

Appendix B

PLANNING PROCESS

PURPOSE

The Code of Federal Regulations (CFR) requires every state to have a State Mitigation Plan that is approved by the Federal Emergency Management Agency (FEMA) if it is to receive non emergency Stafford Act assistance and FEMA mitigation grants.ⁱ The section of the code pertaining to State Mitigation Plans lists seven required components for each plan: a description of the planning process; risk assessments; mitigation strategies; a description of coordination of local mitigation planning; a method and system for plan maintenance; verification of plan adoption; and assurances of state compliance with the plan. This Appendix details the planning process to demonstrate Louisiana's observance of §2014's suggestions that the planning should include "coordination with other State agencies, appropriate Federal agencies, interested groups, and...[integration] with other ongoing State planning efforts as well as other FEMA mitigation programs and initiatives."

The Disaster Mitigation Act of 2000 provided a strong incentive for the development of a Standard State Hazard Mitigation Plan. Thus, the State of Louisiana, through the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), began the process of developing the first State Hazard Mitigation Plan in 2003. The planning process began in May 2004 and the plan was adopted by the Governor and approved by FEMA on April 26, 2005.

PLANNING

To comply with Emergency Management Accreditation Program (EMAP) requirements, an interim update of the plan was prepared by GOHSEP in 2007. This update included improving integration between this plan and the state Emergency Operations Plan (EOP) and Continuity of Operations Plan (COOP). The Update was presented to and approved by the State Hazard Mitigation Team (SHMT) in 2007. This Update consisted of updating all sections of the 2005 Plan using the best available data and methodologies, culminating with FEMA approval in April 2008. These changes were integrated into the 2011 update, as well, and have been brought forward.

Prior to 2018, plan updates and FEMA re-approvals are required every three years. Thus, the process to update the plan a second time was formally initiated in December 2009. The scope of work initiated by all participants consisted of updating each section of the 2008 Plan using the best available data and methodologies, culminating with FEMA approval on April 7, 2011. The process for updating the third plan began in early 2013, and received official approval from FEMA R6 on April 2, 2014. The process for updating the 2019 plan began in November 2017.

After the 2019 plan update process was initiated, the CFR 44, 201.3 was updated, which changed the frequency of updates to every 5 years.

It is GOHSEP's duty to ensure that preparations of this state will be adequate to deal with emergencies or disasters and so the Strategic Plan was updated July 1, 2013. GOHSEP strives to continue to improve Louisiana's (1) preparation for, (2) response to, and (3) recovery from the next emergency. To become better prepared, Louisiana needs protected communities that are prepared to respond to emergencies and disasters. To do this, the state must have emergency response capabilities which focus on the protection of life, property, and the environment.

Further, it is vital for the state to have the capabilities to execute and sustain safe and timely recovery from emergencies and disasters. All of GOHSEP's existing programs support these goals and are essential to the State's efforts, to protect its citizens, and to create a resilient infrastructure.

The Plan Maintenance Section of the State Plan states that the Plan will be done by the State Hazard Planning Committee (SHMPC), and this plan is supported by GOHSEP. The SHMPC is an ad-hoc committee, consisting of state agencies, academia, and Louisiana residents. As directed by the Governor or Governor's Authorized Representative, the SHMPC should:

Direct the development of the plan

Act as a voice for the state

Convene stakeholders (including state, local, and non-profit agencies) for meetings in large attendance since their feedback is necessary to facilitate an effective planning process

Comment on drafts (through Google Drive which includes all drafts and communication done through the plan update process)

Publish all presentation and meeting notes on Google Drive

The SHMPC met on six separate occasions while developing the 2019 Plan Update. The table below provides a summary of the six meetings that contributed to the current update of the plan.

Meeting Number	Date / Place	Subject
1	November 16, 2017	SHMPC Meeting #1—Kick off meeting
2	January 09, 2018	SHMPC Meeting #2— Review Hazard Profiles
3	March 06, 2018	SHMPC Meeting #3—Repetitive Flood Loss and Community Rating System Strategy
4	April 10, 2018	SHMPC Meeting #4—Risk Assessment: Changing Future Conditions
5	May 22, 2018	SHMPC Meeting #5—Risk Assessment of state-owned assets and most vulnerable jurisdictions
6	June 12, 2018	SHMPC Meeting #6—Goals and Actions

These workshops and meetings were facilitated by GOHSEP and its consultants. Prior to these meetings, the SHMPC and key stakeholders received packets of information that were subsequently presented and discussed at the meetings. The products were also distributed online for those who could not attend the meetings. The SHMPC discussed each section of the at Plan Update meetings, where comments and questions were encouraged from all attendees. After the presentations, the SHMPC reviewed modified proposed elements of the Plan Update. A full draft of the Plan Update was circulated to SHMPC state agencies and key stakeholders for final review and comment.

A number of individuals and agencies played key roles in preparing the entire Plan Update including:

Governor’s Authorized Representative State Hazard Mitigation Planning Committee (SHMPC)

Federal Emergency Management Agency, Region VI

Consultants from Louisiana State University

Consultants from University of New Orleans Center for Hazards Assessment, Response & Technology (UNO-CHART)

The Governor’s Authorized Representative was responsible for authorizing the SHMPC to develop the State of Louisiana Hazard Mitigation Plan; reviewing the recommendations of GOHSEP and the SHMPC to adopt the plan on behalf of the state; requesting revisions to the plan contents if deemed necessary; and formally adopting the plan.

GOHSEP was the lead state agency for developing the Plan Update, with specific responsibility for project management resting with the State Hazard Mitigation Officer. Although the SHMPC was responsible to the Governor’s Authorized Representative for the actual development and production of the Plan Update, GOHSEP performed an important coordination function throughout its development. GOHSEP directly supervised the consultants’ activities and facilitated the involvement of the SHMPC members. GOHSEP also provided important oversight and quality control to ensure that the plan and the associated process met federal requirements. At the end of the process, GOHSEP provided a formal recommendation for the Governor’s Authorized Representative to adopt the Plan Update.

At GOHSEP, the SHMT was responsible for developing, reviewing, and approving the 2005 Plan, the 2007 Interim Plan Update, the 2008 Plan Update, the 2011 Plan Update, and the 2014 Plan Update. The 2019 Plan Update was developed by the SHMPC according to principles it decided at its first meeting on November 16, 2017.

The SHMT developed the plan with the assistance of the SHMPC. The SHMPC’s duties and functions include (but are not limited to) identifying the state’s vulnerability to hazards; reviewing existing mitigation plans and prioritizing recommendations; developing or updating Hazard Mitigation Plans; developing a comprehensive strategy for the development and implementation of a State Mitigation Program; reviewing, assigning priority, and recommending mitigation actions for implementation; and seeking funding for implementation of mitigation measures.

FEMA, through its Region VI office in Denton, Texas, is the responsible party for reviewing the plan for compliance with DMA 2000 and the CFR. Representatives of FEMA Region VI also helped facilitate completion of this plan through on-going review of the plan as it was developed and updated.

The consultants for the 2019 Hazard Mitigation Plan Update were a group from Louisiana State University, comprising Dr. Carol Friedland, Dr. Robert Rohli, and Mr. Rubayet Bin Mostafiz, and a group from UNO-CHART, comprising Dr. Monica Farris, Dr. Tara Lambeth, Mr. John McCandless, and Ms. Samantha Romain. The consultants assisted in a variety of ways, including the following:

Assembling information for inclusion in the plan

Editing previous editions of the plan

Writing new material as needed

Providing technical support in profiling the hazards and in performing the risk assessments

Developing written materials for meetings

Making presentations at THE SHMPC meetings and workshops

Providing support for outreach to interested parties and coordination efforts among federal and state agencies

COORDINATION AMONG AGENCIES

The CFR requires that states describe how federal and state agencies were involved in the planning process. It also requires that states describe how interested groups and individuals were involved in the planning process.

For the purposes of this Plan Update, a distinction is made between stakeholders and interested parties. “Stakeholders” are primarily organizations and agencies that will potentially play a direct role and/or receive a direct benefit in implementing the recommendations in the Mitigation Action Plan. Interested parties include anyone else who could potentially benefit either directly or indirectly from the Plan Update recommendations. This primarily refers to residents, property owners, and business owners in the State of Louisiana.

This subsection describes the following:

The involvement of other Federal and state agencies and stakeholders

The process by which GOHSEP and the SHMPC coordinated various agencies, stakeholders, and interested parties during the plan update’s development

FEMA and the state agencies that are members of the SHMPC had regular involvement in developing the Plan Update. GOHSEP and the SHMPC also sought participation from additional federal and state agencies and stakeholders while developing the Plan Update. As part of this process, GOHSEP and the SHMPC solicited the participation of universities, private citizens, businesses, and non-profit and non-governmental organizations.

In addition, GOHSEP and the SHMPC made contact with federal and state agencies to inform them of the Plan Update, and to for ask for assistance in providing the most current data. Correspondence with these agencies indicates GOHSEP and the SHMPC's desire to establish long-term partnerships as part of implementing the plan's recommendations. Correspondence similar to that sent to the federal and state agencies was sent to parish emergency management agency directors, as well as parish and community floodplain administrators, based on participation in the 2014 plan update. Various stakeholders were contacted to assist with the plan update. Selected groups were asked to provide subject matter expertise, and review and provide comments on relevant sections of the plan.

PROGRAM INTEGRATION

The CFR requires that states describe how their mitigation planning process is integrated with other ongoing state planning efforts, as well as FEMA mitigation programs and initiatives. Thus, this subsection describes State Mitigation Programs and Initiatives and FEMA Mitigation Programs and Initiatives.

A measure of integration and coordination is achieved through the participation of representatives of state agencies on the SHMPC who administer three programs: floodplain management under the National Flood Insurance Program (NFIP), coastal protection and restoration under the provisions Act 8 of the First Extraordinary Session of 2005, and the State Uniform Construction Code. Furthermore, in order to achieve EMAP compliance, the SHMT submitted a number of refinements and changes for the Plan Update in late 2007. These changes have been brought forward through the 2011 Plan Update, 2014 Plan Update, the current 2019 Plan Update, and will be integrated into subsequent plan updates.

There are also several initiatives that have fostered further coordination and integration of the SHMPC which was developed to address the roles and responsibilities of state and non- governmental (NGO) partners in responding to all threats and hazards, but especially those outlined in the State Hazard Mitigation Plan. Coordination efforts between the two plans range from seeking consistency in the way hazards are identified, to identifying opportunities to integrate mitigation practices in response and recovery operations.

Another program is the GOHSEP Continuity of Operations Plan (COOP), which was updated in 2017. The COOP was incorporated into the overall State of Louisiana Hazard Mitigation Strategy to specifically acknowledge that key provisions of that plan were part of the total approach to reducing risk and the impacts of hazards. In particular, GOHSEP considered providing for redundancy of critical systems, equipment, flow of information, operations, and materials consistent with the overall goals and objectives of the plan.

GOHSEP also provides leadership for state and local mitigation planning efforts and administers and oversees FEMA-related hazard mitigation grant programs (HMGP) for the state that are related to hazard mitigation, emergency management, and disaster relief. Based on this role, GOHSEP has the opportunity to integrate mitigation planning and project information with the FEMA grant application process for the following:

HMGP

Pre-Disaster Mitigation Competitive Grant Program

Flood Mitigation Assistance (FMA) Program

Public Assistance Grant Program

The objective of HMGP is to accomplish long-term hazard mitigation measures that reduce the loss of life and property from future disasters. Hazard mitigation activities funded may not necessarily relate to the damages caused by the disasters, though. Grants under HMGP are available statewide.

DOCUMENTATION

The following pages contain documentation (in their original format) of the attendees, agendas, minutes, and sign-in sheets (as well as any related, accompanying documents) for the six meetings of the SHMPC held during the development of the Plan Update.

Louisiana State Hazard Mitigation Plan Update 2018

Meeting #1: November 16, 2017 10am to 12pm

Meeting Name

Kick Off Meeting

Location

Louisiana Recovery Office

1500 Main Street Baton Rouge, LA

Attendees:

Name	Agency
James Gomillion	Department of Wildlife and Fisheries
Colonel James Wesley	Department of Public Safety
Gregory Langley	Department of Environmental Quality
Chuck Carr Brown, Ph.D.	Department of Environmental Quality
Rosanne Prats	Department of Health
Charles "Chip" McGimsey, Ph.D.	Office of Cultural Development
Nicole Hobson-Morris	Office of Cultural Development
Felicia H. Cooper	Office of State Fire Marshal
John Hodnett	Facilities Planning and Control
Mark Gates	Facilities Planning and Control
Pat Forbes	Office of Community Development
Warren Byrd	Department of Insurance
Susan Veillon	Department of Transportation and Development
Cindy O'Neal	Department of Transportation and Development
Vincent Brown	Southern Climate Impacts Planning Program/LSU
Alan Black	Southern Climate Impacts Planning Program/LSU
Barry Keim, Ph.D.	Southern Climate Impacts Planning Program/LSU
Kara Moree	Louisiana Floodplain Managers Association
Jeffrey Giering	Governor's Office of Homeland Security & Emergency Preparedness
Steve Garcia	Governor's Office of Homeland Security & Emergency Preparedness
Ellen Ibert	Governor's Office of Homeland Security & Emergency Preparedness
Drew Ratcliff	Capital Region Planning Commission
Patricia Skinner	LSU Agricultural Center
Maggie Olivier	Jefferson Parish
Michelle Gonzales	Jefferson Parish
Scott Hemmerling, Ph.D.	The Water Institute of the Gulf
Ryan Clark	The Water Institute of the Gulf
Traci Birch, Ph.D.	LSU Coastal Sustainability Studio
Ryan Mast	City of New Orleans
Zachary Rosen	Coastal Protection and Restoration Authority
Ashley Cobb	Coastal Protection and Restoration Authority
Martha P. Collins	Ascension Parish

Carol J. Friedland, Ph.D., P.E., C.F.M.	LSU Department of Construction Management
Robert V. Rohli, Ph.D.	LSU Department of Oceanography and Coastal Sciences
Monica Farris, Ph.D.	University of New Orleans-Center for Hazards Assessment, Response & Technology (UNO-CHART)
Tara Lambeth, Ph.D.	University of New Orleans-Center for Hazards Assessment, Response & Technology (UNO-CHART)
John McCandless	University of New Orleans-Center for Hazards Assessment, Response & Technology (UNO-CHART)

Meeting #1 Agenda

- What is a State Hazard Mitigation Plan?
- Why does every state need one?
- Roles of State Hazard Mitigation Planning Committee
- Goals and Actions Progress Update
- Overview of the Planning Process
- UNO/LSU Roles and Responsibilities in the Plan Update
- Utilization of Google Drive in the Plan Update Process
- Next Steps

Governor's Office of Homeland Security And Emergency Preparedness



SHMPC - Meeting #1

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting
Location: 1500 Main Street, Baton Rouge, LA Date: 11/16/2017 Time 10:00 A.M. till Noon

Name	Company	Phone Number	Job Title	Email Address
<i>Chip McGinney</i>	<i>SHPO</i>	<i>225-219-4598</i>	<i>State Architect/Logist</i>	<i>cmcginney@cent.la.gov</i>
<i>Zach Rosen</i>	<i>CPRA</i>	<i>225-338 342-3428</i>	<i>Coastal Resources Scientist</i>	<i>zachary.rosen@la.gov</i>
<i>Kara Moree</i>	<i>LFMA</i>	<i>337-501-8211</i>	<i>Chairman</i>	<i>kara.moree@ccsrslnc.com</i>
<i>Ellen Ibert</i>	<i>BOHSEP</i>	<i>225-334-7748</i>	<i>PRO-EHP</i>	<i>ellen.ibert@la.gov</i>
<i>Rosanne Prats</i>	<i>LDH</i>	<i>225-342-3474</i>	<i>Director, Emer Prep</i>	<i>Rosanne.Prats@la.gov</i>
<i>Chuck Carabram</i>	<i>LDEP</i>	<i>225-219-3550</i>	<i>Secretary</i>	<i>Chuck.brand@la.gov</i>
<i>Greg Langley</i>	<i>LDEP</i>	<i>225-249-3464</i>	<i>Press Secretary</i>	<i>gregory.langley@la.gov</i>
<i>Pat Forbes</i>	<i>OCH</i>	<i>225-342-1676</i>	<i>Exec. Dir</i>	<i>pat.forbes@la.gov</i>
<i>TPAen Burch</i>	<i>LSU</i>	<i>225-578-4990</i>	<i>Asst Prof</i>	<i>tpaen@lsu.edu</i>
<i>Robert Rahli</i>	<i>LSU</i>	<i>225-578-6346</i>	<i>Professor</i>	<i>rahli@lsu.edu</i>
<i>Barry Keim</i>	<i>LSU</i>	<i>225-328-0749</i>	<i>Prof and LA State Climatologist</i>	<i>keim@lsu.edu</i>
<i>Pat Skinner</i>	<i>LSU/Center</i>	<i>225-981-5657</i>	<i>Mitigation Specialist</i>	<i>pskinner@agcenter.lsu.edu</i>



Governor's Office of Homeland Security And Emergency Preparedness

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting
 Location: 1500 Main Street, Baton Rouge, LA Date: 11/16/2017 Time: 10:00 A.M. till Noon

Name	Company	Phone Number	Job Title	Email Address
JAMES COMILLON	LDWF/LEAF	765-2980	Chairman / LEAF	jgcomill@newlf.la.gov
JAMES R. HESLEY	DOC	(225) 360-5142	Corrections Colonel	jameshesley@corrections.state.la.us
Ryan Mast	Orleans Parish	504-658-8743	HR Administrator	remast@ack.gov
Nancy Gates	FPIC	225-219-4422	Asst Director	nancy.gates@la.gov
John Hadnett	FP&C	225-219-4404	Assistant Director	John.Hadnett@LA.GOV
Ashley Cobb	CPRA	342-3894	CRS	ashley.cobb@la.gov
Susan Veillon	LADOTD	379-3005	CRP Manager	Susan.Veillon@la.gov
Lindy O'Neal	"	"	NFIP Coordinator	lindy cindy.oneal@la.gov
FELICIA COOPER	STATE FIREMARSHAL	225-268-4424	DEP. ASSISTANT SECRETARY	Felicia.Cooper@la.gov
Nicole Hobson-Norris	LSHPO	225-342-8172	Director	nhobson@crf.la.gov
Vincent M. Brown	SCIPP	240-626-4307	Research	Vbrown31@lsu.edu
Maggie Olivier	Jeff Parish Flooding	(504) 736-6541	Floodplain/CRS Specialist	molivier@jeffparish.net

(Cont'd)

Briefing / Meeting: _____ Date: _____

Name	Company	Phone Number	Fax Number	Email Address
Ryan Clark	The Water Institute	225-227-2725		rclark@thewaterinstitute.org
Michelle Gouedeles	Jeff Parish	225-223-2719		mgonzales@jeffparish.net
WARREN BYRD	LA Dept of INSRM	225-342-5203	225-342-6057	warren.byrd@ldi.la.gov
Drew Ratcliff	CRPC	Deputy Commissioner		CRPCla.org
Drew Ratcliff	CRPC	225-383-5203		dratcliff@corpcla.org
ALAN BLACK	LSU / Impacts Planning Proj	217 898 9839		ALAN@LSU.EDU
Scott Hemmerling	Treasury Inst. Inc	225-228-2101		shemmerling@the-water-institute.org
John McLandless	UNO-CHART	225-493-4735		Jgonceand@uno.edu
CAROL FRIEDLAND	LSU	225-578-1155		friedland@lsu.edu
Steve Garcia	GO HSEF	225-439-5343		Steve.garcia@go.gov

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(Cont'd)

Briefing / Meeting: _____ Date: 11-17-2017

Name	Company	Phone Number	Fax Number	Email Address
Martha P. Collins	Ascension Parish	225-450-1122	225-644-1502	Mcollins@apgov.us
Tara Lombardi	UNO-CHART	504-280-6071	504-280-4023	tlombard@uno.edu
Mon Jay	UNO-CHART	504 280-4016	504 280-4023	mateets@uno.edu
Jeffrey Giering	GOSHOP	225-267-2516		jeffrey.giering@LA.Gov

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2019 State Hazard Mitigation Plan Meeting #1 November 16, 2017



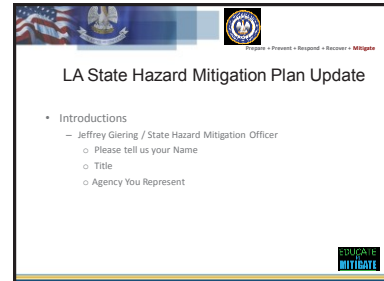
LA State Hazard Mitigation Plan Update

- State Hazard Mitigation Planning Committee
 - Kick Off Meeting
 - November 7, 2017
 - Meeting 1 of 6



LA State Hazard Mitigation Plan Update

- Welcome and Thank You for Coming
 - Casey Tingle
 - Assistant Deputy Director, Disaster Recovery



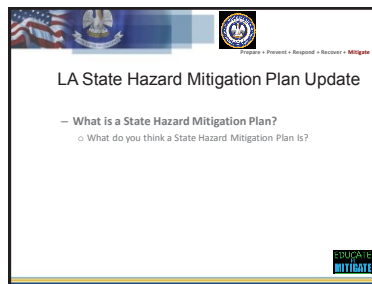
LA State Hazard Mitigation Plan Update

- Introductions
 - Jeffrey Giering / State Hazard Mitigation Officer
 - Please tell us your Name
 - Title
 - Agency You Represent



LA State Hazard Mitigation Plan Update

- Agenda
 - What is a State Hazard Mitigation Plan
 - Why does Every State Need One
 - Roles of State Hazard Mitigation Planning Committee
 - Goals and Actions Progress Update
 - Overview of the Planning Process
 - UNO / LSU Roles and Responsibilities in The Plan Update
 - Utilization of Google Drive in The Plan Update Process
 - Next Steps



LA State Hazard Mitigation Plan Update

- What is a State Hazard Mitigation Plan?
 - What do you think a State Hazard Mitigation Plan is?



LA State Hazard Mitigation Plan Update

- FEMA's Definition of a State Hazard Mitigation Plan
 - The State Hazard Mitigation Plan is a demonstration of the State's commitment to reduce risk from natural hazards and serves as a guide for State Decision Makers as they commit resources to reducing the effects of natural hazards.



LA State Hazard Mitigation Plan Update

- Why Every State Needs a Hazard Mitigation Plan
- Regulatory Requirement
 - Per 44 CFR 201.4 (a) (1): For all disasters declared on or after November 3, 2004, all states, local governments and tribes must have a FEMA approved plan in order to become eligible for these types of FEMA funding.
 - Hazard Mitigation Grant Program
 - Pre-Disaster Mitigation Grant Program
 - Flood Mitigation Assistance Program
 - Public Assistance (Categories C - G)



LA State Hazard Mitigation Plan Update

- Roles of State Hazard Mitigation Planning Committee (SHMPC)
- Planning Process
 - 44 CFR 201.4(b) planning process states an effective planning process is essential in developing and maintaining a good plan. The mitigation planning process should include coordination with other State agencies, appropriate Federal agencies, interested groups, and to be integrated to the extent possible with other ongoing State planning efforts as well as other FEMA mitigation programs and initiatives.



LA State Hazard Mitigation Plan Update

- Responsibilities of the State Hazard Mitigation Planning Committee
 - Review and comment on the Plan using Google Drive <https://goo.gl/356GLW>
 - Help to direct the development of the plan
 - Ranking of Hazards
 - Rank Mitigation Actions
 - Attend SHMPC Meetings

LA State Hazard Mitigation Plan Update

– Current Mitigation Goals and Actions

- Goal 1: The State of Louisiana will improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact.
- Goal 2: The State of Louisiana will improve data collection, use and sharing to reduce the impacts of hazards.
- Goal 3: The State of Louisiana will improve capabilities and coordination at the municipal, parish, regional and state level to plan and implement hazard mitigation projects.

LA State Hazard Mitigation Plan Update

– Current Mitigation Goals and Actions Continued

- Goal 4: The State of Louisiana will continue to pursue opportunities to reduce impacts to the State's manmade and natural environment through mitigation of repetitive and severe repetitive loss properties and other appropriate construction projects and related activities.
- Goal 5: The State of Louisiana will improve on the protection of its Historic Structures/Buildings, Traditional Cultural Properties and Archaeological Sites from natural and human-constructed hazards.

LA State Hazard Mitigation Plan Update

Current Ranking of Mitigation Actions

Action	Description	Priority/Category	Plan Ranking/Plan Update
E.1	Continued Education and Outreach	10	1
E.2	Education and Outreach for State Agencies	20	2
E.3	Emergency Preparedness and Outreach Activities	15	N/A (new action)
E.4	Emergency State Response Effort	9	3
E.5	State-Related Efforts for State Agencies	11	4
A.1	Technical Support for Parish and Municipal Hazard Mitigation Planning	3	10
A.2	Technical Support for State Agencies Hazard Mitigation Planning	13	8
A.3	State Agencies	4	6
A.4	Complete Web-Based Online Application Tool	7	N/A (new action)
A.5	Identify Cost Effective Projects with Parish and Municipalities	1	4
A.6	Identify Cost Effective Projects with State Agencies	6	7
E.6	Legislative and Regulatory Enhancements	18	5
A.7	Enhance Current State Hazard Mitigation Strategy	2	N/A (new action)

LA State Hazard Mitigation Plan Update

Current Ranking of Mitigation Actions Continued

A.1	Identify Cost Effective Projects with Parish and Municipalities	1	4
A.2	Identify Cost Effective Projects with State Agencies	6	7
A.3	Legislative and Regulatory Enhancements	18	5
A.4	Enhance Current State Hazard Mitigation Strategy	2	N/A (new action)
A.5	Integrate Historic Preservation into Hazard Mitigation Planning	12	N/A (new action)
E.1	Education/Outreach for Historic Preservation Best Management Practices	11	N/A (new action)
E.2	Education/Outreach for Parish of Historic Preservation	14	N/A (new action)

LA State Hazard Mitigation Plan Update

– Overview of the Planning Cycle

– Steve Garcia / Senior Problem Resolution Officer

- The Governor's Office of Homeland Security and Emergency Preparedness
- Hazard Mitigation

LA State Hazard Mitigation Plan Update - Planning Process

LA State Hazard Mitigation Plan Update

– Planning Process

– Organize Resources

- Describe process used to develop plan.
- Include how it was prepared.
- Include who was involved in the process.
- Describe participation of the other agencies.

LA State Hazard Mitigation Plan Update

– Planning Process

– Assess Risks

- Identify Hazards
- Profile Hazard Events
- Inventory Assets

LA State Hazard Mitigation Plan Update

– Planning Process

– Mitigation Strategy

- Goals, Objectives and Actions are reviewed and revised to reflect progress in mitigation efforts and changes in priorities.

LA State Hazard Mitigation Plan Update

- Planning Process
- Adopt and Implement the Plan
 - o Incorporate new hazard and risk information
 - o Determine effectiveness of existing plans and implementation
 - o Prepare future periodic SHMP updates.

LA State Hazard Mitigation Plan Update

- Roles and Responsibilities of UNO and LSU in The Plan Update Process
 - o Introducing Dr. Monica Teets Farris – Director of CHART, University of New Orleans
 - o Introducing Dr. Carl Friedland – Associate Professor, Bert S Turner Department of Construction Management LSU

LA State Hazard Mitigation Plan Update

- The Use of Google Drive in the Plan Update Process: <https://goo.gl/36eGLW>
 - o Introducing Dr. Tara Lambeth Assistant Director of CHART with the University of New Orleans

LA State Hazard Mitigation Plan Update

- Next Steps
- Marion Pearson / Senior Problem Resolution Officer
 - o The Governor’s Office of Homeland Security and Emergency Preparedness
 - o Hazard Mitigation

LA State Hazard Mitigation Plan Update

- State Hazard Mitigation Planning Committee (SHMPC) Meeting Dates and Topics
 - o January 9, 2018 (Hazard Profiles Identification and Ranking)
 - o March 13, 2018 (Review Hazard Profile Ranking)
 - o April 10, 2018 (Risk Assessment)
 - o May 8, 2018 (Risk Assessment for State Owned Assets)
 - o May 22, 2018 – (Goals and Actions)

LA State Hazard Mitigation Plan Update

- Schedule to Turn Plan into FEMA
 - o December 29, 2017 (Introduction)
 - o March 30, 2018 (Capability Assessment)
 - o April 30, 2018 (Hazard Identification and Risk Assessment)
 - o May 31, 2018 (Mitigation Strategy – Goals/Actions)
 - o June 26, 2018 (Entire Draft Plan Turn into FEMA for Review)

LA State Hazard Mitigation Plan Update

- Final Housekeeping Items
 - o The meeting invite for the SHMPC meeting scheduled for January 30, 2018 will be sent out by GOHSEP Thursday, November 13th, 2017
 - o Look for link to Google Drive in meeting invite <https://goo.gl/36eGLW>
 - o FEMA Planning Guidance, 2014 HM Plan Update, Meeting Notes and Presentations will be placed in Google Drive site for your review and comment
 - o Be sure to sign today’s sign in sheet and provide your email address

LA State Hazard Mitigation Plan Update

- Questions / Comments

Louisiana State Hazard Mitigation Plan Update 2018

Meeting #2: January 9, 2018 10am to 12pm

Meeting Name

Hazard Profiles Review

Location

Transportation Training and Education Center 4099 Gourrier Avenue, Baton Rouge, LA 70806

Attendees:

Name	Agency
Drew Ratcliff	CRPC
Jeanette Dubinin	CPEX
Rubayet Bin Mostafiz	LSU College of the Coast and Environment
Andrea Galinski	CPRA
Rosanne Prats	Department of Health
Warren Byrd	LDI
Cindy O'Neal	DOTD
Edward Knight	DOTD
Susan Veillon	DOTD
Jeffrey Giering	GOHSEP
Marion Pearson	GOHSEP
Steve Garcia	GOHSEP
Maggie Olivier	Jefferson Parish
Michelle Gonzales	Jefferson Parish
Bret Lane	LDAF
Kara Moree	LFMA
Patricia Skinner	LSU Agricultural Center
Carol J. Friedland, Ph.D., P.E., C.F.M.	LSU Department of Construction Management
Robert V. Rohli, Ph.D.	LSU Department of Oceanography and Coastal Sciences
Pat Forbes	OCD
Charles "Chip" McGimsey, Ph.D.	Office of Cultural Development
Nicole Hobson-Morris	Office of Cultural Development
Brett Beoubay	Office of Risk Management
Alan Black	Southern Climate Impacts Planning Program/LSU
Barry Keim, Ph.D.	Southern Climate Impacts Planning Program/LSU
Vincent Brown	Southern Climate Impacts Planning Program/LSU
Leon Contreras	SWBNO
Ryan Clark	The Water Institute of the Gulf
Scott Hemmerling, Ph.D.	The Water Institute of the Gulf
Monica Farris, Ph.D.	UNO CHART
Tara Lambeth, Ph.D.	UNO CHART
Eddie Skena	LA Wildlife and Fisheries

Meeting #2 Agenda

- Hazard Profile Requirements
- Hazards Profiled by Parishes
- For each hazard:
 - Methodology and updates from 2014 Plan
 - Hazard profiles
 - Evaluation of future conditions
 - Questions and discussion



Governor's Office of Homeland Security And Emergency Preparedness










SHMPC - Meeting # 2

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting
 Location: 4099 Gourrier Ave., Baton Rouge, LA Date: 1/9/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency/Company
Brett Beoubay	<i>Brett Beoubay</i>	Office of Risk Management
Traci Birch	<i>Traci Birch</i>	LSU Coastal Sustainability Studio
Alan Black	<i>Alan Black</i>	Southern Climate Impact
Vinny Brown	<i>Vinny Brown</i>	Southern Climate Impact
Warren Byrd	<i>Warren Byrd</i>	LA Department of Insurance
Ryan Clark	<i>Ryan Clark</i>	The Water Inst. of the Gulf
Leon Contreras	<i>Leon Contreras</i>	SWBNO
Kevin Crosby	<i>Kevin Crosby</i>	Ouachita Parish
Pat Forbes	<i>Pat Forbes</i>	Off of Community Development
Carol Friedland	<i>Carol Friedland</i>	LSU
Andrea Galinski	<i>Andrea Galinski</i>	CPRA
Steve Garcia	<i>Steve Garcia</i>	GOHSEP

(Cont'd)

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 1/9/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company
Jeffrey Giering		GOHSEP
Michelle Gonzales		Jefferson Parish
Scott Hemmerling		The Water Inst of the Gulf
Nicole Hobson-Morris		Office of Cultural Development
Ellen Ibert		GOHSEP
Lee John III		GOHSEP
Barry Keim		Southern Climate Impact
Edward Knight		DOTD
Tara Lambeth		UNO
Bret Lane		LA Dept. of Ag and Forestry
John McCandless		UNO
Chip McGimsey		Office of Cultural Development
Kara Moree		LFMA

Page ____ of ____

(Cont'd)

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting, Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 1/9/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company
Maggie Olivier	<i>Maggie Olivier</i>	Jefferson Parish
Cindy O'Neal	<i>Cindy O'Neal</i>	DOTD
Marion Pearson	<i>Marion Pearson</i>	GOHSEP
Rosanne Prats	<i>Rosanne Prats</i>	LA Dept. of Health <i>on behalf of Rosanne Prats</i>
Drew Ratcliff	<i>Drew Ratcliff</i>	CPRC
Bob Rohli	<i>Bob Rohli</i>	LSU
Eddie Skena	<i>Eddie Skena</i>	Wild Life and Fisheries
Pat Skinner	<i>Pat Skinner</i>	LSU Ag
Monica Farris Teets	<i>Monica Farris Teets</i>	UNO
Boo Thomas	<i>Boo Thomas</i>	Center for Plan Exc <i>on behalf of B. Thomas</i>
Susan Vermillion		DOTD

Page ____ of ____

(Cont'd)

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting, Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 1/9/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company	
Rubayet Bin Mustafa		LSU	

2019 State Hazard Mitigation Plan
Meeting #2
January 09, 2018

2019 State Hazard Mitigation Plan Update

Hazard Profiles

Carol Friedland, Ph.D., P.E., C.F.M.
Robert Rohli, Ph.D.
Rubayet Bin Mostafiz, M.S.

State Plan Update Stakeholder Meeting
January 9, 2018

Presentation Overview

- Hazard profile requirements
- Hazards profiled by parishes
- For each hazard:
 - Methodology and updates from 2014 Plan
 - Hazard profiles
 - Evaluation of future conditions

The presentation will be divided into groups of 3-4 hazards, followed by questions and discussion for each hazard group

PROFILE REQUIREMENTS

Hazard Profiles

44 CFR §201.4(c)(2)(i): “An overview of the type and location of all natural hazards that can affect the state, including information on previous occurrences of hazard events, as well as the probability of future hazard events, using maps where appropriate”

Hazard Profiles

- The plan must include a current summary of the natural hazards that can affect the state. The summary must include information on location and previous occurrences for each natural hazard, using maps where appropriate.
- If any commonly recognized natural hazards are omitted, the plan must provide an explanation.

HAZARDS IN LOUISIANA

Hazards Profiled by Parishes

<p>Temperature hazards</p> <ul style="list-style-type: none"> Extreme heat (20) Drought (49) Wildfire (38) Winter storms (47) 	<p>Wind hazards</p> <ul style="list-style-type: none"> Tropical cyclones (64) Thunderstorms (54) <ul style="list-style-type: none"> High wind (4) Hailstorms Lightning (2) Tornadoes (63)
---	--

Hazards Profiled by Parishes

<p>Flood hazards</p> <ul style="list-style-type: none"> Coastal hazards (26) Dam failure (30) Levee failure (34) Flooding (63) 	<p>Coastal hazards</p> <ul style="list-style-type: none"> Subsidence (20) Land loss (15) Coastal erosion (5) Saltwater intrusion (4) Sea level rise (1) Storm surge (2)
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Hazards Profiled by Parishes

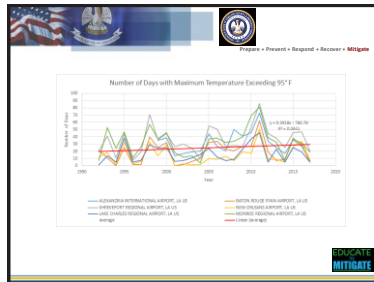
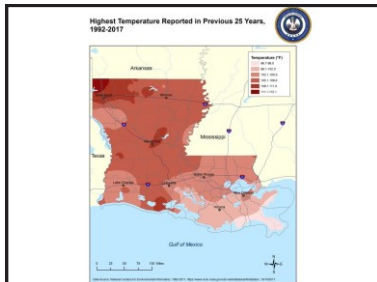
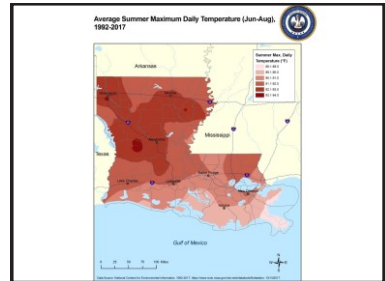
<p>Geologic hazards</p> <ul style="list-style-type: none"> Earthquake (20) Sinkholes (19) Expansive soil (5) 	<p>Other hazards (not profiled)</p> <ul style="list-style-type: none"> Fog (1) Hazardous materials (1)
---	--

TEMPERATURE HAZARDS

EXTREME HEAT, DROUGHT, WILDFIRE, WINTER STORMS

Extreme Heat Methodology

- National Centers for Environmental Information (NCEI)
- 1992–2017 daily temperature records
- Average summer maximum daily temperature
- Highest temperature by station
- Surface interpolation to create continuous map
- Days with high temperature >95° for select cities
- 2014: Average daily maximum July temperature map (1981–2010)



Extreme Heat Future Conditions

- Significant increases in mean number of days/year > 95° F, especially in northern Louisiana
- We project an increase in number of days >95° F by 20% by 2050 statewide

Projected Change in Number of Days Over 95°F
Projected Increase from Historical Average

Source: National Climate Assessment, 2014

Drought Methodology

- United States Drought Monitor
- 2000–2017 weekly shapefiles of drought severity
- Average drought intensity
- 2014: Current drought information and maps were obtained from governmental sources (not mapped by us)

Drought Severity Classification

Category	Description	Possible Impacts	Range				
			Index Range	US DMI (National Drought Product)	US DMI (National Drought Product)	Standardized Precipitation Index (SPI)	Standardized Precipitation Index (SPI)
II	Extreme Drought	Severe impacts on agriculture, livestock, and human health. Significant impacts on ecosystems and infrastructure.	2.00 - 3.00	10.00	11.00	2.00 - 3.00	2.00
III	Very Extreme Drought	Severe impacts on agriculture, livestock, and human health. Significant impacts on ecosystems and infrastructure.	3.00 - 4.00	11.00	12.00	3.00 - 4.00	3.00
IV	Extreme Drought	Severe impacts on agriculture, livestock, and human health. Significant impacts on ecosystems and infrastructure.	4.00 - 5.00	12.00	13.00	4.00 - 5.00	4.00
V	Very Extreme Drought	Severe impacts on agriculture, livestock, and human health. Significant impacts on ecosystems and infrastructure.	5.00 - 6.00	13.00	14.00	5.00 - 6.00	5.00
VI	Extreme Drought	Severe impacts on agriculture, livestock, and human health. Significant impacts on ecosystems and infrastructure.	6.00 - 7.00	14.00	15.00	6.00 - 7.00	6.00



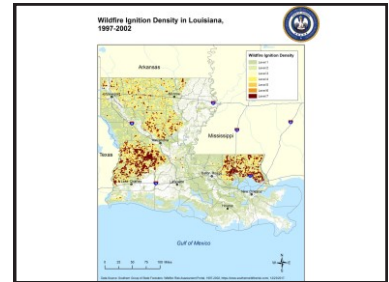
Drought Future Conditions

- Only western Louisiana was included in soil moisture analysis by National Climate Assessment (2014)
- NCA (2014) projects a 1–5% decrease in western Louisiana soil moisture by 2050; NOAA (2016) projects a 5–10% decrease in summer precipitation in Louisiana
- NCA suggests that the influence of increased temperature on soil desiccation will surpass competing effects of increased rainfall
- WebWIMP simulation (<http://climate.geog.udel.edu/~wimp/>)
- We project a 25% increase in future summer drought hazard in Louisiana

Source: NOAA, 2016

Wildfire Methodology

- Southern Group of State Foresters Wildfire Risk Assessment Portal
- Wildfire ignition density, the likelihood of a wildfire igniting in an area
- 2014: Fire density in Louisiana map (2001–2012)



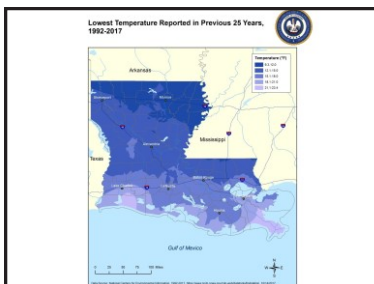
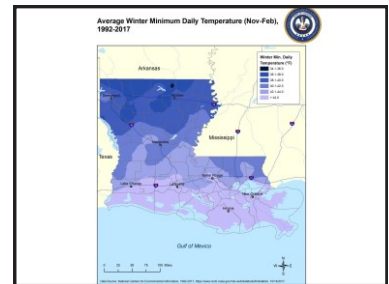
Wildfire Future Conditions

- Similar to our WebWIMP-based drought analysis
- We project a 25% increase in the future wildfire hazard in Louisiana

Source: Liu et al., 2009

Winter Weather Methodology

- National Centers for Environmental Information (NCEI)
- 1992–2017 daily temperature records
- Average winter minimum daily temperature
- Lowest temperature by station
- Surface interpolation to create continuous map
- Days with high temperature <32° for select cities
- 2014: Average daily maximum January temperature map (1981–2010)



Extreme Cold Future Conditions

- The number of days below 32°F is expected to decrease by as much as 12 days/year in northern Louisiana, with lesser decreases southward
- We project a 20% decrease in number of <32°F days statewide

Source: National Climate Assessment, 2014

QUESTIONS AND DISCUSSION

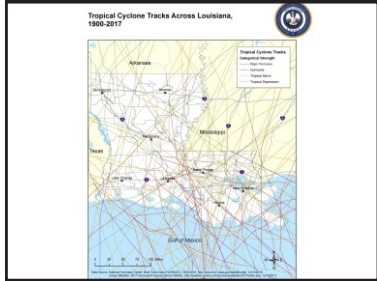
TEMPERATURE HAZARDS

WIND HAZARDS

TROPICAL CYCLONES, THUNDERSTORMS, TORNADES

Tropical Cyclone Methodology

- National Hurricane Center and Unisys Weather
- Best Track Data (HURDAT2) and 2017 hurricane/tropical data for Atlantic Basin
- 1900–2017 tropical cyclone tracks
- Classify tropical cyclones based on sustained wind speed using Saffir-Simpson Scale
- 2014: Historical tracks of tropical cyclones affecting Louisiana (1851–2012)



Tropical Cyclone Future Conditions

- Decreasing frequency but increasing intensity, and perhaps increasing frequency of the strongest tropical cyclones, by 2050
- Role of Atlantic Multidecadal Oscillation?
- Decreasing periodicity of El Niño?
- Exacerbation of impacts by sea level rise and coastal development

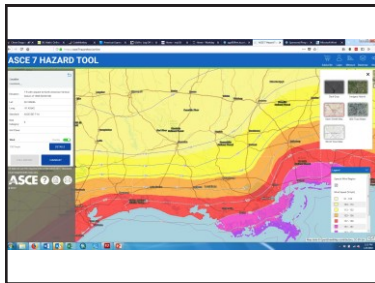
We recommend use of the Coastal Master Plan predictions for coastal flood hazards; wind hazards discussed with thunderstorms

Thunderstorm Methodology

- Wind
- Hail
- Lightning

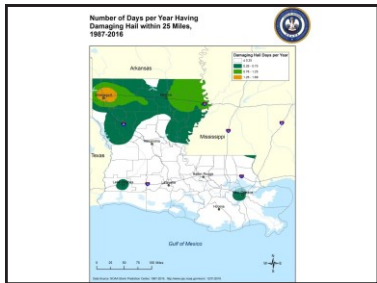
Wind Methodology

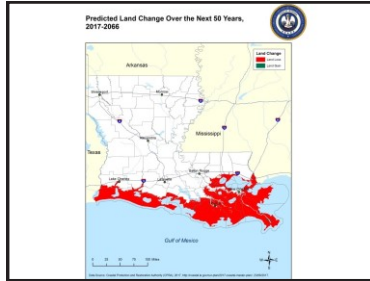
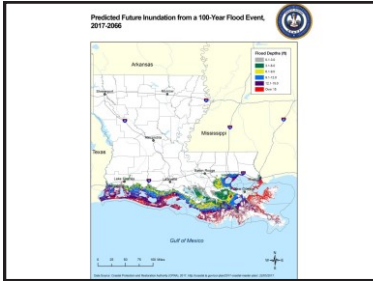
- ASCE 7 Hazard Tool
- Combines all wind speed data, except tornadoes
- 2014: Wind zones in the United States



Hail Methodology

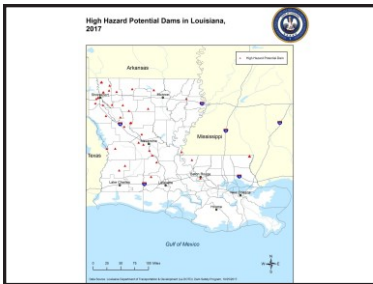
- NOAA's National Weather Service
- Storm Prediction Center
- 1987–2016 hail events
- Damaging hail days per year
- Used only hail events those caused damage (injuries, fatalities, property loss, and crop loss)
- Generate raster heat map through QGIS then divide by total number of years
- 2014: Hail density map (1955–2012)





Dam Failure Methodology

- Louisiana Department of Transportation & Development
- Dam Safety Program
- High hazard potential dams locations
- Dams assigned the high hazard potential classification are those where failure or mis-operation will probably cause loss of human life.
- 2014: Dams location map

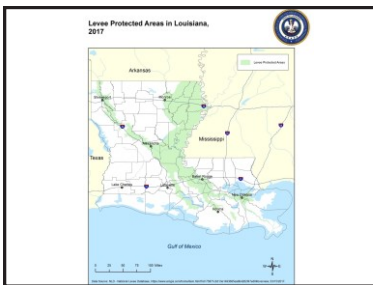


Dam Failure Future Conditions

- Design guidance and oversight in the future should ensure that dams are designed to standards
- *We project no change in likelihood of dam failures due to natural causes, despite anticipated increases in risk of heavy rains/floods and earthquakes*

Levee Failure Methodology

- US Army Corps of Engineers
- National Levee Database
- 2017 national levee location
- Levee protected areas
- 2014: Leveed areas map and levee districts map



Levee Failure Future Conditions

- Design guidance and oversight in the future should ensure that levees are designed to standards
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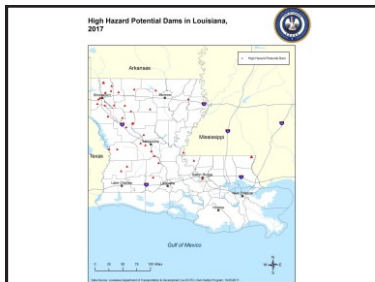
Flooding Methodology

- 100-year flood inundation area
- Combined jurisdictional hazard mitigation plans and data from <https://msc.fema.gov/portal>
- 2014: Average annual precipitation map (1981-2010), flood zone map, percentage of parish in flood zone map and percentage of parish population in flood zone map



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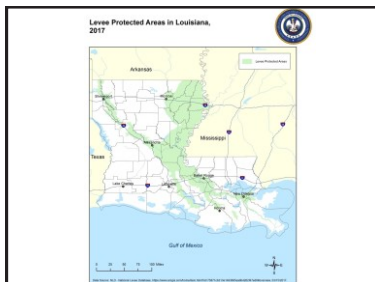


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- 2014: Average annual precipitation map (1981-2010), flood zone map, percentage of parish in flood zone map and percentage of parish population in flood zone map

Prepare • Present • Respond • Recover • Mitigate

Sinkhole Future Conditions

- Continuing land use change and pressures of increased resource extraction and population growth
- Sinkholes as a "side effect" to sea level rise, which contributes to saltwater intrusion, which contributes to the formation of salt domes, which—when mined extensively—can form sinkholes
- We project a 10% increase in the future sinkhole hazard in Louisiana*

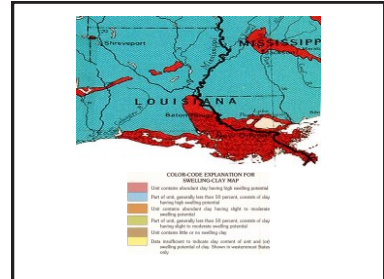
EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Expansive Soil Methodology

- Source: "Swelling Clays Map of the Conterminous United States" by W. Olive, A. Chleborad, C. Frahme, J. Schlocker, R. Schneider, and R. Schuster; 1989
- 2014: Not profiled

EDUCATE
MITIGATE



Prepare • Present • Respond • Recover • Mitigate

Expansive Soil Future Conditions

- Fewer freeze-thaw cycles would reduce the hazard
- But more heavy rainfall events interrupted by longer dry periods would increase the hazard
- We project no net change in the expansive soil hazard statewide by 2050*

EDUCATE
MITIGATE

QUESTIONS AND DISCUSSION

GEOLOGIC HAZARDS

Prepare • Present • Respond • Recover • Mitigate

2019 State Hazard Mitigation Plan Update

Hazard Profiles

Carol Friedland, Ph.D., P.E., C.F.M.
Robert Rohli, Ph.D.
Rubayet Bin Mostafiz, M.S.

State Plan Update Stakeholder Meeting
January 9, 2018

EDUCATE
MITIGATE

Louisiana State Hazard Mitigation Plan Update 2018

Meeting #3: March 6, 2018 10am to 12pm

Meeting Name

Repetitive Flood Loss and Community Rating System Strategy

Location

Transportation Training and Education Center 4099 Gourrier Avenue, Baton Rouge, LA 70806

Attendees:

Name

Jeanette Dubinin

Ryan Mast

Andrea Galinski

Carol J. Friedland, Ph.D., P.E., C.F.M.

Warren Byrd

Robert V. Rohli, Ph.D.

Susan Veillon

Pam Lightfoot

Mark Gates

Jamelyn Trucks

French Wetmore

Ellen Ibert

Jeffrey Giering

Marion Pearson

Steve Garcia

Michelle Gonzales

Kenyatta Esters

Nici English

Patricia Skinner

Traci Birch, Ph.D.

Charles "Chip" McGimsey, Ph.D.

Nicole Hobson-Morris

Brett Beoubay

Barry Keim, Ph.D.

Ryan Clark

Katherine Van Marter

Mark Davis

Monica Farris, Ph.D.

Brett Wilks

Agency

CPEX

City of New Orleans

CPRA

Department of Construction Management

LDI

LSU Department of Oceanography and Coastal Sciences

DOTD

DOTD

Facilities Planning and Control

Atkins/Federal BU

French & Associates Limited/UNO CHART

GOHSEP

GOHSEP

GOHSEP

GOHSEP

Jefferson Parish

LDH

LDH

LSU Agricultural Center

LSU Coastal Sustainability Studio

Office of Cultural Development

Office of Cultural Development

Office of Risk Management

Southern Climate Impacts Planning Program/LSU

The Water Institute of the Gulf

Tulane Institute of Water Resources

Tulane Institute of Water Resources

UNO CHART

UNO CHART

Meeting #3 Agenda

- Welcome
- Planning Process
- Follow up from previous meeting
- Hazard Mitigation Effectiveness Project
- Repetitive Loss Strategy
- Community Rating System Strategy



Governor's Office of Homeland Security And Emergency Preparedness



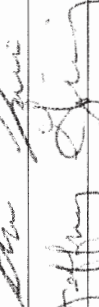

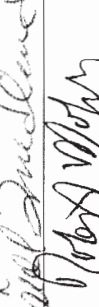
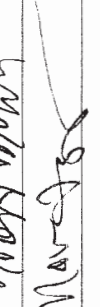





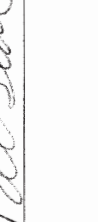
S H M P C - Meeting # 3

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting
 Location: 4099 Gourrier Ave., Baton Rouge, LA Date: 3/6/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency/Company
Mark Davis		Tulane Institute of water Resources
Jameilyn Trucks		Federal BU
Leon Contreras		SWBNO
Drew Ratcliff		Capital Region Planning Commission
Alan Black		Southern Climate Impacts Planning Program/LSU
Mark Gates		Facilities Planning and Control
Brett Beoubay		Office of Risk Management
Alan Black		Southern Climate Impact
Nici English		LDH
Andrea Galinski		CPRA
Michelle Gonzales		Jefferson Parish
Maggie Oliver		Jefferson Parish

(Cont'd)

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 3/6/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company
Kenyatta Esters		LA Dept. of Health
Ellen Ibert		GOHSEP
Steve Garcia		GOHSEP
Jeffrey Giering		GOHSEP
Marion Pearson		GOHSEP
Carol Friedland		LSU
Bob Rohli		LSU
Monica Farris Feets		UNO
Tara Lambert		UNO
Chip McGimsey		Office of Cultural Development
Traci Birch		LSU Coastal Sustainability Studio.
Pat Skinner		LSU Ag

Page ___ of ___

(Cont'd)

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting, Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 3/6/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company
Ryan Clark	<i>Ryan Clark</i>	The Water Inst. of the Gulf
Bret Lane		LA Dept. of Ag and Forestry
Susan Vermillion	<i>Susan Vermillion</i>	DOTD
Pam Lightfoot	<i>Pam Lightfoot</i>	DOTD
French Wetmore	<i>French Wetmore</i>	UNO - CHART
Brett Wing	<i>Brett Wing</i>	UNO - CHART
Mack Coster	<i>Mack Coster</i>	FRAPR
Ryan Masl	<i>Ryan Masl</i>	City of New Orleans
Jeanette Dabnin	<i>Jeanette Dabnin</i>	CREX
Nicole Hobson-Morris	<i>Nicole Hobson-Morris</i>	LA SPPD
Katherine VanNacker	<i>Katherine VanNacker</i>	Thruway Inst. on H2O
Barry Keim	<i>Barry Keim</i>	keim@lsu.edu

(Cont'd)

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting, Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 1/9/2018 Time 10:00 A.M. till Noon


3/4/18
 Name: WARREN BYRD
 Signature: [Handwritten Signature]
 Agency / Company: LA Dept of Insurance

Name	Signature	Agency / Company	
WARREN BYRD	[Handwritten Signature]	LA Dept of Insurance	
NI			

2019 State Hazard Mitigation Plan Update
 Meeting #3
 March 6, 2018

2019 State Hazard Mitigation Plan Update

State Hazard Mitigation Planning Committee
 Meeting #3
 March 6, 2018
 Baton Rouge, LA



Presentation Overview

- Welcome
- Planning Process
- Follow Up From Last Meeting
- Hazard Mitigation Effectiveness Project
- Repetitive Loss Strategy
- Community Rating System Strategy



PLANNING PROCESS

GOHSEP

Timeline

Meeting Date	November 16th	January 9th	March 6th	April 10th	May 22nd	June 12th
	Kick Off Meeting	Hazard Profile/Future Events	RL/CRS Strategy	Risk Assessment/Historic Properties	Capability Assessment	Goals and Actions
FEMA Review	April 30th	April 30th	April 30th	April 30th	May 31st	June 26th
	Introduction and Hazard Identification	State Wide Risk Assessment	RL / CRS Strategy	Risk Assessment/ State Historic Properties	Capability Assessment	Strategy w Actions



FOLLOW UP FROM MEETING 2


GOHSEP AND LSU

HAZARD MITIGATION EFFECTIVENESS PROJECT

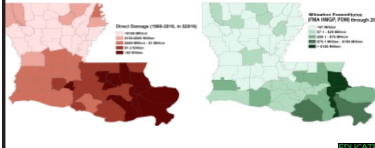
GOHSEP AND LSU

Presentation Overview

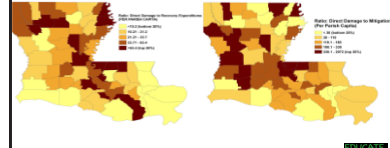
- Parish-level damage and expenditure data
- Building-level elevation data

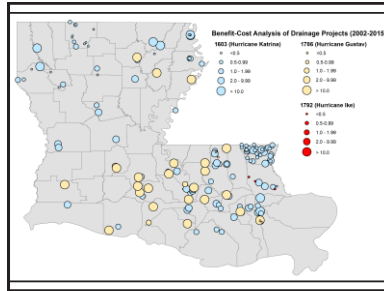
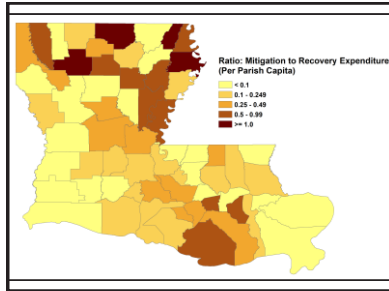


Damage & Mitigation



Parish per Capita





Statewide Totals

- Direct damage since 1960 equates to nearly \$100B for Louisiana (perhaps as high as \$220B)
- Recovery expenditures total nearly \$47B in the past 15-20 years (perhaps as high as \$100B)
- Since 1996, the statewide inflation-adjusted NFIP claims total about \$22 billion
- Mitigation expenditures are about 6% of recovery expenditures (close to \$3 billion)

(all \$ values adjusted to 2016)

Building Level Data

- Building-level data for over 2,000 projects were accessed through Louisiana Hazard Mitigation (LAHM) online portal, used to facilitate project tracking and closeout.

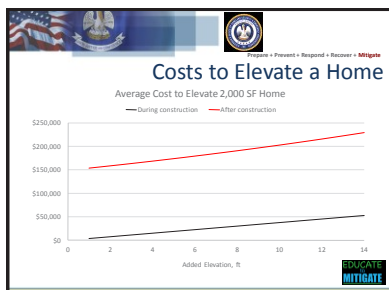
Hazard Profiles

- Hurricane Gustav
- Hurricane Ike
- Hurricane Isaac
- March 2016 Floods
- August 2016 Floods
- Probabilistic Hurricane and Rainfall Scenarios

If you build to the "100-year flood" Base Flood Elevation (BFE)...

you have a 25% chance of flooding over the course of a 30-year mortgage.

you have a 50% chance of flooding in the 70-year building life.



Building Level Elevation Findings

- One-third of the properties evaluated were affected by more than one hazard event
- Elevated buildings avoided up to \$14,000 in loss for each foot the building was elevated (per event); average avoided loss for elevated buildings was ~\$5.50/SF per foot elevated
- Post-flood elevation costs average from \$10-\$85/SF per foot elevated, with decreasing cost for higher elevations
- Construction costs to elevate (~\$2/SF per foot elevated) demonstrate building code changes should be strongly considered

REPETITIVE LOSS STRATEGY

UNO

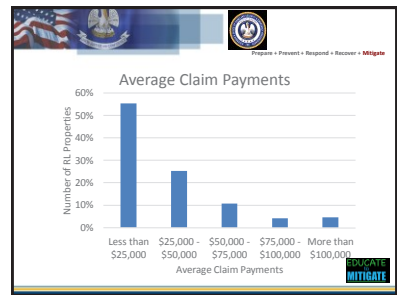
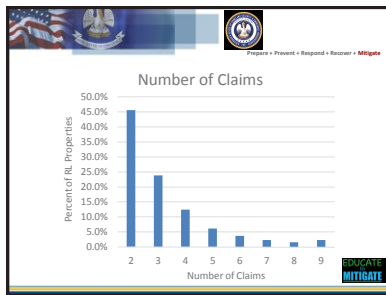
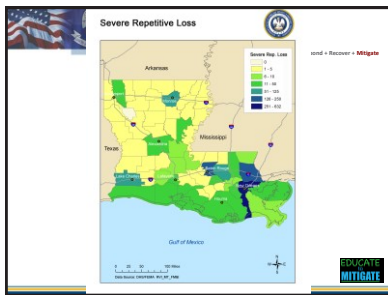
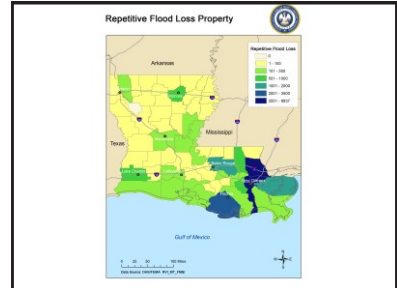
What is repetitive loss?

- Repetitive Loss (RL)
 - Any NFIP insured property where 2 or more claim payments of more than \$1000 have been paid within any rolling 10 year period since 1978.
- Severe Repetitive Loss (SRL)
 - 1-4 family residence that has had 4+ claims of more than \$5,000, or at least 2 claims that cumulatively exceed the reported building's value

Why is it important?

- Louisiana
 - RL Properties = 33,993
 - Total Payments = \$3,421,285,573
 - Total Claims = 111,886
 - Average Payment = \$30,578
 - SRL Properties = 2,188 (6%)

FEMA, October 2017



Mitigated Properties

- 18% of the RLs in the US have been mitigated
- 24% of the RLs in Louisiana have been mitigated
- 23% of US' mitigated RLs are in Louisiana

Rep Loss Strategy Outline

- Risk assessment
- Mitigation goals
- Mitigation actions
- Funding
- Summary of local plans
- Recommendations

Mitigation Actions

- Acquisition
- Elevation
- Flood control
- Drainage improvements
- Low cost retrofitting
- Flood insurance

Prepare + Prevent + Respond + Recover + Mitigate

- Acquisition
- Elevation

EDUCATE MITIGATE

Prepare + Prevent + Respond + Recover + Mitigate

Mitigation Actions

- Flood control

EDUCATE MITIGATE

Prepare + Prevent + Respond + Recover + Mitigate

Mitigation Actions

- Drainage improvements

EDUCATE MITIGATE

Prepare + Prevent + Respond + Recover + Mitigate

Mitigation Actions

- Low cost retrofitting

Photo by Michael O'Connell, 2012 - 2013 with permission of The Home Depot

EDUCATE MITIGATE

Prepare + Prevent + Respond + Recover + Mitigate

Mitigation Actions

- Low cost retrofitting

EDUCATE MITIGATE

Prepare + Prevent + Respond + Recover + Mitigate

Mitigation Actions

EDUCATE MITIGATE

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Mitigation Actions

EDUCATE MITIGATE

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Mitigation Actions

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Prepare + Prevent + Respond + Recover + Mitigate

Mitigation Actions

EDUCATE MITIGATE

Mitigation Actions

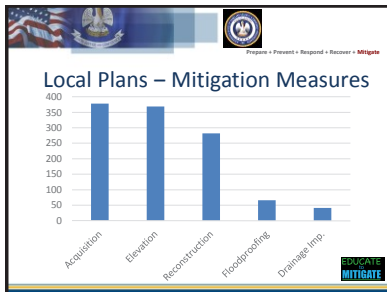
- Flood insurance

Mitigation Actions

- Acquisition
- Elevation
- Flood control
- Drainage improvements
- Low cost retrofitting
- Flood insurance

Rep Loss Strategy

- Risk assessment
- Mitigation goals
- Mitigation actions
- Funding
- Summary of local plans
- Recommendations



Local Plans – Funding Sources

- Hazard Mitigation Grant Program
- Flood Mitigation Assistance
- Pre-Disaster Mitigation
- Community Development Block Grant
- Small Business Administration
- Other grants
- Corps of Engineers
- State Capital Projects
- Local Businesses
- Parish/City Funds

Enhanced Plan

- Standard Plan Elements
- Integrated Planning
- State Mitigation Capabilities
- HMA Grants Management Performance

COMMUNITY RATING SYSTEM STRATEGY

UNO

What is CRS?

- A voluntary program offered to all NFIP communities
- Offers "points" for going above & beyond minimum standards
- Points increase the community's "CRS Class"
- CRS Class has a % discount on flood insurance premiums

Class	Points	SFHA	Non-SFHA	PRP
1	4,500	45%	10%	0
2	4,000	40%	10%	0
3	3,500	35%	10%	0
4	3,000	30%	10%	0
5	2,500	25%	10%	0
6	2,000	20%	10%	0
7	1,500	15%	5%	0
8	1,000	10%	5%	0
9	500	5%	5%	0
10	< 500	0	0	0

4 Series of Activities

- 300 Public Information
- 400 Mapping and Regulations
- 500 Flood Damage Reduction
- 600 Warning and Response
- 19 Activities
- 94 Elements

Coordinator's Manual

National Flood Insurance Program
Community Rating System

FEMA

CRS Strategy

- Objectives
- Methods
- Findings
- Recommendations

Objectives

- Increase our flood resilience through the support of activities that mitigate the risk of flood damage to LA properties and
- Strengthen our participation in the NFIP and the CRS

Methods

- Assess current LA CRS data
- Review CRS programs/strategies in other states
- Survey communities
 - Areas where help is needed
 - Types of assistance needed
- Inventory state agencies and other organizations
- Draft plan for review

Review of data collected to date

- Summary of current CRS data
- Survey of floodplain managers
- Database of state agencies and programs

In NFIP: 315
In CRS: 42
13% of communities
85% of NFIP policies

Annual savings: \$35,000,000

CRS Participation by Class

Class	LA	US
9	25	15
8	50	30
7	20	25
6	10	15
5	5	10
4	0	5
3	0	2
2	0	1
1	0	0

Average Scores

Activity	US	Louisiana
Public Information	350	250
Mapping	150	100
Open Space Preservation	450	200
Regulations	350	150
Planning	150	100
Loss Reduction	250	150
Drainage Maintenance	200	150
Warning & Response	400	200

Louisiana State Hazard Mitigation Plan Update 2018

Meeting #4: April 10, 2018 10am to 12pm

Meeting Name

Risk Assessment: Changing Future Conditions

Location

Transportation Training and Education Center 4099 Gourrier Avenue, Baton Rouge, LA 70806

Attendees:

Name	Agency
Jamelyn Trucks	Atkins/Federal BU
Drew Ratcliff	Capital Region Planning Commission
Andrea Galinski	CPRA
Justin Kozak	CPEX
Pam Lightfoot	DOTD
Susan Veillon	DOTD
Jeffrey Giering	GOHSEP
Marion Pearson	GOHSEP
Steve Garcia	GOHSEP
Maggie Olivier	Jefferson Parish
Michelle Gonzales	Jefferson Parish
Warren Byrd	LDI
Bob Rohli	LSU Department of Oceanography and Coastal Sciences
Carol Friedland	LSU Department of Construction Management
Kong Lee	LSU
Pat Skinner	LSU Agricultural Center
Rubayet Bin Mostafiz	LSU College of the Coast and Environment
Traci Birch	LSU Costal Sustainability Studio
Stacy Bonnaffons	OCD
Chip McGimsey	Office of Cultural Development
Nicole Hobson-Morris	Office of Cultural Development
Jason Higginbotham	SWBNO
Leon Contreras	SWBNO
Ryan Clark	The Water Institute of the Gulf
Monica Teets Farris	UNO CHART
Tara Lambeth	UNO CHART
John McCandless	UNO CHART

Meeting #4 Agenda

- Welcome
- Planning Process
- Revisions to Hazard Profiles
- Risk Assessment Requirements
- Changes between 2014 and 2019 Plans
- Risk Assessment Methodology and Results
- Questions and Discussion
- Next Meeting Information



Governor's Office of Homeland Security And Emergency Preparedness

SHMPC - Meeting #4

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting
 Location: 4099 Gourrier Ave., Baton Rouge, LA Date: 4/10/2018 Time 10:00 A.M. till Noon







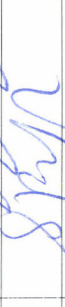
Name	Signature	Agency/Company
Susan Vermillion <i>Vermillion</i>	<i>Susan Vermillion</i>	DOTD
Jason Higginbotham	<i>J. Higginbotham</i>	SWBNO
Leon Contreras	<i>Leon Contreras</i>	SWBNO
Drew Ratchiff	<i>Drew Ratchiff</i>	Capital Region Planning Commission
Ryan Clark	<i>Ryan Clark</i>	The Water Inst. of the Gulf
jeannette Dubinin	<i>jeannette Dubinin</i>	Director of Coastal Program
Chip McGimsey	<i>Chip McGimsey</i>	Office of Cultural Development
Nicole Hobson-Morris	<i>Nicole Hobson-Morris</i>	Office of Cultural Development
Pat Forbes	<i>Pat Forbes</i>	Office of Community Development
Andrea Galinski	<i>Andrea Galinski</i>	CPRA
Michelle Gonzales	<i>Michelle Gonzales</i>	Jefferson Parish
Maggie Oliver	<i>Maggie Oliver</i>	Jefferson Parish

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 3/6/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company	
Kara Moree		Louisiana Floodplain Managers Association	
Ellen Ibert		GOHSEP	
Steve Garcia		GOHSEP	
Jeffrey Giering		GOHSEP	
Marion Pearson		GOHSEP	
Carol Friedland		LSU	
Bob Rohli		LSU	
Monica Teets Farris		UNO	
Tara Lambert		UNO	
Warren Byrd		Louisiana Department of Insurance	
Traci Birch		LSU Coastal Sustainability Studio.	
Pat Skinner		LSU Ag	

(Cont'd)


Briefing / Meeting: State Hazard Mitigation Plan Update Meeting, Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 3/6/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company		
Jamelyn Trucks		Federal BU		
John McCandless		UNO		
Rubayet Ben Mostafa		LSU		
Justin Kozak		CPEX		
Pam Lightfoot		LaDOTD		
Jamelyn Trucks		ATKINS		
Yong Lee		LSU		
Stacy Bonneton		OCD		

2019 State Hazard Mitigation Update Meeting #4 April 10, 2018


2019 State Hazard Mitigation Plan Update

State Hazard Mitigation Planning Committee
Meeting #4
April 10, 2018
Baton Rouge, LA



Presentation Overview

- Welcome
- Planning Process
- Revisions to Hazard Profiles
- Risk Assessment Requirements
- Changes Between 2014 and 2019 Plans
- Risk Assessment Methodology and Results
- Questions and Discussion
- Next Meeting Information

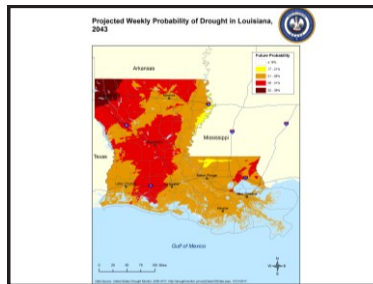


Timeline

Meetings	November 16th	January 9th	March 6th	April 10th	May 22nd	June 12th
	Kick Off Meeting	Hazard Profiles/ Future Events	RI/CRS Strategy	Risk Assessment/ State/ Historic Properties	Capability Assessment	Goals and Actions
FEMA Review	April 20th	April 30th	April 30th	April 30th	May 31st	June 30th
	Introduction and Hazard Identification	State Wide Risk Assessment	RI / CRS Strategy	Risk Assessment/ State/ Historic Properties	Capability Assessment	Strategy w Actions / Approvals



REVISIONS TO HAZARD PROFILES




RISK ASSESSMENT REQUIREMENTS

The Risk Assessment Must ...

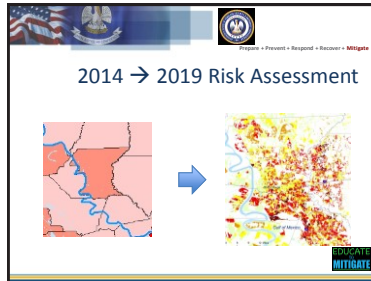
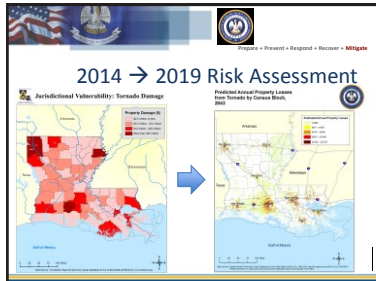
44 CFR §201.4(c)(2)(ii & iii):
“...reflect changes in development”

“...include an overview and analysis of the vulnerability of jurisdictions to the identified hazards and the potential losses to vulnerable structures”

“...address the vulnerability of state assets located in hazard areas and estimate the potential dollar losses to these assets”



METHODOLOGICAL UPDATES FROM 2014 PLAN



RISK ASSESSMENT METHODOLOGY AND RESULTS

Overall Risk Assessment Approach

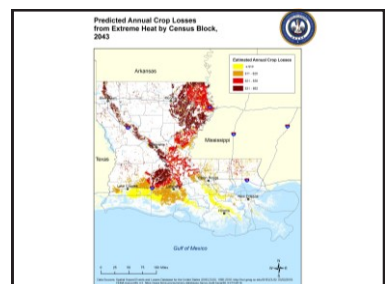
$$\text{Average Annual Loss (AAL)} = \frac{\text{Long-term annual probability of occurrence: Number of occurrences / Number of years of record} \times \text{Buildings or crops exposure to hazards (2014) in 2043} \times \text{Average loss (\$) given hazard} \times 1 + \text{projected change in future hazard intensity}}$$

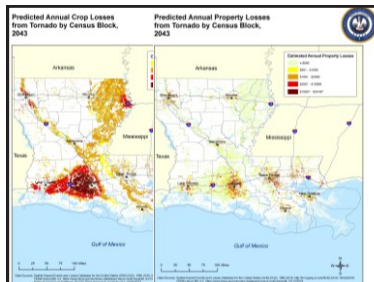
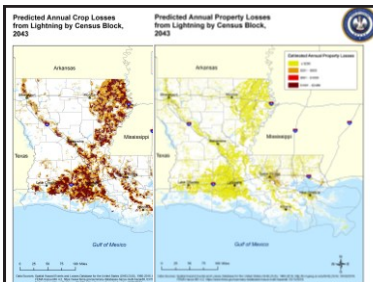
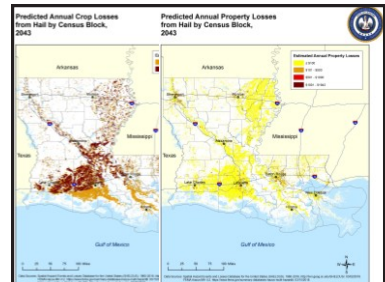
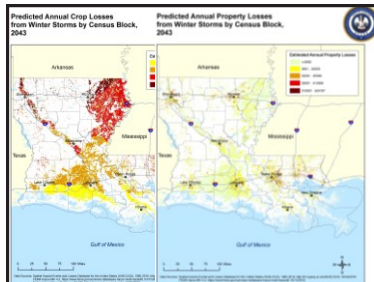
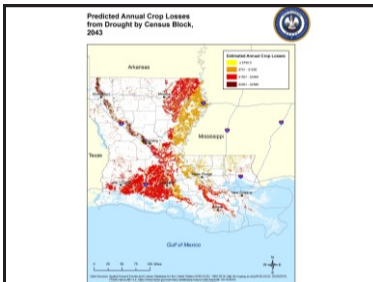
- Changes in Development**
- Used NLCD 2011 to classify agriculture areas (NLCD 2016 not yet released)
 - Used Hazus 4.2 (released Jan. 2018) for population and building inventory values
 - Developed population model to project population in 2043
 - 2010 population = 4,533,372
 - 2043 population = 5,518,889

- Historical Loss Data: SHELDS**
- County-level natural hazard dataset
 - Direct losses caused by the event (property and crop losses) – January 1960 to December 2016
 - Insured crop losses – January 1989 to December 2016
 - Losses adjusted for inflation to \$2016 and then divided by the current population of a county at the time of the event – per capita losses used

- Hazards Overview**
- Temperature Hazards**
 - Extreme heat (new SHELDS method, limited to crop losses)
 - Drought (new SHELDS method, limited to crop losses)
 - Wildfires (new method using hazard exposure and hazard probability)
 - Winter storms (new SHELDS method)
 - Wind and Flood Hazards**
 - Tropical cyclones (N/A, included in wind and flood)
 - High wind (probabilistic Hazus analysis)
 - Hurricanes (new SHELDS method)
 - Lightning (new SHELDS method)
 - Tornadoes (new SHELDS method)**
 - Flooding (including increase in flooding from coastal processes (Hazus and CPTA))**
 - Dam failure (new method using Hazus exposure and hazard probability)**
 - Levee failure (N/A, no full risk assessment)**
 - Geologic Hazards**
 - Earthquake (N/A, no full risk assessment)
 - Sinkholes (new method using Hazus exposure and hazard probability)
 - Expansive soil (new method using Hazus exposure and hazard probability)

- Methodology for SHELDS Data**
- Obtain census block population, determine centroid lat/long
 - Map land cover types for agriculture (crop loss)
 - Extract hazard value at block centroid
 - Normalize SHELDS losses by sum of (hazard x population)
 - Calculate future (2043) losses based on future hazard conditions and future population





Hazards Overview

Plan • Present • Respond • Recover • Mitigate

Temperature Hazards

- Extreme heat (new SHELUS method, limited to crop losses)
- Drought (new SHELUS method, limited to crop losses)
- **Wildfire** (new method using Hazus exposure and hazard probability)
- Winter storms (new SHELUS method)

Wind and Flood Hazards

- Tropical cyclones (N/A, included in wind and flood)
- High wind (probabilistic Hazus analysis)
- Hurricanes (new SHELUS method)
- Lightning (new SHELUS method)

Geologic Hazards

- Earthquake (N/A, no full risk assessment)
- **Sinkholes** (new method using Hazus exposure and hazard probability)
- **Expansive soil** (new method using Hazus exposure and hazard probability)

Dam Failure (new method using Hazus exposure and hazard probability)

Levee failure (N/A, no full risk assessment)

Flooding, including increase in flooding (new method using Hazus and CSPA)

Tornadoes (new SHELUS method)

EDUCATE MITIGATE

Wildfire Methodology

Plan • Present • Respond • Recover • Mitigate

- Developed in consultation with LDAF
- Total annual burn probability = large + small fire probability
- Considered 5% loss (based on input from LDAF for 3% of the residences (average ratio of damaged/total residences))

EDUCATE MITIGATE



Dam Failure Methodology


Plan • Present • Respond • Recover • Mitigate

- High hazard dam inundation zones being generated by Dam Safety Program
- Superimpose inundation zones with non-zero census blocks
- Apply depth-damage functions to estimate losses
- Probability of dam failure

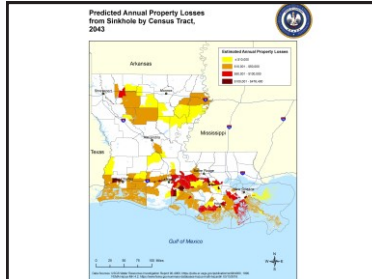
EDUCATE MITIGATE

Sinkhole Methodology

- Considered sinkhole = 0.75 mile radius = 1.77 mi², salt dome = 7 mi²
- Assume sinkhole loss = 100% over 1.77 mi²/7 mi² = 25% of the area
- 2 events in 78 years = 2.6% annual probability




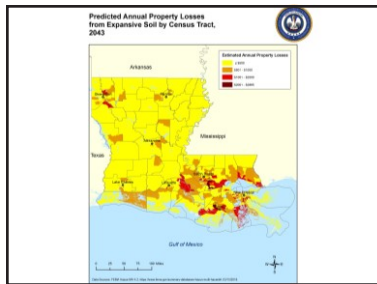
*Bayou Come = 0.06 mi², Lake Peigneur = 1.76 mi²



Expansive Soil Methodology

- Developed based on consultation with geotechnical engineer
- Assumed loss of building value in a 70 year life for residential structures:

 - 5% for <50% clay of high swelling potential
 - 10% for >50% clay of high swelling potential

Hazards Overview

Temperature Hazards

- Saltwater intrusion (new SHELUS method, limited to crop losses)
- Drought (new SHELUS method, limited to crop losses)
- Wildfire (new method using Hazus exposure and hazard probability)
- Winter storms (new SHELUS method)

Wind and Flood Hazards

- Tropical cyclones (N/A, included in wind and flood)
- High wind (probabilistic Hazus analysis)
- Hailstorms (new SHELUS method)
- Lightning (new SHELUS method)

Geologic Hazards

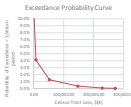
- Earthquake (N/A, no full risk assessment)
- Sinkholes (new method using Hazus exposure and hazard probability)
- Expansive soil (new method using Hazus exposure and hazard probability)

Flooding, including increase in flooding from coastal processes (Hazus and CPRA)

- Claim failure (new method using Hazus exposure and hazard probability)
- Levee failure (N/A, no full risk assessment)

High Wind Methodology

- Return period analysis using ASCE 7 (2010) wind speeds
- At each change in wind speeds, Hazus calculates census tract loss
- Portfolio modeling approach using exceedance probability and census tract loss



Flood Methodology

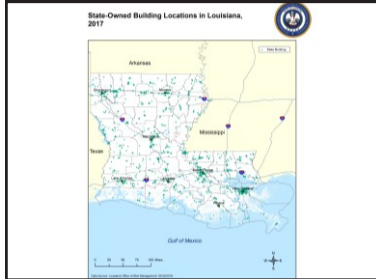
- Updated state flood hazard maps to include most recent FEMA changes
- Integrating FEMA flood zones with CPRA coastal flood assessment
- Current challenge – developing flood depth grids

Jurisdictional Loss Results

- Aggregate census block losses by parish
- Draft results table handout

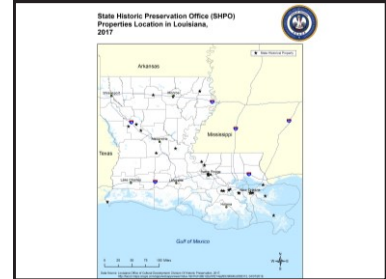
State Assets

- Obtain list of insured buildings from the Office of Risk Management
- Assume that hazards affect state buildings at same rate as general population of buildings
- Pro-rate parish level losses based on the ratio of (state building value/total building value), where total value is derived from Hazus
- State properties results handout



State Historic Properties

- In the 2014 Plan, 43 historic properties were inspected in detail
- Traditional loss assessment doesn't address the historic/cultural value of these sites
- Hazard probabilities for each site



QUESTIONS AND DISCUSSION

NEXT MEETING



Capability Assessment

- 44 CFR §201.4(c)(3)(ii) requires discussion of
 - pre- and post-disaster hazard management policies, programs, and capabilities to mitigate identified hazards
 - funding capabilities for hazard mitigation projects
 - effectiveness of local mitigation policies, programs, and capabilities

Capability Assessment Tasks

- Survey
 - Link will be shared by **Monday, April 23rd**
 - Completed surveys due by **Mon, May 7th**
- Agency Descriptions
 - Handout
 - Follow-up email

Louisiana State Hazard Mitigation Plan Update 2018

Meeting #5: May 22, 2018 10am to 12pm

Meeting Name

State Risk Assessment

Location

Transportation Training and Education Center 4099 Gourrier Avenue, Baton Rouge, LA 70806

Attendees:

Name

Agency

Justin Kozak

CPEX

Zach Rosen

CPRA

Jeanette Dubinin

CPEX

Jennifer Rachal

DOTD

Ellen Ibert

GOSHEP

Jeffrey Giering

GOSHEP

Marion Pearson

GOSHEP

Steve Garcia

GOSHEP

Michelle Gonzales

Jefferson Parish

Maggie Olivier

Jefferson Parish

Bret Lane

LDAF

Warren Byrd

LDI

Carol Friedland

LSU Department of Construction Management

Robayet Bin Mostafiz

LSU College of the Coast and Environment

Rob Rohli

LSU Department of Oceanography and Coastal Sciences

Pat Skinner

LSU AgCenter

Stacy Bonnaffons

OCD

Chip McGimsey

Office of Cultural Development

Nicole Hobson-Morris

Office of Cultural Development

Brett Beoubay

Office of Risk Management

Monica Teets Farris

UNO CHART

Tara Lambeth

UNO CHART

Samantha Romain

UNO CHART

Meeting #5 Agenda

- Welcome
- Planning Process
- Update on Risk Assessment
- Capability Assessment
- Next Steps



Governor's Office of Homeland Security And Emergency Preparedness












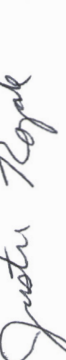
Briefing / Meeting: State Hazard Mitigation Plan Update Meeting
 Location: 4099 Gourrier Ave., Baton Rouge, LA Date: 5/22/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency/Company
Brett Beoubay	<i>Brett Beoubay</i>	Office of Risk Management
Jennifer Rachal	<i>Jennifer Rachal</i>	DOTD
Bret Lane	<i>Bret Lane</i>	LA Dept. of Agriculture & Forestry
Alan Black		Southern Climate Impacts Planning
Zach Rosen	<i>Zach Rosen</i>	CPRA
Jeannette Dubinin	Sub	Director of Coastal Program
Chip McGimsey	<i>Chip McGimsey</i>	Office of Cultural Development
Nicole Hobson-Morris	<i>Nicole Hobson-Morris</i>	Office of Cultural Development
Pat Forbes	<i>Pat Forbes</i>	Office of Community Development
Andrea Galinski		CPRA
Michelle Gonzales	<i>Michelle Gonzales</i>	Jefferson Parish
Maggie Oliver	<i>Maggie Oliver</i>	Jefferson Parish

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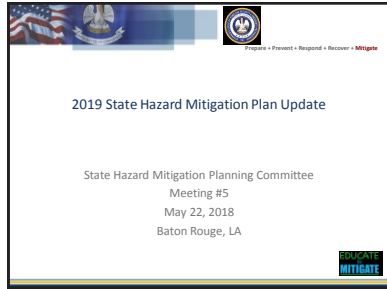
Rubayet Bin Mostafa LSU
Wahar L. al LSU

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 5/22/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company
Kara Moree		LA Floodplain Managers Assoc
Warren Byrd		LA Dept. of Insurance
Steve Garcia		GOHSEP
Jeffrey Giering		GOHSEP
Marion Pearson		GOHSEP
Ellen Ibert		GOHSEP
Samantha Romain		UNO
Monica Teets Farris		UNO
Tara Lambeth		UNO
Rob Rohli		LSU
Carol Friedland		LSU
Pat Skinner		LSU Ag

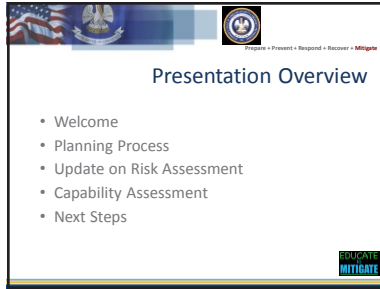
Justin Kozak
 Justin Kozak CPEX

2019 State Hazard Mitigation Plan Update Meeting #5 May 22, 2018



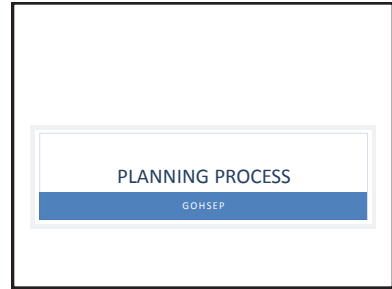
2019 State Hazard Mitigation Plan Update

State Hazard Mitigation Planning Committee
Meeting #5
May 22, 2018
Baton Rouge, LA



Presentation Overview

- Welcome
- Planning Process
- Update on Risk Assessment
- Capability Assessment
- Next Steps



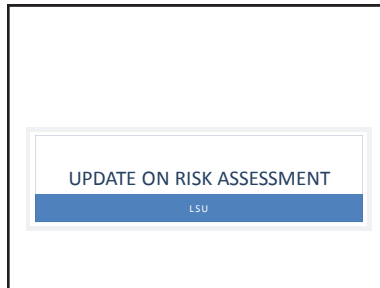
PLANNING PROCESS

GOHSEP



Timeline

Meeting Date	November 16th	January 9th	March 6th	April 10th	May 22nd	June 12th
	Risk GfF Meeting	Hazard Profile/Future Events	R/L/C/S Strategy	Risk Assessment/Historic Properties	Capability Assessment	Goals and Actions
FEMA Review	April 30th	April 30th	May 31st	May 31st	May 31st	June 26th
	Introduction and Hazard Identification	State Wide Risk Assessment	RL / CRS Strategy	Risk Assessment/ State Historic Properties	Capability Assessment	Strategy w Actions / Recommendations



UPDATE ON RISK ASSESSMENT

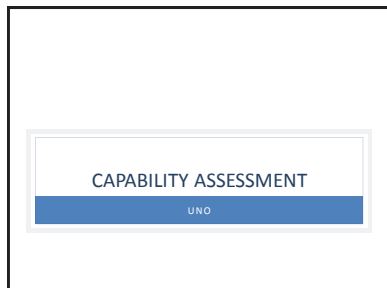
LSU



Predicted Annual Property Losses from Wind by Census Tract, 2043

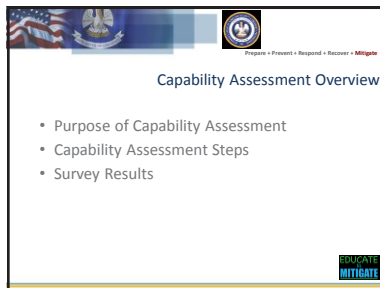
Legend: Estimated Annual Property Losses

- Less than \$100,000
- \$100,000 - \$500,000
- \$500,000 - \$1,000,000
- More than \$1,000,000



CAPABILITY ASSESSMENT

UNO



Capability Assessment Overview

- Purpose of Capability Assessment
- Capability Assessment Steps
- Survey Results



Purpose

"Mitigation capabilities provide the means to accomplish desired mitigation outcomes."

Program • Present • Respond • Recover • Mitigate

Capability Assessment Steps

1. Evaluate state pre- and post-disaster capabilities
2. Discuss state funding capabilities for hazard mitigation

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Capability Assessment Steps

3. Describe and analyze the effectiveness of local and tribal mitigation capabilities
4. Describe the state's process for supporting local and tribal mitigation planning

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Survey Results

- 14 responses
 - State (7)
 - Regional (1)
 - Local (2)
 - Non-profit (2)
 - Higher Ed (2)

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Please list any state codes or laws that support and facilitate hazard mitigation.

- Building codes
- Community planning statutes
- Mitigation credits offered by insurers
- Executive Order No. JBE 2016-0 (Consistency with LA's Comprehensive Master Plan)

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Please list any state codes or laws that could put people and property at risk.

- Continued use of fill in the floodplain
- Failure to adopt statewide freeboard requirements
- Allowing re-entry of a substantially damage structure

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Please list any local codes or ordinances that support and facilitate hazard mitigation.

- Any standards above NFIP minimums
- No Adverse Impact
- Minimum elevation requirements
- Stormwater regulations for commercial structures
- Land use planning
- Local enforcement of building codes

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Please list any local codes or ordinances that could put people and property at risk.

- Continued use of fill in the floodplain
- Failure to adopt freeboard requirements
- Allowing re-entry of a substantially damage structure
- Mitigation not a required element in comprehensive plans
- Lack of stormwater management requirements
- Little support for green infrastructure

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Does your agency have a role in risk reduction? If so, please detail any programs your agency implements to reduce risk.

- Department of Agriculture & Forestry - Certified Burner Program
- DOTD - NFIP compliance, CRS, Dam Safety, Hydraulics, etc.
- LDI - enforce laws relate to mitigation credits, education and outreach
- OCD - funding for disaster recovery projects and programs; require mitigation of local hazards for all investments
- CPRA - Coastal Master Plan, Flood Risk and Resilience Program, project implementation

EDUCATE MITIGATE

Program • Present • Respond • Recover • Mitigate

Does your agency have a role in risk reduction? If so, please detail any programs your agency implements to reduce risk. - Part 2

- CPRA - Coastal Master Plan, Flood Risk and Resilience Program, project implementation
- NOHSEP - elevation program, green infrastructure projects, education & outreach
- Water Institute - FEMA CTP, real time flood forecasting, flood modeling, planning and design
- CPEX - community planning
- LSU & UNO - hazard mitigation planning

EDUCATE MITIGATE

Please list any programs implemented by your agency that need to be revised to more successfully mitigate risk.

- NFIP Compliance, Post Disaster Compliance Visits, CRS, Dam Safety, Levee Safety, Hydraulics
- Recovery funding could carry more stringent mitigation and resilience requirements.
- The coastal master plan is currently updated every 5 years.

Please list any technical and data resources produced by your agency that can assist the state with mitigation.

- Education and outreach
- Technical assistance to residents and local officials
- Statewide LIDAR
- Climate Smart Cities tool
- Green Infrastructure toolkit
- NOLA/Ready
- Master Plan Data Viewer
- Flood Risk and Resilience Program Documents & Resources

Please list any trainings your agency offers to support local planning.

- NFIP 101
- CRS
- Floodway class
- Green Infrastructure
- Climate Smart Cities
- LA SAFE
- Post-disaster insurance claims
- Application development
- NEPA compliance
- Master Plan Data Viewer

Please list any barriers you know of to implementing mitigation projects.

- Lack of staff
- Lack of sustainable funding
- Lack of coordination with land use, comprehensive plans
- Complex federal regulations
- Lack of incentives to developers/businesses
- Misaligned political priorities

Please list ways your agency assists with the NFIP and the CRS. (DOTD is coordinating agency)

- Considers CRS in selection of projects
- Higher development codes
- Education and outreach
- Mitigation planning
- Requires compliance with local floodplain programs
- CTP

Please list public resources available on your website.

- Newsletters
- La Floodplain Management Desk Reference
- Ready.nola.gov
- Lasafe.la.gov
- www.cpex.org/resources
- American Association of Community Planners
- La's Working Coast Story Map

Please list any funding sources you know about that could help the state with hazard mitigation.

- FEMA, HUD, EPA, USDOT, DHHS, USDA
- GOMESA, WRDA
- Green bonds
- Corporate grants
- Social Impact Bonds
- New Market Tax Credits

Criteria for funding mitigation projects

Criteria	1 (Blue)	2 (Green)	3 (Red)	4 (Purple)
Community commitment to mitigation	1	1	1	1
Communities undergoing development	1	1	1	1
Communities with many repetitive loss properties	1	1	1	1
Communities at highest risk	1	1	1	1

Other Criteria

- Demonstrated commitment to mitigation
- Communities with necessary structure in place to implement projects
- Communities with the most need for support in terms of staff, funding
- Communities that are most vulnerable to flood risk

QUESTIONS AND DISCUSSION

NEXT STEPS
GOSHSEP



Louisiana State Hazard Mitigation Plan Update 2018

Meeting #6: June 12, 2018 10am to 12pm

Meeting Name

Mitigation Strategy Goals and Actions

Location

Transportation Training and Education Center 4099 Gourrier Avenue, Baton Rouge, LA 70806

Attendees:

Name

Drew Ratcliff

Zach Rosen

Jeanette Dubinin

Ellen Ibert

Jeffrey Giering

Marion Pearson

Bret Lane

Rosanne Prats

Warren Byrd

Pam Lightfoot

Nici English

Rob Rohli

Rubayet Bin Mostafiz

Pat Skinner

Alan Black

Barry Keim

Stacy Bonnaffons

Tara Lambeth

Agency

CARPC

CPRA

CPEX

GOHSEP

GOHSEP

GOHSEP

LDAF

LA Department of Health

LDI

LA DOTD

LDH

LSU Department of Oceanography and Coastal Sciences

LSU College of the Coast and Environment

LSU AgCenter

LSU SCIPP

LSU SCIPP

OCD

UNO CHART

Meeting #6 Agenda

- Welcome
- Planning Process
- Follow up from previous meeting
- 2014 Goals and Actions
- 2019 Goals and Actions Activity



Governor's Office of Homeland Security And Emergency Preparedness

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting
 Location: 4099 Gourrier Ave., Baton Rouge, LA Date: 6/12/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency/Company
Brett Beoubay		Office of Risk Management
Drew Ratcliff		Capital Area Planning
Bret Lane		LA Dept. of Agriculture & Forestry
Rosanne Prats		LA Dept of Health
Zach Rosen		CPRA
Jeannette Dubinin		Director of Coastal Program
Chip McGimsey		Office of Cultural Development
Nicole Hobson-Morris		Office of Cultural Development
Nici English		LDH
Stacy Bonnaffons		OCD
Warren Byrd		LA Dept. of Insurance
Kara Morre		LA Floodplain Managers Assoc

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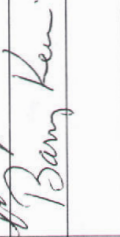
Page ____ of ____

Briefing / Meeting: State Hazard Mitigation Plan Update Meeting Location: 4099 Gourrier Ave., Baton Rouge, LA
 Date: 6/12/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company
Jeffrey Giering	<i>Jeffrey Giering</i>	GOHSEP
Marion Pearson	<i>Marion Pearson</i>	GOHSEP
Ellen Ebert Ibert	<i>Ellen Ebert</i>	GOHSEP
Carol Friedland		LSU
Rob Rohli	<i>Rob Rohli</i>	LSU
Young Cheol Lee		LSU
Pat Skinner	<i>Pat Skinner</i>	LSU Ag
Monica Teets Farris		UNO
Tara Lambeth	<i>Tara Lambeth</i>	UNO
Samantha Romain	<i>Samantha Romain</i>	UNO
Pam Lightfoot	<i>Pam Lightfoot</i>	LaDOTD
Rubayed Mustafiz	<i>Rubayed Mustafiz</i>	LSU

(Cont'd)


Briefing / Meeting: State Hazard Mitigation Plan Update Meeting, Location: 4099 Gourrier Ave., Baton Rouge, LA
Date: 6/12/2018 Time 10:00 A.M. till Noon

Name	Signature	Agency / Company		
Alan Black		LSU - SCJPP		
Barry Keim		LSU - SCJPP		

2019 State Hazard Mitigation Plan Meeting #6 June 12, 2018


2019 State Hazard Mitigation Plan Update

State Hazard Mitigation Planning Committee
Meeting #6
June 12, 2018
Baton Rouge, LA




Presentation Overview

- Welcome
- Planning Process
- Follow Up From Last Meeting
- 2014 Goals and Actions
- 2019 Goals and Actions Activity



PLANNING PROCESS

GOHSEP




Timeline

Meeting Date	November 16th	January 30th	March 6th	April 10th	May 22nd	June 12th
	Kick Off Meeting	Hazard Profile/ Future Events	RL/CRS Strategy	Risk Assessment / Historic Properties	Capability Assessment	Goals and Actions
FEMA Review	April 30th	April 30th	April 30th	April 30th	May 31st	June 26th
	Introduction and Hazard Identification	State Wide Risk Assessment	RL / CRS Strategy	Risk Assessment/ State Historic Properties	Capability Assessment	Strategy w Actions / Appendices





CAPABILITY ASSESSMENT

GOHSEP




Criteria for funding mitigation projects


GOALS AND ACTIONS

GOHSEP




Goal 1

The State of Louisiana will improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact.



Actions

Action 1.1: Statewide Education and Outreach
Action 1.2: Education and Outreach for State Agencies
Action 1.3: Analyze Past Education and Outreach Efforts



Prepare • Present • Respond • Recover • Mitigate

Goal 2

The State of Louisiana will improve data collection, use and sharing to reduce the impacts of hazards.

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Actions

Action 2.1: Statewide Data-Related Efforts
Action 2.2: Data-Related Efforts for State Agencies

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Goal 3

The State of Louisiana will improve capabilities and coordination at the municipal, parish, regional and state level to plan and implement hazard mitigation projects.

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Actions

Action 3.1: Technical Support for Parish and Municipal Hazard Mitigation Planning
Action 3.2: Technical Support for State Agencies Hazard Mitigation Planning
Action 3.3: Plan Integration
Action 3.4: Complete Web-Based Grant Administration Tool

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Goal 4

The State of Louisiana will continue to pursue opportunities to reduce impacts to the State's manmade and natural environment through mitigation of repetitive and severe repetitive loss properties and other appropriate construction projects and related activities.

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Actions

Action 4.1: Identifying Cost Effective Projects with Parishes and Municipalities
Action 4.2: Identifying Cost Effective Projects with State Agencies
Action 4.3: Legislative and Regulatory Enhancements
Action 4.4: Enhance current State Hazard Mitigation Strategy

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Goal 5

The State of Louisiana will improve on the protection of its Historic Structures/Buildings, Traditional Cultural Properties and Archaeological Sites from natural and man-made hazards.

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Actions

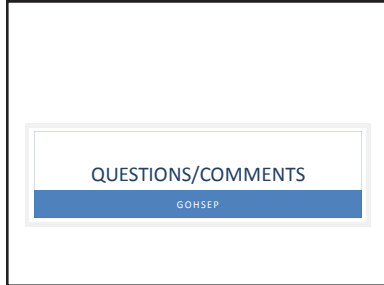
Action 5.1: Integrate historic preservation into hazard mitigation planning
Action 5.2: Education/Outreach for Historic Perseveration Best Management Practices
Action 5.3: Education/Outreach for Polices of Historic Preservation

EDUCATE
MITIGATE

Prepare • Present • Respond • Recover • Mitigate

Goals and Actions Activity

EDUCATE
MITIGATE



PLAN MAINTENANCE

PURPOSE

The section of the Code of Federal Regulations (CFR) pertaining to State Mitigation Plans lists seven required components for each plan: a description of the planning process; risk assessments; mitigation strategies; a description of coordination of local mitigation planning; a method and system for plan maintenance; verification of plan adoption; and assurances of state compliance with the plan. This Appendix details the method and system for plan maintenance, following the CFR's guidelines that the Plan Update must include (1) "an established method and schedule for monitoring, evaluating, and updating the plan," (2) "a system for monitoring implementation of mitigation measures and project closeouts," and (3) "a system for reviewing progress on achieving goals as well as activities and projects identified in the Mitigation Strategy."

MONITORING, EVALUATING AND UPDATING THE PLAN

By law, the Plan must be updated every five years prior to re-submittal to the Federal Emergency Management Agency (FEMA) for re-approval. The first part of this subsection describes the whole update process, including the responsible parties, methods to be used, evaluation criteria to be applied, and schedule for monitoring and evaluating the plan. These descriptions are followed by an explanation of how and when the plan will be periodically updated. The first part of this subsection describes the whole update process, including sections on the following:

1. Responsible parties
2. Methods to be used
3. Evaluation criteria to be applied
4. Scheduling for monitoring and evaluating the plan

These descriptions are followed by an explanation of how and when the plan will be periodically updated.

RESPONSIBLE PARTIES

The Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) is the state agency directly responsible for maintaining the plan. Within that agency, the State Hazard Mitigation Officer (SHMO) is the individual responsible for assuring that plan monitoring and evaluating are done in accordance with the procedures outlined in this section. The State Hazard Mitigation Planning Committee (SHMPC) is responsible for developing periodic updates to the plan.

METHODS FOR MONITORING AND EVALUATING THE PLAN

On an annual basis (and as warranted by circumstances such as a major disaster declaration), GOHSEP will monitor the plan in order to assess the degree to which assumptions and underlying information contained in the plan may have changed. For example, GOHSEP will look for the following:

1. Changes in the information available to perform vulnerability assessments and loss estimates. For example: as parish and municipal risk assessments and plans are integrated into this Plan Update, GOHSEP will solicit feedback from parish and municipal emergency management directors about any changes in their real or perceived risks.
2. Changes in laws, policies and regulations. Changes in state agencies and/or their procedures, including GOHSEP and the administration of grant programs.
3. The results of these monitoring efforts will be made available to the SHMPC as they are produced.

Using the compiled results of ongoing monitoring efforts, the plan will be evaluated annually, generally starting in the month of January (unless circumstances indicate otherwise). GOHSEP will initiate evaluations by contacting state agencies identified as responsible parties in the Mitigation Action Plan, as well as other agencies and organizations that have been involved in developing the plan.

GOHSEP and the SHMPC have the authority to determine if other organizations should also be involved in the process. The SHMPC will be encouraged to include other agencies/ organizations which have specific technical knowledge and/or data pertaining to risks. The initial contacts will be made no later than December of each year for the first two years and in September in the third year (in anticipation of the required Plan Update for FEMA re- approval). The initial contact will advise the appropriate agencies/organizations that the plan will be re-evaluated in the coming months, and request their participation in the process.

GOHSEP also has the authority to evaluate and update the plan at times other than those identified in this section under the following general conditions: (1) After a major disaster declaration; (2) At the request of the Governor; or (3) When significant new information regarding risks or vulnerabilities is identified.

PLAN EVALUATION CRITERIA

The factors that will be taken into consideration during periodic evaluations of the plan include the following:

1. Changes in vulnerability assessments and loss estimations. The evaluation will include an examination of the analyses conducted for hazards identified in the plan and determine if there have been changes in the level of risk to the state and its citizens to the extent that the plan (in particular the strategies and prioritized actions the state is considering) should be modified.
2. Changes in laws, policies, or regulations. The evaluation will include an assessment of the impact of changes in relevant laws, policies, and regulations pertaining to elements of the plan.
3. Changes in state agencies or their procedures (in particular GOHSEP, which is responsible for maintaining the plan) that will affect how mitigation programs or funds are administered
4. Significant changes in funding sources or capabilities.
Progress on mitigation actions (including project closeouts) or new mitigation actions that the state is considering.

UPDATING THE PLAN

Updates will follow the original planning process outlined in Appendix B. The update process will entail a detailed and structured re-examination of all aspects of the original plan, followed by recommended updates. GOHSEP will lead the update process with assistance from the SHMPC. GOHSEP will present the recommendations to the SHMPC for consideration and approval. It is expected that the Governor will issue a letter of adoption for each update of the plan.

At a minimum, the plan will be updated and re-submitted to FEMA for re-approval every five years, as required by DMA 2000. The five-year update for FEMA re-approval requires that the SHMPC revisit all of the original steps outlined in Appendix B to make sure the plan assumptions and results remain valid as a basis for further decision-making and priority-setting. The plan will also be subject to interim updates as significant changes or new information is identified. The degree to which the entire process is repeated will depend on the circumstances that precipitate the update. GOHSEP will initiate, coordinate and lead all plan updates in conjunction with the SHMPC. The next two paragraphs describe the procedures for interim and three-year updates, respectively.

The nature of Plan Updates will be determined by the evaluation process described above. In general, GOHSEP will notify the SHMPC that the agency is initiating an interim Plan Update, and describe the circumstances that created the need for the update (per the list in the Plan Evaluation Criteria section above). GOHSEP will determine if the SHMPC should be consulted regarding potential changes. If it is determined that the SHMPC should be involved, the nature of the involvement will be at the discretion of GOHSEP.

When interim updates are completed absent the involvement of the SHMPC, GOHSEP will advise all SHMPC members via email that the plan has been updated, and describe the nature of the update. In addition, GOHSEP will provide FEMA Region VI with a copy (although there is no requirement to have the plan re-approved by FEMA for interim updates).

As required by the DMA 2000, the plan will be updated every three years and re-submitted to FEMA for re-approval. In those years, the evaluation process will be more rigorous, and will examine all aspects of the plan in detail. It is anticipated that several meetings of the SHMPC will be required, and that the Governor's Authorized Representative will formally re-approve the plan prior to its submission to FEMA.

The following basic schedule will be undertaken for monitoring, evaluating and updating the plan:

1. At a minimum, monitoring activities by GOHSEP should be done on a quarterly basis
2. Notices regarding annual evaluations should be sent by GOHSEP to the SHMPC in December of the first two years of the plan and in September of the third year
3. The timetable for evaluations and updates for the first two years is expected to last up to four months (January-April), and up to six months for the update in the third year for re-submittal to FEMA (November-April)

2019 PLAN METHOD AND SCHEDULE EVALUATION

For the current Update, the previously approved plan's method and schedule were evaluated to determine if the elements and processes still worked for this update. Based on this analysis, the method and schedule were deemed to be acceptable, and nothing was changed for this update. The process was very successful, as the majority of the **plan** was significantly revised.

PLAN ADOPTION

The Code of Federal Regulations requires that each state's hazard mitigation plan update be formally adopted by the state itself before it is submitted to the Federal Emergency Management Agency for final review and approval. This plan reproduces on the following page the statement of the plan's adoption by James Waskom, Director of the Governor's Office of Homeland Security and Emergency Management and the Governor's Authorized Representative for this action.