

2 | ADAPTATION RECOMMENDATIONS

We all have a role to play.

Flood risk and the economic damages resulting from floods are felt at the residential, neighborhood, municipality, parish, and regional scales. And at all scales, we must find responses to adapt the flood risk to become resilient. At the state level, standards for flood risk reduction and mitigation can be put in place, local programs supported and a framework for best practices set. At the local government scale, policies and programs that apply lessons learned from past recovery efforts, implement best practices for land use, increase safe building and development standards, and work with neighbors to address pressing water management matters can be implemented. And finally, the individual property owner and developer can use the tools we provide in the next chapter for elevating buildings and managing stormwater on site, and support local and state efforts to reduce flood risk. Many more strategies and tools are available and it is up to us to require and demand their application and implementation at the appropriate scales to build resilience in Louisiana.

STATE



LOCAL

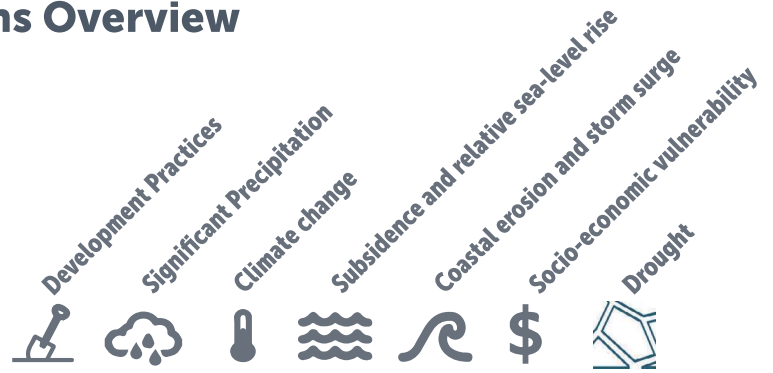


RESIDENTIAL





Flood Risk Adaptation Actions Overview



State

Pass legislation for elevation	•	•			•	•	
Pass enabling laws to establish stormwater fee	•	•	•			•	•
Consider mandatory participation in the NFIP	•		•	•		•	
Update the Statutory definition of a local "Master Plan" (RS 33:106) to include hazard mitigation elements	•	•	•	•	•	•	•
Encourage and support LSUCCC	•		•	•	•	•	
Provide Incentives for green infrastructure and elevation of structures	•	•	•	•			•
Develop and implement a climate action plan for Louisiana	•		•			•	
Support multifaceted public infrastructure investments	•	•	•			•	

Local Government

Educate the public	•	•	•			•	
Participate in the Community Rating System	•		•		•	•	
Review and update ordinances	•	•	•	•	•	•	•
Create regional entities			•	•	•		•
Develop stormwater management plans		•		•	•	•	•
Incentivize on-site stormwater management		•		•	•	•	•
Develop an open space preservation plan	•	•			•		•
Incentivize reduction of impervious surfaces	•	•				•	
Develop and implement an acquisition plan			•	•	•	•	
Create a comprehensive plan	•		•			•	
Identify priority action areas	•	•	•	•	•	•	
Develop elevation design guidelines	•		•	•	•		
Map the Floodplain		•	•	•	•		
Comply with and enforce International Building Code Standards	•		•			•	
Leverage capital improvement projects	•		•	•	•	•	

Residents

Reduce impervious surfaces	•	•	•				
Manage stormwater on site		•	•				•
Get informed about the pros and cons of elevated buildings	•	•	•	•	•	•	
Support local and state government efforts to comprehensively manage stormwater and flood risk	•	•	•				•

State Government Adaptive Actions

State leaders must take bold action and support local efforts more effectively by establishing frameworks within which to develop programs in, support local policies and programs, and by coordinating and collaborating more effectively across agencies for resilient regional programs and projects. State-level adaptation to future risks is crucial to provide the support needed for our communities to adapt and resiliently meet the challenges of the future. The recommendations and strategies are based on best practices across the nation.

Provide incentives for green infrastructure and elevation of structures

Incentives such as tax credits could be used to incorporate stormwater management best practices and flood risk reduction measures, including green infrastructure and elevated buildings, into development and redevelopment. For public construction projects, use of green infrastructure can further assist with improving water quality by reducing nonpoint source pollution. This will significantly contribute to meeting EPA municipality stormwater discharge requirements.

Consider mandatory participation in the NFIP or similar incentive program

In 2016 alone, all but eight parishes in Louisiana made disaster declarations due to inland flooding. The combination of slab-on grade foundations and low to moderate flood risk (and thus few requirements to carry flood insurance) caused significant flood damage with few insurance policies in place. To financially better protect from the cost of flood damage, lawmakers should consider mandatory flood insurance policies for property owners.

Encourage and support LSUCCC

The Louisiana State Uniform Construction Code Council (LSUCCC) should adopt higher standards, including freeboard, to guide development in Louisiana and reduce economic losses from hazards.

Pass enabling laws to establish stormwater fees

Developing a stormwater fee can assist in funding projects at watershed and local jurisdiction scale that support stormwater management and reduce flood risk.

Include climate change impacts in both short and long term infrastructure planning models

Integrate climate change considerations into comprehensive plans, transportation plans and infrastructure designs. Climate stressors such as sea level rise and increased frequency and intensity of storms need to be considered and incorporated into the design of infrastructure. The statutory definition of a local "Master Plan" (RS 33:106) should be updated to include hazard mitigation elements to better guide new development and redevelopment.

Support and create regional entities

Revisit enabling legislation for the creation of watershed/basin authorities and amend as necessary to support capacity, activity, and cross-jurisdictional coordination on flood risk reduction efforts at the watershed level. Support regional transportation authorities to increase transportation choices and networks.

Develop and implement a climate action plan for Louisiana

A comprehensive approach to addressing the impacts of climate change in Louisiana is needed. Drought and precipitation rates are increasing, and with that the risk for flash floods and damage to infrastructure. To address flood risk, Louisiana must look beyond the coastal areas and seasonal risks and towards all flood risk sources by developing and implementing a Climate Action Plan. This plan should work in tandem and complement the efforts of the Master Plan for A Sustainable Coast and Regional Stormwater Management Plans.

Support multifaceted public infrastructure investments

As the state is investing in upgrades to public infrastructure, projects should be leveraged to incorporate best practices for flood risk reduction, including green infrastructure and elevation to further reduce impacts and risk of flood damage in the future.

Invest in transportation technology

The strategic use of coordinated traffic signal systems, incident management programs, and travel information technologies and intelligent transportation systems that use electronic technologies and communications to manage the transportation network can improve the safety, reliability, and efficiency of our transportation network and help maximize the effectiveness of our existing transportation infrastructure.

Local Government Adaptive Actions

Municipalities and Parishes have an opportunity to adapt to increased flood risk by identifying needs and establishing baselines, develop plans and implement projects and programs that are tailored to the specific community, work across political boundaries, and are appropriate for the natural environment. Adaptation strategies include the implementation of green infrastructure, develop in an environmentally sensitive way, and work with local stakeholders and regional partners to address pressing flood risk reduction and adaptation needs. Below are recommendations and strategies based on current best practices across the nation.

Educate the public

Many best practices for elevating buildings, managing stormwater and reducing flood risk can be implemented immediately but the public needs to understand the importance of these measures and their ability to reduce flood risk. An informed public is more likely to take immediate actions such as keeping streets clear of debris, installing rain harvesting systems and rain gardens, and building support for the development of programs and policies towards resilience. With the public's buy-in and cooperation, a more comprehensive and effective flood risk adaptation effort can be made that benefits the entire community. An informed public will also more likely support mileages for bonds, stormwater fee, and programs and policies that can reduce flood risk.

Participate in the community rating system

In exchange for local government's above and beyond approach to flood risk reduction, policyholders can reduce their flood insurance premiums.

The National Flood Insurance Program's Community Rating System is a voluntary incentive program to reduce flood risk. It recognizes communities for implementing floodplain management practices that exceed the federal minimum requirements of the NFIP. It focuses on four categories which each contain point-earning activities:

- Public Information
- Flood Damage Reduction
- Mapping and Regulations
- Flood Preparedness

Actions for which points are earned include adopting higher regulatory standards, providing the public with hazard information, mapping of risks, and others.

Develop active transportation choices

Expanding options for walking, biking and transit use creates needed mobility alternatives, improves public health, and enhances quality of place. Priority should be given to facilities that correspond to commuter corridors, link neighborhoods to major activity nodes, and enhance the regional multimodal network.

Review and update ordinances

Codes should be updated to align with current comprehensive plans and be consistent with stormwater management and community-wide elevation standards that address issues of community character and hydrology and integrate flood risk reduction best practices. These updates should be woven through the entire code and support incentives.

Support and create regional entities

To comprehensively address natural hazards such as flooding and drought, affected jurisdictions should work together to become robust regional entities that have the information, collaboration and resources needed to plan and provide guidance for their region. These entities can develop regional projects to mitigate their particular hazards and its potential economic damage.

Develop stormwater management plans

To address riverine and flash flood risks within watersheds throughout the state, stormwater management plans need to be developed at the municipal, parish, and regional scale to serve as guiding documents for the corresponding watershed authorities. Such plans should address floodplain management within a watershed, provide short- and long-term goals for managing water quantity and quality, and provide guidance on how to protect the watershed and its inhabitants. Further, a stormwater management plan can facilitate coordination of local jurisdictions within a defined watershed to address shared flood risk.

Incentivize on-site stormwater management

Incentives in the form of tax credits, stormwater fee discounts, and rebates can be used to offset the costs of implementation and reward measures taken by property owners to increase the amount of stormwater handled on site. Handling stormwater with site-level features will reduce the amount of runoff entering the drainage system.

Develop an open space preservation plan

An Open Space Preservation Plan aims to balance land use and development with preservation and conservation of the natural environment. Such a plan will benefit the community and help guide development and redevelopment when standards are established that require a minimum acreage to be preserved. To preserve property right, a mechanism could be established that allows for property owners to retain ownership of the property and adopt deed restrictions that ensure that parcels do not get developed.



Local Government Adaptive Actions (continued)



Incentivize reduction of impervious surfaces

Reducing the cover of impervious surfaces on residential, commercial and public properties is an important strategy for increasing the retention and detention of stormwater. Existing impervious surfaces can be replaced with pervious surfaces through which water can penetrate, thus reducing the amount of water entering the drainage system at a given time. Incentives in the form of tax credits, stormwater fee discounts, and rebates can be used to increase participation of residents and commercial property owners.



Develop and implement an acquisition program

Properties that have flooded numerous times, are vacant, or abandoned should be inventoried and addressed comprehensively. Owners of repetitive loss properties should be provided with the opportunity to relocate rather than rebuild in high flood risk areas.



Create a comprehensive plan

Local jurisdictions should develop or update their comprehensive plan to incorporate hazard mitigation and adaptation strategies.

In addition to providing strategies for future housing, transportation, economic development, and land use, comprehensive plans in Louisiana should at a minimum include flood risk reduction strategies, including restrictions on development in high risk areas, reducing impervious cover, and elevating critical facilities and public infrastructure.



Identify priority action areas

To prioritize investment, action areas should be identified; these areas are especially vulnerable to hazards and need to be addressed sooner rather than later. Mitigating for current and anticipated hazards should not be delayed until disaster strikes and funding is available. Instead, local jurisdictions should leverage projects and funding to reduce risk and economic damage. Action areas can focus on elevating all buildings, implementing stormwater management best practices, improving drainage, and retrofitting of buildings to name a few.

Develop elevation design guidelines

The guidelines should support flood risk reduction through landscaping and elevation designs that are appropriate for each community, including what the buildings should look like in terms of cladding, accessory structures and utility placement. This will ensure that new development is compatible with existing community character.

Map the floodplain

Local jurisdictions and/or regional entities should develop their own flood maps to better identify flood risk from a variety of sources (i.e. coastal erosion, rain events, climate change impacts) as well as include local flood mitigation projects. These maps can guide the decision making process of implementing development regulations so as not to increase flood risk for residents and infrastructure.

Although the National Flood Insurance Program provides flood maps to local jurisdictions to determine their flood risk, these maps have several shortcomings and are often contested.

Comply with and enforce International Building Code Standards

Local building codes should - at minimum - reflect International Building Code standards. Local governments must ensure that building codes are enforced for all buildings, including secondary homes. Participating in the Building Code Effectiveness Grading Schedule Program, which assesses the building codes in effect and rates how the community enforces the International Building Code can earn points towards the Community Rating System to lower insurance premiums.

Leverage capital improvement projects

Green infrastructure measures, such as stormwater curb extensions, filter strips, and permeable pavements should be included in updates to existing infrastructure as well as new infrastructure. Doing so will expand the scope and funding of the projects to make them more comprehensive and multifaceted.

Create Redevelopment Plan

By creating a plan for how to redevelop after a disaster strikes, communities can ensure that vulnerable and impacted infrastructure is not simply rebuilt as it was before in the same location, but rather that future investments are directed to safer areas. As coastal erosion and sea level rise continue to increase risk to existing infrastructure, plans for relocating or rebuilding infrastructure should be made. Financial resources such as hazard mitigation grants that may become available to disaster-struck areas could be used to implement the plans.

Resident Adaptive Actions

We are all residents and in this role, we too can play a significant role by implementing many of the best practices and supporting the strategies at the various scales. Property owners can reduce their runoff and support local initiatives for stormwater management and flood risk reduction. Neighborhood associations can work with their local council representatives to move strategies forward that address stormwater management in a comprehensive way. To weather the next storm we must make development and redevelopment decisions now that are cognizant of the hazards we face and reduce their impact on our economy, quality of life, and natural assets we cherish here in the Sportsmen's Paradise.

Reduce impervious surfaces

Reducing impervious surfaces will allow stormwater to convey more naturally and enter the water cycle sooner. It will further reduce runoff volume and increase runoff quality, which will reduce demand on our often overwhelmed drainage system and at the same time reduce pollutants impairing receiving water bodies.

Manage stormwater on site

Managing stormwater on site reduces the volume and increases the quality of runoff generated from a site. Stormwater from roofs and other site-specific impervious surfaces can be collected and temporarily stored on site for later grey use.

Get informed about the pros and cons of elevated buildings

There are numerous benefits to elevated buildings, including flood risk reduction, decreased susceptibility to pests, and lower cost of adapting to changing elevation height requirements. These and other factors should be considered for current and future home and building owners when making purchasing and building decisions.

Support local and state government efforts to comprehensively manage stormwater and flood risk

Elected officials in our communities need to have residents' support to implement strategies suggested here but also developed locally. By getting involved in the solution finding and decision making process, residents can support resilience and adaptation initiatives that benefit them individually and their community as a whole.