII. Conclusion
Risk Reduction Strategies
FEMA Strategic Plan
A lifeline enables the continuous operation of government functions and critical business, and is essential to human health and safety or economic security.

- Lifelines are designed to highlight priority areas and interdependencies, focus attention on actions being taken, communicate coordination efforts towards stabilization, and integrate information.
  - Each lifeline is comprised of multiple components and essential elements of information needed to stabilize the incident.
Community Lifeline Projects

1. Safety and Security
   - Law Enforcement/Security
   - Search and Rescue
   - Fire Services
   - Government Service
   - Responder Safety
   - Imminent Hazard Mitigation

2. Food, Water, Sheltering
   - Evacuations
   - Food/Potable Water
   - Shelter
   - Durable Goods
   - Water Infrastructure
   - Agriculture

3. Health and Medical
   - Medical Care
   - Patient Movement
   - Public Health
   - Fatality Management

4. Energy
   - Power (Grid)
   - Temporary Power
   - Fuel

5. Communications
   - Infrastructure
   - Alerts, Warnings, Messages
   - 911 and Dispatch
   - Responder Communications
   - Financial Services

6. Transportation
   - Highway/Roadway
   - Mass Transit
   - Railway
   - Aviation
   - Maritime
   - Pipeline
The disaster risk management (DRM) cycle: Looking at the time element of resilience

Preparedness
The precautionary actions taken prior to hazard events

Disaster

Response
The actions taken during and immediately after a disaster to contain or mitigate disaster impacts

Recovery
The actions taken after a disaster (either in the short- or long-term) to help people cope with disaster impacts

Prospective Risk Reduction
The actions taken to avoid the build-up of new or increased risks

Corrective Risk Reduction
The actions taken to reduce risk to already at-risk assets
I. Welcome and Introductions
II. Meeting 4 Notes Review
III. Subcommittee Discussion Update
IV. Strategy Discussion – FEMA Priorities
V. Project Prioritization Methodology
VI. Goals and Objectives and Revisions Review
VII. Project List Review
VIII. Conclusion
- Community Buyin
- People to do the work
- Raw materials available
- Land available
- Funding available
- Political Capital
Project costs v. Benefits

- Cost of the Project
- Cost of Maintenance
- Opportunity Cost
  - Other projects
  - Reallocated Taxes
  - Loss of natural connections/habitat
- Reduction in Losses
- Investment Security
- Reduction in Flood Insurance Premiums (increase disposable income)
• BCRs for Mitigation Strategies Studied
  o Adopting Model Codes Saves $11 per $1 Spent
  o Federal Mitigation Grants Save $6 per $1 Spent
  o Exceeding Codes Saves $4 per $1 Spent
  o Mitigating Infrastructure Saves $4 per $1 Spent

➤ BCR of 11:1 for adopting the 2018 IRC and IBC, versus codes represented by 1990-era design
➤ Designing new buildings to exceed the 2015 IRC and IBC would result in 87,000 new, long-term jobs
➤ Communities that consistently meet the latest editions of commonly adopted code requirements, culminating in the 2018 IRC and IBC, have added 30,000 new jobs to the construction-materials industry
### Natural Hazard Mitigation Saves: 2018 Interim Report Summary

#### Table 1. Benefit-Cost Ratio by Hazard and Mitigation Measure.
I. Welcome and Introductions
II. Meeting 4 Notes Review
III. Subcommittee Discussion Update
IV. Strategy Discussion – FEMA Priorities
V. Project Prioritization Methodology
VI. Goals and Objectives and Revisions Review
VII. Project List Review
VIII. Conclusion
1. Identify and pursue preventative measures that will reduce future damages from hazards.

2. Enhance public awareness, *public education*, and understanding of disaster preparedness.

3. Reduce repetitive flood losses in the parish.

4. Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards.

5. *Set a uniform standard of protection incorporated into all activities.*
Goal 1: Identify and pursue preventative measures that will reduce future damages from hazards

- Objective 1.1: Ensure existing structures are structurally sound to endure hurricane-force winds
  - *Action 1.1.1:* Wind harden structures

- Objective 1.2: Ensure all citizens and employees of Terrebonne Parish are safe from high winds (hurricanes and tornado related)
  - *Action 1.2.1:* Construct safe rooms at critical facilities
  - *Action 1.2.2:* Expand the coverage and participation in the Parish’s hazard early warning system

- Objective 1.3: Ensure all first responders are adequately equipped to respond to a storm event
  - *Action 1.3.1:* Purchase or upgrade communication devices as necessary to ensure interoperability among first responders and develop recurring cost funding source.
  - *Action 1.3.2:* Purchase generators for critical facilities (see Attachment c3-1 for locations) to ensure operation during and after a hazard event
Goal 1: Identify and pursue preventative measures that will reduce future damages from hazards

- **Objective 1.4:** Protect citizens from saltwater intrusion
  - **Action 1.4.1:** Install gauges to test for salt content in marshes
  - **Action 1.4.2:** Increase freshwater diversions
  - **Action 1.4.3:** Continue to construct Morganza to the Gulf and internal lock system to reduce the effects of saltwater intrusion

- **Objective 1.5:** Reduce the effects of Land Subsidence (Discuss with subcommittee)
  - **Action 1.5.1:** Pursue approvals and funding for coastal restoration projects such as sediment diversions to reduce land subsidence in coastal areas and marshes.
  - **Action 1.5.2:** Ensure accurate survey points are located throughout the parish to monitor continued subsidence (may be redundant with LIDAR)
  - **Action 1.5.3:** Monitor agricultural activities and encourage smart farming practices to reduce soil compaction and acceleration of subsidence (NRCS)
  - **Action 1.5.4:** Study effects of forced drainage pumping on subsidence
Goal 1: Identify and pursue preventative measures that will reduce future damages from hazards

- **Objective 1.6:** Protect historic and cultural resources, such as cemeteries and gathering places from all hazards
  - *Action 1.6.1:* Identify vulnerable historic and cultural resources, and opportunities to protect and/or relocate historic assets threatened by sea level rise

- **Objective 1.7:** Protect critical facilities from lightning strikes
  - *Action 1.7.1:* Install lightning rods on all critical facilities (relevant/feasible/done?)
  - *Action 1.7.2:* Install and maintain surge protection on all critical electronic equipment (Sent to Ben/David/Ernest)

- **Objective 1.8:** Protect citizens from sinkholes 1 vote for removal
  - *Action 1.8.1:* Initiate study on salt domes to fill in data gaps and identify hazard effects
Objective 2.1: Increase public awareness of hazard areas and educate the public on mitigation through existing channels and organizations and their memberships.

- Action 2.1.1: Continue to advertise public meetings for hazard mitigation planning updates and yearly maintenance to spark engagement

- Action 2.1.2: OEP will continue to attend public gatherings, provide yearly materials for preparedness, and updates to the registration system for people needing evacuation or other services in preparation for an event.

- Action 2.1.3: Continue web and email postings of mitigation programs available to reduce risks.

- Action 2.1.4: Develop or identify and place pamphlets in the libraries and the Parish Government Tower regarding the various hazards that can impact the parish.
Goal 2: Enhance public awareness and understanding of disaster preparedness

- **Action 2.1.5**: Increase social media to increase penetration of messaging

- **Action 2.1.6**: Increase education regarding Law and Ordinance and Flood Insurance Claims to assist in elevation or other code compliance.

- **Action 2.1.7**: Increase transparency on the website and links to useful material.

- **Action 2.1.8**: Provide age appropriate materials for schools to support physical and mental health through knowledge of natural hazard preparation and recovery.

- **Action 2.1.9**: Educate communities currently residing in at risk areas on the six (6) evacuation plans, access to shelter and transportation assistance as needed.

- **Action 2.1.10**: Promote increased participation in the NFIP
Action 2.1.11: Better promote the Multijurisdictional Program for Public Information to educate population on risk reduction strategies, their responsibilities, and the Parish’s responsibility for enforcement

Action 2.1.12: Gather and present information on subsidence and climate change as models mature and understanding improves.

Action 2.2.13: Increase understanding of public, real estate, banking and mortgage stakeholders regarding the value of flood and wind safety building alternatives.

Action 2.2.14:4.2.3 Establish a public outreach campaign to ensure all homeowners in floodplains are aware of the various types of coverage options under the NFIP

Action 2.2.15:4.2.4: Establish homeowner education program on flood mitigation measures
Goal 3: Reduce repetitive flood losses in the parish

- **Objective 3.1.**: Eliminate threat of flood damage to structures in Terrebonne Parish including storm surge and levee failure
  - **Action 3.1.1**: Continue to upgrade current drainage infrastructure
  - **Action 3.1.2**: Construct new flood control structures and levees or elevate or harden as necessary.
  - **Action 3.1.3**: Elevate or acquire all RL and SRL structures in Terrebonne Parish
  - **Action 3.1.4**: Develop new and more accurate models to project the impact of various activities.
  - **Action 3.1.5**: Elevate equipment that is vulnerable to flood damage
  - **Action 3.1.6**: Flood proof all public buildings vulnerable to flood damage
Goal 3: Reduce repetitive flood losses in the parish

- **Action 3.1.8:** Collaborate with communities to design, evaluate, and implement Relocation Strategies for communities located outside the levee systems as needed.

- **Action 3.1.9:** Ensure that current and future building elevations take the needs of those individuals with access and functional needs into account. This includes the incorporation of lifts.

- **Action 3.1.10:** Identify mechanisms to protect the Island Road from surge and tidal impacts. This might include engineered solutions to decrease wave impacts and/or erosion control mechanisms along the edges of the road. (Cost benefit?)

- **Action 3.1.11:** Develop and implement repetitive loss area analyses as damages are identified.
Goal 4: Facilitate sound development in the parish to reduce or eliminate potential impacts of hazards

- **Objective 4.1:** Promote and permit commercial and industrial development, including public critical facilities, outside of hazard areas to limit business interruption, property damage, and impairment to critical facilities in strict accordance with the parish zoning, flood management, and other applicable state and federal regulations.
  - **Action 4.1.1:** Ensure that future development does not increase hazard losses by enforcing building codes
  - **Action 4.1.2:** Guide future development away from hazard areas using zoning regulations while maintaining other parish goals such as economic development and improving the quality of life
  - **Action 4.1.3:** Provide safe locations for files, records, and computer equipment
  - **Action 4.1.4:** Examine current zoning regulations and determine what new regulations could be passed to reduce the effects of hazards on new buildings and infrastructure
Goal 4: Facilitate sound development in the parish to reduce or eliminate potential impacts of hazards

- **Objective 4.2**: Promote preservation and/or conservation of flood prone areas for parish parks, recreation areas, and general flood plain management
  - **Action 4.2.1**: Participate in existing programs at the state and federal levels oriented to environmental enhancement and conservation
  - **Action 4.2.5**: Work with land owners in flood prone areas, particularly outside of the levee systems, and other stakeholders to identify flood mitigation and climate adaptation measures to reduce flood risk and protect the levee, floodgate and lock system/s.
  - **Action 4.2.6**: Research partners and low tech or low cost alternatives for marsh, coastal or shoreline protection or restoration programs to reduce harm from all hazards.
I. Welcome and Introductions
II. Meeting 4 Notes Review
III. Subcommittee Discussion Update
IV. Strategy Discussion – FEMA Priorities
V. Project Prioritization Methodology
VI. Goals and Objectives and Revisions Review
VII. Project List Review
VIII. Conclusion
Efforts to Reduce Vulnerabilities
Projects Submitted

- Funding for Elevators
- Flood Insurance Support
- Increase Availability of Affordable Housing
- Increase number of Housing Choice Vouchers Available
- Homeless Services Evacuation Shelter Hardening Evacuation Shelter Generators
- HNC/Bayou Grand Caillou By-pass Canal
- Freshwater Introduction into the Lake Boudreaux Basin
- Phase 2 of the Bayou Terrebonne Freshwater Introduction Project
- Redundant Protection for PAC LA
- Hwy 55 Road Ramp/Floodgate
Efforts to Reduce Vulnerabilities
Projects Submitted

- Safe Harbor pilings
- Lower Bayou Side Drive Levee Lower
- Shrimpers Row flood control improvements
- Brady Road (Lower Dularge) flood control
- Fortify Levees Wear 90 deg turns to avoid runup and erosion.

- Increase flow into the Atchafalaya and Sediment through Pipeline
## RISK REDUCTION STRATEGIES

### Flood Ordinance Change Recommendations

**CRS Recommendation Additional Points**

<table>
<thead>
<tr>
<th></th>
<th>Code</th>
<th>Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>432 g</td>
<td>Enclosures</td>
<td>160</td>
</tr>
<tr>
<td>2</td>
<td>452 a1</td>
<td>Stormwater Plans</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>452 a2</td>
<td>Design Storm</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>432 a</td>
<td>Fill Restrictions</td>
<td>130</td>
</tr>
<tr>
<td>5</td>
<td>452 c1</td>
<td>Erosion Control Plans</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>432 b</td>
<td>Freeboard</td>
<td>165</td>
</tr>
<tr>
<td>7</td>
<td>432 k</td>
<td>Coastal A Zone**</td>
<td>400</td>
</tr>
<tr>
<td>8</td>
<td>432 j</td>
<td>Manufactured Home BFE</td>
<td>15</td>
</tr>
<tr>
<td>9</td>
<td>452 d</td>
<td>Water Quality</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>340</td>
<td>Disclosure Requirements</td>
<td>70</td>
</tr>
</tbody>
</table>

**New Points**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>70</td>
<td>870</td>
<td>100</td>
<td>1040</td>
</tr>
</tbody>
</table>

**Maximum Net Gain**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>959</td>
</tr>
</tbody>
</table>

**Planning Proposal**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>70</td>
<td>740</td>
<td>100</td>
</tr>
</tbody>
</table>

* Eliminating numbers in gray from the totals - not proposed.

** Can't be implemented until map development complete.
I. Schedule/Next Public Meeting
   A. December 19: 6-8
      1) Review Risk Assessment Cost Projections
      2) Prioritize Projects – BCA Estimate
      3) Select top priority candidates
II. Draft of Submission Available for Review
III. Adjourn
CONTACT INFORMATION

Jennifer Gerbasi, CFM, JD
Recovery Planner
Planning Department
Recovery Assistance and Mitigation Planning
985-873-6565