



Orleans Parish, Louisiana – 2010 Hazard Mitigation Plan Update  
Appendices

## Section 5. Planning Process

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#### Changes between the 2010 Plan and the 2015 Plan Update.

This section of the Plan has been completely revised to reflect the planning process utilized for the 2015 Plan Update. The NOHSEP Mitigation Office provided oversight and direction in setting up the new City Hall Working Group and Advisory Committee for the 2015 Plan Update, and also worked closely with Water Works LA, the firm responsible for planning and outreach for the 2015 Plan Update. All stakeholder lists were reviewed and updated as part of the Update. The plans, ordinances, and codes reviewed in 2010 were examined again along with many new ones to identify all opportunities to integrate other plans into the 2015 Plan Update. Section 5 describes the planning process conducted in 2015 and summarizes all Planning Team and community meetings held to develop and update each section of the 2015 Hazard Mitigation Plan Update.

### 5.1 Interim Final Rule (IFR) Requirements for Planning Process

IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

IFR §201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.



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## 5.2 Overview of the Planning Process

An effective planning process identifies all stakeholders, integrates their input and builds consensus in the development of the plan. An inclusive process, like the one utilized to develop the City of New Orleans Hazard Mitigation Plan Update, reaches out to other governmental agencies, the public, and the business community. All parties involved gain understanding of the challenges and issues and are involved in developing solutions. Transparency and inclusivity add validity to the plan. This section explains the integral pieces of the planning process and how the Hazard Mitigation Plan Update was created.

The planning process was divided into four phases as follows:

### 1) Organize Resources

During the first phase of the planning process, Water Works LA worked with the Hazard Mitigation Office to review the 2010 Plan, establish the City Hall Working Group and Advisory Committee, develop a community engagement/outreach strategy, conduct interviews to update the capability assessment, and coordinate with regional, state and other agencies.

### 2) Assess Risks

During the second phase, Water Works LA worked with the Hazard Mitigation Office, the City Hall Working Group, and Advisory Committee to identify hazards to be profiled in the plan. Using the identified list of hazards, the Hazard Mitigation Office conducted a thorough risk assessment, which included identifying critical public and private facilities, identifying repetitive loss properties, estimating potential losses, and analyzing development trends.

### 3) Develop the 2015 Plan

During the third phase Water Works LA worked with the Hazard Mitigation Office, the City Hall Working Group and Advisory Committee, to update 2010 goals and objectives, select/prioritize mitigation actions, and submit an initial draft and final plan for City, GOHSEP and FEMA approval.

### 4) Implement and Monitor Progress

The final phase started after GOHSEP (Louisiana Governor's Office of Homeland Security & Emergency Preparedness) and FEMA approved the updated plan. During this phase, the Hazard Mitigation Office worked to ensure adoption by the New Orleans City Council, and also developed an implementation strategy and process to monitor progress and to maintain the plan.



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## 5.3 Mitigation Planning Organization

The New Orleans Homeland Security Emergency Preparedness (NOHSEP) Hazard Mitigation Office working with its consultant, Water Works LA, received guidance and recommendations from the community, City Hall Working Group, and Advisory Committee to prepare the updated plan. Once the plan was reviewed by the City, it was sent to GOHSEP and FEMA for approval before being submitted to the City Council for final adoption. The following sections provide additional details about the roles and responsibilities of each group.

### Lead Agency and Planning Group

The Lead Agency for the development of the Orleans Parish Hazard Mitigation Plan Update, 2015, is the NOHSEP Hazard Mitigation Office. The Planning Group consisted of a City Hall Working Group, an Advisory Committee, and several other stakeholders involved throughout the process. All meeting documentation is included in Appendix B.

### City Hall Working Group

The City Hall Working Group included representatives from various City departments. The departments and participants are listed below and included representation from City of New Orleans departments that worked on the 2010 approved Hazard Mitigation Plan and other organizations that work closely with hazard mitigation planning efforts for Orleans Parish.

The City Hall Working Group members were tasked with:

- Providing leadership and support
- Overseeing the planning process
- Helping to develop specific details for the
  - Risk assessment
  - Mitigation strategies
  - Implementation plan
- Attending several meetings
- Ensuring that the perspectives of the community were considered and incorporated into the Plan
- Ensuring that all recommendations were realistic given anticipated funding levels and human resources available within the City.
- Recommending the Plan to the City Council for adoption.

City Hall Working Group	
Organization	Participants
New Orleans Office of Homeland Security & Emergency Preparedness (NOHSEP)	Gregory Reese
NOHSEP Office of Emergency Preparedness (OEP)	Dev Jani
NOHSEP Hazard Mitigation Office	Brad Case
City of New Orleans Office of Performance and Accountability	Oliver Wise
City of New Orleans Department of Public Works	Jennifer Larmeu
City of New Orleans Office of Coastal and Environmental Affairs	Ron Harper
Louisiana Public Health Institute Advisor to the City of New Orleans	Jennifer Ruley
New Orleans City Planning Commission	Tyler Hevlin



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City of New Orleans Department of Parks and Parways	Tica Hartman
City of New Orleans Floodplain Management	Jerome Landry
City of New Orleans Office of Information Technology & Innovation	Ishmael Amin
City of New Orleans Stormwater Manager	Prisca Weems
New Orleans Redevelopment Authority	David Lessinger
New Orleans Redevelopment Authority	Jerry Graves
City of New Orleans Office of Place-Based Planning	William Gilchrist
City of New Orleans Department of Public Health	Sarah Babcock

### Advisory Committee

The Planning Group included the City Hall Working Group (described above) and an Advisory Committee that brought input from various additional organizations.

The Advisory Committee responsibilities included:

- Sharing specific knowledge
- Commenting on interim and final versions of the plan
- Participating in all stages of the planning process
- Assisting in disseminating information to the community.

Advisory Committee	
Organization	Participants
UNO/CHART	Monica Farris
Lowlander Center	Shirley Laska
Tulane Institute on Water Resources Law Policy	Mark Davis
New Orleans Redevelopment Authority	Jerry Graves
Sewerage & Water Board	Jason Higginbotham
Regional Planning Commission	Meredith Soniat
City of New Orleans Stormwater Manager	Prisca Weems
New Orleans Redevelopment Authority	David Lessinger
South Louisiana Flood Protection Authority East	Robert Turner
NOHSEP Office of Emergency Preparedness (OEP)	Dev Jani
Louisiana Public Health Institute Advisor to the City of New Orleans	Jennifer Ruley
South Louisiana Flood Protection Authority East	Steven Spencer
UNO/CHART	Tara Lambeth
Governor's Office of Homeland Security and Emergency Preparedness	Nicolette English
Governor's Office of Homeland Security and Emergency Preparedness	Jeffrey Giering



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### Additional Meetings

In addition to the City Hall Working Group and the Advisory Committee, two additional groups were convened for the purpose of holding a discussion specific to their sectors. These two groups included a Public Safety Group and a Non-Profits and Community Organizations Group.

The Public Safety Group was convened by the New Orleans Office of Homeland Security & Emergency Preparedness to discuss the alignment of the risk assessments across the various relevant plans, as well as to discuss hazard vulnerability and mitigation actions. Representatives from the New Orleans Fire Department, New Orleans Police Department, and New Orleans Emergency Medical Services were all invited. The meeting was attended by NOHSEP, as well as the Chief of Plans for the New Orleans Fire Department and the Head of Planning for New Orleans Emergency Medical Services.

The Non-Profit and Community Organizations Group was convened by NOHSEP in order to facilitate a discussion with local organizations regarding their concerns and needs regarding hazards; as well as how they can best interact with NOHSEP in support of risk reduction. Invitations were sent out to an extensive listing of local non-profit and community organizations, based upon the lists maintained by NOHSEP, the New Orleans Department of Public Health and the University of New Orleans' Center for Hazard Assessment, Response and Technology.

Participants at Non-Profits and Community Organizations Meeting	
Organization	Participants
UNO/CHART	Monica Farris
UNO/CHART	Tara Lambeth
Louisiana Emergency Management Disability & Aging Coalition	Joan Guillory
New Orleans ADA Administrator	Page McCranie
Evacuteer	Kali Rapp Roy
NOHD/NOMRC	Bijal Patel
Friends of Lafitte Greenway	Sophie Harris
Friends of Lafitte Greenway	Nellie Catzen
Oxfam / Latino Forum	Rosa Herrin
La. Appleseed	Tara Richard
Sierra Club	Darryl Malek-Wiley
Common Ground Relief	Thom Pepper
CNO - Hazard Mitigation Office	Brad Case
LA DHH	Cynthia Davidson
Puentes New Orleans	Kenneth Roubon
Water Works LA	Alessandra Jerolleman
Water Works LA	Miriam Belblidia

### Regional Coordination

In addition to the meetings held with City of New Orleans stakeholders, an effort was made to reach out to representatives from the neighboring parishes responsible for hazard mitigation planning. These representatives were notified by letter of the Orleans Parish 2015 Hazard Mitigation Plan Update and given the opportunity to participate. These neighboring parishes included Jefferson Parish, St. Bernard Parish, and Plaquemines Parish.



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In addition to the invitation to participate, there were two meetings that allowed NOHSEP to receive Regional input to the 2015 Plan Update. These included a presentation at a meeting of the regional Community Rating System (CRS) Users Group, Flood Loss Outreach and Awareness Taskforce (FLOAT). Water Works LA, on behalf of NOHSEP, gave a presentation describing the CRS credit for planning processes and requesting specific input for the City's Update. FLOAT members gave feedback regarding both mitigation actions and the planning process. Attendees represented St. John the Baptist Parish, the City of Mandeville, Tangipahoa Parish, LSU Ag Center, LA DOTD, GOHSEP and UNO CHART.

The second additional meeting was sponsored by the South Louisiana Flood Protection Authority-East (SLFPA-E) and brought together the planners and emergency managers from various neighboring jurisdictions. The meeting included representatives from St. Bernard Parish, Jefferson Parish, the South Louisiana Flood Protection Authority-West, the Louisiana Coastal Protection and Restoration Authority, and the United States Army Corps of Engineers. Meeting participants provided feedback to the City's Plan Update as well as discussing what their respective jurisdictions do to address levees and levee failures in their hazard mitigation plans. The meeting also included a Risk Awareness Exercise and a Levee Failure Due to High River Events Discussion.

### **Community**

Community members were initially informed of the planning process through a press release, as well as the NOHSEP Hazard Mitigation website. A survey was circulated to the general public in August and September of 2015 and received over 130 responses. The survey was circulated by members of the Planning Group, on the NOHSEP website, utilizing social media, and by community groups, such as the Greater New Orleans Water Collaborative. A copy of the survey can be found in Appendix C.

The survey asked a total of nine questions, including questions on demographics, perceived hazard frequency, perceived hazard risk, mitigation actions taken and mitigation actions which might be considered.

The following bullet list provides a brief overview of findings:

- The vast majority of respondents perceived coastal erosion, subsidence, thunderstorms and flooding as the highest frequency hazards.
- The vast majority of respondents perceived flooding, coastal erosion, tropical cyclones, storm surge, dam/levee failure, and infrastructure failure as the hazards with the highest potential impacts.
- Over half of the respondents were concerned about street flooding during heavy rain and one quarter were concerned about house flooding.
- Many respondents had taken steps to protect their property. The most frequently cited measures were: purchasing flood insurance, making an emergency plan, clearing debris, elevating utilities, clearing tree limbs, and installing gutters or yard drains.
- Many respondents indicated that they would take measures to protect their property if they could. The most frequently cited potential measures were: rain barrels, rain gardens, and clearing debris.



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Due to the many other public engagement processes ongoing in the City of New Orleans in 2015, such as the Resilient New Orleans Strategy, a public meeting for the Plan Update was not held until October of 2015. This meeting was publicized in the *Times-Picayune*.

Community responsibilities included:

- Receiving information about the hazard mitigation planning process
- Sharing specific concerns about each phase of the planning effort
- Reviewing the recommendations from the Planning Group
- Identifying community priorities for hazard mitigation planning

## 5.4 Hazard Mitigation Plan Development

### Planning and Organization

The NOHSEP Hazard Mitigation Office began the 2015 Plan Update process in February 2014 by convening advisors and initiating conversations with relevant City departments. Beginning in May 2015, the City accelerated the Plan Update process, with the assistance of Water Works LA.

The planning team convened a formal Advisory Committee and City Hall Working Group beginning in June 2015, as described above. Water Works LA established a schedule of meetings for City Hall Working Group and the Advisory Committee.

The City Hall Working Group met seven times between June and October 2015. The purpose of each meeting was as follows:

- June 26, 2015 – Overview/Hazards: overview of the hazard mitigation planning process; review the 2010 Plan; hazards activity to rank hazards and discuss correlation to 2010 risk assessment
- July 13, 2015 – Assets and Goals: shared draft maps and discussed data sources; goal exercise to develop updated goals for 2015 Plan
- July 31, 2015 – History of Impacts: update on risk assessment; discussion of proposed goals; hazards exercise to discuss what could have been done to reduce impacts of different hazards in past 5 years
- August 13, 2015 – Risk Assessment: update on risk assessment; overview of hazard impacts
- September 14, 2015 – Mitigation Strategies: mitigation actions activity to determine how actions fit under updated goals
- September 25, 2015 – Capabilities/Implementation: capability assessment and mitigation action implementation activities to determine process for city departments to implement mitigations strategies



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- October 13, 2015 – Hazards Ranking/Draft Review: activity to rank hazards; review draft of 2015 Plan Update

The Advisory Committee met four times between July and October 2015. The purpose of each meeting was as follows:

- July 8, 2015: Assets, Goals, Capabilities
- August 5, 2015: Risk Assessment
- September 18, 2015: Mitigation Strategies
- October 7, 2015: Implementation and Draft Review

The agendas, summary minutes, attendance sheets, comment sheets, handouts, press release and other public notifications of the Planning Team and community meetings are included in Appendix B.

### **Review of Existing Plans and Integration with 2015 Plan**

To begin development of the Hazard Mitigation Plan several plans, ordinances, and codes were reviewed. Coordination of existing and future plans is imperative to generating a plan that is capable of being implemented throughout its life. The following existing Plans and Programs were evaluated for integration into the New Orleans Hazard Mitigation Plan:

**Resilient New Orleans Strategy.** The *Resilient New Orleans Strategy* identifies the resilience gaps in New Orleans' infrastructure and identifies potential actions to increase resilience through effective planning and cross-sector collaboration. The document builds upon a multitude of sources, ranging from locally developed plans to globally accepted practices, and addresses three overarching components for improving the city's resilience. First, it advocates for the regional Urban Water Plan that favors adaptation to the current and future environment as opposed to fighting the existing natural systems. The plan also stresses the necessity of social equity in order to strengthen and stabilize New Orleans communities while fostering resilience through numerous initiatives to grant access, support, and training to disenfranchised populations. Finally, the strategy recommends developing a plan of sufficient capacity to prepare for potential risks, including key investments into communication initiatives, infrastructure, and community outreach.

In the development of this plan, various stakeholders in New Orleans were consulted for their expertise and insight on the city's weaknesses and strengths in an effort to create new approaches and improve existing ones. The Office of Neighborhood Engagement had carried out a summit with prominent community leaders to help gather research and develop focus areas for the strategy to serve as the foundation for initiatives and priorities. With the information gathered from the summit and research from global approaches, the strategy developed a "series of short-term actions with long-term goals that provide a road map for implantation." The newly created department of Resilience and Sustainability in the Mayor's office, predominantly led by the chief resilience officer, will implement the strategy by "coordinating with partners and agencies." The goal is to ultimately ensure the execution of these actions in congruence with the City's existing Master Plan and Hazard Mitigation Plan.



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**City of New Orleans Comprehensive Emergency Management Plan (CEMP).** The New Orleans Office of Emergency Preparedness is responsible for producing and maintaining the City's Comprehensive Emergency Management Plan. The CEMP addresses mitigation of, preparation for, and recovery from a wide variety of emergencies and disasters.

**City of New Orleans Master Plan.** The Plan for the 21<sup>st</sup> Century: New Orleans 2030 was approved by the City Council in August 2010. This plan outlines a structure for the City's development potential for the next twenty years. Significant changes are recommended in the future development pattern to support and encourage the City's future growth toward a more sustainable, livable community. The plan includes a chapter on "Resilience: Living with Water and Natural Hazards." The City's new master plan now includes a significant discussion of strategies to reduce risks and vulnerabilities and also includes the Orleans Parish Hazard Mitigation Plan (2010) as an appendix to the document. When the 2015 Plan Update is approved and adopted, it will become a part of the master plan. The master plan will have the "force of law."

Briefly, the master plan seeks greater levels of flood protection through myriad policy/program recommendations, including: comprehensive wetlands restoration, enhanced storm water management, better building codes/regulations/techniques, additional funding for residents to elevate and storm proof structures, and development of a public office to oversee mitigation/resilience activities.

**City of New Orleans Master Land Use Element.** The Plan for the 21<sup>st</sup> Century: New Orleans 2030 Master Plan also includes a revised future land use plan that will serve as a guide in directing future development to achieve the goals for a sustainable, livable community. The new land use plan was approved by the City Council as part of the new master plan in August 2010. The new land use plan will be used to implement the "force of law" provisions. This provision will ensure that all future land use decisions are consistent with the land use element of the master plan and any future amendments to the plan.

**City of New Orleans Comprehensive Zoning Ordinance.** The Zoning Ordinance was reviewed for land use regulations and hazard identification. The Zoning Ordinance controls the uses and densities of various land uses throughout the Parish. The current zoning ordinance was approved in the 2015, including a revised Article 23 which addresses landscape and stormwater management to create a more sustainable city by conserving resources such as water, decreasing stormwater runoff, reducing heat island effects, subsidence, and creating a more amiable space for the public.

In order to enforce these restrictions, the city will issue a certificate of occupancy only once landscaping and stormwater management restrictions are met. All developments require a landscape plan, except for single-family dwellings and residences under six units. A stormwater management plan is required for all new development that exceeds 5,000 square feet of impervious surface.

Stormwater management is addressed through on site detention with measures such as infiltration through pervious pavement and surfaces, vegetation, green roofs, blue roofs, and other methods that allow rainfall to reenter the ground water. Buildings that exceed 5,000 square feet of impervious surface are in charge of their own stormwater runoff and must either detain or allow for infiltration the first one and one quarter (1.25) inch of stormwater runoff back into the groundwater.



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Some of the stormwater management strategies outlined as a best management practices are listed in Article 23 as follows: bioswells, circular depressions, constructed wetlands, detention/ retention basins, disconnected roof tops, recycling, and irrigation, ditch gardens, flow diffusers, french drains, infiltration trenches, and dry wells, grassed swales, habitat preservation and protection areas, permeable pavers, porous surfaces, grass paving, and structural soils, planted stormwater buffers, preserved forest floors, preserved wetlands, rain gardens, rain groves, rooftop runoff management, sand filters, stream bank or riparian buffers, tree protection areas, cisterns and underground stormwater chambers.

**City of New Orleans Building Code.** The Building Code of City of New Orleans was amended to read as set forth in the International Building Code, 2006 Edition. This latest edition of the International Building Code was reviewed for assessment in hazard mitigation analysis.

**State of Louisiana Hazard Mitigation Plan.** The purpose of this hazard mitigation plan is to implement actions that eliminate the risk from hazards, or reduce the severity of the effects of hazards on people and property. Mitigation actions are both short-term and long-term activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through various means to include preparedness, response, and recovery measures. The State's updated 2014 Plan was reviewed to ensure consistency between the Orleans Parish plan and the State plan regarding hazard identification, as well as other sections of the plan.

**Flood Loss Outreach & Awareness Task Force (FLOAT) Plan for Public Information (PPI).** FLOAT is comprised of a group of communities across several parishes and municipalities that work towards lowering flood risk and subsequently, insurance policies through a Community Rating System (CRS) program. The group is user driven, meaning that the actual members of the community work towards hazard mitigation. The premise behind FLOAT is to give communities incentives to increase mitigation by allowing insurance rates to be lowered through the use of points. Activities taken on by the FLOAT group in each community help homeowners lower their insurance rates while making the community more resilient, and thus helping the NFIP. The purpose of the Program for Public Information (PPI) document is to give concrete actions to each community and the goals for the group are as follows:

The goals of the PPI are: "1) To make the public aware of the flood threat their community may be susceptible to; 2) To promote an all-hazard approach to public outreach; 3) To educate local officials about the importance of making the public aware of flood threats and other hazards; 4) To provide the most comprehensive coverage for public outreach using the most cost effective means, including the pooling of resources by seeking private sector sponsors; 5) To provide a level of consistency in the public message disseminated from the various public entities participating in this strategy; and, 6) To promote public awareness of their community's Flood Insurance Rate Map."

The PPI document specifically outlines each parish's hazards and risks by stating the overall geography of the parish, the flood zones, and the associated flood risks. The FLOAT group is comprised of Orleans Parish, St. Bernard Parish, Tangipahoa Parish, St. Tammany Parish, City of Slidell, City of Mandeville, City of Covington, Terrebonne Parish, City of Houma, and St. John the Baptist Parish.

While it is up to each community to take on the recommendations provided by the group, and incorporate each action, Orleans parish lists specific actions that include enforcing building codes, land use regulations, outreach, education, and mitigation. Each community has its own list of actions and it is up to each community to fulfill these tasks.



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**Resilience and Resistance: Addressing Acute and Chronic Adversity in Communities of Color.** This white paper by the Institute of Women and Ethnic Studies provides a sociological approach to disaster resilience and highlights the shortcomings in the realm of emergency management. The document suggests that individuals who frequently deal with social disadvantages in their everyday lives are more susceptible to enduring trauma after a hazard, which highlights the importance of understanding the factors that contribute to successful coping mechanisms in the face of a disaster. The institute emphasizes the emotional and physical recovery of individuals before and after disasters, offering services and information ranging from mental health to job training to availability of public transit. By thinking about these factors in the context of resilience, we are better able to understand the complex interactions that exist between social factors and adverse environmental factors.

**Hurricane Katrina in the Gulf Coast, Mitigation Assessment Team (MAT) Report, Building Performance Observations, Recommendations, and Technical Guidance, FEMA 549 / July 2006.** The findings from the MAT report concluded that structures should be built to better withstand wind and flooding events common to the Gulf Coast. To accomplish this goal, the MAT report recommended that the City adopt and enforce modern building codes, develop more accurate floodplain maps, and encourage building beyond code with the expectation of severe weather events. The report further stated that critical structures should be located, when possible, in areas likely to be unaffected by severe weather, and plans should be in place to ensure these facilities remain operational in such an event.

**Flood Risk in New Orleans, Implications for Future Management and Insurability.** Briefly, this report illustrates how the risk analysis involved in assessing insurability can be a useful tool for policy makers concerned with determining acceptable levels of risk. Specifically, the use of catastrophe modeling is used to quantify the individual components of risk (hazard, exposure, vulnerability). The report finds that flood risk in New Orleans will continue to rise and therefore flood risks should be continually assessed, so that preparations are equal to the level of threat.

**Polderize New Orleans.** This proposal calls for a system of internal levees that would compartmentalize Orleans Parish to mitigate flooding within the parish. The proposal is based on the Dutch polder system and identifies 4 major areas to be addressed: street cuts, underpasses, Bayou St. John and drainage culverts.

**Unified Plan for New Orleans (UNOP).** The UNOP plan was developed in 2006 and 2007. Briefly, this post-Katrina plan outlines priorities for flood protection policy and projects at the citywide level. Strategies include, taking measures to flood-proof individual structures and critical equipment from rising water and hurricane-force winds, clustering residents and businesses in less populated areas, and developing incentives for areas with more population/less flood risk to attract residents and businesses. Policies and projects are generally centered on two concepts: moving the population to higher ground and elevating structures, which would be accomplished through a series of incentives and code changes/enforcement.

**City of New Orleans Floodplain Ordinance.** The City's floodplain ordinance was amended post-Katrina to include FEMA recommendations. The purpose of the floodplain ordinance is to set forth minimum land use requirements and control measures for flood prone areas within the city, as determined by FEMA. Regulations are based on parish specific storm data and were developed by the U. S. Army Corps of Engineers (USACE) and the National Academy of Sciences. The floodplain ordinance is to be applied uniformly to land within flood prone areas. Methods include: restriction/prohibition of uses, increased hardening of vulnerable structures, controlling the alteration of natural flood protection elements, controlling developments which may increase flood damage, prevention/regulation of barriers



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which unnaturally divert floodwaters or increase flood hazards to other areas. Additionally, the City's participation in FEMA's Community Rating System Program CRS) is to create incentives that reduce flood losses and support the sale of flood insurance.

**City Assisted Evacuation Plan (CAEP).** The purpose of the City Assisted Evacuation Plan is to help evacuate residents and visitors that are unable to self-evacuate during an emergency. The plan lists relevant agencies that will participate and identifies staging and debarkation facilities, such as local hotels, Morial Convention Center, Union Passenger Terminal, and Louis Armstrong Airport.

**Individual Agency Hazard Mitigation Plans within Orleans Parish.** All individual agency plans approved or in draft form were reviewed to coordinate proposed mitigation strategies. Individual plans reviewed include 1) Louis Armstrong New Orleans International Airport (LANOIA) Hazard Mitigation Plan; 2) the University of New Orleans (UNO) Hazard Mitigation Plan; 3) the Sewerage and Water Board Plan; 4) the Port of New Orleans Plan; 5) the Audubon Institute Plan; 6) Dillard University Hazard Mitigation Plan; and 7) the Public Belt Railroad Plan.

**Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast.** This plan, adopted in 2012 and currently being updated, aims to achieve long term and comprehensive coastal protection and restoration in coordination with federal, state, and local agencies. The plan presents hurricane protection (both structural and non-structural) and coastal restoration measures. In addressing hurricane protection the plan takes a whole system approach, with a goal of built hurricane protection structures that allow the natural ecosystem to be dynamic and functional. Non-structural hurricane protection tools include: flood insurance, structure elevation, and building codes. Structural hurricane protection planning is recommended for the following areas: Lake Pontchartrain, Barataria Basin and West Bank, Plaquemines Parish, Terrebonne Parish and Atchafalaya Delta, LA 1 Highway Corridor, Acadiana, and the Chenier Plain.

**Louisiana Coastal Protection and Restoration (LACPR) Final Technical Report (USACE).** This report seeks to develop plans for hurricane risk reduction and coastal restoration in Louisiana and Mississippi. It accomplishes through comprehensive hurricane protection analysis and design, development of a full range of flood control, coastal restoration, and hurricane protection measures, and consideration of Category 5 hurricane protection. The report does not contain construction recommendations, NEPA alternatives, feasibility designs, real-estate planning, or cost estimates. The report was developed in conjunction with Louisiana's Coastal Protection and Restoration Authority and similar themes, goals, and recommendations are seen in both documents, specifically the multiple lines of defense strategy: coastal restoration, structural, and nonstructural measures.

### **Risk Assessment**

The NOHSEP Hazard Mitigation Office prepared the Hazard Identification/Risk Assessment (HIRA).

The ongoing results of the HIRA were discussed with the City Hall Working Group and Advisory Committee throughout the series of meetings, with their input requested at several points. The update included the following:

- **Hazard Identification and Profiles.** An update to those included in the 2010 Plan and a complete identification and profiles for new hazards included for the 2015 Plan.



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- Update to the Community Asset Inventory, including private property, public infrastructure, and Repetitive Loss/Severe Repetitive Loss Properties
- Loss Estimates of anticipated losses with each hazard
- Risk Estimates for each hazard, and
- Funding Matrix to identify potential funding opportunities to support mitigation actions
- Preliminary Review and Update of Goals and Objectives in the 2010 Plan

The agendas, summary minutes, and attendance sheets are included in Appendix B.

### **Mitigation Strategy**

In developing the mitigation strategy, the City Hall Working Group and the Advisory Committee reviewed the 2010 goals and objectives for the 2015 Orleans Parish Hazard Mitigation Plan Update. In updating the goals, the planning groups also decided to add foundational principles as key to the goals of the Plan Update, including:

1. Consider the principles of equity in risk reduction decisions, including land use, zoning, and the allotment of funds and resources
2. Plan for future conditions, including development and climate change
3. Plan for minimizing damage and maximizing disaster recovery
4. Treat risk reduction and hazard mitigation as part of an integrated system, with an emphasis on safety.

Once the foundational principles and goals were established, the Planning Team reviewed an update of mitigation actions from the 2010 Plan and a list of new preliminary mitigation actions for the 2015 Plan Update.

A number of plans were reviewed to develop the list of mitigation actions for the 2015 Plan Update, including the Resilient New Orleans Strategy, Chapter 12: Resilience of the New Orleans Master Plan, the Unified New Orleans Plan (UNOP), the Louisiana Coastal Protection Restoration Technical Report and the Louisiana Coastal Protection Restoration Authority Comprehensive Plan, the City's Emergency Operations Plan, the Mitigation Assessment Team Report, and others. The updated goals and a preliminary list of mitigation actions were reviewed by the City Hall Working Group and the Advisory Committee. At the September meetings of the City Hall Working Group and the Advisory Committee, the groups participated in the mitigation actions activities, organizing the actions under the corresponding Goals and Objectives and developing a process for city departments to implement mitigations strategies.

The agendas, summary minutes, attendance sheets, comment sheets, handouts, press release and other public notifications of the City Hall Working Group, Advisory Committee, and community meetings are including in **Appendix B**.

### **Implementation Strategy**

The fourth set of meetings for the 2010 Hazard Mitigation Plan Update, were held in June and July. The Progress and Coordination Meeting was held at the Homeland Security Conference Room in New Orleans City Hall on June



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29, 2010. At this meeting the Planning Team reviewed the results of the STAPLEE evaluations of the mitigation actions. The members were asked to evaluate all of the actions by considering the benefits and costs of implementing each action. The seven (7) criteria used to evaluate the actions included social, technical, administrative, political, legal, economic, and environmental. GCR assessed the STAPLEE evaluation forms that were completed by the Planning Team members and summarized the results in a number of different ways: a) identified the number of criteria with positive responses, b) overall total number of positive/negative responses for each action, and 3) benefit-cost review. The Planning Team reviewed the STAPLEE results and approved the overall priority ranking of each mitigation action.

The Planning Team members also reviewed the Implementation Strategy at this meeting. The Implementation Strategy handout reviewed at this meeting listed all mitigation actions by goal and identified the specific objectives that are met with each action, and further explained the content of the table, and pointed out the key components of the Implementation Strategy which includes:

- Lead agency/support agencies to implement the action
- Preliminary cost estimates (including ongoing maintenance costs)
- Funding sources
- Time frame for implementing action
- Priority ranking based on the benefit-cost review

The Planning Team reviewed the handout and the detail of the Implementation Strategy and recommended some changes to the key components of the strategy. Once all actions had been reviewed and changes noted, the members voted unanimously to approve the Implementation Strategy.

On July 1, 2010, the 4<sup>th</sup> Community Meeting was held for the 2010 Hazard Mitigation Plan Update at the Latter Library on St. Charles Avenue. At this meeting, the community was presented with a review of planning efforts underway since the May 11, 2010 meeting, including a review of the updated list of identified hazards, goals and objectives, mitigation actions, and implementation strategy for the updated plan. The community was given an opportunity to ask questions and provide comments on the work completed.

The agendas, summary minutes, attendance sheets, comment sheets, handouts, press release and other public notifications of the third set of Planning Team and community meetings are including in Appendix H.

## **5.5 Community Engagement/Outreach Strategy**

Community involvement in the development of the Plan Update was coordinated with ongoing public engagement processes through the City of New Orleans for the Resilient New Orleans Strategy and National Disaster Resiliency Competition (NDRC).

### **Goals and Objectives**

The goals and objectives of the engagement strategy were to educate the community, hear community concerns, gain public support, and engage Orleans Parish residents in the decision making process.



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### **Identify the Community**

Stakeholders include active organizations representing neighborhoods, civic organizations, churches, businesses, environmental groups, governmental agencies, and non-profit organizations as well as elected officials that have an interest in hazard mitigation planning.

### **Organize Community Events/Meetings**

One community meeting was organized and held in conjunction with the NDRC public engagement process. The community engagement meeting included the following:

The planning group also hosted a meeting for nonprofits and community organizations, to present these groups with an overview of the process and how they can participate to support the populations they serve.

### **Distribute Information to the Community**

To make sure that the community remained well informed of the planning process and the community events/meetings, the City of New Orleans utilized the following techniques to distribute information.

- Hazard Mitigation Website - The City posted information on the hazard mitigation planning effort on its website <http://www.nola.gov/hazard-mitigation/>
- Press releases – A press release was issued to inform the community of the planning process and before the community meeting.
- Community Survey -- A survey was circulated to the general public in August and September of 2015 and received over 130 responses. The survey was circulated by members of the Planning Group, on the NOHSEP website, utilizing social media, and by community groups such as the Greater New Orleans Water Collaborative.

The materials created to distribute information to the community are included in Appendix C.

## **5.6 Plan Development Meeting Summary**

### **June 26, 2015: City Hall Working Group Meeting - Overview and Discussion of Hazards**

The kickoff meeting for the City Hall Working Group provided an opportunity to present the department representatives with an overview of the hazard mitigation planning process, including the timeline and integration with other planning processes, such as the Resilient New Orleans initiative. The planning team presented an overview the 2010 Plan, including a discussion on the hazards included, risk assessment, capability assessment, and the mitigation strategy. A discussion on the importance of the process and the need for the Hazard Mitigation Plan allowed City Hall Working Group representatives to understand their role in the update and how it related to their departments' work. A hazards exercise asked attendees to consider hazards according to greatest negative impact, ability of the City to reduce impact, hazards that would require external assistance to reduce risk, and hazards of least concern. Based upon the hazard exercise results, the following hazards were raised for consideration: power outages, terrorism, fire, infrastructure failure, building collapse, civil unrest, and pandemic. The meeting closed with sharing the meeting schedule and responsibilities of the City Hall Working Group.

#### **Accomplishments:**

- Established meeting schedule and responsibilities for City Hall Working Group



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- Developed additional hazards for consideration

### **July 8, 2015: Advisory Committee Meeting - Assets, Goals, Capabilities**

The Advisory Committee meeting provided an update on the Hazard Mitigation Plan Update, including progress to date and the planning process timeline. Advisors participated in a Hazard Mitigation Goals exercise, in which they were asked to provide three primary goals for the plan update. Following the exercise, the 2010 Goals were shared and attendees discussed changes in priorities, including adding goals to focus on equity, renters, and risk communication. Advisors shared suggestions for engaging stakeholders in City departments and regionally, and the use of a survey tool to gather input. The meeting closed with sharing the meeting schedule and responsibilities of the Advisory Committee.

#### Accomplishments:

- Established meeting schedule and responsibilities for Advisory Committee
- Developed additional goals for the Hazard Mitigation Plan
- Robert Turner from SFLPAE offered to host a regional meeting

### **July 13, 2015: City Hall Working Group Meeting - Assets and Goals**

The City Hall Working Group received an update on progress to date, including an overview of the Advisory Committee recommendations. NOHSEP shared GIS data, including draft maps showing storm surge impacts and Digital Flood Insurance Rate Maps, and the group discussed the need for additional data sources. Attendees participated in a goal setting exercise to update the goals for the 2015 Plan, and the 2010 Plan goals were shared.

#### Accomplishments:

- Developed additional goals for the Hazard Mitigation Plan
- Ron Harper from the Office of Coastal and Environmental Affairs offered to assist with public outreach

### **July 31, 2015: City Hall Working Group Meeting - History of Impacts**

The City Hall Working Group received an update on the risk assessment and a proposed final list of hazards to include in the 2015 Plan Update, based on previous meeting exercises. The group received a copy of the proposed goals, based on previous meeting exercises, including foundational principles to guide the goals and actions. The group then conducted a hazards exercise, asking participants to provide input on what can be done to reduce impacts of the hazards in past five years for the 2015 Plan.

#### Accomplishments:



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- City Planning Commission will assist with timeline for Plan Update adoption and incorporation into Master Plan.
- City Hall Working Group to share community outreach list
- Data requests made to City Hall Working Group

### **August 5, 2015: Advisory Committee Meeting - Risk Assessment**

The Advisory Committee received an update on the planning process and was provided with the draft 2015 goals. Advisors provided feedback on the goals, and received an update on the revised list of hazards. GOHSEP reminded that the State would not review any man-made or technological hazards; however, advisors expressed interest in pursuing an all hazards approach. An update on the risk assessment was shared with attendees, including draft maps. Advisors were also asked to provide input on the outreach plan.

#### **Accomplishments:**

- SWBNO agreed to send out a public notice regarding the 2015 Plan in the water bill
- Additional planning for regional meeting hosted by SLFPAGE

### **August 13, 2015: City Hall Working Group – Risk Assessment**

The City Hall Working Group received update on the planning process, including individual meetings held with city departments, SLFPAGE, CHART, SWBNO, NORA, and Evacuteer. The group discussed the final hazard list and the Goals and Objectives, and requested addition of several goals relating to protection of records, consideration of cultural resources, and continuity of operations. The group also discussed vulnerable populations related to different hazards, and members of the group agreed to provide information on vulnerabilities for hazards relating to their departments.

#### **Accomplishments:**

- Review of final hazard list
- Addition of goals relating to protection of records, consideration of cultural resources, and continuity of operations

### **September 9, 2015: Public Safety Meeting**

### **September 14, 2015: City Hall Working Group – Mitigation Strategies**

The City Hall Working Group received an update on work to progress, including presentations at the FLOAT users group and a meeting with public safety officials, plan integration efforts, data gathering completion, and an update



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on the risk assessment. The group participated in the mitigation actions activity, in which they were asked to organize the actions under the corresponding Goals and Objectives.

### Accomplishments:

- Mitigation actions organized under Goals and Objectives

### **September 15, 2015: Regional Stakeholders Meeting**

Based on previous discussion during the Advisory Committee on the need to engage regional stakeholders, SLFPA-E hosted a meeting that convened representatives from Jefferson, Orleans, and St. Bernard Parish, CPRA, USACE, and SLFPA-W. The attendees received an overview of the Hazard Mitigation Plan Update process, and discussed how levees and levee failure are handled in mitigation plans. Attendees took part in an exercise on communicating residual risk to residents, and an exercise focused on a scenario of levee failure due to a high river event.

### Accomplishments:

- Regional stakeholders engaged and received information on 2015 Hazard Mitigation Plan Update
- Regional stakeholders shared information on procedures for handling a levee failure hazard event

### **September 18, 2015: Advisory Committee - Mitigation Strategies**

The Advisory Committee received an update on the planning process, including presentations at the FLOAT users group and a meeting with public safety officials, plan integration efforts, data gathering completion, and an update on the risk assessment. The committee participated in a capability assessment activity and a mitigation action implementation activity. The committee provided feedback on potential implementation mechanisms, including the Local Emergency Planning Committee (LEPC).

### Accomplishments:

- NOHSEP exploring establishing a mitigation subcommittee on the LEPC for plan implementation

### **September 21, 2015: Nonprofits and Community Organizations Meeting**

This meeting provided nonprofits and community organizations an opportunity to learn about the 2015 Hazard Mitigation Plan Update and to better understand how their organizations can participate to address the needs of the communities they serve. Attendees were asked to provide information on their experience with hazards and how they have taken steps to reduce risk. An overview of the planning process was provided, along with copies of the hazards being addressed by the Update. The attendees then participated in a tabletop exercise, including a train derailment, heavy rainfall, and hurricane evacuation scenarios, and were prompted to determine impacts to their organizations and the populations they serve.



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### Accomplishments:

- Nonprofits and community organizations identified potential impacts from different hazards considered in the 2015 Plan Update
- Nonprofits and community organizations shared information on how they currently interact with the City in responding to different hazards and provided recommendations on how the City can best support their efforts

### September 25, 2015: City Hall Working Group - Capabilities/Implementation

The City Hall Working Group received an update on the planning process. The group discussed the capability assessment, and conducted an activity to come up with options for a process for engagement. The group demonstrated an interest in continuing to meet, but questioned whether ongoing implementation could be tied to other efforts. The group conducted a mitigation action implementation activity to determine process for city departments to implement mitigations strategies.

### Accomplishments:

- Group developed options for Plan implementation and ongoing engagement
- Group developed process for implementing mitigation strategies

### October 7, 2015: Advisory Committee - Implementation and Draft Review

The Advisory Committee received an update on the partial draft and the community engagement process, in coordination with NDRC. The planning team presented the STAPLEE and asked advisors to provide feedback on it as a method of ranking mitigation actions.

### Accomplishments:

- Advisors recommended use of STAPLEE for ranking mitigation actions

### October 13, 2015 – Hazards Ranking/Draft Review: activity to rank hazards; review draft of 2015 Plan Update

### October 19, 2015 – Community Meeting