



Hazard Mitigation Office 2021 Annual Report

City of New Orleans, Louisiana



**New Orleans, Louisiana
2021 Hazard Mitigation Annual Report**



Purpose of the Hazard Mitigation Plan and Annual Report

Hazard mitigation planning provides a structure for understanding the risks and vulnerabilities of the city, and identifying actions that can reduce future loss of life and property. The City of New Orleans developed an update to its local multi-hazard mitigation plan in 2020, with formal adoption of the document on September 2021. The 2020 Hazard Mitigation Plan was developed jointly with partners including the Sewerage and Water Board of New Orleans, New Orleans Redevelopment Authority, Housing Authority of New Orleans and Tulane University.

The Disaster Mitigation Act of 2000 includes a requirement that state and local governments have an approved hazard mitigation plan that is updated every five years in order to apply for and receive federal grant funds through any of the hazard mitigation assistance programs. FEMA also requires the community to maintain the plan in between 5-year updates. As part of the ongoing review and documentation process, the Hazard Mitigation (HM) Office prepares annual reports to summarize significant actions and events that affect both current mitigation project execution and future planning efforts. This annual report serves as the mechanism for plan maintenance, and includes information about major hazard events, changes in capabilities, and mitigation project status updates that occurred during the year.

2021 Summary

- Hazard Mitigation Office and partners finalized the 2020 Hazard Mitigation Plan update, securing FEMA approval and signatory adoption.
- Continued home elevation program work through Flood Mitigation Assistance grants. Received final approvals on FY18 and FY19 grant projects.
- Supported community partners in navigating N Claiborne Green Infrastructure permitting and O&M agreements with city and state partners.
- Kicked off design work on the NO East Landbridge Restoration project with CPRA, funded through grant from National Coastal Resilience Fund.
- HM Office led development of the City's Multi-Year Implementation Plan for use of the city's allocation of funds under the RESTORE Act. DPW released a draft of the plan for public comment in late 2021 and anticipate finalizing the plan in early 2022.
- The Hazard Mitigation Office developed an RFP for the Comprehensive Recovery Plan and secured consultant services for development of the CRP in 2021. NOHSEP formed a Community Advisory Committee and outlined a schedule of meetings to complete plan development in 2022.
- Hazard Mitigation Office coordinated post Hurricane Ida preliminary damage assessments and recovery planning. Collaborated on development of Emergency Resource Center operations plan based on the Ida response. Identified priority backup power needs and working with Entergy NO to expand generator availability for 2022 storm season.
- The Hazard Mitigation Office and UNO CHART released a final report on the Repetitive Loss Area Analysis covering the entire city. NOHSEP and ITI developed an online map to make the data available to the public.
- NOHSEP continued maintenance of the city's Automated Flood Warning System. At the time of this report, post Ida repairs and re-calibration of the system are being coordinated.



Hazard Mitigation Planning Organization

New Orleans Office of Homeland Security and Emergency Preparedness (NOHSEP) is the lead agency charged with developing and implementing the City's Hazard Mitigation Plan. NOHSEP works with several City agencies to implement mitigation projects, including:

- Office of Resilience and Sustainability
- Department of Safety and Permits
- Capital Projects Administration
- Department of Public Works
- New Orleans Health Department
- Information Technology and Innovation
- Property Management
- Parks and Parkways
- Mosquito, Termite and Rodent Control Board

NOHSEP also works with numerous other governmental, academic and non-profit partners to support mitigation planning and implementation, including the co-signatories to the 2020 HM Plan:

- Sewerage and Water Board of New Orleans
- New Orleans Redevelopment Authority
- New Orleans Housing Authority
- Tulane University

Meetings and Engagement Efforts

In 2021, NOHSEP continued to organize and hold virtual quarterly meetings of the Local Emergency Preparedness Committee's Hazard Mitigation Subcommittee (HM Committee). As the 2020 HMP was finalized in mid-2021, the focus of the HM Committee is turning to tracking and implementing the risk reduction strategy, while leveraging partnerships formed through the planning process to increase the effectiveness of the mitigation program.

The HM Office also participated in several local committees and groups focused on strengthening mitigation and resilience efforts. These include the Greater New Orleans Housing Alliance Resiliency Committee, the Resilience Design Review Committee, the Water Collaborative of Greater New Orleans, the C40 Urban Flooding Network, and the Louisiana Insurance Stakeholder's Roundtable.

The City increased coordination efforts with the State and neighboring communities through participation in the CPRA's Flood Risk and Resilience Capacity and Capability Assessment and Workshops, and the Louisiana Watershed Initiative, led by OCD. City personnel continued to coordinate on regional hurricane risk reduction systems through participation in Strategic Partnership Meetings with USACE, SLFPA-E, SLFPA-W and SWBNO.



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2021 Hazard Identification

The following table includes extreme weather events recorded in NOAA’s National Climate Data Center (NCDC) database. In 2021 New Orleans received major disaster declarations for Hurricane Ida and the Covid-19 pandemic. Values for estimated property damage are drawn from the NCDC records or from NFIP claims data. The actual cost of these events is understood to be much higher than these estimates, as uninsured losses, damage to automobiles, loss of revenue, and other impacts are not readily quantified from available data. Final damage values from Hurricane Ida are still being calculated at the time of this report, so are not represented.

<u>Date</u>	<u>Event Type</u>	<u>Estimated Property Damage</u>
3/23/2021	Flash Flood	\$ -
5/5/2021	Flash Flood	\$ -
5/10/2021	Flash Flood	\$ -
5/12/2021	Tornado	\$ 25,000.00
5/12/2021	Thunderstorm Wind	\$ -
5/18/2021	Flash Flood	\$ -
6/21/2021	Flash Flood	\$ 15,000.00
6/23/2021	Flash Flood	\$ -
7/3/2021	Flash Flood	\$ -
7/5/2021	Flash Flood	
7/16/2021	Flash Flood	\$ -
8/29/2021	Hurricane	\$ -
9/14/2021	Flash Flood	\$ -

Hurricane Ida made landfall on August 29 near Grand Isle, Louisiana. Ida produced high winds, widespread power outages, debris and minor-moderate roof/structure damage. Hazard Mitigation Office coordinated damage assessment data collection and Cooling Center response. Hurricane Ida provides an example of the compounding impacts of multiple hazards, as the tropical cyclone led to power outages that exacerbated the public health impacts of an extreme heat event.

Changes in Vulnerabilities

The ongoing impacts of the COVID-19 pandemic and related Economic Shock and supply chain disruptions continued to be felt through 2021. During the post-Ida response and initial recovery, operating plans had to be revised and revisited to incorporate public health measures into emergency resource center and disaster recovery center plans.

In October 2021, FEMA began phased implementation of major changes to flood insurance premiums that will have important implications for our community. It is clear that the cost of flood insurance is going to rise in the next few years; the specifics of who will be impacted and how are still unclear.



Changes in Capabilities

Recently passed legislation including the American Recovery Act and Infrastructure Investment and Jobs Act provide substantial new funding through programs typically outside of FEMA's Hazard Mitigation programs, but related as they deal with infrastructure planning and investments. The spending bills also include additional funding to FEMA Hazard Mitigation Assistance programs which should become available in the coming year.

The Infrastructure Investment and Jobs Act passed in November 2021 and contains the first \$500M federal funding for STORM Act. The law directs FEMA to make capitalization grants to States to establish revolving mitigation loan funds. This fund could become an important tool for financing resilient infrastructure and helping local mitigation projects provide their nonfederal cost share requirements. NOHSEP is working with partners at the State to build support for State-level implementation of this new capability.

Mitigation Actions

Attachment A provides a summary of the current status of the mitigation actions outlined in the 2020 Hazard Mitigation Plan. Updates include addition of several new action items led by SWBNO, and several items noted as completed since the 2020 plan update was drafted.

The Actions are organized around the six Goals of the Plan:

- 1) Reduce Risk and vulnerability to the Human Environment including cultural resources, homeowners, renters, visitors and transient populations;
- 2) Reduce Risk and Vulnerability to the Built Environment including current and future structures; critical facilities; historical structures; and infrastructure including communications;
- 3) Reduce Risk and Vulnerability to the Natural Environment including wetland restoration and recognition of New Orleans as a coastal city;
- 4) Maximize the involvement of Individuals, Businesses, and Groups in Risk Reduction Measures through education/outreach on Hazard Mitigation appropriate to all groups, particularly vulnerable populations;
- 5) Promote coordination locally, regionally, and nationally including all levels of government, private sector entities, as well as nonprofits and community based organizations;
- 6) Ensure continuity of operations for local government and businesses, including protection of critical functions, records and cultural assets.

Ongoing Plan Maintenance

In 2022, NOHSEP will continue to hold quarterly meetings of the HM Committee to coordinate implementation of the 2020 mitigation strategy. The Hazard Mitigation Office will continue to track changes in vulnerabilities, the status of active projects and additional funding opportunities throughout the year and include updates to hazard profiles, vulnerability assessments, and mitigation strategy in the 2022 Annual Report.

The Mitigation Action table included with this report reflects project status updates, including completion of some action items and inclusion of new action items. These new and/or redefined projects are now considered to be part of the 2020 Hazard Mitigation Plan.

In addition to the updates discussed above, the 2018 Sewerage and Water Board of New Orleans Hazard Mitigation Plan is added as a reference to the 2020 HMP, and the risk assessment, mitigation strategy, and other plan elements developed for that plan are fully incorporated in the joint 2020 plan update.



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	B	C	D	E	H	I	J	K	M
	Action No.	Action Item	Description	Hazards	Lead Agencies	Support Agencies	Time Frame for Implementing Action	Priority Ranking	2021 Status Update
1									
2	2020.1.1	Advocate for state and national policy supporting a Green New Deal for Housing. Along with local policy creation and implementation.	Incorporate recommendations from the national proposed Green New Deal for Public Housing Act into local public housing policies, such as converting buildings to electric energy, adding solar panels, and securing renewable energy sources.	Extreme Heat, Winter Weather	CNO (Office of Community Development)	HANO, NORA FANO, GNOHA, Gulf South for a New Green Deal	1-5 years	Medium	
3	2020.1.2	Actively plan for shifting risks, population movement, and changing development patterns in response to Climate Change.	Create local and regional plans for climate change-related threats, including intensification of weather events, changing development patterns and methods, and population relocation due to environmental risk.	Flooding, Storm Surge, Extreme Heat, Subsidence, Coastal Erosion, Infectious Disease Outbreak	CNO (Office of Resilience & Sustainability)	NOHD, NOHSEP	1-3 years	Medium	
4	2020.1.3	Refocus from coastal habitat to coastal communities.	Expand the scope of coastal habitat restoration, protection, and preservation to include the individuals and communities residing in these places. Incorporate the culture of coastal communities into policies surrounding coastal habitat management.	Flooding, Storm Surge, Tornadoes, Tropical Cyclones, Coastal Erosion, Subsidence, Severe Thunderstorms, Extreme Heat, Winter Weather	CNO (Office of Resilience & Sustainability)	DPW, NOHSEP, CRCL, National Wildlife Federation, Deep South Center for Environmental Justice, Southeast Louisiana VOICE	1-3 years	Medium	
5	2020.1.4	Address equity issues within the floodplain management program: provide support for local match requirement.	Buildout and implement an equity strategy for the flood plain management program.	Flooding	CNO (Homeland Security and Emergency Preparedness)	Water Collaborative of Greater New Orleans	1-3 years	Medium	HM Office developing work plans to evaluate NFIP Affordability and access to Hazard Mitigation Assistance programs.
6	2020.2.1	Complete BCEGS assessment.	Address the Building Code Effectiveness Grading Schedule.	Flooding, Tropical Cyclones, Severe Thunderstorms, Tornadoes	CNO (Safety and Permits)		1-2 years	High	Safety and Permits interrupted by Hurricane Ida, on track to complete in early 2022.

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7	2020.2.2	Implement Duncan Plaza Drainage Improvement.	Increase Storm Water Retention capacity with Improvements to the stormwater infrastructure in Duncan Plaza.	Flooding	CNO (Department of Public Works)	CNO (ORS) ,Downtown Development District, SOUL, GNOF, DDD, SWBNO	3-5 years	Medium	HM Office completed a Preliminary Benefit Cost Analysis that does not support moving this project forward as currently scoped.
8	2020.2.3	Implement Audubon Golf Course Drainage Improvement.	Address Storm Water Retention Needs with Improvements to the stormwater infrastructure in the Audubon Park Golf Course.	Flooding	CNO (Department of Public Works)	CNO (ORS), Audubon Institute, Water Collaborative of Greater New Orleans, SWBNO, Tulane University	3-5 years	High	HM Office developed a funding proposal through BRIC program.
9	2020.2.4	Scope Parks Master Plan - Drainage Projects.	Scope potential drainage projects for inclusion in the Parks Master Plan for implementation. Make sure that there are not duplicate plans for the same area.	Flooding	CNO (Department of Public Works)	OYF, ORS, NORDC, HANO, NORA, SWBNO, Tulane University, French Market Corporation, Parks for All, Water Collaborative of Greater New Orleans, City Park, Flood Protection Authority East	3-5 years	High	Office of Youth and Families will lead Parks Master Plan in 2022.
10	2020.2.5	Utilize an incentive rebate and/or building code requirement to implement higher energy efficiency standards for new developments.	Create a higher set of energy efficiency standards for building performance to reduce energy consumption and greenhouse gas emissions in new construction.	Extreme heat, Winter Weather	CNO (City Planning Commission)	DPW, ORS, Safety and Permits	3-5 years	Medium	

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11	2020.2.6	N Claiborne Corridor Green Infrastructure	Implement and construct recommended green infrastructure improvements along the North Claiborne corridor that could include tree planting, bioswales, stormwater parks, and pervious pavement on public and private property.	Flooding, Extreme Heat	CNO (Department of Public Works, Parks and Parkways)	ORS, CID, NORA, SOUL, Claiborne Avenue Alliance, Neighborhood Associations, Merchants and Business Association, GNOF	1-5 years	High	HM and DPW coordinated with stakeholders on pending permit applications. Construction begun on N. Claiborne priority project in 2021. DPW working to secure feasibility and design funding for additional project scoping in 2022.
12	2020.2.7	2043-47 Felicity Green Infrastructure	Implement and construct recommended green infrastructure improvements along at 2043-47 Felicity Street.	Flooding, Extreme Heat	CNO (Parks and Parkways)	ORS, DPW, SOUL	1-5 years	Low	
13	2020.2.8	Lafitte Blue Way	Implement and construct recommended green infrastructure improvements along the Lafitte Greenway.	Flooding, Extreme Heat	CNO (Department of Public Works)	ORS, PPW, SWBNO, Friends of the Lafitte Greenway, NORDC, SOUL	1-5 years	Medium	
14	2020.2.9	Provide shade structures and seating at all RTA stops and evacuation pick-up sites.	Help the RTA to construct shelters to protect riders from the elements at RTA stops and evacuation sites through the permitting and construction process.	Extreme Heat	CNO (Department of Public Works)	RTA, City Council, Mayor's Office of Transportation, RIDE New Orleans, RTA Rider's Advisory Committee	1-2 years	High	

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15	2020.2.10	Solar for All	Make solar power a realistic and viable option for residential and commercial property owners and city-owned properties in Orleans Parish to increase energy security, reduce energy costs, and reduce dependence on fossil fuels.	Extreme Heat, Winter Weather, Infrastructure Failure (Power Outages)	CNO (Office of Resilience & Sustainability)	OCD, NORA, HANO, Finance New Orleans, GNOHA	1-5 years	High	The Solar for All program is ongoing, offering free residential assessments for solar installation.
16	2020.2.11	Integrate stormwater solutions into community infrastructure projects (e.g. designate parking areas in neutral grounds to avoid damage to trees and underground infrastructure).	Implement citywide urban design standards intended to guide the community's response to stormwater management. Ensure the design guidelines and solutions consider the location of utilities and green infrastructure to prevent accidental and unintended damage to City facilities, and improve safety and mobility.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Winter Weather, Active Threats, Infrastructure Failure	CNO (Office of Resilience & Sustainability)	OCD, NORA, HANO, Finance New Orleans, GNOHA,	2-5 years	Medium	
17	2020.2.12	Encourage voluntary installation of residential sprinkler systems. Create an incentive program for the voluntary installation of residential sprinklers in key areas.	Consider incentives for residential sprinklers for existing structures, renovated structures, and new construction.	Winter Weather, Infrastructure Failure	CNO (Fire Department)	CPC		Low	
18	2020.3.1	Complete a Methane Capture Feasibility Study at SWBNO WWTP.	Explore opportunities to capture and reuse methane as an energy source rather than allowing it to be released as a harmful pollutant.	Tornadoes, Tropical Cyclones, Severe Thunderstorms	SWBNO	ORS	3-5 years	Medium	

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19	2020.3.2	Sankofa Wetlands Enhancement	Design and construct a wetland park and nature trail on 40 acres of space in the Lower Ninth Ward to help increase floodwater retention through bioretention ponds and mitigate stormwater overflow, as well as provide outdoor education and recreation space to support economic development in the Lower Ninth Ward and Greater New Orleans Area.	Coastal Erosion	CNO (Office of Resilience & Sustainability)	Sankofa, Wetland Resources, Comite Resources, NOHSEP, Earth Economics, Engineers without Borders, Batture Engineering, USDA NRCS, Asakura Robinson, Southern University Agricultural Research and Extension Center, Deep South Center for Environmental Justice, National Park Service Rivers Trails and Conservation Program	1-2 years	Medium	
20	2020.3.3	Advocate for NRDA funding for the NO East Land bridge Restoration.	Advocate for NRDA Funding of the NOE Land Bridge Project at State and Federal Levels.	Coastal Erosion, Storm Surge	CNO(Office of Resilience & Sustainability)	Restore the Delta Gulf Program for National Wildlife Restoration, Pontchartrain Conservancy, Food Protection Authority East	3-5 years	Medium	In Progress. NO Landbridge is included in NRDA Restoration Plan 8 being developed by CPRA for public comment in early 2022.
21	2020.3.4	MRGO Restoration:	Advocate for Funding of the continued restoration of the MRGO at State and Federal Levels.	Coastal Erosion, Storm Surge	CNO (Office of Resilience & Sustainability)	/NOHSEP, DPW, Orleans Land Bridge, Pontchartrain Conservancy, MRGO Coalition, Mississippi Restore Coalition, St. Bernard Parish, Regional Planning Commission, Flood Protection Authority East	3-5 years	Medium	

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22	2020.3.5	Implement Bayou Bienvenue/Central Wetlands Restoration.	Advocate for Funding of the restoration of Bayou Bienvenue at State and Federal Levels.	Coastal Erosion, Storm Surge	CNO (Office of Resilience & Sustainability)	Sankofa Community Development Corporation, Center for Sustainable Engagement, MRGO Must Go, Flood Protection Authority East, St. Bernard Parish	3-5 years	Medium	CPRA began construction on the Golden Triangle Marsh Creation project, at the junction of Bayou Bienvenue with the MRGO and Lake Borgne.
23	2020.3.6	Scale up tree planting to neighborhood level utilizing an opt-out approach.	Use a tree clustering strategy which will allow plantings to have more impactful scale. It is a proven strategy that produces numerous environmental benefits, which has been implemented in numerous major cities, including Atlanta. Explore an opt-out planting strategy where community pre-selects streets for plantings; property owners can "opt-out" of the project if they desire.	Flooding, Extreme Heat	CNO (Parks & Parkways)	NORA, HANO CPC, Sustaining Our Urban Landscape (SOUL), NOLA Tree Project	1 to 3 years	High	
24	2020.3.7	Maintain Former Recovery 1 Landfill and implement environmental protection of Bayou Sauvage.	Ensure the former Recovery 1 landfill site located adjacent to Bayou Sauvage, a National Wildlife Refuge, is properly and safely maintained over time to prevent contamination of Bayou Sauvage.	Infrastructure Failure	CNO (Sanitation)	DPW, ORS	1-2 years	High	City and USFWS are coordinating on a 2022 plan for needed maintenance.
25	2020.4.1	Complete a job study to institutionalize floodplain management training as a requirement for key positions. Provide training in floodplain management principles for local officials and increase the number of Certified Floodplain Managers on City staff.	Work with Civil Service Commission to require building officials employed at the city to become Certified Floodplain Managers (CFM) through ASFPM. Work with SHMO to schedule trainings in Orleans Parish. Explore adding CFM as a requirement for resilience officers, others.	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Civil Service)	Safety and Permits, Water Collaborative of Greater New Orleans	1-2 years	Low	

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26	2020.4.2	Develop public education on flood risk for real estate industry and a city/state policy on real estate disclosures about flood risk.	Work with the Metropolitan Realtors Association and Louisiana Realtors Association to understand this issue from their point of view. Also hold meetings for public comment on this issue to fully inform the policy. Develop and Implement a policy at the State and Local level.	Flooding, Storm Surge	CNO (Office of Resilience & Sustainability)	NOHSEP, NOMAR, Urban Conservancy, Water Collaborative of Greater New Orleans	1-3 years	Medium	HM Office and NOLA Ready are coordinating on a 2022 work plan to expand hazard mitigation public information.
27	2020.4.3	Leverage Resilience work to create workforce development opportunities.	Work with the WIB and JOB1 to build out a strategy for workforce development in the field of resiliency. Leverage local resilience and mitigation efforts as opportunities to train the local workforce in 'green' jobs, such as sustainable construction, green infrastructure, adaptive reuse of demolition materials, energy and carbon capture and storage, and water quality technicians. Make sure all angles of workforce development are being addressed.	Flooding, Storm Surge, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Subsidence, Winter Weather, Coastal Erosion, Infectious Disease Outbreak, Active Threats, Infrastructure Failure, Hazardous Materials, Economic Shock	CNO (Office of Resilience & Sustainability)	Workforce Investment Board, DPW, GNOF, Schools and Universities, Job1, CCC OCD, Sankofa Community Development Corporation, LA Green Jobs Corps	1-5 years	High	In 2021, began coordinating economic development activities across departments via the Advancing Cities Initiative a 3-year, \$5 million grant from JP Morgan Chase to support workforce and business development in the blue and green industries
28	2020.4.4	Expand the lot-scale green infrastructure model piloted by the Gentilly Resilience District Climate Adaptation program.	Develop program criteria and identify a funding stream to allow for city-wide expansion of the Climate Adaptation Program.	Flooding, Extreme Heat	NORA	NOHSEP, Water Wise Gulf South	1-2 years	High	City working to identify funding to continue/expand the CAP program, developing methods to maintain and track GI installations on privately owned property.
29	2020.4.5	Update and Maintain the Climate Adaptation decision support tool and encourage use of the tool.	Update and Maintain the Climate Adaptation decision support tool and encourage use of the tool.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Severe Thunderstorms, Extreme Heat, Winter Weather	CNO (Office of Resilience & Sustainability)	NOHSEP, CPC, SWBNO, Trust for Public Land	1-5 years	Medium	

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30	2020.4.6	Increase water literacy through curriculum development and teacher training. Implement goal of all students receiving 1 hour/year of qualified instruction.	Work with Orleans Parish School Board and other charter schools in the Parish to develop a curriculum for water ecology, rain gardens, and best management practices for storm water management (catch basin debris collection etc.).	Flooding, Storm Surge, Coastal Erosion, Tropical Cyclones, Subsidence	CNO (Office of Resilience & Sustainability)	Orleans Parish School Board, Ripple Effect, Flood Protection Authority East, Green Light New Orleans, Water Collaborative of Greater New Orleans, Pontchartrain Conservancy, Water Institute	3 to 5 years	Medium	
31	2020.4.7	Implement Louisiana Watershed Initiative - City engagement in Region 6 and Region 8 planning and policy.	Continue coordination with Regional Planning Commission (RPC) and other parishes in Region 6 and Region 8 to implement the planning and policy development for water shed management in the region. Evaluation of flood risks and identification of projects in the region to minimize the flood risk in accordance with Louisiana Water Initiative launched by the State of Louisiana in 2018 based on the following principles: 1) Using scientific tools and data; 2) Enabling transparent, objective decision-making; 3) Maximizing the natural function of floodplains; 4) Establishing regional, watershed-based management of flood risk.	Flooding	CNO (Office of Resilience & Sustainability)	RPC, CPC, Water Collaborative of Greater New Orleans, DPW, Greater New Orleans Water Collaborative	On-going (1 year)	High	CNO representatives continue participating in LWI regional planning meetings. NOHSEP made CNO rainfall data available to LWI researchers for use in updating statewide rainfall frequency estimates.
32	2020.4.8	Complete and implement reforestation community outreach plan	Develop a public outreach and education plan to involve residents, businesses, and public officials to promote an equitable distribution of healthy tree canopy across the City. This public outreach program will facilitate the on-going city's reforestation initiative to restore and expand the urban forest to a 50 percent tree canopy coverage by 2030 as specified in the city master plan.	Flooding	CNO (Parks and Parkways)	DPW, CPC, SOUL, NOLA Tree Project	1 to 3 years	Medium	

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33	2020.4.9	Provide financial incentives to make mitigation accessible to all.	Provide financial incentives at the City, Parish, or State level to make hazard mitigation improvements to private property accessible to all residents. Examples of incentives include offering low loan interest rates for renovations, insurance discounts, home interest rate reductions, and SBA loan guarantee programs.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Subsidence, Winter Weather, Coastal Erosion, Infectious Disease Outbreak, Active Threats, Infrastructure Failure, Hazardous Materials, Economic Shock	CNO (Homeland Security & Emergency Preparedness)	OCD, ORS	1-5 years	Medium	
34	2020.4.10	Develop a tool with City monitoring data for the Automated Flood Warning System (AFWS) similar to the education/data monitoring tools that federal agencies use.	Create an online, interactive tool utilizing City monitoring data around hazard mitigation initiatives for public use and education. This tool can be modeled after federal agency data monitoring tools. Ensure the tool is accessible to all, including K-12 audiences.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Subsidence, Winter Weather, Coastal Erosion, Infectious Disease Outbreak, Active Threats, Infrastructure Failure, Hazardous Materials, Economic Shock	CNO (Homeland Security & Emergency Preparedness)	DPW, PPW, ITI	3-5 years	Medium	
35	2020.4.11	Improve education about green jobs from a Kindergarten onward. Improve access to green jobs as a means to greater social equity.	Integrate green jobs education and skill-building into K-12 school and after school curriculums. Coordinate with education-focused organizations in the greater New Orleans area to offer additional educational opportunities pertaining to green jobs as a means to high-paying careers.	Flooding, Storm Surge, Tornadoes, Tropical Cyclones Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	CNO (Office of Community Development)	WIB, Job1, ORS, DPW, Louisiana Department of Education, CCC, Thrive Nola, City Council, New Orleans School Board, Charter schools, Delgado Horticultural Tech, Edible Schoolyards, STEM Nola	4-5 years	Medium	

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36	2020.4.12	Expand Household Hazard Waste drop-off days: involve volunteers, scale up material recovery and landfill diversion	Advertise and coordinate household hazardous waste drop-off days with local jurisdictions. Recruit volunteers to assist with expanding City efforts to scale up material recovery and landfill diversion. Improve public education to Orleans Parish residents about household hazardous waste Materials Collection Day and related efforts.	Hazardous Materials	CNO (Department of Sanitation, Office of Resilience and Sustainability)		1-2 years	Medium	
37	2020.4.13	Create Green Infrastructure maintenance manual.	Create a comprehensive green infrastructure maintenance manual for Orleans Parish that details procedures such as who is the party responsible for maintenance, what are the steps and needed equipment and materials to maintain the green infrastructure, how these efforts can be sustainably funded over time, and how maintenance will be properly inspected and enforced.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	CNO (Department of Public Works, Parks and Parkways)	NOHSEP, Water Wise Gulf South	1-2 years	High	Under Development. O&M manuals have been developed for several GI projects, and there will likely be a process of refinement in the coming years as we learn from recently completed projects.
38	2020.5.1	Create and Maintain Databases to aid in Flood Plain Management	Create an Elevation Certificate database and FFE estimation tool to augment the RLAA findings and aid floodplain management planning. Train building officials to enter data from new ECs in order to maintain the database.	Flooding	City of New Orleans (Safety & Permits, Information Technology & Innovation)	NOHSEP	1-5 years	High	
39	2020.5.2	Create a Stormwater Fee.	Draft a citywide policy to levy and administer a stormwater fee to fund stormwater mitigation projects across the city. Study how this would impact and interact with other fees (e.g. how this will impact non-profits).	Flooding	SWBNO	NOHSEP, Urban Conservancy, DPW, Safety and Permits, Green Light New Orleans, Water Collaborative of Greater New Orleans, Housing Nola, SOUL, SWBNO	1-2 years	High	Updated to reflect that SWBNO will be the lead agency for this action item. This item to be renamed as 2021.SWBNO.8 for future tracking.
40	2020.5.3	Create insurance credit for fortified roofs to incentivize builders to use resilient materials and methods.	Create a state-level insurance credit to incentivize the installation of roofs adhering to fortified building methods, which are designed to strengthen residential and commercial buildings against high winds and hurricanes. Promote community education opportunities around this incentive for new and existing homeowners.	Tropical Cyclones, Severe Thunderstorms, Tornadoes	CNO (Office of Community Development)	IGA, Finance New Orleans	1-5 years	Medium	

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41	2020.5.4	Develop "Green" Specifications to promote use of resilient building materials and methods in City projects.	Develop and implement a set of standards aimed at promoting the use of resilient building materials in government-owned, commercial, and residential projects.	Flooding, Extreme Heat, Winter Weather, Tropical Cyclones	CNO (Department of Public Works, Office of Resilience & Sustainability)		1-3 years	Low	
42	2020.5.5	Develop "Green" Specifications to promote use of resilient building materials and methods in City projects.	Develop and implement a set of standards aimed at promoting the use of resilient building materials in government-owned, commercial, and residential projects.	Flooding, Extreme Heat, Winter Weather, Tropical Cyclones, Severe Thunderstorms	HANO	CNO (Capital Projects)	1-3 years	Low	
43	2020.5.6	Develop a Comprehensive Reforestation Plan.	Conduct a Tree Canopy Study to understand gaps in the existing tree canopy inventory. Identify and allocate city budget to plant trees in order to address the identified gaps in the tree canopy network.	Extreme Heat, Tornadoes, Tropical Cyclones, Severe Thunderstorms	CNO (Parks & Parkways)	ITI, ORS, CPC, SOUL, Nola Tree Project, Coalition for Community Connection, Coalition for Coastal Louisiana, Earth Economics	1-3 years	High	Canopy cover data collection and mapping effort is underway. Ongoing tree planting efforts led by Parks and Parkways and City Park.
44	2020.5.7	Conduct an Urban Heat Island Study.	Conduct an Urban Heat Island Study that addresses extreme heat threats on a neighborhood-by-neighborhood level. Identify areas most in need of interventions to prevent extreme heat threats and prioritize project implementation in those places.	Extreme Heat	CNO (Homeland Security & Emergency Preparedness)	NOHD, NACCHO, Growing Gardens, Earth Economics	1-3 years	Medium	NOHSEP and SWBNO coordinating on installation of weather stations to expand density of local monitoring network.
45	2020.5.8	Advocate for NFIP reforms.	Advocate for National Flood Insurance Program (NFIP) reforms, including increasing the cap on Increased Cost of Compliance (ICC) coverage and freezing premiums for properties enrolled in Hazard Mitigation Assistance (HMA) programs.	Flooding	CNO (Homeland Security & Emergency Preparedness)	Mayors Office, City Council, Regional Planning Commission, Housing Nola, Urban Conservancy, Flood Protection Authority East and West	1-5 years	High	HM Office developing work plans to evaluate NFIP Affordability and access to Hazard Mitigation Assistance programs.

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46	2020.5.9	Explore incorporating repetitive damage provision in the City's floodplain ordinance.	Include a Repetitive Loss provision to increase access to ICC funds for repetitive loss property owners. This would help fund residential mitigation projects. CPC to investigate adding a repetitive loss mechanism to the CZO that would enable ICC to be triggered for repetitive loss residential properties. This would help some homeowners meet their non-federal match for mitigation grant projects. IGA to advocate at federal level with support from Hazard Mitigation Office and ORS to raise the ICC funding cap.	Flooding, Storm Surge, Tropical Cyclones, Tornadoes	CNO (Homeland Security & Emergency Preparedness, City Planning Commission)	Safety and Permits, ORS, Housing Nola, Urban Conservancy, Water Collaborative of Greater New Orleans	1-3 years	Medium	
47	2020.5.10	Develop in-house custom HAZUS model for risk assessment and decision support.	Create an in-house HAZUS model, a nationally standardized methodology from FEMA for estimating potential losses from natural disasters, designed to support risk-informed decision-making efforts specific to Orleans Parish.	Flooding, Storm Surge, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather	CNO (Homeland Security & Emergency Preparedness)	ITI	1-2 years	Medium	
48	2020.5.11	Complete update to Climate Action Plan Update.	Perform update of the Climate Action Plan and incorporate relevant actions into the HM plan.	Flooding, Storm Surge, Coastal Erosion, Tropical Cyclones	CNO (Office of Resilience & Sustainability)	NOHSEP, Climate Action Equity Advisory Group, C40	1 year	High	ORS completed an update to the CAP in 2020, but did not include a comprehensive GHG inventory update or action recommendations.
49	2020.5.12	Develop sustainable financing for State and Local adaptation.	Examine financing mechanism from other state and municipalities for funding adaptation beyond FEMA recovery dollars. Advocate for federal authorization and ACE implementation for levees that can protect up to the 500-year level.	Flooding, Storm Surge, Coastal Erosion, Tropical Cyclones	CNO (Homeland Security & Emergency Preparedness)	FANO, Economic Development, Regional Planning Commission, Sankofa Community Development Corporation, Urban Conservancy	3-5 years	High	HM Office coordinating with State Resilience Office on development of Resilience Revolving Loan program enabled by STORM Act of 2020. Important Developments include 2021 bond sale, and passage of the ARA and IJA.

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50	2020.5.13	Improve HSRRS system to achieve at least 500-year flood protection.	HSDDRS authorized level of protection, MP goal of 500-year protection: assign City team. This is a Congressional Authorization of the levee system that could include a higher level of protection than the ACE have approved. Tulane University Center for Environmental Law will develop policy analysis to assist the City in implementing this action.	Flooding, Storm Surge, Coastal Erosion, Tropical Cyclones	CNO (Office of Resilience & Sustainability), Tulane Center for Environmental Law	Flood Protection Authority East and West	1-3 years	High	
51	2020.5.14	Conduct a study to evaluate the potential impacts of a catastrophic rain event.	Conduct a study to better understand and evaluate the potential impacts of catastrophic rain events. Incorporate the outcomes of this study into recommendations for regional emergency preparedness planning.	Flooding	CNO (Homeland Security & Emergency Preparedness)	SWBNO	1-2 years	Medium	HM Office began coordinating with Woodwell Climate Research Center on a scope of study to investigate the impacts of climate change on extreme weather events.
52	2020.5.15	Investigate HSDDRS authorization to make case for nonstructural investment.	Study how non-structural investments could be implemented from the HSDDRS authorization.	Flooding, Storm Surge, Coastal Erosion, Tropical Cyclones, Subsidence	CNO (Office of Resilience & Sustainability)	Tulane Center for Environmental Law, New Orleans City Council Governmental Affairs Committee, Flood Protection Authority East	1-2 years	Medium	
53	2020.5.16	Develop a policy for the adaptive re-use and recycling of demolition materials.	Develop citywide policy regarding re-use of materials from structure demolitions and other ways to reduce greenhouse gas footprint of new construction or retrofits.	Hazardous Materials	CNO (Office of Resilience & Sustainability, Sanitation)	CPC	1-2 years	Medium	
54	2020.5.17	Explore code/policy models related to canopy preservation on private property.	Look at Houston Tree Ordinance as a potential guide for such a policy.	Flooding, Extreme Heat	CNO (City Planning Commission)	PPW, ORS, SOUL	1-2 years	Medium	

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55	2020.5.18	Obtain USACE recertification of the HSDDRS at 100-year level of flood protection.	Work with USACE to update the HSDDRS risk assessment (conducted in 2013) to obtain NFIP recertification (due in 2023) for 100-year flood protection from FEMA.	Flooding, Storm Surge	CNO (Office of Resilience & Sustainability)	NOHSEP, SLFPA-E, SLFPA-W, CPRA	1 to 2 years	High	NOHSEP participated in USACE Semi-Quantitative Risk Assessment process. This effort is on track for scheduled completion.
56	2020.5.19	Complete study on economic impact of Green Infrastructure investments and implement policy recommendations.	Work with GNOF and partners to implement the recommendations of the 2020 Green Infrastructure economic impact study.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms	CNO (Office of Community Development)	GNOF, Water Collaborative of Greater New Orleans, Healthy Community Services, Nola BA, GNO Inc., Finance Authority	3 to 5 years	High	Final report was issued in 2021.
57	2020.5.20	Implement provisions in CZO for new construction to include native tree planting, protection of existing canopy including on private property	Evaluate the options for amending the building code and zoning ordinance to require/promote the preservation of existing native trees and planting of new native trees in the development of new properties.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms	CNO (City Planning Commission)	PPW	3 to 5 years	Low	
58	2020.5.21	Provide Outreach and Education to clarify permitting process for tree planting and some types of concrete removal as Green Infrastructure rather than Construction project	Reclassify the tree planting activities under green infrastructure projects instead of construction projects.	Flooding, Extreme Heat	CNO (Safety & Permits)	DPW, CPC, SOUL, Nola Tree Project	1 to 3 years	Low	DPW and HM Office working to help navigate pending permits through One Stop Shop reviews.
59	2020.5.22	Create a citywide data platform of all green infrastructure projects.	Coordinate between the City of New Orleans, local jurisdictions, Orleans Parish, neighboring Parishes, regional planning organizations, environmental organizations, and any other relevant stakeholder groups to compile a user-friendly, interactive data platform displaying green infrastructure projects and initiatives.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	CNO (Information Technology & Innovation)		4-5 years	Medium	HM Office developed a standard database structure and working with partners to populate the database and plan wider rollout.

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60	2020.5.23		Coordinate with the City of New Orleans to compile a user-friendly, interactive data platform displaying green infrastructure projects and initiatives.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	SWBNO	CNO (Information Technology & Innovation)	4-5 years	Medium	
61	2020.5.24	Implement a system to track green infrastructure projects and other resilience measures at NORA facilities.	Utilize resilience metrics developed by the City of New Orleans to track green infrastructure projects and other resilience initiatives.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	NORA	CNO (Information Technology & Innovation)	4-5 years	Medium	
62	2020.5.25	Implement a system to track green infrastructure projects and other resilience measures.	Coordinate with the City of New Orleans to compile a user-friendly, interactive data platform displaying green infrastructure projects and initiatives.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	HANO	CNO (Information Technology & Innovation)	4-5 years	Medium	
63	2020.5.26	Implement a system to track green infrastructure projects and other resilience measures.	Coordinate with the City of New Orleans to compile a user-friendly, interactive data platform displaying green infrastructure projects and initiatives.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	Tulane University	CNO (Information Technology & Innovation)	4-5 years	Medium	
64	2020.5.27	Link cross-parish projects to LWI and DOTD priorities, including Claiborne Ave, N Broad St, and Tulane Ave.	Coordinate Orleans Parish mitigation initiatives with neighboring parishes to meet regional goals around safety and mobility, including those outlined by the Louisiana Watershed Initiative and the Louisiana Department of Transportation and Development. Cross-jurisdictional project examples focused on major thoroughfares include Claiborne Avenue, Broad Street, and Tulane Avenue.	Flooding	CNO (Homeland Security & Emergency Preparedness)	Regional Planning Commission, DPW, Jefferson Parish, St. Bernard Parish, RIDE	1 year	Medium	

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65	2020.5.28	Define common metrics to measure resilience progress.	Develop a set of metrics that can be used to track and measure the progress of various resiliency projects and initiatives in Orleans Parish. Ensure these data-informed metrics can be measured consistently over time to clearly communicate the impact of projects and programs on regional resiliency and mitigation.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Winter Weather, Coastal Erosion, Subsidence	CNO (Office of Resilience & Sustainability)	Universities, Love Your City	1-2 years	Medium	
66	2020.5.29	Create a digital database of City infrastructure plans, surveys, and other spatial data to inform project design, stormwater modeling, and other uses.	Digitize hard copies of historic plans and create a standard operation procedure for new projects. Create a comprehensive citywide digital database of existing City infrastructure plans, utility plans, surveys, GIS, and other spatial data to inform project design, stormwater modeling, and other hazard mitigation initiatives.	Flooding	CNO (Department of Public Works)	ITI	1-3 years	High	DPW is building out this database.
67	2020.5.30	Integrate hazard mitigation strategies with MS4 permit activities.	Identify hazard mitigation provisions that can be included in the Municipal Separate Storm Sewer Systems (MS4) permitting process in order to promote a comprehensive and innovative urban water management approach throughout Orleans Parish. Focus on identifying actions that address both water quality and flooding.	Flooding	CNO (Office of Resilience & Sustainability, Department of Public Works)		1-2 years	Medium	
68	2020.5.31	Implement a comprehensive program of drainage improvements and other flood mitigation measures via GNO Urban Water Plan.	Use the Urban Water Plan to provide a roadmap for better management of flood and subsidence threats, while creating economic value and enhancing quality of life. This plan seeks to work in tandem and create multiple lines of defense with the region's levee system and Louisiana's 2012 Coastal Master Plan (ref: GNO Urban Water Plan). Implement projects from the Urban Water Strategy, including but not limited to, the Monticello Canal, 40 Aparent Canal, I-610 Corridor/Desire/Florida Canal, expanding the Blue Green Corridor Network, Interceptor Streets and Urban Parks, and the New Orleans East Water Walk.	Flooding, Subsidence	CNO (Homeland Security & Emergency Preparedness)	DPW, GNO, Inc., Water Collaborative of Greater New Orleans, Flood Protection Authority East, Green Light New Orleans, GNOF	1 to 3 years	High	Identification and scoping of new projects is an ongoing process. In 2022, DPW should finalize a new contract pool that should help accelerate planning and design work on new projects. HM coordinated in 2021 with community partners to develop a project scoping proposal under FMA.

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69	2020.5.32	Educate the public about building methods which are hazard resistant and built above the current building code standards. Provide information on hazards and mitigation resources, and publicize success stories.	Coordinate public information and education with NOLA Ready. Provide stakeholders with information about building standards, incentive programs and financing options for homeowners and builders (w/ GNO Inc, FANO, Insurance commissioner, etc.). Publicize success stories	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes, Storm Surge	NORA	CNO (Homeland Security & Emergency Preparedness)	1-5 years	Medium	Following Hurricane Ida, HM worked to gather resources on wind mitigation and made them available through NOLA Ready.
70	2020.6.1	Establish Neighborhood Resilience Hubs to provide hazard mitigation information and resources.	Build neighborhood resilience hubs that are focused on community-serving initiatives. Resilience hubs provide an opportunity to build local community power and leadership, can support neighborhood residents before, during, or after a natural or manmade hazard event, and can ensure timely resource and service distribution during disasters. Include information on types of disasters, family disaster plans, business continuity plans, and basic mitigation projects. Give presentations to civic groups, church groups, business groups, etc.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Subsidence, Winter Weather, Coastal Erosion, Infectious Disease Outbreak, Active Threats, Infrastructure Failure, Hazardous Materials, Economic Shock	CNO (Office of Resilience & Sustainability, Neighborhood Engagement Office)	NOHSEP, NOHD	3-5 years	Medium	Working with OED to develop SMB disaster readiness programming. NOHSEP developing Emergency Resource Center plans incorporating lessons learned from Ida
71	2020.6.2	Develop coordinated warning, operational, and evacuation plans for potential of combined river flood and storm surge hazards.	Create a formal planning process with USACE, CPRA, and SLFPAs to evaluate the potential for combined Mississippi River flooding and storm surge hazards. Develop coordinated operational plans, including early warning systems and evacuation plans.	Flooding, Storm Surge	CNO (Homeland Security & Emergency Preparedness)	USACE, CPRA, SLFPA-E, SLFPA-W	1-5 years	High	
72	2020.6.3	Improve Cyber Security to address threats from cyber attacks on infrastructure and data.	Develop and Enact Cyber Security policies and procedures.	Active Threats	CNO (Homeland Security & Emergency Preparedness)		1-5 years	High	Efforts led by ITI are ongoing.
73	2020.6.4	HANO with assistance from CNO (Homeland Security & Emergency Preparedness) will develop an All-Hazards Emergency Operations Plan for public housing within the City.	Create and adopt an All-Hazard Emergency Operations Plan that builds on the 2020 HANO Hurricane Emergency Preparedness Plan with the help of NOHSEP.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Extreme Heat, Subsidence, Winter Weather, Coastal Erosion, Infectious Disease Outbreak, Active Threats, Infrastructure Failure, Hazardous Materials, Economic Shock	HANO	CNO (Homeland Security & Emergency Preparedness)	1-5 years	Medium	

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74	2020.SWBNO.1	Generators and Transfer Switics at SPS	See 6.8 Sewage & Water Board Master Plan.	Flooding, Tropical Cyclone, Infrastructure Failure	SWBNO Operations		TBD	High	
75	2020.SWBNO.2	Safe House and Resiliency center	See 6.5.2 Sewage & Water Board Master Plan.	All	SWBNO Emergency Mgmt		TBD	Medium	
76	2020.SWBNO.3	Water Hammer Mitigation	See 6.6.1 Sewage & Water Board Master Plan.	Flooding, Tropical Cyclone, Severe Thunderstorms	SWBNO Operations		45290	Medium	Under Construction June 2023
77	2020.SWBNO.4	Power House	See 6.7 Sewage & Water Board Master Plan.	Flooding, Tropical Cyclone, Infrastructure Failure	SWBNO Operations		44560	High	
78	2020.SWBNO.5	Soil Sampling/Analysis	See 6.63 Sewage & Water Board Master Plan.	Flooding	SWBNO, CNO (Office of Resilience & Sustainability)	Eustis Engineering, EPA ORD	43830	Low	
79	2020.SWBNO.6	Flood Risk Analysis	See 6.6.4 Sewage & Water Board Master Plan.	Flooding	CNO (Homeland Security & Emergency Preparedness), SWBNO	UNO	TBD	Medium	Complete. HM Office preparing to release the final report and web map tool at the end of 2021.

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80	2020.SWBNO.7	Upgrade and improve the SWBNO Drainage System, including Canals Upgrades, Pump Station Rehabilitation, Pump Upgrades, and Power Controls.	See 6.6.6 Sewage & Water Board Master Plan.	Flooding, Tropical Cyclone, Infrastructure Failure	SWBNO	USACE	On Going	High	
81	2020.Tulane.1 (4.A.1)	Facilitate development and timely submittal of project applications; meeting state and federal guidelines for funding for hardening/retrofitting infrastructure and critical facilities with highest vulnerability ratings.	Implement mitigation projects and programs intended to reduce risk to people; critical facilities; critical infrastructure; and the University mission.	Flooding, Tornadoes, Tropical Cyclones, Storm Surge, Severe Thunderstorms, Extreme Heat, Winter Weather, Subsidence	Tulane University (Office of Risk Management)	CNO (Homeland Security & Emergency Preparedness)	On Going	High	
82	2020.Tulane.2 (2.B.1)	Acquire and maintain detailed critical facility data such that these sites can be prioritized and riskassessed for possible mitigation actions	Develop and/or enhance repository for storage and access of hazard, risk and vulnerability data for all University assets, including specific data regarding University assets and infrastructure.	Flooding, Tornadoes, Tropical Cyclones, Severe Thunderstorms, Winter Weather, Extreme Heat, Subsidence, Coastal Erosion	Tulane University (Office of Capital Projects and Real Estate)		1 year	High	
83	2020.Tulane.3 (1.A.5)	Enhance emergency and evacuation procedure signage and capabilities.	Improve emergency and evacuation procedure signage (DOWNTOWN)	Active Threats, Infrastructure Failure (levee failure)	Tulane Office of Emergency Preparedness and Response/OHES		1-2 years	Moderate	

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84	2015.2.1	Improve drainage infrastructure through measures in high flood risk areas including, but not limited to, the upgrade and improvement of culvert design and construction and retention and detention areas.	Improve drainage infrastructure through measures including the upgrade and improvement of canals and drainage pipes and installation of retention and detention areas including green infrastructure.	Flooding, Tropical Cyclones, Infrastructure Failure, Coastal Erosion, Subsidence	CNO (Department of Public Works), SWBNO	FEMA, USACE	5-10 years	High	CNO, SWBNO, and community partners continued to develop and construct drainage improvement projects City-wide.
85	2015.2.2	Continue implementing funded drainage improvement projects, including post construction maintenance and monitoring. This project will reduce pressure on the existing piping system. Benefits of this project will include beautification, improved recreational areas, flood mitigation, and social cohesion.	Continue implementing drainage improvement projects that could include St Roch Streetscape Improvements, Mirabeau Water Park, Mac 35/Hall/Youth Study Center, Pontilly Project green infrastructure interventions, and Hagan Lafitte drainage upgrades.	Flooding, Tropical Cyclones, Infrastructure Failure, Coastal Erosion, Subsidence	CNO (Capital Projects)	USACE, SWBNO	5-10 years	High	CPA continuing to progress funded projects through design.
86	2015.2.3	Install rain gardens, storm water runoff filtration, and water retention systems along streets to reduce subsidence and flooding.	Develop and advocate the necessary site design and landscape standards for streets, neighborhoods, and building sites.	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Department of Public Works)		5-10 years	High	
87	2015.2.4	Harden/Retrofit all critical and non-critical existing public facilities, including City Hall, remote sites and all distribution points, and construct future public facilities that are resilient to wind and flooding.	Wind hardening projects can include shutters, roof tie downs, etc. Flood protection projects include switches to turn off equipment in the event of flooding and floodproofing.	Tropical Cyclones, Coastal Erosion, Winter Weather	City of New Orleans (Property Management), SWBNO		5-10 years	Medium	Capital Projects developing scopes of work for post Ida repair/mitigation projects at public facilities.

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88	2015.2.5	Promote greater use of pervious concrete.	Include pervious concrete in city-contracted road work and other projects, education through NOLA Ready for homeowners.	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Department of Public Works)	SWBNO, NORA, HANO	1-5 years	High	
89	2015.2.6	Mitigate contamination resulting from illegal dumpsites.	Continue to expand prevention and enforcement of illegal dump sites. Develop remediation funding sources.	Hazardous Materials	CNO (Sanitation)		5-10 years	Low	RTCC and Sanitation coordinating on prevention strategy including camera deployment.
90	2015.2.7	Coordinate with USACE and SLFPA regarding the levee system improvements and maintenance.	Ensure there is operational coordination between Orleans Parish, the US Army Corps of Engineers, and the Southeast Louisiana Flood Protection Authorities East and West around levee upgrades and ongoing maintenance.	Flooding, Storm Surge, Infrastructure Failure, Coastal Erosion, Subsidence	CNO (Homeland Security & Emergency Preparedness)		1-5 years	High	NOHSEP participated in USACE Semi-Quantitative Risk Assessment process. This effort is on track for scheduled completion.
91	2015.3.1	Engage with regional and statewide efforts for the protection of coastal wetlands – including coordination regarding wetlands policy.	Utilize Regional Coordination as a strategy, within which there are specific actions: Participate in LWI, Coordinate with CPRA, assign staff to participate in SLFPA/USACE strategic partnership meetings, etc.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure (levee failure)	CNO (Office of Resilience & Sustainability), Tulane University Center for Environmental Law		1-5 years	High	Hazard Mitigation Office coordinating with the MRDC and CPRA around public support for the State's NRDA proposal for construction funding of NO East Landbridge project.

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92	2015.3.2	Implement the Golden Triangle Marsh Creation Project.	Implement the Golden Triangle Marsh Creation Project, a project which creates marsh within the boundaries of Bayou Sauvage, the largest urban wildlife refuge in the United States, leading to an increase in the refuge's wildlife and fish habitat. Monitor progress on construction of the 1st increment which is funded through RESTORE and will restore 600 acres of marsh. Advocate on state and federal level for additional funding to complete the full project as identified in the CMP and MRGO restoration plan.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Office of Resilience & Sustainability)	State of Louisiana (CPRA)	5-10 years	Medium	Construction has begun on this state-led project.
93	2015.3.3	Advocate on state and federal level for additional funding to complete the full Biloxi Marsh Living Shoreline project as identified in the CMP.	Advocate for additional funding for the proposed Biloxi Marsh Living Shoreline project. If implemented in the future, the project would create approximately 47,000 feet of bioengineered oyster barrier reef fringing the marshes, which would reduce shoreline erosion and recession, prevent further marsh degradation, promote community resilience, and enhance local fisheries and oyster production. Monitor progress on construction of the 1st increment which is funded through RESTORE .	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Office of Resilience & Sustainability)		5-10 years	Low	
94	2015.3.4	Coordinate with State and Federal partners to implement the NO East Landbridge restoration project	Work with CPRA to get E&D complete on larger components of the marsh restoration and shoreline protection, as identified in the CMP and MRGO restoration plans. Advocate to support state effort to secure funding (likely NRDA) for construction.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Office of Resilience & Sustainability)		5-10 years	High	Began preliminary E&D on a portion of the project with funding through NFWF National Coastal Resilience grant.
95	2015.4.1	Educate the public about storm water management.	Educate the public about their role in keeping drains and culverts clear. Distribute information on lot-scale mitigation strategies like Green Infrastructure; promoting the work of partner NGOs that have programs to assist homeowners with implementing these activities	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Homeland Security & Emergency Preparedness)	SWBNO	1-5 years	Medium	

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96	2015.4.2	Promote the use of building methods which are hazard resistant and built above the current building code standards (e.g. higher wind rated roofing).	Educate the public through NOLA Ready about these methods. Explore incentive programs and financing options for homeowners and builders (w/ GNO Inc, FANO, Insurance commissioner, etc.).	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes, Storm Surge	CNO (Homeland Security & Emergency Preparedness)		1-5 years	Medium	Following Hurricane Ida, HM worked to gather resources on wind mitigation and made them available through NOLA Ready.
97	2015.4.3	Develop a small business resilience program.	Assist business owners in developing COOP plans and promote the NOLA Ready Business Continuity Guide.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes, Thunderstorms	CNO (Homeland Security & Emergency Preparedness)	OCD, NEO	1-5 years	Low	HM collaborating with OED on SMB COOP planning program.
98	2015.4.4	Develop and maintain a comprehensive GIS database including data on properties, hazard areas, service districts, public works facilities, transportation infrastructure, and vulnerable populations.	Develop a process and requirements for interdepartmental coordination to keep the database maintained. E.G. Annual review and updates of SDE including critical facilities, new hazard data, etc.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes, Thunderstorms	CNO (Homeland Security & Emergency Preparedness)	HANO, NORA, Tulane, SWBNO	1-5 years	Medium	Finalized Repetitive Loss Area Analysis and published web map with public dataset.
99	2015.4.5	Require mandatory training in floodplain regulations for all building officials.	Identify available training courses that meet this requirement. Have CAO identify which job positions would be affected. Work with Civil Service to add this to requirements.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes	CNO (Safety & Permits)	NOHSEP	1-5 years	Low	

	B	C	D	E	H	I	J	K	M
	Action No.	Action Item	Description	Hazards	Lead Agencies	Support Agencies	Time Frame for Implementing Action	Priority Ranking	2021 Status Update
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100	2015.4.6	Evaluate the implementation of voluntary incentive and reward programs.	Encourage builders and contractors to go beyond minimum requirements.	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes	CNO (Office of Community Development)	CPC, Safety and Permits	1-5 years	Medium	
101	2015.5.1	Continue compliance with the NFIP. Coordinate activities across departments to maximize the City's CRS score; pursue other policy initiatives to make flood insurance affordable.	Continue compliance with the NFIP. Coordinate activities across departments to maximize the City's CRS score; pursue other policy initiatives to make flood insurance affordable.	Flooding, Storm Surge	CNO (Safety & Permits)	CPC, NOHSEP	1-5 years	High	Improved CRS score from 8 to 7, effective in 2022.
102	2015.5.2	Improve asset management to assist with the documentation of disaster-related damages.	Continue use of the Survey123 asset management apps; complete annual inspection of all city-owned facilities to support post-event damage assessments.	Flooding, Storm Surge, Tropical Cyclones, Infrastructure Failure, Coastal Erosion, Tornadoes, Subsidence	CNO (Homeland Security & Emergency Preparedness, Property Management, Safety & Permits)		1-5 years	Medium	Implemented new Asset Management and Preliminary Damage Assessment processes following Ida. Developing plans to structure damage surveys using Zoned coverage.
103	2015.5.3	Pursue an acquisition/buy-out program wherein property owners could elect to move out of high risk area to a lower risk area.	Pursue an acquisition/buy-out program wherein property owners could elect to move out of high risk area to a lower risk area. Acquired properties would be rezoned as open space and maintained by PPW as passive recreational areas.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Homeland Security & Emergency Preparedness)		3-5 years	Medium	
104	2015.5.4	Pursue programs to mitigate at-risk structures by physically elevating buildings to or above the Base Flood Elevation (BFE), wet flood proofing, and/or dry floodproofing where appropriate.	Continue programs to mitigate at-risk structures by physically elevating buildings to be compliant with the Floodplain Ordinance, wet flood proofing, and/or dry floodproofing where appropriate.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Levee Failure	CNO (Homeland Security & Emergency Preparedness), Tulane University Planning Office		3-5 years	High	HM Office coordinated Flood Mitigation Assistance grants for residential property owners.

	B	C	D	E	H	I	J	K	M
	Action No.	Action Item	Description	Hazards	Lead Agencies	Support Agencies	Time Frame for Implementing Action	Priority Ranking	2021 Status Update
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105	2015.5.5	Consolidate Damage Assessment procedures and maintain a database of all properties that sustain damage as a result of a hazard, including critical facilities.	Include this information as part of the City's overall GIS database.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes	CNO (Homeland Security & Emergency Preparedness)	HANO, NORA, Tulane, SWBNO	1-5 years	Low	See 2015.5.2; to be further addressed during CRP development.
106	2015.5.6	Explore alternative financing methods to support flood mitigating projects, such as a rebate program	Explore alternative financing methods to support flood mitigating projects, such as a P3s, Environmental Impact bonds, homeowner/builder rebate programs, and others.	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure	CNO (Homeland Security & Emergency Preparedness), SWBNO		1-5 years	Medium	The IJA includes the first \$500 million for STORM Act grants. Hazard Mitigation is coordinating with the State Resilience Office on development of a Resilience Revolving Loan Fund for the State of Louisiana.
107	2015.5.7	Engage with regional hazard mitigation planning efforts.	Coordinate with other parishes and local plans to ensure consistency and coordinate actions with neighboring jurisdictions.	Flooding, Storm Surge, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes	CNO (Homeland Security & Emergency Preparedness)	RPC	1-5 years	Medium	These efforts are ongoing, through a number of groups including CPRA, Louisiana Watershed Initiative, State Climate Task Force, LA Insurance Stakeholder's Roundtable
108	2015.5.8	Assist other local agencies with hazard mitigation plans in the implementation of actions from their plans.	Assist local agencies with project scoping, grant management, stakeholder coordination, and other support functions as needed to implement hazard mitigation plan actions.	Flooding, Tropical Cyclones, Coastal Erosion, Subsidence, Infrastructure Failure, Tornadoes	CNO (Homeland Security & Emergency Preparedness)		1-5 years	Medium	
109	2015.6.1	Set up cooling shelters or other heat relief measures during extreme heat events.	Include cooling shelters along with other active cooling strategies such as misters and splash pads in public spaces.	Extreme Heat	CNO (Health Department)	NORD, UNITY	1-5 years	High	Activated NORD Rec Centers as Cooling Shelters during Ida response.
110	2015.6.2	Continue the Southeast Louisiana (SELA) Drainage program to reduce flood damages in the City of New Orleans and surrounding parishes.	The SELA Drainage program will be accomplished by constructing new pumping stations and better drainage canals throughout our city. The program was authorized in 1996 by the United States Congress and administered under a project cooperation agreement between the Sewerage and Water Board of New Orleans and the U.S. Army Corps of Engineers.	Flooding, Tropical Cyclones, Infrastructure Failure, Coastal Erosion, Subsidence	CNO (Homeland Security & Emergency Preparedness)	USACE	5-10 years	Medium	

