

**PHASE 1
INVESTIGATION**
**LOUISIANA STATEWIDE
COMPREHENSIVE
WATERSHED BASED
FLOODPLAIN MANAGEMENT
PROGRAM DEVELOPMENT**



Lake, Water, Louisiana,
Gulf Coast States, USA

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Acronyms

ABFE	Advisory Base Flood Elevation	DPW	Department of Public Works
ACS	American Community Survey	DR	Disaster Recovery
AIPC	American Institute of Certified Planners	DRBC	Delaware River Basin Commission
APC	Acadiana Planning Commission	DRU	Disaster Recovery Unit
AWAWG	Alabama Water Agencies Working Group	DWR	Department of Water Resources
BCA	Benefit Cost Analysis	EDA	Economic Development Administration
BFE	Base Flood Elevation	EDF	Environmental Defense Fund
BOEM	Bureau of Ocean energy Management	EIB	Environmental Impact Bond
BWSR	Board of Water and Soil Resources	FDEM	Florida Division of Emergency Management
CA DWR	California Department of Water Resources	FEMA	Federal Emergency Management Agency
CAP-SSSE	Community Assistance Program - State Support Services Element	FERC	Federal Energy Regulatory Commission
CAV	Community Assistance Visit	FIRM	Flood Insurance Rate Maps
CCCB	Construction Codes Coordination Board	FIS	Flood Insurance Study
CFM	Certified Floodplain Manager	FL DOS	Florida Department of State
CIS	Community Information System	FMA	Flood Mitigation Assistance
CRS	Community Rating System	FRRP	Flood Risk Resilience Program
CDBG	Community Development Block Grant	GIS	Geographic Information System
CDBG-NDRC	Community Development Block Grant - National Disaster Resilience Competition	GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
CFR	Code of Federal Regulations	GOMESA	Gulf of Mexico Energy Security Act
CMAF	Chicago Metropolitan Agency for Planning	GPO	Government Publishing Office
CNRA	California Natural Resources Agency	H&H	Hydraulics and Hydrology
CPRA	Coastal Protection and Restoration Authority	HB	House Bill
CRMS	Coastwide Reference Monitoring System	HEC	Hydrologic Engineering Center
CRS	Community Rating System	HMGP	Hazard Mitigation Grant Program
CTP	Cooperating Technical Partnership	HR	House Resolution
CTS	Cooperating Technical State	HU	Hydrologic Unit
CVFPB	Central Valley Flood Protection Board	HUC	Hydrologic Unit Code
CVFPP	Central Valley Flood Protection Plan	HUD	U.S. Department of Housing and Urban Development
CWAP	California Water Action Plan	HSEM	Homeland Security and Emergency Management
CWMS	USACE Water Management System	HWM	High Water Mark
DCRA	Department of Consumer and Regulatory Affairs	IDNR	Illinois Department of Natural Resources
DEQ	Department of Environmental Quality	ITB	Invitation to Bid
DEM	Digital Elevation Model	ITN	Invitation to Negotiate
DFIRM	Digital Flood Insurance Rate Map	IWM	Integrated Water Management
DHSEM	Division of Homeland Security & Emergency Management	JPM-OS	Joint Probability Method with Optimal Sampling
DMT	Drainage Management Team	LA DOA	Louisiana Division of Administration
DNRP	Department of Natural Resources and Parks	LaDOTD	Louisiana Department of Transportation & Development
DOA	Division of Administration	LAPDD	Louisiana Association of Planning and Development Districts
DOD	United States Department of Defense	LARR	Louisiana Resilient Recovery
DOTD	Department of Transportation and Development	LED	Louisiana Economic Development
		LiDAR	Light Detection and Ranging
		LDEQ	Louisiana Department of Environmental Quality

LDWF	Louisiana Department of Wildlife and Fisheries	RFMS	River and Floodplain Management Section
LGAP	Local Government Assistance Program	RFP	Request for Proposal
LOMA	Letter of Map Amendment	RFPE	Regulatory Flood Protection elevation
LOMR	Letter of Map Revision	RIF	River Improvement Fund
LRAP	Louisiana Resiliency Assistance Program	RL	Repetitive Loss
LSU	Louisiana State University	RLSB	Restore Louisiana Small Business Program
LSUCC	Louisiana State Uniform Construction Code	RMSE	Root Mean Square Error
LSUCCC	Louisiana State Uniform Construction Code Council	RS	Revised Statute
m²	Square Meters	SBA	Small Business Administration
MAWD	Minnesota Association of Watershed Districts	SCR	Senate Concurrent Resolution
MPO	Metropolitan Planning Organization	SFHA	Special Flood Hazard Area
MS4	Municipal Separate Storm Sewer System	SFWMD	Southwest Florida Water Management District
NASA	National Aeronautics and Space Administration	SHMO	State Hazard Mitigation Officer
NCDC	National Climate Data Center	SIB	Social Impact Bond
NCFMP	North Carolina Floodplain Mapping Program	SI/SD	Substantial Improvement / Substantial Damage
NCSS	North Carolina Society of Surveyors	SLR	Sea Level Rise
NDBC	National Data Buoy Center	SR	Senate Resolution
NDNR	Nebraska Department of Natural Resources	SRL	Severe Repetitive Loss
NDRF	National Disaster Recovery Framework	SWM	Surface Water Management
N-FACT	Nebraska Flood Analyses Calculating Tool	SWMM	Storm Water Management Model
NFIP	National Flood Insurance Program	SWFWM	Southwest Florida Water Management District
NLCD	National Land Cover Database	USACE	U.S. Army Corps of Engineers
NLD	National Levee Database	USC	United States Code
NMTC	New Market Tax Credit	USDA	U.S. Department of Agriculture
NOFA	Notice of Funding Availability	USEPA	U.S. Environmental Protection Agency
NOFO	Notice of Funding Opportunity	USFWS	U.S. Fish and Wildlife Service
NOAA	National Oceanic and Atmospheric Administration	USGCRP	U.S. Global Change Research Program
NRDC	National Disaster Resilience Competition	USGS	U.S. Geological Survey
NRCS	National Resource Conservation Service	VA DCR	Virginia Department of Conservation and Recreation
NSA	Nonstructural Alternative	WBD	Watershed Boundary Dataset
NWS	National Weather Service	WFPO	Watershed and Flood Prevention Operations
OAL	Office of Administrative Law	WIS	Wave Information Studies
OCD	Office of Community Development	WMP	Watershed Management Plane
OCD - DRU	Office of Community Development - Disaster Recovery Unit	WQC	Water Quality Certification
OCS	Outer Continental Shelf	WRRDA	Water Resources Reform and Development Act
PA	Public Assistance	WVCA	West Virginia Conservation Agency
PAS	Planning Assistance to States	WV DHSEM	West Virginia Division of Homeland Security & Emergency Management
PDM	Pre-Disaster Mitigation Program		
PE	Professional Engineer		
PFS	Pay-For-Success		
PL	Public Law		
PNP	Private Nonprofit Organization		

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A photograph of a swampy forest, likely a cypress swamp, with large, gnarled trees and their reflections in the water. The scene is dimly lit, suggesting dusk or dawn, with a warm, golden light filtering through the trees on the right side. The text "Appendices" is overlaid on the left side of the image.

Appendices

A. Existing conditions

B. Watershed delineation options

C. Model Legislation






Executive Summary



Lake Fausse Pointe State Park



Louisiana is no stranger to flooding. Whether by inland rivers, stormwater, or coastal storm surge, Louisiana is facing increased risk, from both magnitude and frequency, of flood events. This risk threatens our natural and built environment, and our way of life.

In addition to coastal flood risk, fluctuations in the climate, when combined with current development patterns and practices, are also increasing the risk of inland flooding. Since 1958, the amount of precipitation falling during heavy rainstorms has increased by 27% in the southeast, and the trend toward increasingly heavy and frequent rainstorms is projected to continue with high confidence (USGCRP 2017). Moreover, the amount of rainfall in the Midwest is also likely to increase, which could worsen flooding in Louisiana, as most of the Midwest drains into the Mississippi River. This greater flood risk brings short term losses in the form of property damage, disruption to daily life and business activities, and possible injury and death; these consequences can have both immediate and lasting impacts on quality of life, as well as the economic health and vitality of our communities, and could limit or reverse growth and prosperity in the long run. Louisiana's coastal areas saw an 85% increase in homeowners insurance premiums from 2004-2015 (CPRA 2017c) with a statewide average increase of 67%, and studies have shown that even the perception of unmitigated flood risk can result in losses to property value (Bhattacharya-Mis and Lammond 2016).

In response to coastal flood hazard, Louisiana's Coastal Master Plan has been built on a foundation of scientific and engineering principles, as well as

This risk also comes with opportunity cost. Costs required to respond, recover, rebuild, and fund higher insurance rates, if avoided, could be leveraged into the kind of positive transformation, as well as economic, environmental, and quality of life improvements our communities wish to see.

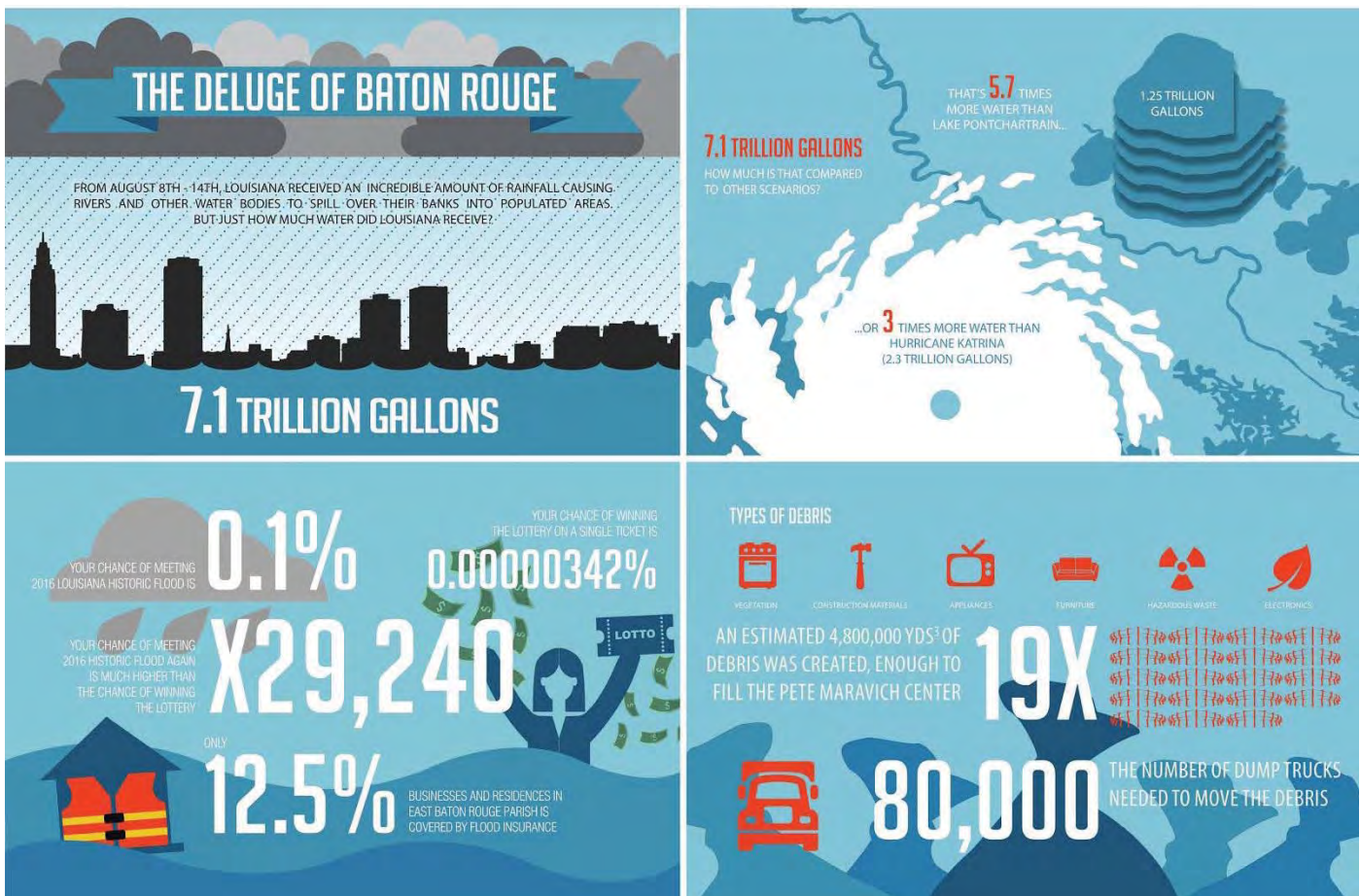
extensive stakeholder engagement. This Plan provides the guidance to protect and restore the coast based upon future risks faced both from climate change and human development patterns. An equivalent effort for inland areas under the threat of riverine flooding was previously uninitiated. As the Plan's most recent iteration recognizes, more than projects will be required to build resilience in the State of Louisiana to face the current risk context and expected changes to that context in the coming decades. Such resilience building actions also include policies, programs, outreach, engagement, and further knowledge seeking to strengthen our understanding of our needs and the effectiveness of our actions. These efforts will be most effective if aligned with a common vision and guiding principles for resilience in our state.

To that end, the State of Louisiana is in the process of developing a statewide, comprehensive Watershed-based Floodplain Management Program (Program). Phase I of program development initiated in the fall of 2017 through the cooperation of the Coastal Protection and Restoration Authority (CPRA), the Department of Transportation and Development (DOTD), the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), and the Office of Community Development (OCD), as well as interviews and meetings with a broad swath of stakeholders, subject matter experts, other Louisiana state agencies, and other states and regions in the country. In February of 2018, the Department of Wildlife and Fisheries (DWLF) was integrated as a cooperating agency.

The purpose of this document is to outline the efforts completed in Phase I, as well as the path forward for the Program.

In 2016, Louisiana experienced two historic rain events that exposed our state's current floodplain management challenges.

In August 2016, more than 7 trillion gallons of rainwater fell on the state, resulting in more than 31 inches of rain in parts of Livingston Parish alone (the area hit hardest by the event) (Di Liberto 2016). Governor John Bel Edwards called the disaster a “historic, unprecedented flooding event” (Phippen 2016); approximately 146,000 homes were damaged due to the flooding (Broach 2016). Economic damages were approximated at more than \$10 billion, and the state has a long road ahead to reach full recovery (The Advocate 2016). Just months prior to this catastrophic event, flash flooding in March 2016 set records with historic rainfall and river crests damaging at least 12,000 homes in the state (Allen 2016; Vagell 2016).



American Society of Landscape Architects (ASLA) 2017 Student Honor Award, Analysis and Planning Category, Disaster Autopsy Model by Donguk Lee, Student ASLA and Xiwei Shen, Student ASLA. Photo credit: Donguk Lee and Xiwei Shen.

With our challenges exposed, Louisiana has the opportunity - and necessity - to rethink the concept of floodplain management within the state.

Currently, Louisiana's various different jurisdictions, including city/parish planning, perform floodplain management activities in a largely uncoordinated fashion. Additionally, various jurisdictions, including city/parish planning and zoning departments or public works, regulate or undertake activities that affect floodplains independently, even when they affect the same watersheds. Floodplain issues are managed within political jurisdictions, often without the mechanisms to consider the effects on other jurisdictions or the watershed on the whole. Effective floodplain management requires a paradigm shift from independent jurisdictional boundaries to management within watershed boundaries.

A comprehensive watershed-based floodplain management program will allow the State and its various jurisdictions and political subdivisions to coordinate at a watershed level and manage floodplains consistently using best practices across the State.

Current development practices in many areas lead to drastically increased runoff. This can lead to increased flood risk, both in magnitude and extent of flooding, on adjacent properties and downstream of the development. Areas considered to have low flood risk in prior years can find themselves flooding frequently due to land use practices outside of their jurisdiction.



What is a watershed?

A watershed is the geographic area within the boundary of a drainage divide. The United States Geological Survey (USGS) defines a watershed as follows:

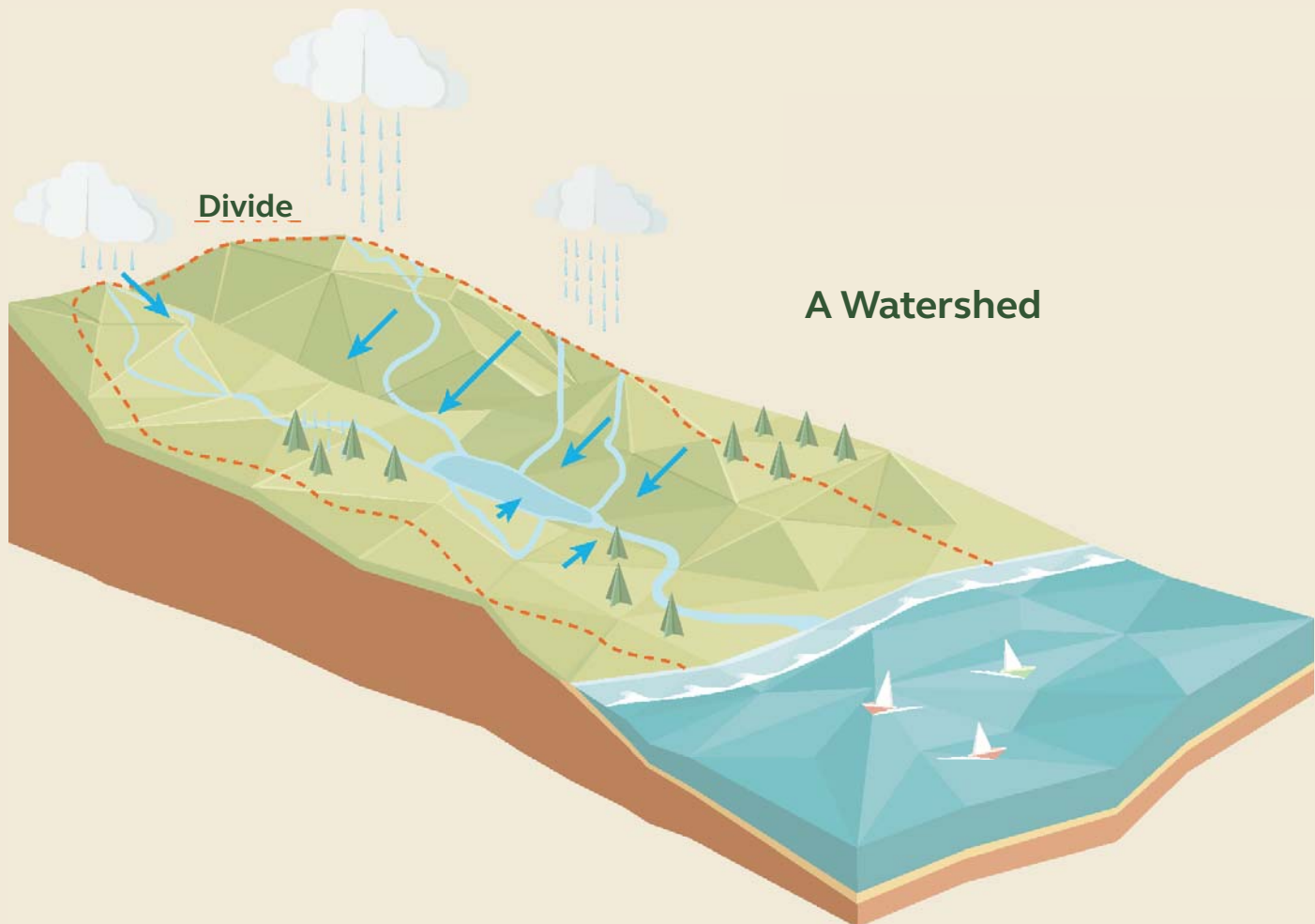
A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. The word **watershed** is sometimes used interchangeably with **drainage basin** or **catchment** (USGS 2016).

Watersheds are precipitation collectors, conceptually illustrated in the figure below.

What is a floodplain?

FEMA's National Flood Insurance Program defines a floodplain as "any land area susceptible to being inundated by floodwaters from any source" (FEMA 2017a).

A comprehensive watershed-based floodplain management program will allow Louisiana and its various political jurisdictions to coordinate floodplain management on a watershed level on a consistent basis, using best practices statewide. Watershed-level flood management implicitly reflects and responds to hydrologic processes involved in riverine flooding. Watersheds may range in geographic size from small tributary streams to major river basins.



Watershed management should be coordinated to maximize both flood risk reduction and the natural and beneficial functions of the watershed and its floodplains.

Flooding during the summer of 2016 alerted communities and agencies in the State of Louisiana of the need to reevaluate current floodplain management practices, much in the way that Hurricane Katrina stimulated a shift in coastal zone management. **It also demonstrated that communities are interdependent in ways that cross jurisdictional boundaries.** Projects and development activities in one area of a watershed can change the shape of floodplain in other areas - expanding or contracting the areas known to be at risk to flooding. They can also deepen or increase the speed of floodwaters, exacerbating flood risk in existing floodplains. These interdependencies often occur within a watershed and extend to the natural and beneficial functions of the watershed, including those that support water quality, habitat condition, and economic vitality.

To address the needs made clear by recent flood events and to mitigate the risk of similar events in the future, we must move forward acknowledging and integrating the possible effects of these interdependencies into our flood risk management paradigms. Additionally, we must ensure these efforts are coordinated with one another. Hasty and impulsive decision-making can have lasting impacts that are not easily recognized upfront.

State and local jurisdictions that carry out floodplain management activities are capable of coordinating to align planning, zoning, and public works activities across jurisdictional boundaries. Political jurisdictions can be supported with the necessary staff, technical capabilities, and regulatory incentives to consider the outcomes of their activities and how these can impact the state as a whole. These jurisdictions have the power to mitigate flooding at a watershed scale and to improve the beneficial functions of the floodplain. By acting based on our knowledge of the cumulative effects of our activities within a watershed, we have the opportunity to reduce risk to life and property from flooding in a way that is also compatible with the natural and beneficial functions of our floodplains and watersheds - functions that support our economy, our communities, and our way of life.

In the coming months and years, Louisiana will continue to work toward the achievement of an evolving vision of well-coordinated, watershed-based floodplain management in our state.



Photo by USDA. 2016. *Flooding in Louisiana*. Licensed under CC BY 2.0.

State of Louisiana agencies with floodplain management related responsibilities are collaborating to define the path forward for effective floodplain management in the State of Louisiana.

Louisiana Senate Resolution 172 of the 2017 Regular Legislative Session, co-authored by Senators Mack A. “Bodi” White and Sharon W. Hewitt, directed the Department of Transportation and Development (DOTD), in consultation with other state agencies, to “... provide recommendations to establish, implement, and enforce floodplain management plans for each watershed in Louisiana” (LA State Legislature 2017b: 1). The resolution implicitly recognizes that effective floodplain management is driven by hydrology and, consequently, must be implemented on a watershed level. Simultaneous with the development of this resolution, the Office of Community Development (OCD) was working to convene multiple state agencies in an effort to align resources toward consistent watershed-level planning and plan implementation. Such efforts require an overarching and comprehensive program to coordinate and support floodplain management activities at all levels of government.

In November of 2017, the Louisiana Coastal Protection and Restoration Authority (CPRA), DOTD, the Governor’s Office of Homeland Security and Emergency Preparedness (GOHSEP), and OCD convened their first meeting to investigate the challenges and opportunities of statewide floodplain management, and to leverage existing floodplain management efforts of these and other agencies, as well as local jurisdictions, non-profits, subject matter experts, and others. This report represents preliminary findings of these agencies, as developed through dozens of interviews and research conducted from November 2017 through January 2018. These findings are presented in the form of recommendations for catalyst (immediate) actions to be undertaken at present, Phase II recommendations (over the next six months), Phase III recommendations (over the next year), and beyond. The group will build upon this Phase I foundation and refine program actions in the coming



Our communities, infrastructure, and political jurisdictions are interdependent, and everything we do is within the context of our watershed. By acknowledging and working with our interdependencies, we have the ability to change how we are affected by the forces and functions within that watershed.

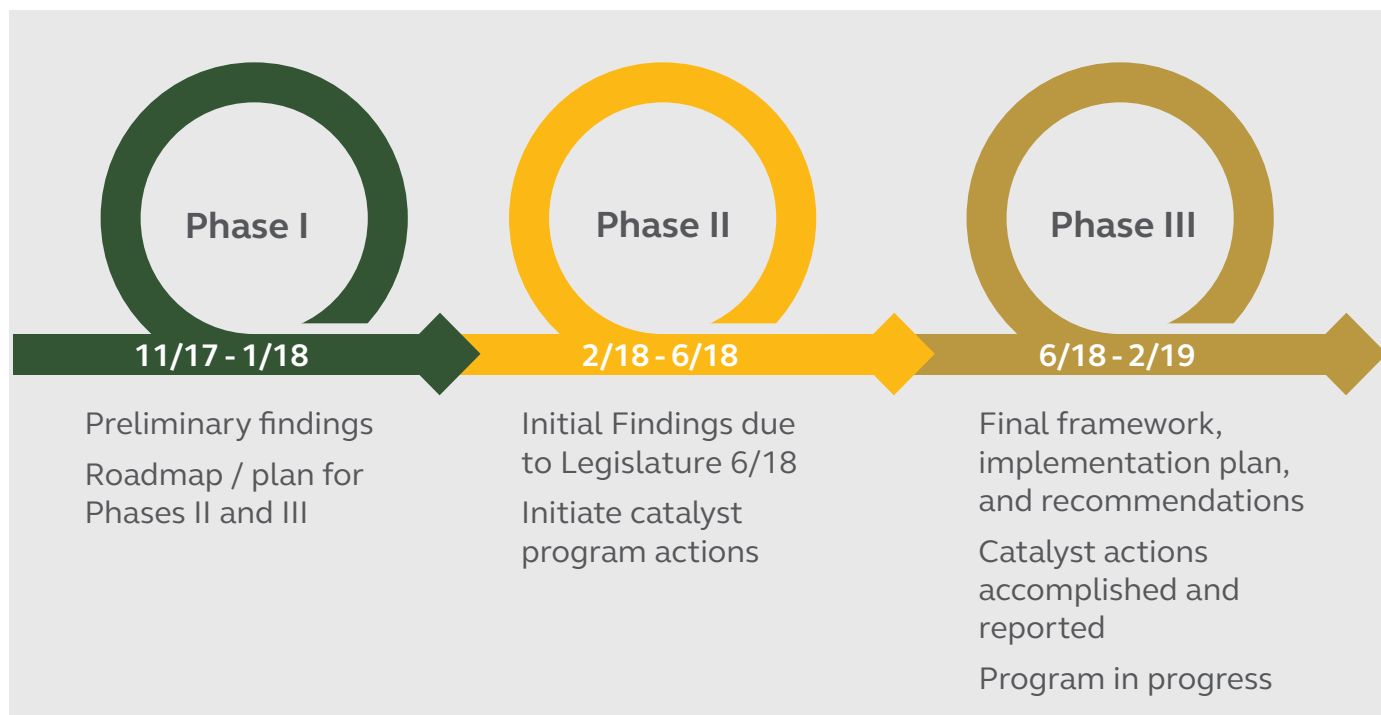
In coordination with stakeholders, and through undertaking the recommendations enclosed in this initial report, it is expected that this group of agencies will both expand and be further refined over time as needs of the Program evolve. In early 2018, the Louisiana Department of Wildlife and Fisheries was added to the group of agencies coordinating and cooperating to implement the Program.

Senate Resolution 172 established two specific timeframes to create recommendations for developing, implementing, and enforcing floodplain management at the watershed level:

- June 2018: Initial Findings
- February 2019: Final Report

These timeframes coincided naturally with the planning process developed by the cooperating agencies. The cooperating agencies have added a preliminary step to this process and divided addressing the requirements of the resolution into the following three phases:

The goal of the Phase I initiative was to develop a path forward for a Statewide Comprehensive Watershed-Based Floodplain Management Program, to be confirmed and implemented through future phases of program development.



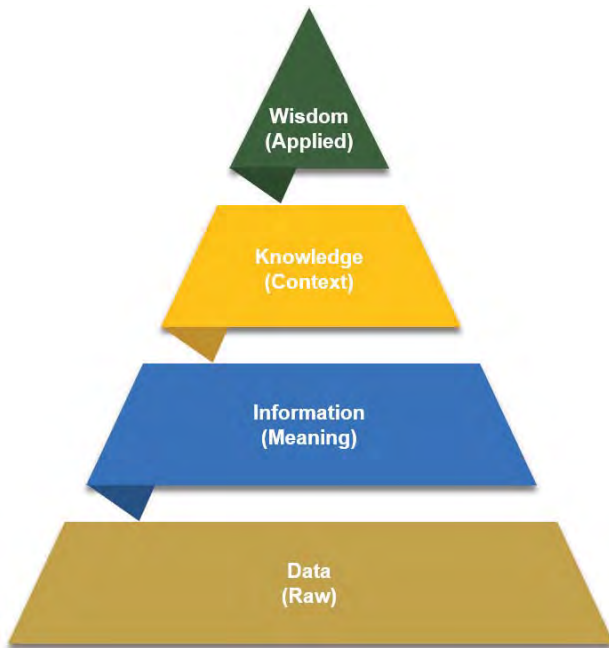
In addition to the constant involvement, oversight, and feedback provided by the cooperating agencies, the Phase I effort was supported by the input of a number of others who were gracious with their time and insight. These participants from local jurisdictions, parish presidents, state legislators, federal agency representatives, national subject matter experts, state floodplain managers, and more are motivated to help build a path forward to a clear and sustainable framework for floodplain management in the state of Louisiana.



Key Themes in Phase I Findings

Ecosystem services maximized through the natural and beneficial functions of the floodplain and effective flood risk management go hand in hand.

While flood risk can never be eliminated, only reduced, Phase I investigations revealed that the floodplain management programs generally accepted to be successful have this in common: the acknowledgment, and programmatic accommodations, of the fact that ecosystem services maximized through the natural and beneficial functions of the floodplain and effective flood risk management go hand in hand. Often, programs researched in Phase I seemed to start with either a focus on the ecological health of the floodplain or a focus on flood risk, and then evolved over time to accommodate both. The most effective programs also appear to have evolved from a local to regional concern / perspective, then to regional coordination and prioritization processes.



The root of all wise decision making is accurate, complete, transparent, and accessible data.

The Phase I investigation included dozens of interviews with state and local officials and subject matter experts within and outside of Louisiana. Nearly every meeting and interview echoed the need for more, improved, and current data and information to support decision making.

Capability and Capacity Building. Locals need to be empowered and supported to meet the demands of our changing flood risk context.

The State of Louisiana is facing unprecedented and, in some areas, existential threat due to flood hazard. The State needs to better understand the needs of local governments as they face these challenges as well as their capacity to partake in the development, implementation, and enforcement of watershed-based plans in order to help address flood risk and allocate resources effectively.



Standard Setting. The State should set the bar for sound flood risk management across Louisiana.

Interviews with local government representatives indicated a need for leadership and support from the state related to standard setting, communication of expectations, and partnership to meet those standards. Clear incentives are needed to reward the meeting and exceeding of those standards, and disincentives are needed to avoid missteps into the future.

Sustainable sources of funding are needed to implement and maintain sound flood risk management practices across the state, and existing sources can be stretched and leveraged more efficiently if put toward a common goal.

The Phase I investigation revealed multiple findings relevant to funding for flood risk reduction related activities. Funding needs exist, and must be more thoroughly defined through Phases II and III. The development of watershed-based plans will support this understanding, but it is also clear that cooperating agencies, local governments, and regional entities do currently and will continue to have significant impact with the dollars available to them. The impact of these dollars could be increased, possibly significantly, through alignment of objectives, reduced duplication, and collective action where possible.



Engagement, trust building, and partnership toward collective action are necessary to maximize Program effectiveness.

The Phase I investigation revealed that certain present and future practices, both at the State and local level, have sometimes led to mistrust and competition for resources between parishes, as well as mistrust between local representatives and the State. Extensive engagement is needed to build connectivity and momentum toward collective regional action, and consensus around key Program questions.

Program Development Engagement Efforts

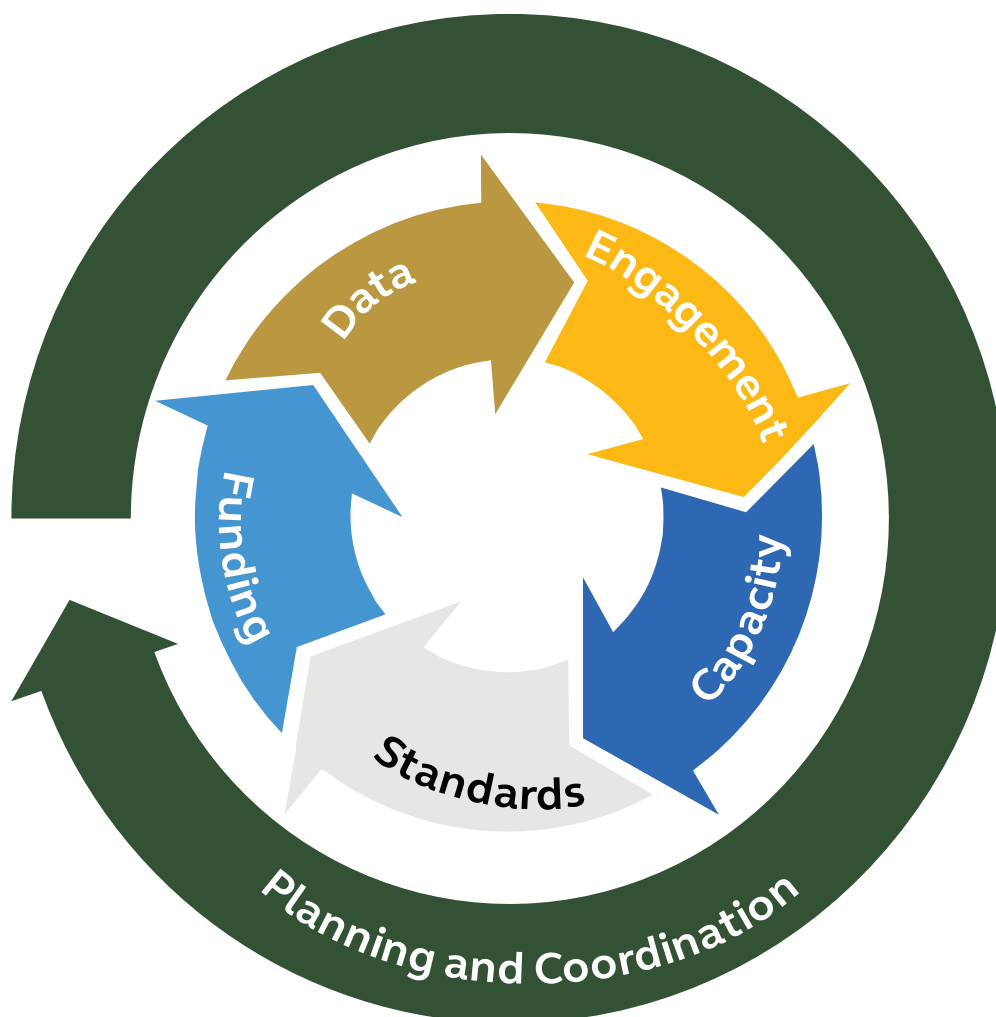
Over three short months, the Phase I investigation team and cooperating agencies conducted dozens of interviews and meetings with stakeholders within and outside of the state of Louisiana. This process must be ongoing and iterative. Many more interviews and meetings are planned in Phase II and beyond. In addition, cooperating agencies are expanding engagement both by leveraging existing engagement initiatives within their agencies, and by developing new initiatives in order to share knowledge and information, identify needs, build trust and partnerships, and build consensus on Louisiana's path to flood risk resilience. Examples include: the continuation and leveraging of watershed-based workshops facilitated by OCD and GOHSEP, a capacity and capability assessment and parish workshops facilitated by CPRA, leveraging conferences, meetings, and forums to engage with subject matter experts and flood risk managers across the state, and more.

Multi-agency Watershed-based Program Governance and Implementation Plan

In the near- to mid-term, the statewide, comprehensive Watershed-based Floodplain Management Program will exist under the purview of a multi-agency governing body, also referred to as the cooperating agencies. The cooperating agencies, which currently consist of CPRA, DOTD, LDWF, GOHSEP, and OCD, are also charged with carrying out implementation of the Program and its various initiatives in accordance with the authorities and regulatory responsibilities of these agencies, through the supportive administration of OCD. Cooperating agencies and Program implementation roles are being tested, refined, and expanded through Phase II and III of Program development, as appropriate and indicated through engagement and ongoing investigations.

The Phase I development research and evaluation process illuminated six initial strategic areas that are key to effective floodplain management in the State of Louisiana. These are listed in detail, along with recommended initiatives, to support each strategic area in Section 4.0 Implementation Roadmap. Within Section 4.0, each initiative is broken into specific actions that should be undertaken as the program develops and matures. Actions are assigned goal timeframes as follows: immediate action (catalyst actions), within the next 6 months (Phase II), within the next year (Phase III), within 2 to 3 years, and within 4 to 5 years. The focus of the Phase I effort is to identify the path forward to define the State of Louisiana's Watershed-Based Floodplain Management Program, as well as activities needed to establish the program itself and provide a foundation from which subsequent phases can be initiated. The program will be required to further define itself and expand or modify the activities, as needed. The initiatives are, by design, incomplete, especially as listed in the longer timeframes.

The Phase I investigation illuminated recommendations across six strategic areas



Actions Underway

As a result of Phase I efforts, cooperating agencies are already coordinating to implement high-benefit, low-risk recommendations that address watershed-based floodplain management needs across the state.

Everything Flood Related Website and Data Portal

A clear, urgent need identified in Phase I was increased quality, quantity, and access to data and information. To that end, cooperating agencies are working to develop an Everything Flood Related Website and Data Portal. Example proposed features include the following:

- Online data portal and library – some data will be within database, others will be links
- Metadata and rating of data to clarify QA/QC, maintenance, and standards compliance
- Links to all relevant agencies, websites, resources
- Online decision tools / mapping tools
- Flood risk engagement materials and risk communication
- Library for best practices and standards
- Training materials and curricula
- Funding information and best practices, including links to sources
- Metrics and loss avoidance reports posting
- Links to state and watershed-based plans
- Engagement calendar publishing and requests portal (a possible long-term feature)
- Joint funding application portal and funding clearinghouse (a possible long-term feature to be explored)

Cooperating agencies are working on the following actions in Phase II and III:

- Scope, cost estimate, and plan development
- Determining initial and long term hosting of the website and data portal
- Website development
- Existing data reconciliation and posting / linking
- DRAFT data quality standards and QA/QC process
- Mapping tool

Watershed Models

An important and likely costly goal of the cooperating agencies is to achieve hydraulic and hydrologic model coverage of every watershed in the state. Such models will support decision making at all levels, as well as help Louisiana better understand and map its flood risk. Additionally, such models should adhere to uniform standards, be maintained. Furthermore, any users should understand what decisions can, should, or must be made using the models. Over 2018, cooperating agencies are:

- Standing up a Technical Advisory Committee to support the development of minimum and technological standards for watershed models
- Developing a river gauge placement initiative
- Developing a bathymetry, topography, and surveys of river crossings initiative
- Developing a planning process to complete statewide watershed models (including watershed prioritization)
- Developing preliminary standards for model use in decision making

Cooperating agencies are developing a funding strategy for:

- Model development
- River gauge placement
- Bathymetry, LiDAR, and surveys of river crossings

Local Capacity and Capability Assessment and Capacity Building Plan

As part of the 2017 Louisiana Coastal Master Planning process, CPRA identified the need for a capacity and capability assessment to help identify and focus resources to support local parishes in the implementation of flood risk reduction projects and floodplain management and flood risk reduction-related policy and program improvement. The Phase I Program investigation also identified the need for a detailed assessment to focus resources in the way that parishes and other local and regional entities may need them most. In spring of 2018, CPRA began piloting this assessment to the 24 coastal parishes. The extensive evaluation consists of a detailed survey, interviews, and workshops with participating parishes to confirm findings of the assessment and build consensus around recommendations. The recommendations will be passed on to all cooperating agencies, who will focus resources to appropriate capacity and capability building efforts. Based on the lessons learned from the evaluation, expected to complete late summer 2018, the Program is considering expanding the assessment to the rest of the state.

Interstate Summits

Louisiana is inviting other states to join us in identifying possible solutions to our common issues, and accomplish the example following objectives:

- Watershed metric development
- Regional planning best practices
- State level planning best practices
- Relationship building with neighboring states / watersheds
- Legislation and policy best practices

During the Phase I investigation, cooperating agencies began coordinating with the State of Texas, and GOHSEP engaged FEMA to support planning and funding an interstate summit in Louisiana during the Phase II period.

Near-term Action Plans

Cooperating agencies are identifying and partnering with appropriate stakeholders to implement high benefit, low risk floodplain management projects and initiatives. An example is the Waterway Restoration Near-term Action Plan described below.

Senate Resolution 172

SR 172 called on DOTD **“to study construction or maintenance impacts, including channelization, dredging, and clearing and snagging activities, upon river basins and water transmission.”**

Cooperating agencies are taking a three part approach to addressing this element of SR 172:

I. Waterways Restoration and Near-term Action Plan

Cooperating agencies are developing a Waterway Restoration Near-term Action Plan to identify and complete actions that are presently known to be high benefit and low risk, particularly in non-scenic rivers. An example of such actions includes clearing debris that is exacerbating flood risk and is potentially damaging to the environment (such as household appliances that are sometimes dumped in waterways).

II. Waterways Restoration and Management Study

Significant actions should not be taken in rivers without first fully understanding the effects of that activity on hydrology and hydraulics and, ultimately, flooding. Some risks of hasty action include the following:

1. Dredging action to drain wetlands and move water more efficiently may remove valuable storage and increase runoff entering downstream rivers
2. Dredging first and second order streams (and others)

may provide little to no flood risk reduction locally and could increase flash flood risk, peak flows, and flood risk downstream

3. Snagging a stream can cause that stream to become more disconnected from its floodplain, destroying floodplain function and removing flood storage, leading to increase flood risk

As such, cooperating agencies will be developing a **Waterways Restoration and Management Study** through Phase II of Program development consisting of the following activities:

- General Research. Conduct academic research into construction or maintenance impacts, including channelization, dredging, and clearing and snagging activities, upon river basins and water transmission
- Amite Case Study. Using the Amite River initiative and model as a case study, study the expected construction or maintenance impacts, including channelization, dredging, and clearing and snagging activities, upon the Amite River basin
- Stakeholder Engagement. Engage actively with permitting agencies and subject matter experts to better understand and build consensus around expected construction or maintenance impacts, including channelization, dredging, and clearing and snagging activities, upon river basins and water transmission

III. Implementation of the Findings of the Waterways Restoration and Management Study

Findings and action items from the Waterways Restoration and Management Study will be integrated into individual watershed plans, incorporating the needs and context of each watershed. These plans will be implemented according to the needs and context of the watershed.

SR 172 also called on DOTD in coordination with CPRA and others **“to develop recommendations to establish, implement, and enforce floodplain management plans for each watershed in Louisiana.”**

Cooperating agencies are in the process of working with stakeholders to develop recommendations related to the following, which are described in more detail in Layer 3 Watershed-based Floodplain Management:

- Watershed-based planning governance structure
- Watershed-based planning geographic delineations
- Watershed plan structure
- Watershed plan authorities
- Engagement and planning process for watershed-based plans

State Watershed-based Floodplain Management Plan

Through Phase II engagement and coordination efforts, the State is defining the contents and nature of the State Floodplain Management Plan, including whether the plan will be descriptive or prescriptive, will cover program governance or implementation-related topics, or both, and to what extent this Plan will supplement, supplant, or support other existing related planning mechanisms. In the meantime, cooperating agencies are aligning and coordinating existing related state planning mechanisms, such as the Coastal Master Plan, the State Hazard Mitigation Plan, and the Flood Risk and Resilience Program, toward Program objectives. As an example, GOHSEP is in the process of updating the State Hazard Mitigation Plan to incorporate a watershed approach and findings from Phase I of Program development.

Example Phase II and Phase III High Yield Investigations

Watershed Success Metrics Development

Through engagement with subject matter experts and key stakeholders, the State will define metrics with which to measure success of watershed-based floodplain management activities, as well as methods and intervals to gather the information needed to measure success over time.

Standards Substantiation and Economic Benefits Study

The State will study and publish findings related to both the impact of flood risk reduction-related development standards on loss mitigation, and the impact of flood risk reduction-related standards on economic development. Findings will be published on the new Everything Flood-related website, once complete.

Best Practice Needs Identification, Development, and Publishing

The State, locals, nonprofits, regional organizations, universities and research institutions, consultants, elected officials, and members of the public all benefit from the research and publication of best practices related to data, standards, engagement, funding, capacity building, and planning and coordination. The State will consolidate and review existing best practice publications within Louisiana, continue to review best practices outside of the state, and improve existing or publish new best practices to the Everything Flood-related website. This effort will be ongoing and will require a regular review and maintenance schedule. related website, once complete.

State-level Standards Feasibility

The State is evaluating the feasibility of implementing certain state level standards and will begin a comprehensive engagement process to this end.

Policy and Standards Examples and Templates Development

Related to the development of best practices is the review, consolidation, needs identification, development, and publishing of policy and standards templates and models to support local governments as they work to reduce flood risk in their communities.

Fund Source Leverage Evaluation

Cooperating agencies will continue to review funding allocations to identify more ways to leverage those sources toward the common goals of the Watershed-based Floodplain Management Program.

Fund Source Incentives and Disincentives Coordination

It is critical that areas receiving funds for flood risk reduction projects to correct development, infrastructure, or project missteps in the past do not repeat those missteps. The State is evaluating mechanisms to incentivize and disincentivize certain standard and plan development, implementation, and enforcement behaviors through future funding allocations and other mechanisms.

How to Navigate this Report

Section 02 Scope and Background

Provides more detail on the impetus for the development of the statewide, comprehensive Watershed-based Floodplain Management Program, as well as the structure and process of Program development.

Section 03 Phase I Investigation

Outlines four layers of floodplain management that must be in alignment to progress the state of Louisiana to effective watershed-based floodplain management:

Layer 1. State Floodplain Management Program

- Identifies prescribed and possible roles and responsibilities of the state related to floodplain management
- Provides example best practices from other states, based on Phase I research and interviews
- Clarifies key findings and recommendations

Layer 2. Floodplain Management Planning

- Defines floodplain management
- Identifies DRAFT contents and specifications of an effective floodplain management plan
- Clarifies required responsibilities and actions to develop, implement, and enforce a floodplain management plan at any scale
- Provides example best practices from other states, based on Phase I research and interviews

Layer 3. Watershed-based Floodplain Management

- Identifies the benefits of a watershed-based floodplain management program
- Identifies the possible responsibilities of a floodplain management group, organization, or entity operating at the watershed-level
- Explores existing watershed-based planning initiatives within the State of Louisiana
- Provides potential watershed-based geographical and planning configurations
- Provides example best practices from other states, based on Phase I research and interviews

Layer 4. Technical Approaches, Capabilities, and Data

- Documents the technical approaches, capabilities, and data needed for effective floodplain management at any scale
- Documents existing floodplain management data and technical approaches currently applied in the state of Louisiana
- Identifies preliminary gaps in existing floodplain data and technical approaches
- Recommends further action needed to obtain additional information in future phases and to address data gaps
- Provides example best practices from other states, based on Phase I research and interviews

Section 04 Summary Findings, Recommendations, and Implementation Roadmap

Clarifies the Program's near-, mid- and longer-term path forward as defined by the results of the Phase I investigation.

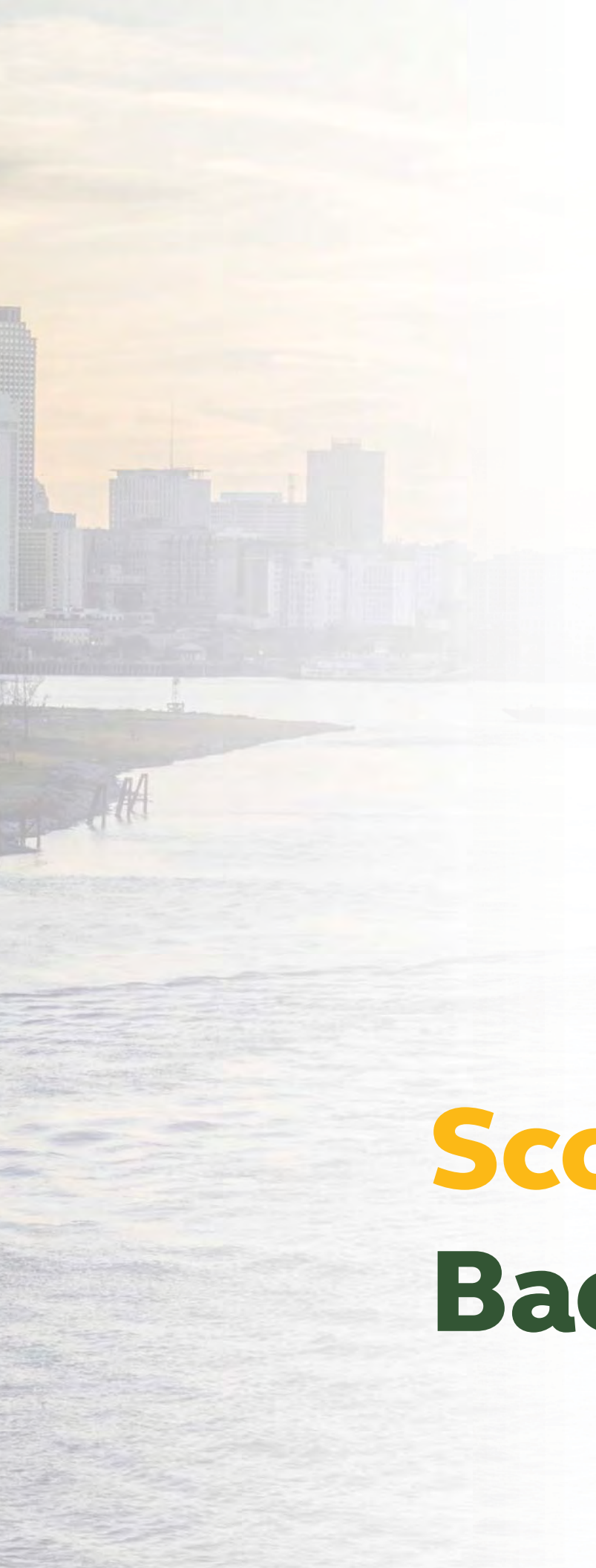
Program Guiding Principles

Every element of this report should be considered a working document. As actions continue to be taken, more stakeholders and agencies engaged, and data and information gathered, the Program plan will be updated and modified to suit the needs of the state of Louisiana as they are revealed. The guiding principles may grow in number or semantics, but not in kind. Guiding principles that emerged from the Phase I investigation include the following:

- Ecosystem services maximized through the natural and beneficial functions of the floodplain and effective flood risk management go hand in hand
- The root of all wise decision making is accurate, complete, transparent, and accessible data and information
- Engagement, trust building, and partnership toward collective action are necessary to maximize Program effectiveness
- Locals need to be empowered and supported to meet the demands of our changing flood risk context
- The State should set the bar for sound flood risk management across Louisiana
- Sustainable sources of funding are needed to implement and maintain sound flood risk management practices across the state, and existing sources can be stretched and leveraged more efficiently if put toward a common goal

Cypress Swamp





Scope and Background

Floodplain Management: A Quick Overview

More than 75 percent of declared Federal disasters are flood-related (USGS 2007). To this day, flooding remains the most costly hazard in the United States, causing greater loss of life and property than all other natural hazards (for example, wind, fire, and earthquake) combined (NWS 2018).



Photo by Staff Sgt. Daniel J. Martinez / SC National Guard. 2017. 170831-Z-AH923-039.



Photo by Staff Sgt. Daniel J. Martinez / SC National Guard. 2017. 170831-Z-AH923-040.



Photo by Melissa Leake / USDA. 2016. 20160815-OC-DOD-0010.



Photo by 1st Sgt. Paul Meeker / U.S. DOD. 2016. Through Flood Waters.

What is a Floodplain?

FEMA's National Flood Insurance Program defines a floodplain as any normally dry area that is "susceptible to being inundated by floodwaters from any source" (FEMA 2017). Example sources of flooding include major bodies of water, such as rivers, lakes, and streams, as well as rainfall and stormwater.

Riverine Flooding occurs when the volume of water exceeds the capacity of a waterway and the channel spreads out over adjacent land.

Coastal Flooding occurs when normally dry, low-lying land is flooded by seawater (or the Great Lakes). This flooding is normally caused by coastal storm events or off-shore seismic action (earthquakes), but is increasingly occurring during very high tides in some areas, such as those referred to as King Tides, as a result of sea level rise and subsidence (sinking land).

Ponding refers to flooding as a result of depressions in the landscape that collect runoff. Areas susceptible to ponding may not be depicted on FEMA flood hazard maps.

Sheet Flow is flooding from runoff resulting from a combination of inadequate drainage and impervious surface. This overland flow of water takes the form of a thin, continuous film and is generally not concentrated into clear channels.

What is Floodplain Management?

According to the Association of State Floodplain Managers, **floodplain management** is a continuous decision-making process that aims to achieve the wise use of floodplains. It encompasses the choices made by owners of homes and businesses in the floodplain, decisions made by officials at all levels of government, plans made by land developers and contractors, and the judgment of the general public regarding future decisions to be made with regard to land use. The process also focuses the attention of decision makers on the relationship between human use and the conservation of natural resources.

A floodplain is being put to **wise use** when activities can both reduce flood risk to life and property and protect the natural resources and beneficial functions of floodplains.

The purpose of floodplain management is to reduce flood risk to life and property and protect the natural resources and beneficial functions of floodplains.

What does floodplain management mean to Louisiana?

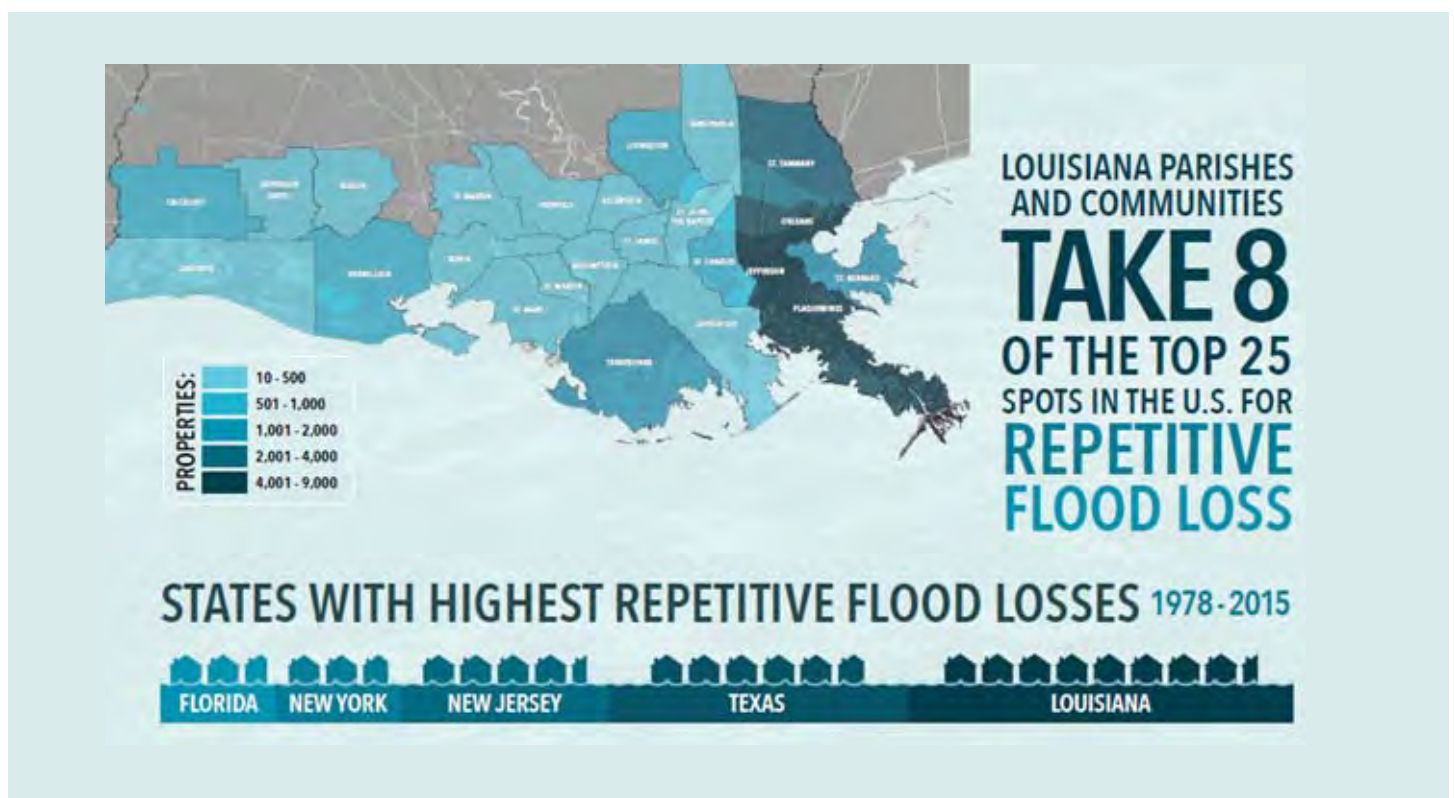
It is clear, from events like those experienced in 2016, that floodplain management needs extend beyond the current understood floodplain. Flooding is a dynamic, fluid hazard, and the risk associated with flooding is also dynamic and sensitive to many influencing factors. **Actions within the broader watershed can expand, contract, exacerbate, and attenuate flood risk in other areas.**

What is a floodplain management plan?

Effective management of both floodplains and flood risk can break the cycle of damage and rebuild. A floodplain management plan (FMP) can be a “playbook” used at a variety of levels of government to drive down flood risks.

Generally, an FMP comprises the following parts:

1. Purpose and use of the FMP
2. Identification of floodplain regulations and standards
3. Recognition and understanding of flood risks and flood problems
4. Goals and objectives to be achieved to address the flood problems
5. Evaluation of the full list of measures and tools for reducing risk
6. Scoring criteria to assess this list of measures and tools to identify the most appropriate solution
7. Establishment of an action plan or strategy to clarify specifics and responsibilities
8. Short- and long-term plans to achieve these goals and identify needs



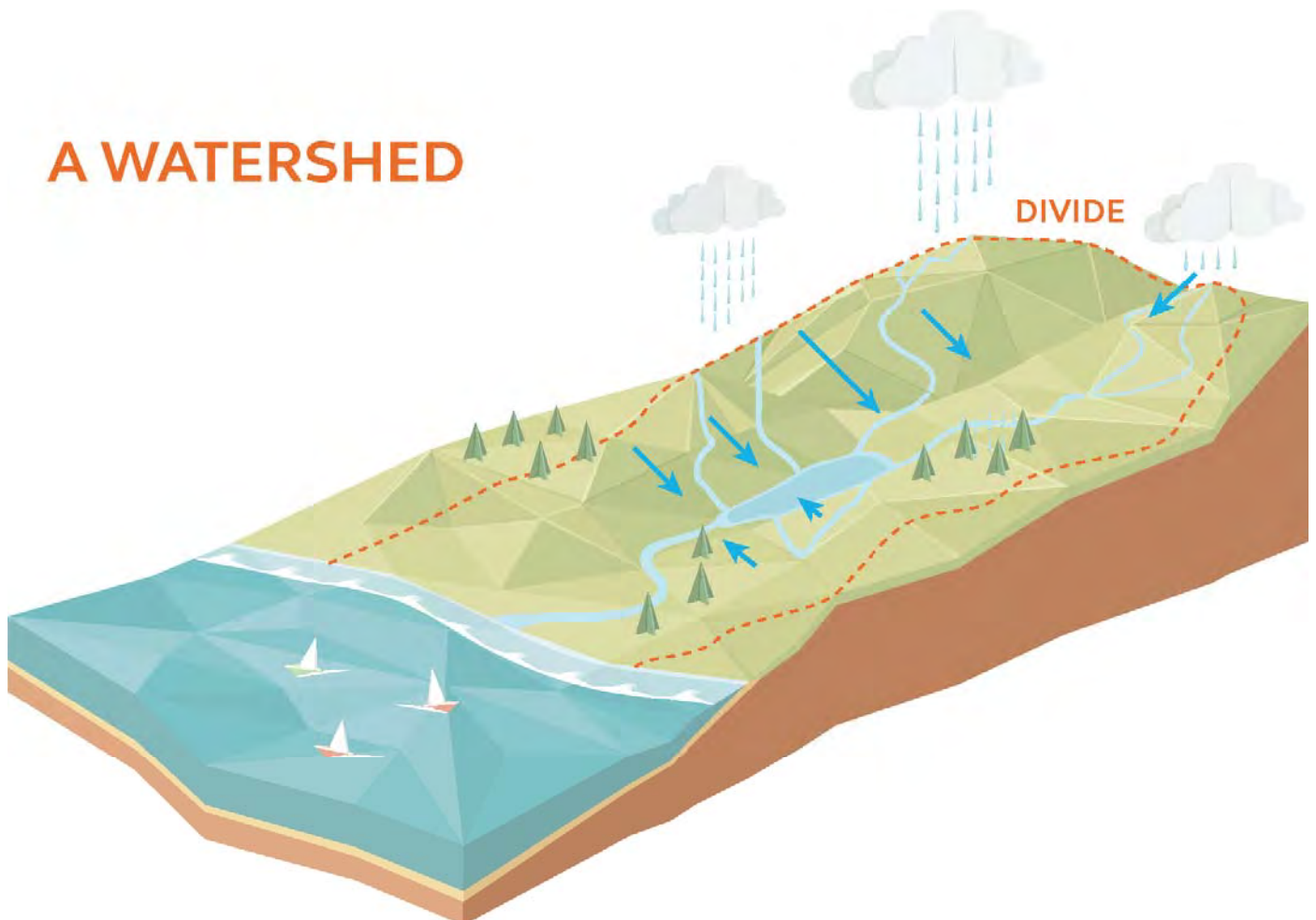
What is a watershed?

A watershed is the geographic area within the boundary of a drainage divide. The United States Geological Survey (USGS) defines a watershed as follows:

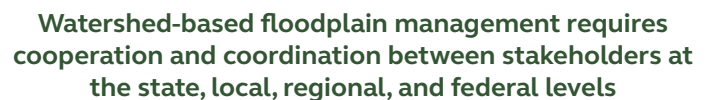
A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. The word *watershed* is sometimes used interchangeably with *drainage basin* or *catchment* (USGS 2016).

Watersheds are precipitation collectors, conceptually illustrated in the figure below.

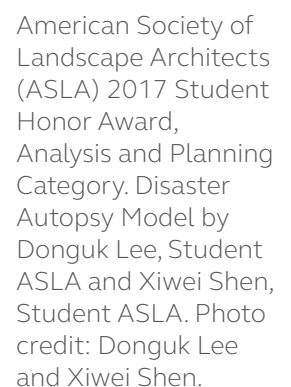
A WATERSHED



Successful watershed-based floodplain management planning requires clear delineation of responsibilities, as well as cooperation and coordination between entities at the state, local, and watershed, or regional, level.



In March of 2016, Louisiana experienced a record-setting flash flooding event with historic rainfall and river crests damaging at least 12,000 homes in the state (Allen 2016; Vagell 2016). A few months later, in August 2016, the Amite and Comite Rivers and 21 parishes in south central Louisiana experienced catastrophic flooding – 20 of which were declared federal major disaster areas. The August event was characterized by the Red Cross at the time as the “worst U.S. disaster since Hurricane Sandy” (American Red Cross 2016). Estimated loss of life for the August 2016 event was 13, with approximately 146,000 homes damaged due to flooding and economic damages exceeding \$10 billion – the seventh most expensive natural disaster in the U.S. at that time since 1978 (Broach 2016; The Advocate 2016). On average, 21 percent of affected structures had NFIP coverage, and coverage rates in some of the hardest-hit parishes were much lower (Calder 2016).



Floodplain Management Programs

What is a Program?

A program is a collection of responsibilities and projects that are managed as a group to achieve efficiencies of scale. Just as project management involves the coordination of individual tasks, program management comprises the coordination of related projects and initiatives.

Watershed-based Floodplain Management Planning

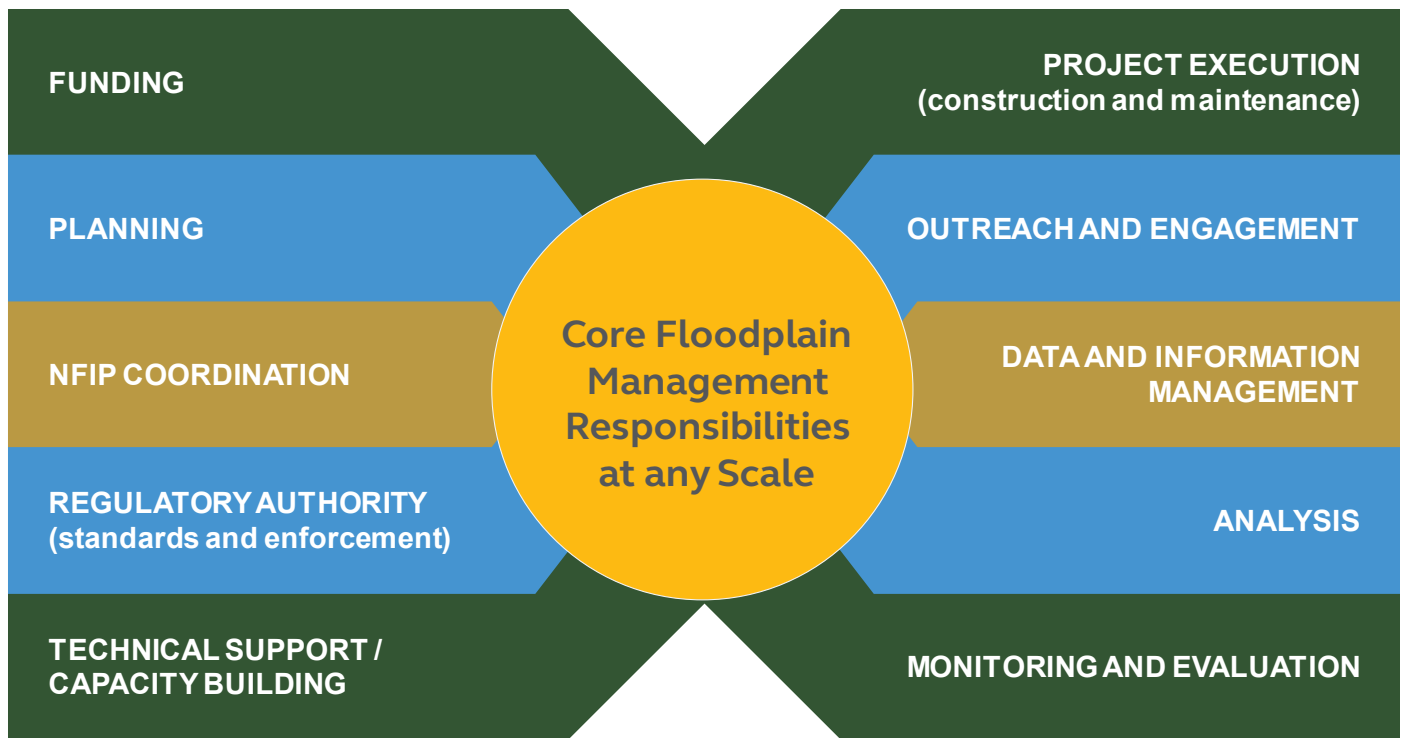
According to 44 CFR Part 59, which governs FEMA's National Flood Insurance Program, a **floodplain management program** is the "operation of an overall program of corrective and preventative measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, and floodplain management regulations" (GPO 2002a: 239). Floodplain management regulations' means "zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction" (ibid: 238).

Most floodplain management programs center around five key elements (ASFPM 2010):

1. National Flood Insurance Program (NFIP) Coordination and Compliance
2. Flood Risk Mitigation Funding and Implementation
3. Technical Assistance
4. Education and Outreach
5. Planning

In practice, these activities are not always completed by the same agency, or even at the same jurisdictional (i.e., federal, state, regional, local) level. Additionally, there are important distinctive activities that are completed within each of these five areas, responsibilities for which may be shared or divided across multiple agencies or implemented across different geographic scales and jurisdictional levels.

This list can be more practically broken into ten distinct categories of responsibility, described on the following pages in no particular order, that are generally applicable regardless of the scale and jurisdictional level at which floodplain management activities are conducted. While the details of how these responsibilities are manifested, as well as subcategories of responsibility, are expected to differ based on whether the responsibility is being met at the state, regional, or local level, the essential themes remain the same.



There are multiple sub-categories associated with each of these items

Funding

Funding responsibilities include the acquisition, obligation, allocation, and administration of funding for flood risk mitigation activities and projects. Flood risk mitigation efforts can include planning, policy, and outreach efforts, or construction projects like property acquisition, rain garden installation, creation of passive floodwalls, and implementation of storm-warning systems.

Planning

Planning involves the process of developing programs plans, projects, and measures aimed at reducing the adverse impacts of flood hazards on the community.

Regulatory Authority (standards and enforcement)

The NFIP provides minimum regulatory standards for development in the floodplain. There are additional state, regional, and local standards and policy that can, are, and should be developed and enforced related to floodplain management. Examples include stormwater ordinances, building code, and land use development codes and maps.

National Flood Insurance Program (NFIP) Coordination

The NFIP is a federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. Participation in the NFIP is based on an agreement between local communities and the Federal Government that states if a community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new and existing construction in Special Flood Hazard Areas in compliance with NFIP regulations, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The program requires federal, state, local, and property owner coordination, includes the Community Rating System (a mechanism to recognize a community's efforts to reduce risk by providing NFIP insurance discounts), and includes elements related to or involving each of the other nine categories of responsibility described herein.

Technical Support and Capacity Building

Technical support and capacity building activities are essential to ensure continued understanding of floodplain management concepts and their appropriate application amongst local and state officials with floodplain management related responsibilities. As an example, State Floodplain Management Office representatives work directly with local program administrators to review and strengthen a community's floodplain management ordinances, zoning and comprehensive planning practices, building code enforcement practices and staff resources, and provide trainings related to such topics. Workshops or one-on-one training are currently available to communities on various floodplain topics such as the NFIP, hazard mitigation, Community Rating System (CRS), and floodplain building code enforcement. The state can also help communities re-map floodplains, develop hazard mitigation plans and programs, and identify at-risk structures in the floodplain.

Project Execution (construction and maintenance)

Project execution involves the championing and management of floodplain management projects and initiatives from start to finish.

Monitoring and Evaluation

This responsibility describes the need for monitoring and evaluation of program and project maintenance and achievement of objectives over time.

Education and Outreach

Education and outreach responsibilities Includes efforts to educate citizens, engineers, consultants, developers, realtors, insurance agents, and others within the broader community regarding important floodplain management concepts, such as flood insurance rate maps, flood-proofing techniques, construction methods, best practices, and ordinance interpretation.

Data and Information Management

Complete and accurate information is the foundation for sound decision making. An effective floodplain management program should have standards, procedures, and tools in place to gather, confirm or ensure the quality of, and store essential data and information necessary for floodplain management related activities.

Analysis

Analysis responsibilities involve the processing and interpretation of information to draw conclusions necessary for appropriate planning and action. For example, the Program should involve a mechanism to understand the potential impacts of a large development on flood risk downstream in the watershed.



Photo by Robert Ingelhart. 2015. *Louisiana Cypress Tree Swamp*. ©



Photo by Jamie Tuchman. 2017. *Louisiana Marsh Pond* ©

Louisiana's Journey toward a Statewide, Comprehensive Watershed-based Floodplain Management Program

A statewide, comprehensive Watershed-based Floodplain Management Program will allow Louisiana and its various political jurisdictions to coordinate floodplain management on a watershed level consistently, using best practices statewide. Watershed-level flood management implicitly reflects and responds to hydrologic processes involved in riverine flooding. Watersheds may range in geographic size from small tributary streams to major river basins.

Louisiana's different jurisdictions have historically performed floodplain management activities in a largely uncoordinated fashion. Even departments within those jurisdictions (such as city/parish planning and zoning departments or public works) often independently regulate or undertake activities that affect the same watersheds, inadvertently failing to recognize interdependencies and the cascading impacts of those activities.

Floodplain issues in Louisiana have historically been managed within political jurisdictions, often without the mechanisms to consider the effects on other jurisdictions or the watershed on the whole. Effective floodplain management requires a paradigm shift from independent jurisdictional boundaries to management within watershed boundaries.

A comprehensive Watershed-based Floodplain Management Program will allow the State and its various jurisdictions and political subdivisions to coordinate at a watershed level and manage floodplains consistently using best practices across the State. Such a program will allow the State of Louisiana to leverage existing efforts, identify work that needs to stop, start, and continue, recognize the interdependencies inherent in floodplain management-related or relevant activities, and make significant advances in understanding, planning for, and mitigating flood risk.

There are many existing programs that aim to support floodplain management in Louisiana. These and other prior investigations and programs must be identified, coordinated, and leveraged to support effective floodplain management in the State of Louisiana.

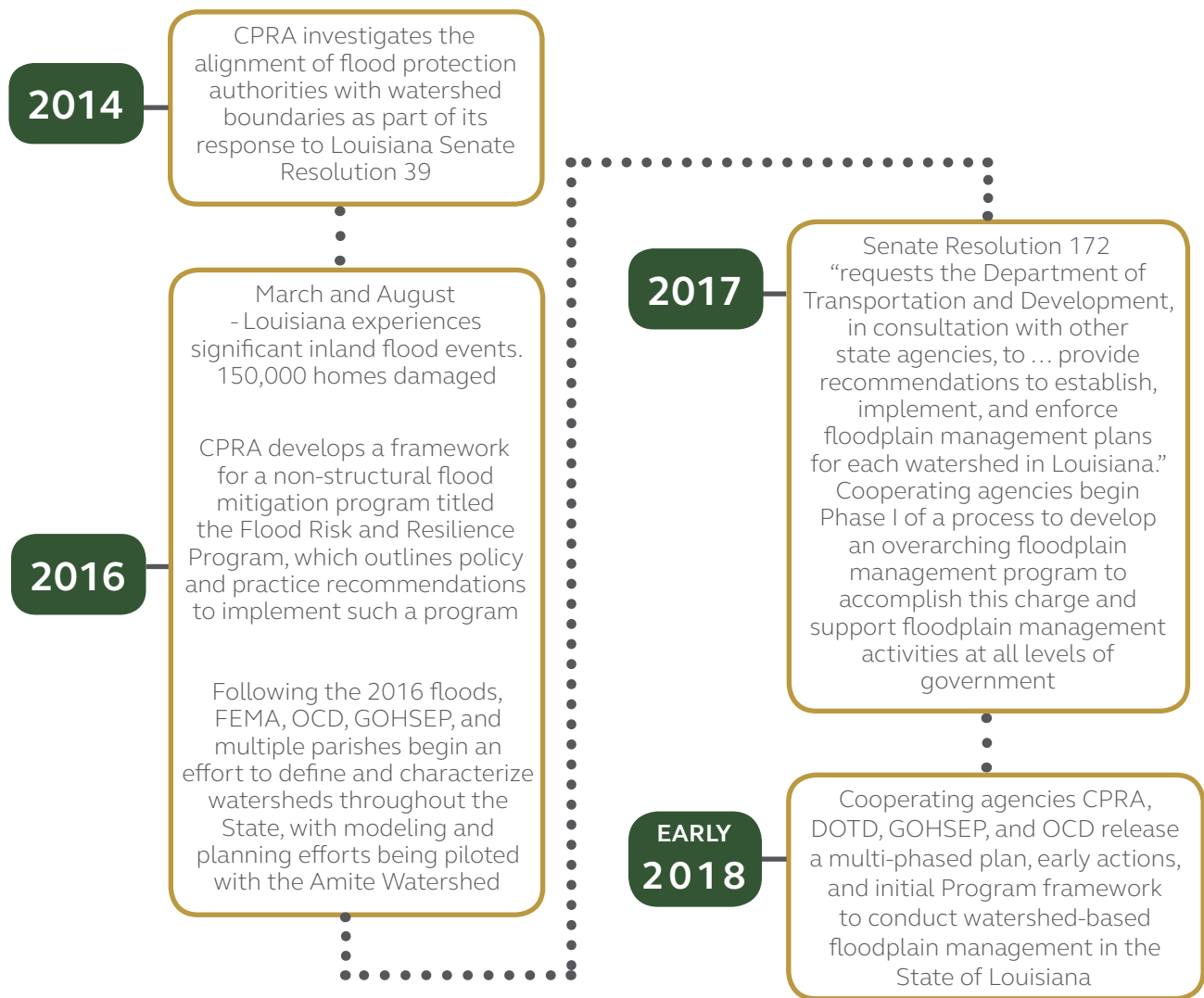
Goal: Improve floodplain management across the State.

Phase I Goal: The goal of the Phase I initiative was to develop a path forward for a statewide comprehensive Watershed-based Floodplain Management Program, to be confirmed and implemented through future phases of program development.

The State envisions a multi-agency comprehensive Watershed-based Floodplain Management Program with defined roles and responsibilities to support existing jurisdictions that affect watersheds across the State. CPRA, DOTD, GOHSEP, and OCD convened to investigate and accomplish this goal.

An effective program is defined as one that will allow the State and its various jurisdictions and political subdivisions to coordinate at a watershed level and manage floodplains consistently using best practices across the State.

Several initiatives have led up to and have been leveraged into the development of the Program:



Phase I cooperating agencies consisted of:



Coastal Protection and Restoration Authority (CPRA)



Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)



Louisiana Department of Wildlife and Fisheries (LDWF) (in early 2018)



Office of Community Development (OCD)



Department of Transportation and Development (DOTD)

Phase II will see this list expand to integrate other agencies with floodplain management related responsibilities, as needed.



Aerial of Swamp and highway in Louisiana

Phase I

Investigation Process

From November 2017 to February 2018, the cooperating agencies consisting of OCD, GOHSEP, CPRA, and DOTD, with the support of a consultant team consisting of Arcadis and Emergent Method, as well as other stakeholders, conducted a preliminary and rapid investigation to identify short- and long-term actions, as well as next step investigations and engagement efforts, to advance the establishment of a Watershed-based Floodplain Management Program. While detailed to support robust recommendations, the Phase I investigation was not exhaustive in nature. Cooperating agencies have determined that a phased approach is necessary to ensure that the right actions are taken at the right time with the right information, through an exhaustive and appropriate engagement process. The investigation consisted of five broad tasks, as follow:

1. Research and Information Gathering/Desktop Analysis
2. Gap Analysis and Recommendations
3. Program Framework Development
4. Working Implementation Plan for Recommendations and Program Framework Phase II Workplan
5. Engagement and Future Stakeholder Engagement Planning

Best Practice Examples

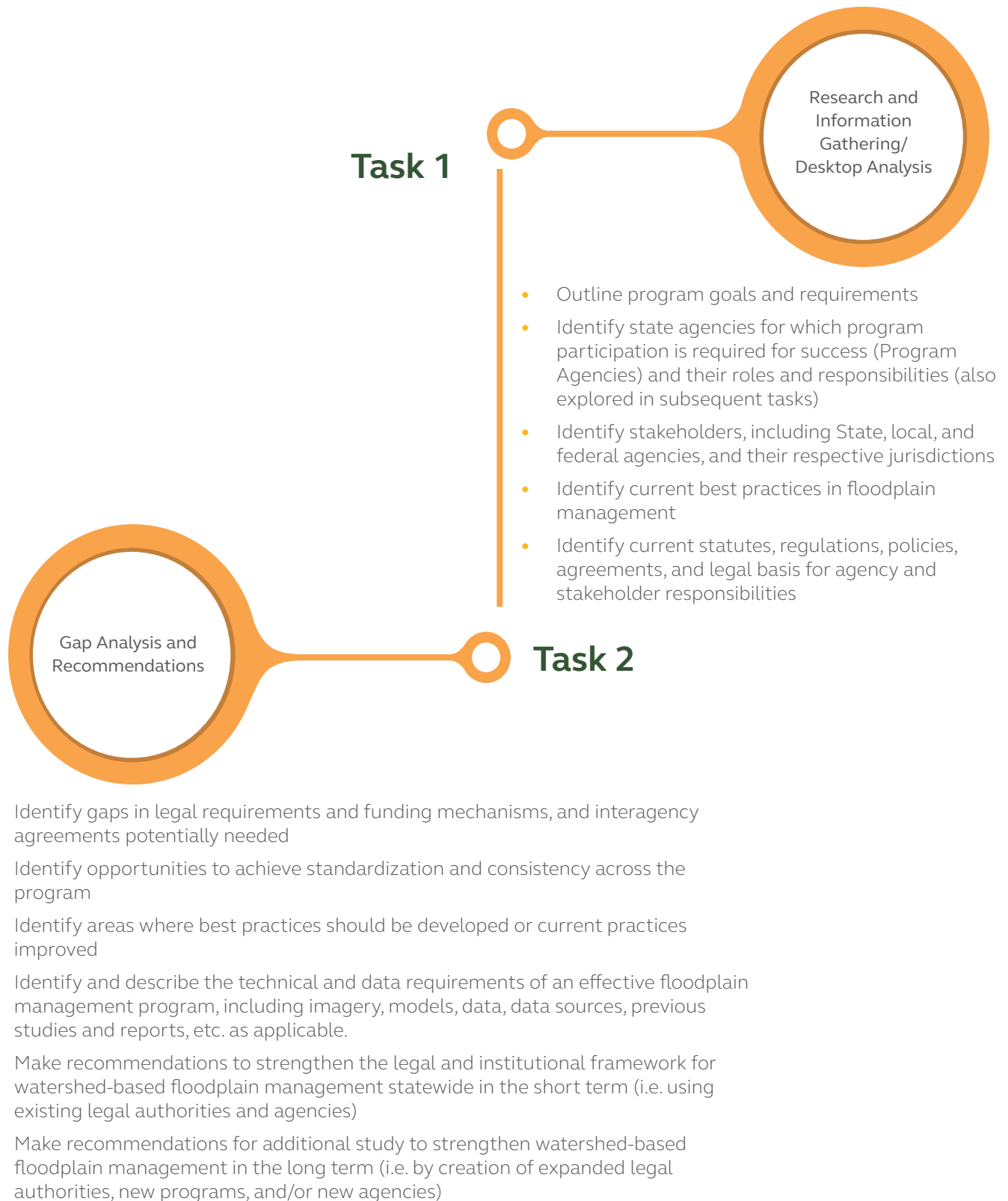
Flood is a dynamic, not static, risk. It is ever-changing as a result of factors and influence both within and outside of our control.

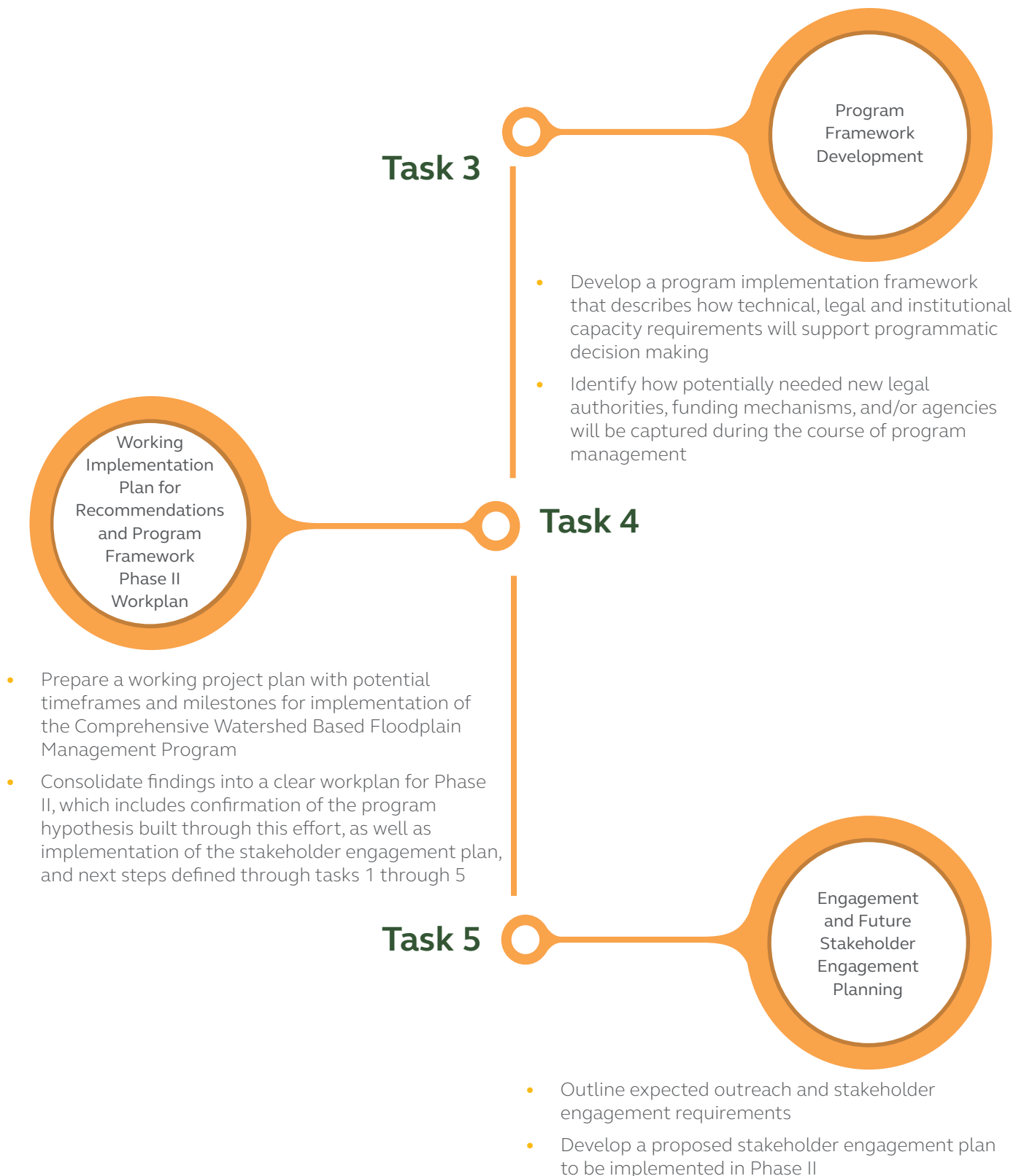
Floodplains are continually changing because development (for example, pavement, structures, and roadways) can add more people and assets to at-risk areas. Furthermore, this development can fundamentally change how much water the landscape can absorb, as well as how fast and where water moves across the landscape.

Changing climate and precipitation patterns are also changing the flood risk context within which we develop and exist.

No state, region, or community seems to have found the “silver bullet” to floodplain management. Nevertheless, a lot can be learned from observing and investigating floodplain management practices across the nation and in other countries. Best practices captured through Phase I research are described throughout this report, and will be expanded and refined through Phase II and beyond. The main body of the report includes brief summaries of these case studies, with greater detail included within Appendix A.


This Phase I report provides the baseline to get a comprehensive and coordinated program going. The program and project plan will be modified as the program is implemented.





Phase 1 Investigation





The Phase I investigation crossed four layers of floodplain management that must be in alignment to progress the state of Louisiana to effective watershed-based floodplain management:

LAYER 1. STATE FLOODPLAIN MANAGEMENT PROGRAM

- Identifies prescribed and possible roles and responsibilities of the state related to floodplain management
- Provides example best practices from other states, based on Phase I research and interviews
- Clarifies key findings and recommendations

LAYER 2. FLOODPLAIN MANAGEMENT PLANNING

- Defines floodplain management
- Identifies DRAFT contents and specifications of an effective floodplain management plan
- Clarifies required responsibilities and actions to develop, implement, and enforce a floodplain management plan at any scale
- Provides example best practices from other states, based on Phase I research and interviews

LAYER 3. WATERSHED-BASED FLOODPLAIN MANAGEMENT

- Identifies the benefits of a watershed-based floodplain management program
- Identifies the possible responsibilities of a floodplain management group, organization, or entity operating at the watershed-level
- Explores existing watershed-based planning initiatives within the State of Louisiana
- Provides potential watershed-based geographical and planning configurations
- Provides example best practices from other states, based on Phase I research and interviews

LAYER 4. TECHNICAL APPROACHES, CAPABILITIES, AND DATA

- Documents the technical approaches, capabilities, and data needed for effective floodplain management at any scale
- Documents existing floodplain management data and technical approaches currently applied in the state of Louisiana
- Preliminarily identifies gaps in existing floodplain data and technical approaches
- Recommends further action needed to obtain additional information in future phases and to address data gaps
- Provides example best practices from other states, based on Phase I research and interviews





LAYER 1

STATE FLOODPLAIN MANAGEMENT PROGRAM

- Identifies prescribed and possible roles and responsibilities of the state related to floodplain management
- Provides example best practices from other states, based on Phase I research and interviews
- Clarifies key findings and recommendations

Current Floodplain Management Related Responsibilities, Authorities, and Initiatives

Authority	Initiative/Program	Description
CPRA	Flood Risk and Resiliency Program (2017 Coastal Master Plan)	Nonstructural program included in the legislatively-approved 2017 Coastal Master Plan; focus on reducing risk to existing building inventories in the Louisiana Coastal Zone through floodproofing, elevating, or acquiring structures, as well as through encouraging flood risk awareness and supporting state and local policies involving coastal resilience
GOHSEP	Hazard Mitigation Planning	Includes local and state hazard mitigation plans required by FEMA in order to be eligible for FEMA Hazard Mitigation Assistance Programs
	Public Assistance	Includes support provided by FEMA to implement hazard mitigation measures following a Presidentially declared disaster
	Hazard Mitigation Grant Program	Includes support provided by FEMA to implement hazard mitigation measures following a Presidentially declared disaster
	Predisaster Mitigation Program	Provides funds to reduce the overall risk to covered populations and structures from future hazard events, with funding available for hazard mitigation planning and projects on an annual basis; grants funded by Congressional appropriations, managed by FEMA, and administered through GOHSEP
	Flood Mitigation Assistance	Provides funding for reducing or eliminating long-term risks of flood damage to structures insurable under the NFIP, with funding available on an annual basis; grants funded by Congressional appropriations, managed by FEMA, and administered through GOHSEP
	Louisiana Resilient Recovery Program (LARR)	The Louisiana Resilient Recovery (LARR) is an initiative led by GOHSEP and OCD with support from FEMA. The purpose is to help communities in Louisiana's watersheds identify resilient recovery strategies and coordinate technical assistance at the watershed level.
OCD	Community Development Block Grant Program	Administered by OCD and structured to be flexible in terms of state-designated priorities
	CDBG - Disaster Recovery Grants	Appropriated to Louisiana by Congress and administered by OCD, featuring recovery funds for recovery from the 2005, 2008, 2012, and 2016 storms
	Local Government Assistance Program (LGAP) including Community Water Enrichment Fund	Provides for Louisiana municipalities and parishes to apply for funds that apply to a broad range of activities, including local drainage projects with grants capped at \$100,000 per parish
	Louisiana Strategic Adaptations for Future Environments Framework (LA SAFE)	Aimed at adapting Louisiana Coastal Zone for future sea level rise and increased storm surge flooding impacts with a focus on resilience planning and to complement CPRA's Coastal Master Plan
	Louisiana Resilient Recovery Program	Initiated by FEMA and co-led by GOHSEP and OCD at state level; pilot program occurring in three watersheds (Vermillion, Amite, and Boeuf) with plans to expand to a statewide program.
DOTD	State NFIP Coordination and Education/Community Assistance Program - State Support Services (CAPP-SSE)	Maintained by approximately 3-5 staff within DOTD who generate and maintain the Louisiana Floodplain Management Desktop Reference and coordinate with local floodplain managers on NFIP advisory issues
	Louisiana Statewide Flood Control Program	Maintained by minimal staff within DOTD who administer funds through the State Transportation Trust Fund; grants awarded through multi-agency committee project selection process with funding cap of \$10 million that will increase to \$20 million in next fiscal year
	Watershed Modeling Program Management	Includes multiple efforts ongoing across the state, primarily through the Amite River Basin model, CPRA flood studies, and local efforts such as the East Baton Rouge Parish Stormwater Master Plan and Ascension Parish drainage models
DEQ	Administration of water quality certifications (WQCs)	Section 401 of the Clean Water Act requires the certification of all federal licenses and permits in which there is a "discharge of fill material into navigable waters". The certification is used to determine whether an activity, as described in the federal license or permit, will impact established site specific water quality standards
LDWF	Habitat Section	Includes reviewing and providing comments and mitigation recommendations on all permits sought from state and federal environmental regulatory agencies, primarily LDNR and USACE.
	Scenic Rivers	Administers a permitting system for activities that have potential for significant ecological impact to designated Natural and Scenic Rivers, as well as a system of monitoring, surveillance, investigation, and enforcement for the purpose of ensuring compliance with the Act

This overview of floodplain management roles and responsibilities, as they are presently understood, is intended to serve as a high-level description of agencies' responsibilities as they relate to floodplain management, particularly for those functions established within state law or policy. This section summarizes each state agency's charge and provides a summary table that lists the established authority and funding sources, where known.

Establishment	Funding Mechanism
RS 49:214.6.1 – Coastal Protection and Restoration Authority RS 38:90.4 – Methodology for flood-control project evaluation	No current dedicated funding source
RS 29:726 – GOHSEP authority and responsibilities 44 CFR Part 201 Disaster Mitigation Act of 2000 – Section 322	FEMA HMA funding allocated to the State as applicant, with subapplicant allocations distributed. Grant funding is often not adequate to complete planning and is often locally sourced
RS 29:726 – GOHSEP authority and responsibilities Disaster Mitigation Act of 2000 – Section 322	FEMA post-disaster recovery and mitigation funding allocated to the State as applicant, with subapplicant allocations
RS 29:726 – GOHSEP authority and responsibilities Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act	Post-disaster FEMA HMA funding allocated to the State as applicant, with subapplicant allocations distributed
RS 29:726 – GOHSEP authority and responsibilities Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act	Annual FEMA HMA funding allocated to the State as applicant, with subapplicant allocations distributed
RS 29:726 – GOHSEP authority and responsibilities Section 1366 of National Flood Insurance Act of 1968	Annual FEMA HMA funding allocated to the state as applicant, with subapplicant allocations distributed
RS 29:726 – GOHSEP authority and responsibilities 44 CFR Part 201 Disaster Mitigation Act of 2000 – Section 322	FEMA Hazard Mitigation Grant Program; HUD allocated through State CDBG Program and specified within State Action Plan; Funded initially through mix of HMGP funds and \$9.8 million in technical assistance funds for actions such as watershed modeling
RS 49:663.1 – Community Development Block Grant HUD Act of 194: Community Development Laws and Regulations, Title 42-Chapter 69-Sec. 5304	HUD allocated through State CDBG Program
RS 49:663.1 – Community Development Block Grant	HUD allocated to States through subrecipients or subgrantees
RS 49:663.2 – Local government assistance RS 39:100.81 – Community Water Enrichment Fund Administrative Procedures Act of November 2006: Title 4, Part VII, Chapter 23	State Capital Outlay
RS 49:663.1 – Community Development Block Grant	HUD allocated through State CDBG Program
RS 29:726 – GOHSEP authority and responsibilities 44 CFR Part 201 Disaster Mitigation Act of 2000 – Section 322	FEMA Hazard Mitigation Grant Program; HUD allocated through State CDBG Program and specified within State Action Plan; Funded initially through mix of HMGP funds and \$9.8 million in technical assistance funds for actions such as watershed modeling
RS 38:84 – Parishes and municipalities authorized to comply with federal flood insurance act RS 36:508 – Office of engineering; functions; chief engineer; powers and duties	In part, CAPP-SSSE
RS 38:90.1 – Statewide Flood Control Program RS 38:90.2 – Provides relative to the Statewide Flood-Control Program RS 36:508 – Office of engineering; functions; chief engineer; powers and duties	State Transportation Trust Fund
RS 38:84 – Parishes and municipalities authorized to comply with federal flood insurance act RS 36:508 – Office of engineering; functions; chief engineer; powers and duties RS 49:214.6.2 – Functions and responsibilities; coastal activities RS 38:83 – Governor authorized to enter contracts RS 38:91 – Creation of the Louisiana Water Resources Information Center	Primarily funded by OCD with DOTD and CPRA serving in technical advisory roles
Louisiana Administrative Code, Title 33 (Environmental Regulatory Code): Part IX, Chapter 11.	DEQ does not receive any state general fund dollars. Most of their funding comes from fees received through the Environmental Trust Fund and EPA grant programs such as the Performance Partnership Grant Program and 319 Grant Program.
R.S. 56:1 - Establishmetn of LDWF and Authorites	LDWF does not receive any state general fund dollars. Most of the Department's funding comes from statutory dedications (including the constitutionally created Conservation Fund), federal funds, and interagency transfers.
R.S. 56:1841(B) - Louisiana Natural and Scenic Rivers Act	

Coastal Protection and Restoration Authority

According to Louisiana Revised Statute (R.S.) 49:214.6.1, the Coastal Protection and Restoration Authority (CPRA) is “...responsible for the implementation and enforcement of the Master Plan and Annual Plan...” and “...shall implement the integration of hurricane protection, storm damage reduction, flood control, infrastructure, and coastal protection and restoration efforts in accordance with the Master Plan and Annual Plans” (LA State Legislature 2011e). The Flood Risk Resilience Program (FRRP) is the program through which the nonstructural projects and corresponding policy recommendations suggested in Louisiana’s Comprehensive Master Plan for a Sustainable Coast (CPRA 2017b) will be implemented.

CPRA is legislatively mandated to update its coastal Master Plan every 5 years. To date, the plans have developed a suite of technical modeling tools focused on understanding future flood risk posed by the combination of land loss and sea level rise. The modelling tools draw from an array of existing data collection and aggregation initiatives, namely CPRA’s SystemWide Assessment and Monitoring Program (SWAMP). The plans adopt a 50-year analysis horizon and have included efforts to prioritize projects and dollars within the coastal zone, including structural and nonstructural flood risk reduction measures.

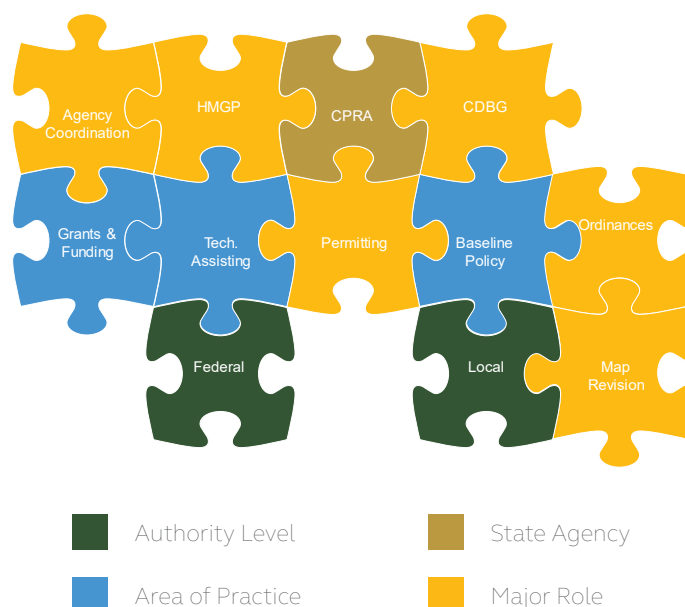
Key findings:

- Although there are no project procurement or execution tasks overseen by CPRA relative to nonstructural risk reduction efforts, the need for addressing recurring issues of coastal flooding have prompted the inclusion of the FRRP in the 2017 Coastal Master Plan. The FRRP is an existing program that provides for nonstructural projects and related policy measures through which watershed-focused plans can feed into – both within the Louisiana Coastal Zone under current program and agency authorization as well as part of a statewide focus on flood hazard mitigation.
- Although encumbered with relatively minimal funding and restricted by the home-rule charter, the programmatic authority for selecting and implementing nonstructural projects that exists through CPRA’s legislatively-mandated planning efforts represents an area of opportunity for directing priorities and funding to additional nonstructural flood control projects within the Louisiana Coastal Zone.

The System-Wide Assessment and Monitoring Program (SWAMP) has been envisioned as a long-term monitoring program to ensure a comprehensive network of coastal data collection activities is in place to support the development, implementation, and adaptive management of the coastal protection and restoration program within coastal Louisiana. The Coastwide Reference Monitoring System (CRMS) and Barrier Island Comprehensive Monitoring (BICM) programs predate SWAMP and have been a major data source for previous Coastal Master Plans. These programs are now rolled into the SWAMP umbrella.

CPRA, with assistance from the Water Institute of the Gulf, has begun to develop programmatic monitoring plans on a coast wide scale and basin wide monitoring plans that will incorporate the elements of the programmatic plan with specific data collection activities designed to capture effects within basins. Monitoring plans were developed for the Barataria Basin and Pontchartrain Regions (includes Breton Sound, Pontchartrain and Mississippi River Delta Basins) for both the natural and human systems using an iterative process to identify the monitoring variables, objectives, and sampling design. The monitoring variables and objectives identified fall under the general categories of weather and climate, biotic integrity, water quality, hydrology, physical terrain, population and demographics, housing and community characteristics, economy and employment, ecosystem dependency, residential properties protection, and critical infrastructure and essential services protection (Hijuelos and Hemmerling 2016).

CPRA Operational Characterization



*For the purposes of this report, the reference of “CPRA” is intended to be inclusive of the Governor’s Office of Coastal Affairs (GOCA).

Governor's Office of Homeland Security and Emergency Preparedness

The primary responsibilities of the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) are state-level homeland security and emergency response, recovery, and mitigation planning and project funding administration. This agency supports and provides oversight of local / multi-jurisdictional emergency and state and local / multi-jurisdictional hazard mitigation plan development through technical assistance, interagency coordination of emergency response, recovery, and mitigation efforts, administration of the FEMA Public Assistance Program, and administration and advising the governor in the disbursement of FEMA Unified Hazard Mitigation Assistance Program funds, including the Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance (FMA) program, and the Pre-Disaster Mitigation (PDM) program. In the fund disbursement capacity, GOHSEP works with the Office of Community Development (OCD) to manage significant funding allocations for post-disaster and hazard mitigation planning and projects.

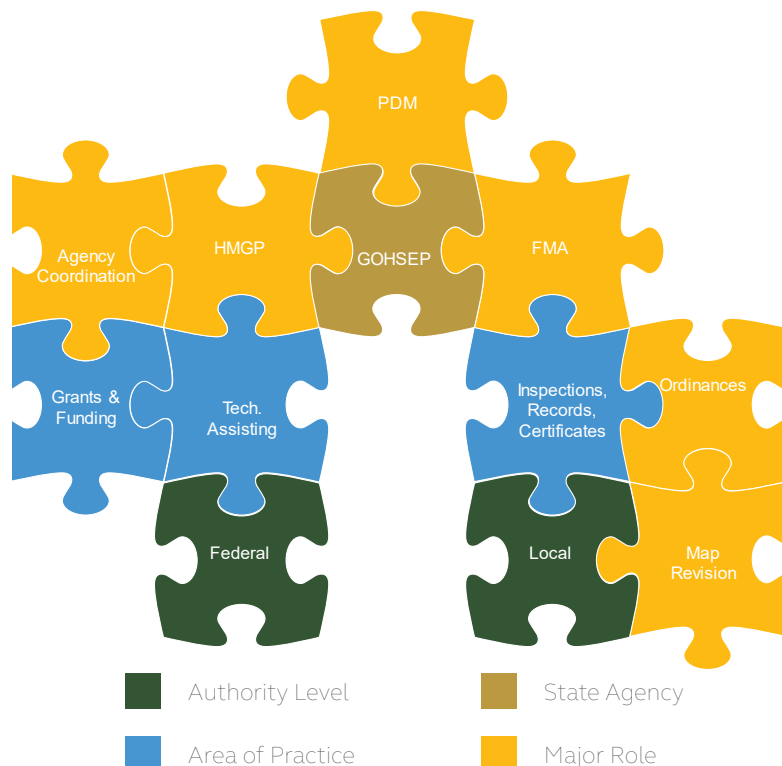
Given that any state-level floodplain management framework will require integration with local or regional project selection and funding decisions, GOHSEP operates with a vested authority that can provide financial incentives for regional or watershed-level floodplain management strategies, particularly projects that meet higher standards than those established at

the state level (GOHSEP 2018a). GOHSEP additionally provides significant technical support, outreach, and trust building with other state, local, and regional entities in its current capacity. These efforts and relationships can be leveraged to further increase resilience at the watershed level within the state.

Key findings:

- As the state disbursement coordinator for federal HMGP funds, GOHSEP functions as one of two state agencies (with OCD being the other) that manages significant funding allocations for post-disaster and hazard mitigation planning or projects. Given any state-level floodplain management framework will require integration with local or regional project selection and funding decisions, GOHSEP operates with a vested authority that it can utilize to incentivize candidate project submissions focused on addressing floodplain management issues at a regional or watershed level.
- Public assistance is an important piece of current state responsibilities given it is specifically for recovery and is typically not maximized when it comes to mitigation. This program and funding mechanism offers the potential to train state employees to advocate on behalf of locals to maximize mitigation and flexible use funds.

GOHSEP Operational Characterization



Figures in the following sections are intended as simple characterizations of the presently understood roles and areas of practice of each state entity considered in this analysis.

Office of Community Development

The OCD Disaster Recovery Unit (DRU) is both a disaster recovery and a resilience agency (LA DOA 2018a). Similar to the vested statutory authority placed in GOHSEP with respect to HMA allocations, OCD administers billions of dollars in disaster recovery programs – primarily CDBG funds – under the oversight of U.S. Department of Housing and Urban Development (HUD) in compliance with the action plan attached to the corresponding disaster that has received federal funding through congressional allocations.

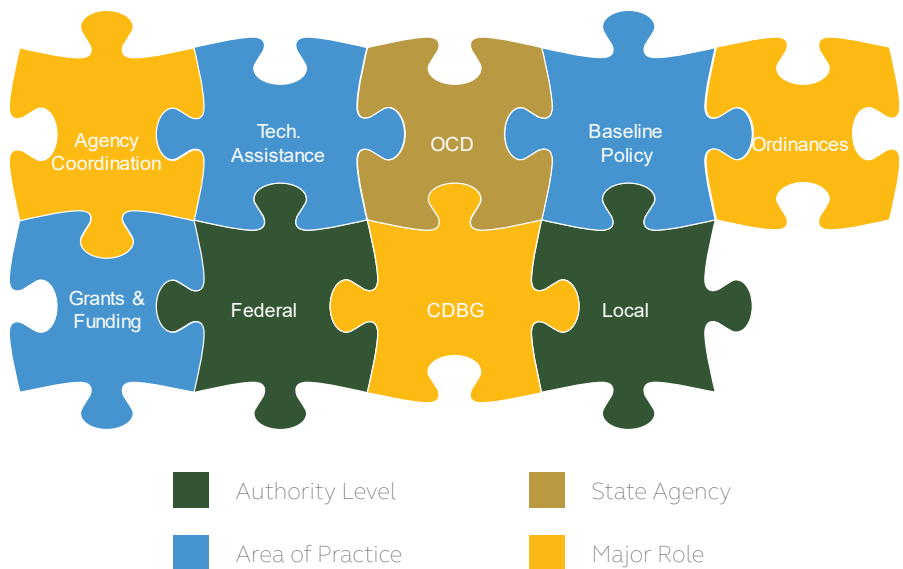
OCD additionally supports engagement and planning efforts. Prior to the initiation of Phase I, OCD was working in coordination with GOHSEP to develop pilot watershed-based planning approaches. OCD supports initiatives intended to provide improved quality of living and expanded economic development opportunities to the citizens of the state, most notably in low to moderate income areas.

In order to access CDBG recovery funds, OCD is required to submit Action Plans and Action Plan Amendments to describe its proposed use of funds for program execution.

Key findings:

- Similar to the statutory authority of GOHSEP with respect to hazard mitigation grant allocations to projects, OCD administers billions of dollars in disaster recovery programs – primarily CDBG funds – under the oversight of HUD and in compliance with the action plan associated with the disaster that has received federal funding through congressional allocations.
- OCD is in a unique position to leverage engagement efforts across the state at all levels to support improved floodplain management and the implementation of a watershed-based approach to floodplain management.

OCD Operational Characterization



Louisiana Department of Transportation and Development

The primary floodplain management responsibilities of the Louisiana Department of Transportation and Development (DOTD) are rooted in management of the National Flood Insurance Program (NFIP). The Cooperating Technical Partner (CTP) Program and the Community Rating System (CRS) are both included under the NFIP umbrella. The CTP Program is currently funded at 100% to enable the State of Louisiana to determine the direction and selection of Statewide Watershed Mapping for Development of Flood Insurance Rate Maps and Flood Data. The CRS Program currently includes over 80 of the flood insurance policies statewide for communities enforcing higher standards and saving Louisiana flood insurance policyholders \$38 million dollars annually. Management of the NFIP and CRS are funded with a 75/25 FEMA/State match.

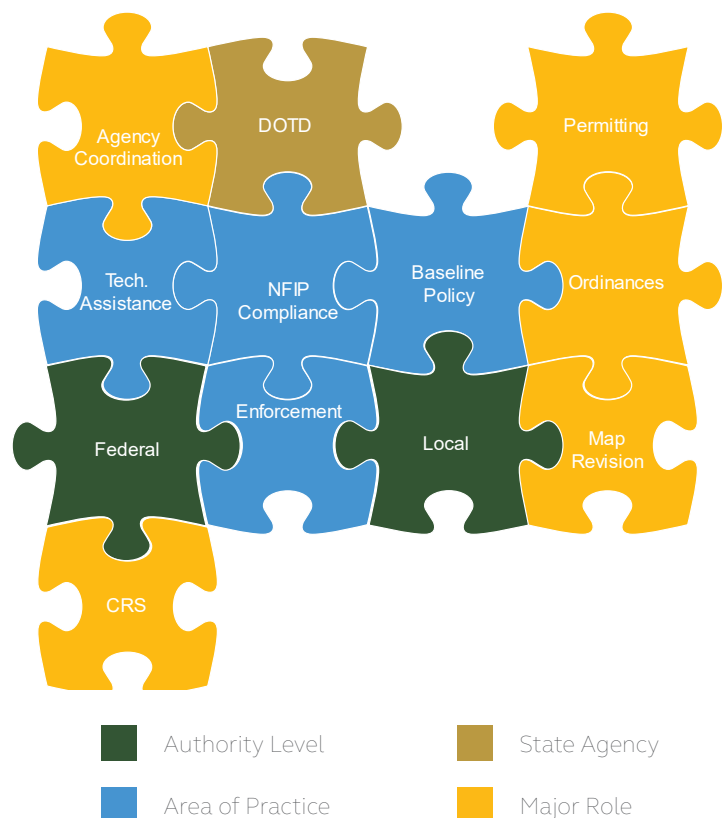
DOTD also manages the Statewide Flood Control Program, which provides funding through the Transportation Trust Fund. The program is designed to reduce existing flood damages through an active, innovative approach that considers both structural and non-structural solutions. Eligible projects must reduce existing flood damages without adversely affecting upstream or downstream flooding or encouraging additional development in flood-prone areas. The program provides up to 90% of the construction cost of non-federal projects or up to 70% of the non-federal share of federal projects. The program has historically been funded with an annual budget of approximately \$10 million, but this amount is expected to be increased to \$20 million for Fiscal Year 2019.

Many of DOTD's floodplain management responsibilities were performed by the former Louisiana Department of Public Works (DPW) but were transferred to DOTD when it assumed DPW's functions in the mid-1980s. Limited resources are allocated to DOTD to fund flood control projects, thus the agency's ability is limited to direct resources to support responsible statewide floodplain management and enforcement efforts. (LaDOTD 2018a).

Key findings:

- The manner in which the agency is funded for its functions and the manner in which it provides technical oversight and support on key programs, such as the Statewide Flood Control Program or NFIP, lends itself to potentially serving a similar role as part of a Statewide Floodplain Management Program.

DOTD Operational Characterization



Louisiana Department of Environmental Quality

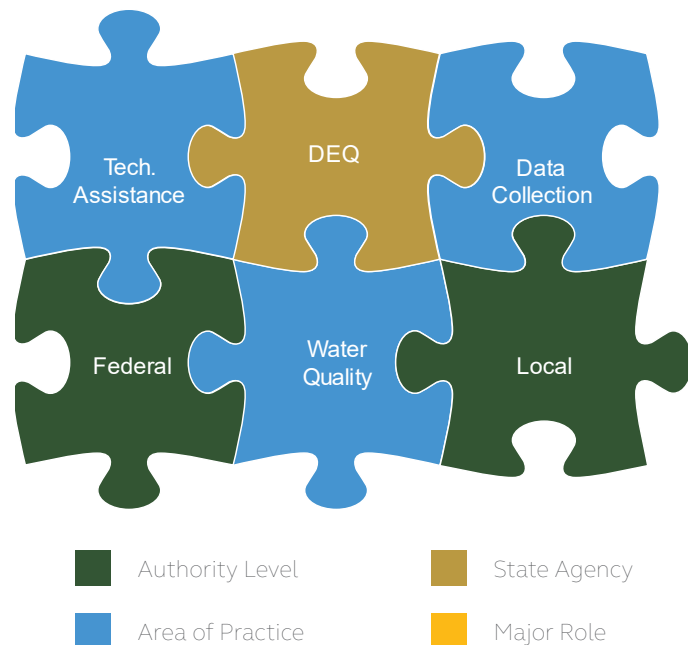
The Louisiana Department of Environmental Quality (DEQ) has minimal involvement with floodplain management, primarily through their Office of Assessment and Water Quality Certifications. The work DEQ executes with local jurisdictions involves identifying impaired watersheds and determining how they are meeting U.S. Environmental Protection Agency (USEPA) water quality standards. In instances where water bodies are identified as impaired, DEQ conducts a study that places requirements on the water bodies, with the goal of decreasing the pollutants in the water through “Watershed Implementation Plans,” which outline a holistic plan for addressing water quality issues in the watershed. DEQ also administers water quality certifications (WQCs) within the state, which are used to determine whether an activity (as described in the federal license or permit) will impact established site-specific water quality standards.

Key Findings:

- DEQ’s involvement with floodplain management is minimal, primarily taking place through their Office of Assessment and Water Quality Certifications as noted in Louisiana Administrative Code, Title 33 (Environmental Regulatory Code): Part IX, Chapter 11 (DEQ 2017).
- The work DEQ executes with local jurisdictions, such as Tangipahoa Parish, involves identifying impaired watersheds and determining how they meet U.S. Environmental Protection Agency (USEPA) water quality standards. In instances where water bodies are identified as impaired, DEQ conducts a study that places requirements on the water bodies with the goal of decreasing the pollutants in the water through Watershed Implementation Plans, which outline a holistic plan for addressing water quality issues in the watershed.
- DEQ’s interactions with other agencies relative to watershed management primarily include USACE, DNR, and DOTD. With DOTD, locals that participate in flood control projects have to determine a project’s impact on water quality in four parishes due to federal regulations involving large urbanized areas (examples include East Baton Rouge and Jefferson Parishes) through the municipal separate storm sewer systems (MS4) permitting process.
- There are potential avenues to include floodplain management with water quality management, such as in New Orleans where DEQ implemented flood control projects that include green infrastructure to require MS4 permits.

- DEQ does not receive any state general fund dollars. Most funding comes from fees received through the Environmental Trust Fund and USEPA grant programs, such as the Performance Partnership Grant Program and the 319 Grant Program. After the 2016 floods, the USEPA indicated that 319 Grant funding would be eligible for flood control projects, but the current state allocation is approximately \$2 to 3 million annually, divided between DEQ and USDA, with 319 Grant Program funding decisions made via congressional appropriations. If any such funds were to be designated for flood control projects, DEQ would need to be allocated to the appropriate agency, since DEQ has indicated that this falls outside its mission.
- DEQ has some flow and water discharge data that it captures and manages. DEQ maintains a centralized data system that could potentially be leveraged toward a data clearinghouse (LDEQ 2018).

DEQ Operational Characterization



Good News

While there are a number of findings rooted in organizational and industry best practices within this Layer 1 that will inform the ongoing development and refinement of the state's floodplain management program, there are a number of initiatives and actions currently underway that will benefit a statewide watershed-based approach and help to catalyze related recommendations.

- The four Phase I cooperating state agencies have already begun coordinating with other states, such as Texas, to share best practices, mutually improve floodplain management efforts, and build longterm momentum into statewide programs, policies, and incentives as a direct result of recent natural disasters.

- Prior to the initiation of this Phase I analysis, the state began working in earnest toward the formation of an entity or framework to guide policy and funding decisions relative to watershed-based floodplain management, planning, and flood risk mitigation. These early actions led by Gov. Edwards and OCDDRU included, among other actions, the concept of cooperating state agencies to achieve key outcomes related to collaboration and coordination cross political boundaries and surmount related barriers.

The positive momentum created through these discussions and planning efforts cannot be understated in providing the state and agencies involved in floodplain management responsibilities with prior context and analysis to more rapidly advance planning work and begin implementing the catalyst actions contained within this Phase I report.



Tchefuncte River in Louisiana

Louisiana Department of Wildlife and Fisheries (LDWF)

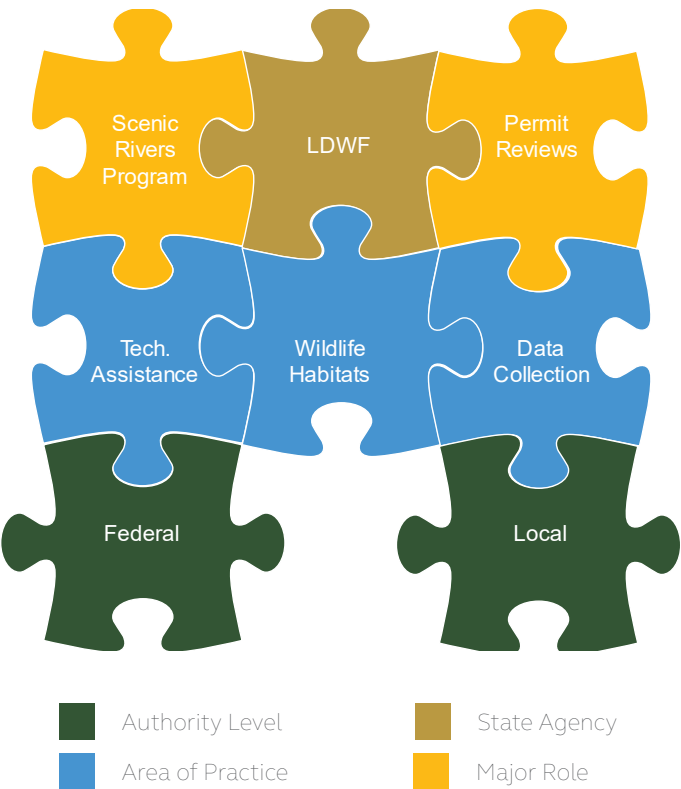
The Louisiana Department of Wildlife and Fisheries (LDWF) is charged with the responsibility of managing and protecting Louisiana's abundant natural resources. LDWF is concerned with Louisiana's renewable fish and wildlife resources as well as their supporting habitats including Louisiana's riparian and coastal wetlands as well as our streams, rivers, and bayous. LDWF gathers and compiles data on certain natural resources as well as on the potential impacts of human activities on those resources. These data, as well as technical assistance, are provided to regulators, planners, and decision-makers in advance of execution of projects in order to avoid, minimize, and/or mitigate any adverse environmental impacts. Staff members in LDWF's Habitat Section also receive, review, and provide comments and mitigation recommendations to roughly 1,500 state and federal permit applications for activities impacting wetlands and other waters of the United States (WOTUS) each year.

LDWF is also charged with the administration of the Louisiana Natural and Scenic Rivers Act (LA State Legislature 2014b). Since 1970, the Scenic Rivers system has been administered for the purposes of preserving, protecting, developing, reclaiming, and enhancing the wilderness qualities, scenic beauties, and ecological regime of certain free-flowing streams or segments thereof. There are currently approximately 80 streams and/or stream segments in the system constituting an estimated 3,100 linear miles of Louisiana's streams, rivers, and bayous.

Due to associated ecological impacts, clearing and snagging, and dredging are prohibited on certain streams. Clearing and snagging results in the loss of aquatic organism habitat (including fisheries habitat), higher energy and erosion, decreased oxygenation, reduced water quality, etc. and can lead to channel incision and disconnection from the floodplain. Dredging results in even greater loss of aquatic organism habitat, lowering of water quality, disconnection from the floodplain and loss of valuable functions and may actually increase downstream flooding and reduce channel stability. However, it should be noted that the Scenic Rivers clearing and snagging prohibition does not prevent the removal of certain logs, debris, logjams, or blockages that pose a threat to property, prevent navigation, or litter waterways. Furthermore, a number of system streams have been provided exceptions to the clearing and snagging and dredging prohibitions.

The Act requires that LDWF administer a permitting system for activities that have potential for significant ecological impact to designated Natural and Scenic Rivers, as well as a system of monitoring, surveillance, investigation, and enforcement for the purpose of ensuring compliance with the Act.

LDWF Operational Characterization



Other Key Legal Authority Considerations with Associated Recommendations

In addition to the responsibilities vested in state agencies through existing statutes, local jurisdictions maintain key responsibilities that represent potential challenges or areas of opportunity to explore relative to statewide floodplain management.

Urban drainage

Historically a local issue in Louisiana, the management of drainage, per Louisiana R.S. 33:1236, is a power vested in “police juries and other parish governing authorities” (LA State Legislature 2011a). One inherent weakness in any watershed-based floodplain management plan will be that few mechanisms exist for the state to either incentivize or require maintenance of channels via clearing, snagging, and dredging. Presently, a considerable amount of local drainage entities in Louisiana do not possess the funding or capability to perform these actions unilaterally.

In addition, most major drainage pathways in the state are controlled by multiple jurisdictional bodies, who may or may not communicate effectively within a watershed. Some entities, such as the Acadiana Regional Planning Commission, have been established to generate the cross-boundary lines of communication and cooperation required for effective watershed management.

State flood damage prevention regulations

Currently, there are limited minimum standards prescribed by the Louisiana State Uniform Construction Code (R.S. 40:1720.21 – 1730.40) to which new construction or reconstruction must adhere (LA State Legislature 2011d). While all local jurisdictions are required to comply with these state-level code building requirements, there are limited standards that govern consistent and appropriate development at a local level within the floodplain, although the mechanism exists through this code to do so. Additionally, this lack of consistent building standards is augmented by the requirement that all state agencies, including public and quasi-public agencies of the state, comply with all parish or municipal ordinances, rules, and regulations, including zoning and land use regulations (R.S. 38:84.1) (LaDOTD and DHS/FEMA 2008). This is true for all state-level actions with the exception of construction and maintenance of bridges and highways. However, in spite of Louisiana’s home-rule charter system, which grants a substantial amount of immunity to parish and municipal governments to state intrusion, the state uniform code represents one area in which local governments are obligated to adopt prescribed standards. Encouragement of the LSUCCC, on the part of state agencies, to pursue an amendment for higher minimum standards (e.g. freeboard) presents one potential opportunity to draw parish codes and regulations into deeper consistency with the 2017 Coastal Master Plan.

Section 404 of the Clean Water Act / Section 10 of the Rivers and Harbors Act

The National Environmental Policy Act (NEPA) requires all federal agencies to evaluate major federal actions and inform decision makers and the public of the likely environmental consequences of proposed projects and federal actions and alternatives. Major federal actions that most often trigger NEPA review for proposed projects fall under Section 404 or Section 10 jurisdiction. Section 10 of the Rivers and Harbors Act of 1899 (GPO 2012a) prohibits the obstruction or alteration of navigable waters of the United States without a federal permit.

The Clean Water Act (GPO 2012b) prohibits the discharge of dredged or fill material into waters of the United States without a federal permit.

Examples of Best Floodplain Management Practices

There are institutions and programs existing that could serve to guide floodplain initiatives and exemplify best management practices in Louisiana, two of which are subsequently described.

Coastal use permitting

The Office of Coastal Management (OCM) of the Louisiana Department of Natural Resources (LDNR) maintains the authority to regulate development activities and manage resources in the Coastal Zone (LDNR 2018) through the issuing of coastal-use permits (CUPs) and oversight of optional Local Coastal Programs (LCPs) (Rose and Engle 2014). Detailed coastal use laws and regulations are outlined primarily in Louisiana Administrative Code Title 43, Chapter 7 “Coastal Management,” which forms the basis of OCM’s authority (LA DOA 2018c). Furthermore, LDNR has the authority to update LCP requirements, and, for those parishes that have adopted an LCP, local authority to continue issuing their own CUPs is conditional on compliance with LCP requirements (Rose and Engle 2014). This incentive can be leveraged to ensure LCP consistency with the state comprehensive Master Plan across parishes.

The Floodplain Evaluation and Management Commission

The Floodplain Evaluation and Management Commission is considered to be a workable piece of legislation that could potentially serve as a vehicle to implement some of the recommendations made in this study. The Floodplain Evaluation and Management Commission is an entity established by House Bill (HB) 691 of the 2017 Louisiana Regular Legislative Session, authored by Representative Valarie Hodges (LA State Legislature 2017a). It directs that a commission be established, comprised of DOTD, CPRA, OCD, GOHSEP, and a House and Senate member from each chamber's Transportation Committee. The body's purpose is to manage flood control efforts by the state, monitor Louisiana's 24 river basins, and establish a flood database as an update to DOTD's 1984 Blue Book, created "for the purpose of the systematic evaluation of drainage and flooding problems in the state" (LA State Legislature 2012b). The legislation is only valid if funded and, to date, has no dedicated funding or activity.

The Flood Risk and Resilience Program

The Flood Risk and Resilience Program (FRRP) could also facilitate collection of essential data for floodplain management planning and efficiency improvements statewide. The program presently has no dedicated funding or capacity to generate funding but could provide recommendations for Phase II of this analysis, including improving coordination between parishes to assess floodplain management capacity and recommend resilience improvement strategies (CPRA 2018).

The Flood Risk and Resilience Program (FRRP)

CPRA's Flood Risk and Resilience Program is focused on promoting the state's objective of reducing the impacts of coastal storm surge based flooding on communities. The program emphasizes the planning for and implementation of nonstructural risk reduction projects, which are complements to the other structural risk reduction measures, such as levees and flood gates. Nonstructural risk reduction measures potentially funded by the program could include activities that do not stop floodwaters, but reduce the impacts of flooding to buildings and infrastructure by floodproofing, elevation, or voluntary acquisition where property owners move away from high risk areas. Additionally, the Flood Risk and Resilience Program is expected to also support other programmatic efforts and resilience policies to reduce risk to future building infrastructure, promote safer growth, and to encourage greater flood risk awareness.

The FRRP includes a series of policy recommendations addressing the state legislature, state agencies, and parish governments. These include detailed recommended planning measures to enhance comprehensive, multi-jurisdictional, land use, and recovery plans, as well as regulatory recommendations relating to parish and municipal ordinances and building codes. These and other recommendations could provide a foundation for policies pursued by the watershed initiative and be reflected in the overall state approach to floodplain management (adopted from CPRA 2017e).

Furthermore, to administer the FRRP, both parishes and the State will be required to collect and manage large amounts of data. The FRRP application process has been built to be compatible with CDBG-DR and HMA funding requirements. It is possible that the FRRP program and other state programs, related data management systems, and project management materials could be leveraged into a single system or funding clearinghouse to help applicants navigate and comply with the programs, as well as facilitate closer coordination between various state and local governments and agencies.

Blue Heron (*Ardea herodias*) in Cypress Swam

Financial Resource Allocations

Funding sources for floodplain related activities can generally be categorized into recurring and non-recurring allocations. Non-recurring allocations are most often federal dollars predicated on either a previous disaster declaration or a competitive grant application. Because these are not reliable or continuing funding sources, they are typically programmed to support short-term reactive measures as opposed to long-term comprehensive planning applications.

Several potential funding mechanisms for watershed-based floodplain management activities were identified in Phase I, the largest of which are summarized in the following table. Other potential funding sources, including the U.S. Army Corps of Engineers (USACE) Planning Assistance to States (PAS) Program, and the U.S. Department of Agriculture (USDA) Watershed and Flood Prevention Operations Program, should be investigated in the Phase II analysis.

Funding Source	Type	Grantor	Funding Range (\$ Millions)
Federal Emergency Management Agency (FEMA) Public Assistance (PA)	Post-disaster (Non-recurring)	Federal	Varies based on eligible recovery and mitigation scopes of work following a major presidential disaster declaration
HMGP	Post-disaster (Non-recurring)	Federal	Varies based on amount of total federal assistance
FMA	Non-disaster (recurring)	Federal	Varies based on the amount appropriated annually by congress, from the NFIP
PDM	Non-disaster (recurring)	Federal	Varies based on the amount of funding appropriated annually by congress
CDBG	Post-disaster (Non-recurring)	Federal	\$65 to \$13,400
Gulf of Mexico Energy Security Act (GOMESA)	Recurring	Federal	\$0.1 to \$8 (previous) \$70 (predicted)
Statewide Flood Control Program	Recurring	State	\$10 to \$20

Disaster Grants

FEMA provides federal assistance to government organizations and certain private nonprofit organizations following a presidential disaster declaration that allows communities to rapidly respond to and recover from major disasters or emergencies. Louisiana has received more than \$500 million in FEMA PA funding since 2015.

Federal HMGP funding available to the State of Louisiana is limited to 15% of total individual assistance, public assistance, and Small Business Administration assistance following a presidential disaster declaration. If a state achieves Enhanced Mitigation Planning Status, HMGP funding may be increased beyond the 15% cap. Louisiana has received more than \$90 million in HMGP funding since 2015.

Federal CDBG funding may be set aside for disaster events through the HUD CDBG Disaster Recovery (DR) Funding Program. The CDBG-DR Funding Program provides flexible grants to help cities, counties, and states recover from presidentially declared disasters, especially in low-income areas and subject to the availability of supplemental appropriations. In response to presidentially declared disasters, Congress may appropriate additional funding for the affected areas and provide crucial seed money to start the recovery process. Since CDBG-DR assistance may fund a broad range of recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources. Louisiana has received more than \$16 billion in CDBG funding since 2005 (LA DOA 2017).

- \$13.4 billion for recovery from Hurricanes Katrina and Rita in 2005
- \$1.1 billion for recovery from Hurricanes Gustav and Ike in 2008
- 66.4 million for recovery from Hurricane Isaac in 2012
- \$92.6 million from HUD's National Disaster Resilience Competition in 2016
- \$1.7 billion for recovery from the Great Floods of 2016

In September 2014, HUD released a Notice of Funding Availability (NOFA) for the CDBG - National Disaster Resilience Competition (CDBG-NDRC) (HUD Exchange 2018). The competition awarded approximately \$1 billion in funding for disaster recovery and long-term community resilience through a two-phase competition process. All states and units of general local governments with major disasters declared in 2011, 2012, and 2013 were eligible to participate. A \$92.6 million CDBG-NDRC

grant was awarded to Louisiana in January 2016 (LA DOA 2018b).

In response to the flooding and flood damages caused by Hurricanes Harvey, Irma, and Maria, a nationwide competition for a total of \$12 billion in grants to states was proposed to increase resilience to future flood and hurricane disasters (Moore 2017). To be eligible, states had to have had more than one flood-related major disaster in the last 4 years, a criterion Louisiana met. The Disaster Relief Appropriations Act of 2013 (PL 113-2) provided the funding allocation for these projects.

Recurring Funds

The Gulf of Mexico Energy Security Act of 2006 (GOMESA) is administered by the U.S. Department of the Interior for the purpose of coastal protection, including conservation, coastal restoration, hurricane protection, and infrastructure directly impacted by coastal wetland loss (BOEM 2018). Each year, CPRA estimates the annual anticipated funding distribution. In addition to the state-wide values noted below, parishes also receive direct distributions from the program. Since 2009, coastal parishes have received \$1.8 million directly, with amounts expected to drastically increase as the program enters full maturity in 2018. Likewise, the state has received \$7.4 million directly since 2009, but, as evidenced by distribution expectations below, that value is expected to increase nearly tenfold in the coming years, per the most current CPRA estimation (CPRA 2017a).

- \$80,775 received for 2017
- \$70.0 million predicted for 2018
- \$70.0 million predicted for 2019

While GOMESA funding is recurring, available funding depends on the prices of oil and gas, thus program dollars are vulnerable to market fluctuations. Oil and gas royalties were originally anticipated to be \$175 million in 2018, but are currently projected to range between \$60 to \$70 million (Hasselle 2017). GOMESA funding can be expected to decline in 2018 as a results.

The Louisiana Statewide Flood Control Program, administered by the DOTD, receives allocations each year from the Transportation Trust Fund, authorized by the state legislature to assist in the construction of flood control infrastructure (LaDOTD 2018b). Historically, the allocation has been \$10 million annually. The allocation is anticipated to increase to \$20 million in the 2018 fiscal year.

PDM is authorized by the Stafford Act, 42 U.S.C. 5133. PDM is designed to assist States, territories, federally-recognized tribes, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding in future disasters. Congressional appropriations provide the funding for PDM. The total amount of funds distributed for PDM is determined once the appropriation is provided for a given fiscal year. It can be used for mitigation projects and planning activities.

FMA is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). FMA was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994. The Biggert-Waters Flood Insurance Reform Act of 2012 (Public Law 112-141) consolidated the Repetitive Flood Claims and Severe Repetitive Loss grant programs into FMA. FMA funding is available through the National Flood Insurance Fund (NFIF) for flood hazard mitigation projects as well as plan development and is appropriated by Congress. States, territories, and federally-recognized tribes are eligible to apply for FMA funds. Local governments are considered sub applicants and must apply to their Applicant State, territory, or federally-recognized tribe.



Louisiana Bayou

Required and Optional Responsibilities

State Floodplain Management Program Responsibility Categories

The summary table below is intended to provide a condensed categorization of the various roles, actors, and responsibilities across an array of floodplain management activities.

Category	Subcategory/ Examples	Description	Federal Program, Requirement, or Incentive
Funding	Procurement and Contract Management	RFP, ITB, and ITN development	Relevant programs include FEMA's Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, 406 and 428 Public Assistance, Pre-Disaster Mitigation, and HUD's Community Development Block Grants (including disaster recovery). Of this list, only FMA funds flood mitigation activities exclusively. Other grants, such as transportation and environmental grants, may also be applicable.
		Reviews and approves requisitions for goods and services	
	Financial Grant Management	Responsible for disbursement and administration of each grant payment allocated to localities	
		Preparation and submission of required financial federal reports	
		Disbursement	
	State Funded Program Management	Review and approve all state grant and subrecipient agreements	
		Oversight of grant management procedures	
		Compliance	
		BCA Analysts	
	Federally Funded Program Management	Planning engagement	
		Approval mechanism	
		Plan monitoring and update staff	
Planning	State of Louisiana Consolidated Annual Action Plan (HUD-approved)	Ensure proper project implementation and tracking systems	HUD approved the state's action plan for the first appropriation of flood recovery dollars from the historic floods of 2016. The first appropriation was for approximately \$438 million and will require significant financial grant management.
	State Hazard Mitigation Plan Development and Update	Project identification procedures	FEMA requirement: to become eligible for federal funds, the state and localities must adopt a FEMA-approved State Hazard Mitigation Plan and Local Hazard Mitigation Plan. Not floodplain management exclusive.
		Approval mechanism	
	Local Hazard Mitigation Plan Compliance and Update Approval	Planning engagement	
		Approval mechanism	
		Plan monitoring and update staff	

Category	Subcategory/ Examples	Description	Federal Program, Requirement, or Incentive
NFIP Coordination	Mapping Coordination and Adoption	Flood Insurance Rate Map (FIRM) and FIS acceptance and coordination	FEMA requirement: to become eligible for the NFIP and federal funds, the state and localities must adopt FEMA-approved Flood Hazard Maps.
		Technical experts – community assistance in mapping and amendments	
	State NFIP Coordination Authority	Community assistance visits/community assistance contacts	FEMA requirement: to become eligible for the NFIP and federal funds, the state must ensure localities adopt and enforce local floodplain management regulations.
		Review and approval of local floodplain management regulations (ordinance)	
Regulatory Authority	Federal Permitting Requirements	Coordination with federal entities	FEMA requirement: to become eligible for the NFIP and federal funds, the state must ensure localities adopt and enforce local floodplain management regulations.
		USACE	
		U.S. Fish and Wildlife	
		U.S. Coast Guard (bridges/causeways affecting waterways)	
		LOMA/LOMR evaluations and approvals	
	State and Local Permitting Requirements	Review capabilities, including No-Rise Certifications, engineering permits, elevation certificates, floodway permits, and SI/SD certifications – SHMO and Local Floodplain Management Coordinator/Building Official	Ensure that proper regulatory authority is placed on permitting requirements, engineering certifications, and elevation requirements. This can be done at multiple levels (e.g., state and local)
Recommend - Technical Assistance	NFIP Compliance and Planning	Floodplain management experts	Though not a federal requirement to participate in the NFIP, establishing a strong core of technical assistance components can drastically improve floodplain management at the state level. Updated mapping, program experts, and advisory services will ensure a streamlined and effective management program.
	Funding and Grants Management	Programmatic experts	
		Logistics experts – resource management, regional coordination	
		Emergency advisory assistance	
Recommend – Coordinating Boards	Construction Codes Coordination Board	Coordinated building codes with floodplain management procedures (state level)	

**Shaded line items are considered higher standard recommendations*

Case Studies from Other States

West Virginia, Illinois, and Florida

Phase I resulted in a series of case studies applicable to the development of a floodplain management program in the State of Louisiana. It should be noted that this is not an exhaustive list but instead represents a small sampling of creative approaches to floodplain management.

Appendix A details case studies from West Virginia, Illinois, and Florida which provide unique models for best practices in state floodplain management. In **West Virginia**, the **Statewide Flood Protection Plan** provides a vision for the future of the state, spelling out both long- and short-term goals, strategies, and implementation schedules for floodplain management. Having grown out of a Joint Task Force comprised of 20 federal, state, regional, and local agencies, the statewide plan outlines strategies of implementation for projects across the state and reveals the importance, and rewards, of establishing a strong framework at the beginning of the process, including clear goals, objectives, policies, and projects to implement with funding and financing suggestions.

The **State of Illinois' Floodplain Management Program** is unique in that it focuses on keeping development out of the floodplain, rather than ensuring development meets criteria within the floodplain. Its county-level approach directs attention toward expanding the floodway and deterring development, focusing on reducing loss first and foremost. In doing so, it proactively engages in aggressive mapping and statewide standard setting, which includes the implementation of a mapping service. Rather than relying on a reactive approach, Louisiana, too, can begin to look ahead at creative solutions to manage development in the floodplain and reduce prospective losses.

The **State of Florida's Community Rating System (CRS) Pilot Program** encourages communities to become flood resilient by adopting seven performance measures that help ensure that key regulatory standards of the NFIP are implemented. It entailed a no-cost package of tools that, when adopted and implemented by communities, improves their flood resilience and enables access to CRS credits.

**Shaded line items are considered higher standard recommendations*



Layer 1 State Floodplain Management Program Path Forward

Key recommendations for existing legal authorities, state and federal programs, and other state and local initiatives are shown in the following tables.

Recommendations for Legal Authorities			
Legal Authority	Recommended Actors	Recommendations	Timeline
Coastal Protection and Restoration Authority (CPRA)	CPRA	Continue to develop technical tools for state's assessment of coastal flood risk to more fully implement the Flood Risk and Resiliency Program (FRRP) through the 2022 Coastal Master Plan.	5-Year Master Plan Cycle culminating in the 2022 Coastal Master Plan update
		Continue to develop protection and restoration priorities for the coastal area, including the state's structural and nonstructural project priorities.	
		Utilize FRRP resilience policies to guide/provide a foundation for a broader state approach to policy prioritization and implementation (e.g., higher standards, plan integration).	
Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)	GOHSEP and CPRA	Incentivize project submissions focused on watershed-based floodplain management and project submissions that provide for higher standards than those established at a state or federal level.	5-Year Master Plan Cycle culminating in the 2022 Coastal Master Plan update
		Collaborate with local parishes to utilize the FRRP as a mechanism for prioritizing projects funded through GOHSEP-administered programs.	Next 3 to 5 Years
		Train state employees in 406 Mitigation and Section 428 policy, researching case studies that demonstrate maximized mitigation funding through the Public Assistance Program.	Next 3 to 5 Years
		Train state and local employees on Benefit Cost Analysis development and vulnerability assessment to support planning and funding justification.	
Office of Community Development (OCD)	OCD and Louisiana Legislature	Incentivize candidate project selection based on the extent to which a project aligns with watershed-based floodplain management and applies higher standards (such as additional freeboard) in its flood damage prevention ordinance.	Next 1 to 3 Years
		Investigate whether the above recommendation requires only OCD policy change or Legislative directive.	
Louisiana Department of Transportation and Development (DOTD)	Louisiana Legislature with support from DOTD	Investigate mechanisms for amending existing legislation to enable funding of large-scale flood mitigation projects in areas outside the coastal zone.	2018 Calendar Year
		Investigate mechanisms to continue to elevate Transportation Trust Fund allocation.	
		In 2017, the Transportation Trust Fund allocation was \$10 million; in 2018, this jumped to \$20 million. In the future, this allocation should remain at least \$20 million annually, if not more.	
		Amend legislation to create policies that incentivize and prioritize funding in a manner that ties program dollar distributions to entities that adopt and adhere to watershed-based planning standards or higher-than-minimum National Flood Insurance Program (NFIP) standards.	
		Prioritize funding based on FRRP policy incentives (i.e., participation in Community Rating System and adopted freeboard requirements).	
		Enforce higher standards through Community Assistance Visits, where possible.	

Key recommendations for existing legal authorities, state and federal programs, and other state and local initiatives are shown in the following tables.

Recommendations for Legal Authorities			
Legal Authority	Recommended Actors	Recommendations	Timeline
Louisiana Department of Environmental Quality (DEQ)	Analysis Team and Steering Committee	Continue to include DEQ in program development conversations.	Ongoing
		Leverage the existing DEQ data inventory and collection toward a data clearinghouse.	
Louisiana Department of Wildlife and Fisheries (LDWF)	LDWF	Prepare a shortlist of project priorities for the Scenic Rivers Program to apply for and expedite funding to facilitate trash and debris removal from channels.	2018 Calendar Year
		Engage Scenic Rivers Program to promote BMPs, develop standards, and work to understand impacts of dredging activities.	
Local Jurisdictions	Louisiana Legislature	<p>Establish a pathway to incorporate higher flood hazard prevention standards into the state building code or through alternate legislation that harmonizes local- and state-level flood damage prevention standards and capitalizes on existing Uniform Construction Code mechanisms for responsible development within floodplains.</p> <p>For more information on incorporating higher flood hazard prevention standards into practice, check out what Illinois has done in the Best Practices From Other States section of this chapter.</p>	2018 Calendar Year
		The Louisiana Legislature should instruct a combined task force of DOTD, the Department of Natural Resources (DNR), CPRA, the Office of Community Development (OCD), and GOHSEP to develop a Phase II report subsection or appendix to focus on the extent, cost, prevalence, and policies related to urban flooding in Louisiana and to identify resources and technologies that may lead to mitigation of the impact of urban flooding, much in a similar manner that Illinois undertook with its Urban Flood Awareness Act Report (Illinois Department of Natural Resources [IDNR 2015]). The exercise should be completed by 2020 and should directly inform, or contain, recommendations to be carried forward in other efforts, such as amending state building codes or land use ordinances.	
		Change state statute to require participation in a floodplain management plan (potentially watershed-based) as part of larger hazard mitigation plans required to be updated every 5 years for participation in the Hazard Mitigation Grant Program (HMGP).	

Recommendations Regarding Federally Funded Programs			
Federal Program	Recommended Actors	Recommendations	Timeline
Community Assistance Program - State Support Services (CAPP-SSSE)	Analysis Team, GOHSEP, and DOTD	Gather information regarding where this program is implemented in Louisiana and the extent to which its funding may be maximized.	Phase II analysis in 2018
Community Development Block Grants (CDBG)	OCD	Create policies that incentivize and prioritize funding in a manner which ties federal dollar distributions to entities who adopt and adhere to elevated watershed-based planning standards.	2018 Calendar Year
		Encourage participation in residential resiliency funding mechanisms such as HUD's 203(k) Rehab Mortgage Insurance, under which structural alterations and elimination of hazards are eligible activities.	
		Encourage heavy participation in federal competitions, such as the National Disaster Resilience Competition, that can inject large one-time sums of money for post-disaster adaptation and recovery.	
Federal Emergency Management Agency (FEMA): Public Assistance (PA)	DOTD	Leverage the full extent of the of roles and responsibilities within DOTD operations, as each are critical components to a statewide floodplain management program.	Next 1 to 3 years
		Build capability and capacity, via direct hires or dedicated consultant subcontracts, to execute these roles.	
		While DOTD maintains limited resources relative to floodplain management (primarily those originating from the former Louisiana Department of Public Works that was consolidated into DOTD), it operates under several key statutes that outline responsibilities relative to serving in technical advisory, project selection, and data management roles.	
	GOHSEP and OCD	Create policies that incentivize and prioritize funding in a manner that ties federal dollar distributions to entities who adopt and adhere to higher flood damage prevention standards and plan regionally, at the watershed level.	Next 1 to 3 years
FEMA: Community Disaster Loan (CDL)	GOHSEP	Continue to perform outreach and education with local entities to ensure they are aware of this tool post-disaster.	Ongoing
Gulf of Mexico Energy Security Act (GOMESA)	CPRA and coastal parishes and levee districts	CPRA currently monitors GOMESA as a funding source for coastal restoration projects as part of the Coastal Master Plan. Discuss applicability and availability of funding with CPRA executive to leverage maximum funding.	2018 Calendar Year
Hazard Mitigation Assistance Programs: Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), and Flood Mitigation Assistance (FMA)	CPRA, OCD, and GOHSEP	Direct increased funds toward nonstructural floodplain management projects defined through the FRRP through the existing authority granted in statute for annual and master plan development. Note that the FRRP currently only covers projects in coastal areas.	Immediately
		Engage in a state technical support program to help locals develop applications through each Hazard Mitigation Assistance Program to maximize funding in Louisiana.	
	GOHSEP	Earmark a specific percentage of HMGP funding allocations for specific flood-related projects that meet program eligibility. This can be accomplished through a standing HMGP Action Plan.	Immediately
		Elevate mitigation planning efforts to reach Enhanced State Mitigation Plan status, allowing the state eligibility to receive increased HMGP funding after a disaster declaration.	
House Resolution (HR) 4460, the Disaster Recovery Reform Act (DRRA) of 2017	Analysis Team and Steering Committee	Communicate with congressional staff to ensure the bill meets Louisiana's needs.	Phase II analysis in 2018
		Monitor the bill's progress through the United States Congress.	
National Oceanographic and Atmospheric Administration (NOAA) Coastal Resilience Grants	CPRA with coordination from OCD	Research and pursue grants, such as the National Academy of Sciences (NAS) Thriving Communities grant, as a partial funding mechanism for the FRRP Program.	2018 Calendar Year

Recommendations Regarding Federally Funded Programs			
Federal Program	Recommended Actors	Recommendations	Timeline
Small Business Administration (SBA) Disaster Loans	OCD	Communicate present program inefficiencies to potential users concerning the headaches suffered during the 2016 flood recovery.	Ongoing
		Ensure the populace is informed of issues derived from SBA loan approval deduction amounts from the Restore Louisiana Program and any similar future program eligibility.	
		Communicate basic differences between various loan and grant programs to ensure potential users understand interest and loan terms.	
		Work with Louisiana's Congressional delegation to eliminate the eligibility overlap issues between the SBA Program, Restore Louisiana, and similar future programs.	
Title VII Water Resources Development Act (WRDA) and Energy & Water Appropriation Act	Louisiana Congressional Delegation, with advisement from cooperating agency heads	Continue to push for congressional funding authorizations for presently authorized, shovel-ready USACE projects such as the various flood risk reduction projects in the coastal zone (e.g., Lake Pontchartrain and vicinity, Morganza to the Gulf, Comite River Diversion Canal, Southwest Coastal Louisiana Feasibility Study).	Ongoing
		Communicate with congressional staff to ensure WRDA language and authorizations meet Louisiana's needs.	
United States Army Corps of Engineers (USACE): Floodplain Management Services Program	CPRA and DOTD	Monitor future USACE appropriations for programs such as the Southwest Coastal Louisiana Feasibility Study.	2018 Calendar Year
USACE: Flood Risk Management Program	CPRA and DOTD	Initiate regular involvement of the Louisiana Silver Jackets State team.	2018 Calendar Year
USACE: Non-Structural Alternatives to Structural Rehabilitation to Damaged Flood Control Works	CPRA, DOTD, and other cooperating agencies	Determine what Louisiana facilities are eligible for flood control works.	2018 Calendar Year
		Work with USACE to ensure eligible projects are included in the program.	
		Investigate to what extent this program is leveraged by state and local authorities in Phase II to gain a clearer understanding of its relevance to ongoing efforts.	
		Monitor future USACE appropriations for the program.	
USACE: Planning Assistance to States Program	CPRA and DOTD	Investigate to what extent this program is leveraged by state and local authorities in Phase II to develop a clearer understanding of its relevance to ongoing efforts.	2018 Calendar Year
		Monitor future USACE appropriations for the program.	
United States Department of Agriculture: Watershed and Flood Prevention Operations Program and Watersheds Surveys and Planning Program	CPRA and DOTD	Evaluate program requirements for Louisiana projects and monitor congressional appropriations for the program.	2018 Calendar Year
		Investigate to what extent this program is leveraged by state and local authorities in Phase II to develop a clearer understanding of its relevance to ongoing efforts.	

Recommendations Regarding State and Local Programs and Resources			
Program or Resource	Recommended Actors	Recommendations	Timeline
Limited Current State Flood Damage Prevention Regulations	Local and state government	Establish a pathway to incorporate flood hazard prevention measures into the state building code.	Next 1 to 3 Years
		Change state statute to require a floodplain management plan as part of larger hazard mitigation plans required to be updated every 5 years for participation in the HMGP.	
Local Government Assistance Program (LGAP)	OCD	Continue to monitor as potential funding source for small flood control, drainage, and watershed improvement projects in communities meeting the defined criteria.	2018 Calendar Year/ Ongoing
New Market Tax Credits (NMTc)	CPRA, OCD, GOHSEP, and DOTD	Educate municipalities and parishes on the mechanics of NMTcs as potential routes for funding resiliency programs.	2018 Calendar Year
		Continue to research efficacy of NMTcs as possible funding avenues for floodplain management and flood resiliency projects in Phase II of the analysis.	
Social Impact Bonds (SIBs)	CPRA, DOTD, OCD, and GOHSEP	Educate municipalities and parishes on the mechanics of SIBs as a potential route for funding resiliency programs.	Next 3 to 5 years
		Monitor the success of the CPRA-Environmental Defense Fund pilot project as a potential model for future use of this funding mechanism.	
Urban Drainage	Parishes, state government, and Louisiana's Scenic Rivers Program	Research best practices and develop a statewide standard for urban drainage, much like the State of Illinois accomplished with its Urban Flood Awareness Act report and model stormwater management ordinance.	2018 Calendar Year

Recommendations Regarding Other State, Local, and Multi-Parish Initiatives and Entities			
Initiative or Entity	Recommended Actors	Recommendations	Timeline
Acadiana Regional Planning Commission	Analysis Team	Explore the efficacy of establishing similar working relationships across the state through the existing Metropolitan Planning Organizations.	Phase II analysis in 2018
Amite and Comite Basin Flood Model	Louisiana Legislature with assistance from DOTD	Establish a single statewide entity to set modeling standards and serve as the facilitator, data manager, data archivist, and sole clearinghouse of technical modeling assistance for similar efforts in other watersheds.	2018 Calendar Year
		Establish state statutes requiring the methodology used for the Amite effort, including LiDAR collection, be set as the standard for future efforts statewide.	
Flood Risk and Resilience Program (FRRP)	CPRA, OCD, and GOHSEP	Explore the most efficient/effective mechanism to implement FRRP projects through existing grant management systems at GOSHEP or OCD; coordinate with GOSHEP and OCD on ways to identify disaster related funding sources that could be used to mitigate structures in areas of high current and future storm surge risk.	5-Year Master Plan Cycle culminating in the 2022 Coastal Master Plan update
Floodplain Evaluation and Management Commission	Louisiana Legislature, Chris Broadwater (author of HB 691), and Analysis Team	Collaborate for proposed improvements to the existing legislation in the 2018 Legislative Session, at a minimum, to enact "low hanging fruit" reforms proposed in this document as they pertain to watershed-based floodplain management in Louisiana.	2018 Calendar Year

Recommendations Regarding Other State, Local, and Mult-Parish Initiatives and Entities			
Initiative or Entity	Recommended Actors	Recommendations	Timeline
Louisiana Resilient Recovery (LARR) Program	GOHSEP and DOTD with support from FEMA	<p>Expand data collection efforts beyond pilot areas to the entire state to enable future efforts to further understand risk and the ability to predict flood hazards and, ultimately, to assist in any future revision or update of DOTD's "Blue Book."</p> <p>All data collection activities should be catalogued in a state-wide database to track data and documentation for supporting NFIP compliance and CRS communities.</p>	Next 3 to 5 Years
Louisiana Strategic Adaptations for Future Environments Framework (LA SAFE)	OCD	Monitor the future periodic releases of NDRC funding opportunities and allocations for opportunities to obtain funding for floodplain management efforts.	Ongoing
Lower Pearl River Basin Task Force	Analysis Team	Continue to monitor progress of task force for alignment and/or eventual incorporation of policies into statewide floodplain management program.	2018 Calendar Year
Parishes of Caddo and Bossier and Municipalities of Shreveport and Bossier	OCD, GOHSEP, DOTD, and CPRA	<p>Leverage incentivization of HMGP, CDBG, and Statewide Flood Control Project submissions focused on watershed-based floodplain management and project submissions that provide for higher standards than those established at a state or federal level.</p> <p>Senate Concurrent Resolution 39 (SCR 39) requested a comprehensive study of government entities with legal authority over surface water in Louisiana, including levee districts and water resource boards. The study found over 250 legally established entities with some prescribed authority over surface water in the state. Of these, roughly 75 were created in state law, including the state's 26 levee districts. The vast majority have boundaries established by political subdivision rather than any hydrologic or geographic boundary such as a watershed or basin. These entities varied widely in their responsibilities, operational budgets, revenues, capacities, and capabilities. See the discussion in Layer 3 for more detail regarding SCR 39.</p>	2018 Calendar Year
Various Surface Water Control Districts, Gravity Drainage Districts, and Departments of Public Works	Analysis Team	Continue to research and detail the full list of active, relevant entities, governance structures, and funding sources building off the efforts of SCR 39's cataloguing exercise to inform any future legislative proposals to reform or rearrange governance of such entities.	Phase II analysis in 2018





LAYER 2

FOODPLAIN MANAGEMENT PLANNING

- **Defines floodplain management**
- **Identifies DRAFT contents and specifications of an effective floodplain management plan**
- **Clarifies required responsibilities and actions to develop, implement, and enforce a floodplain management plan at any scale**
- **Provides example best practices from other states, based on Phase I research and interviews**

Layer 2 Developing, Implementing, and Enforcing a Floodplain Management Plan at Any Scale

A note on engagement

Phase I of this initiative was initiated in October of 2017 and completed in late January, early February of 2018. Over this short period of time, the consultant team and cooperating agencies completed dozens of interviews, along with multiple meetings and workshops. While engagement was maximized during the time available for Phase I, this represented a sampling of the scale of engagement needed to successfully design and implement a statewide, comprehensive Watershed-Based Floodplain Management Program. The cooperating agencies are expanding and refining stakeholder engagement activities in Phases II and III of this initiative, including interviews, workshops, meetings, and more.

Community Rating System (CRS) participating communities can gain a significant number of credits for completing a floodplain management plan in accordance with criteria outlined in Section 510 of FEMA's CRS Coordinator's Manual (FEMA 2017).

According to the FEMA's CRS Coordinator's Manual, a well-prepared local plan will:

- Identify existing and future flood-related hazards and their causes
- Ensure that a comprehensive review of all possible activities and mitigation measures is conducted so that the most appropriate solutions will be implemented to address the hazard
- Ensure that the recommended activities meet the goals and objectives of the community, are in coordination with land use and comprehensive planning, do not create conflicts with other activities, and are coordinated so that the costs of implementing individual activities are reduced
- Ensure that the criteria used in community land use and development programs account for the hazards faced by existing and new development
- Educate residents and property owners about the hazards, loss reduction measures, and the natural and beneficial functions of floodplains
- Build public and political support for activities and projects that prevent new problems, reduce losses, and protect the natural and beneficial functions of floodplains; and
- Build a constituency that desires to see the plan's recommendations implemented.

Contents and Specifications of a Floodplain Management Plan

Presently, Louisiana does not have a statewide Floodplain Management Plan. Whether at a state level in other states, or at a community level, the Floodplain Management Plan is typically found as a subsection of a larger Hazard Mitigation Plan. Louisiana presently has a robust Floodplain Management Desk Reference (2008), which provides guidance on the formulation of such plans (LaDOTD and DHS/FEMA 2008).

Louisiana's Comprehensive Master Plan for a Sustainable Coast (CPRA 2017b), also referred to as the Coastal Master Plan, and its accompanying documentation, contains significant flood risk and flood risk management information related to the coastal areas of the state. The Coastal Master Plan identifies and assesses hazards, sets goals, proposes mitigation alternatives, and establishes an ultimate plan of action to decrease risk. The plan is required via legislative directive to be updated every 5 years and upon update, is adopted by the full State Legislature. CPRA's robust analysis and planning practices are a prime building blocks for a statewide, comprehensive Floodplain Management Plan.

The following outline has been developed based on a combination of several references including, but not limited to, the State of Florida Floodplain Management Program², Louisiana's Comprehensive Master Plan for a Sustainable Coast (CPRA 2017b), FEMA Floodplain Management Requirements (FEMA 2006), the 2017 CRS Coordinator's Manual (FEMA 2017), and the State of Virginia Floodplain Management Plan (VA DCR 2018). These recommended contents should be reviewed and refined in consultation with stakeholders in Phase II, perhaps through a session at the Louisiana Floodplain Management Association Annual Conference in April 2018.

²<http://archive.floridadisaster.org/mitigation/SFMP/Index.htm>

It's important to note that the contents of a comprehensive floodplain management plan need not all reside in one paper or electronic document or be updated at the same time by the same group of people. In fact, it is often more useful for multiple related documents, websites, and resources to cross-reference one another to avoid duplication and version control issues, maximize stakeholder engagement and accuracy, as well as leverage and efficiently focus expertise and resources. The important thing is that there is a process in place to understand, plan, and account for, make accessible, regularly update, and coordinate the information described below.

*Note that some (or even many) of these contents may be in separate documents or resources. In which case, they could simply be referenced.

Recommended Floodplain Management Plan Content	Subcontent	Example Components
Executive Summary	About the Plan	Authority, purpose, and use
	State of the floodplain	Achievements
		Needs
	Strategy Update	Initiatives
		Implementation Roadmap
About the Plan	Authority	
	Purpose and Use	Plan as a Resource
		Plan as a Data Source
		Plan as a Future Vision
		Plan as a Performance Measure
		Possible - Plan as a prescriptive guide with requirements and standards
	Plan Development Process	Scientific and technical analysis
		Engagement
		Decision making process
		Plan maintenance
Community Context	Existing Strategy Update	People, including vulnerable populations
		Property (including land cover)
		Economy
		Resources (natural and otherwise)
	Future	People, including vulnerable populations
		Property (including land cover)
		Economy
		Resources (natural and otherwise)

Recommended Floodplain Management Plan Content	Subcontent	Example Components
Floodplain Hazard Characterization	Floodplain definition and flood sources	i.e., coastal, riverine, sheetflow
	Floodplain Mapping	FIRMs and FIRM Status
		State / watershed Advanced Mapping, as applicable
	Floodplain characteristics and dynamic nature	Local floodplain characteristics
		Natural and beneficial functions
		Factors that affect the size and nature of the floodplain
Understanding Current and Future Flood Risk	Historic Flood Events	Past, Current, and Future Floodplain changes and projections
		Historic Dates
		Impacts and Losses
	Current Flood Exposure and Risk	Flood Insurance Claims (RL and SRL properties)
		People, property, infrastructure, and community assets exposed
	Future Flood Exposure and Risk (optional)	Potential losses
Floodplain Management Program	Overview	People, property, infrastructure, and community assets exposed
		Potential losses
		Program Mission and metrics
		Program structure and history
		Roles and responsibilities
Federal and State Support to Reduce Flood Risk	Federal Regulations and Programs	Program contacts
		Related departments and initiatives
		FEMA
		USACE
		NOAA
		USGS
		USEPA
State	State Regulations and Programs	USFWS
		NRCS
		GOHSEP
		OCD
		CPRA
		DOTD
Regional	Applicable Regional Entities	DWF
		DEQ
	Watershed Regulations and Programs	e.g., Regional Planning Association, Metropolitan Planning Organization
		TBD

Recommended Floodplain Management Plan Content	Subcontent	Example Components
Local Flood Risk Reduction Mechanisms	Local Flood Damage Prevention Related Policy	Examples might include an overview of elements of the flood damage prevention ordinance, standards for utilities and critical infrastructure, residential and non-residential standards, substantial improvement determination, enforcement procedures, the role of land use planning in mitigating flood risk, and local Project and Maintenance Standards
		Community Rating System
	Structural Flood Control Measures	Dams and Reservoirs
		Dikes, Levees, and Floodwalls
		Other Flood Control Structures
	Nonstructural Flood Control Measures	Acquisition and Open Space Use
		Mitigation in place
		Stormwater
		Leveraging Capital Improvement Planning and Asset Management
	Maintaining the natural and beneficial functions of the floodplain	Local approaches
		Tools and application
	Preparedness	Flood Forecasting and Warning
		Preparing Before the Event
	Response	Reference to appropriate flood response plans
	Recovery	Disaster Assistance
		Post disaster redevelopment planning
Five-Year Vision and Strategy	Program Needs Analysis	Outreach and Education
		Community Training and Education
		Compliance and enforcement methods
		Program Achievements
	Actions	Issues to resolve
		Capabilities and resources to resolve them
		Gap analysis
		Goals and Objectives, metrics
		Project and initiative identification
	Implementation Strategy	Updated project and initiative list
		Additional recommendations or investigations
		Funding and Financing
		Partners in implementation
		Implementation Roadmap

Requirements to Develop, Implement, and Enforce a Floodplain Management Plan

Key Recommendation: In 2017, CPRA released policy recommendations as part of the investigation into the Flood Risk and Resilience Program and 2017 Louisiana Coastal Master Plan. These policy recommendations are relevant to floodplain management in the state of Louisiana and should be pursued as part of the statewide, comprehensive Watershed-based Floodplain Management Program. Topics include planning and land use, hazard mitigation planning, regulatory tools, infrastructure and building standards, capital improvement plans, and other policy resources. The suite of recommendations is available on CPRA's 2017 Coastal Master Plan website at: <http://coastal.la.gov/our-plan/2017-coastal-master-plan/flood-risk-and-resilience-program/policy-recommendations/>

There is significant value to having a transparent, cohesive, coherent, guiding plan for any floodplain management program. Much can be achieved through cooperative action guided by a plan based on scientific, technical, and stakeholder consensus, situated within a clear community and regional context, in alignment with a clearly defined mission and with metrics to measure progress. Further, objectives can be achieved more effectively and efficiently through a coordinated planning process.

Conversely, the potential consequences of not having a defined floodplain management plan in place (or failing to follow that plan) can range from minor to severe, including but not limited to lack of coordination among mission-aligned local, state, and federal agencies; inconsistent application of development codes with the potential to create harmful, downstream impacts to adjacent properties and jurisdictions; and lack of accessibility to sound, objective data to guide decisions that impact floodplains or watersheds. Further, the ability to manage and inform project funding decisions at the multi-jurisdictional level can be heavily hampered without a floodplain management plan that justifies, weighs, and prioritizes potential actions. This can lead to undue competition for limited mitigation or resilience funding and mute the impact that would be achieved through regional cooperation. These potential consequences were often echoed as existing and undesirable by local and regional stakeholders during the Phase I interview process.

Developing, implementing, and enforcing a floodplain management plan at any scale requires alignment of responsibility and accountability, authority, capacity, capability, and cooperation. Actions may be required from all or some of the following: state and federal agencies and decision-makers, legislators, community agencies and organizations, regional entities, local governments, public and private entities, nonprofits, and special interest groups.

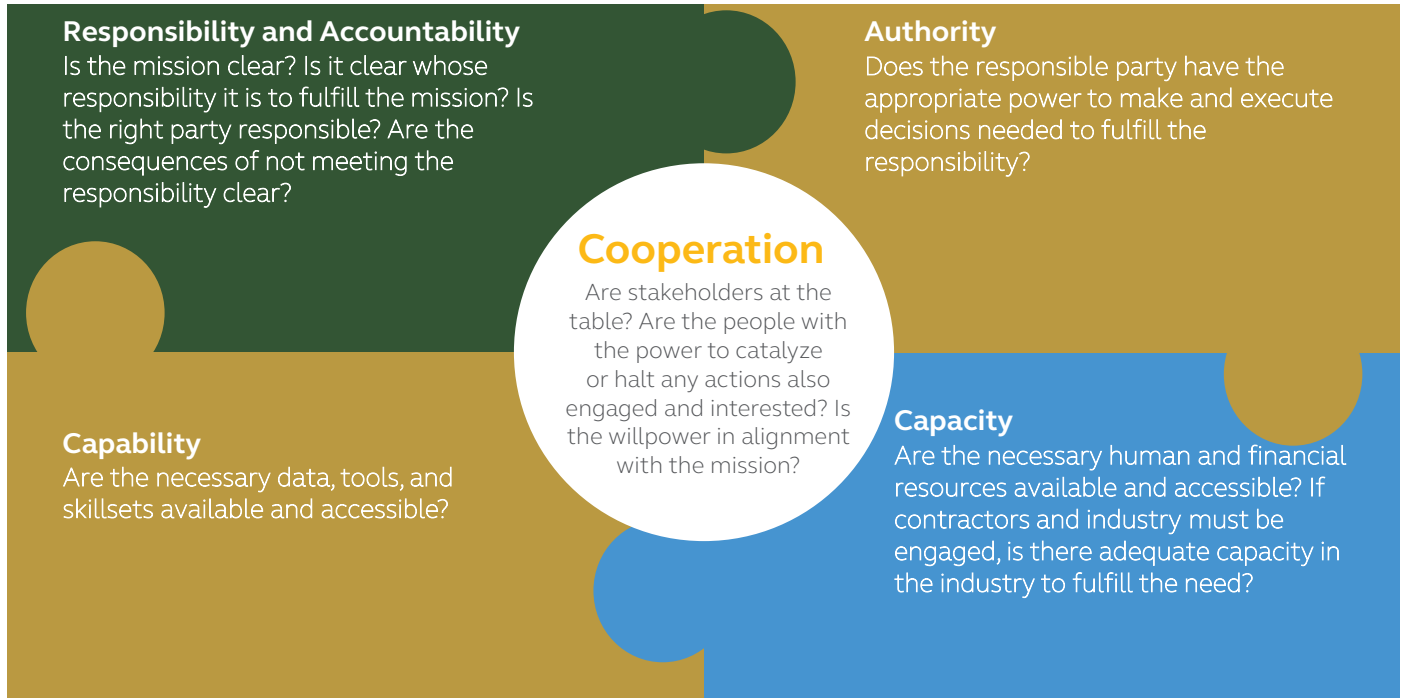
The development, implementation, and enforcement of a floodplain management plan requires funding and resources. Identifying creative funding mechanisms within local jurisdictions and at the state level is critical to the successful development of these plans. Both FEMA and HUD provide planning dollars, but these dollars are often not sufficient at the local level to develop a robust plan with the appropriate buy-in to ensure that it will be diligently followed. As an example, the FEMA Flood Mitigation Assistance Program provides a maximum of \$25,000 to develop the flood mitigation component of a FEMA approved local hazard management plan to NFIP participating communities. This apparent lack of availability of funding can send the message to local parishes that floodplain management planning is neither important nor worth significant investment. As demonstrated above, the opposite is true. A well-constructed and followed plan can lead to losses avoided and resource expenditure efficiencies that dwarf the investment in gathering, processing, and analyzing the data, coordinating resources and stakeholders, evaluating action alternatives, and developing an implementation roadmap.



Recommendation:

Evaluate existing state and federal funding mechanisms to maximize federal dollars. Develop a funding strategy to increase planning and implementation capacity at the local level.

What do we mean when we say responsibility and accountability, authority, capacity, capability, and cooperation must be in alignment?



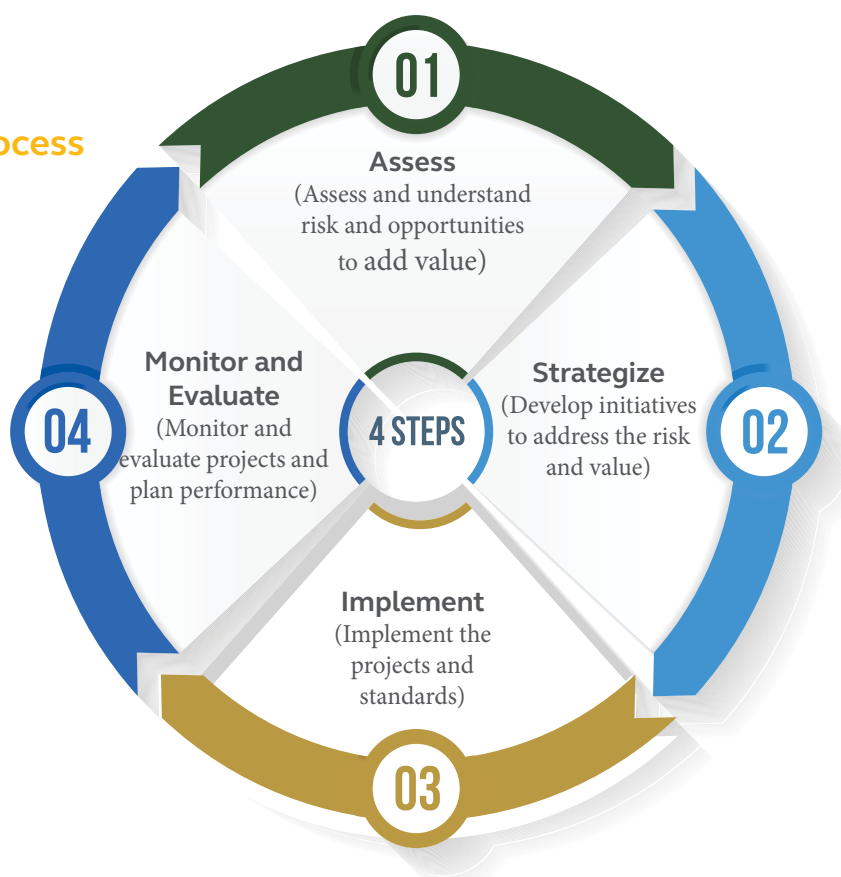
A note on engagement:

Stakeholder engagement goes beyond outreach and consultation (which is also necessary in plan development). The most effective plans share leadership with the public, key stakeholders, and subject matter experts in order to maximize buy-in and successful implementation.

The following elements must be clear and in alignment for a floodplain management plan to be effectively developed, implemented, and enforced. These needs should be reviewed and updated in future phases of the initiative.

PLAN DEVELOPMENT				
Responsibility and Accountability	Authority	Capability	Capacity	Cooperation
<p>Specific plan development standards must be provided. All jurisdictions to which a plan is relevant should be required to participate as a condition of receiving floodplain management-related funding.</p> <p>The plan will require a regular update as well as a monitoring and evaluation cycle. Regular gatherings of stakeholders will be required to maintain the plan</p>	<p>Participating jurisdictions must be in agreement as to who will develop the plan and how. The plan should be developed using consensus-based technical and scientific authority and social and community needs. Participating jurisdictions should be required to formally adopt the plan as a condition of receiving specific state and plan-based support.</p>	<p>Tools, data, and skill sets required to develop a floodplain management plan are defined in Layer 4 of this report, according to the needs of the Plan Development Process as outlined in the figure below. All jurisdictions participating in the plan should have access to a certified floodplain manager, certified planner, appropriate flood-related data, and appropriate additional technical support in plan development.</p>	<p>Staff and funding must be made available to develop the plan, the mechanisms for which should be defined in Phase II but could include some combination of state, federal, and local funding appropriations. Capacity needs will be based on the scale and complexity of the plan to be developed.</p>	<p>Special interest groups, nonprofit organizations, subject matter experts, and state and regional agencies should be engaged with relevant jurisdictions in plan development. The floodplain management plan could conceivably provide an annex to any local hazard mitigation plan. It should be coordinated with CRS objectives and broader community master plan needs and objectives, as well as local development policy.</p>

Plan Development Process Planning Cycle



PLAN IMPLEMENTATION

Responsibility and Accountability	Authority	Capability	Capacity	Cooperation
The plan should clearly articulate responsible parties, milestones, and objectives for every action identified for implementation. Other plans that apply to participating jurisdictions should be required to be compatible.	The authorities of the plan must be defined, such as the authority to prioritize specific expenditures or set standards that must be adopted within participating jurisdictions. The plan should be the authority on all flood-related activities, and applicable initiatives should be required to comply with the plan.	Capabilities required for plan implementation include in-house or contracted engineering, cost estimation, grant and financial management, monitoring and maintenance, as well as legal and outreach (as required by specific plan-defined initiatives).	Capacity needs will be defined by specific initiatives in the floodplain management plan.	Cooperation needs will be defined by specific initiatives in the floodplain management plan. Nevertheless, plan implementation should be coordinated and leveraged with other capital improvements and standard-setting initiatives wherever possible.

PLAN ENFORCEMENT

Responsibility and Accountability	Authority	Capability	Capacity	Cooperation
Parties responsible for plan enforcement should be developed by consensus during Phase II, but could be any or some combination of the state, a regional entity, or local jurisdictions. See Layer 3 for a description of options related to watershed-based floodplain management organizations.	<p>Jurisdiction flood damage prevention ordinances and land use plans should be compatible with the plan. Standards developed by the plan must be enforceable, and specific enforcement actions must be defined.</p> <p>All activities within the geographic boundaries of the plan should be required to adhere to the plan, including state agency projects and development.</p>	Enforcement will require expertise related to both code enforcement and floodplain management, along with neighbor reporting capabilities, GIS capabilities for tracking, and integration with existing or planned development review processes.	Enforcement will require similar capacity to the enforcement requirements of a flood damage prevention ordinance. Staff and funding will be needed for code enforcement tours on weekdays and weekends as well as enforcement actions related to findings.	Local political will to enforce flood damage prevention standards is critical to success. Integration of Enforcement actions could also be integrated with NFIP Community Assistance Visits (CAVs).

CPRA Flood Risk Resilience Program 2017 Findings and Recommendations

The Flood Risk and Resilience Program element of the 2017 Coastal Master Plan recommended that parishes and municipalities adopt or improve comprehensive plans to incorporate a holistic scope of elements based on recent American Planning Association guidance including land use, natural hazards, post-disaster recovery, and land loss, and/or flood risk. The Plan specified that these plans should be forward-thinking and address:

- Transportation, critical infrastructure, community facilities, housing, economic development, environmental/water management, and coastal management/conservation goals
- Future environmental conditions, including sea level rise, subsidence, land loss, flood risk, and their potential impacts on communities through economic damages or other costs
- Integrate or coordinate comprehensive plans with other local hazard mitigation plans and/or post-disaster recovery plans

Parishes are currently required to have a FEMA approved Hazard Mitigation Plan that contains some element of floodplain management as an incentive for FEMA Hazard Mitigation Assistance, and floodplain management plans are incentivized through the Community Rating System. Nevertheless, there is currently no established policy compelling local floodplain management planning or integration of flood risk considerations into other plans as a condition for funding or receipt of other incentives. The following are additional recommendations made under the Flood Risk and Resilience Program.

Recommendation:

Consider incentives and policy requirements for parishes or municipalities to develop and maintain a comprehensive land use plan that consists of 1) all critical elements related to floodplain management, and 2) risk reduction planning, development, and project measures (as a function for receiving pre- or post-disaster mitigation or state recovery funds). Such requirements would provide state agencies with capabilities to tie project selection and funding decisions to standards established within regularly updated plans.

Recommendation:

Consider amending the Louisiana Revised Statutes to require parishes and municipalities to develop a comprehensive plan whether or not they have adopted a planning commission.

Recommendation:

Consider amending the Louisiana Revised Statutes to require that a comprehensive plan include elements that address land loss, flood risk, post-disaster recovery, and/or natural hazards.

Recommendation:

Consider including a provision that future planning grants administered by cooperating agencies (e.g. GOHSEP and OCD) require parishes and/or municipalities to have adopted a post-2005 land use plan. Such land use plans should contain a section specifically addressing flood risk reduction measures that are consistent with the 2017 Coastal Master Plan and a future statewide, comprehensive Floodplain Management Plan.

Recommendation:

Improve the quality and integration of parish hazard mitigation plans with other state and parish level planning processes, parish comprehensive plans, emergency management plans, transportation plans, Community Development Block Grant (CDBG) action plans, land use plans, and zoning processes; participate in mutual aid emergency response programs, such as the Emergency Management Assistance Compact (EMAC)/ Intrastate Mutual Aid Compact (IMAC), to help communities and residents recover more quickly post-disaster.



Recommendation:

Encourage and incentivize the development of parish wide CIPs and align CIP funding priorities with the flood risk reduction goals of their comprehensive plan; include a reference to an existing plan or initiative for each project in the CIP to ensure continuity of planning processes; encourage parishes to consider tax incentives (such as preferential assessment programs, tax abatements, or tax credits), transfer of development rights, or market-based incentives (such as real estate disclosure) to promote development in lower risk areas.

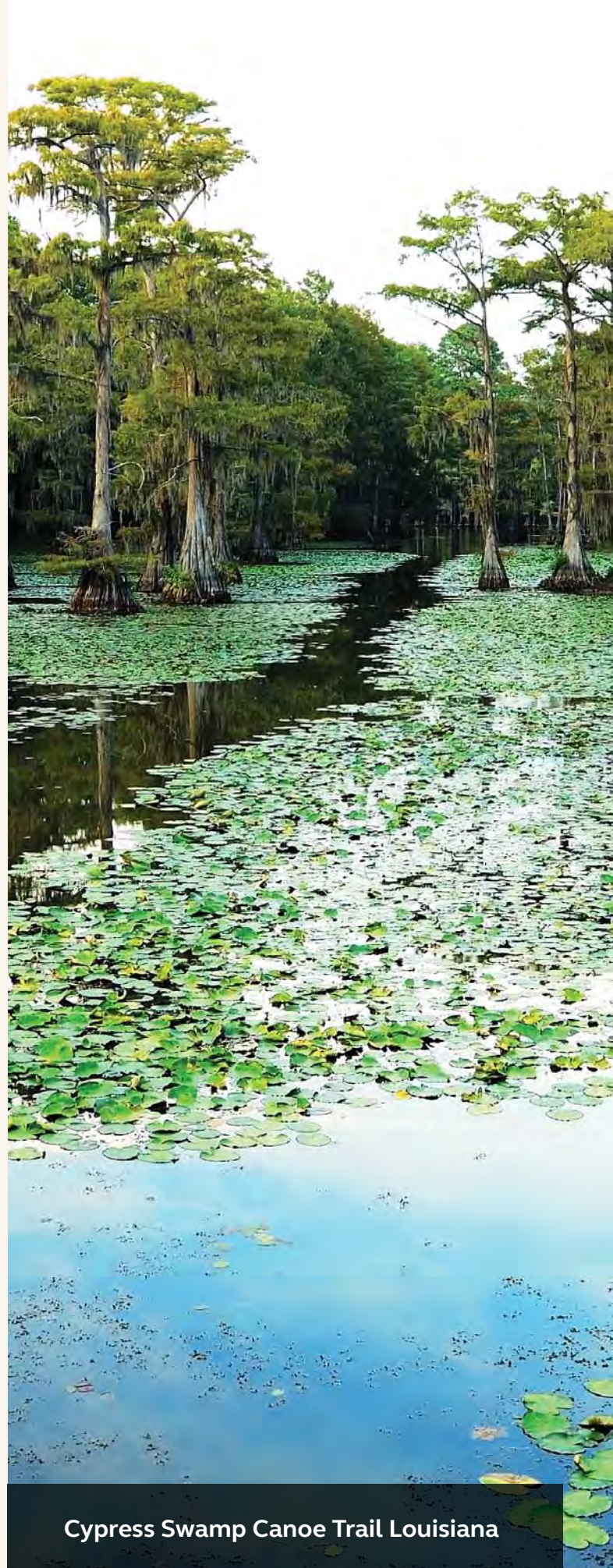
Floodplain Management Desk Reference

The current Louisiana Floodplain Management Desk Reference was last updated in 2008 (LaDOTD and DHS/ FEMA 2008), which itself was an update of a document originally generated in 2004 under Task Order 210 of FEMA's Hazard Mitigation Technical Assistance Program. The document is intended to educate and assist local floodplain administrators in "administering flood damage prevention ordinances at the community level." As technical understanding of climate science has continued to advance, coupled with rapid advances in computational ability to model and predict flood behavior, periodic updates of such a documents are required to ensure the latest science, policy, and regulatory norms are captured.



Recommendation:

Evaluate the extent to which this document would supplement or be absorbed by a statewide, comprehensive Floodplain Management Plan. Consider legislatively mandated periodic updates in a similar fashion as is required of CPRA's Annual and Master Plans.



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Example Projects and Initiatives within Floodplain Management Plans

The selection of objectives, projects, and measures to integrate into the floodplain management plan is typically contingent upon a group of identified stakeholders sized to the appropriate scale of the plan. For example, a state floodplain management plan would likely require a larger set of stakeholders than a local community floodplain management plan. The stakeholder group would use the study recommendations and input from citizens and staff to carry out a selection of measures to be implemented at various time scales.

Catalyst Measures

There are almost always important initiatives that are both high-benefit and low-cost that immediately bubble to the top of a planning process. Often called “planning on your feet,” catalyst measures are those that can and should be acted upon immediately. An effective floodplain management plan should provide a mechanism to catalog and act on these catalyst measures in order to build success, promote buy-in, and increase planning impact. Examples include the following:

- Clearing debris that is exacerbating flood risk and is potentially damaging to the environment (examples include household appliances that are sometimes dumped in waterways)
- Expanding public information about floods and their causes, individual risk reduction measures, and the need to protect natural resources in the floodplain
- Developing a website where important data can be catalogued and accessed, and where the public can contribute to flood risk-related reporting.
- Disseminating best practices and regulation reminders to developers, utilities, and construction companies

Examples of Near- to Medium-Term Strategies

At the local level, these strategies are generally those to establish future community policies, development controls, and building regulations, and might include project or initiatives that can be implemented fairly quickly. These strategies ensure at least some relief of existing problems and slow the further growth of potential problems while other measures requiring longer periods of analysis are planned and implemented.

These strategies often include the following measures:

- Strengthening or adopting floodplain regulations
- Improving the community’s CRS rating
- Adjusting public policies
- Developing a comprehensive land use plan and policy framework
- Improving watershed modeling
- Considering current and future natural and built environment conditions
- Property acquisitions and open space enhancement
- Small scale green infrastructure improvements (i.e., bioswales)

Examples of Long-Term Strategies

These strategies often require additional studies and investigations to determine costs, benefits, financing and funding, and implementation scheduling. They may require years or potentially decades to implement, particularly if a dedicated funding source is not identified. Additionally, to ensure these strategies are implemented, these measures generally require dedicated staffing by the entity developing the plan. Measures include the following:

- Constructing structural flood control features (e.g., dams, levees, floodwalls)
- Projects to restore the natural and beneficial function of the floodplain
- Redeveloping damaged areas
- Making structural adjustments to buildings (elevations, retrofits, floodproofing)
- Developing flood warning and emergency preparedness protocols
- Establishing evacuation and relocation procedures and projects
- Endorsing acquisitions of properties and neighborhoods in flood-prone areas
- Identifying and implementing other resource protection and restoration measures
- Broader scale green infrastructure improvements (i.e., multi-purpose park improvements)

CPRA's FRRP document includes the following additional recommendations:

Parish and Municipal Government:

- Adopt higher elevation standards based on future flood depths and recommended elevations by the 2017 Coastal Master Plan
- Implement more stringent zoning codes, subdivision ordinances, or other flood ordinances that include hazard mitigation or flood risk reduction elements, such as those found in the Coastal Land Use Toolkit, to promote higher risk reduction standards in areas subject to increased flood risk

Building Codes (adopted from the Uniform Construction Code Council):

- Increase resilience of building stock by updating building standards for high risk structures in the floodplain and continuing to provide resources for local implementation and enforcement of LSUCC standards.
- Create a statewide standard process for building code enforcement.
- Update building code standards to promote flood damage reduction by adopting ASCE-24-14 into the 2015 IRC.
- Prevent the weakening of the code by deleting the statewide freeboard requirement.
- Update building code standards to promote storm damage reduction including high-wind design requirements in the 2012 IRC.
- Maintain minimum disaster related provisions of the adopted model code and adopt higher regulatory standards such as increased freeboard, additional levels of protection for structures behind levees, or cumulative substantial damage tracking requirements.
- Parish and Municipal Governments:
 - Increase resilience of building stock by strengthening building standards for high risk structures in the floodplain in accordance with ASCE-24-14, and increase enforcement of these standards.
 - Require more stringent development standards for new construction that require a Flood Insurance Study for neighborhoods under 50 structures and five acres or less."

Important Ongoing Work

The various state agencies in Louisiana that are involved in driving or supporting floodplain management activities have done so for years and provide a basis upon which additional efforts can be augmented through a collaborative, coordinated floodplain management program.

- **DOTD's National Flood Insurance Program (NFIP) and State Floodplain Management Office (SFMO)** actively provides community-level support and guidance to support local compliance with FEMA regulations and help communities meet or exceed NFIP requirements.
- **GOHSEP** administers FEMA 406 Mitigation and HMA programs through which local communities receive mitigation dollars and implement floodplain management-related projects and flood risk reduction or prevention. GOHSEP also develops the State Hazard Mitigation Plan and provides technical support to communities related to the Community Rating System, which facilitates sound floodplain management, insurance cost savings for constituents, and risk reduction.
- **OCD's Disaster Recovery Unit** is the lead agency responsible for the development of Community Development Block Grant-Disaster Recovery (CDBG-DR) action plans and manages CDBG-DR funded disaster recovery and/or resiliency-focused projects. OCD-DRU's recent focus on watershed resilience and allocation of nearly \$10 million to fund staff and technical assistance demonstrates a commitment to watershed-based floodplain management and is a catalyst to the statewide, comprehensive Watershed-based Floodplain Management Program.
- **CPRA's Flood Risk and Resilience Program** has laid the groundwork from a policy and programmatic standpoint for how nonstructural flood risk reduction projects will be considered and funded within Louisiana's Coastal Zone, and provides a basis for how nonstructural projects meeting similar criteria and public policy needs may be advanced on a statewide level in the future. The CPRA is in the process of undertaking a detailed coastal parish capacity and capability assessment that can be leveraged to scope resource allocation to support local floodplain management efforts.

Case Studies from Other States

During Phase I, cooperating agencies gathered creative approaches to floodplain management; this compendium (included in Appendix A Case Studies from Other States) will be expanded and refined in Phase II and beyond. Case studies from California, North Carolina, Minnesota, and Delaware provide unique models for best practices in floodplain management planning.

In **California, the Central Valley Flood Protection Board (CVFPB)** serves as the state's regulatory agency responsible for ensuring that appropriate standards are met for the construction, maintenance, and protection of the Central Valley flood control system. It aligns with three significant statewide plans and is updated every 5 years to set a strategic blueprint to prioritize the state's investment in flood management. The CVFPB is comprised of a diverse set of stakeholders contributing to leadership, standard setting, and oversight. Lessons learned from the Board and Plan would be helpful to consider in floodplain management planning at the state and regional level.


Floodplain management in the **City of Charlotte and Mecklenburg County, North Carolina**, involves the unique use of benefit-cost analyses to make determinations related to future development in the floodplain. The county calculates the potential amount of future damage and costs to repair from a storm event to justify the added cost of mapping hazard areas and factoring in future development. This element alone is a leap above the national approach of calculating runoff and basing floodplain maps on existing conditions (Charlotte-Mecklenburg Storm Water Services 2017).

The **Floodplain Management Unit in Minnesota** oversees administration of the state's Floodplain Management Program and directs the NFIP in the state, providing significant public outreach, technical training, and a detailed floodplain management website. Through the development of watershed management districts, Minnesota effectively divides powers between the state and watershed-level districts. It provides a model for higher regulatory standards and more direct local engagement from the state related to floodplain management planning.

The **Delaware River Basin Compact (DRBC)**, signed into law in 1961, marked the first time a federal government and a group of states joined together as equal partners in a river basin planning, development, and regulatory agency. Consisting of commissioners from Delaware, New Jersey, New York, and Pennsylvania, the DRBC serves as an exemplar of interstate coordination, and in so doing demonstrates the importance of putting floodplain management planning over and above political boundaries.







LAYER 3

WATERSHED-BASED FLOODPLAIN MANAGEMENT

- Identifies the benefits of a watershed-based floodplain management program
- Identifies the possible responsibilities of a floodplain management group, organization, or entity operating at the watershed-level
- Explores existing watershed-based planning initiatives within the State of Louisiana
- Provides potential watershed-based geographical and planning configurations
- Provides example best practices from other states, based on Phase I research and interviews

Layer 3 Watershed-Based Floodplain Management

Layer 3 investigates key topics related to the formation of any structure that would manage floodplains at the watershed level.

In 2017, OCD hired a dedicated watershed planner and allocated a \$10 million budget to watershed-based floodplain management coordination and planning activities. This planner, Danica Adams, has been identified by cooperating agencies to facilitate the administration of the statewide, comprehensive Watershed-based Floodplain Management Program through at least Phases II and III of Program development.

Benefits of a Watershed-based Floodplain Management Program

Coordinated activities and actions that could be made possible through watershed-based coordination may include, but are not limited to the following:

Activities Possible Through Watershed-Based Coordination	Benefits Possible Through Watershed-based Coordination
Watershed/river basin flood analysis and mapping	<ul style="list-style-type: none"> Consistent assumptions across and within watersheds for future-condition analysis and mapping Greater certainty related to the effects and benefits of actions in the watershed Greater prediction capability Ability to leverage information to improve flood risk reduction
Coordinated multi-jurisdictional development policies and practices	<ul style="list-style-type: none"> Consistent application and benefit of watershed/river basin-wide NFIP-coordinated floodplain management policies and practices Planning and zoning: land use, runoff, drainage, conveyance, detention, storage, and flood mitigation policies and practices for equitable upstream-to-downstream distribution of flood risks Permitting: cumulative assessment of flood impacts of proposed development and re-zoning applications Floodplain ordinance: location-specific drainage, detention, storage, and impervious area policies for development to be coordinated with watershed districts
Flood protection system planning and design	<ul style="list-style-type: none"> Establishment of river basin commissions or multi-jurisdictional improvement districts for Coordinated/participatory planning of federal and state flood management projects and programs, and Negotiation of federal, state, and local cost sharing agreements Equitable sharing of benefits of floodplain management policies and practices and potential associated NFIP rate reductions and flood risk reduction measures
Flood protection system maintenance and improvement financing	<ul style="list-style-type: none"> Establishment of multi-jurisdictional and multi-basin flood improvement districts for cooperative financing Equitable and efficient distribution of costs of flood risk reduction across more benefiting parties Joint financing of flood protection system maintenance and improvement

Important ongoing work

As the state's floodplain management program takes shape, it is important to point to early organizational planning and funding actions initiated jointly between state agencies and regional stakeholders that are informing how such a statewide model may be structured.

Through the Amite and Comite Basin Flood Model authorized prior to this Phase I planning effort, and currently being developed under the oversight of DOTD and through funding provided by OCD-DRU, the state will soon have a robust watershed-based flood model that can be used to not only inform decisions within this basin but serve as a case study in evaluating potential statewide standards that can be used to govern the development of other watershed-based flood models. The Amite and Comite Basin Flood Model is intended to inform the basin's watershed planning and emergency planning capability (Hardy 2017). It encompasses East Feliciana, St. Helena, East Baton Rouge, Livingston, and Ascension Parishes. The modeling effort and accompanying data collection will assist in decision-making concerning structural and non-structural initiatives to reduce flooding in the watershed. The tools from the outcome of this analysis could run scenarios that predict how different storms will impact the basin and whether future projects will impact flooding.

Governor Edwards' Louisiana Resilient Recovery (LARR) Program is a collaborative effort between OCD and GOHSEP to create a regional, watershed-based pilot approach to watershed planning. This program has seen early successes in the Acadiana region. The Acadiana Regional Planning Commission has assembled the parish presidents from St. Landry, St. Martin, Lafayette, Evangeline, Vermillion, and Iberia, along with other local political and academic advisors. Participants have convened to enhance regional collaboration through project development discussions and to develop the criteria by which prospective projects will be evaluated for funding. This Metropolitan Planning Organization (MPO)-based effort recognizes that water abides by no political boundaries and encourages equitable decision making by representatives based on the good of the larger region (APC 2018). The manner in which involved parishes are working cohesively within the MPO structure to pursue, implement, and manage projects and related funding is consistent with industry best practices and serves as a key model that can be considered for broader application using similar existing regional structures.



Cypress Swamp Louisiana

Potential Responsibilities at the Watershed Level

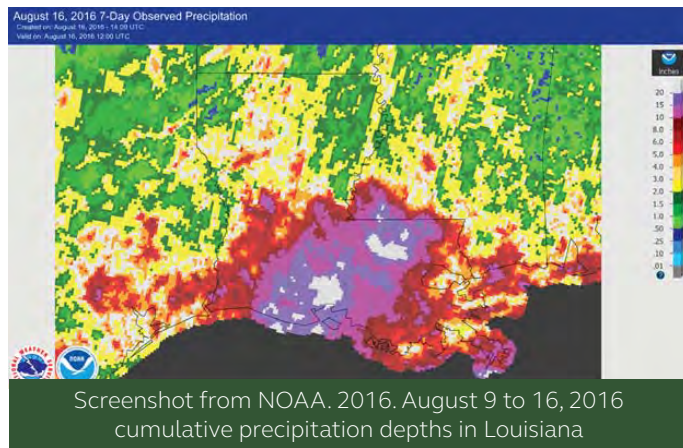
The following responsibilities have been identified as possible for management at the watershed level. The extent to which responsibilities are assigned at this level, governance structures, as well as the extent to which they supplement, complement, or supplant existing state, regional, or local jurisdictional responsibilities will be evaluated in coordination with stakeholders through Phases II and III of this initiative.

Category	Subcategory	Examples of Possible Responsibilities of a Watershed-level Organization
Funding	Procurement and Contract Management	<ul style="list-style-type: none"> Authority and responsibility to procure and contract goods and services to accomplish the organization's mission
	Allocations	<ul style="list-style-type: none"> Project prioritization process Project beneficiary identification Possible direct allocation of funding, if the entity has the power of funding generation (i.e., through service fees)
	Funding Generation and Management	<ul style="list-style-type: none"> Grant and loan applications Possible revenue generation models: utility fee, sales tax, property tax, special assessments, bonds Grant and financial management Public and private partnership development, agreement, implementation Coordinate investments with outside stakeholders
Planning	Planning Capabilities	<ul style="list-style-type: none"> Watershed plan(s) prescriptive or descriptive in nature – update on appropriate timeline to include goals, objectives, prioritized projects, and coordination efforts with surrounding watersheds Possible post-Flood Recovery Plan development Possible post-disaster redevelopment planning Possible coordination to integrate watershed-based perspective, plans, and initiatives into local comprehensive plans, capital improvement plans, projects, and development
NFIP Coordination	Mapping (Expanded Capabilities)	<ul style="list-style-type: none"> GIS capacity – data gathering, synthesis, updates, and support of predictive modeling Watershed hydrologic assessments Dynamic modeling Development and project consequence analysis
	Standards Development and Enforcement	<ul style="list-style-type: none"> Boundary delineation of floodplain and sensitive or high consequence areas of the watershed Standards development – higher standards than NFIP minimum requirements, and possibly based on dynamic and future projections of risk Land use and zoning Possible permitting
	Community Rating System (CRS)	<ul style="list-style-type: none"> Coordination of regional CRS participation Identification, documentation, and advancement of creditable CRS activities Assistance in preparing for CRS Verification Visits, annual reviews

Category	Subcategory	Examples of Possible Responsibilities of a Watershed-level Organization
Project Execution	Pre- and Post-Disaster Mitigation	<ul style="list-style-type: none"> • Program development to assist public pre- and post-disaster (i.e., CPRA Nonstructural Program) • Possible project implementation and maintenance responsibilities
Outreach and Engagement	Materials Development, Workshopping, and Information Disbursement	<ul style="list-style-type: none"> • Public information material development and distributio. 1. RL and SRL outreach – responsibility of the local entity 2. Flood Warning Program – warning system development and monitoring 3. Flood Protection Library – grant info, insurance info, etc. • Emergency Plan Development for Disasters • Stakeholder engagement, coalition, and trust building
Regulatory Authority	Development	<ul style="list-style-type: none"> • Floodplain Management Coordinator per watershed – coordinates directly with SHMO and the state NFIP Coordinator, as well as local stakeholders • Possible Floodplain Management criteria / policies per watershed that must be adopted at the local level into local flood damage prevention ordinance based on areas of the parish within each watershed
	Permitting and Enforcement	<ul style="list-style-type: none"> • Possible power to inspect, levy fines • Development permit – new or SI/SD construction • Development impact review – offsetting water onto neighboring properties, No-Rise analysis, floodplain expansion analysis, impervious surface review, on-site stormwater retention, etc. • Floodway permit – encroachment review
	Planning and Zoning Mechanisms	<ul style="list-style-type: none"> • Policies, practices, zoning codes to steer development away from natural floodplains or areas that could significantly impact the nature of the existing floodplain downstream • Establish new development and redevelopment policies on critical infrastructure • Land acquisition procedures • Possible incentives to encourage sound floodplain management related practices in development
Analysis	<ul style="list-style-type: none"> • Floodplain modeling and mapping completed at the watershed level • Dynamic modeling to understand project and development impacts at the watershed level • Flood risk evaluation facilitated at the watershed level, as needed 	
Data and Information Management	<ul style="list-style-type: none"> • Data collection and processing quality control coordinated and facilitated at the watershed level • Sharing of data within and between watersheds, as well as the state and relevant organizations 	
Monitoring and Evaluation	<ul style="list-style-type: none"> • Possible project monitoring responsibilities • Program and project metric development, tracking, reporting • Loss avoidance assessment responsibilities • Possible economic benefit tracking and reporting responsibilities • Possible insurance cost racking responsibilities 	
Technical Support and Capacity Building	<ul style="list-style-type: none"> • Provision of subject matter experts at the watershed level to support parish responsibility achievement (i.e, mutual aid agreements to review development plans) • Trainings and workshops provided by the state at the watershed level • Possibility for state funding and resources for local capacity building to be allocated and prioritized at the watershed level 	

Potential Watershed Planning Configurations

Rainfall may occur over multiple watersheds at the same time, at different rates, and typically does not follow political boundaries. As an example, the distribution of cumulative 7-day rainfall depths in August of 2016, indicates progressively more intense rainfall moving from northern to southern portions of Louisiana and from upstream to downstream watersheds, where the worst flooding was observed.



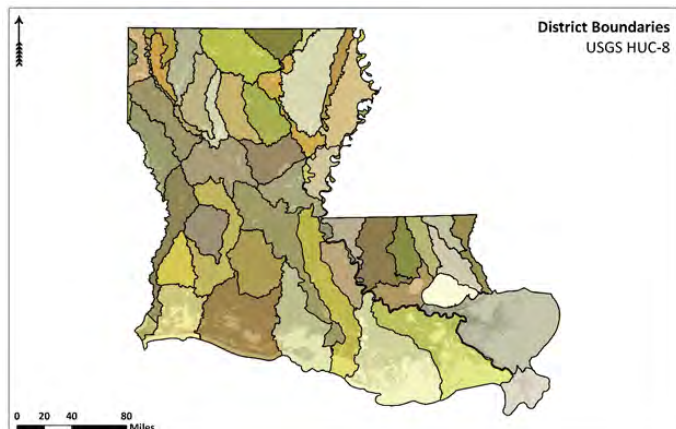
There are multiple geographic boundary options for watershed-based planning configurations. In Phase I, analysts overlaid jurisdictional and existing regional planning boundaries with various watershed-based geographic configurations to determine whether any natural existing planning alignments emerged, and to what extent existing regional planning entities might be leveraged toward watershed-based floodplain management and planning. Described in more detail in Appendix B: Watershed-Based Floodplain Management District Boundary Options, the investigation included:

- Various hydrologic units (regions, basins, and sub-basins/watersheds)
- Louisiana Association of Planning and Development districts
- MPOs
- Levee districts
- Water districts
- Alternate possible configuration observed in the Senate Concurrent Resolution (SCR) 39 Study commissioned by DOTD in 2014

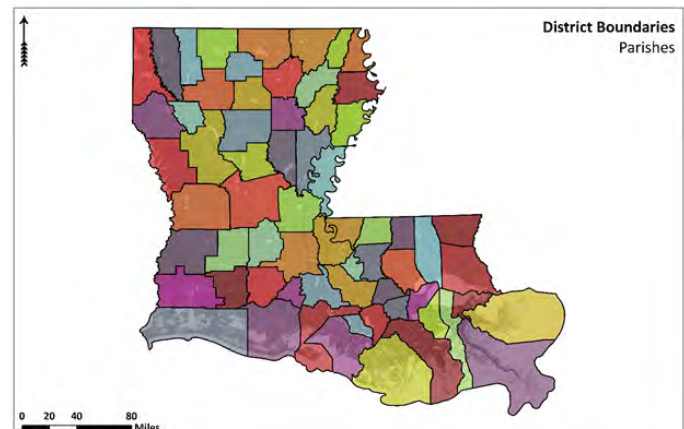


The number and hierarchy of political jurisdictions engaged in floodplain management increases with study area size. An important objective of the Phase I initiatives was to investigate appropriate hydrologic unit size within Louisiana's river basins relative to flood risk reduction potential and scalability of coordination mechanisms to political entities involved, complexity of floodplain management planning, and effectiveness of emergency response decision-making. While the current phase of floodplain management program investigation is limited to institutional mechanisms established under current law, subsequent phases may consider new legal authorities and/or institutions (e.g., flood management districts or river basin commissions to strengthen floodplain management statewide).

Sub-Basin/Watershed Boundaries



Parish Boundaries



Findings:

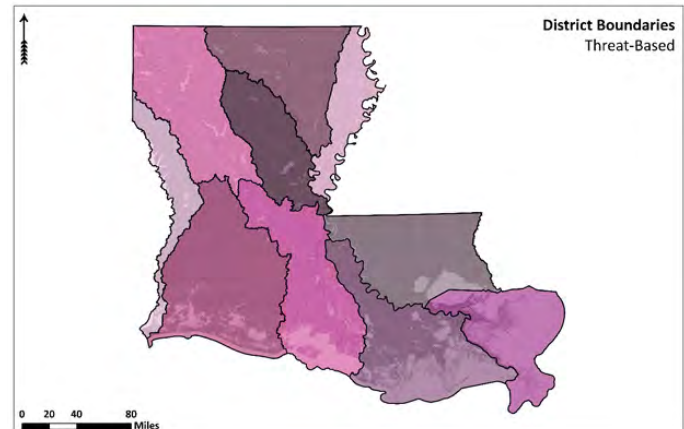
The SCR 39 Study referenced above found that many of the existing levee districts follow political rather than hydrological boundaries. While there are some levee districts that attempt to follow alluvial boundaries, such as those along the Red River, even these districts are limited both by outdated floodplain data and by parish boundaries. A district whose planning and authority does not encompass a watershed, or does not have cooperating capabilities to accomplish the same, is unable to manage water resources in a holistic manner.

Similarly, only 2 out of the 23 active water districts (Sabine River Authority and Amite River Basin Drainage and Water Conservation District) had watershed-based delineations. The rest followed parish or municipal lines. Additionally, water district boundaries are not necessarily mutually exclusive. An area may be covered by multiple water districts, such is the case with the Cane River and Red River Waterway Districts. This type of overlap could lead to inefficiencies, redundancies, and unnecessary bureaucratic burdens.

The Louisiana Planning and Development Districts (LAPDDs) and MPOs provide a platform for multi-parish collaboration; authority to plan and manage at a watershed scale will need to be investigated as part of Phase II.

Districts based solely on USGS Hydrologic unit Code (HUC) boundaries are not necessarily the solution either. Drawing district boundaries at the watershed or sub-basin scale could result in an unreasonable number of districts to operate efficiently. As an example, There are 59 HUC 8 watersheds in the state, just five less than the number of parishes. Furthermore, strict adherence to the hydrological boundaries would disregard the practicality of population distribution throughout the state.

As described in the SCR 39 Study, a better solution could exist that would reflect both the hydrological and practical needs, such as the threat-based districts shown in the figure below. The alternative shown is only a single example of the potential for science-driven district boundaries that consider flooding hazard, hydrologic boundaries, flood infrastructure, and population centers.



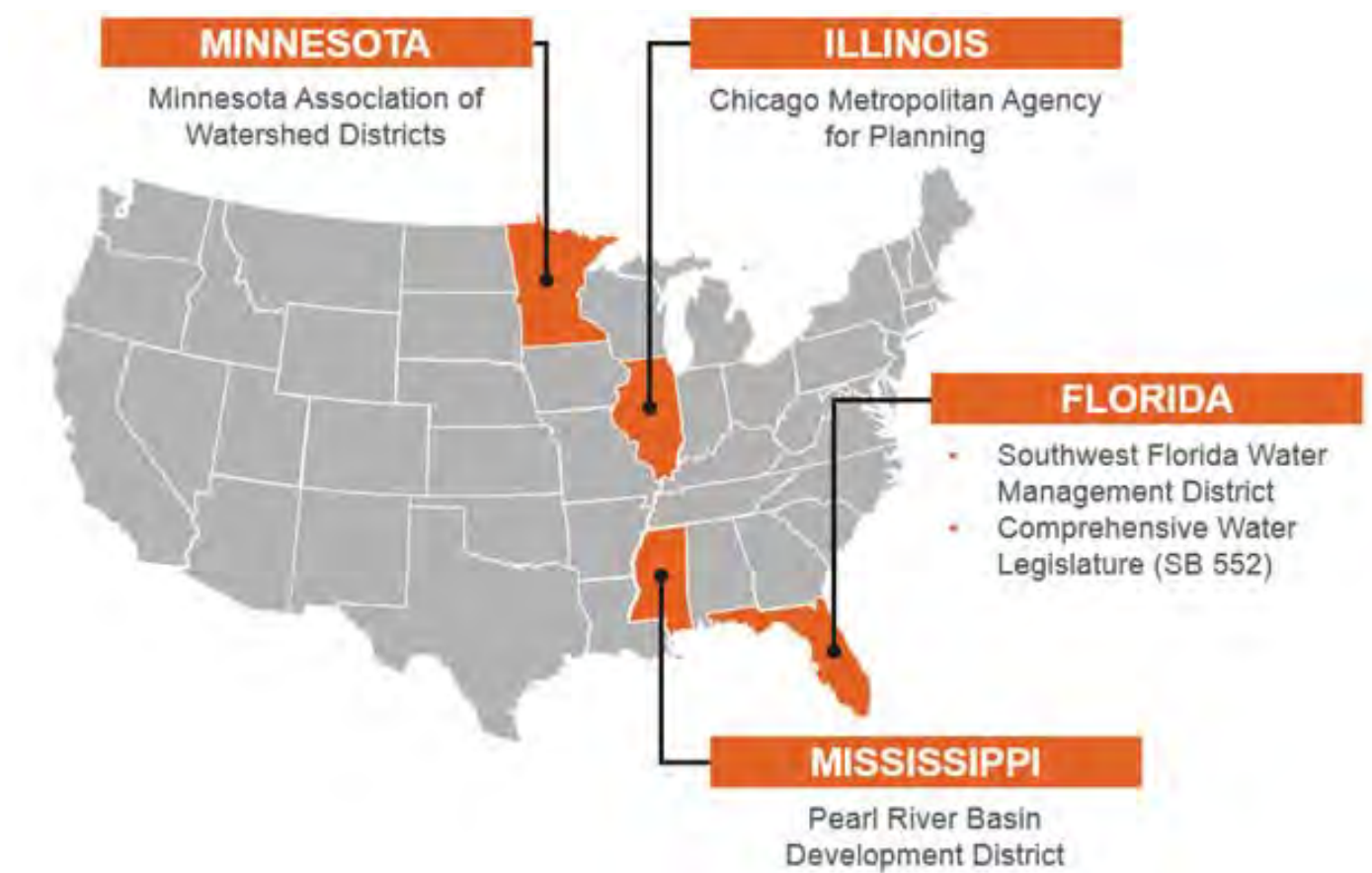
Threat-Based District Boundaries from the SCR 39 Study

Recommendation:

The Phase II initiative should build on this existing evaluation and the recommendations for next steps included in the SCR 39 Study by exploring whether realignment of existing regional planning authorities and levee districts is feasible or possible, whether authorities may be added or modified to accomplish the needs of the program, or whether these entities may be supplemented or supplanted by a watershed-based approach.

Case Studies from the States: Regional and Watershed Level

Management and Coordination



Minnesota, Chicago, Mississippi, and Florida

During Phase I, cooperating agencies gathered creative approaches to floodplain management; this compendium (included in Appendix A Case Studies from Other States) will be expanded and refined in Phase II and beyond. Case studies from Minnesota, Illinois, Mississippi, and Florida which provide unique models for best practices in regional and watershed-level management and coordination.

The **Minnesota Association of Watershed Districts** (MAWD) is a local, special-purpose unit of government that works to solve and prevent water-related problems, providing educational opportunities, information, and training for watershed district managers and staff. The creation of 45 watershed districts in Minnesota, each governed by a Board of Managers appointed by each county in the respective district, allows for policy development on a watershed basis, governed by a legitimate organization with regulatory power.

The **Chicago Metropolitan Agency for Planning** (CMAP) in Illinois is an award-winning streamlined, consolidated regional planning organization for northeastern Illinois counties, tasked with the implementation of a comprehensive regional plan. Additionally, CMAP serves as a regional watershed coordinator and integrates plans for land use and transportation. As a regional planning agency with water resource capabilities and oversight, CMAP is a case study for the potential option for consolidation, rather than coordination, between separate local agencies.

In **Mississippi**, the **Pearl River Basin Development District** serves as a special funding agency for the purposes of planning and constructing flood control projects, and is a model for the creation of task forces and organizations with an interest in the preservation of waterways, outreach, education, and data provision—something that has helped many states and watershed districts become more effective and efficient. The Pearl River Basin Development District was recently disbanded, and lessons could be learned in Phase II from why the district was considered ineffective.

The **Southwest Florida Water Management District** (SWFWMD), established in 1961 as a flood protection agency, has grown to include water supply, water quality, and the preservation of natural systems. It creates coordination documents for each county and city government and is an example of what an active and engaged water management district could look like, as well as its capabilities and roles.

Also in **Florida**, **Comprehensive Water Legislation** (SB 552) passed in 2016 established legal authority and responsibility among various state agencies to create and promote state-level standards on several issues related to water use and quality. With a regional focus on priority-setting, this legislation provides a policy basis for how best to address issues of competing jurisdictional priorities within a watershed. In requiring grading for a project's benefit to the watershed and adherence to state standards as prerequisites for state funding, the Florida legislation establishes a strong foundation for regional standard-setting





LAYER 4

TECHNICAL APPROACHES, CAPABILITIES, AND DATA NEEDS

- Document the technical approaches, capabilities, and data needed for effective floodplain management at any scale
- Document existing floodplain management data and technical approaches currently applied in the State of Louisiana
- Identify gaps in existing floodplain data and technical approaches
- Recommend further actions needed to obtain additional information in future phases and to address data gaps

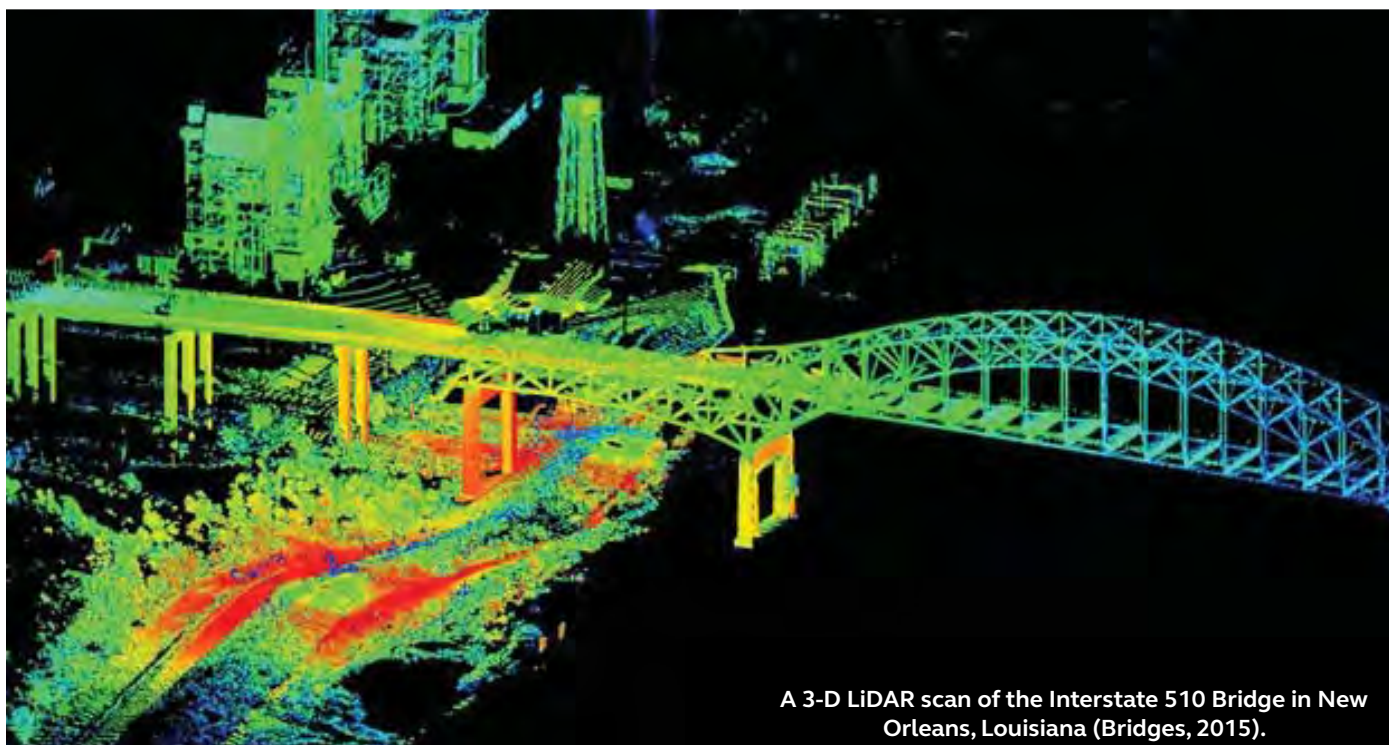
Layer 4 Technical Approaches, Capabilities, and Data Needs

Sound data and information are the foundation for all sound decision-making. Expanding and refining the quality and accessibility of useful watershed and floodplain management-related data are among the most important and urgent actions the statewide, comprehensive Watershed-based Floodplain Management Program could take.

The Phase I investigation included desktop research into state, federal, and local data sources as well as technical approaches and capabilities at the local or regional level. The results of the Layer 4 evaluation are preliminary and intended to provide a path forward for

Phase II. Phase II will continue the following activities, at a minimum:

1. Conducting interviews with local floodplain management teams to better understand technical approaches, capabilities, and data availability, and accessibility, across the state
2. Assessing and organizing the information obtained through statewide, comprehensive Watershed-based Floodplain Management Program (Program) development efforts
3. Sharing findings, gaps, and recommendations on how to integrate these data into the Program with the cooperating agencies



A 3-D LiDAR scan of the Interstate 510 Bridge in New Orleans, Louisiana (Bridges, 2015).

A Path Forward: Key Findings and Phase II Recommendations

Existing Flood Planning Approaches:

Many communities have floodplain ordinances and plans that focus on flood preparedness, flood mapping, and floodplain development permitting issues. Most communities do not appear to have a separate detailed floodplain management plan that describes the flood risks and actions a community has taken and will take to mitigate flood hazards, aside from information captured in the local Hazard Mitigation Plan. It is not clear to what extent this represents a need for a more direct strategy in flood risk management at the local level.



Recommendation:

Conduct a more detailed review of parish local hazard mitigation plans or comprehensive plans, as well as interview representatives, to understand technical approaches and existing floodplain management planning capabilities. Recommend selecting a spectrum of parishes for evaluation, including urban areas that flooded in 2016, rural areas that flooded in 2016, and areas that did not flood in 2016. A minimum of 9 parishes should be engaged in the evaluation. For each category, the parishes should be a mix of parishes with significant staff and resources, parishes with some staff and resources, and parishes with fewer staff and resources.

Hydraulic and Hydrologic Models:

While there are several pilot projects presently occurring within specific watersheds to model and understand flood risk, and some data publicly available in others, it is not clear the extent to which data are available at the local level, nor in jurisdictions located outside of the pilot regions.



Recommendation:

A survey coupled with local interviews of floodplain managers is needed to understand what studies have already been completed in each watershed. These studies should be collected and potentially leveraged for watershed planning and gap identification. Consider developing quality standards based on the pilot projects and explore expanding these modeling efforts across the state, or at least to the highest priority areas.

Data Accessibility, Quality, and Completeness:

Non-coastal floodplain management data are spread across multiple locations and are often not publicly accessible. The State of Louisiana has been developing a catalogue of data. Nevertheless, these data do not yet have a specific governance or quality control plan in place and are not inclusive of the data available at the local level.



Recommendation:

A centralized place for storage, display, and quality control of data from a variety of sources is needed, and a standard format for each physical parameter is needed for data archiving. With the centralized management of data, more specific data gaps can be disclosed easily.

Updates to land use and land cover data

May be necessary to more accurately reflect current and projected development.



Recommendation:

An evaluation of the quality of existing land use and land cover data from federal, state, and local sources, such as Louisiana State University's Atlas repository should be completed to confirm the need to update and gather new land use and land cover data, with a goal of eventually having land use and land cover data for the entire state with a data maintenance plan in place.

Data gaps in spatial coverage

Potentially exist for stage, discharge, and precipitation.



Recommendation:

Gaps may be determined through a complete data gathering effort via interviews with local agencies and continued research of national and state websites such as the Coastwide Reference and Monitoring System (CRMS) network of remote sensing stations. Leverage the data gathering tools developed for Phase I and refine or expand the information captured within them for Phase II.

The limited number of wave measurements

Is another gap in coastal zones. CPRA has been proactive in modeling both present and future predicted conditions across a number of possible scenarios of sea level rise and coastal landscape degradation.



Recommendation:

Interface with CPRA to determine which existing third-party datasets would be most effective to illustrate measured, hindcasted, and predicted wave measurements should be consolidated and leveraged for application in coastal zones.

Monitoring, Mapping, and Modeling Watersheds

Louisiana has committed to developing and implementing a statewide, comprehensive Watershed-based Floodplain Management Program to further the development of context-appropriate, locally feasible strategies for resilience planning, preparedness, and recovery relative to flood events. Hydrologic and Hydraulic models capable of supporting the state, local governments and private industry decision-making will strengthen the Program long term.

River gauges provide data necessary to validate, calibrate, and refine Hydraulic and Hydrologic (H&H) models, as well as feed data into an early flood warning system. Currently the United States Geological Survey (USGS) has the backbone of a state-wide monitoring network of major waterways, however, there are critical areas in the network that remain unmonitored. The USGS has estimated that the addition of one hundred (100) new gauges located around the state would be sufficient to perform the necessary tasks. Ongoing funding to perform maintenance of instruments and infrastructure on new gauges will be necessary, therefore a critical component of this program will be to identify local partners which can commit the funds necessary to perform the requisite annual maintenance and upkeep of gauges.



Recommendation:

Work with USGS and other relevant agencies to perform a gap analysis determining strategic locations for new gauges, and install new gauges in strategic locations across the state. Work with USGS and local partners to establish a cooperative endeavor agreement relative to long-term maintenance.

Hydraulic and Hydrologic (H&H) models have the power to provide forecasting as well as hindcasting capabilities. With the concurrent development of statewide data and modeling performance standards, watershed models would provide a coherent and connected picture relative to conditions within each watershed, as well as scenario-building that can help inform policy and land-use decisions.



Recommendation:

Perform a gap analysis to determine the date and quality of existing H&H models around the state. Develop H&H models for watersheds across the remainder of the state, determining and adhering to specific quality standards.

High quality TopoBathy, or an integrated topographic and bathymetric data set, is crucial in the development of an accurate H&H model. Topographic and bathymetric data has, thus far, only been procured in select areas of the state that have been able to afford it, and the data sets reside with a variety of governmental agencies, ranging from local to state or federal. Additionally, river crossings are frequently the choke points of a waterway, resulting in flood water backing up behind the crossing.



Recommendation:

Perform a gap analysis to determine date and quality of existing TopoBathy data sets. Collect TopoBathy data for the remainder of the state, developing and adhering to consistent quality standards. Survey selected river crossings at known choke points.

Single website, or data portal The available datasets concerning Louisiana surface water are currently held by many different local, state, and federal agencies. There is a need for a single website, or data portal, which would connect and house every data set relative to surface water, flood risk information, as well as training and education modules relative to the use of this information, and which would be public facing. Ongoing data management and maintenance will be necessary, requiring institutional partners able to commit or secure necessary funds.



Recommendation:

Develop an “everything flood-related” data portal to provide public access to all water information and flood risk relevant data in the state. Determine a mechanism to provide long term hosting for website, data sets and models. Develop standards for the procurement and maintenance of that data. Develop a plan to work with communities to utilize, update and verify the models regularly (more on this data portal on the next page).

A statewide levee database would be beneficial; presently, datasets are housed by both CPRA and DOTD for coastal and non-coastal areas and updated at varying intervals. Due to the phenomenon of subsidence in coastal areas, levee databases require constant updating.



Recommendation:

Inquiries regarding existing levee databases should be made during interviews with state officials to identify current levee data, update intervals and responsibilities, and data standards concerning vertical datums and geoids.

A comprehensive and detailed inventory of built environment characteristics does not appear to exist. Standard data collection methods for property appraiser data, which could be leveraged to this end, do not appear to exist.



Recommendation:

Explore the possibility of leveraging tax assessor data to develop a coherent and detailed inventory of the built environment utilizing such tools as Geiger LiDAR for bulk data collection. Capture elevation certificate data, elevation permit data, and data regarding substantial damage. In coastal areas, supplement this data with structure inventories performed for various federal feasibility flood studies over the last two decades, such as the Morganza to the Gulf and Southwest Coastal Louisiana feasibility studies. Explore the possibility of requiring uniform methods of tax assessor data collection for public and private assets. Work with DOTD and other agencies to reconcile flood and infrastructure datasets. Perform a detailed inventory gap analysis.

An integrated statewide inventory of flood loss (in addition to and inclusive of that captured by the National Flood Insurance Program [NFIP]) does not appear to exist. These data would be indispensable in long-term planning and project prioritization efforts.



Recommendation:

Reconcile NFIP repetitive loss data with high water mark data, Individual Assistance, Public Assistance, and Small Business Administration data, as well as historical flood damage assessments, and local flood loss data to create a master dataset of flood loss in the State of Louisiana. Privacy Act concerns will need to be addressed, and alternate data security measures may be required.

An integrated statewide inventory of hydraulic structures does not appear to exist. It is likely that this data is housed in a number of separate modelling studies and other repositories managed by CPRA, DOTD, LDNR, and the USACE.



Recommendation:

During interviews with local floodplain managers and state officials, inquire about GIS coverages of primary hydraulic structures within floodplains that could be part of a statewide hydraulic structures database. Consider standards of physical and operational attribute information that should be included in a GIS database. Coordinate to begin development of the dataset.

Technical Capability Needs: Depending on the management focus, different technical teams may be formed at the local level. The capabilities of floodplain managers and support staff vary widely, from small communities to parishes to the state. To develop an efficient and cost-effective technical team for a local agency, an understanding of the existing technical floodplain managers' capabilities is necessary.



Recommendation:

Develop a capability assessment and long-term capability and capacity building strategy.

Important Ongoing Work

Each of the four cooperating agencies maintain active roles in providing technical expertise and supporting data management efforts that will serve as critical inputs in the implementation of recommendations outlined in this report.

DOTD's work in coordinating community assistance visits (CAVS) through the State Floodplain Management Office may be expanded through a statewide, interagency focus on floodplain management capacity building or by leading the development of a watershed-based model for the Amite and Comite Basin, an effort that is expected to serve as one of the initial inputs into a state-level data clearinghouse for subsequent modeling efforts to follow.

OCD and GOHSEP actively coordinate with other local, state, and federal partners to collect watershed-level data to inform strategy development for three pilot watersheds through the Louisiana Resilient Recovery Program. This effort could be leveraged into the development of model standards across the state and can potentially be expanded to others to facilitate statewide watershed-based planning.

CPRA's efforts through the 2017 Coastal Master Plan include technical and data-related recommendations for the agency's Flood Risk and Resilience Program (FRRP) that could be leveraged into the watershed-based floodplain management program and its related initiatives. FRRP is focused on promoting the state's objective of reducing the impacts of coastal storm surge-based flooding on communities, emphasizing the planning for and implementation of nonstructural risk reduction projects focused on reducing the impacts of flooding to buildings and infrastructure by floodproofing, elevation, or voluntary acquisition where property owners move away from high risk areas.

CPRA's work in designing and implementing the agency's Coastal Information Management System (CIMS) provides the public with open access to a mix of geospatial data, tabular databases, and documents related to CPRA's suite of protection and restoration projects. Similar to the Amite and Comite Basin flood model, CIMS will serve as a key input into the flood-related public access website outlined in these Phase I recommendations.

Technical Data

State- and federal-owned data are typically readily available, some of which can be obtained through web-based searches. Data collected by local agencies (e.g., parishes or cities) are often not accessible through a web-based search. Direct communication with parishes and cities may be the only way to understand data availability and data quality. Development of a centralized location for storage and display of data from national and local agencies is recommended to control data quality and to maintain the data in a standardized format. With the centralized management of data, users and decision-makers will know of any data gaps and can propose or support data collection efforts to fill the gaps. Existing efforts such as CPRA's System Wide Assessment and Monitoring Program (SWAMP) have already begun to track a significant portion of such natural and human system data within Louisiana's coastal zone. Such programs could form the backbone for expansion across the entire state.

Technical Capabilities

Generally, ready access to a full technical team consisting of a certified floodplain manager, certified planner, hydrologist, hydraulic engineer, coastal engineer, GIS specialist, surveyor, geologist, geophysicist, biologist, ecologist, economist, database engineer, landscape architect, and network architect are key to achieving successful floodplain management at a state or regional level. Nevertheless, a full technical team is not always required for local-level management or implementation. Local agencies may be able to seek support from a full technical team at a state or regional level or through contracted support. The capabilities of floodplain managers and support staff vary widely from small communities to parishes to the state.

Technical approaches and capabilities required for sound decision-making in floodplain management include the following categories. More detail and subcategories were also evaluated as part of Phase I.

1. **Data collection:** Gathering, extracting, or measuring scattered and widespread data that are used to support hydrologic and hydraulic analysis and flood risk assessment.
2. **Hydrologic and hydraulic analysis:** Engineering analysis of a flooding source to establish peak flood discharges and flood elevations at given recurrence intervals, which may provide detailed or limited detailed studies. A detailed study is a flood hazard study that, at a minimum, results in the delineation of floodplain boundaries for the 1%-annual-chance flood and the determination of base flood elevation or flood depths. A limited detailed study is a flood hazard study that estimates flood elevations in areas that were originally mapped as A zones or were not previously studied using limited or no surveyed field data.
3. **Flood mapping:** Geographic flood hazard information that support decision-making and provides stakeholders with high-resolution flood risk data, including flood elevation and risk assessment.
4. **Data management:** Effective management of observational and analytical data related to flood risk assessment and risk mitigation.
5. **Flood risk assessment:** Estimations of flood losses and damages at a given depth of flooding, which are calculated at the structure level or aggregated at the census block level. Risk assessment will require cross reference with the latest predictions concerning the future change of climatic and physical conditions (e.g. predictions of sea level rise, land loss rates) as well as anthropogenic conditions (e.g. predicted land use and develop patterns) over the coming decades.
6. **Decision-making support:** The capacity to understand the potential short- and long-term as well as the upstream and downstream effects of development, maintenance, and project activities on flood risk, equitable benefit, and the natural and beneficial functions of the environment anywhere within a watershed.
7. **Project planning technical capabilities:** Technical resources required and used to enact appropriate planning processes.
8. **Cost estimating capabilities:** Engineering capabilities and tools (in house or contracted) to accurately estimate required costs to implement and maintain flood risk and watershed-related projects.
9. **Financial and grant management capabilities:** Tools and capabilities to manage funds, contracts, and grants associated with floodplain management and watershed-based initiatives.

“Everything-flood Related” Website and Data Portal

As a result of the Phase I effort, cooperating agencies are partnering to develop a website that houses all known floodplain management data (local, state, and federal) in the State of Louisiana. The website can be leveraged, expanded, and refined into a clearing house that facilitates data gathering, review, storage, and management with a specific set of standards. Key recommended features of the data clearinghouse include the following:

- Present Geographic and Spatial Data (both above and below grade information)
- Predicted Geographic and Spatial Data (such as DEMs for future environmental scenarios) based on CPRA’s Master Plan work in the coastal zone representing future land loss and flood risk data.
- Hydrologic and Hydraulic Data
- Structure and Infrastructure Inventory and Characterizations
- Population and Demographic Data
- Hydraulic Structure and Existing Flood Protection Measures Inventory
- Historical Flood Loss and Hazard Event Data
- Watershed and Floodplain Models and Studies
- Losses Avoided and Flood insurance Studies (FIS)

This data portal could be expanded in the future to provide a clearinghouse and management tool for flood risk reduction funding applications. In 2017, recommendations associated with the development of CPRA’s FRRP included a central database and web portal for the collection, evaluation, and implementation of nonstructural flood mitigation project applications. Significant benefit, in the form of increased planning and flood risk management capability, could be gained from direct entry of statewide flood mitigation project application and implementation data into a central portal.

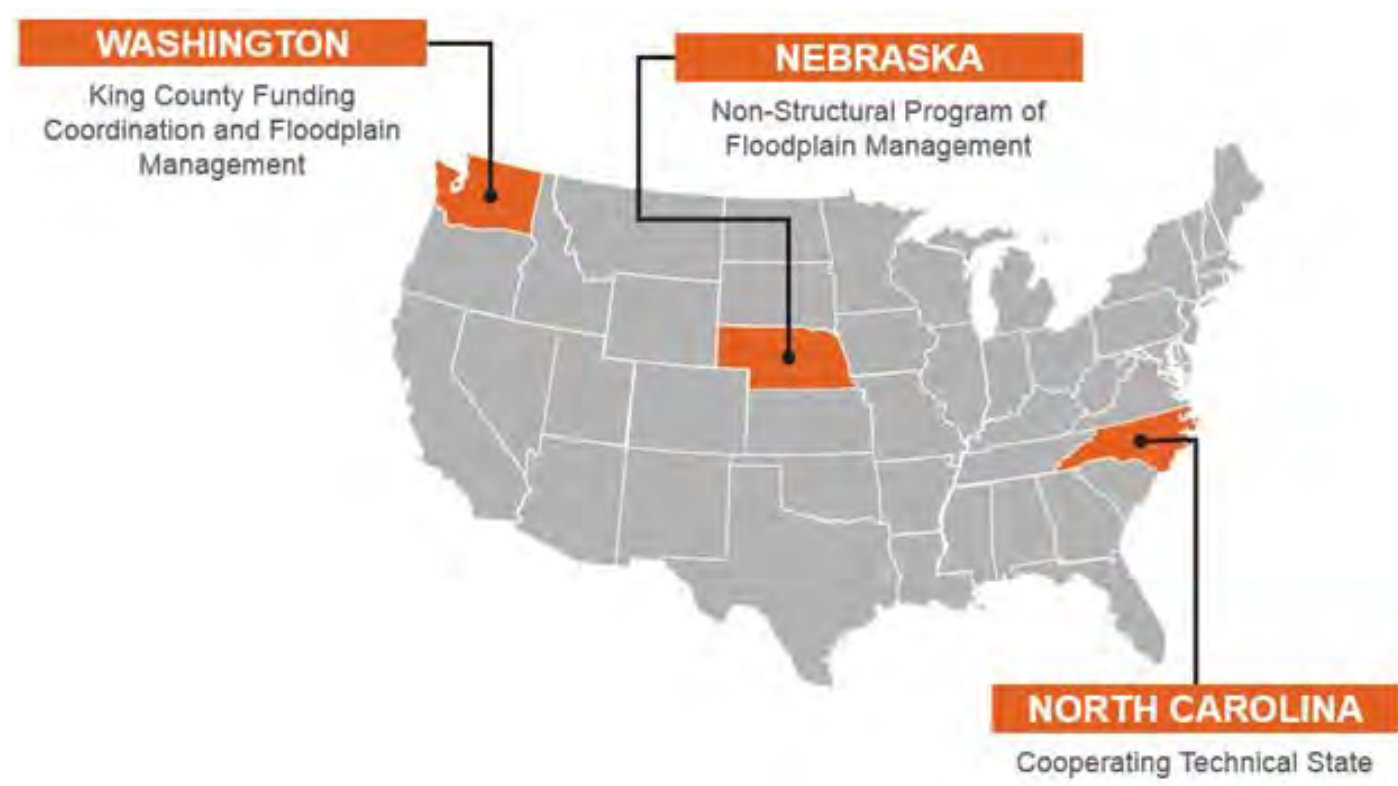
In Phase II, Layer 4 should be expanded to include an evaluation of non-technical local and state capabilities and approaches that are critical to a successful floodplain management program, including the following:

- Outreach and information dissemination and publishing
- Stakeholder engagement
- Compliance with and enforcement of minimum National Flood Insurance Program Standards, as well as identification and pursuit of creditable Community Rating System activities
- Urgent flood risk tracking capabilities, such as canal maintenance and logjam clearance needs



Green cypress tree dome in Louisiana

Case Studies from Other States



Nebraska, Washington, and North Carolina

During Phase I, cooperating agencies gathered creative approaches to floodplain management; this compendium (included in Appendix A Case Studies from Other States) will be expanded and refined in Phase II and beyond. **Nebraska, Washington, and North Carolina** provide unique models for best practices in technical approaches, capabilities, and data needs.

Nebraska's Non-Structural Program of Floodplain Management is led by the Nebraska Department of Natural Resources (NDNR) Floodplain Division, which oversees floodplain delineation and provides technical assistance regarding floodplain management to local units of government. Nebraska is a best practice for its innovative practices in expanding risk mapping and communication to previously underserved areas.

King County, Washington relies on inter-county agreements with counties where watersheds cross boundaries to coordinate funding for floodplain management activities. The County itself employs more than 60 people on staff to support river and floodplain management and funds the River Management Program through a countywide property tax levy called the River Improvement Fund (RIF) levy. King County engages in program and project effectiveness monitoring in order to inform future flood-reduction projects.

North Carolina is a Cooperating Technical State and the first state to assume ownership of and responsibility for the FIRM for all North Carolina Communities participating in the NFIP. The program also provides more accurate mapping than required by FEMA. The state sets a high standard for meeting NFIP requirements and leveraging participation.



The background of the slide features a photograph of a city skyline, likely New York City, viewed from across a body of water. The skyline includes several prominent skyscrapers, with the Empire State Building being particularly visible. The water in the foreground is calm, and the sky is overcast. The text is overlaid on the right side of the image.

Summary Findings, Recommendations, and Implementation Roadmap



Lake Fausse Pointe State Park, Louisiana

Phase I Example Key Findings

The Phase I Program Development Research and Evaluation Process illuminated key findings correlated to six initial strategic areas that are essential to effective floodplain management in the State of Louisiana. The following pages provide summary key findings, with all key findings addressed within the Implementation Roadmap.

Strategic Area 1: Collecting, Developing, Managing, Processing, and Sharing Data

Strategic Area 2: Expanding and Refining Engagement and Trust Building

Strategic Area 3: Setting Standards

Strategic Area 4: Identifying Funding Sources and Maximizing Effectiveness

Strategic Area 5: Understanding, Building, and Maintaining Capability and Capacity

Strategic Area 6: Planning and Coordinating for the Future

Strategic Area 1: Collecting, Developing, Managing, Processing, and Sharing Data

Example Key Findings related to Strategic Area 1

Sound data leads to sound decision making

Best practice investigations in Phase I indicated that effective floodplain management requires that robust data gathering, management, sharing, and analysis mechanisms are in place and being consistently improved.

Eliminating data silos will drive greater efficiencies at the state, local, and federal levels

There is a lot of high quality data within the state. This data is not always accessible to the people who need it. Phase I revealed the need for increased availability, standardization, and centrally accessible data. Stakeholders expressed frustration that the availability, need, and quality of data are not always clear. Additionally, multiple entities may be collecting and separately housing similar data, leading to resource inefficiencies, and conflicting information where data collection methods differ. This issue appears prevalent at the state, local, federal, and non-governmental levels. Stakeholders repeatedly asked for a mechanism to coordinate and improve accessibility of data across agencies and levels.

There is an overarching need for quality and up to date data and models that can support and drive sound decision-making

Several efforts are currently underway to advance data gathering and hydrologic and hydraulic modeling efforts at a watershed level that will support planning mitigation projects for the existing built environmental and also to support planning and understanding new project and development impacts within the watershed. Based on Phase I findings, successes and lessons learned from these endeavors, in addition to technical and scientific consensus-based best practices, are needed across the state and should be expanded as funding becomes available.

Data should be transparently managed, standardized for use at any scale, integrated as much as possible to maximize planning utility, and open and accessible to those who need it

As more studies or planning efforts are initiated, more and more data will be created. If models are not created in alignment with consistent statewide standards, nor developed in such a manner that allow for seamless integration into a central data clearinghouse, the data that is created will only have applicability to the watershed under consideration and risks not being developed in alignment with industry best practices. As the primary funder and/or facilitator of project-based funding, the State must adopt a leadership position in ensuring dynamic flood models are initiated and flood-related data are collected in a coherent and cohesive manner across all Louisiana regions and parishes, whereby all watersheds benefit from data that is gathered, analyzed, and used to make decisions.

Strategic Area 2: Expanding and Refining Engagement and Trust Building

Example Key Findings related to Strategic Area 2

Engagement is a force multiplier

It is clear from review of best practices both within and outside of Louisiana that engagement can be a force multiplier. When people, agencies, and organizations are engaged early and often in solving a problem and developing solutions, such as the need to reduce flood risk, they become invested in the outcome. Invested parties are more likely to engage others and to drive change.

Roles and responsibilities related to floodplain management and flood risk reduction have often been unclear

Phase I revealed a need for more communication and clarity about the roles and responsibilities of specific state, local, regional, and federal entities relative to floodplain management. It is possible that a lack of clarity has contributed to a corresponding lack of engagement among stakeholders who are unsure about “who to go to for what” – a role that the State can both clarify and fill through this program.

Existing processes are more likely to lead to competition, as opposed to cooperation, between parishes and within regions

Multiple stakeholders expressed the need for both trust building and incentives to encourage cooperation at a regional level. In addition, local parishes expressed that existing systems are more likely to disincentivize cooperation and more mindful development practices than encourage them. As an example, parishes and municipalities within parishes within the same watershed must often compete for funding and investment, which can disincentivize knowledge sharing and the development of mutually beneficial projects.

Trust building is needed between organizational levels in order to maximize Program effectiveness

It is clear that state, local, regional, and federal stakeholders must all work together in order to improve flood risk mitigation in the state of Louisiana. Nevertheless, stakeholders shared significant confidence in some agencies, but not in others, and in some cases were clear about some of the ways this could be improved. Transparency and active engagement across organizational levels is needed in order to support trust building and collective action.

The State must be elevated as a trusted and expert voice supporting local jurisdictions to meet floodplain management goals

As local jurisdictions move toward improved flood damage prevention standards, it will be critical for the relevant State agencies to operate from a trusted and authoritative position that can deliver technical assistance, resources, and guidance at the local level in the manner that is most needed. Expanded engagement efforts from the state could help jurisdictions overcome entrenched challenges or obstacles that may otherwise impede the implementation of improved standards.

Expanded engagement related to flood risk and the benefits of risk mitigation projects and policies is needed

As an example, best practice investigations revealed that improved development standards for flood risk mitigation can lead to increased economic activity. Nevertheless, multiple stakeholders expressed that there are still significant and widespread misconceptions about the value these standards can provide to local jurisdictions, the development community, and private property owners. Empirical data and knowledge sharing is needed to ensure that benefits, as well as the costs of inaction, related to mitigation projects and policies are clear.

Strategic Area 3: Setting Standards

Example Key Findings related to Strategic Area 3

Consistent standards are necessary to maximize risk reduction within each watershed and minimize negative downstream effects to neighbors

As Louisiana moves in the direction of a watershed-based approach to floodplain management, minimum development, project, and maintenance standards that are rooted in best practices and sound science and engineering principles must be applied consistently across jurisdictions to reduce flood risk and negative downstream effects. While it is understood that each local jurisdiction is responsible for setting and implementing a municipal code of ordinances, including the establishment of various standards stipulating project, building, or development activities, it is also widely acknowledged that the variation that exists in such standards and enforcement from jurisdiction-to-jurisdiction has to-date resulted in confusion and consequences within and outside of the parish. Local stakeholders expressed the need for support in understanding and setting needed minimum standards.

The State can help address gaps in floodplain management expertise by publishing best practices

Local jurisdictions interviewed acknowledged that floodplain management is often an added-on responsibility of an incumbent public servant – from the fire chief to chief building official – and thus these individuals do not operate from a position of having the readiest access to best practices and subject matter experts as it relates to enhancing flood prevention efforts through ordinance modifications. Clear, improved, and updated publications are needed to support sound floodplain management across the state.

Local standards can benefit from model policies and connecting state-managed project awards to standard adherence

Even when presented with best practices, it can be difficult for local jurisdictions to overcome market forces that would otherwise opt for looser or less-defined building codes or development ordinances. The State can serve a key role in balancing against such variability by publishing model policies and minimum standards that are required for various project awards or funding decisions, including incentivizing those jurisdictions that may consider implementing higher-than-minimum standards. Those jurisdictions that move to implement such disaster resistant standards and ordinances would ultimately be those that are most fittingly positioned to receive funding from state and federal agencies where adherence to minimum standards serves as a base qualifier for project awards.

Strategic Area 4: Identifying Funding Sources and Maximizing Effectiveness

Example Key Findings related to Strategic Area 4

Project-based funding allocations will become much more effective when considered on a watershed basis

Many jurisdictions' efforts to advance flood risk reduction or mitigation projects are often stymied by a lack of access to desired or ideal levels of project funding. Consequently, given an environment with limited funding availability and/or funding decisions that are often applied to the jurisdictional level as opposed to regional or watershed level, many projects in receipt of state or federal funds are targeted to improve jurisdiction-level drainage or flood prevention issues. This can occur at the expense of surrounding jurisdictions – whether through adverse, cross-jurisdictional impacts that are created or in the absence of a regional approach that benefits residents living across jurisdictional boundaries. While it is expected that there will continue to be local drainage or flood mitigation needs that are specific to one jurisdiction, it is critical that all projects are considered, funded, and advanced in coordination with a regional, watershed-based approach to achieve maximum regional impact.

State-level standards and incentives or disincentives will drive local compliance and coordination

Minimum state standards and funding incentives (such as reduced local match) can be used to drive regional planning, as well as increased flood risk reduction. Ultimately, such criteria would be factored into funding decisions administered by state or federal agencies, thus motivating all jurisdictions to adopt similar standards and project parameters. The State can work concurrently to increase the capacity of jurisdictions to more effectively address flood risk reduction efforts at a local level and thereby contribute toward greater readiness for regional or watershed-based projects. Such actions will support the State and regional or local partners to most effectively leverage existing local and/or state funding sources toward any new federal appropriations focused on mitigation and resilience.

Local jurisdictions may need funding support in order to improve and / or implement and enforce local floodplain management and flood risk reduction-related standards

The process of evaluating, modifying, implementing, and enforcing appropriate floodplain management standards, as well as completing the engagement, outreach, and education activities necessary to ensure the soundness and success of such standards, can be resource intensive. Local jurisdictions may need financial and technical support from the state to enact lasting change.

State agencies may be able to further tweak and leverage existing resources to maximize benefit

It is clear that more funding is needed to support sound floodplain management and flood risk reduction in the state. Nevertheless, it is also clear that existing resources can and should be evaluated for opportunities to maximize the benefits those sources provide. Such opportunities might include reconciling and streamlining application processes between agencies, leveraging sources to reduce duplication and fill gaps, and refining or refocusing money to address the highest priorities of the state Watershed-based Floodplain Management Program.

Strategic Area 5: Identifying, Building, and Maintaining Capability and Capacity

Example Key Findings related to Strategic Area 5

The State must work to first fully understand and then help to increase state, regional, and local capabilities and capacity to address needs related to floodplain management expertise

As identified across all other strategic areas of focus recommended as part of this Phase I effort, many local jurisdictions or regional entities will need support to successfully implement standards or ordinances, identify and pursue or implement local risk reduction projects, and/or inform regional project solutions that could otherwise be positioned for significant funding opportunities. The State must work with local and regional entities to continue to develop a robust understanding of the capabilities and capacity that currently exists across all local jurisdictions in order to identify what assistance state agencies can and should provide in a targeted manner – financial, technical, or otherwise – and orient capacity building efforts accordingly. In essence, this approach becomes a necessary element of “provision equity” that ensures those jurisdictions lacking the expertise or resources to implement standards or pursue projects that offer the greatest potential for funding, and thus community resilience, are able to effectively position themselves for such opportunities as the State’s floodplain management program advances.

Similar self-reflection is required at the state level. Agencies working toward floodplain management and flood risk reduction within the state must evaluate the extent to which state staff, funding, engagement, coordination, and other resource capabilities and capacity are sufficient to meet current and projected needs, as well as develop a strategy to fill any gaps.

Strategic Area 6: Planning and Coordinating for the Future

Example Key Findings related to Strategic Area 6

Collective action is needed across organizational levels to support effective floodplain and flood risk management

It is clear from Phase I investigations that active coordination across state, local, regional, and even federal entities will be necessary to maximize the success of a watershed-based approach to floodplain management.

A fully integrated program management model for floodplain management at the state level will lead to more effective and efficient delivery of projects and services to Louisiana citizens

The primary driver behind this strategic area is consistent with the programmatic driver of SR172 – to establish a multi-agency program operating framework that allows state agencies and partners at a regional and local level to advance a statewide, comprehensive watershed-based floodplain management approach for Louisiana residents. The design and implementation of such a framework addresses policy, operational, organizational, and programmatic elements of the State’s efforts to properly mitigate against future flooding. One of the core components of this Phase I planning effort involved the identification and delineation of state agency responsibilities relative to floodplain management, and how those responsibilities could be clarified and bolstered within a statewide comprehensive Watershed-based Floodplain Management Program framework (see layer 1).

Program Governance | Strategic Area 6

The advancement of this statewide, comprehensive Watershed-based Floodplain Management Program requires a clear approach to program management and governance into Phase II and beyond that builds upon the cooperating agencies model that drove Phase I. Given the number and scale of initiatives targeted for advancement or completion as part of Phase II and III program efforts, it is recommended that the State expand program governance through two actions.

The first is to continue to advance planning efforts through an interagency approach to program governance that leverages the strengths and capabilities of each agency with floodplain management related responsibilities, as opposed to creating a new state-level entity or agency. Such an approach, as evidenced through the Phase I effort, will encourage cooperation and leveraging of resources, as opposed to silo-ing. As outlined in this report, the Phase I approach to program governance was driven through the cooperation of OCD, DOTD, CPRA, and GOHSEP, with the addition of LDFW in Phase II. These cooperating agencies are developing interagency working groups and integrating subject matter experts from these and other agencies whose involvement in floodplain management activities was identified through Phase I research and will be instrumental in program administration actions moving forward.

The second is to assign an agency to lead and support the cooperating agencies through program administration, and identify a qualified staff member as program manager. The program manager will be a central point through which actions can be coordinated, and the flow of program-related information is facilitated, in an efficient manner. The Office of Community Development was identified during Phase I as the agency to serve in this role given its focus on long-term, statewide recovery and resilience, as well as its emphasis on integrating co-benefits into projects through broad stakeholder engagement. In response to these needs and expected path forward, OCD has hired an experienced watershed planner whose responsibilities include serving in this program management role.

In coordination with OCD as the program administrator, cooperating agencies are expected to provide governance over the program's technical advisory committees and working groups, using recommendations and findings from subject matter experts, engagement, and research and investigations to inform policy and programmatic decisions. Furthermore, additional planning activities – such as the development of the recommended State Floodplain Management Plan – are expected to be informed, driven, and authorized by the cooperating agencies.

The interagency actions that take place through the cooperating agencies and their working groups, beyond core program governance, should occur through the requisite policy instrument(s) such as memorandum of understandings to align participating agencies' statutory responsibilities around program goals and ensure activities are coordinated in an integrated manner based on programmatic needs.

Significant policy, funding, and programmatic decisions that are relevant to floodplain management in the State of Louisiana must be coordinated through these cooperating agencies to ensure that decision making processes are sound and that decisions are made in the light of all available information, data, and stakeholder feedback.

It is recommended that the State consider legislative action to ensure that the statewide, comprehensive Watershed-based Floodplain Management Program, comprised of cooperating state agencies with floodplain management related responsibilities, become the central clearinghouse for significant funding and policy and programmatic decisions that will affect watershed health and flood risk within the state.

PHASE I RECOMMENDATIONS

The following key initiatives are recommended to support each strategic area identified through the Phase I program development research and evaluation process. On the following pages, each initiative is broken into specific actions that should be undertaken as the program develops and matures. Actions are assigned goal timeframes as follows: immediate (catalyst actions), within the next 6 months (Phase II), within the next year (Phase III), within 2 to 3 years, and within 4 to 5 years. The focus of the initial Phase I effort was to identify the path forward to define the State of

STRATEGIC AREAS



Collecting, Developing, Managing, Processing, and Sharing Data

- 1.1 Ensure that data presently collected are available to those who need it, with clear metadata defining source and status
- 1.2 Identify and fill critical data and data collection process gaps
- 1.3 Define a quality control and maintenance process for future data collection
- 1.4 Develop and enforce minimum standards for dynamic watershed models
- 1.5 Ensure that models adhering to specific minimum standards are developed for every watershed
- 1.6 Ensure that dynamic watershed models are used in decision making



Expanding and Refining Engagement and Trust Building

- 2.1a Ensure that the right stakeholders are involved to build consensus around program planning and implementation
- 2.1b Work to build trust across and between all levels of government required for floodplain management
- 2.2 Ensure that information needed to make program and floodplain management decisions is properly and effectively communicated at all levels
- 2.3 Continue and regularly maintain an interagency coordinating mechanism to support floodplain management planning, program effectiveness, and resource leveraging
- 2.4 Provide a mechanism for direct one-on-one feedback on program success and areas for improvement.
- 2.5 Coordinate planning at a regional (watershed) level.



Standard Setting

- 3.1 Publish best practices for use in decision-making and establishing incentives
- 3.2 Publish model policies that include higher than minimum standards
- 3.3 Establish appropriate mandatory flood damage prevention standards at the state level

Louisiana’s Watershed-Based Floodplain Management Program, as well as activities needed to get it started. The Program will be required to further define itself and expand or modify the activities, as needed. The initiatives are, by design, incomplete, especially as listed in the longer timeframes. Activities identified as highest priority by members of the cooperating agencies are in **bold**.



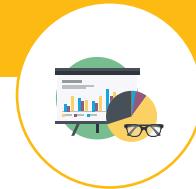
Identifying Funding Sources and Maximizing Effectiveness

- 4.1 Fund Phases II and III of the program development process
- 4.2 Ensure that existing available funding sources are maximized, leveraged, and aligned
- 4.3 Maximize the effectiveness and reach of state-administered funding sources such as FRRP cost-share reduction incentives by integrating transparent standard-based and regional-planning incentives
- 4.4 Increase provision equity by integrating capacity building mechanisms into state-administered funding sources
- 4.5a Facilitate local funding generation for project implementation and long-term project maintenance
- 4.5b Support the development of funding mechanisms that allow beneficiaries of projects across jurisdictional boundaries to contribute to the funding and implementation of floodplain management-related actions
- 4.6 Be prepared to maximize the effectiveness of congressional appropriations and funding from presidential disaster declarations by having prioritized and consensus-based state-level initiatives and “shovel-ready” projects, and by promoting the same at the watershed and local levels
- 4.7 Expand the reach of funding by disincentivizing development policies that will require corrective action to mitigate flood damage, water quality degradation, or habitat loss at a later date



Identifying, Building, and Maintaining Capacity

- 5.1 Initially and then periodically assess local capacity and capability needs to effectively target and develop state technical support initiatives
- 5.2 Initially and then periodically assess state program capacity and capability needs to effectively plan resource requirements and initiatives



Planning and Coordinating for the Future

- 6.1 Develop and maintain a multi-agency program operating framework that shows the authorities, responsibilities, and interrelationships of the cooperating program management agencies
- 6.2 Provide interim recommendations for high-benefit, low-impact activities that can be completed in the near term to reduce immediate risk
- 6.3 Use interstate summits as an important partnership development and planning support mechanism
- 6.4 Develop a State Floodplain Management Plan
- 6.5 Develop a flood risk reducing master plan for each watershed consistent with the Coastal Master Plan in relevant areas
- 6.6 Include a mechanism to expand and regularly publish studies that substantiate the value of Louisiana’s Watershed-based Floodplain Management Program and practices
- 6.7 Continue to engage and periodically evaluate the form and function of a Steering Committee to support program development and management
- 6.8 Engage a Technical Advisory Committee for program development and periodic evaluation




**Collecting,
Developing,
Managing,
Processing, and
Sharing Data**

**STRATEGIC
AREA 1**

Information and data is the foundation for all analysis, decision making, and management of the floodplain and associated watersheds. This information and data must be as complete as possible, relevant, current, of appropriate quality, and as consistent as possible to ensure wise decision making and appropriate action. This information and data must be processed using impartial methods and industry best practices and tools to ensure that it is put to sound use.

#	Initiative	Catalyst (Immediate) Action
1.1	<p>Ensure that data presently collected are available to those who need it, with clear metadata defining their source and status</p> <p>"Everything Flood Related" Data Portal and Website</p> <p>Plan, fund, develop, and provide a data library and clearinghouse within an "everything flood-related" website to collect, review, and distribute data gathered through a variety of sources relevant to floodplain management, and watershed-based planning</p>	<p>Develop a scope, cost estimate, and plan for the development of "Everything Flood Related" Database and Website that includes clearinghouse, grant application portal, standards, quality control mechanisms, publishing, data sharing mechanisms, and maintenance processes and schedule</p> <p>Determine whether any existing data library currently being managed by the State or cooperating entity can be modified to meet the needs of the "Everything Flood Related" Data Portal and Website</p>
1.2	<p>Identify and work collaboratively to fill critical data and data collection process gaps.</p>	<p>Pilot and then finalize the technical approaches, capabilities, and data questionnaire drafted in Phase I for use in Phase II, and explore integration with the Capacity and Capability Assessment recommended within Strategic Area 5</p> <p>FEMA Region VI and the State of Louisiana have been cooperating to complete an inventory of existing statewide and national data layers and datasets for 22 of the 59 Louisiana watersheds. Raw data has been compiled for these watersheds.</p>
1.3	<p>Define a quality control and maintenance process for future data collection and management</p>	<p>Address this initiative under catalyst action for initiative 1.1</p>

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
<p>Create the “Everything Flood-Related” website that provides links to all relevant existing agency websites and data documentation</p> <p>Plan, fund, develop, and share a mapping tool on the “Everything Flood-Related” website to enable application and use of the data by locals, specialists, and the general public</p> <p>There are multiple existing mapping tools and websites within the state, run by state agencies and non-governmental organizations that will be researched for best practices and possible reconciliation or expansion in Phase II and III. CPRA’s Coastal Information Management System (CIMS) (https://cims.coastal.la.gov/) is an example best practice and possible resource in this effort.</p> 	<p>Develop a clear long-term governance structure and technical process for maintaining the website</p> <p>Identify and leverage long-term funding mechanisms to maintain the website (see Strategic Area 4)</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Establish a comprehensive and dynamic list of all relevant data currently captured and available at the state and watershed level</p> <p>Identify data gaps and develop a periodic review schedule for data needs (see Initiative 1.3)</p> <p>Use Strategic Area 2 and Initiatives 3.1, 6.7, and 6.8 as a mechanism to identify data gaps based on guidance from local jurisdictions, state agency representatives, technical advisors, and other key stakeholders.</p>	<p>Perform a gap analysis of the clearinghouse, and develop a plan to fill those gaps and a schedule to periodically reevaluate needs</p>	<p>Continue Phase III actions</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Develop, record, and communicate data quality standards for all available data on the website</p> <p>A Technical Advisory Committee (see Initiative 6.8) may be able to support the state in developing data quality standards and a quality control process.</p>	<p>Determine whether legislative action is required to ensure use of and compliance with data gathering, management, and maintenance standards</p> <p>Develop a clear long-term governance structure and technical process for maintaining the data</p> <p>Identify and leverage long-term funding mechanisms to maintain the data (see Strategic Area 4)</p> <p>Through engagement with subject matter experts and expert organizations, develop ongoing data gathering and maintenance requirements, responsibilities, standards, and best practices (e.g., after every disaster, high water marks must be collected following a specific methodology)</p>	<p>Develop data</p> <p>Execute maintenance plan.</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>



Collecting,
Developing,
Managing,
Processing, and
Sharing Data

STRATEGIC AREA 1

Information and data is the foundation for all analysis, decision making, and management of the floodplain and associated watersheds.

This information and data must be as complete as possible, relevant, current, of appropriate quality, and as consistent as possible to ensure wise decision making and appropriate action. This information and data must be processed using impartial methods and industry best practices and tools to ensure that it is put to sound use.

#	Initiative	Catalyst (Immediate) Action
1.4	Develop and enforce minimum standards for dynamic watershed models	Begin to develop draft standards for the development of dynamic watershed models for vetting in Phase II
1.5	Ensure that models adhering to specific minimum standards are developed for every watershed	<p>Develop criteria and process to prioritize watersheds for modeling. For example, watersheds could be prioritized based on expected flood exposure to low income populations, frequently of flooding, or other factors.</p> <p>Develop a legislative or resilient infrastructure funding proposal or strategy for recommended Phase II and Phase III Initiative 1.5 efforts</p>
1.6	Ensure that dynamic watershed models are used in project and development decision making, in order to prevent or mitigate adverse impacts to existing uses within the watershed	Using the Amite Watershed as a case study, work with communities within the watershed to understand expectations and build consensus around how the model will be used, managed, and integrated into decision making processes

In August 2017, the Federal Emergency Management Agency (FEMA) released the Louisiana Watershed Resiliency Study (LAWRS) in response to two major flooding disasters that took place in Louisiana in 2016. The flooding events destroyed or damaged approximately 80,000 structures and 100,000 vehicles in Louisiana, of which 75-80% were uninsured.[1] Those events prompted a FEMA effort to collect data and evaluate flood impacts in 22 of the affected watersheds. A wide range of data was collected with the goals of increasing watershed resiliency, providing data that inform disaster funding strategies and priorities, increasing community cohesion, and enhancing environmental quality and minimizing degradation.

The 22 of the state's 59 watersheds in the LAWRS are spread throughout the state and are not constrained by jurisdictional boundaries, such as parishes. For that reason, data collection presented additional coordination challenges. Information was collected on a wide variety of topics, including watershed stakeholders, flood-related data, topography, soils, floodplains, aquifers, water quality, hazardous waste, drainage, land cover, social demographics, energy infrastructure, transportation, and critical and emergency facilities. Hydrological and hydraulic analyses were performed, and input was received from community members and stakeholders.

The result of the study is a report containing all the collected information and analyses, which can be used as a reference for planners and policy makers in the state. FEMA also generated a series of interactive maps for each watershed. These maps aggregate the collected data into a visual form that's easy to process and learn from. There are also appendices for each watershed with complete data and more detailed analyses. Going forward, there is potential to expand this study to every watershed in the state. Doing so would support future modelling and risk assessments and provide a foundation for resiliency planning statewide.

[1] Louisiana Watershed Resiliency Study. FEMA. August 2017

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
<p>Draft and vet minimum standards for the development of dynamic watershed models</p> <p>A dynamic flood model, compared to static flood maps, should be updated regularly and should be used to understand the potential effects of project, maintenance, and development activities within the watershed</p> <p>A Technical Advisory Committee may help vet pilot modeling standards as well as support related recommendations for Phase III, such as developing ongoing data maintenance requirements, standards, and best practices</p>	<p>Develop legislation or policy to ensure compliance with dynamic flood model standards</p>	<p>Continue Phase III action, as necessary</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Reconcile basin-level flood risk model data for highest priority watersheds and identify model data gaps</p> <p>Complete a preliminary, comprehensive riverine flood risk assessment using existing available basin data. Integrate this and a defined process for integrating future dynamic model information into the State Hazard Mitigation Plan that is presently being updated</p>	<p>Develop models for watersheds based on priority and funding established in Phase II</p>	<p>Develop models for watersheds based on priority and funding established in Phase II</p>	<p>Models for all watersheds complete by the end of this period</p>
<p>Investigate appropriate methods and standards for use, as well as effectiveness, of using dynamic models in project and development decision making in order to prevent or mitigate adverse impacts to existing uses within the watershed</p> <p>A Technical Advisory Committee may help in the development of processes related to this initiative</p>	<p>Conduct outreach and technical support to normalize use of the models in decision making</p>	<p>Develop standards and best practices to facilitate and normalize use of dynamic models in decision making</p> <p>Explore whether any policy will be needed to ensure use of dynamic models in project and development decision making</p> <p>Continue to conduct outreach and technical support to normalize use of the models in decision making</p>	<p>Implement any key decisions from Years 2 and 3</p> <p>Conduct outreach and technical support to facilitate compliance</p> <p>Conduct enforcement actions to facilitate compliance</p>



Expanding and Refining Engagement and Trust Building

STRATEGIC AREA 2

Engagement must be thorough and widespread to understand and address floodplain, flood risk, and watershed management related needs.

#	Initiative	Catalyst (Immediate) Action
2.1a	Ensure that the right stakeholders are involved to build consensus around program planning and implementation	Phase I provides recommendations to address this initiative. Nevertheless, the program will need to regularly revisit engagement actions to ensure that objectives are pertinent, clear, achievable, and ultimately met.
2.1b	Work to build trust across and between all levels of government required for floodplain management	Review, refine, and expand the Phase I stakeholder map based on those who could be affected by, affect, or otherwise have interest in the Phase II and Phase III implementation roadmap Leverage the cooperating agencies, the Phase I initiative, related initiatives, and existing outreach mechanisms within partner agencies and organizations, as well as related upcoming conferences to build consensus around a program development framework and solutions
2.2	Ensure that information needed to make program and floodplain management decisions is properly and effectively communicated at all levels	Catalog and leverage existing advantageous and appropriate outreach mechanisms (including, but not limited to, Police Jury, State Floodplain Management Office engagement activities and community assistance visits, GOHSEP engagement activities, LA SAFE) and conferences to share news, updates, and key information Draft a decision making and prioritization matrix to support watershed and floodplain management project and activity planning The Louisiana Floodplain Management Association's 35th Annual Conference will be held April 25 through 27, 2018, in Natchitoches, Louisiana. The cooperating agencies leveraged the conference to engage key local floodplain management stakeholders and build consensus around specific program development topics, as well as obtain content feedback for the "everything flood-related" website from Initiative 1.1.
2.3	Continue and regularly maintain an interagency coordinating mechanism to support floodplain management planning, program effectiveness, coordinate and leverage outreach and engagement efforts, and leverage resources	Explore whether a change in the composition, nature, or function of Louisiana Senate Resolution 172 Steering Committee is necessary to meet the needs of Phase II (see Initiative 6.7). Develop a decision making process and structure to facilitate the sharing of information

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
<p>Using engagement input and the results of the preliminary capability assessment (Initiative 5.1), develop Phase III program engagement objectives, plan, and metrics, with regular intervals to evaluate progress. This engagement plan should include public, local, relevant non-profit and private entities, relevant state agencies, relevant federal agencies, special interest groups, and regulators, academic institutions, and soil conservation districts, at a minimum.</p> <p>Record and publish engagement activities and plans on the “everything flood-related” website from Initiative 1.1</p> <p>Provide a mechanism within the “everything flood-related” website from Initiative 1.1 for engagement requests to be received</p>	<p>Using engagement input and the results of the capability assessment (Initiative 5.1), develop long-term program engagement objectives, plan, and metrics, with regular intervals to evaluate progress</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Using engagement input and the results of the preliminary capability assessment (Initiative 5.1), develop Phase III program outreach and publishing objectives, plan, and metrics, with regular intervals to evaluate progress</p>	<p>Using engagement input and the results of the preliminary capability assessment (Initiative 5.1), develop long-term program outreach and publishing objectives, plan, and metrics, with regular intervals to evaluate progress</p> <p>Conduct an outreach campaign to share the outcomes of Initiative 3.2</p> <p>Publish the Statewide Comprehensive Watershed-Based Program Framework for public comment</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Continue convening the cooperating agencies to drive program planning and maximize inter-agency cooperation and resource leveraging (see Initiative 6.7)</p>	<p>Evaluate the long-term needs, the mission, and objectives of interagency coordination to effectively implement floodplain management. Develop a long-term interagency coordination plan, with a mechanism to periodically evaluate membership and effectiveness</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>



Expanding and Refining Engagement and Trust Building

STRATEGIC AREA 2

Engagement must be thorough and widespread to understand and address floodplain, flood risk, and watershed management related needs.

#	Initiative	Catalyst (Immediate) Action
2.4	Provide a mechanism for direct one-on-one feedback on program success and areas for improvement	Revisit, adjust, and refine interview questions developed during Phase I, as needed.
2.5	Coordinate engagement for planning at the watershed level	<p>The Louisiana Resilient Recovery (LARR) Watershed Program is a joint effort between the Federal Emergency Management Agency (FEMA), the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), and OCD to improve the resilience of the 22 watersheds that were impacted by the 2016 Floods</p> <p>Continue to evaluate the mission, objectives, and achievements of the LARR workshops to-date. Explore potential modifications and replicability to other watersheds</p> <p>Assess short- and long-term staffing needs related to coordinating planning at the watershed level, and align Phase II and Phase III watershed-level coordination staffing capacity with this short-term need</p>

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
Continue conducting interviews recommended to the cooperating agencies through the Phase I effort, logging findings, and using the information to contribute to program recommendations and further engagement planning. Continue to expand and refine the list of individuals and organizations that should be engaged and interviewed through the process.	Continue conducting interviews recommended through the Phase II effort, logging findings, and using the information to contribute to program recommendations and further engagement planning Develop a long-term evaluation mechanism to periodically check in with key stakeholders	Implement a long-term evaluation mechanism to periodically check in with key stakeholders.	Evaluate initiative accomplishment and success Monitor and maintain this initiative
Leverage LARR workshops to build consensus around a state watershed-level planning process. Explore expanding the participation of the LARR watershed-level workshops to include all relevant governmental and non-governmental entities in the planning process (at the watershed level).	Leverage the watershed-level workshops to develop a replicable framework for expansion of the watershed-planning approach Increase the number of watersheds engaged in the watershed-level workshops	Evaluate effectiveness and planning achievements of the watershed pilots Expand to a statewide program with a regular and replicable update cycle	Evaluate initiative accomplishment and success Monitor and maintain this initiative



Setting Standards

STRATEGIC AREA 3

Leadership and support at the state level will ensure consistent and effective floodplain management.

#	Initiative	Catalyst (Immediate) Action
3.1	Publish best practices for use in decision-making and establishing incentives	<p>Develop a library of relevant, existing published best practices</p> <p>Example new best practices include long-term project maintenance governance and plans, local funding partnership development, project implementation, governance planning processes, and floodplain management policy administrative and enforcement procedures.</p>
3.2	Publish and communicate model standards and policies	<p>Review existing and develop a draft list of potential model standards and policies to be vetted through Phase II investigations</p> <p>Multiple model standards and policies have been developed in the past by partner agencies and affiliated entities. These standards should be gathered and reviewed in the light of a watershed-based floodplain management approach.</p>
3.3	Set appropriate mandatory flood damage prevention standards at the state level	<p>Track H.R. 4460 (U.S. Congress 2017b), which would incentivize adoption of the latest disaster resistant codes and standards at the state level and could change the schedule and nature of actions taken related to this recommendation.</p>

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
<p>Add the best practice library to the “everything flood-related” website for Louisiana (see Initiative 1.1).</p> <p>Evaluate best practice needs based on preliminary engagement</p> <p>Begin developing, refining, and publishing best practices that support sound floodplain management practices</p> <p>Identify best practices (in addition to model ordinances) that can and should be affiliated with financial incentives and disincentives</p> <p>As an example, CPRA’s Flood Risk and Resilience Program proposes cost share reduction incentives for local jurisdictions that include higher standards, such as freeboard, flood risk reduction development and land use standards, and critical infrastructure standards.</p>	<p>Evaluate initiative accomplishment and success</p> <p>Maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Evaluate model floodplain and stormwater management policies from around the country. Convene a Technical Advisory Committee to review and support development of model policies (the creation of Technical Advisory Committees are referenced in Initiative 6.8)</p> <p>Explore the feasibility of additional, creative higher standards for locals to integrate into land use and flood damage prevention codes, such as those used by the State of Illinois for the floodway</p>	<p>Develop and publish a model Flood Damage Prevention Ordinance based on higher than minimum National Flood Insurance Program (NFIP) standards (to include standards that will maximize Community Rating System points)</p> <p>Develop and publish a model stormwater ordinance</p>	<p>Integrate incentives for adoption of model and higher standards into state-administered funding sources (See Strategy 4)</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Evaluate state standard-setting mechanism options, including potential modifications to existing standards (such as the Louisiana Uniform Construction Code (LA State Legislature 2011c)) as well as development of potential new standards (such as accomplished in Illinois’ Rivers, Lakes, and Streams Act) (Illinois General Assembly 2016).</p> <p>Evaluate the presence and location of existing authorities to develop, implement, and enforce state standards; determine whether necessary authority exists or must be developed</p> <p>Through engagement and technical research, draft standards that should be incorporated at the state level, to include requiring consistency with CPRA sea level rise and flood probability standards used in the development of the Louisiana Coastal Master Plan</p>	<p>Develop higher than minimum NFIP standards at the state level, as well as a maintenance and update process</p>	<p>Higher than minimum NFIP standards and update process should be in full effect at the state level by the end of Year 3</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>



Identifying Funding Sources and Maximizing Effectiveness

STRATEGIC AREA 4

Both availability and effective use of funding should be maximized toward best floodplain management and flood risk reduction practices.

#	Initiative	Catalyst (Immediate) Action
4.1	Ensure resources are allocated to support Phases II and III of the program development process	<p>Develop a funding strategy to implement Phases II and III of the program development process</p> <p>Develop a funding strategy and legislative proposal to accomplish Initiative 1.4 (Develop Models for Each Watershed)</p> <p>Track H.R 4667 (U.S. Congress 2018), which has the potential to accelerate funding and completion of multiple recommendations contained herein as well as high priority existing floodplain management projects</p> <p>Initiative 1.4 is both urgent and important as it will result in the provision of the critical information needed by local governments, developers, state agencies, and other stakeholders to advocate for and make informed decisions. This initiative has been specifically identified as needing an independent funding strategy due to the expected cost required.</p>
4.2	Ensure that existing available funding sources are maximized, leveraged, and aligned.	Integrate agency-specific Phase I recommendations that can be implemented immediately
4.3	Maximize the effectiveness and reach of state-administered funding sources by integrating standard-based and regional-planning incentives	<p>Promote and prioritize the following types of flood resilience measures, wherever feasible:</p> <ul style="list-style-type: none"> • Those planned through a regional coalition of entities • Those that benefit underserved, low income, or otherwise vulnerable populations • Those that benefit a broad population • Those that provide a broad regional benefit • Actions involving contiguous property mitigation in cases where individual property action is required • Actions that restore or enhance the natural and beneficial functions of the floodplain • Actions associated with establishing higher standards and capacity building • Actions that integrate broader co-benefits

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
<p>Coordinate with State government staff and key legislative and agency stakeholders on funding options and the budgetary process that may be needed for new Program recommendations</p> <p>Develop a funding strategy to implement new Phase II recommendations as well as Years 2 through 5 Phase I recommendations, as appropriate</p>	<p>Identify and leverage long-term funding mechanisms to maintain the Program</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Continue and complete the Fund Source Leverage and Alignment Evaluation from Phase I.</p> <p>Continue (and possibly expand) providing state technical support to locals in the development of FEMA Hazard Mitigation Assistance Applications for the 2018 funding cycle.</p>	<p>Enact a standing action plan for the administration of post-disaster mitigation and resilience funds that allocates a percentage of those funds toward high-priority State Flood Mitigation Program initiatives (also relevant to Initiative 4.6).</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Continue working toward (and achieve) FEMA Enhanced Status through the State Hazard Mitigation Planning process, which will increase post-disaster Hazard Mitigation Grant Program funding from 15 to 20% of the sum of post-disaster aid through Public Assistance, Individual Assistance, and the Small Business Administration</p> <p>Enact a process by which state funded projects must comply or not interfere with the objectives and initiatives associated with the State Floodplain Management Program</p>
<p>Recommend incentives associated with all state-administered flood-related funding sources</p>	<p>Enact incentives recommended from Phase II.</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>



Identifying Funding Sources and Maximizing Effectiveness

STRATEGIC AREA 4

Both availability and effective use of funding should be maximized toward best floodplain management and flood risk reduction practices.

#	Initiative	Catalyst (Immediate) Action
4.4	Increase equity by integrating capacity-building mechanisms into state-administered funding sources	
4.5a	Facilitate local fund generation for project implementation and long-term project maintenance	Create and publish a library (on the “Everything Floods-Related website”) of possible local funding mechanisms and methods to facilitate flood mitigation activities and sound floodplain and watershed management practices
4.5b	Support the development of funding mechanisms that allow beneficiaries of projects across jurisdictional boundaries to contribute to the funding and implementation of floodplain management-related actions	Incentivize local project applications that contribute private investments, matches from direct project beneficiaries, or are associated with communities establishing long-term funding and financing of sound floodplain management practices (such as through utility fees)

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
Evaluate the potential either to expand the Flood Risk and Resilience Program's Phase I Application Approach of identifying and potentially funding capability- and capacity-building needs to other state-administered funding sources, or to use the program as a clearinghouse for all non-structural flood mitigation project funding needs. This would require definition of party responsibilities and potentially a legislative expansion of CPRA's current mission and responsibilities.	Evaluate initiative accomplishment and success Maintain this initiative	Evaluate initiative accomplishment and success Monitor and maintain this initiative	Evaluate initiative accomplishment and success Monitor and maintain this initiative
Research and also leverage interstate summits (recommended in Strategic Area 6) to begin development of best practices and standards to support locals in developing and identifying new and creative funding mechanisms	Publish guidance for locals related to established and experimental project funding frameworks.	Allocate funding toward competitive grants for specific regional project finance and implementation planning workshops that include funding gatekeepers and project champions to help catalyze project implementation <div> <p>In December 2016, the Rockefeller Foundation, in coordination with the City of Pittsburgh, Pittsburgh Water and Sewer Authority, and key stakeholders, conducted an implementation planning workshop for a watershed-level project initiative that succeeded in identifying a project governance, value proposition, and funding and finance path forward. Similar workshops could support implementation planning and project implementation success for regional and watershed-based floodplain management projects and initiatives.</p> </div> <p>Conduct local workshops and training sessions to evaluate capital improvement plans and identify ways that unrelated infrastructure and capital projects can be refined, refocused, or leveraged to maximize flood risk resilience</p> <p>Conduct workshops with utility, infrastructure, and telecommunications providers to develop an understanding of interdependencies and encourage resource leveraging and information sharing toward increased flood risk resilience</p>	Evaluate initiative accomplishment and success Monitor and maintain this initiative



Identifying Funding Sources and Maximizing Effectiveness

STRATEGIC AREA 4

Both availability and effective use of funding should be maximized toward best floodplain management and flood risk reduction practices.

#	Initiative	Catalyst (Immediate) Action
4.6	Be prepared to maximize the effectiveness of congressional appropriations and funding from presidential disaster declarations by having prioritized consensus-based state-level initiatives and “shovel-ready” projects identified and promoting them at watershed and local levels	Consolidate and prioritize the list of state and regional floodplain management-related initiatives, with “shovel-readiness” as a factor (related to Initiative 6.2)
4.7	Expand the reach of funding by disincentivizing development policies that will require corrective action (e.g., to mitigate flood damage, water quality degradation, or habitat loss at a later date)	

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
Integrate planning for the efficient and effective use of unexpected funding availability into Initiatives 6.2 and 6.4	Complete recommendations from Phase II	Evaluate initiative accomplishment and success Monitor and maintain this initiative	Evaluate initiative accomplishment and success Monitor and maintain this initiative
Further evaluate this recommendation in Phase II.	Evaluate initiative accomplishment and success Maintain this initiative	Evaluate initiative accomplishment and success Monitor and maintain this initiative	Evaluate initiative accomplishment and success Monitor and maintain this initiative



**Identifying,
Building, and
Maintaining
Capacity**

**STRATEGIC
AREA 5**

Sufficient capacity, in the form of human and financial resources, and adequate capability, in the form of appropriate tools and skillsets, must be in alignment at the state, local, and watershed level to ensure program effectiveness.

#	Initiative	Catalyst (Immediate) Action
5.1	Initially and then periodically assess local capacity and capability needs to effectively target and develop state technical support activities and materials	Work with the CPRA Flood Risk and Resilience Program and Local Disaster Recovery Managers to develop and administer the Parish Nonstructural Capacity and Capacity Assessment
5.2	Initially and then periodically assess state program capacity and capability needs to effectively plan resource requirements and initiatives	Assess existing capacity, capability, and authority at the state level to meet Phase I preliminary program recommendations, and develop an action plan to accomplish these needs

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
<p>Provide recommendations based on existing LARR watershed workshops related to local technical support, engagement, and capacity-building needs.</p> <p>Integrate watershed engagement priorities into the Community Assistance Visit (CAV) process; consider expanding CAV engagement to include additional local stakeholders with related responsibilities, even where responsibilities are unofficial (i.e., planners, public works department, code enforcement, parish president's office, etc.)</p> <p>Evaluate whether and to what extent the recent Florida Community Assistance Visit/Community Rating System (CAV/CRS) pilot may be appropriate for implementation in Louisiana</p>	<p>Take action on any recommended preliminary capacity building activities from the Parish Capacity and Capability Assessment that are not already being acted on and captured through other initiatives, including the development of training modules and curricula, as needed</p> <p>Complete Parish Capacity and Capability Assessment, develop a 5-year Action Plan with clear statewide capacity building goals, metrics, and accountability requirements</p>	<p>Launch the Capability and Capacity Building Action Plan</p>	<p>Conduct widespread CAVs within the state, using these as an opportunity to improve access to the CRS Program and enhance enforcement of basic standards.</p>
<p>State Floodplain Management Office Needs Assessment.</p> <p>Evaluate and develop recommendations related to maximizing the effective alignment of responsibilities, authority, funding, and staff capacity, capability, and inter- and intra-agency cooperation related to the existing State Floodplain Management Office. Consider partnering with the Association of State Floodplain Managers to conduct this evaluation, if such a mechanism exists, and/or establish a Technical Advisory Committee (Initiative 6.8)</p> <p>Consider funding and other actions required to expand the Cooperating Technical Partnership (CTP) Program to enhance the role of the State in FEMA flood mapping for Louisiana</p> <p>Explore (through evaluations and engagement) whether any organizational realignment is necessary at the state level in order to accomplish the needs of the program</p>	<p>Address state floodplain management capability and capacity needs within the current DOTD</p> <p>(DOTD) Program, including those requiring new legislation or budgetary allocations to meet needs</p> <p>Continue to explore (through evaluations and engagement) and provide final recommendations related to whether any organizational realignment is necessary at the state level in order to accomplish the needs of the program</p> <p>Recommend final organizational restructuring, if applicable, in advance of the 2019 Louisiana Legislative Session</p>	<p>Complete recommendations from Phase III</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>



Planning and
Coordinating for
the Future

STRATEGIC AREA 6

Immediate, near-term, and long-term planning and coordinating actions should be in alignment toward a long-term mission.

#	Initiative	Catalyst (Immediate) Action
6.1	Develop and maintain a multiagency Program operating framework that shows the authorities, responsibilities, and interdependencies of appropriate agencies and entities	<p>Phase I investigation</p> <p>Determine implementation process for Phase II</p>
6.2	Provide interim and prioritized project recommendations for high-benefit, low-impact activities that can be completed in the near-term to reduce immediate risk and build support and momentum for the Program	<p>Identify a near-term project plan (Immediate River Risk Mitigation) implementation lead</p> <p>Coordinate with locals to prioritize bottlenecks and areas where canal drainage is not currently maximized and poses immediate flood risk</p> <p>Hold a meeting with state and federal permitting and funding agencies, and other key stakeholders, with the power to streamline or restrict actions related to high priority canal drainage issues, and develop a short-, medium-, and long-term action plan for these areas.</p>
6.3	Use interstate summits as an important partnership development and planning support mechanism	Plan interstate summits related to best practice and problem solving for state-level floodplain and watershed management, and regional coordination
6.4	Develop a State Watershed-based Floodplain Management Plan	

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
<p>Refine and review Program goals and metrics</p> <p>Refinement and modification toward the goals of the program</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Develop a near term project plan process for implementation following any future flood-related presidential disaster declarations (related to Initiative 4.6)</p> <p>Assign responsibility and funding to clean rivers by removing trash, white goods such as refrigerators, trees and debris, as well as prevent dumping in the waterways to help increase capacity</p>	<p>Ensure that post-disaster triage and redevelopment planning mechanisms are integrated into watershed-based planning processes</p>	<p>Continue to explore improving undersized river crossings to prevent bottlenecks and sediment build-up, but not negatively impact ecosystems (such as cleaning and clearing)</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>
<p>Complete interstate planning best practice and problem solving summits</p> <p>Plan interstate summit to address planning activities with neighboring states</p>	<p>Execute interstate summit regarding planning activities with neighboring states</p>	<p>Evaluate initiative accomplishment and success</p> <p>Explore whether this initiative should be periodically revisited</p>	
<p>Determine the contents and nature of the State Floodplain Management Plan, including whether the plan will be descriptive or prescriptive, will cover program governance or implementation-related topics, or all of the above. Stormwater management will need to be an integral piece.</p> <p>Explore which agency or agencies would be most appropriately responsible for plan development and maintenance</p> <p>Explore alignment and coordination of other state planning mechanisms, such as the Coastal Master Plan, the State Hazard Mitigation Plan, and the Flood Risk and Resilience Program, toward program objectives</p>	<p>Continue Phase II recommendations</p>	<p>Complete State Floodplain Management Plan and include a regular update schedule</p>	<p>Evaluate initiative accomplishment and success</p> <p>Monitor and maintain this initiative</p>



Planning and Coordinating for the Future

STRATEGIC AREA 6

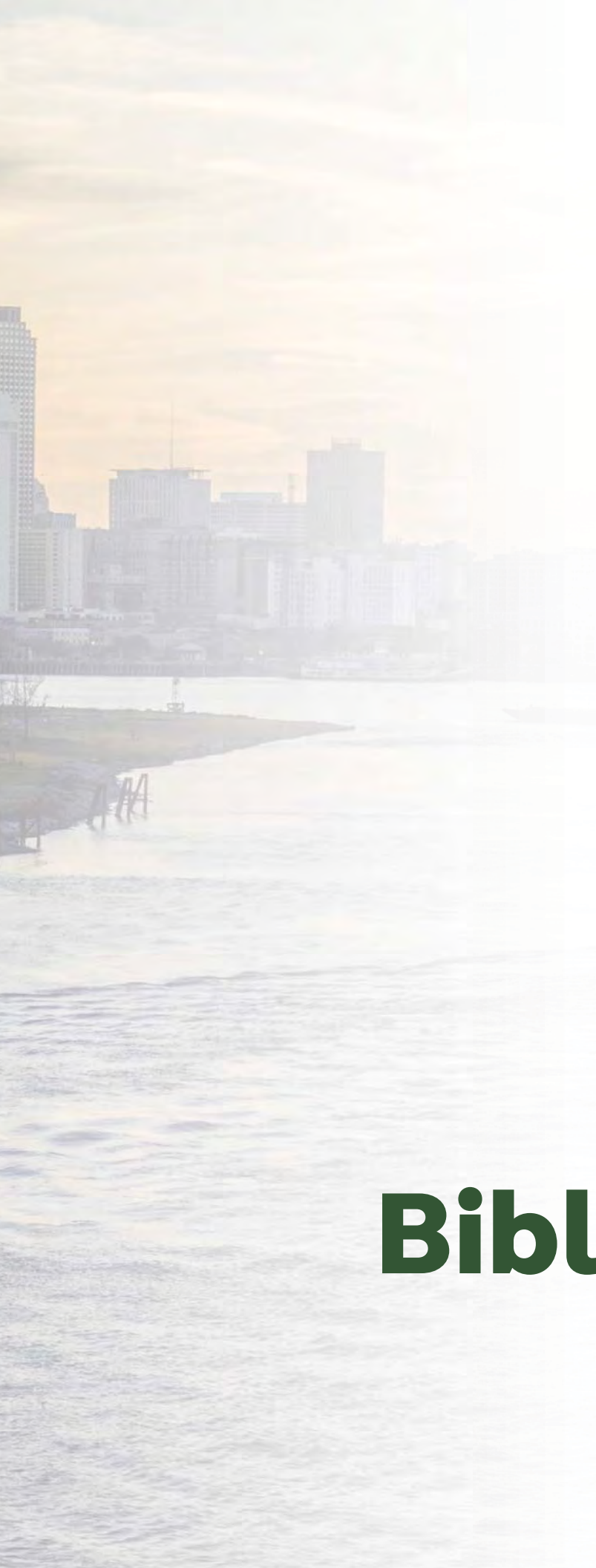
Immediate, near-term, and long-term planning and coordinating actions should be in alignment toward a long-term mission.

#	Initiative	Catalyst (Immediate) Action
6.5	Develop a floodplain and watershed management plan for each watershed	<p>Continue to interview those engaged with LARR pilot projects to understand best practices regarding their process</p> <p>Continue the in-progress watershed-level workshops identified in Initiative 2.5 and use them as a mechanism to build consensus around a process to ensure the following:</p> <ul style="list-style-type: none"> • Neighboring areas, benefiting from a project, contribute to the match and share the project and funding responsibilities. • Upstream and downstream project and development effects are understood and managed. • Funding is effectively allocated within the watershed. • Planning for the watershed includes areas outside of the currently mapped floodplain, because development and activities in these areas have the potential to both affect and potentially expand the floodplain.
6.6	Include a mechanism to expand and regularly publish studies that evaluate and substantiate the value of Louisiana's floodplain management program and practices.	
6.7	Continue to engage and periodically evaluate the form and function of a Steering Committee to support program development and management	<p>Evaluate the form and function of cooperating agency coordination activities relevant to the needs of Phase II (to be accomplished January 9, 2018).</p> <p>Explore whether a legislative requirement will be required or desired to formalize, as well as ensure the continued function and effectiveness of cooperating agency coordination activities</p>
6.8	Engage a Technical Advisory Committee for program development and periodic evaluation	Develop and engage one or more Technical Advisory Committees for the completion of the Phase II and Phase III planning process.

IMPLEMENTATION PERIOD

Phase II (6 months)	Phase III (1 year)	Years 2 through 3	Years 4 through 5
Through engagement efforts with key stakeholders (and possibly a Technical Advisory Committee), draft and publish watershed level planning success metrics	Develop pilot watershed-based floodplain management plans in the highest priority areas Finalize and publish watershed level planning success metrics	Complete floodplain management plans for each watershed	Begin first update of floodplain management plans for each watershed Evaluate success of plans in the update cycle by comparing to established metrics
Research and publish findings related to flood risk reduction and other savings through the implementation of higher development and building code standards as well as through regional planning efforts Research and publish findings related to economic development impacts, benefits of higher flood damage prevention, and watershed management standards.	Develop a storm and/or water level threshold for each watershed that will correlate to the required completion and publishing of loss avoidance assessments (as opposed to completing loss avoidance assessments strictly after presidential disaster declarations)	Complete and publish assessments at specified intervals and thresholds Develop and publish a system and strategy that will facilitate completion of loss avoidance assessments at the watershed and local level. Include a mechanism for the regular reporting of this information in order to support program and project planning, and assess program metric achievement.	Evaluate initiative accomplishment and success Monitor and maintain this initiative
Develop a formal charter, mutual agreement, inter-agency agreement, or other policy necessary to ensure the continuation, and appropriate alignment of responsibility and accountability, as well as necessary fund and responsibility sharing, between cooperating agencies	Evaluate the form and function of the cooperating agency coordination activities to meet the future needs of the program, and establish a regular evaluation schedule to ensure that the needs of the program continue to be addressed and appropriate members are engaged	Evaluate initiative accomplishment and success Monitor and maintain this initiative	Evaluate initiative accomplishment and success Monitor and maintain this initiative
Technical Advisory Committee possibilities are explored across multiple Strategic Areas.	Evaluate initiative accomplishment and success Explore whether a Technical Advisory Committee may be appropriate to engage for future program activities	Continue recommendations, as appropriate	Continue recommendations, as appropriate





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APPENDICES



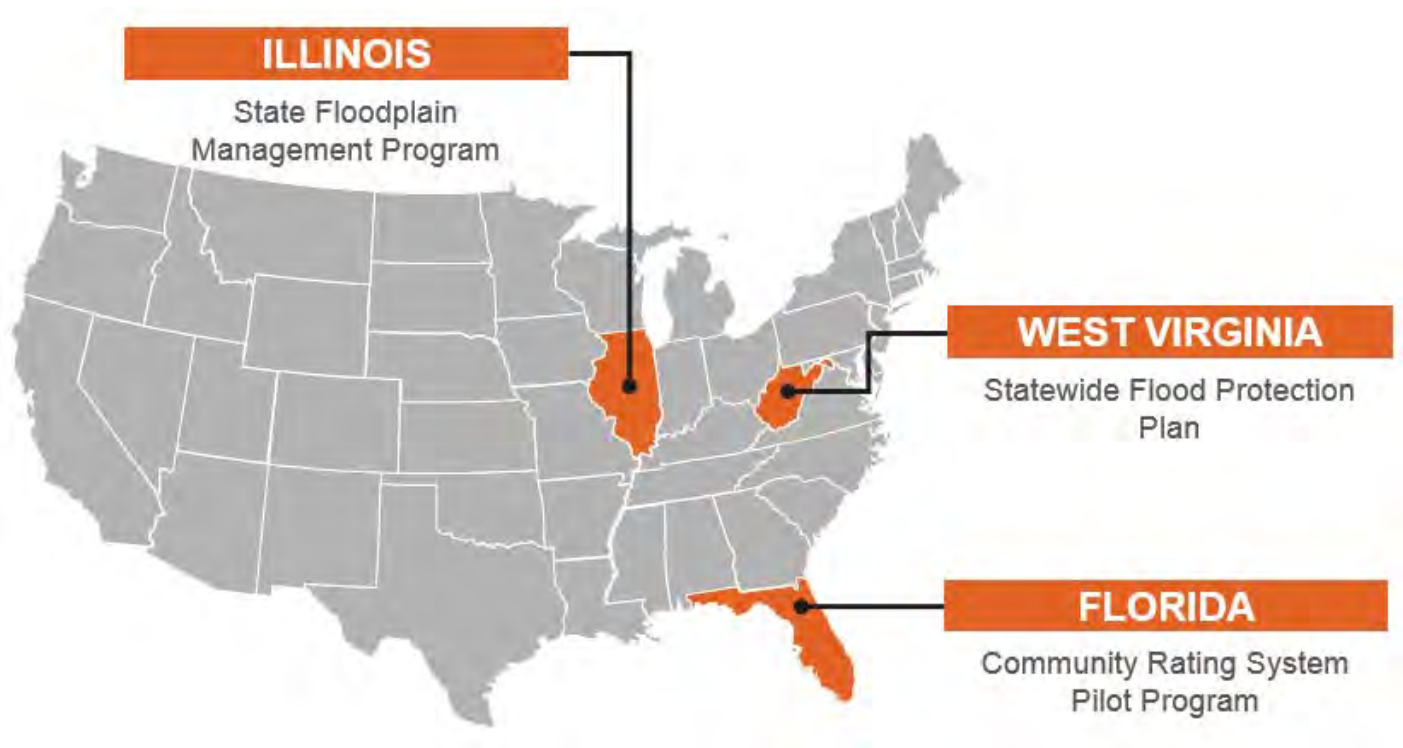


A. Case Studies from Other States

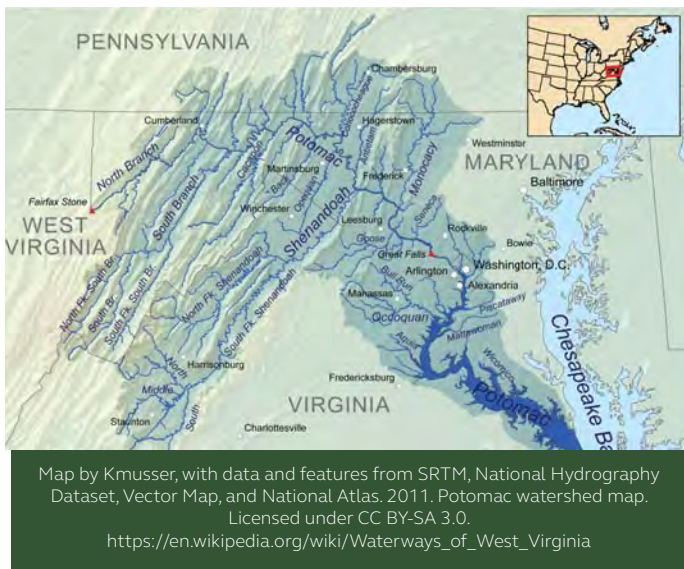
Layer 1 - State Floodplain Management Program

Arcadis has gathered a series of case studies applicable to the development of a floodplain management program in the State of Louisiana. It should be noted that this is not an exhaustive list but instead represents a small sampling of creative approaches to floodplain management.

All "The case studies provided here are relevant to Layer 1 of the Phase I report."



West Virginia: Statewide Flood Protection Plan



What Did They Do?

The West Virginia Statewide Flood Protection Plan provides a vision for the future of the state, spelling out both long- and short-term goals, strategies, and implementation schedules for floodplain management.

Best Practices that Louisiana Could Look To

- Planning - State Hazard Mitigation Plan Development and Update
- Funding - Financial Grant Management
- Funding - State Funded Program Management
- Funding - Federally Funded Program Management
- UNIQUE - Strategy of Implementation for Projects

Why Did They Do It?

West Virginia has been plagued throughout the state's history with a number of severe floods, including major events in 1977, 1985, and, more recently, in 2016. Floodplain development and management in West Virginia has historically been left under the jurisdiction of local governments. To ensure continuity among localities, the state deemed it necessary to develop a strategic plan, identifying potential flood management projects, resources, and legislative actions (WV DHSEM 2018).

How Did They Do It?

In 1999, the West Virginia Conservation Agency (a state agency dedicated to protect and conserve West Virginia's natural resources), USACE, and the Natural Resources Conservation Service created a framework that specified the need for a Joint Task Force for the statewide plan. The Joint Task Force is a dedicated group that could bring to bear the technical and policy expertise and experience

needed to tackle the complex flooding issues in the state. The Joint Task Force met for the first time in September of 2000 and was composed of 20 federal, state, regional, and local agencies and quasi-public organizations (WVCA n.d.). The Joint Task Force dedicated staff, data, and other resources to develop a comprehensive strategic plan that would reduce flood damages and save lives.

Addressing a problem of this magnitude and complexity necessitated initiation of a strategic planning process that would be comprehensive in scope, well-coordinated, and sensitive to the needs of the stakeholders and their environment. The Statewide Flood Protection Plan was established after three years of analysis and planning. The plan was presented to a joint committee of the West Virginia Legislature, which evaluated the flood protection options presented. Many of the recommendations listed in the plan required administrative or legislative actions by the state, county, or municipal governments. There are several recommendations for capital construction that would require annual allocation of matching funds by the federal government and the state through existing flood protection programs. The Joint Task Force purposefully avoided recommending the creation of entirely new flood protection programs that could require months of State Congressional and Legislative debate at the expense of those in need.

Legislative Action Taken/Required

Chapter 19 to 21A of the West Virginia State Code establishes the State Conservation Committee and the Conservation Agency (WV Legislature 2013)

For more information:

<http://dhsem.w.v.gov/>

Applicability to Louisiana

As Louisiana continues to move forward in the development of its State Floodplain Management Program, it is imperative that a strong framework is established at the beginning of the process. Louisiana should consider the development of a State Floodplain Management Plan that provides clear goals, objectives, policies, and projects to implement with funding and financing suggestions. With the development of the recent 2017 Coastal Master Plan, Louisiana should consider expanding or replicating valuable processes associated with watershed and floodplain management to cover all floodplain management in the state, which indeed is the ultimate goal of this present analysis.

State of Illinois: Floodplain Management Program



Photo by IvoShandor. 2008. Galena River flowing through downtown Galena, Illinois, USA. Licensed under CC BY-SA 3.0.
Source: https://commons.wikimedia.org/wiki/File:Galena_IL_Galena_River1.JPG

What Did They Do?

The State of Illinois has developed a unique and thoughtful approach to floodplain management that focuses on keeping development out of the floodplain rather than ensuring development meets criteria within the floodplain.

Best Practices that Louisiana Could Look To

- NFIP Coordination - Mapping Coordination and Adoption, State NFIP Coordination
- Regulatory Authority - Federal, State and Local Permitting Requirements
- Regulatory Authority - State Executive Order requires compliance on state funded or permitted activities. Requires freeboard. Requires higher standards on critical facilities.
- Technical Assistance - Technical Experts (Regulation Development)
- UNIQUE - Focus on Expanding Floodway and Deterring Development Within Floodway

Why Did They Do It?

Illinois has one of the largest inland systems of rivers, lakes, and streams in the United States. Nearly 15% of the state's total land area is subject to flooding. Total streamflow in Illinois averages more than 25 billion gallons per day, making it significantly flood prone. Floods are, by far, the most common natural disaster in Illinois, accounting for more than 95% of declared disasters. It is estimated that more than 250,000 buildings are located in floodplains of Illinois (IDNR 2018).

How Did They Do It?

The State of Illinois has taken a unique approach to floodplain management by applying a county-level approach and proactive outreach. The state does not have a Statewide Building Code. Instead, it has implemented a Rivers, Lakes, and Streams Act that requires certain floodplain development practices to be implemented and enforced. Within much of the state, no buildings are allowed within the floodway; only appropriate open space uses are allowed. Floodways in Illinois are mapped more aggressively than the mapping standards required by FEMA, and consider conveyance, velocity, and storage. Floodways are mapped based on a one half foot water surface increase (rather than FEMA's one-foot increase). By implementing this mapping standard and strict compliance with state regulations, the state has preserved the storage capacity of the floodplain and, in turn, reduced damages to homes and businesses.

Additionally, the State of Illinois has been very aggressive in the development of model flood damage prevention ordinances and stormwater management ordinances, which have both been adopted in virtually every community throughout the state. Each of these models integrates higher standards into its language and does not include any language allowing for these standards to be removed. The NFIP participation rate in Illinois is among the highest in the nation. The Illinois DNR conducts hundreds of community visits annually and has developed a strong personal bond with local officials. The office quickly responds to flood disasters and often will have post flood damage assessments completed weeks before FEMA involvement. The state closely tracks cumulative substantial damage which has led to the nation's largest overall reduction in repetitive loss properties.

Legislative Action Taken/Required

615 Illinois Compiled Statutes 5/4.9: Rivers, Lakes, and Streams Act (Illinois General Assembly 2016)

Applicability to Louisiana

By developing and initiating statewide standards that focus on reducing loss rather than building in the floodplain, the State of Illinois has provided a proactive approach to avoiding flood issues. As the State of Louisiana begins to challenge its current processes and enforcement procedures, it should consider Illinois' approach to floodplain management **and proactive outreach**. Rather than relying on a reactive approach, Louisiana can begin to look ahead at creative solutions to manage development in the floodplain and reduce prospective losses.

State of Florida: Community Rating System Pilot Program



Beach erosion caused by hurricane Matthew at St. Augustine, Florida area.
<http://www.publicdomainpictures.net/view-image.php?image=198830&picture=beach-home-damage-by-hurricane>

What Did They Do?

The Florida Division of Emergency Management and the Insurance Services Office with FEMA have been engaged since 2015 in a 2-year pilot program to enroll 100 new communities into the CRS (FDEM 2016).

Best Practices that Louisiana Could Look To

- **NFIP Coordination - State NFIP Coordination**
- **Regulatory Authority - Federal Permitting Requirements**
- **Regulatory Authority - State and Local Permitting Requirements**
- **Technical Assistance - NFIP Compliance/Planning**
- **Technical Assistance - Technical Experts (Enforcement/Compliance)**
- **UNIQUE - Pilot Program to Encourage Entry into the CRS**

Why Did They Do It?

A 2013 study of coastal areas by CoreLogic found that 4.2 million homes, with \$1.1 trillion in total property exposure, are at risk of damage caused by hurricane storm surge flooding (Botts et al. 2013). In the Atlantic Coast region alone, there are approximately 2.4 million homes at risk, valued at more than \$793 billion. Total exposure along the Gulf Coast is \$354 billion, with 1.8 million homes at risk for potential storm surge damage. According to CoreLogic, residential properties in Florida have the most exposure to hurricane storm surge damage, followed by New York, New Jersey, Virginia, and Louisiana.

How Did They Do It?

The pilot program is intended to encourage communities to become more flood resilient by adopting seven performance measures that help ensure that key regulatory standards of the NFIP are implemented as a condition of joining the CRS. In order to achieve this, the State of Florida developed a no-cost package of tools that, when adopted and implemented by communities, improves flood resilience and enables communities to benefit from Florida's statewide uniform CRS credits. The uniform credits allow communities to increase their number of CRS points, which equates to additional savings for flood insurance policyholders.

<http://www.floridadisaster.org/>

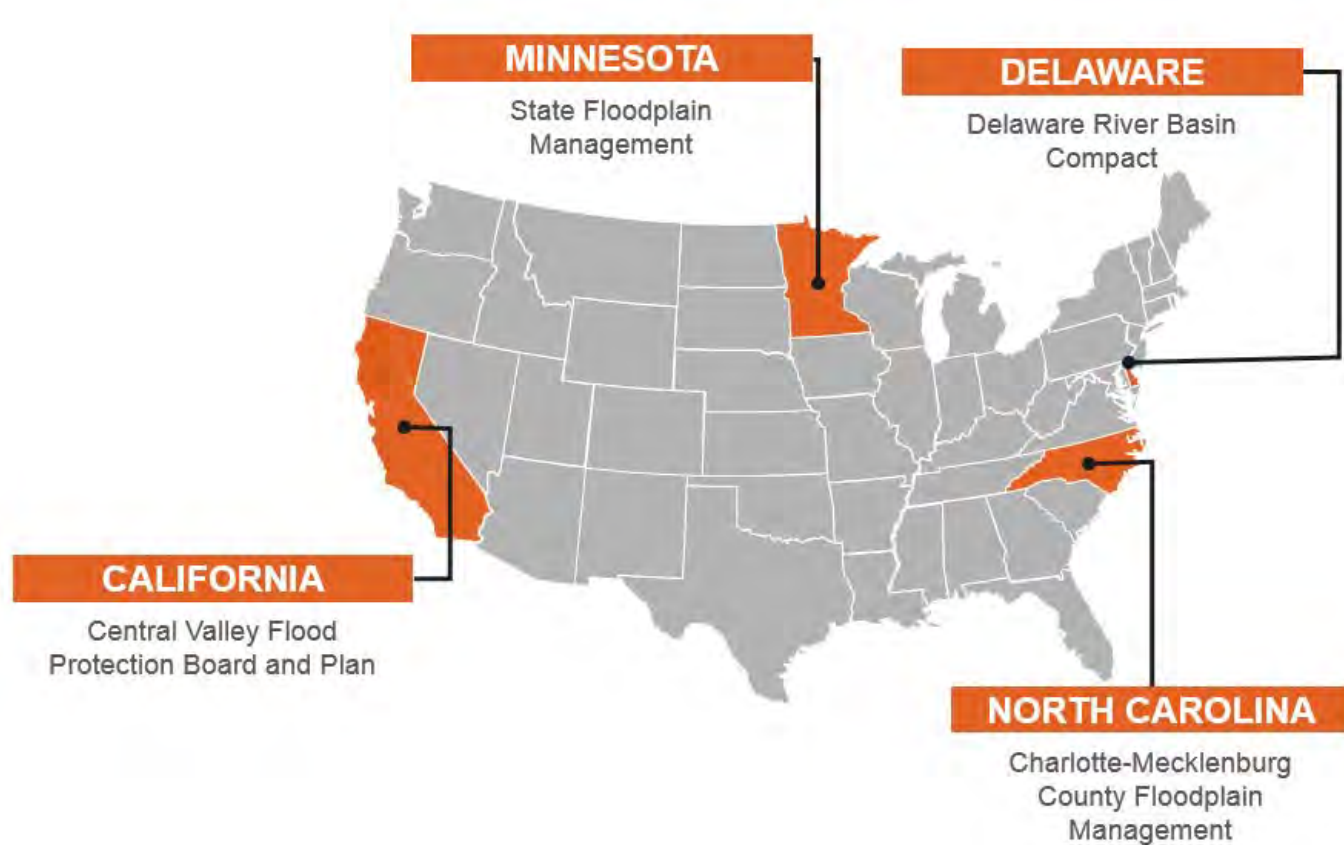
Legislative Action Taken/Required

These actions did not require any legislative action on behalf of the state but required extensive coordination and approval from FEMA.

Applicability to Louisiana

Implementing a similar program within Louisiana could save the taxpayer base a significant amount of money and encourage smart and sustainable floodplain management and development practices. The State of Florida has seen success under this initiative and encouraged a large number of communities to enter into the CRS Program.

LAYER 2 - FLOODPLAIN MANAGEMENT PLANNING



Arcadis has gathered a series of case studies applicable to the development of a floodplain management program in the State of Louisiana. It should be noted that this is not an exhaustive list but instead represents a small sampling of creative approaches to floodplain management. The case studies provided here are relevant to Layer 2 of the Phase I report.

California: Central Valley Flood Protection Board and Plan



Photo by IvoShandor. 2008. Galena River flowing through downtown Galena, Illinois, USA. Licensed under CC BY-SA 3.0.
<https://pixabay.com/en/dam-shasta-dam-construction-74071/>

What Did They Do?

The Central Valley Flood Protection Plan (CVFPP) was adopted by the Central Valley Flood Protection Board (CVFPB) in June 2012 (CA DWR 2017). The CVFPB is the State of California's regulatory agency responsible for ensuring that appropriate standards are met for the construction, maintenance, and protection of the flood control system that protects life, property, and wildlife habitat in California's vast and diverse Central Valley from flooding. The CVFPB issues encroachment permits, works with other agencies to improve the flood protection structures, enforces removal of problematic encroachments, and keeps watch over the Central Valley's continually improving flood management system.

Best Practices that Louisiana Could Look To

- **Funding - State Funded Program Management**
- **Funding - Federally Funded Program Management**
- **Planning - State Hazard Mitigation Plan Development and Update (Regional)**
- **Planning - Local Hazard Mitigation Plan Compliance and Approval**
- **UNIQUE - Alignment with Three Statewide Plans**

Why Did They Do It?

Considerable progress has been made to improve flood management in the Central Valley of California, but the region still faces significant flood risk. Approximately one million Californians live and work in the floodplains of the valley, which contain more than \$70 billion worth of infrastructure, buildings, homes, and prime agricultural land. A major flood in the Central Valley could have a significant financial impact on California and the nation.

Without sufficient and sustained investment in statewide flood management, the risk to life and property will continue to grow (ibid).

How Did They Do It?

The CVFPP is "descriptive, not decisional; it is not a funding or permitting decision for specific projects" (CA DWR 2017: 1-1), but, instead, serves to align with three significant statewide plans: The California Water Action Plan (CWAP) (CNRA et al. 2014, 2016), the California Water Plan Update 2013 (CA DWR 2013), and California's Flood Future: Recommendations for Managing the State's Flood Risk (FloodSAFE California 2013).

Updated every 5 years, the CVFPP is the State of California's strategic blueprint to improve flood risk management in the Central Valley. It lays out a strategy to prioritize the state's investment in flood management over the next three decades and identifies strategies to promote multi-benefit projects and to integrate and improve ecosystem functions associated with flood risk reduction projects. The CVFPP also incorporates information about system-wide and regional flood management needs, advancements in the best available science, and new policy considerations.

<http://cvfpb.ca.gov/>

Legislative Action Taken/Required

State of California Water Code State Statute 9600: Central Valley Flood Protection Act of 2008 (CA State Legislature 2007)

Applicability to Louisiana

CVFPB is a state regulatory agency with a diverse set of stakeholders contributing to the creation of policy and influencing the oversight of flooding issues within the state. This level of leadership and standard setting could add value to Louisiana's program. Additionally, and importantly, the CVFPB is heavily engaged in public outreach and education.

North Carolina: Charlotte-Mecklenburg County Floodplain Management



Photo by James Willamor. 2007. Charlotte Aerial Photography. Licensed under CC BY-SA 2.0
https://commons.wikimedia.org/wiki/File:Charlotte_uptown_Aerial.jpg

How did they do it?

The county is 525 square miles in size and has increased in population by 245,000 in the last 20 years. It is estimated that an additional 300,000 residents will live in the Charlotte-Mecklenburg area in the next 25 years. In the past, traditional stormwater and floodplain management techniques were employed, such as joining the NFIP, using voter-approved bond funds for the protection of property losses due to erosion, and requiring stormwater detention on commercial development. Starting in 1994, Mecklenburg County, the City of Charlotte, and six surrounding towns within the county initiated a joint stormwater management program, funded by a stormwater fee, to address infrastructure problems on private property and expand the existing floodplain management program (LRAP 2017).

The Charlotte-Mecklenburg community does several things that address the adverse impacts of development. One of the most significant is its aggressive approach to flooding economics. The county calculates the potential amount of future damage and costs to repair from a storm event to justify the added cost of mapping hazard areas and factoring in future development. This element alone is a leap above the national approach of calculating runoff and basing floodplain maps on existing conditions (Charlotte-Mecklenburg Storm Water Services 2017).

<http://charlottenc.gov/>

What Did They Do?

The City of Charlotte and Mecklenburg County in North Carolina apply a unique approach to floodplain management by using flood economics and analyzing the impacts of future development on the floodplain. This approach has allowed the county to weigh the costs and benefits of potential development and make determinations on what it believes will be best for residents.

Best Practices that Louisiana Could Look To

- **Planning - Local Hazard Mitigation Plan Compliance and Update**
- **Regulatory Authority - State and Local Permitting Requirements**
- **Technical Assistance - Technical Experts (Cost Analysis)**
- **UNIQUE - Benefit-Cost Analysis of Future Development**

Legislative Action Taken/Required

North Carolina General Statute 143, Article 21, Part 6: Floodplain Management (NC General Assembly 2014)

Why Did They Do It?

Mecklenburg County contains approximately 4,000 structures in the floodplain with 1,530 policies in force. Short-sighted development practices in the early 1900s, including the draining of swamps and the straightening of creeks and streams, have led to several severe flooding events in the area. The environment was a nuisance and an obstacle to development, not an asset. In fact, some developers even built on top of streams, covering them with pavement and putting them out of sight. Vegetation removal was routinely conducted in flooded areas, and the situation quickly morphed into a larger flooding problem that the Stormwater Services Team battled until they exhausted the patience and resolve of the residents in the 1990s. With roughly 5% of the county located in the floodplain, the county determined that it was necessary to implement more stringent regulations and standards to guide future development.

Applicability to Louisiana

Rather than being reactive to flooding issues, the Charlotte-Mecklenburg area took a proactive approach to floodplain management and has been able to maintain steady economic growth throughout these policies being initiated, possibly, in part, because of these standards. Louisiana could consider the outcomes of future damages and losses prevented in developing value propositions for standards and projects. The Charlotte-Mecklenburg area also provides a funding model that may be applicable in Louisiana.

Cooperating Technical Partnership with FEMA and Floodplain Mapping and Modeling North Carolina additionally provides a case study for expansion of the CTP to include state-run floodplain modeling and mapping at the watershed level. The State of Illinois provides another important case study in expanding this capability.

Minnesota: Floodplain Management



Photo by Andres Booher / FEMA. 2009. Moorhead, Minn., March 29, 2009 -- Flooded homes and communities adjacent to the Red River of the North. https://commons.wikimedia.org/wiki/File:FEMA_-_40502_-_Aerial_of_flooded_homes_in_Minnesota.jpg

What Did They Do?

The Floodplain Management Unit within the Minnesota Department of Natural Resources oversees the administration of the state's Floodplain Management Program and directs the National Flood Insurance Program in the state (MN DNR 2018). Through significant public outreach, extensive technical outreach and trainings, a detailed floodplain management website for developers and the general public, and higher minimum standards integrated into their floodplain management regulations, Minnesota has produced a solidified and effective floodplain management program.

<http://www.dnr.state.mn.us/>

Best Practices that Louisiana Could Look To

- Planning - State Hazard Mitigation Plan Development and Update
- Planning - Local Hazard Mitigation Plan Compliance and Update
- NFIP Coordination - Mapping Coordination and Adoption
- NFIP Coordination - State NFIP Coordination Authority
- Regulatory Authority - Federal Permitting Requirements
- Regulatory Authority - State and Local Permitting Requirements
- UNIQUE - Higher Regulatory Standards and More Direct Local Engagement from the State

Why Did They Do It?

Floods are the number one hazard in Minnesota in terms of frequency and total damages. The State of Minnesota was granted Presidential Disaster Declarations 43 times between 1965 and 2010 (45 years). Of those declarations, 36 involved flooding (MN BWSR 2011).

In 2016, Central Minnesota was hit with a series of flash floods, providing 2-day rainfall totals over 9 inches. Numerous roads were affected by water in the hardest-hit counties. Southbound I-35 and Highway 61 were temporarily closed. The area covered by at least 6 inches of rainfall exceeded 2,000 square miles, easily qualifying this as a "mega" rainfall event (which requires at least 1,000 square miles of 6 inches or more of rain) (MN DNR 2016).

How Did They Do It?

Even with such a significant rain event, Minnesota suffered very little loss in the form of property damage, claims filed, and closures of critical facilities. The Floodplain Management Unit within the Minnesota Department of Natural Resources oversees the administration of the state's Floodplain Management Program and administers the National Flood Insurance Program in the state. With a strong leadership team in place, the state has been able to establish stringent regulations, an enhanced mapping program, model flood ordinances applied statewide, and training and education opportunities for local communities.

Additionally, the state has opted for the development of watershed management districts, which have assisted the state in training development, water resource studies, and regulatory administration. By dividing the powers between the state and these watershed-level districts, the state has been more efficient in providing localized enforcement procedures and oversight. Furthermore, they have been more effective in developing detailed and prioritized mitigation project strategies.

Legislative Action Taken/Required

Minnesota State Statutes 103B, Water Planning and Project Implementation (MN Legislature 2017a)

Applicability to Louisiana

Minnesota provides a long-term case study of regional planning, state-level standard setting, and regulatory models that Louisiana could use as guidance for future program development.

Delaware River Basin Compact



Map by Shannon1. 2015. Map of the Delaware River basin, showing tributaries, lakes and major cities. Licensed under CC BY-SA 4.0.
Source: <https://commons.wikimedia.org/wiki/File:DelawareRiverBasin-01.png>

What Did They Do?

The primary intent and purpose of the commission is to develop and effectuate plans, policies, and projects relating to the water resources of the Delaware River Basin. The Delaware River Basin Compact (DRBC) was signed into law in 1961 under President John F. Kennedy (DRBC 1961). The Compact's signing marked the first time since the nation's birth that the federal government and a group of states joined together as equal partners in a river basin planning, development, and regulatory agency. The commission consists of the Governors of Delaware, New Jersey, New York, and Pennsylvania, and one commissioner appointed by the President of the United States.

How Did They Do It?

The DRBC is one of the first major legislative examples of interstate coordination relating to water resource management with roles including:

1. Plan, design, acquire, construct, reconstruct, complete, own, improve, extend, develop, operate and maintain any and all projects, facilities, properties, activities and services, determined by the commission to be necessary, convenient or useful for the purposes of the DRBC;
2. Establishment standards of planning, design and operation of all projects and facilities in the basin which affect its water resources;
3. Conduct and sponsor research on water resources, their planning, use, conservation, management,

development, control and protection, and the capacity, adaptability and best utility of each facility thereof, and collect, compile, correlate, analyze, report and interpret data on water resources and uses in the basin;

4. Compile and coordinate systematic stream stage and ground water level forecasting data, and publicize such information when and as needed for water uses, flood warning, quality maintenance or other purposes;
5. Conduct such special ground water investigations, tests, and operations and compile such data relating thereto as may be required to formulate and administer the comprehensive plan;
6. Prepare, publish and disseminate information and reports with respect to the water problems of the basin and for the presentation of the needs, resources and policies of the basin to executive and legislative branches of the signatory parties;
7. Negotiate for such loans, grants, services or other aids as may be lawfully available from public or private sources to finance or assist in effectuating any of the purposes of the compact.

<http://www.state.nj.us/>

Legislative Action Taken/Required

Delaware River Basin Compact

Applicability to Louisiana

The DRBC has established a series of programs throughout the region supporting water quality, supply and conservation, project review, flow management, and natural gas drilling. The Commission also supports basinwide planning and sub-basin planning initiatives. Although the DRBC is a Federal initiative, the State of Louisiana should consider the implementation of a commission similar to that of the DRBC. A core group of stakeholders focused on reporting about the state's water resources and identifying potential gaps in legislative authority could prove beneficial to the overall State Floodplain Management Program.

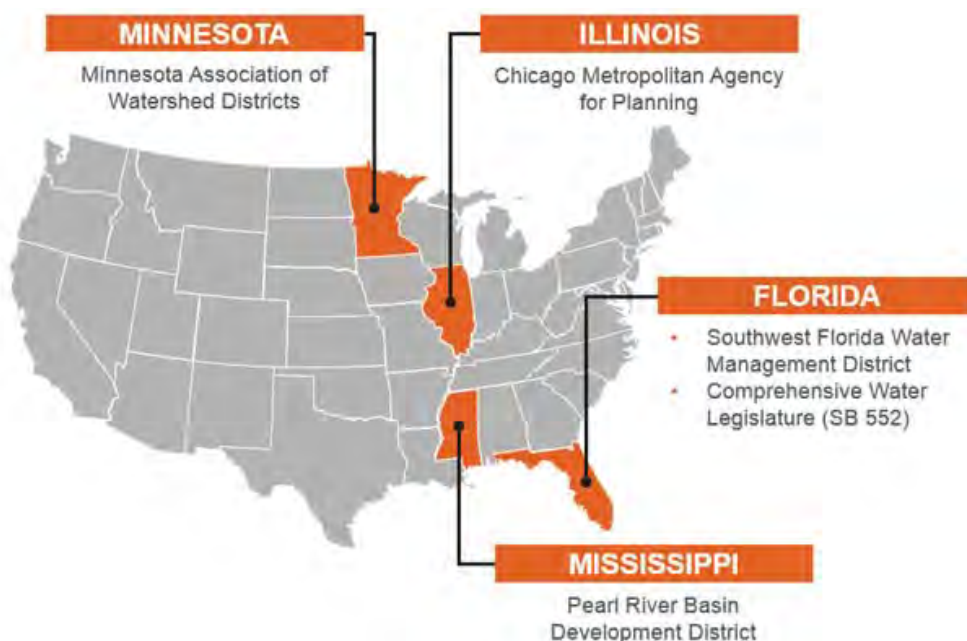


Lake Fausse Pointe State Park

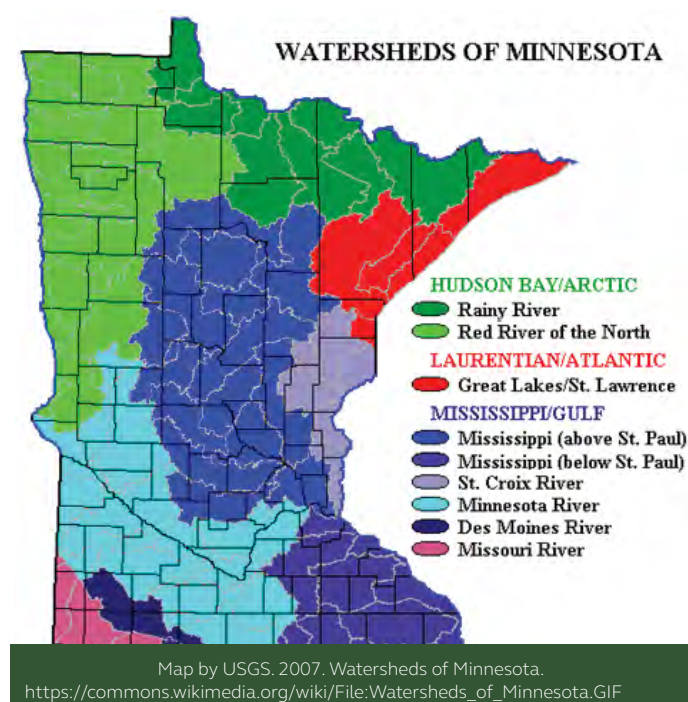
LAYER 3: REGIONAL AND WATERSHED LEVEL MANAGEMENT AND COORDINATION

Arcadis has gathered a series of case studies applicable to the development of a floodplain management program in the State of Louisiana. It should be noted that this is not an exhaustive list but instead represents a small sampling of creative approaches to floodplain management.

The case studies provided here are relevant to Layer 3 of the Phase I report.



Minnesota Association of Watershed Districts



What Did They Do?

The Minnesota Association of Watershed Districts (MAWD) is a local, special-purpose unit of government that works to solve and prevent water-related problems. MAWD provides educational opportunities, information, and training for watershed district managers and staff through yearly tours, meetings, and regular communication.

Best Practices that Louisiana Could Look To

- Funding - Financial Grant Management
- Planning - Local Watershed Plan Review and Approval
- Regulatory - State/Local Permitting Requirements
- Technical Assistance - Technical Experts (Mapping)
- Technical Assistance - Technical Experts (Water Resource Studies)
- UNIQUE - Provides Educational Materials, Training, Workshops, and Cross-State Coordination and Collaboration

Why Did They Do It?

The Minnesota Legislature authorized the creation of watershed districts in 1955 through the Watershed Act (MN BWSR n.d.), with the idea that water management policies should be developed on a watershed basis, because water does not follow political boundaries (MN Legislature 2017b).

How Did They Do It?

The 45 watershed districts that make up the MAWD are each governed by a Board of Managers appointed by each county Board of Commissioners that have land in the district.

Roles of the watershed districts are defined in the Minnesota Statutes 103b.201 and include the following:

- Prepare, adopt, and implement a plan for each watershed that meets the requirements of the WMD guidelines.
- Grants authority to review and approve local water management plans.
- Grants authority to regulate the use and development of land in a watershed when one or more of the following conditions exists:
 - The local government unit exercising planning and zoning authority over the land does not have a local water management plan approved or adopted.
 - An application to the local government unit for a permit requires amendment to or variance from the adopted local water management plan.
 - The local government unit has authorized the organization to require permits for the use and development of the land.
- Accept the transfer of drainage systems in the watershed; repair, improve, and maintain the transferred system; or construct new systems.
- Adopt a budget and decide on the total amount necessary to be raised from ad valorem tax levies to meet the budget.
- Certify the budget with the auditor of each county having territory within the joint powers watershed management organization.
- File approved assessment statements with each affected county (budget requests).

Through a number of legislative actions (see the example legislation provided in Appendix D), MAWD has been made a legitimate organization with regulatory power that can be exercised through the State of Minnesota. As described in the authorized powers, MAWD is funded through ad valorem tax levies that vary based on the county in which a citizen lives³.

Additionally, Minnesota has initiated a commission with its neighboring State of South Dakota to coordinate water resources. The interstate commission, known as the South Dakota-Minnesota Boundary Waters Commission, contains secretaries of the Department of Water and Natural Resources; the Department of Game, Fish and Parks of South Dakota; the commissioners of natural resources; and the Pollution Control Agency of Minnesota (MN Legislature 2016). The fifth member is a qualified engineer appointed for a 4-year term by the mutual consent of the Governors of Minnesota and South Dakota. The primary purpose of this commission is to investigate and determine the most desirable and beneficial outcomes for lakes, rivers, and waterways that overlap between the two states, including desirable water levels for waters that are artificially controlled.

<http://www.bwsr.state.mn.us/>

³Information obtained via interview with Ceil Strauss on December 4, 2017

Legislative Action Taken/Required

Minnesota State Statutes 103D, Watershed Districts (MN Legislature 2017b)

Applicability to Louisiana

Minnesota provides a potential model framework for watershed planning and management. Providing the watershed with regulatory authority and allowing these districts to engage openly in land development decisions is a consideration that should be made by Louisiana in the establishment of the refined floodplain management structure. With this capability, the state watershed districts will be able to contribute heavily to future development across the state and will be able to inform decisions on water resources.

Illinois: Chicago Metropolitan Agency for Planning



Photo by Jeremy Atherton. 2010. Kinzie Street bridge across the north branch of the Chicago River in Chicago, Illinois. Licensed under CC BY-SA 3.0.
Source: https://commons.wikimedia.org/wiki/File:Kinzie_Street_bridge_20100731.jpg

What Did They Do?

Created in 2005, the Chicago Metropolitan Agency for Planning (CMAP) is the award-winning regional planning organization for the northeastern Illinois counties of Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will (CMAP 2018a). CMAP operates under authorizing legislation known as Public Act 095-0677 and by-laws (Illinois General Assembly 2007). The agency developed and now guides implementation of the GO TO 2040 Comprehensive Regional Plan (CMAP 2017a). As part of CMAP's areawide water quality planning role, the agency also serves as a regional watershed coordinator, when appropriate, and leads one or more watershed planning processes at any given time in the northeastern Illinois region.

Best Practices that Louisiana Could Look To

- Planning - Local Watershed Plan Review and Approval
- Planning - Local Hazard Mitigation Plan Review and Approval
- Regulatory - State/Local Permitting Requirements
- Technical Assistance - Technical Experts (Data Research and Analysis)
- Technical Assistance - Technical Experts (Water Resource Studies)
- UNIQUE - Regional Planning Agency with Water Resource Capabilities and Oversight

Why Did They Do It?

The General Assembly of Illinois determined that a streamlined, consolidated regional planning agency was necessary to plan for the most effective public and private investments in the northeastern Illinois region and to better integrate plans for land use and transportation. As a part of these powers, the State of Illinois has given CMAP the authority to develop, or assist in the development of, watershed management plans (CMAP 2018b).

How Did They Do It?

CMAP has been involved in the development of numerous watershed plans in northeastern Illinois. CMAP has worked directly with local stakeholders to develop watershed plans, assisted others with watershed plan development, provided administrative oversight on behalf of the Illinois EPA for plans developed by others, and assisted with plan implementation following completion of watershed plans⁴. Led by an executive director, the CMAP staff have diverse capabilities in comprehensive planning, data research and analysis, and many related disciplines, including water resources. CMAP has committees at the policy, advisory, coordinating, and working levels that play integral roles in the agency's planning processes (CMAP 2018c).

<http://www.cmp.illinois.gov/programs/>

⁴Information obtained via interview with Paul Osman on December 18, 2017

Legislative Action Taken/Required

Illinois General Assembly Public Act 095-0677
(Illinois General Assembly 2007)

Applicability to Louisiana

The State of Louisiana may wish to consider providing authority to the regional planning agencies and give them the capability to coordinate watershed management planning and plan development rather than forming separate agencies. This way, the powers could be consolidated rather than requiring coordination among separate agencies.

Mississippi: Pearl River Basin Development District



Photo by Mississippi Water Resources Research Institute. n.d. Upper Pearl River - Watershed Advisory Group.
Source: <http://www.wrri.msstate.edu/projects.asp>

What Did They Do?

The Pearl River Basin Development District was created by the Mississippi State Legislature in 1964 as a special fund agency to assume the legal responsibilities involved in coordinating local, state, and federal programs for water resource development (MN State Legislature 2013).

Best Practices that Louisiana Could Look To

- Funding - Financial Grant Management
- Funding - State Funded Program Management
- Funding - Federally Funded Program Management
- Technical Assistance - Technical Experts (Funding and Grant Management)
- Technical Assistance - Technical Experts (Data Research and Analysis)
- Technical Assistance - Technical Experts (Project Identification and Implementation)
- UNIQUE - Identified as a Special Funding Agency for the Purposes of Planning and Constructing Flood Control Projects

Why Did They Do It?

The Pearl River Basin District spans all the way from Neshoba County in the north to Hancock County in the south. The Pearl River Basin contains seven million acres and drains an area of 8,760 square miles, which includes all or parts of 23 counties in Mississippi and 3 parishes in Louisiana. It is the third largest drainage basin in the state, meandering approximately 421 miles through the central portion of Mississippi and a small part of southeastern Louisiana. Over two trillion gallons of water pass along these banks each year (PRBDD 2017).

To assist in the management of these waters, the State of Mississippi has developed the Pearl River Basin Development District.

How Did They Do It?

The enabling legislation was designed to permit those counties within the Pearl River Basin to join for the purpose of planning and constructing projects for recreational uses, flood control, pollution abatement, and soil conservation. The district's eligible counties were allowed to join on an individual basis by county-wide referendum. The district has a 25-member Board of Directors, with two directors appointed by each County Board of Supervisors for 6-year terms. One director is appointed from each of the following state agencies: the State Board of Health; Forestry Commission; Department of Wildlife, Fisheries, and Parks; and DEQ, and one director is appointed by the governor. This district could serve as a partner entity for the Louisiana-based Lower Pearl River Basin Task Force.

In 2018, the Pearl River Basin Development District was dissolved. During Phase II, it is recommended that both the successes and reasons for dissolution be further evaluated for lessons learned.

Legislative Action Taken/Required

Mississippi State Code, Title 51, Chapter 11: Pearl River Basin Development District (MS State Legislature 2013)

For more information:

<http://www.pearlriverbasin.com/index.php>

Applicability to Louisiana

Because of the State of Louisiana's significant waterways and watersheds, it seems pertinent to consider the implementation of an organization, such as the Pearl River Basin Development District. Although the district has no real regulatory authority, the programs and services provided by the district are critical to the preservation of the basin. The creation of task forces and organizations with an interest in the preservation of waterways, outreach, education, and data provision is what has helped many states and watershed districts become more effective and efficient.

Florida: Southwest Florida Water Management District



Photo by Visit Central Florida. 2014. SWFWMD Hampton Tract Lake on Right.
Licensed under CC BY 2.0.
<https://www.flickr.com/photos/sunnycentralflorida/>

What Did They Do?

The Southwest Florida Water Management District (SWFWMD) takes a watershed approach to managing water and water-related resources within its boundaries. The district was established in 1961 as a flood protection agency. Since then, its responsibilities have grown to include managing the water supply, protecting water quality, and preserving natural systems that serve important water-related functions (SWFWMD 2018a).

Best Practices that Louisiana Could Look To

- **Planning - Local Watershed Plan Review and Approval**
- **Planning - Local Hazard Mitigation Plan Review and Approval**
- **Regulatory - State and Local Permitting Requirements**
- **Technical Assistance - Technical Experts (Mapping)**
- **Technical Assistance - Technical Experts (Water Resource Studies)**
- **Technical Assistance - Technical Experts (Data Research and Analysis)**
- **UNIQUE - Provides One Example of Watershed Management Capabilities and Roles**

Why Did They Do It?

The SFWMD was created in 1961 by a special act of the Florida Legislature to be the local sponsor of the Four River Basins, Florida Project. This was a major flood control project sponsored by USACE after Hurricane Donna caused massive damage to southwest Florida in

1960. The project included flood control structures and water detention areas and encompassed a 6,000-square-mile area (SWFWMD 2018c).

How Did They Do It?

This program provides five major elements, including topographic information, watershed evaluation, watershed management planning, implementation of best management practices, and maintenance of watershed parameters and models.

The district strives to create coordination documents for each county government and city government as requested to address coordination and enhance cooperation. Local governments' capital improvement plans and the district's cooperative funding program provide funding for local elements of the Watershed Management Plane (WMP). The costs of these elements are determined as the program progresses. District funding comes from voter-approved ad valorem property taxes, along with other intergovernmental sources. While the legislature allows a tax levy up to \$1 million (\$1 for each \$1,000 of assessed land value), the actual tax levy has been less than the maximum (SWFWMD 2018b).

<http://www.swfwmd.state.fl.us/>

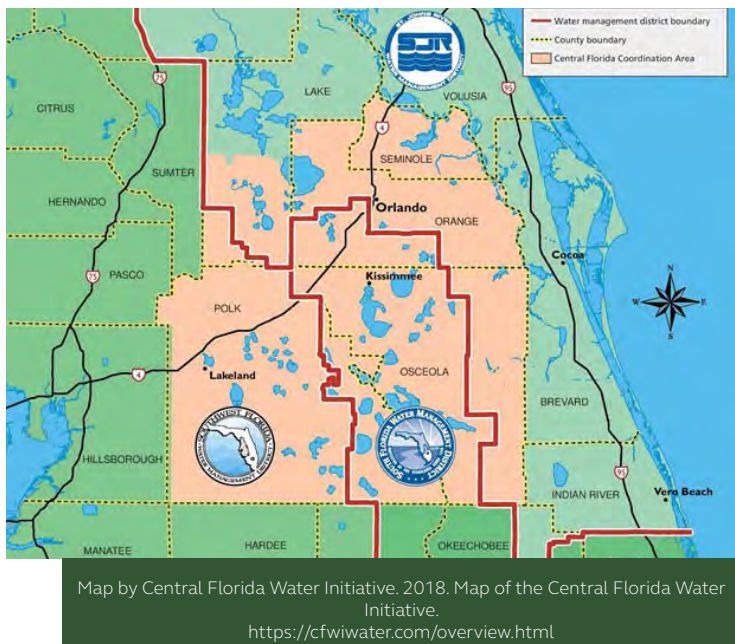
Legislative Action Taken/Required

Florida Administrative Code, Department 40: Water Management Districts (FL DOS 2010)

Applicability to Louisiana

The SFWMD provides a good example of an active and engaged water management district. With this stated, the SFWMD is not provided with much power or authority with regard to enforcement, regulatory capability, or compliance, and must fall back on the local and county governments for support against new development. The SFWMD has permitting authority over well construction, water use, and water quality but has few capabilities over floodplain management. While these permits are strict and can be used in such a way that they can influence development decisions, the burden of these decisions still lie within the hands of the local, county, and state governments. The State of Louisiana must consider what type of powers it is willing to provide at the watershed level if it decides to pursue this option in its floodplain management structure.

Florida: State of Florida Comprehensive Water Legislation (SB 552)



What Did They Do?

In 2016, the Florida Legislature passed Senate Bill 552, which provides for comprehensive updates to water resources legislation for the state (FL Senate 2016). The contents of the bill were part of a multi-year effort advanced by a number of stakeholders within the state, which achieved broad-based support with both the Florida House of Representatives and State Senate. Through this legislation, a number of state statutes were either amended or created that established legal authority and responsibility among various state agencies, particularly the Department of Environmental Protection (DEP), to create and promote state-level standards on several issues related to water use and quality. Such areas include a focus on better and more integrated data management, improving water quality, increasing public access to conservation lands, improving water flow, recovery or prevention strategies for water supply, water use permitting, promoting water conservation, and more.

Best Practices that Louisiana Could Look To

- **Planning - Watershed Plan Review, Approval, and Reporting**
- **Regulatory - State and Local Standard Setting**
- **Funding - State Funded Program Management**
- **Technical Assistance - Technical Experts (Data Research and Analysis)**
- **Technical Assistance - Technical Experts (Project Identification and Implementation)**
- **UNIQUE - Requires Grading for a Project's Benefit to the Watershed and Adherence to State Standards as Prerequisite for State Funding**

Why Did They Do It?

Much of the focus of this legislation was on water use and quality, given the unique water management challenges within the state of Florida related to the noted deterioration of the Outstanding Florida Springs and water supply issues. While state law already provided for watershed-focused management districts, this bill provided the statutory basis for advancing (and funding) pilot projects that addressed state priorities involving water resource management, as well as ensuring those entities establishing regional priorities and initiating actions based on those priorities do so with full transparency to both the Governor and Florida Legislature, as well as the general public.

How Did They Do It?

This comprehensive water resource management and policy legislation was years in the making, resulting in new or amended legislation spanning multiple chapters and areas of Florida state law (FL Senate 2015). The legislation is overwhelmingly rooted in the development and production of action-oriented plans, including those involving watershed protection and basin management programs, led by DEP and the appropriate coordinating agencies such as the state's water management districts. These plans and related activities are now mandated by law to be publicly reported, with transparent and accountable decision-making processes and actions a clear focus, with cooperation and consensus among interest parties highly encouraged. Projects are required to go through a grading process as part of a rolling five-year capital improvements plan at the water management district level that takes into account the project's benefit to the watershed, with adherence to these and other standards required as a condition to receive certain funding. The legislation also codified the role of the Central Florida Water Initiative (CFWI), which serves as a collaborative entity bridging together interests of local and state agencies to present a unified process to address the current and long-term water supply needs of Central Florida without causing harm to water resources and associated natural systems. As a regional shared-interest entity, the amendments contained within this water resource legislation requires the adoption of uniform rules across the CFWI geographic area, which help to ensure consistency in water resource management activities that cross multiple jurisdictional boundaries.

Legislative Action Taken/Required

Florida State Law; Multiple Sections and State Statutes (FL Senate 2016)

For more information:

<https://floridadep.gov/about-dep>

Applicability to Louisiana

The State of Florida was able to address multiple issues within state water management policy by adopting a science-driven approach to actions taken and/or projects advanced within a watershed that is supported through a number of transparency and reporting-related measures. While the state's focus through this far-reaching policy initiative primarily involved issues related to water use, conservation, and supply, it provides Louisiana with a policy basis for how best to address the issues of competing jurisdictional priorities within a watershed, using incentives for those projects that exceed state minimum standards and requiring local government entities adopt ordinances consistent with state standards for elements of basin and springshed management. A regional focus on priority-setting and project selection is featured throughout the amended law, including prioritizing "regionally significant" water resource development projects and giving preference to funding decisions that are accompanied or supported by local or regional match dollars. The legislation also carried a strong focus on establishing consistency in data collection and management, utilizing standards for the collection and analysis of water-related data and requiring state agencies and/or water management districts to demonstrate compliance with such standards as a prerequisite for receiving state funds involving water resource projects. The State of Louisiana and local government agencies across the state would similarly benefit from such state-driven standardization involving data management practices, with compliance directly correlated to an entity's ability to secure state funding for projects or initiatives.

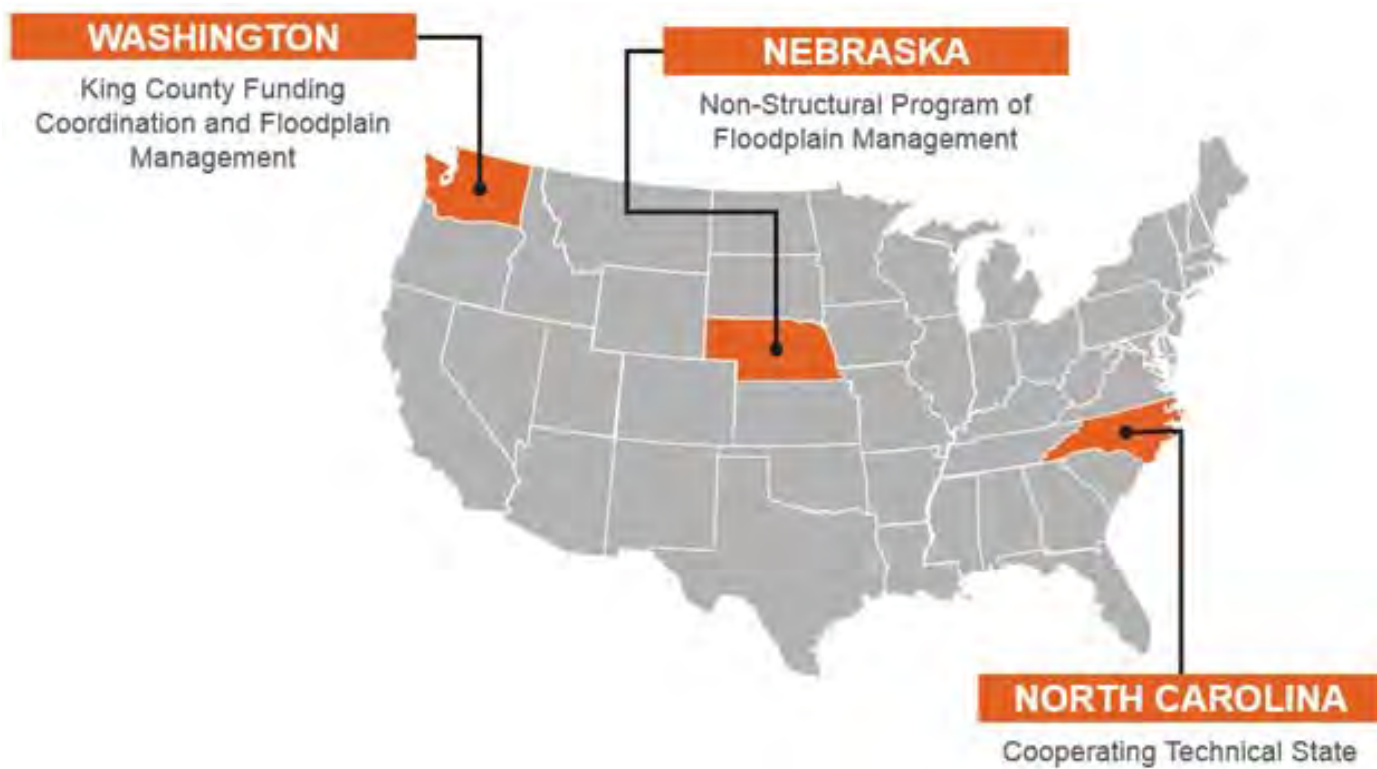




Honey Island Swamp- Louisiana

LAYER 4 - TECHNICAL APPROACHES, CAPABILITIES, AND DATA NEEDS

Arcadis has gathered a series of case studies applicable to the development of a floodplain management program in the State of Louisiana. It should be noted that this is not an exhaustive list but instead represents a small sampling of creative approaches to floodplain management.



Nebraska: Non-Structural Program of Floodplain Management



Photo by USFWS. 2011. In A River Runs Through It: Hydrogeomorphic restoration and public-private partnerships build a future for the Big Muddy. <https://www.fws.gov/midwest/news/BigMuddyAGOLCC.html>

What Did They Do?

The Nebraska Department of Natural Resources (NDNR) Floodplain Division is responsible for a non-structural program of floodplain management, which oversees floodplain delineation and provides technical assistance regarding floodplain management to local units of government (NDNR 2018).

Best Practices that Louisiana Could Look To

- **Planning - Local Hazard Mitigation Plan Compliance and Update**
- **NFIP Coordination - Mapping Coordination and Adoption**
- **Technical Assistance - NFIP Compliance/Planning**
- **Technical Assistance - Technical Experts (Mapping)**
- **UNIQUE - Non-Structural Program focused on Floodplain Delineation and Technical Assistance**

Why Did They Do It?

Finding a balance between competing demands is a key to the future of Nebraska's resources. Assessing impacts of alternative soil and water management options requires an understanding of complex issues and substantial amounts of reliable data. The NDNR was formed with the purpose of providing the state with the data and analyses they need to make wise resource decisions for the benefit of all Nebraskans, particularly with regard to flooding. The NDNR is a state agency with responsibilities in the areas of groundwater, surface water, floodplain management, dam safety, natural resources planning, water planning, storage of natural resources, and administration of state funds.

How Did They Do It?

With these responsibilities in mind, NDNR partnered with FEMA to work toward the goal of providing floodplain mapping information and assistance. A CTP agreement was signed on August 19, 1999. Under the CTP agreement, NDNR aligned the state's floodplain programs with FEMA's programs and increased efforts

to build and improve the state's floodplain management capabilities. To that end, a knowledgeable floodplain team was formed, comprising engineers, floodplain management specialists, flood mitigation planners, GIS professionals, and an education and outreach specialist. One of the main objectives of the CTP program was to create DFIRMs. To assist with the effort, NDNR developed and utilized the Nebraska Flood Analyses Calculating Tool (N-FACT), a GIS tool designed to map Zone A floodplains for large rural unmapped areas in Nebraska. With this tool, the floodplain mapping team can delineate the 1% annual-chance-floodplain at a rate of approximately 5 stream miles per hour while producing most of the information necessary for FEMA's DFIRM product at the same time. This tool has been shared with other local, state, and federal agencies. In addition, it was provided to the State of Iowa for its evaluation when selecting mapping techniques. The N-FACT process has been coordinated with FEMA, and the tool is being upgraded to run on the latest ArcGIS platform under a CTP program management grant. With the assistance of FEMA's CTP program, 49 out of Nebraska's 93 counties now have DFIRMs, with several more counties in preliminary phases.⁷

<https://dnr.nebraska.gov/>

⁷Information obtained via interview with Mitch Paine on December 8, 2017

Legislative Action Taken/Required

The Cooperating Technical Partners Initiative was established through the approval of 42 USC 4101, National Flood Insurance Act of 1968 (Office of the Law Revision Council 2018)

Applicability to Louisiana

The formation of the NDNR and its engagement with FEMA has proved vital to the success of Nebraska's floodplain mapping and floodplain management. Ensuring a strong technical staff, with the capacity and ability to develop resources for the State of Louisiana, is critical to a well-organized and technically apt State Floodplain Management Program. Providing a high level of engagement and support, to both the locals and staff within the state, not only serves as a best practice but also helps to encourage ongoing discussions regarding floodplain management.

The establishment of N-FACT was also critical to Nebraska's success in rapidly understanding and deploying information about risk and has improved the state's ability to target and identify areas of potential future projects. Mapping rural areas that typically may not be identified as a priority for FEMA is critical to states that use agriculture and livestock as an economic indicator, such as Louisiana and Nebraska. This should be considered in the further development of the State of Louisiana Floodplain Management Program.

King County Funding Coordination and Floodplain Management



Photo by Joe Mabel. 2013. Aerial view of Star Lake, Kent, King County, Washington. Licensed under CC BY-SA 2.0.
[https://commons.wikimedia.org/wiki/File:Aerial_view_of_Star_Lake,_King_County,_Washington_from_the_west_01_\(9792449163\).jpg](https://commons.wikimedia.org/wiki/File:Aerial_view_of_Star_Lake,_King_County,_Washington_from_the_west_01_(9792449163).jpg)

What Did They Do?

The King County Flood Control District was established in April, 2007 by ordinance 15728 of the Metropolitan King County Council to protect public health and safety, regional economic centers, public and private properties and transportation corridors. The district is instrumental in addressing the backlog of maintenance and repairs to levees and revetments, acquiring repetitive loss properties and other at-risk floodplain properties, and improving countywide flood warning and flood prediction capacity.

<http://www.kingcounty.gov/depts/dnrrp/>

Best Practices that Louisiana Could Look To

- Planning - Local Hazard Mitigation Plan Compliance and Update
- NFIP Coordination - Mapping Coordination and Adoption
- Technical Assistance - NFIP Compliance/Planning
- Technical Assistance - Technical Experts (Mapping)
- UNIQUE - Utilizes a unique funding source developed specifically for floodplain management and mitigation

Why Did They Do It?

Flooding within King County has historically caused tens of millions of dollars in damages to public and private property, resulted in the deaths of several people, damaged or destroyed hundreds of homes, and killed scores of livestock. The historic Thanksgiving 1990 Flood exceeded all previous flow records on most rivers and caused more than \$15 million in damage.

How Did They Do It?

King County, Washington relies on inter-county agreements with counties where watersheds cross boundaries. Within the county itself, the County Government employs more than 60 people on staff to support river and floodplain management including ecologists, NFIP coordinators, funding specialists, and technical experts. King County addresses flooding problems along its major rivers through a specific program and funding source: The River Management Program, which is funded from a Countywide property tax levy called the River Improvement Fund (RIF) levy (King County DNRP 2016). The RIF levy is part of the County's overall property tax assessment and is collected from both incorporated and unincorporated properties. The River Management Program is administered by the County's Surface Water Management (SWM) Division.

In the western one-third of the County, characterized by small, urbanizing stream basins, drainage problems are addressed through a separate program, the SWM Program. The SWM Program, which is also administered by the SWM Division, is funded by a service charge based on the amount of impervious surface area such as pavement and rooftops on properties in unincorporated King County. The program deals primarily with urban drainage issues and the impacts of development on small streams in the western third of the County. Additionally, the King County River and Floodplain Management Section (RFMS) employs a program and project effectiveness monitoring framework consisting of project performance reviews, which include routine data collection activities and special investigations. This multidisciplinary and cross-county effort provides an effective mechanism for drawing program and project implementation across the County into line with the goals of the Flood Hazard Management Plan, in addition to enabling continual and wide-spread data gathering and maintenance (King County DNRP 2015).

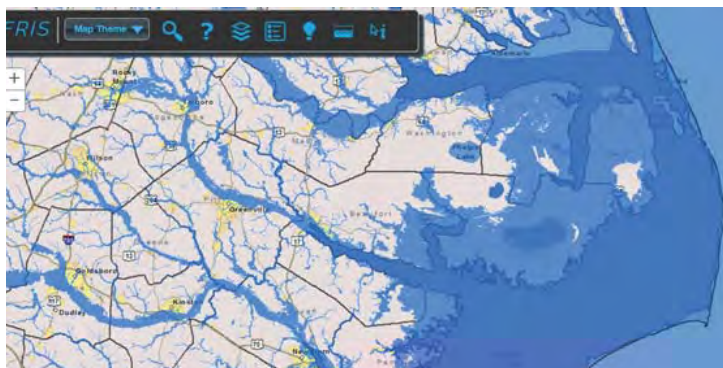
Legislative Action Taken/Required

Revised Code of Washington (RCW, Title 86, Chapter 86.12, Flood Control by Counties (WA State Legislature 2005)

Applicability to Louisiana

Developing a unique funding mechanism to provide an ongoing funding source is critical toward encouraging continuous resilience project development. Rather than relying on grant funding sources that may change over time such as FEMA or HUD, it is important that Louisiana begin identifying creative solutions that can be applied statewide such as the RIF levy and SWM service charge. These sources can be managed either by a state agency or by divisional leads on a region by region basis.

North Carolina: Cooperating Technical State



State of North Carolina. Flood Risk Information System (FRIS).
Source: <http://fris.nc.gov/fris/Home.aspx?ST=NC>

What Did They Do?

The State of North Carolina, through FEMA's Cooperating Technical Partnership (CTP) initiative, was the first and only state to assume primary ownership of and responsibility for the FIRMs for all North Carolina communities as part of the NFIP.

Best Practices that Louisiana Could Look To

- **NFIP Coordination - Mapping Coordination and Adoption**
- **Technical Assistance - NFIP Compliance and Planning**
- **Technical Assistance - Technical Experts (Mapping)**
- **UNIQUE - Providing More Accurate Mapping than Required by FEMA**

Why Did They Do It?

North Carolina faces extreme hazards and vulnerability from hurricanes and flooding. Since 1989, there have been 14 federally declared disasters in North Carolina. Damage from Hurricane Floyd (1999) alone reached \$3.5 billion. Hurricane Floyd destroyed 4,117 uninsured and under-insured homes. The state's vulnerability to hurricanes and flooding make it crucial that communities and property owners have accurate, up-to-date information about flood risk.

How Did They Do It?

Each fiscal year, FEMA issues a Notice of Funding Opportunity (NOFO) document to announce the availability of the CTP cooperative agreement funding opportunity. The NOFO describes the available funding, priorities, requirements, and process for eligible applicants to request funding for program activities. These maps show the extent of the 1% annual chance floodplain, also known as the Special Flood Hazard Area (SFHA). The updated Digital Flood Insurance Rate Maps (DFIRMs), produced through this project, help to protect lives and property and contribute to the general well-being of North Carolina citizens (NCFMP n.d.,a).

<http://www.ncfloodmaps.com/>

Legislative Action Taken/Required

The Cooperating Technical Partners Initiative was established through the approval of 42 United States Code (USC) 4101, National Flood Insurance Act of 1968 (Office of the Law Revision Council 2018)

For more information:

<http://www.ncfloodmaps.com/>

Applicability to Louisiana

As demonstrated through this partnership, technical capabilities are critical to a successful floodplain management program. This program has allowed North Carolina and its citizens to gain a much deeper knowledge of flooding throughout the state, because it requires the state to be the ones to determine its flood-prone regions. Though Louisiana is a member of the CTP Program, many of the activities performed by the state under this program have been completed at a smaller scale. Growing the scale of this program within the state could prove valuable by making these mapping services available to local communities.





B. Watershed delineation options

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HYDROLOGIC UNITS

The United States Geological Survey (USGS) has delineated watersheds throughout the United States at varying scales and has maintained these data in the Watershed Boundary Dataset (WBD). These watersheds, called hydrologic units (HUs), are defined below (USGS 2017):

“A hydrologic unit is a drainage area delineated to nest in a multi-level, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream or similar surface waters. A hydrologic unit can accept surface water directly from upstream drainage areas, and indirectly from associated surface areas such as remnant, non-contributing, and diversions to form a drainage area with single or multiple outlet points. Hydrologic units are only synonymous with classic watersheds when their boundaries include all the source area contributing surface water to a single defined outlet point.”

The United States is split into 22 of the largest HUs, called regions. Each region is divided into subregions; each subregion is divided into basins; and each basin is divided into sub-basins, or watersheds. Each HU can be represented by a unique hydrologic unit code (HUC), and each level in the hierarchy earns two digits in the HUC. For example, in Figure 1, the largest, lightest gray area represents the Lower Mississippi Region, whose HUC-2 is 08. The next-largest area is the Louisiana Coastal Subregion, with an HUC-4 of 0808. Nested within that subregion is the HUC-6 080801, or the Atchafalaya-Vermillion Basin. Finally, the darkest area shown represents HUC-8 08080102, or the Bayou Teche Subbasin. In some places in the U.S., this subdivision scheme continues to 16-digit HUCs.

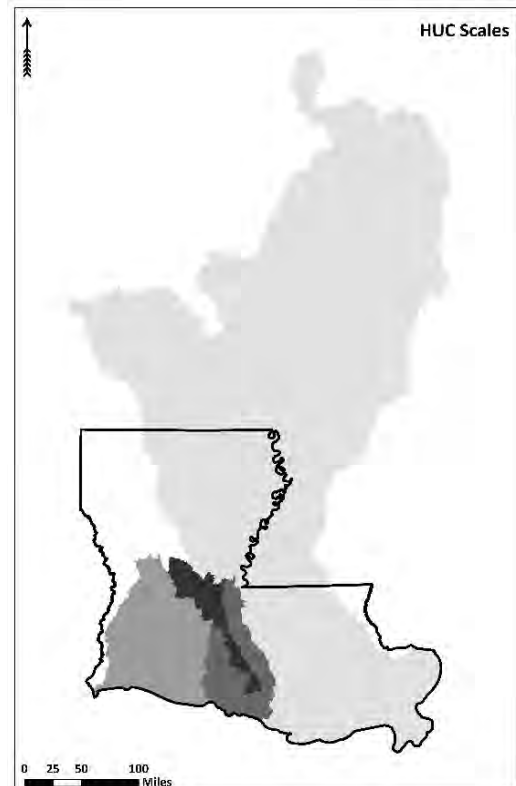


Figure 1: Example of Hydrologic Unit Scales

For the purpose of this study, we have focused on HUC-4, -6, and -8 level units. Louisiana is divided into 11 subregions, 18 subregions, and 54 subbasins, as summarized in Table 1 and Figures 2, 3, & 4.

Table 1: Louisiana Hydrologic Unit Summary

HUC Digits	Common Name	Number of HUs	Average Size (mi ²)
4	Subregion	11	4,761
6	Basin	18	2,910
8	Subbasin/Watershed	54	970

**Note: m² = squared meters*

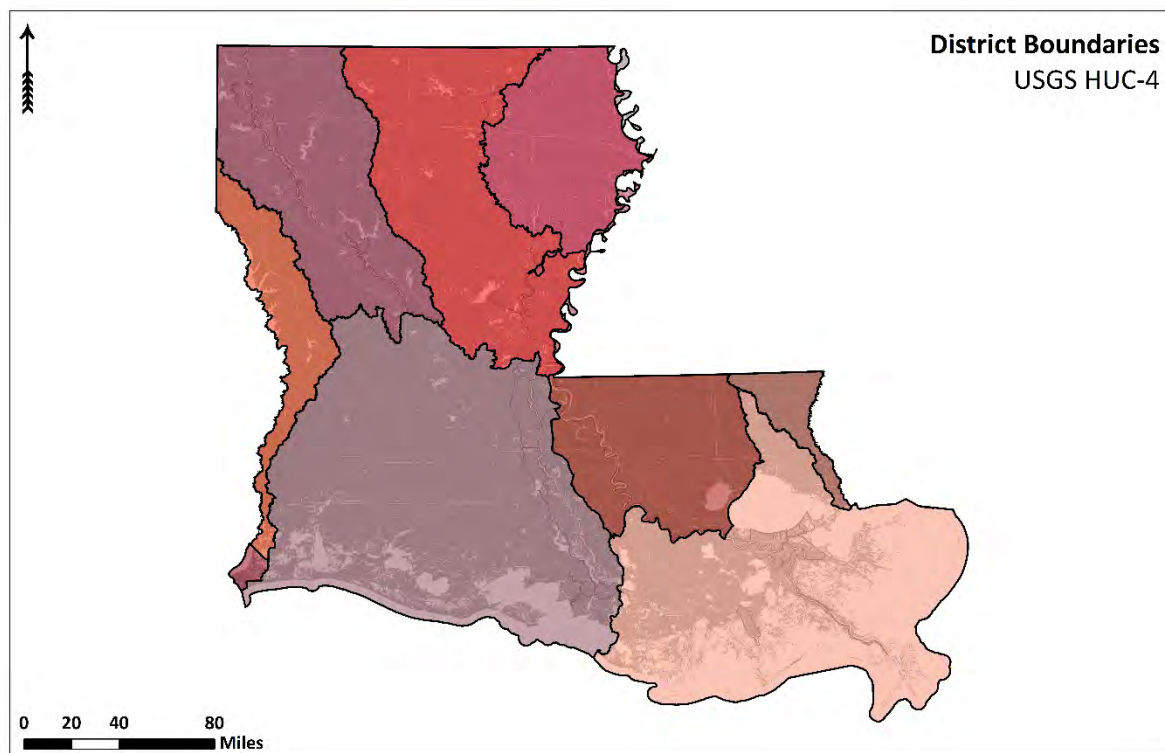


Figure 2: HUC-4 District Boundaries

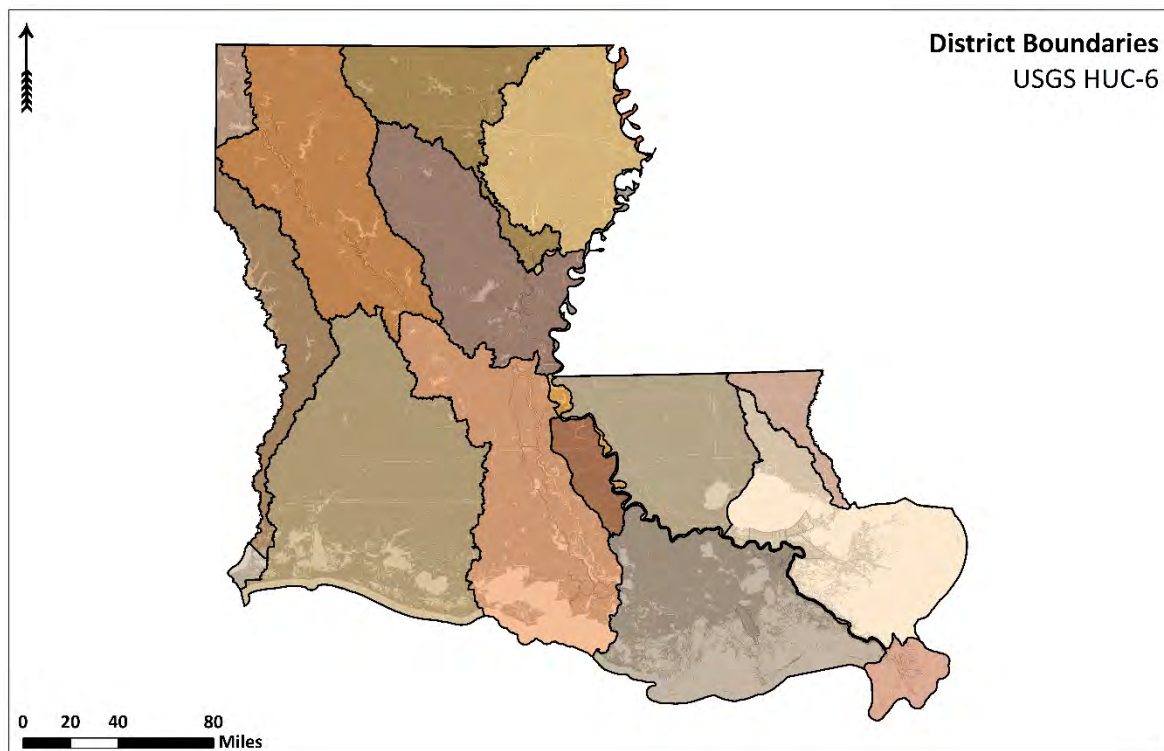


Figure 3: HUC-6 District Boundaries

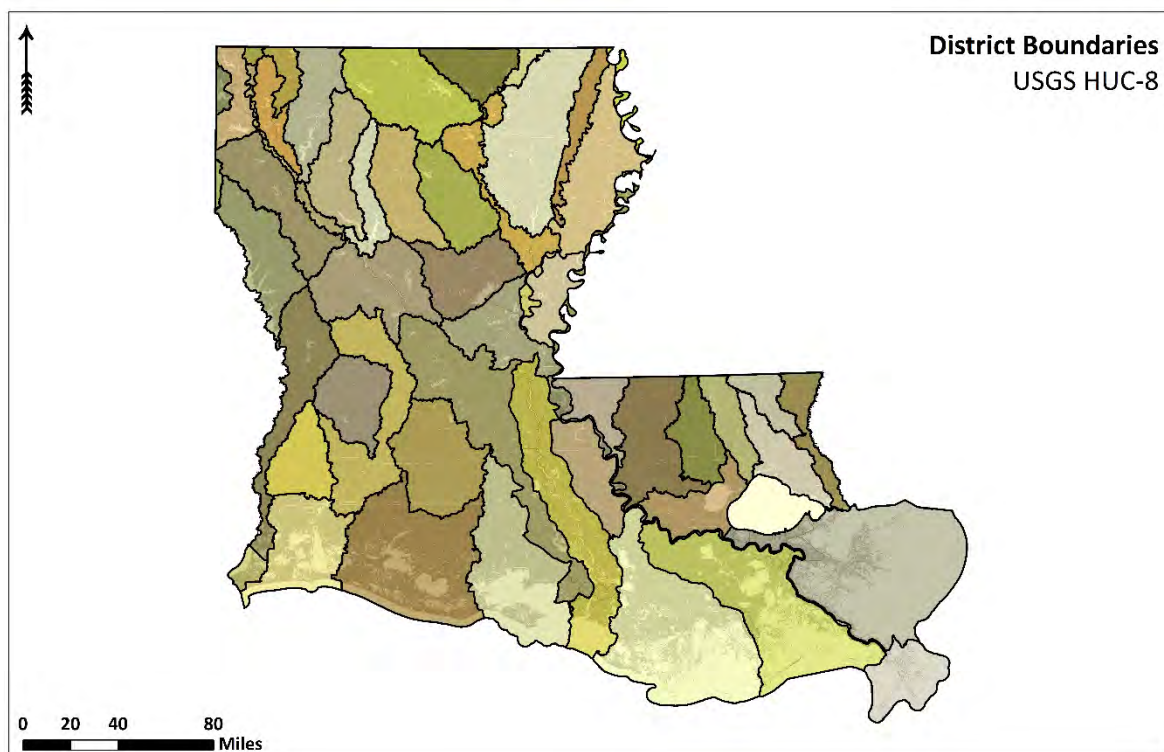


Figure 4: HUC-8 District Boundaries

PLANNING DISTRICTS

The Louisiana Association of Planning and Development Districts (LAPDD) comprise eight regions throughout the state that focus on “recovery and resiliency, job creation and retention, and capacity” (LAPDD 2017). Each district is composed of several member parishes, listed in Table 2. Figures 5 & 6 show parish boundaries and illustrate the LAPDD.

Table 2: Louisiana Association of Planning and Development Districts (LAPDD)

District	Number of Member Parishes	Member Parishes
Acadiana Planning Commission	7	Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, Vermilion
Capital Region Planning Commission	11	Ascension, East Baton Rouge, East Feliciana, Iberville, Livingston, Pointe Coupee, St. Helena, Tangipahoa, Washington, West Baton Rouge, West Feliciana
Coordinating and Development District	10	Bienville, Bossier, Caddo, Claiborne, DeSoto, Lincoln, Natchitoches, Red River, Sabine, Webster
Imperial Calcasieu Regional Planning and Development District	5	Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis
Kisatchie-Delta Regional Planning and Development District	8	Avoyelles, Catahoula, Concordia, Grant, LaSalle, Rapides, Vernon, Winn
North Delta Regional Planning and Development District	11	Caldwell, East Carroll, Franklin, Jackson, Madison, Morehouse, Ouachita, Richland, Tensas, Union, West Carroll
Regional Planning Commission (Metro New Orleans)	5	Orleans, Jefferson, St. Tammany, St. Bernard, Plaquemines
South Central Planning and Development District	7	Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, Terrebonne

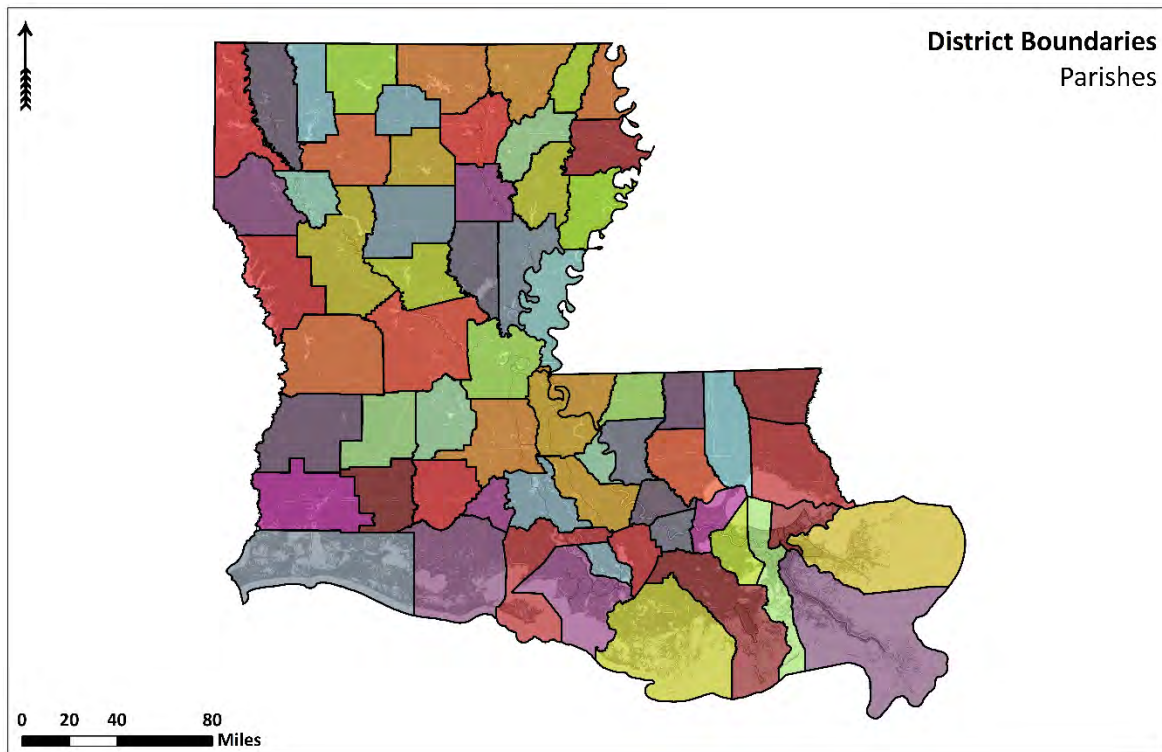


Figure 5: Parish Boundaries

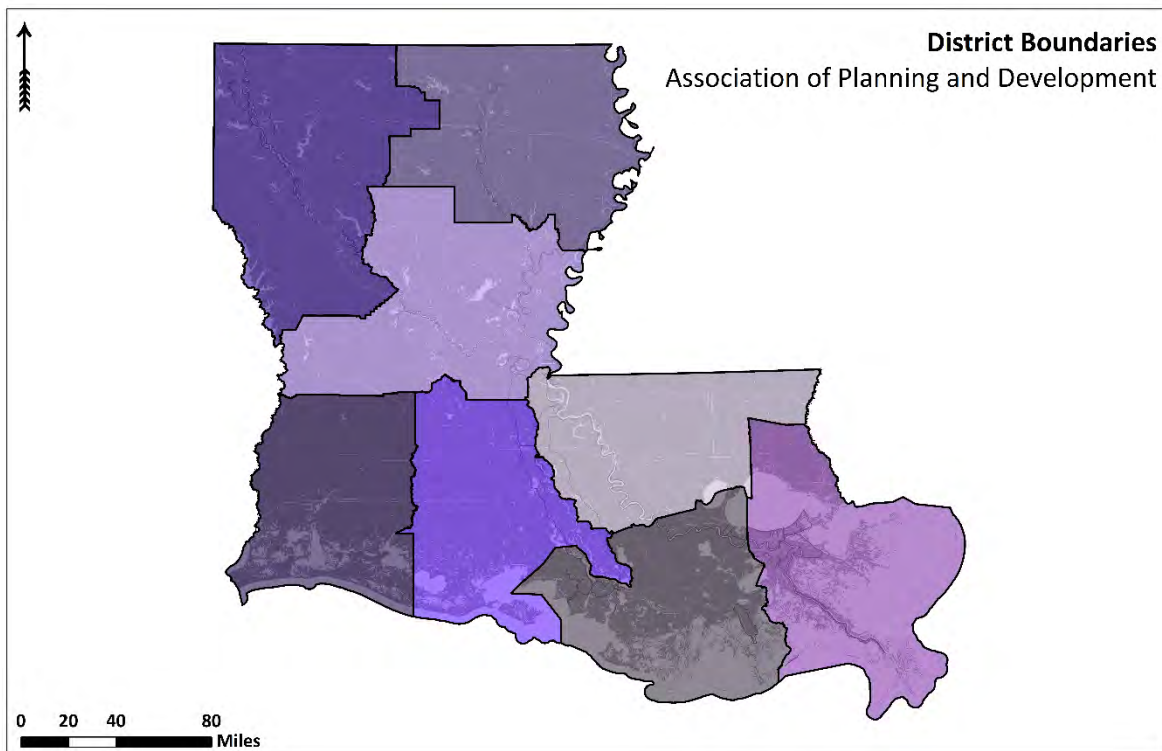


Figure 6: LAPDD District Boundaries

These LAPDD boundaries often overlap with the nine Metropolitan Planning Organizations (MPOs) in the state (see Table 3 and Figure 7). MPOs are federally-mandated entities that are created in all urban areas with populations of more than 50,000 people. MPOs must include the largest incorporated city by population and represent at least 75% of the population in the urban area. As transportation planning organizations, MPOs are responsible for developing the long-term Metropolitan Transportation Plans and the short-term Transportation Improvement Programs for the area (USDOT 2016).

Table 3: Metropolitan Planning Organizations (USDOT 2010)

Metropolitan Planning Organization (MPO)	Major City	Area (mi ²)	2010 Census Population	Designation Year
Alexandria-Pineville MPO	Alexandria	1,363	131,613	1975
Capital Regional Planning Commission	Baton Rouge	1,103	661,042	1972
Houma-Thibodaux MPO	Houma	175	125,380	1982
Imperial Calcasieu Regional Planning and Development Commission	Lake Charles	631	173,604	1984
Lafayette Area MPO	Lafayette	649	338,379	1972
Northwest Louisiana Council of Governments	Shreveport	1,805	371,948	1968
Ouachata Council of Governments	Monroe	182	126,619	1973
Regional Planning Commission	New Orleans	1,329	1,057,709	1962
South Tangipahoa MPO Regional Planning Commission	Hammond	259	99,316	2013

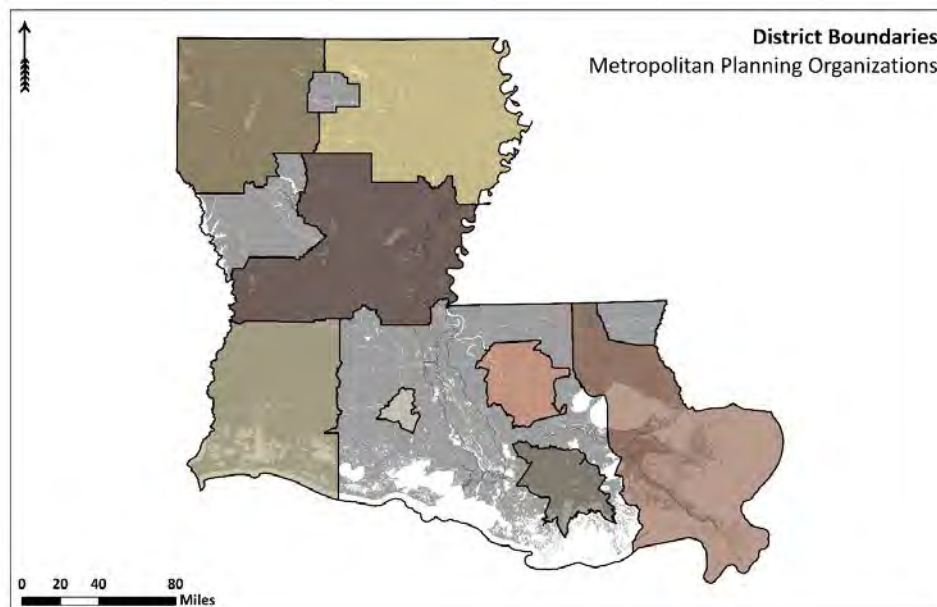


Figure 7: MPO District Boundaries

OTHER DISTRICT BOUNDARIES

In 2014, Arcadis published a report on behalf of the Coastal Protection and Restoration Authority of Louisiana (CPRA) and the Louisiana Department of Transportation and Development (DOTD) in response to Senate Concurrent Resolution 39 (SCR 39), which called for a comprehensive evaluation of Louisiana's levee and water districts. This report, entitled *Phase I Study – Exploring the Reorganization of Levee Districts and Other State-Created Entities with Flood Control Responsibilities*, and hereby referred to as the SCR 39 Study, identified more than 250 governmental entities created by statute to have legal authority over surface water in Louisiana (Arcadis 2014). Through robust data collection, review, and analysis, the study distilled these entities to the following active levee and water districts, which are listed below and shown in Figures 8 & 9.

Levee Districts

- Atchafalaya Basin Levee District
- Bossier Levee District
- Bunches Bend District
- Caddo Levee District
- Chenier Plain Coastal Restoration and Protection Authority
- Fifth Louisiana Levee District
- Grand Isle Independent Levee District
- Iberia Parish Levee, Hurricane Protection, and Conservation District
- Lafitte Area Independent Levee District
- Lafourche Basin Levee District
- Natchitoches Levee and Drainage District
- Nineteenth Louisiana Levee District
- North Lafourche Conservation, Levee, and Drainage District
- Plaquemines Parish
- Pontchartrain Levee District
- Red River Levee and Drainage District
- Red River, Atchafalaya, and Bayou Boeuf Levee District
- Southeast Louisiana Flood Protection Authority East
- Southeast Louisiana Flood Protection Authority West
- South Lafourche Levee District
- St. Mary Levee District
- Tensas Basin Levee District
- Terrebonne Levee and Conservation District

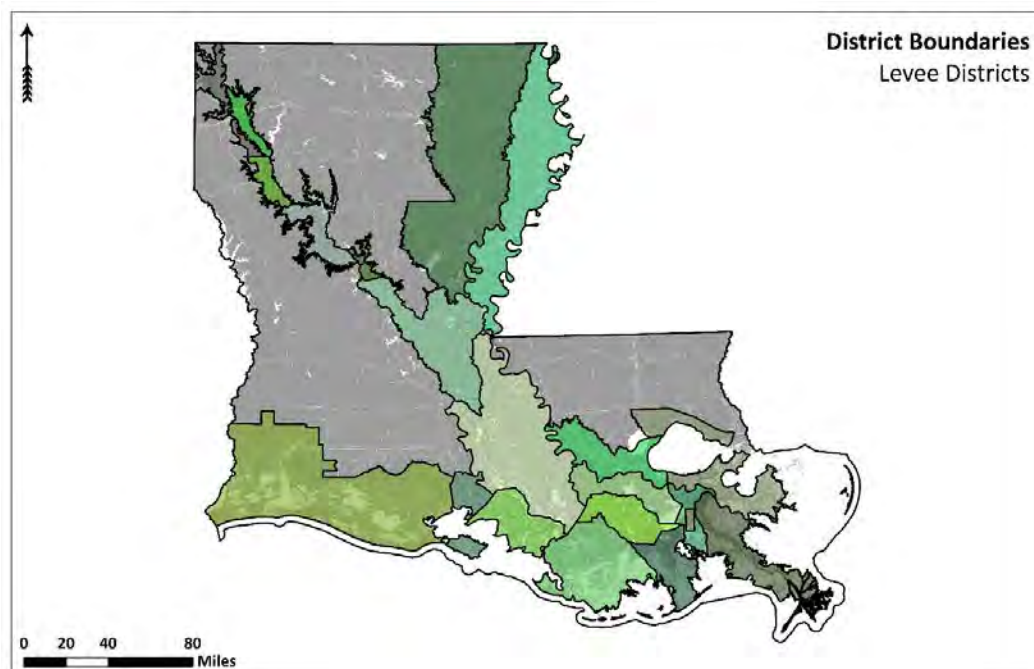


Figure 8: Levee District Boundaries

Water Districts

- Allen Parish Reservoir District
- Amite River Basin Drainage and Water Conservation District
- Bayou D'Arbonne Lake Watershed District
- Bayou DeSiard-Bayou Bartholomew Cut-Off Loop Water Conservation Board of Ouachita and Morehouse Parishes
- Bayou Desiard Restoration Commission
- Bayou Lafourche Freshwater District
- Black Bayou Watershed District
- Black River Lake Recreation and Water Conservation District
- Bodcau Soil and Water Conservation District
- Caddo Lake Watershed District
- Cane River Waterway District
- Claiborne Parish Watershed District
- Dorcheat Soil and Water Conservation District
- Jackson Parish Watershed District
- John K. Kelly Grand Bayou Reservoir District
- Lake Bruin Recreation and Water Conservation District
- Lake St. John Recreation and Water Conservation District
- Morehouse Parish Lake Commission
- Red River Waterway District
- Sabine River Authority, State of Louisiana
- Teche-Vermilion Fresh Water District
- Webster Parish Watershed District
- West Ouachita Parish Reservoir Commission

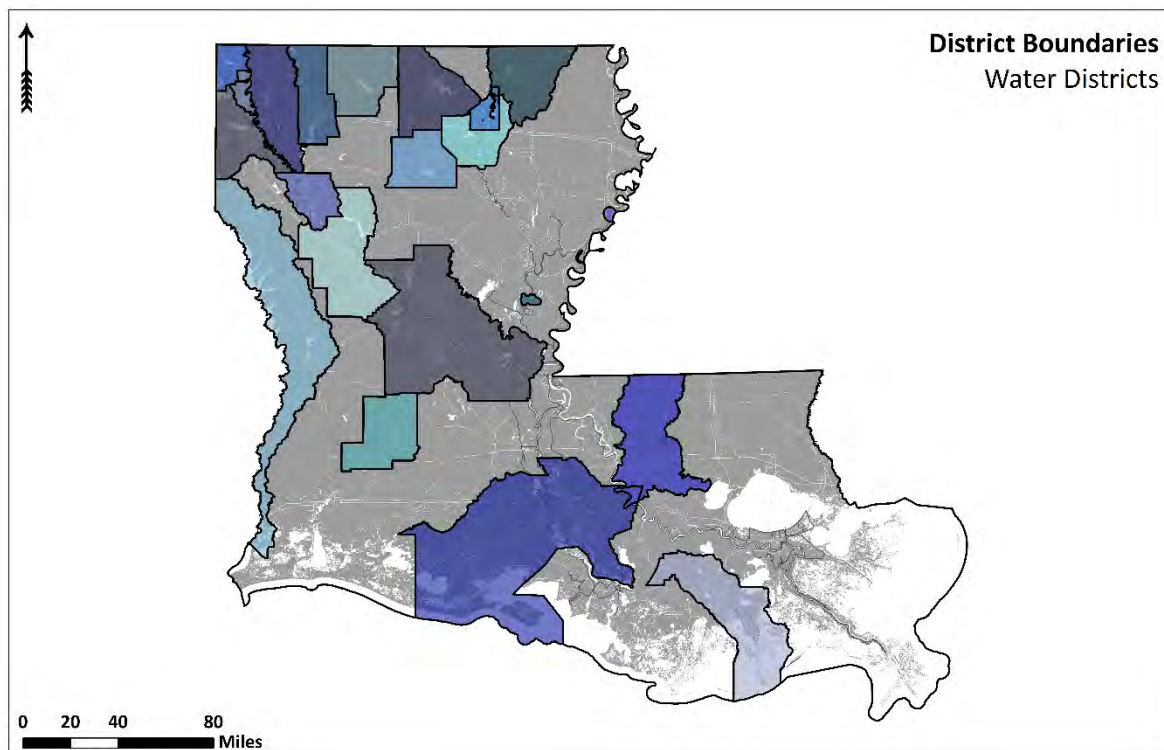


Figure 9: Water District Boundaries

OBSERVATIONS

The SCR 39 Study found that many of the existing levee districts follow political rather than hydrological boundaries. While there are some levee districts that attempt to follow alluvial boundaries, such as those along the Red River, even these districts are truncated both by outdated floodplain data and by parish boundaries. Without the authority of an entire watershed, a district is unable to manage water resources in a holistic manner.

Similarly, only 2 out of the 23 active water districts (Sabine River Authority and Amite River Basin Drainage and Water Conservation District) had watershed-based delineations – the rest followed parish or municipal lines. Additionally, water district boundaries are not necessarily mutually exclusive – an area may be covered by multiple water districts, such is the case with the Cane River and Red River Waterway Districts. This type of overlap could lead to inefficiencies, redundancies, and unnecessary bureaucratic burdens.

Furthermore, while the LAPDDs and MPOs provide a platform for multi-parish collaboration, these organizations still lack the authority to manage at a watershed scale.

However, districts based solely on HUC boundaries are not necessarily the answer either. Drawing district boundaries at the watershed or subbasin scale could result in an unreasonable number of districts to operate efficiently. Furthermore, strict adherence to the hydrological boundaries would disregard practicality, with regard to population distribution throughout the state.

Because of this, the SCR 39 Study proposed three alternatives for new, hybrid, threat-based water/levee districts based on a compilation of census, hydrologic, infrastructure, and flood hazard data. One of these alternatives (Alternative 3), is presented in Figure 10.

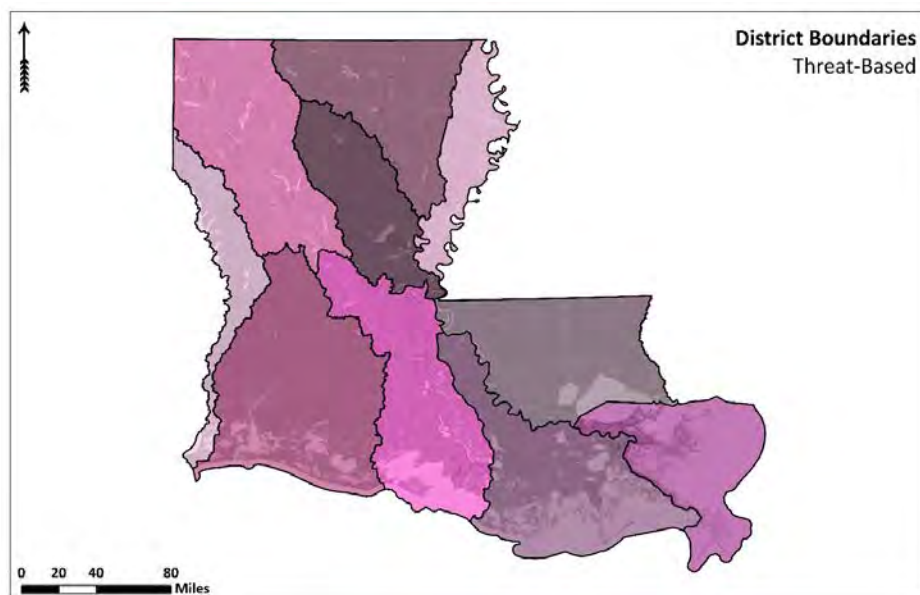


Figure 10: Threat-Based District Boundaries

As discussed in the SCR 39 Study, a better solution could exist that would reflect both the hydrological and practical needs, such as the threat-based districts shown in the above figure. The alternative shown in this figure is only a single example of the potential for smarter, science-driven district boundaries that consider flooding hazard, hydrologic boundaries, flood infrastructure, and population centers.





C. Model Legislation

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INTRODUCTION

The ability to impact society through well-written legislation is critical in the development of a statewide floodplain management program. Although legislation drafting is highly technical and rigorous, it is imperative that the legislation drafted is deliberate, intentional, and clear for the audience intended. In legislative drafting, a message is conveyed by articulating the legislation's intent in the clearest and most concise manner possible.

To ensure concise and cohesive legislation, it is important to follow these guidelines:

- Write simply and carefully
- Write purposefully
- Keep in mind the bigger picture and the State's role in the process
- Ensure all appropriate stakeholders are integrated in the drafting process

LEGISLATIVE EXAMPLES

The following legislative examples have been gathered through Phase I research and illustrate potential best practices when developing new legislation within the State of Louisiana. These preliminary examples have been each identified by state, date of initiation, an understanding of why it was initiated, and provided with a legislative description. The physical legislation has also been attached to this appendix. Phase II of Program development will add to this list and library.

Legislation provides the backbone for much of the authority, powers, and duties of both the state and local authorities related to floodplain management. Ensuring any legislation that is developed is enforced and carried out is the next step to providing the state with the most effective and efficient floodplain management program, regardless of structure.

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Delaware	1961	<p>When the Delaware River Basin Commission (DRBC) was created, 43 state agencies, 14 interstate agencies, and 19 federal agencies exercised a multiplicity of splintered powers and duties within the watershed, which stretches 330 miles from the Delaware River's headwaters near Hancock, N. Y., to the mouth of the Delaware Bay.</p> <p>President Kennedy and the Governors of Delaware, New Jersey, Pennsylvania, and New York for the first time signed concurrent compact legislation into law, creating a regional body with the force of law to oversee a unified approach to managing a river system without regard to political boundaries.</p>	United States: Public Law 87-328: Delaware River Basin Compact Agreement	United States: Public Law 87-328: Delaware River Basin Compact Agreement - The commission consists of the Governors of Delaware, New Jersey, New York, and Pennsylvania, and one commissioner appointed by the President of the United States. The purpose of the commission is to develop and effectuate plans, policies and projects relating to the water resources of the basin. It shall adopt and promote uniform and coordinated policies for water conservation, control, use, and management in the basin. It shall encourage the planning, development, and financing of water resources projects according to such plans and policies.	<p>The members of this regional body – the DRBC – include the four basin state governors and the Division Engineer, North Atlantic Division, U.S. Army Corps of Engineers, who serves as the federal representative.</p> <p>Each commissioner has one vote of equal power, with a majority vote needed to decide most issues. Exceptions are votes to apportion, among the signatory parties, amounts required to support the current expense budget and votes to declare a state of emergency resulting from a drought or catastrophe, which require unanimity.</p> <p>Commission programs include water quality protection, water supply allocation, regulatory review (permitting), water conservation initiatives, watershed planning, drought management, flood loss reduction, and recreation.</p>

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Illinois	1948	The General Assembly finds that erosion continues to be a serious problem throughout the state. Also, rapid shifts in land use from agricultural to nonagricultural uses, changes in farm enterprises, operations, ownership, construction of housing, industrial and commercial developments, streets, highways, recreation areas, schools, colleges and universities, and other land disturbing activities have accelerated the process of soil erosion and sediment deposition, resulting in pollution of the waters of the state and damage to domestic, agricultural, industrial, recreational, fish and wildlife, and other resource uses.	Illinois Statute 70 Illinois Compiled Statute (ILCS) 405: Soil and Water Conservation Districts Act	Through Illinois Statute 70 ILCS 405, the State of Illinois has declared it in the public interest to provide 1) for the conservation of the soil, soil resources, water and water resources of this state; 2) for the control and prevention of soil erosion; 3) for the prevention of air and water pollution; and 4) for the prevention of erosion, floodwater, and sediment damages, and thereby to conserve natural resources; control floods; prevent impairment of dams and reservoirs; assist in maintaining the navigability of rivers and harbors; conserve wildlife and forests; protect the tax base; protect public lands; and protect and promote the health, safety, and general welfare of the people of this state	<p>State - Strengthen and extend the present erosion and sediment control activities and programs for both rural and urban lands. Establish and implement, through the department and Soil and Water Conservation Districts (in cooperation with units of local government, school districts, other political subdivisions of this state, agencies of this state, and other public agencies and private entities), a statewide comprehensive and coordinated erosion and sediment control program to conserve and protect land, water, air, and other resources</p> <p>Advisory Board – The Advisory Board has seven members. The Director of the Department and the Director of Agriculture Extension of the College of Agriculture of the University of Illinois, shall serve as members of the Advisory Board. The other 5 members shall be appointed by the governor by and with the advice and consent of the Senate. They shall be individuals who are the owners and active operators of farmland in this state, and who have been engaged in farming in this state for at least 5 years preceding their appointment (consideration having been given to geographical location and to Soil and Water Conservation District experience).</p>

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Illinois	1997	The restoration and conservation of the Illinois River Watershed is in the ecological and economic interests of the citizens of Illinois. It is further in the public interest to stimulate watershed management projects by local, State, and federal agencies, local communities, not-for-profit conservation organizations, and private landowners.	20 ILCS 3967: Illinois River Watershed Restoration Act	The purpose of this act is to create a group of leaders (representing agriculture, business, conservation, and the environment) to encourage the implementation of efforts to restore the Illinois River Watershed in accordance with the recommendations of the <i>Office of the Lieutenant Governor's Integrated Management Plan for the Illinois River Watershed Technical Report</i> (1997), to work with local communities to develop projects and regional strategies, and to make recommendations to appropriate state and federal agencies.	<p>Duties of the Council. The Council shall:</p> <p>(1) Periodically review activities and programs administered by state and federal agencies that directly impact the Illinois River Watershed.</p> <p>(2) Work with local communities and organizations to encourage partnerships that enhance awareness and capabilities to address watershed and water resource concerns and to encourage strategies that protect, restore, and expand critical habitats and soil conservation and water quality practices;</p> <p>(3) Work with state and federal agencies to optimize the expenditure of funds affecting the Illinois River Watershed.</p> <p>(4) Advise and make recommendations to the governor and state agencies on ways to better coordinate the expenditure of appropriated funds affecting the Illinois River Watershed, including <i>Illinois River 2020</i>.</p> <p>(5) Encourage local communities to develop watershed management plans to address stormwater, erosion, flooding, sedimentation, and pollution problems and encourage projects for the natural conveyance and storage of floodwaters; the enhancement of wildlife habitat and outdoor recreation opportunities; the recovery, management, and conservation of the Illinois River and its tributaries; the preservation of farmland, prairies, and forests; and the use of measurable economic development efforts that are compatible with the ecological health of the watershed and this state.</p> <p>(6) Help identify possible sources of additional funding for watershed management projects.</p> <p>(7) Advise and make recommendations to the governor on funds and the priority of projects.</p>

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Minnesota	1997	Minnesota state law has required that the Regulatory Flood Protection Elevation (RFPE) specified in local floodplain ordinances include 1 foot of freeboard (at a minimum) since 1997. The model floodplain management ordinances prepared by Department of Natural Resources, Waters for local units of government have recommended that 1 foot of freeboard be included for more than 20 years.	Minnesota Statutes 103B: Water Planning and Project Implementation	State floodplain regulations include RFPE, require a 1-foot freeboard minimum for all local floodplain ordinances. This legislation has been in place since 1990.	<p>State – Provides oversight; technical assistance and training; approve ordinances and some data/mapping; and coordinates between the Federal Emergency Management Agency (FEMA) and the community.</p> <p>Watershed District – May have overlapping regulations and/or mitigation projects, often a key data source, has the ability to develop a budget through ad valorem taxes, and has the ability to regulate land development so long as certain conditions are met.</p> <p>Zoning Authority – Adopts ordinance, enrolls in National Flood Insurance Program (NFIP), administers and enforces.</p>
Minnesota	1990	The Board of Water and Soil Resources is the state soil and water conservation agency. It administers programs that prevent sediment and nutrients from entering Minnesota's lakes, rivers, and streams; enhance fish and wildlife habitat; and protect wetlands. The 20-member board consists of representatives of local and state government agencies and citizens.	Minnesota Statutes 103B: Water Planning and Project Implementation	103B.101: Board of Water and Soil Resources – Establishes the foundation of the Board including the number of appointed members (three County Commissioners, three Soil and Water Conservation District Supervisors, three watershed district organization representatives, three citizens; one township officer, two city elected officials, Commissioner of Health, Commissioner on Agriculture, Commissioner of Natural Resources, Commissioner of the Pollution Control Agency, and the Director of the University of Minnesota Extension Service).	

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Minnesota	1982		Minnesota Statutes 103B: Water Planning and Project Implementation	103B.201: Metropolitan Surface Water Management – Protect and preserve natural surface and groundwater storage and retention systems; minimize public expenditures needed to correct flooding; establish uniform local policies and official controls for surface and groundwater management; prevent erosion of soil into surface water systems; and promote groundwater recharge	
Minnesota	1982	The Metropolitan Surface Water Management Act was enacted in 1982. The act was originally included in chapter 509 (commonly referred to as "509" planning) and was later recodified. Since passage of the act, all local units of government in the seven-county metropolitan area have been involved in the preparation and implementation of Comprehensive Surface Water Management Plans through membership in a watershed management organization or a watershed district.	Minnesota Statutes 103B: Water Planning and Project Implementation	<p>103B.211 Joint Powers Watershed Management Organization – Provides the authority to:</p> <p>(1) Prepare, adopt, and implement a plan for the watershed to meet the requirements of Section 103B.231.</p> <p>(2) Review and approve local water management plans as provided in Section 103B.235.</p> <p>(3) Regulate the use and development of land in the watershed when one or more of a series of conditions are met.</p> <p>(4) Accept the transfer of drainage systems in the watershed, to repair, improve, and maintain the transferred drainage systems, and construct new systems.</p> <p>(5) Adopt a budget and decide on the amount necessary to be raised from ad valorem tax levies to meet the budget.</p> <p>(6) Certify its budget with the auditor of each county having territory.</p> <p>(7) File approved assessment statements with each affected county.</p> <p>(8) Implement other powers necessary to exercise authority under clauses.</p>	<p>State – Provides oversight; technical assistance and training; approve ordinances and some data/mapping; and coordinates between the Federal Emergency Management Agency (FEMA) and the community.</p> <p>Watershed District – May have overlapping regulations and/or mitigation projects, often a key data source, has the ability to develop a budget through ad valorem taxes, and has the ability to regulate land development so long as certain conditions are met.</p> <p>Zoning Authority – Adopts ordinance, enrolls in National Flood Insurance Program (NFIP), administers and enforces.</p>

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Minnesota	1955	The Minnesota Legislature authorized the creation of watershed districts in 1955 through the Watershed Act, with the idea that water management policies should be developed on a watershed basis, because water does not follow political boundaries. The statutory purposes of watershed districts are to conserve the natural resources of the state through land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of public health and welfare and the provident use of natural resources.	Minnesota Statutes 103D: Watershed Districts	103D.201: Watershed District Purposes – To conserve the natural resources of the state by land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources. The establishment of watershed districts is authorized under this chapter	<p>State – Provides oversight; technical assistance and training; approve ordinances and some data/mapping; and coordinates between the Federal Emergency Management Agency (FEMA) and the community.</p> <p>Watershed District – May have overlapping regulations and/or mitigation projects, often a key data source, has the ability to develop a budget through ad valorem taxes, and has the ability to regulate land development so long as certain conditions are met.</p> <p>Zoning Authority – Adopts ordinance, enrolls in National Flood Insurance Program (NFIP), administers and enforces.</p>

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Minnesota	2006	<p>The Drainage Work Group (DWG) was first established as a stakeholder group to advise the preparation of the Public Drainage Ditch Buffer Study, which was published by the Minnesota Board of Water and Soil Resources (BWSR) in February 2006. This Study Work Group discussed a range of topics regarding buffer strips and drainage and developed a number of consensus recommendations, which are presented in Section 6 of the study report. In 2006, the Study Work Group agreed to continue to meet as the stakeholder DWG, with continued facilitation provided by the BWSR.</p>	Minnesota Statutes 103E: Drainage	<p>103E.011: Drainage Authority – The Drainage Management Team (DMT) is an interagency team comprised of staff members from state and federal agencies and academic institutions that meet regularly to coordinate and network, primarily agricultural drainage topics.</p>	<p>The Drainage Authority may make orders to:</p> <ul style="list-style-type: none"> (1) Construct and maintain drainage systems. (2) Deepen, widen, straighten, or change the channel or bed of a natural waterway that is part of the drainage system or is located at the outlet of a drainage system. (3) Extend a drainage system into or through a municipality for a suitable outlet. (4) Construct necessary dikes, dams, and control structures and power appliances, pumps, and pumping machinery as provided by law.

State	Date of Initiation	Why Was It Initiated?	State Legislation	Legislation Description	Federal/State/Local Roles
Minnesota	1991	The Minnesota Public Drainage Manual (MPDM) is a guidance document for administration of drainage systems established and maintained in accordance with Minnesota Statutes Chapter 103E: Drainage.	Minnesota Public Drainage Manual	MPDM was first published in 1991 in a hard copy, three-ring binder. A legislative appropriation from the Clean Water Fund in 2014 enabled the MPDM to be updated and republished in 2016 in an online Wiki format that greatly improves electronic access, search capabilities, and ease of future updates. MPDM has multiple audiences, including: Chapter 103E drainage authorities, drainage engineers, county auditors, attorneys, drainage inspectors, landowners, regulatory agencies, and other interested entities. MPDM is a guidance document, not a rule or law.	N/A

APPENDIX C-I: DELAWARE RIVER BASIN COMPACT

DELAWARE RIVER BASIN COMPACT



1961

(Reprinted 2009)

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DELAWARE RIVER BASIN COMPACT

*United States: Public Law 87-328,
Approved September 27, 1961, 75 Statutes at Large 688*

*Delaware: 53 Delaware Laws, Chapter 71,
Approved May 26, 1961*

*New Jersey: Laws of 1961, Chapter 13,
Approved May 1, 1961*

*New York: Laws of 1961, Chapter 148,
Approved March 17, 1961*

*Pennsylvania: Acts of 1961, Act No. 268,
Approved July 7, 1961*

PART 1

COMPACT

Whereas the signatory parties recognize the water and related resources of the Delaware River Basin as regional assets vested with local, State, and National interests, for which they have a joint responsibility; and

Whereas the conservation, utilization, development, management, and control of the water and related resources of the Delaware River Basin under a comprehensive multipurpose plan will bring the greatest benefits and produce the most efficient service in the public welfare; and

Whereas such a comprehensive plan administered by a basin wide agency will provide effective flood damage reduction; conservation and development of ground and surface water supply for municipal, industrial, and agricultural uses; development of recreational facilities in relation to reservoirs, lakes, and streams; propagation of fish and game; promotion of related forestry, soil conservation, and watershed projects; protection and aid to fisheries dependent upon water resources; development of hydroelectric power potentialities; improved navigation; control of the movement of salt water; abatement and control of stream pollution; and regulation of stream flows toward the attainment of these goals; and

Whereas decisions of the United States Supreme Court relating to the waters of the basin have confirmed the interstate regional character of the water resources of the Delaware River Basin, and the United States Corps of Engineers has in a prior report on the Delaware River Basin (House Document 179, Seventy-third Congress, second session) officially recognized the need for an interstate agency and the economies that can result from unified development and control of the water resources of the basin; and

Whereas the water resources of the basin are presently subject to the duplicating, overlapping, and uncoordinated administration of some forty-three State agencies, fourteen interstate agencies, and nineteen Federal agencies which exercise a multiplicity of powers and duties resulting in a splintering of authority and responsibilities; and

Whereas the joint advisory body known as the Interstate Commission on the Delaware River Basin (INCODEL), created by the respective commissions or Committee on Interstate Cooperation of the States of Delaware, New Jersey, New York, and Pennsylvania, has on the basis of its extensive investigations, surveys, and studies concluded that regional development of the Delaware River Basin is feasible, advisable, and urgently needed; and has recommended that an interstate compact with Federal participation be consummated to this end; and

Whereas the Congress of the United States and the executive branch of the Government have recognized the national interest in the Delaware River Basin by authorizing and directing the Corps of Engineers, Department of the Army, to make a comprehensive survey and report on the water and related resources of the Delaware River Basin, enlisting the technical aid and planning participation of many Federal, State, and municipal agencies dealing with the waters of the basin, and in particular the Federal Departments of Agriculture, Commerce, Health, Education, and Welfare, and Interior, and the Federal Power Commission; and

Whereas some twenty-two million people of the United States at present live and work in the region of the Delaware River Basin and its environs, and the government, employment, industry, and economic development of the entire region and the health, safety, and general welfare of its population are and will continue to be vitally affected by the use, conservation, management, and control of the water and related resources of the Delaware River Basin; and

Whereas demands upon the waters and related resources of the basin are expected to mount rapidly because of the anticipated increase in the population of the region projected to

reach thirty million by 1980 and forty million by 2010, and because of the anticipated increase in industrial growth projected to double by 1980; and

Whereas water resources planning and development is technical, complex, and expensive, and has often required fifteen to twenty years from the conception to the completion of a large dam and reservoir; and

Whereas the public interest requires that facilities must be ready and operative when needed, to avoid the catastrophe of unexpected floods or prolonged drought, and for other purposes; and

Whereas the Delaware River Basin Advisory Committee, a temporary body constituted by the Governors of the four basin States and the mayors of the cities of New York and Philadelphia, has prepared a draft of an interstate-Federal compact for the creation of a basin agency, and the signatory parties desire to effectuate the purposes thereof: Now therefore

The states of Delaware, New Jersey and New York and the Commonwealth of Pennsylvania, and the United States of America hereby solemnly covenant and agree with each other, upon the enactment of concurrent legislation by the Congress of the United States and by the respective state legislatures, having the same effect as this Part, to the following Compact:

ARTICLE 1

SHORT TITLE, DEFINITIONS, PURPOSE AND LIMITATIONS

Section 1.1 Short title.. This Act shall be known and may be cited as the Delaware River Basin Compact.

1.2 Definitions. For the purposes of this compact, and of any supplemental or concurring legislation enacted pursuant thereto, except as may be otherwise required by the context:

(a) "Basin" shall mean the area of drainage into the Delaware River and its tributaries, including Delaware Bay;

(b) "Commission" shall mean the Delaware River Basin Commission created and constituted by this compact;

(c) "Compact" shall mean Part I of this act;

(d) "Cost" shall mean direct and indirect expenditures, commitment, and net induced adverse effects, whether or not compensated for, used or incurred in connection with the establishment, acquisition, construction, maintenance and operation of a project;

(e) "Facility" shall mean any real or personal property, within or without the basin, and improvements thereof or thereon, and any and all rights of way, water, water rights, plants, structures, machinery and equipment, acquired, constructed, operated or maintained for the beneficial use of water resources or related land uses including, without limiting the generality of the foregoing, any and all things and appurtenances necessary, useful or convenient for the control, collection, storage, withdrawal, diversion, release, treatment, transmission, sale or exchange of water; or for navigation thereon, or the development and use of hydroelectric energy and power, and public recreational facilities; or the propagation of fish and wildlife; or to conserve and protect the water resources of the basin or any existing or future water supply source, or to facilitate any other uses of any of them;

(f) "Federal government" shall mean the government of the United States of America, and any appropriate branch, department, bureau or division thereof, as the case may be;

(g) "Project" shall mean any work, service or activity which is separately planned, financed, or identified by the commission, or any separate facility undertaken or to be undertaken within a specified area, for the conservation, utilization, control, development or management of water resources which can be established and utilized independently or as an addition to an existing facility, and can be considered as a separate entity for purposes of evaluation;

(h) "Signatory party" shall mean a state or commonwealth party to this compact, and the federal government;

(i) "Water resources" shall include water and related natural resources in, on, under, or above the ground, including related uses of land, which are subject to beneficial use, ownership or control.

1.3 Purpose and Findings. The legislative bodies of the respective signatory parties hereby find and declare:

(a) The water resources of the basin are affected with a local, state, regional and national interest and their planning, conservation, utilization, development, management and control,

under appropriate arrangements for intergovernmental cooperation, are public purposes of the respective signatory parties.

(b) The water resources of the basin are subject to the sovereign right and responsibility of the signatory parties, and it is the purpose of this compact to provide for a joint exercise of such powers of sovereignty in the common interests of the people of the region.

(c) The water resources of the basin are functionally inter-related, and the uses of these resources are interdependent. A single administrative agency is therefore essential for effective and economical direction, supervision and coordination of efforts and programs of federal, state and local governments and of private enterprise.

(d) The water resources of the Delaware River Basin, if properly planned and utilized, are ample to meet all presently projected demands, including existing and added diversions in future years and ever increasing economies and efficiencies in the use and reuse of water resources can be brought about by comprehensive planning, programming and management.

(e) In general, the purposes of this compact are to promote interstate comity; to remove causes of present and future controversy; to make secure and protect present developments within the states; to encourage and provide for the planning, conservation, utilization, development, management and control of the water resources of the basin; to provide for cooperative planning and action by the signatory parties with respect to such water resources; and to apply the principle of equal and uniform treatment to all water users who are similarly situated and to all users of related facilities, without regard to established political boundaries.

1.4 Powers of Congress; Withdrawal. Nothing in this compact shall be construed to relinquish the functions, powers or duties of the Congress of the United States with respect to the control of any navigable waters within the basin, nor shall any provision hereof be construed in derogation of any of the constitutional powers of the Congress to regulate commerce among the states and with foreign nations. The power and right of the Congress to withdraw the federal government as a party to this compact or to revise or modify the terms, conditions and provisions under which it may remain a party by amendment, repeal or modification of any federal statute applicable thereto is recognized by the signatory parties.

1.5 Existing Agencies; Construction. It is the purpose of the signatory parties to preserve and utilize the functions, powers and duties of existing offices and agencies of government to the extent not inconsistent with the compact, and the commission is

authorized and directed to utilize and employ such offices and agencies for the purpose of this compact to the fullest extent it finds feasible and advantageous.

1.6 Duration of Compact.

(a) The duration of this compact shall be for an initial period of 100 years from its effective date, and it shall be continued for additional periods of 100 years if not later than 20 years nor sooner than 25 years prior to the termination of the initial period or any succeeding period none of the signatory states, by authority of an act of its legislature, notifies the commission of intention to terminate the compact at the end of the then current 100 year period.

(b) In the event that this compact should be terminated by operation of paragraph (a) above, the commission shall be dissolved, its assets and liabilities transferred, and its corporate affairs wound up, in such manner as may be provided by act of the Congress.

ARTICLE 2

ORGANIZATION AND AREA

Section 2.1 Commission Created. The Delaware River Basin Commission is hereby created as a body politic and corporate, with succession for the duration of this compact, as an agency and instrumentality of the governments of the respective signatory parties.

2.2 Commission Membership.¹ The commission shall consist of the Governors of the signatory states, ex officio, and one commissioner to be appointed by the President of the United States to serve during the term of office of the President.

2.3 Alternates. Each member of the commission shall appoint an alternate to act in his place and stead, with authority to attend all meetings of the commission, and with power to vote in the absence of the member. Unless otherwise provided by law of the signatory party for which he is appointed, each alternate shall serve during the term of the member appointing him, subject to removal at the pleasure of the member. In the event of a vacancy in the office of alternate, it shall be filled in the same manner as an original appointment for the unexpired term only.

¹ Section 2.2 is as enacted in 1961. See Endnote regarding subsequent changes.

2.4 Compensation. Members of the commission and alternates shall serve without compensation but may be reimbursed for necessary expenses incurred in and incident to the performance of their duties.

2.5 Voting Power. Each member shall be entitled to one vote on all matters which may come before the commission. No action of the commission shall be taken at any meeting unless a majority of the membership shall vote in favor thereof.

2.6 Organization and Procedure. The commission shall provide for its own organization and procedure, and shall adopt rules and regulations governing its meetings and transactions. It shall organize annually by the election of a chairman and vice-chairman from among its members. It shall provide by its rules for the appointment by each member in his discretion of an advisor to serve without compensation, who may attend all meetings of the commission and its committees.

2.7 Jurisdiction of the Commission. The commission shall have, exercise and discharge its functions, powers and duties within the limits of the basin, except that it may in its discretion act outside the basin whenever such action may be necessary or convenient to effectuate its powers or duties within the basin, or to sell or dispose of water, hydroelectric power or other water resources within or without the basin. The commission shall exercise such power outside the basin only upon the consent of the state in which it proposes to act.

ARTICLE 3

POWERS AND DUTIES OF THE COMMISSION

Section 3.1 Purpose and Policy. The commission shall develop and effectuate plans, policies and projects relating to the water resources of the basin. It shall adopt and promote uniform and coordinated policies for water conservation, control, use and management in the basin. It shall encourage the planning, development and financing of water resources projects according to such plans and policies.

3.2 Comprehensive Plan, Program and Budgets. The commission shall, in accordance with Article 13 of this compact, formulate and adopt:

(a) A comprehensive plan, after consultation with water users and interested public bodies, for the immediate and long range development and uses of the water resources of the basin;

(b) A water resources program, based upon the comprehensive plan, which shall include a systematic presentation of the quantity and quality of water resources needs of the area to be served for such reasonably foreseeable period as the commission may determine, balanced by existing and proposed projects required to satisfy such needs, including all public and private projects affecting the basin, together with a separate statement of the projects proposed to be undertaken by the commission during such period; and

(c) An annual current expense budget, and an annual capital budget consistent with the water resources program covering the commission's projects and facilities for the budget period.

3.3 Allocations, Diversions and Releases. The commission shall have the power from time to time as need appears, in accordance with the doctrine of equitable apportionment, to allocate the waters of the basin to and among the states signatory to this compact and to and among their respective political subdivisions, and to impose conditions, obligations and release requirements related thereto, subject to the following limitations:

(a) The commission, without the unanimous consent of the parties to the United States Supreme Court decree in *New Jersey v. New York*, 347 U. S. 995 (1954), shall not impair, diminish or otherwise adversely affect the diversions, compensating releases, rights, conditions, obligations, and provisions for the administration thereof as provided in said decree; provided, however, that after consultation with the river master under said decree the commission may find and declare a state of emergency resulting from a drought or catastrophe and it may thereupon by unanimous consent of its members authorize and direct an increase or decrease in any allocation or diversion permitted or releases required by the decree, in such manner and for such limited time as may be necessary to meet such an emergency condition.

(b) No allocation of waters hereafter made pursuant to this section shall constitute a prior appropriation of the waters of the basin or confer any superiority of right in respect to the use of those waters, nor shall any such action be deemed to constitute an apportionment of the waters of the basin among the parties hereto: Provided, That this paragraph shall not be deemed to limit or restrict the power of the commission to enter into covenants with respect to water supply, with a duration not exceeding the life of this compact, as it may deem necessary for a benefit or development of the water resources of the basin.

(c) Any proper party deeming itself aggrieved by action of the commission with respect to an out-of-basin diversion or compensating releases in connection therewith, notwithstanding the powers delegated to the commission by this compact may invoke the original jurisdiction

of the United States Supreme Court within one year after such action for an adjudication and determination thereof de novo. Any other action of the commission pursuant to this section shall be subject to judicial review in any court of competent jurisdiction.

3.4 Supreme Court Decree; Waivers. Each of the signatory states and their respective political subdivisions, in consideration of like action by the others, and in recognition of reciprocal benefits, hereby waives and relinquishes for the duration of this compact any right, privilege or power it may have to apply for any modification of the terms of the decree of the United States Supreme Court in *New Jersey v. New York*, 347 U. S., 995 (1954) which would increase or decrease the diversions authorized or increase or decrease the releases required thereunder, except that a proceeding to modify such decree to increase diversions or compensating releases in connection with such increased diversions may be prosecuted by a proper party to effectuate rights, powers, duties and obligations under Section 3.3 of this compact, and except as may be required to effectuate the provisions of paragraphs IIIB3 and VB of said decree.

3.5 Supreme Court Decree; Specific Limitations on Commission. Except as specifically provided in Sections 3.3 and 3.4 of this article, nothing in this compact shall be construed in any way to impair, diminish or otherwise adversely affect the rights, powers, privileges, conditions and obligations contained in the decree of the United States Supreme Court in *New Jersey v. New York*, 347 U. S. 995 (1954). To this end, and without limitation thereto, the commission shall not:

- (a) Acquire, construct or operate any project or facility or make any order or take any action which would impede or interfere with the rights, powers, privileges, conditions or obligations contained in said decree;
- (b) Impose or collect any fee, charge or assessment with respect to diversions of waters of the basin permitted by said decree;
- (c) Exercise any jurisdiction, except upon consent of all the parties to said decree, over the planning, design, construction, operation or control of any projects, structures or facilities constructed or used in connection with withdrawals, diversions and releases of waters of the basin authorized by said decree or of the withdrawals, diversions or releases to be made thereunder; or
- (d) Serve as river master under said decree, except upon consent of all the parties thereto.

3.6 General Powers. The commission may:

(a) Plan, design, acquire, construct, reconstruct, complete, own, improve, extend, develop, operate and maintain any and all projects, facilities, properties, activities and services, determined by the commission to be necessary, convenient or useful for the purposes of this compact;

(b) Establish standards of planning, design and operation of all projects and facilities in the basin which affect its water resources, including without limitation thereto water and waste treatment plants, stream and lake recreational facilities, trunk mains for water distribution, local flood protection works, small watershed management programs, and ground water recharging operations;

(c) Conduct and sponsor research on water resources, their planning, use, conservation, management, development, control and protection, and the capacity, adaptability and best utility of each facility thereof, and collect, compile, correlate, analyze, report and interpret data on water resources and uses in the basin, including without limitation thereto the relation of water to other resources, industrial water technology, ground water movement, relation between water price and water demand, and general hydrological conditions;

(d) Compile and coordinate systematic stream stage and ground water level forecasting data, and publicize such information when and as needed for water uses, flood warning, quality maintenance or other purposes;

(e) Conduct such special ground water investigations, tests, and operations and compile such data relating thereto as may be required to formulate and administer the comprehensive plan;

(f) Prepare, publish and disseminate information and reports with respect to the water problems of the basin and for the presentation of the needs, resources and policies of the basin to executive and legislative branches of the signatory parties;

(g) Negotiate for such loans, grants, services or other aids as may be lawfully available from public or private sources to finance or assist in effectuating any of the purposes of this compact; and to receive and accept such aid upon such terms and conditions, and subject to such provisions for repayment as may be required by federal or state law or as the commission may deem necessary or desirable;

(h) Exercise such other and different powers as may be delegated to it by this compact or otherwise pursuant to law, and have and exercise all powers necessary or convenient to carry out its express powers or which may be reasonably implied therefrom.

3.7 Rates and Charges. The commission may from time to time after public notice and hearing fix, alter and revise rates, rentals, charges and tolls and classifications thereof, for the use of facilities which it may own or operate and for products and services rendered thereby, without regulation or control by any department, office or agency of any signatory party.

3.8 Referral and Review. No project having a substantial effect on the water resources of the basin shall hereafter be undertaken by any person, corporation or governmental authority unless it shall have been first submitted to and approved by the commission, subject to the provisions of Sections 3.3 and 3.5. The commission shall approve a project whenever it finds and determines that such project would not substantially impair or conflict with the comprehensive plan and may modify and approve as modified, or may disapprove any such project whenever it finds and determines that the project would substantially impair or conflict with such plan. The commission shall provide by regulation for the procedure of submission, review and consideration of projects, and for its determinations pursuant to this section. Any determination of the commission hereunder shall be subject to judicial review in any court of competent jurisdiction.

3.9 Coordination and Cooperation. The commission shall promote and aid the coordination of the activities and programs of federal, state, municipal and private agencies concerned with water resources administration in the basin. To this end, but with limitation thereto, the commission may:

(a) Advise, consult, contract, financially assist, or otherwise cooperate with any and all such agencies;

(b) Employ any other agency or instrumentality of any of the signatory parties or of any political subdivision thereof, in the design, construction, operation and maintenance of structures, and the installation and management of river control systems, or for any other purpose;

(c) Develop and adopt plans and specifications for particular water resources projects and facilities which so far as consistent with the comprehensive plan incorporate any separate plans of other public and private organizations operating in the basin, and permit the decentralized administration thereof;

(d) Qualify as a sponsoring agency under any federal legislation heretofore or hereafter enacted to provide financial or other assistance for the planning, conservation, utilization, development, management or control of water resources.

3.10 Advisory Committees. The commission may constitute and empower advisory committees, which may be comprised of representatives of the public and of federal, state, county and municipal governments, water resources agencies, water-using industries, water-interest groups, labor and agriculture.

ARTICLE 4

WATER SUPPLY

Section 4.1 Generally. The commission shall have power to develop, implement and effectuate plans and projects for the use of the water of the basin for domestic, municipal, agricultural and industrial water supply. To this end, without limitation thereto, it may provide for, construct, acquire, operate and maintain dams, reservoirs and other facilities for utilization of surface and ground water resources, and all related structures, appurtenances and equipment on the river and its tributaries and at such off-river sites as it may find appropriate, and may regulate and control the use thereof.

4.2 Storage and Release of Waters.

(a) The commission shall have power to acquire, operate and control projects and facilities for the storage and release of waters, for the regulation of flows and supplies of surface and ground waters of the basin, for the protection of public health, stream quality control, economic development, improvement of fisheries, recreation, dilution and abatement of pollution, the prevention of undue salinity and other purposes.

(b) No signatory party shall permit any augmentation of flow to be diminished by the diversion of any water of the basin during any period in which waters are being released from storage under the direction of the commission for the purpose of augmenting such flow, except in cases where such diversion is duly authorized by this compact, or by the commission pursuant thereto, or by the judgment, order or decree of a court of competent jurisdiction.

4.3 Assessable Improvements. The commission may undertake to provide stream regulation in the main stream or any tributary in the basin and may assess on an annual basis or otherwise the cost thereof upon water users or any classification of them specially

benefited thereby to a measurable extent, provided that no such assessment shall exceed the actual benefit to any water user. Any such assessment shall follow the procedure prescribed by law for local improvement assessments and shall be subject to judicial review in any court of competent jurisdiction.

4.4 Coordination. Prior to entering upon the execution of any project authorized by this article, the commission shall review and consider all existing rights, plans and programs of the signatory parties, their political subdivisions, private parties, and water users which are pertinent to such project, and shall hold a public hearing on each proposed project.

4.5 Additional Powers. In connection with any project authorized by this article, the commission shall have power to provide storage, treatment, pumping and transmission facilities, but nothing herein shall be construed to authorize the commission to engage in the business of distributing water.

ARTICLE 5

POLLUTION CONTROL

Section 5.1 General Powers. The commission may undertake investigations and surveys, and acquire, construct, operate and maintain projects and facilities to control potential pollution and abate or dilute existing pollution of the water resources of the basin. It may invoke as complainant the power and jurisdiction of water pollution abatement agencies of the signatory parties.

5.2 Policy and Standards. The commission may assume jurisdiction to control future pollution and abate existing pollution in the waters of the basin, whenever it determines after investigation and public hearing upon due notice that the effectuation of the comprehensive plan so requires. The standard of such control shall be that pollution by sewage or industrial or other waste originating within a signatory state shall not injuriously affect waters of the basin as contemplated by the comprehensive plan. The commission, after such public hearing may classify the waters of the basin and establish standards of treatment of sewage, industrial or other waste, according to such classes including allowance for the variable factors of surface and ground waters, such as size of the stream, flow, movement, location, character, self-purification, and usage of the waters affected. After such investigation, notice and hearing the commission may adopt and from time to time amend and repeal rules, regulations and standards to control such future pollution and abate existing pollution, and to require such treatment of sewage, industrial or other waste within a time reasonable for the

construction of the necessary works, as may be required to protect the public health or to preserve the waters of the basin for uses in accordance with the comprehensive plan.

5.3 Cooperative Legislation and Administration. Each of the signatory parties covenants and agrees to prohibit and control pollution of the waters of the basin according to the requirements of this compact and to cooperate faithfully in the control of future pollution in and abatement of existing pollution from the rivers, streams, and waters in the basin which flow through, under, into or border upon any of such signatory states, and in order to effect such object, agrees to enact any necessary legislation to enable each such party to place and maintain the waters of said basin in a satisfactory condition, available for safe and satisfactory use as public and industrial water supplies after reasonable treatment, suitable for recreational usage, capable of maintaining fish and other aquatic life, free from unsightly or malodorous nuisances due to floating solids or sludge deposits and adaptable to such other uses as may be provided by the comprehensive plan.

5.4 Enforcement. The commission may, after investigation and hearing, issue an order or orders upon any person or public or private corporation, or other entity, to cease the discharge of sewage, industrial or other waste into waters of the basin which it determines to be in violation of such rules and regulations as it shall have adopted for the prevention and abatement of pollution. Any such order or orders may prescribe the date, including a reasonable time for the construction of any necessary works, on or before which such discharge shall be wholly or partially discontinued, modified or treated, or otherwise conformed to the requirements of such rules and regulations. Such order shall be reviewable in any court of competent jurisdiction. The courts of the signatory parties shall have jurisdiction to enforce against any person, public or private corporation, or other entity, any and all provisions of this article or of any such order. The commission may bring an action in its own name in any such court of competent jurisdiction to compel compliance with any provision of this article, or any rule or regulation issued pursuant thereto or of any such order, according to the practice and procedure of the court.

5.5 Further Jurisdiction. Nothing in this compact shall be construed to repeal, modify or qualify the authority of any signatory party to enact any legislation or enforce any additional conditions and restrictions to lessen or prevent the pollution of waters within its jurisdiction.

ARTICLE 6

FLOOD PROTECTION

Section 6.1 General Powers. The commission may plan, design, construct and operate and maintain projects and facilities, as it may deem necessary or desirable for flood damage reduction. It shall have power to operate such facilities and to store and release waters on the Delaware River and its tributaries and elsewhere within the basin, in such manner, at such times, and under such regulations as the commission may deem appropriate to meet flood conditions as they may arise.

6.2 Flood Plain Zoning.

(a) The commission shall have power to adopt, amend and repeal recommended standards, in the manner provided by this section, relating to the nature and extent of the uses of land in areas subject to flooding by waters of the Delaware River and its tributaries. Such standards shall not be deemed to impair or restrict the power of the signatory parties or their political subdivisions to adopt zoning and other land use regulations not inconsistent therewith.

(b) The commission may study and determine the nature and extent of the flood plains of the Delaware River and its tributaries. Upon the basis of such studies, it may establish encroachment lines and delineate the areas subject to flood, including a classification of lands with reference to relative risk of flood and the establishment of standards for flood plain use which will safeguard the public health, safety and property. Prior to the adoption of any standards delineating such area or defining such use, the commission shall hold public hearings, in the manner provided by Article 14, with respect to the substance of such standards. At or before such public hearings the proposed standards shall be available, and all interested persons shall be given an opportunity to be heard thereon at the hearing. Upon the adoption and promulgation of such standards, the commission may enter into agreements to provide technical and financial aid to any municipal corporation for the administration and enforcement of any local land use ordinances or regulations giving effect to such standards.

6.3 Flood Lands Acquisition. The commission shall have power to acquire the fee or any lesser interest in lands and improvements thereon within the area of a flood plain for the purpose of restricting the use of such property so as to minimize the flood hazard, converting property to uses appropriate to flood plain conditions, or preventing unwarranted constrictions that reduce the ability of the river channel to carry flood water. Any such action shall be in accord with the standards adopted and promulgated pursuant to Section 6.2.

6.4 Flood and Stream Stage Warnings and Posting. The commission may cause lands particularly subject to flood to be posted with flood hazard warnings, and may from time to time cause flood advisory notices to be published and circulated as conditions may warrant.

ARTICLE 7

WATERSHED MANAGEMENT

Section 7.1 Watersheds Generally. The commission shall promote sound practices of watershed management in the basin, including projects and facilities to retard runoff and waterflow and prevent soil erosion.

7.2 Soil Conservation and Forestry. The commission may acquire, sponsor or operate facilities and projects to encourage soil conservation, prevent and control erosion, and to promote land reclamation and sound forestry practices.

7.3 Fish and Wildlife. The commission may acquire, sponsor or operate projects and facilities for the maintenance and improvement of fish and wildlife habitats related to the water resources of the basin.

7.4 Cooperative Planning and Operation.

(a) The commission shall cooperate with the appropriate agencies of the signatory parties and with other public and private agencies in the planning and effectuation of a coordinated program of facilities and projects authorized by this article.

(b) The commission shall not operate any such project or facility unless it has first found and determined that no other suitable unit or agency of government is available to operate the same upon reasonable conditions, in accordance with the intent and purpose expressed in Section 1.5 of this compact.

ARTICLE 8

RECREATION

Section 8.1 Development. The commission shall provide for the development of water related public sports and recreational facilities. The commission on its own account or in cooperation with a signatory party, political subdivision or any agency thereof, may provide

for the construction, maintenance and administration of such facilities, subject to the provisions of Section 8.2 hereof.

8.2 Cooperative Planning and Operation.

(a) The commission shall cooperate with the appropriate agencies of the signatory parties and with other public and private agencies in the planning and effectuation of a coordinated program of facilities and projects authorized by this article.

(b) The commission shall not operate any such project or facility unless it has first found and determined that no other suitable unit or agency of government is available to operate the same upon reasonable conditions, in accordance with the intent and purpose expressed in Section 1.5 of this compact.

8.3 Operation and Maintenance. The commission, within limits prescribed by this article, shall:

(a) Encourage activities of other public agencies having water related recreational interests and assist in the coordination thereof;

(b) Recommend standards for the development and administration of water related recreational facilities;

(c) Provide for the administration, operation and maintenance of recreational facilities owned or controlled by the commission and for the letting and supervision of private concessions in accordance with this article.

8.4 Concessions. The commission shall after notice and public hearing provide by regulation for the award of contracts for private concessions in connection with recreational facilities, including any renewal or extension thereof, upon sealed competitive bids after public advertisement therefore.

ARTICLE 9

HYDROELECTRIC POWER

Section 9.1 Development. The waters of the Delaware River and its tributaries may be impounded and used by or under authority of the commission for the generation of hydroelectric power and hydroelectric energy, in accordance with the comprehensive plan.

9.2 Power Generation. The commission may develop and operate, or authorize to be developed and operated, dams and related facilities and appurtenances for the purpose of generating hydroelectric power and hydroelectric energy.

9.3 Transmission. The commission may provide facilities for the transmission of hydroelectric power and hydroelectric energy produced by it where such facilities are not otherwise available upon reasonable terms, for the purpose of wholesale marketing of power and nothing herein shall be construed to authorize the commission to engage in the business of direct sale to consumers.

9.4 Development Contracts. The commission may after public notice and hearing enter into contracts on reasonable terms, consideration and duration under which public utilities or public agencies may develop hydroelectric power and hydroelectric energy through the use of dams, related facilities and appurtenances.

9.5 Rates and Charges. Rates and charges fixed by the commission for power which is produced by its facilities shall be reasonable, nondiscriminatory, and just.

ARTICLE 10

REGULATION OF WITHDRAWALS AND DIVERSIONS

Section 10.1 Power of Regulation. The commission may regulate and control withdrawals and diversions from surface waters and ground waters of the basin, as provided by this article. The commission may enter into agreements with the signatory parties relating to the exercise of such power or regulation or control and may delegate to any of them such powers of the commission as it may deem necessary or desirable.

10.2 Determination of Protected Areas. The commission may from time to time after public hearing upon due notice determine and delineate such areas within the basin wherein the demands upon supply made by water users have developed or threaten to develop to such a degree as to create a water shortage or to impair or conflict with the requirements or effectuation of the comprehensive plan, and any such areas may be designated as "protected areas." The commission, whenever it determines that such shortage no longer exists, shall terminate the protected status of such area and shall give public notice of such termination.

10.3 Withdrawal Permits. In any protected areas so determined and delineated, no person, firm, corporation or other entity shall divert or withdraw water for domestic,

municipal, agricultural or industrial uses in excess of such quantities as the commission may prescribe by general regulation, except (i) pursuant to a permit granted under this article, or (ii) pursuant to a permit or approval heretofore granted under the laws of any of the signatory states.

10.4 Emergency. In the event of a drought or other condition which may cause an actual and immediate shortage of available water supply within the basin, or within any part thereof, the commission may, after public hearing, determine and delineate the area of such shortage and declare a water supply emergency therein. For the duration of such emergency as determined by the commission no person, firm, corporation or other public or private entity shall divert or withdraw water for any purpose, in excess of such quantities as the commission may prescribe by general regulation or authorize by special permit granted hereunder.

10.5 Standards. Permits shall be granted, modified or denied as the case may be so as to avoid such depletion of the natural stream flows and ground waters in the protected area or in an emergency area as will adversely affect the comprehensive plan or the just and equitable interests and rights of other lawful users of the same source, giving due regard to the need to balance and reconcile alternative and conflicting uses in the event of an actual or threatened shortage of water of the quality required.

10.6 Judicial Review. The determinations and delineations of the commission pursuant to Section 10.2 and the granting, modification or denial of permits pursuant to Section 10.3 through 10.5 shall be subject to judicial review in any court of competent jurisdiction.

10.7 Maintenance of Records. Each state shall provide for the maintenance and preservation of such records of authorized diversions and withdrawals and the annual volume thereof as the commission shall prescribe. Such records and supplementary reports shall be furnished to the commission at its request.

10.8 Existing State Systems. Whenever the commission finds it necessary or desirable to exercise the powers conferred by this article any diversion or withdrawal permits authorized or issued under the laws of any of the signatory states shall be superseded to the extent of any conflict with the control and regulation exercised by the commission.

ARTICLE 11

INTERGOVERNMENTAL RELATIONS

Section 11.1 Federal Agencies and Projects. For the purposes of avoiding conflicts of jurisdiction and of giving full effect to the commission as a regional agency of the signatory parties, the following rules shall govern federal projects affecting the water resources of the basin, subject in each case to the provisions of Section 1.4 of this compact:

(a) The planning of all projects related to powers delegated to the commission by this compact shall be undertaken in consultation with the commission;

(b) No expenditure or commitment shall be made for or on account of the construction, acquisition or operation of any project or facility nor shall it be deemed authorized, unless it shall have first been included by the commission in the comprehensive plan;

(c) Each federal agency otherwise authorized by law to plan, design, construct, operate or maintain any project or facility in or for the basin shall continue to have, exercise and discharge such authority except as specifically provided by this section.

11.2 State and Local Agencies and Projects. For the purposes of avoiding conflicts of jurisdiction and of giving full effect to the commission as a regional agency of the signatory parties, the following rules shall govern projects of the signatory states, their political subdivisions and public corporations affecting water resources of the basin:

(a) The planning of all projects related to powers delegated to the commission by this compact shall be undertaken in consultation with the commission;

(b) No expenditure or commitment shall be made for or on account of the construction, acquisition or operation of any project or facility unless it shall have first been included by the commission in the comprehensive plan;

(c) Each state and local agency otherwise authorized by law to plan, design, construct, operate or maintain any project or facility in or for the basin shall continue to have, exercise and discharge such authority, except as specifically provided by this section.

11.3 Reserved Taxing Powers of States. Each of the signatory parties reserves the right to levy, assess and collect fees, charges and taxes on or measured by the withdrawal or

diversion of waters of the basin for use within the jurisdictions of the respective signatory parties.

11.4 Project Costs and Evaluation Standards. The commission shall establish uniform standards and procedures for the evaluation, determination of benefits, and cost allocations of projects affecting the basin, and for the determination of project priorities, pursuant to the requirements of the comprehensive plan and its water resources program. The commission shall develop equitable cost sharing and reimbursement formulas for the signatory parties including:

(a) Uniform and consistent procedures for the allocation of project costs among purposes included in multiple-purpose programs;

(b) Contracts and arrangements for sharing financial responsibility among and with signatory parties, public bodies, groups and private enterprise, and for the supervision of their performance;

(c) Establishment and supervision of a system of accounts for reimbursable purposes and directing the payments and charges to be made from such accounts;

(d) Determining the basis and apportioning amounts (i) of reimbursable revenues to be paid signatory parties or their political subdivisions, and (ii) of payments in lieu of taxes to any of them.

11.5 Cooperative Services. The commission shall furnish technical services, advice and consultation to authorized agencies of the signatory parties with respect to the water resources of the basin, and each of the signatory parties pledges itself to provide technical and administrative services to the commission upon request, within the limits of available appropriations and to cooperate generally with the commission for the purposes of this compact, and the cost of such services may be reimbursable whenever the parties deem appropriate.

ARTICLE 12

CAPITAL FINANCING

Section 12.1 Borrowing Power. The commission may borrow money for any of the purposes of this compact, and may issue its negotiable bonds and other evidences of indebtedness in respect thereto.

All such bonds and evidences of indebtedness shall be payable solely out of the properties and revenues of the commission without recourse to taxation. The bonds and other obligations of the commission, except as may be otherwise provided in the indenture under which they were issued, shall be direct and general obligations of the commission and the full faith and credit of the commission are hereby pledged for the prompt payment of the debt service thereon and for the fulfillment of all other undertakings of the commission assumed by it to or for the benefit of the holders thereof.

12.2 Funds and Expenses. The purpose of this compact shall include without limitation thereto all costs of any project or facility or any part thereof, including interest during a period of construction and a reasonable time thereafter and any incidental expenses (legal, engineering, fiscal, financial consultant and other expenses) connected with issuing and disposing of the bonds; all amounts required for the creation of an operating fund, construction fund, reserve fund, sinking fund, or other special fund; all other expenses connected with the planning, design, acquisition, construction, completion, improvement or reconstruction of any facility or any part thereof; and reimbursement of advances by the commission or by others for such purposes and for working capital.

12.3 Credit Excluded; Officers, State and Municipal. The commission shall have no power to pledge the credit of any signatory party, or of any county or municipality, or to impose any obligation for payment of the bonds upon any signatory party or any county or municipality. Neither the commissioners nor any person executing the bonds shall be liable personally on the bonds of the commission or be subject to any personal liability or accountability by reason of the issuance thereof.

12.4 Funding and Refunding. Whenever the commission deems it expedient, it may fund and refund its bonds and other obligations whether or not such bonds and obligations have matured. It may provide for the issuance, sale or exchange of refunding bonds for the purpose of redeeming or retiring any bonds (including the payment of any premium, duplicate interest or cash adjustment required in connection therewith) issued by the commission or issued by any other issuing body, the proceeds of the sale of which have been applied to any facility acquired by the commission or which are payable out of the revenues of any facility acquired by the commission. Bonds may be issued partly to refund bonds and other obligations then outstanding, and partly for any other purpose of the commission. All provisions of this compact applicable to the issuance of bonds are applicable to refunding bonds and to the issuance, sale or exchange thereof.

12.5 Bonds; Authorization Generally. Bonds and other indebtedness of the commission shall be authorized by resolution of the commission. The validity of the authorization and issuance of any bonds by the commission shall not be dependent upon nor affected in any way by: (i) the disposition of bond proceeds by the commission or by contract, commitment or action taken with respect to such proceeds; or (ii) the failure to complete any part of the project for which bonds are authorized to be issued. The commission may issue bonds in one or more series and may provide for one or more consolidated bond issues, in such principal amounts and with such terms and provisions as the commission may deem necessary. The bonds may be secured by a pledge of all or any part of the property, revenues and franchises under its control. Bonds may be issued by the commission in such amount, with such maturities and in such denominations and form or forms, whether coupon or registered, as to both principal and interest, as may be determined by the commission. The commission may provide for redemption of bonds prior to maturity on such notice and at such time or times and with such redemption provisions, including premiums, as the commission may determine.

12.6 Bonds; Resolutions and Indentures Generally. The commission may determine and enter into indentures providing for the principal amount, date or dates, maturities, interest rate, denominations, form, registration, transfer, interchange and other provisions of the bonds and coupons and the terms and conditions upon which the same shall be executed, issued, secured, sold, paid, redeemed, funded and refunded. The resolution of the commission authorizing any bond or any indenture so authorized under which the bonds are issued may include all such covenants and other provisions other than any restriction on the regulatory powers vested in the commission by this compact as the commission may deem necessary or desirable for the issue, payment, security, protection or marketing of the bonds, including without limitation covenants and other provisions as to the rates or amounts of fees, rents and other charges to be charged or made for use of the facilities; the use, pledge, custody, securing, application and disposition of such revenues, of the proceeds of the bonds, and of any other moneys of the commission; the operation, maintenance, repair and reconstruction of the facilities and the amounts which may be expended therefor; the sale, lease or other disposition of the facilities; the insuring of the facilities and of the revenues derived therefrom; the construction or other acquisition of other facilities; the issuance of additional bonds or other indebtedness; the rights of the bondholders and of any trustee for the bondholders upon default by the commission or otherwise; and the modification of the provisions of the indenture and of the bonds. Reference on the face of the bonds to such resolution or indenture by its date of adoption or the apparent date on the face thereof is sufficient to incorporate all of the provisions thereof and of this compact into the body of the bonds and their appurtenant coupons. Each taker and subsequent holder of the bonds or

coupons, whether the coupons are attached to or detached from the bonds, has recourse to all of the provisions of the indenture and of this compact and is bound thereby.

12.7 Maximum Maturity. No bond or its terms shall mature in more than fifty years from its own date and in the event any authorized issue is divided into two or more series or divisions, the maximum maturity date herein authorized shall be calculated from the date on the face of each bond separately, irrespective of the fact that different dates may be prescribed for the bonds of each separate series or division of any authorized issue.

12.8 Tax Exemption. All bonds issued by the commission under the provisions of this compact and the interest thereof shall at all times be free and exempt from all taxation by or under authority of any of the signatory parties, except for transfer, inheritance and estate taxes.

12.9 Interest.² Bonds shall bear interest at a rate determined by the commission, payable annually or semi-annually.

12.10 Place of Payment. The commission may provide for the payment of the principal and interest of bonds at any place or places within or without the signatory states, and in any specified lawful coin or currency of the United States of America.

12.11 Execution. The commission may provide for the execution and authentication of bonds by the manual, lithographed or printed facsimile signature of officers of the commission, and by additional authentication by a trustee or fiscal agent appointed by the commission. If any of the officers whose signatures or counter signatures appear upon the bonds or coupons cease to be officers before the delivery of the bonds or coupons, their signatures or counter signatures are nevertheless valid and of the same force and effect as if the officers had remained in office until the delivery of the bonds and coupons.

12.12 Holding Own Bonds. The commission shall have power out of any funds available therefor to purchase its bonds and may hold, cancel or resell such bonds.

12.13 Sale. The commission may fix terms and conditions for the sale or other disposition of any authorized issue of bonds. The commission may sell bonds at less than their par or face value but no issue of bonds may be sold at an aggregate price below the par or face value thereof if such sale would result in a net interest cost to the commission

² Section 12.9 appears as amended on October 17, 1984.

calculated upon the entire issue so sold of more than six percent per annum payable semi-annually, according to standard tables of bond values. All bonds issued and sold for cash pursuant to this act shall be sold on sealed proposals to the highest bidder. Prior to such sale, the commission shall advertise for bids by publication of a notice of sale not less than ten days prior to the date of sale, at least once in a newspaper of general circulation printed and published in New York City carrying municipal bond notices and devoted primarily to financial news. The commission may reject any and all bids submitted and may thereafter sell the bonds so advertised for sale at private sale to any financially responsible bidder under such terms and conditions as it deems most advantageous to the public interest, but the bonds shall not be sold at a net interest cost calculated upon the entire issue so advertised, greater than the lowest bid which was rejected. In the event the commission desires to issue its bonds in exchange for an existing facility or portion thereof, or in exchange for bonds secured by the revenues of an existing facility, it may exchange such bonds for the existing facility or portion thereof or for the bonds so secured, plus an additional amount of cash, without advertising such bonds for sale.

12.14 Negotiability. All bonds issued under the provisions of this compact are negotiable instruments, except when registered in the name of a registered owner.

12.15 Legal Investments. Bonds of the commission shall be legal investments for savings banks, fiduciaries and public funds in each of the signatory states.

12.16 Validation Proceedings. Prior to the issuance of any bonds, the commission may institute a special proceeding to determine the legality of proceedings to issue the bonds and their validity under the laws of any of the signatory parties. Such proceeding shall be instituted and prosecuted *in rem* and the judgment rendered therein shall be conclusive against all persons whomsoever and against each of the signatory parties.

12.17 Recording. No indenture need be recorded or filed in any public office, other than the office of the commission. The pledge of revenues provided in any indenture shall take effect forthwith as provided therein and irrespective of the date of receipts of such revenues by the commission or the indenture trustee. Such pledge shall be effective as provided in the indenture without physical delivery of the revenues to the commission or to the indenture trustee.

12.18 Pledged Revenues. Bond redemption and interest payments shall, to the extent provided in the resolution or indenture, constitute a first, direct and exclusive charge and lien on all such rates, rents, tolls, fees and charges and other revenues and interest thereon received from the use and operation of the facility, and on any sinking or other funds created

therefrom. All such rates, rents, tolls, fees, charges and other revenues, together with interest thereon, shall constitute a trust fund for the security and payment of such bonds and except as and to the extent provided in the indenture with respect to the payment therefrom of expenses for other purposes including administration, operation, maintenance, improvements or extensions of the facilities or other purposes shall not be used or pledged for any other purpose so long as such bonds, or any of them, are outstanding and unpaid.

12.19 Remedies. The holder of any bond may for the equal benefit and protection of all holders of bonds similarly situated:

(a) by mandamus or other appropriate proceedings require and compel the performance of any of the duties imposed upon the commission or assumed by it, its officers, agents or employees under the provisions of any indenture, in connection with the acquisition, construction, operation, maintenance, repair, reconstruction or insurance of the facilities, or in connection with the collection, deposit, investment, application and disbursement of the rates, rents, tolls, fees, charges and other revenues derived from the operation and use of the facilities, or in connection with the deposit, investment and disbursement of the proceeds received from the sale of bonds; or (b) by action or suit in a court of competent jurisdiction of any signatory party require the commission to account as if it were the trustee of an express trust, or enjoin any acts or things which may be unlawful or in violation of the rights of the holders of the bonds. The enumeration of such rights and remedies does not, however, exclude the exercise or prosecution of any other rights or remedies available to the holders of bonds.

12.20 Capital Financing by Signatory Parties; Guarantees.

(a) The signatory parties will provide such capital funds required for projects of the commission as may be authorized by their respective statutes in accordance with a cost sharing plan prepared pursuant to Article 11 of this compact; but nothing in this section shall be deemed to impose any mandatory obligation on any of the signatory parties other than such obligations as may be assumed by a signatory party in connection with a specific project or facility.

(b) Bonds of the commission, notwithstanding any other provision of this compact, may be executed and delivered to any duly authorized agency of any of the signatory parties without public offering and may be sold and resold with or without the guaranty of such signatory party, subject to and in accordance with the constitutions of the respective signatory parties.

(c) The commission may receive and accept, and the signatory parties may make, loans, grants, appropriations, advances and payments of reimbursable or non-reimbursable funds or property in any form for the capital or operating purposes of the commission.

ARTICLE 13

PLAN, PROGRAM AND BUDGETS

Section 13.1 Comprehensive Plan. The commission shall develop and adopt, and may from time to time review and revise, a comprehensive plan for the immediate and long range development and use of the water resources of the basin. The plan shall include all public and private projects and facilities which are required, in the judgment of the commission, for the optimum planning, development, conservation, utilization, management and control of the water resources of the basin to meet present and future needs; provided that the plan shall include any projects required to conform with any present or future decree or judgment of any court of competent jurisdiction. The commission may adopt a comprehensive plan or any revision thereof in such part or parts as it may deem appropriate, provided that before the adoption of the plan or any part or revision thereof the commission shall consult with water users and interested public bodies and public utilities and shall consider and give due regard to the findings and recommendations of the various agencies of the signatory parties and their political subdivisions. The commission shall conduct public hearings with respect to the comprehensive plan prior to the adoption of the plan or any part of the revision thereof.

13.2 Water Resources Program. The commission shall annually adopt a water resources program, based upon the comprehensive plan, consisting of the projects and facilities which the commission proposes to be undertaken by the commission and by other authorized governmental and private agencies, organizations and persons during the ensuing six years or such other reasonably foreseeable period as the commission may determine. The water resources program shall include a systematic presentation of:

- 1) the quantity and quality of water resources needs for such period;
- 2) the existing and proposed projects and facilities required to satisfy such needs, including all public and private projects to be anticipated;
- 3) a separate statement of the projects proposed to be undertaken by the commission during such period.

13.3 Annual Current Expense and Capital Budgets.

(a) The commission shall annually adopt a capital budget including all capital projects it proposes to undertake or continue during the budget period containing a statement of the estimated cost of each project and the method of financing thereof.

(b) The commission shall annually adopt a current expense budget for each fiscal year. Such budget shall include the commission's estimated expenses for administration, operation, maintenance and repairs, including a separate statement thereof for each project, together with its cost allocation. The total of such expenses shall be balanced by the commission's estimated revenues from all sources, including the cost allocations undertaken by any of the signatory parties in connection with any project. Following the adoption of the annual current expense budget by the commission, the executive director of the commission shall:

1) certify to the respective signatory parties the amounts due in accordance with existing cost sharing established for each project; and

2) transmit certified copies of such budget to the principal budget officer of the respective signatory parties at such time and in such manner as may be required under their respective budgetary procedures. The amount required to balance the current expense budget in addition to the aggregate amount of item (1) above and all other revenues available to the commission shall be apportioned equitably among the signatory parties by unanimous vote of the commission, and the amount of such apportionment to each signatory party shall be certified together with the budget.

(c) The respective signatory parties covenant and agree to include the amounts so apportioned for the support of the current expense budget in their respective budgets next to be adopted, subject to such review and approval as may be required by their respective budgetary processes.³ Such amounts shall be due and payable to the commission in quarterly installments during its fiscal year, provided that the commission may draw upon its working capital to finance its current expense budget pending remittances by the signatory parties.

³ See Endnote regarding subsequent statutory directives.

ARTICLE 14

GENERAL PROVISIONS

Section 14.1 Auxiliary Powers of Commission; Functions of Commissioners.

(a) The commission, for the purposes of this compact, may:

- 1) Adopt and use a corporate seal, enter into contracts, sue and be sued in all courts of competent jurisdiction;
- 2) Receive and accept such payments, appropriations, grants, gifts, loans, advances and other funds, properties and services as may be transferred or made available to it by any signatory party or by any other public or private corporation or individual, and enter into agreements to make reimbursement for all or part thereof;
- 3) Provide for, acquire and adopt detailed engineering, administrative, financial and operating plans and specifications to effectuate, maintain or develop any facility or project;
- 4) Control and regulate the use of facilities owned or operated by the commission;
- 5) Acquire, own, operate, maintain, control, sell and convey real and personal property and any interest therein by contract, purchase, lease, license, mortgage or otherwise as it may deem necessary for any project or facility, including any and all appurtenances thereto necessary, useful or convenient for such ownership, operation, control, maintenance or conveyance;
- 6) Have and exercise all corporate powers essential to the declared objects and purposes of the commission.

(b) The commissioners, subject to the provisions of this compact, shall:

- 1) Serve as the governing body of the commission, and exercise and discharge its powers and duties except as otherwise provided by or pursuant to this compact;
- 2) Determine the character of and the necessity for its obligations and expenditures and the manner in which they shall be incurred, allowed, and paid subject to any

provisions of law specifically applicable to agencies or instrumentalities created by compact;

- 3) Provide for the internal organization and administration of the commission;
- 4) Appoint the principal officers of the commission and delegate to and allocate among them administrative functions, powers and duties;
- 5) Create and abolish offices, employments and positions as it deems necessary for the purposes of the commission, and subject to the provisions of this article, fix and provide for the qualification, appointment, removal, term, tenure, compensation, pension and retirement rights of its officers and employees;
- 6) Let and execute contracts to carry out the powers of the commission.

14.2 Regulations; Enforcement. The commission may:

(a) Make and enforce reasonable rules and regulations for the effectuation, application and enforcement of this compact; and it may adopt and enforce practices and schedules for or in connection with the use, maintenance and administration of projects and facilities it may own or operate and any product or service rendered thereby; provided that any rule or regulation, other than one which deals solely with the internal management of the commission, shall be adopted only after public hearing and shall not be effective unless and until filed in accordance with the law of the respective signatory parties applicable to administrative rules and regulations generally; and

(b) Designate any officer, agent or employee of the commission to be an investigator or watchman and such person shall be vested with the powers of a peace officer of the state in which he is duly assigned to perform his duties.

14.3 Tax Exemption. The commission, its property, functions, and activities shall be exempt from taxation by or under the authority of any of the signatory parties or any political subdivision thereof; provided that in lieu of property taxes the commission shall, as to specific projects, make payments to local taxing districts in annual amounts which shall equal the taxes lawfully assessed upon property for the tax year next prior to its acquisition by the commission for a period of ten years. The nature and amount of such payments shall be reviewed by the commission at the end of ten years, and from time to time thereafter, upon reasonable notice and opportunity to be heard to the affected taxing district, and the payments may be thereupon terminated or continued in such reasonable amount as may be

necessary or desirable to take into account hardships incurred and benefits received by the taxing jurisdiction which are attributable to the project.

14.4 Meetings; Public Hearing; Records, Minutes.

(a) All meetings of the commission shall be open to the public.

(b) The commission shall conduct at least one public hearing prior to the adoption of the comprehensive plan, water resources program, annual capital and current expense budgets, the letting of any contract for the sale or other disposition by the commission of hydroelectric energy or water resources to any person, corporation or entity, and in all other cases wherein this compact requires a public hearing. Such hearing shall be held upon at least ten days public notice given by posting at the offices of the commission. The commission shall also provide forthwith for distribution of such notice to the press and by the mailing of a copy thereof to any person who shall request such notices.

(c) The minutes of the commission shall be a public record open to inspection at its offices during regular business hours.

14.5 Officers Generally.

(a) The officers of the commission shall consist of an executive director and such additional officers, deputies and assistants as the commission may determine. The executive director shall be appointed and may be removed by the affirmative vote of a majority of the full membership of the commission. All other officers and employees shall be appointed by the executive director under such rules of procedure as the commission may determine.

(b) In the appointment and promotion of officers and employees for the commission, no political, racial, religious or residence test or qualification shall be permitted or given consideration, but all such appointments and promotions shall be solely on the basis of merit and fitness. Any officer or employee of the commission who is found by the commission to be guilty of a violation of this section shall be removed from office by the commission.

14.6 Oath of Office. An oath of office in such form as the commission shall prescribe shall be taken, subscribed and filed with the commission by the executive director and by each officer appointed by him not later than fifteen days after the appointment.

14.7 Bond. Each officer shall give such bond and in such form and amount as the commission may require for which the commission may pay the premium.

14.8 Prohibited Activities.

(a) No commissioner, officer or employee shall:

- 1) be financially interested, either directly or indirectly, in any contract, sale, purchase, lease or transfer of real or personal property to which the commission is a party;
- 2) solicit or accept money or any other thing of value in addition to the compensation or expenses paid him by the commission for services performed within the scope of his official duties;
- 3) offer money or any thing of value for or in consideration of obtaining an appointment, promotion or privilege in his employment with the commission.

(b) Any officer or employee who shall willfully violate any of the provisions of this section shall forfeit his office or employment.

(c) Any contract or agreement knowingly made in contravention of this section is void.

(d) Officers and employees of the commission shall be subject in addition to the provisions of this section to such criminal and civil sanctions for misconduct in office as may be imposed by federal law and the law of the signatory state in which such misconduct occurs.

14.9 Purchasing. Contract for the construction, reconstruction or improvement of any facility when the expenditure required exceeds ten thousand dollars and contracts for the purchase of services, supplies, equipment and materials when the expenditure required exceeds two thousand five hundred dollars shall be advertised and let upon sealed bids to the lowest responsible bidder. Notice requesting such bids shall be published in a manner reasonably likely to attract prospective bidders, which publication shall be made at least ten days before bids are received and in at least two newspapers of general circulation in the basin. The commission may reject any and all bids and readvertise in its discretion. If after rejecting bids the commission determines and resolves that in its opinion the supplies, equipment and materials may be purchased at a lower price in the open market, the commission may give each responsible bidder an opportunity to negotiate a price and may proceed to purchase the supplies, equipment and materials in the open market at a negotiated price which is lower than the lowest rejected bid of a responsible bidder, without further

observance of the provisions requiring bids or notice. The commission shall adopt rules and regulations to provide for purchasing from the lowest responsible bidder when sealed bids, notice and publication are not required by this section. The commission may suspend and waive the provisions of this section requiring competitive bids whenever:

- 1) the purchase is to be made from or the contract to be made with the federal or any state government or any agency or political subdivision thereof or pursuant to any open end bulk purchase contract of any of them;
- 2) the public exigency requires the immediate delivery of the articles or performance of the service;
- 3) only one source of supply is available;
- 4) the equipment to be purchased is of a technical nature and the procurement thereof without advertising is necessary in order to assure standardization of equipment and interchangeability of parts in the public interest; or
- 5) services are to be provided of a specialized or professional nature.

14.10 Insurance. The commission may self-insure or purchase insurance and pay the premiums therefore against loss or damage to any of its properties; against liability for injury to persons or property; and against loss of revenue from any cause whatsoever. Such insurance coverage shall be in such form and amount as the commission may determine, subject to the requirements of any agreement arising out of the issuance of bonds by the commission.

14.11 Annual Independent Audit.

(a) As soon as practical after the closing of the fiscal year, an audit shall be made of the financial accounts of the commission. The audit shall be made by qualified certified public accountants selected by the commission, who have no personal interest direct or indirect in the financial affairs of the commission or any of its officers or employees. The report of audit shall be prepared in accordance with accepted accounting practices and shall be filed with the chairman and such other officers as the commission shall direct. Copies of the report shall be distributed to each commissioner and shall be made available for public distribution.

(b) Each signatory party by its duly authorized officers shall be entitled to examine and audit at any time all of the books, documents, records, files and accounts and all other

papers, things or property of the commission. The representatives of the signatory parties shall have access to all books, documents, records, accounts, reports, files and all other papers, things or property belonging to or in use by the commission and necessary to facilitate the audit and they shall be afforded full facilities for verifying transactions with the balances or securities held by depositaries, fiscal agents and custodians.

(c) The financial transactions of the commission shall be subject to audit by the general accounting office in accordance with the principles and procedures applicable to commercial corporate transactions and under such rules and regulations as may be prescribed by the comptroller general of the United States. The audit shall be conducted at the place or places where the accounts of the commission are kept.

(d) Any officer or employee who shall refuse to give all require assistance and information to the accountants selected by the commission or to the authorized officers of any signatory party or who shall refuse to submit to them for examination such books, documents, records, files, accounts, papers, things or property as may be requested shall forfeit his office.

14.12 Reports. The commission shall make and publish an annual report to the legislative bodies of the signatory parties and to the public reporting on its programs, operations and finances. It may also prepare, publish and distribute such other public reports and informational materials as it may deem necessary or desirable.

14.13 Grants, Loans or Payments by States or Political Subdivisions.

(a) Any or all of the signatory parties or any political subdivision thereof may:

- 1) Appropriate to the commission such funds as may be necessary to pay preliminary expenses such as the expenses incurred in the making of borings, and other studies of subsurface conditions, in the preparation of contracts for the sale of water and in the preparation of detailed plans and estimates required for the financing of a project;
- 2) Advance to the commission, either as grants or loans, such funds as may be necessary or convenient to finance the operation and management of or construction by the commission of any facility or project;
- 3) Make payments to the commission for benefits received or to be received from the operation of any of the projects or facilities of the commission.

(b) Any funds which may be loaned to the commission either by a signatory party or a political subdivision thereof shall be repaid by the commission through the issuance of bonds or out of other income of the commission, such repayment to be made within such period and upon such terms as may be agreed upon between the commission and the signatory party or political subdivision making the loan.

14.14 Condemnation Proceedings.

(a) The commission shall have the power to acquire by condemnation the fee or any lesser interest in lands, lands lying under water, development rights in land, riparian rights, water rights, waters and other real or personal property within the basin for any project or facility authorized pursuant to this compact. This grant of power of eminent domain includes but is not limited to the power to condemn for the purposes of this compact any property already devoted to a public use, by whomsoever owned or held, other than property of a signatory party and any property held, constructed, operated or maintained in connection with a diversion authorized by a United States Supreme Court decree. Any condemnation of any property or franchises owned or used by a municipal or privately owned public utility, unless the affected public utility facility is to be relocated or replaced, shall be subject to the authority of such state board, commission or other body as may have regulatory jurisdiction over such public utility.

(b) Such power of condemnation shall be exercised in accordance with the provisions of any federal law applicable to the commission; provided that if there is no such applicable federal law, condemnation proceedings shall be in accordance with the provisions of such general state condemnation law as may be in force in the signatory state in which the property is located.

(c) Any award or compensation for the taking of property pursuant to this article shall be paid by the commission, and none of the signatory parties nor any other agency, instrumentality or political subdivision thereof shall be liable for such award or compensation.

14.15 Conveyance of Lands and Relocation of Public Facilities.

(a) The respective officers, agencies, departments, commissions or bodies having jurisdiction and control over real and personal property owned by the signatory parties are authorized and empowered to transfer and convey in accordance with the laws of the respective parties to the commission any such property as may be necessary or convenient to the effectuation of the authorized purposes of the commission.

(b) Each political subdivision of each of the signatory parties is authorized and empowered, notwithstanding any contrary provision of law, to grant and convey to the commission, upon the commission's request, any real property or any interest therein owned by such political subdivisions including lands lying under water and lands already devoted to public use which may be necessary or convenient to the effectuation of the authorized purposes of the commission.

(c) Any highway, public utility or other public facility which will be dislocated by reason of a project deemed necessary by the commission to effectuate the authorized purposes of this compact shall be relocated and the cost thereof shall be paid in accordance with the law of the state in which the facility is located; provided that the cost of such relocation payable by the commission shall not in any event exceed the expenditure required to serve the public convenience and necessity.

14.16 Rights of Way. Permission is hereby granted to the commission to locate, construct and maintain any aqueducts, lines, pipes, conduits and auxiliary facilities authorized to be acquired, constructed, owned, operated or maintained by the commission in, over, under or across any streets and highways now or hereafter owned, opened or dedicated to or for public use, subject to such reasonable conditions as the highway department of the signatory party may require.

14.17 Penal Sanction. Any person, association or corporation who violates or attempts or conspires to violate any provision of this compact or any rule, regulation or order of the commission duly made, promulgated or issued pursuant to the compact in addition to any other remedy, penalty or consequence provided by law shall be punishable as may be provided by statute of any of the signatory parties within which the offense is committed; provided that in the absence of such provision any such person, association or corporation shall be liable to a penalty of not less than \$50 nor more than \$1,000 for each such offense to be fixed by the court which the commission may recover in its own name in any court of competent jurisdiction, and in a summary proceeding where available under the practice and procedure of such court. For the purposes of this section in the event of a continuing offense each day of such violation, attempt or conspiracy shall constitute a separate offense.

14.18 Tort Liability. The commission shall be responsible for claims arising out of the negligent acts or omissions of its officers, agents and employees only to the extent and subject to the procedures prescribed by law generally with respect to officers, agents and employees of the government of the United States.

14.19 Effect on Riparian Rights. Nothing contained in this compact shall be construed as affecting or intending to affect or in any way to interfere with the law of the respective signatory parties relating to riparian rights.

14.20 Amendments and Supplements. Amendments and supplements to this compact to implement the purposes thereof may be adopted by legislative action of any of the signatory parties concurred in by all of the others.

14.21 Construction and Severability. The provisions of this Act and of agreements thereunder shall be severable and if any phrase, clause, sentence or provision of the Delaware River Basin Compact or such agreement is declared to be unconstitutional or the applicability thereof to any signatory party, agency or person is held invalid, the constitutionality of the remainder of such compact or such agreement and the applicability thereof to any other signatory party, agency, person or circumstance shall not be affected thereby. It is the legislative intent that the provisions of such compact be reasonably and liberally construed.

14.22 Effective Date; Execution. This compact shall become binding and effective thirty days after the enactment of concurring legislation by the federal government, the states of Delaware, New Jersey and New York, and the Commonwealth of Pennsylvania. The compact shall be signed and sealed in six duplicate original copies by the respective chief executives of the signatory parties. One such copy shall be filed with the Secretary of State of each of the signatory parties or in accordance with the laws of the state in which the filing is made, and one copy shall be filed and retained in the archives of the commission upon its organization.

IN WITNESS WHEREOF, and in evidence of the adoption and enactment into law of this compact by the Congress and legislatures, respectively, of the signatory parties, the President of the United States and the respective Governors do hereby, in accordance with authority conferred by law, sign this compact in six duplicate original copies, as attested by the respective secretaries of state, and have caused the seals of the United States and of the respective states to be hereunto affixed this 2nd day of November, 1961.

s/ JOHN F. KENNEDY
PRESIDENT OF THE UNITED STATES

Attest
s/ DEAN RUSK
SECRETARY OF STATE

s/ ELBERT N. CARVEL
GOVERNOR OF
THE STATE OF DELAWARE

s/ ROBERT B. MEYNER
GOVERNOR OF
THE STATE OF NEW JERSEY

Attest
s/ ELISHA C. DUKES
SECRETARY OF STATE

Attest
s/ EDWARD J. PATTEN
SECRETARY OF STATE

s/ NELSON A. ROCKEFELLER
GOVERNOR OF
THE STATE OF NEW YORK

s/ DAVID L. LAWRENCE
GOVERNOR OF
THE COMMONWEALTH OF PENNSYLVANIA

Attest
s/ CAROLINE K. SIMON
SECRETARY OF STATE

Attest
s/ E. JAMES TRIMARCHI, JR.
SECRETARY OF THE COMMONWEALTH

PART II

EFFECTUATION

UNITED STATES: *(from Public Law 87-328, 75 Stat. 688)*

15.1 Reservations. In the exercise of the powers reserved to the Congress, pursuant to Section 1.4 of the Compact, the consent to and participation in the Compact by the United States is subject to the following conditions and reservations:

(a) Notwithstanding any provision of the Delaware River Basin Compact the Delaware River Basin Commission shall not undertake any project (as defined in such compact), other than a project for which State supplied funds only will be used, beyond the planning stage untilC

(1) such commission has submitted to the Congress such complete plans and estimates for such project as may be necessary to make an engineering evaluation of such project, includingC

(A) where the project will serve more than one purpose, an allocation of costs among the purposes served and an estimate of the ratio of benefits to costs for each such purpose.

(B) an apportionment of costs among the beneficiaries of the project, including the portion of the costs to be borne by the Federal Government and by State and local governments, and

(C) a proposal for financing the project, including the terms of any proposed bonds or other evidences of indebtedness to be used for such purposes; and

(2) such project has been authorized by Act of Congress.

(b) No provision of Section 3.7 of the Compact shall be deemed to authorize the commission to impose any change for water withdrawals or diversions from the Basin if such withdrawals or diversions could lawfully have been made without charge on the effective date of the Compact; or to impose any charges with respect to commercial navigation within the Basin, jurisdiction over which is reserved to the Federal Government:

Provided, That this paragraph shall be applicable to the extent not inconsistent with Section 1.4 of this Compact.

(c) Nothing contained in the Compact shall be deemed to restrict the executive powers of the President in the event of a national emergency.

(d) Notwithstanding the provisions of Article 2, Section 2.2 of the Compact, the member of the commission appointed by the President of the United States and his alternate shall serve at the pleasure of the President.⁴

(e) Nothing contained in the Compact shall be construed as impairing or in any manner affecting the applicability to all Federal funds budgeted and appropriated for use by the commission, or such authority over budgetary and appropriation matters as the President and Congress may have with respect to agencies in the Executive Branch of the Federal Government.

(f) Except to the same extent that state bonds are or may continued to be free or exempt from Federal taxation under the internal revenue laws of the United States, nothing contained in the Compact shall be construed as freeing or exempting from internal revenue taxation in any manner whatsoever any bonds issued by the commission, their transfer, or the income therefrom (including any profits made on the sale thereon).

(g) Nothing contained in the Compact shall be construed to obligate the United States legally or morally to pay the principal or interest on any bonds issued by the Delaware River Basin Commission.

(h) Notwithstanding the provisions of Section 11.5 or any other provision of the Compact, the furnishing of technical services to the commission by agencies of the Executive Branch of the Government of the United States is pledged only to the extent that the respective agencies shall from time to time agree thereto or to the extent that the President may from time to time direct such agencies to perform such services for the commission. Nothing in the Compact shall be deemed to require the United States to furnish administrative services or facilities for carrying out functions of the commission except to the extent that the President may direct.

⁴ Section 15.1(d) is as enacted in 1961. This section was subsequently repealed by Public Law 105-18 in June of 1997. Also see Endnote on this subject.

(i) All laborers and mechanics employed by contractors or subcontractors in the construction, alteration or repair, including painting and decorating, of projects, buildings and works which are undertaken by the commission or are financially assisted by it, shall be paid wages at rates not less than those prevailing on similar construction in the locality so determined by the Secretary of Labor in accordance with the Davis-Bacon Act, as amended (40 U. S. C. 276a-276a-5), and every such employee shall receive compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in any workweek in excess of eight hours in any workday or forty hours in any workweek, as the case may be. A provision stating the minimum wages thus determined and the requirement that overtime be paid as above provided shall be set out in each project advertisement for bids and in each bid proposal form and shall be made a part of the contract covering the project. The Secretary of Labor shall have, with respect to the administration and enforcement of labor standards specified in this provision, the supervisory, investigatory and other authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F. R. 3176, 64 Stat. 1267, 5 U. S. C. 133z-15, and Section 2 of the Act of June 13, 1934, as amended (48 Stat. 948, as amended; 40 U. S. C. 276(c)).

(j) Contracts for the manufacture or furnishing of materials, supplies, articles and equipment with the commission which are in excess of \$10,000 shall be subject to the provisions of the Walsh-Healey Public Contracts Act (41 U. S. C. 35 et seq.).

(k) Notwithstanding any other provision of this Act, nothing contained in this Act or in the Compact shall be construed as superseding or limiting the functions, under any other law, of the Secretary of Health, Education, and Welfare or of any other officer or agency of the United States, relating to water pollution: *Provided*, That the exercise of such functions shall not limit the authority of the commission to control, prevent, or abate water pollution.

(l) The provisions of Section 8.4 of Article 8 of the Compact shall not be construed to apply to facilities operated pursuant to any other Federal law.

(m) For purposes of the Act of June 25, 1948, 62 Stat. 982, as amended (Title 28, U. S. Code, chapter 171, and Sections 1346(b) and 240 (b)) and the Act of March 3, 1887, 24 Stat. 505, as amended (Title 28, U. S. Code, Section 1402, 1491, 1496, 1501, 1503, 2071, 2072, 2411, 2412, 2501), and the Act of June 11, 1946, 60 Stat. 237, as amended (Title 5, U. S. Code, Sections 1001 and 1011, Title 50 App. U.S. Code, Section 1900), the commission shall not be considered a Federal agency.

(n) The officers and employees of the commission (other than the United States member, alternate United States member, and advisors, and personnel employed by the United States

member under direct Federal appropriation) shall not be deemed to be, for any purpose, officers or employees of the United States or to become entitled at any time by reason of employment by the commission to any compensation or benefit payable or made available by the United States solely and directly to its officers or employees.

(o) Neither the Compact nor this Act shall be deemed to enlarge the authority of any Federal agency other than the commission to participate in or to provide funds for projects or activities in the Delaware River Basin.

(p) The United States district courts shall have original jurisdiction of all cases or controversies arising under the Compact, and this Act and any case or controversy so arising initiated in a State Court shall be removable to the appropriate United States district court in the manner provided by ' 1446, Title 28 U. S. C. Nothing contained in the Compact or elsewhere in this Act shall be construed as a waiver by the United States of its immunity from suit.

(q) The right to alter, amend, or repeal this Act is hereby expressly reserved. The right is hereby reserved to the Congress or any of its standing committees to require the disclosure and furnishing of such information and data by the Delaware River Basin Compact Commission as is deemed appropriate by the Congress or any such committee.

(r) The provisions of Sections 2.4 and 2.6 of Article 2 of the Compact notwithstanding, the member and alternate member appointed by the President and advisor there referred to may be paid compensation by the United States, such compensation to be fixed by the President at the rates which he shall deem to prevail in respect to comparable officers in the executive branch.

(s) 1. Nothing contained in this Act or in the Compact shall impair or affect the constitutional authority of the United States or any of its powers, rights, functions, or jurisdiction under other existing or future legislation in and over the area or waters which are the subject of the Compact including projects of the commission: *Provided*, That whenever a comprehensive plan, or any part or revision thereof, has been adopted with the concurrence of the member appointed by the President, the exercise of any powers conferred by law on any officer, agency or instrumentality of the United States with regard to water and related land resources in the Delaware River Basin shall not substantially conflict with any such portion of such comprehensive plan and the provisions of Section 3.8 and Article 11 of the Compact shall be applicable to the extent necessary to avoid such substantial conflict: *Provided further*, That whenever the President shall find and determine that the national interest so requires, he may suspend, modify or delete any provision of the comprehensive

plan to the extent that it affects the exercise of any powers, rights, functions, or jurisdiction conferred by law on any officer, agency or instrumentality of the United States other than the commission. Such action shall be taken by executive order in which such finding and determination shall be set forth.

2. For the purposes of paragraph 1 hereof, concurrence by the member appointed by the President shall be presumed unless within 60 days after notice to him of adoption of the comprehensive plan, or any part or revision thereof, he shall file with the commission notice of his nonconcurrence. Each concurrence of the member appointed by the President in the adoption of the comprehensive plan or any part or revision thereof may be withdrawn by notice filed with the commission at any time between the first and sixtieth day of the sixth year after the initial adoption of the comprehensive plan and of every sixth year thereafter.

(t) In the event that any phrase, clause, sentence or provision of Section 1.4 of Article 1 of the Compact, is declared to be unconstitutional under the constitution of any of the signatory parties, or the applicability thereof to any signatory party, agency or person is held invalid by a court of last resort of competent jurisdiction, the United States shall cease to be a party to the Compact, except to the extent that the President deems remaining a party necessary and proper to protect the national interest, and shall cease to be bound by the terms thereof.

(u) All Acts or parts of Acts inconsistent with the provisions of this Act are hereby amended for the purpose of this Act to the extent necessary to carry out the provisions of this Act: *Provided, however,* That no act of the commission shall have the effect of repealing, modifying or amending any Federal law.

15.2 Effectuation. (a) The President is authorized to take such action as may be necessary and proper, in his discretion, to effectuate the Compact and the initial organization and operation of the Commission thereunder.

(b) Executive departments and other agencies of the executive branch of the Federal Government shall cooperate with and furnish appropriate assistance to the United States member. Such assistance shall include the furnishing of services and facilities and may include the detailing of personnel to the United States member. Appropriations are hereby authorized as necessary for the carrying out of the functions of the United States member, including appropriations for the employment of personnel by the United States member.

15.3 Effect Date. This Act shall take effect immediately.

DELAWARE: *(from 53 Delaware Laws, Chapter 71)*

▪ **1011. Repealer.** All acts and parts of acts inconsistent with any provision of this act are to the extent of such inconsistency hereby repealed.

▪ **1012. Effectuation by Chief Executive.** The chief executive is authorized to take such action as may be necessary and proper, in his discretion, to effectuate the compact and the initial organization and operation of the commission thereunder.

▪ **1013. Effective Date.** This act shall take effect immediately.

NEW JERSEY: *(from New Jersey Laws of 1961, Chapter 13)*

15.1 Repealer. All acts and parts of acts inconsistent with any provision of this act are to the extent of such inconsistency hereby repealed.

15.2 Effectuation by Chief Executive. The chief executive is authorized to take such action as may be necessary and proper, in his discretion, to effectuate the compact and the initial organization and operation of the commission thereunder.

15.3 Effective Date. This act shall take effect immediately.

NEW YORK:⁵ *(from New York Laws of 1961, Chapter 148);* with Sections of the Conservation Law as renumbered by Laws of 1962, Chapter 73.

▪ **631. Commissioner and Alternate.** 1. As provided in the second subdivision of section two of article two of the compact, the governor shall be this state's member on the commission established thereby. The governor shall appoint a member of the water resources commission as his alternate pursuant to the third subdivision of said section two of article two of the compact. In the absence of the governor and such member of the water resources commission, the powers, duties and functions of this state's member of the Delaware River Basin Commission shall be performed by the alternate of said department head on the water resources commission.

⁵ The Sections have been renumbered by Laws of 1962, Chapter 73 and now constitute Sections 802-812 of the Conservation Law.

2. Any person serving on the Delaware River Basin Commission pursuant to this section shall be reimbursed for all necessary expenses incurred as an incident of such service, and such reimbursement shall be from the funds of said person's department or office.

▪ **632. Advisors.** 1. The member of the Delaware River Basin Commission from this state shall have an advisor as contemplated by subdivision six of section two of article two of the compact. Such advisor shall be the mayor of the city of New York or his designee, but no designee of the mayor shall be recognized as an advisor or accorded any privileges as such unless the mayor shall have notified the commission member from this state and the Delaware River Basin Commission in writing of the selection of such designee and of his identity.

2. The members of the water resources commission and the state commissioner of commerce shall constitute an advisory committee with whom the member of the Delaware River Basin Commission from this state shall consult with respect to the conduct of New York participation in the compact. Such member of the commission also shall consult from time to time with other officers of the state government or any subdivision thereof, as may be appropriate.

▪ **633. Consent to Alteration of Diversions.** 1. Consent of this state to the impairment, diminution or other adverse effect on diversions, compensating releases, rights, conditions, obligations, and provisions for the administration thereof as contemplated by subdivision three of section three of article three of the compact shall not be given, except with the prior approval of the water resources commission.

2. Except with respect to diversions governed by subdivision one of this section and the provision of the compact referred to therein, the provisions of section four hundred fifty-two of the conservation law shall not apply to any diversion or furnishing of water authorized by or made pursuant to the compact.

▪ **634. Jurisdiction of Courts.** Except as otherwise specifically provided herein, the phrase "court of competent jurisdiction" as used in the compact shall, with reference to this state, mean the supreme court, and said court is hereby given all necessary and appropriate jurisdiction to hear and determine any action or proceeding brought before it pursuant to appropriate provisions of the compact. As used in subdivision six of section ten of article ten of the compact, the phrase "court of competent jurisdiction" shall mean a court in which an appropriate proceeding under article seventy-eight of the civil practice act may be brought. As used in item one of paragraph (a) of subdivision one of section fourteen of article fourteen of the compact, the phrase "court of competent jurisdiction" shall mean any court of

this state in which an action or proceeding of the class brought by the Delaware River Basin Commission may be heard and determined.

▪ **635. Prior to Project Approval.** No project requiring a license, permit or other approval by any agency or officer of this state, or any subdivision thereof, shall be given any such license, permit, or approval, if such project requires approval of the Delaware River Basin Commission pursuant to the compact and such has not been given.

▪ **636. Agreements with Municipalities.** Any city, county, town or village within the "basin", as that term is defined in the compact, shall have power to make agreements to provide technical and financial aid as contemplated by paragraph (b) of subdivision two of section six of article six of the compact. Nothing herein contained shall be construed to relieve any such city, county, town or village from compliance with any general or special laws relating to the receipt of grants or other assistance from other governmental units and contracts in connection therewith.

▪ **637. Delegations of Power.** No agency or officer of this state or any subdivision thereof shall accept or exercise any delegation of power pursuant to subdivision one of section ten of article ten of the compact unless, in the absence of the compact, it would have the constitutional or statutory power to exercise such power on its own account.

▪ **638. Cooperative Services.** Departments, agencies and officers shall provide technical and administrative services to the Delaware River Basin Commission upon request, within the limits of available appropriations and shall cooperate generally with said commission for the purposes of the compact.

▪ **639. Budget.** The Delaware River Basin Commission shall submit annually to the director of the budget, in accordance with the rules and practice of the state, for study and consideration by such director, an estimate of moneys required to administer, manage and support the commission during the ensuing fiscal year. Such estimate shall include any request for appropriation of funds by New York and shall be accompanied by a tabulation of similar requests which the commission expects to make to each other member state and the formula or factors upon which such respective requests are based. The provisions of subdivision three of section thirteen of article thirteen of the compact shall apply to the budgetary and other fiscal matters related to the participation of this state in the compact.

▪ **640. Audit.** Pursuant to paragraph (b) of subdivision eleven of section fourteen of article fourteen of the compact, the state comptroller is hereby authorized and empowered from time to time to examine the accounts and books of the commission, including its

receipts, disbursements and such other items referring to its financial standing as such comptroller may deem proper and to report the results of such examination to the governor.

▪ **641. Inconsistent Laws.** No provision of the conservation law or of any other law, which is inconsistent with the provisions of the compact shall be applicable to the Delaware River Basin Commission or to any matter governed by the compact.

▪ **2. Effectuation.** The compact set forth in the conservation law as amended by section one of this act shall become binding and effective in accordance with the provisions of subdivision twenty-one of section fourteen of article fourteen thereof. The governor is hereby authorized and directed to sign and seal the compact as provided in said subdivision twenty-one and to cause copies thereof to be filed in accordance therewith.

▪ **3. Effective Date.** This act shall take effect immediately.

PENNSYLVANIA: *(from Pennsylvania Acts of 1961, Act No. 268)*

Section 2. Repealer. All acts and parts of acts inconsistent with any provision of this act are to the extent of such inconsistency hereby repealed.

Section 3. Effectuation by Chief Executive. The chief executive is authorized to take such action as may be necessary and proper in his discretion to effectuate the compact and the initial organization and operation of the commission thereunder.

Section 4. Effective Date. This act shall take effect immediately.

ENDNOTES

^{1,4} In June of 1997, Congress enacted and President Clinton signed the 1997 Emergency Appropriations Act (“the Act”), which specified that beginning in fiscal year 1997 and thereafter, the United States members and alternate members appointed under the Delaware River Basin Compact “shall be officers of the U.S. Army Corps of Engineers, who hold Presidential appointments as Regular Army officers with Senate confirmation” P.L. 105-18, Sec. 3001(a). The Act further provided that Section 15.1(d) of the Compact was repealed, and Section 2.2 was amended by striking the words “during the term of office of the President” and inserting the words “at the pleasure of the President”. Previously, Sections 2.2 and 15.1(d) were inconsistent as to the term of the federal representative’s appointment.

The Water Resources Development Act of 2007 (“WRDA”) modified the 1997 act as follows:

(a) Ex-Officio Member. Notwithstanding Section 3001(a) of the 1997 Emergency Supplemental Appropriations Act ... (Public Law 105-18; 111 Stat. 176) ... and Section 2.2 of the Delaware River Basin Compact to which consent was given by Public Law 87-328 (75 Stat. 691), beginning in fiscal year 2002, and each fiscal year thereafter, the Division Engineer, North Atlantic Division, Corps of Engineers:

(1) shall be:

(A) the ex-officio United States member of the Susquehanna River Basin Compact and the Delaware River Basin Compact; and

* * * *

(2) shall serve without additional compensation; and

(3) may designate an alternate member in accordance with the terms of those compacts.

WRDA (Public Law 110-114), sec. 5019.

³ The 2007 WRDA directed as follows:

(b) Authorization to Allocate. The Secretary [of the Army] shall allocate funds to the Susquehanna River Basin Commission, Delaware River Basin Commission, and the Interstate Commission on the Potomac River Basin to fulfill the equitable funding requirements of the respective interstate compacts.

Water Resources Development Act of 2007 (Public Law 110-114), sec. 5019.

The Water Resources Reform and Development Act of 2014 (Public Law 113-121) amended subsection (b) of the 2007 WRDA by striking subsection (b) and inserting the following:

(b) AUTHORIZATION TO ALLOCATE

(1) IN GENERAL.— The Secretary shall allocate funds to the Susquehanna River Basin Commission, the Delaware River Basin Commission, and the Interstate Commission on the Potomac River Basin to fulfill the equitable funding requirements of the respective interstate compacts.

(2) AMOUNTS.— For each fiscal year, the Secretary shall allocate to each Commission described in paragraph (1) an amount equal to the amount determined by the Commission in accordance with the respective interstate compact approved by Congress.

(3) NOTIFICATION.— If the Secretary does not allocate funds for a given fiscal year in accordance with paragraph (2), the Secretary, in conjunction with the subsequent submission by the President of the budget to Congress under section 1105(a) of title 31, United States Code, shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a notice that describes—

(A) the reasons why the Secretary did not allocate funds in accordance with paragraph (2) for that fiscal year; and

(B) the impact of that decision not to allocate funds on each area of jurisdiction of each Commission described in paragraph (1), including with respect to—

- (i) water supply allocation;
- (ii) water quality protection;
- (iii) regulatory review and permitting;
- (iv) water conservation;
- (v) watershed planning;
- (vi) drought management;
- (vii) flood loss reduction;
- (viii) recreation; and
- (ix) energy development.

Water Resources Reform and Development Act of 2014 (Public Law 113-121), sec. 4001.

APPENDIX C-II:
ILLINOIS STATUTE 70 ILCS 405:
SOIL AND WATER CONSERVATION
DISTRICTS ACT



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SPECIAL DISTRICTS

(70 ILCS 405/) Soil and Water Conservation Districts Act.

(70 ILCS 405/1) (from Ch. 5, par. 106)

Sec. 1. Short title. This Act shall be known and may be cited as the "Soil and Water Conservation Districts Act".
(Source: P.A. 80-159.)

(70 ILCS 405/2) (from Ch. 5, par. 107)

Sec. 2. Declaration of policy. The General Assembly declares it to be in the public interest to provide (a) for the conservation of the soil, soil resources, water and water resources of this State, (b) for the control and prevention of soil erosion, (c) for the prevention of air and water pollution, and (d) for the prevention of erosion, floodwater and sediment damages, and thereby to conserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, conserve wild life and forests, protect the tax base, protect public lands, and protect and promote the health, safety and general welfare of the people of this State.

The General Assembly finds that erosion continues to be a serious problem throughout the State, and that rapid shifts in land use from agricultural to nonagricultural uses, changes in farm enterprises, operations, ownership, construction of housing, industrial and commercial developments, streets, highways, recreation areas, schools, colleges and universities, and other land disturbing activities have accelerated the process of soil erosion and sediment deposition resulting in pollution of the waters of the State and damage to domestic, agricultural, industrial, recreational, fish and wildlife, and other resource uses. It is, therefore, declared to be the policy of this State to strengthen and extend the present erosion and sediment control activities and programs for both rural and urban lands, and to establish and implement, through the Department and soil and water conservation districts in cooperation with units of local government, school districts, other political subdivisions of this State, agencies of this State and other public agencies and private entities, a statewide comprehensive and coordinated erosion and sediment control program to conserve and protect land, water, air and

other resources.

The provisions of the "Local Governmental and Governmental Employees Tort Immunity Act" shall apply to all districts created pursuant to this Act.

(Source: P.A. 84-114.)

(70 ILCS 405/3) (from Ch. 5, par. 108)

Sec. 3. Definitions. As used in this Act, unless the context clearly otherwise requires, the terms defined in the Sections following this Section and preceding Section 4 have the meanings ascribed to them in those Sections.

(Source: P.A. 97-813, eff. 7-13-12.)

(70 ILCS 405/3.01) (from Ch. 5, par. 108.01)

Sec. 3.01. "District" or "soil and water conservation district" means a public body corporate and politic, organized in accordance with this Act.

(Source: P.A. 80-159.)

(70 ILCS 405/3.02) (from Ch. 5, par. 108.02)

Sec. 3.02. "Director" means one of the members of the governing body of a district, elected or appointed in accordance with this Act.

(Source: P.A. 80-159.)

(70 ILCS 405/3.03) (from Ch. 5, par. 108.03)

Sec. 3.03. "Department" means the Department of Agriculture of this State.

(Source: P.A. 80-159.)

(70 ILCS 405/3.04) (from Ch. 5, par. 108.04)

Sec. 3.04. "State" means the State of Illinois.

(Source: P.A. 80-159.)

(70 ILCS 405/3.05) (from Ch. 5, par. 108.05)

Sec. 3.05. "Agency of this State" includes the government of this State and any subdivision, agency, or instrumentality thereof.

(Source: P.A. 80-159.)

(70 ILCS 405/3.06) (from Ch. 5, par. 108.06)

Sec. 3.06. "United States" includes the United States of America, the Soil Conservation Service of the United States Department of Agriculture, and any other agency or instrumentality, corporate or otherwise, of the United States of America.

(Source: P.A. 80-159.)

(70 ILCS 405/3.07) (from Ch. 5, par. 108.07)

Sec. 3.07. "Land owner" or "owner of land" includes any individual of legal voting age, firm, or corporation who holds legal or equitable title to any land lying within a district organized or proposed to be organized under this Act. For the purposes of this Act, a list of the persons who appear from the tax assessment rolls of the county to be owners of land within a district or proposed district is prima facie evidence of the names and number of such land owners.

(Source: P.A. 80-159.)

(70 ILCS 405/3.08) (from Ch. 5, par. 108.08)

Sec. 3.08. "Land occupier" or "occupier of land" includes any individual of legal voting age, firm or corporation, other

than the owner, who is in legal possession of any land lying within a district organized or proposed to be organized under this Act, whether as lessee, renter, tenant or otherwise.
(Source: P.A. 80-159.)

(70 ILCS 405/3.09) (from Ch. 5, par. 108.09)

Sec. 3.09. "Due Notice" means notice given in accordance with Section 31 of this Act.
(Source: P.A. 80-159.)

(70 ILCS 405/3.10) (from Ch. 5, par. 108.10)

Sec. 3.10. "Proxy" means a written authorization complying with Section 32 of this Act.
(Source: P.A. 80-159.)

(70 ILCS 405/3.11) (from Ch. 5, par. 108.11)

Sec. 3.11. "Person" means any owner of land or the owner's designated agent including any individual, partnership, firm, association, joint venture, corporation, trust, estate, commission, board, public or private institution, unit of local government, school district, political subdivision of this State, State agency, any interstate body or any other legal entity.
(Source: P.A. 80-159.)

(70 ILCS 405/3.12) (from Ch. 5, par. 108.12)

Sec. 3.12. "Land disturbing activity" means any change in land, which may result in soil erosion from water or wind and the movement of sediments into state waters or on to lands in the State, including but not limited to, the tilling, clearing, grading, excavating, rehabilitating, transporting, depositing or filling of land, other than federal lands. "Land disturbing activity" does not include such minor activities as home gardens, individual home landscaping, repairs, maintenance or any plat of subdivision approved by municipal or county units of government. This Act shall encourage the establishment of sediment and erosion control ordinances at the municipal and county levels.
(Source: P.A. 80-159.)

(70 ILCS 405/3.13) (from Ch. 5, par. 108.13)

Sec. 3.13. "Waters" means any and all waters, public or private, on the surface of the ground, which are wholly or partially contained within, flow through or border upon this State.
(Source: P.A. 80-159.)

(70 ILCS 405/3.14) (from Ch. 5, par. 108.14)

Sec. 3.14. "Erosion and sediment control plan" or "plan" means a plan for the control of soil erosion and sediment resulting from a land disturbing activity.
(Source: P.A. 80-159.)

(70 ILCS 405/3.15) (from Ch. 5, par. 108.15)

Sec. 3.15. "Conservation standard" or "standard" means any standard adopted by the Department or the districts under this Act.
(Source: P.A. 80-159.)

(70 ILCS 405/3.16) (from Ch. 5, par. 108.16)

Sec. 3.16. "Guideline" means a guide or recommendation to be used by districts in developing a program and standards for

erosion and sediment control.
(Source: P.A. 80-159.)

(70 ILCS 405/3.17) (from Ch. 5, par. 108.17)

Sec. 3.17. "Board" means the State Soil and Water Conservation Districts Advisory Board appointed under Section 4 of this Act with which the Department and the soil and water conservation district respectively consult and advise with regard to the erosion and sediment control provisions of this Act.
(Source: P.A. 80-159.)

(70 ILCS 405/3.18) (from Ch. 5, par. 108.18)

Sec. 3.18. "Point source discharge" means any discernible, confined, discrete conveyance of pollutants to waters through pipes or conduits from sewage treatment plants or industrial processes.
(Source: P.A. 80-159.)

(70 ILCS 405/3.19) (from Ch. 5, par. 108.19)

Sec. 3.19. "Enduring erosion and sediment control device, structure or practice" means and includes any device, structure or practice designed for the control and prevention of soil erosion and air and water pollution for a period in excess of one year.
(Source: P.A. 80-159.)

(70 ILCS 405/3.20) (from Ch. 5, par. 108.20)

Sec. 3.20. "Aggrieved party" means any person whose property, resources, interest or responsibility is being injured or impeded in value or utility or any other manner by the adverse effects of sediment caused by soil erosion.
(Source: P.A. 80-159.)

(70 ILCS 405/3.21) (from Ch. 5, par. 108.21)

Sec. 3.21. "Willful or wanton misconduct" means a course of action which shows an actual or deliberate intention to cause harm or which, if not intentional, shows an utter indifference to or conscious disregard for the safety of others or their property.
(Source: P.A. 86-1173.)

(70 ILCS 405/4) (from Ch. 5, par. 109)

Sec. 4. State soil and water conservation districts advisory board. The State Soil and Water Conservation Districts Advisory Board is created. The Board shall consist of 7 members. The Director of the Department and the Director of Agricultural Extension of the College of Agriculture of the University of Illinois shall serve, ex officio, as members of the Board. The other 5 members shall be appointed by the Governor by and with the advice and consent of the Senate and shall be individuals who are the owners and active operators of farm lands in this State and who have been engaged in farming in this State for at least 5 years next preceding their appointment, consideration having been given to geographical location and to soil and water conservation district experience. In case of any vacancy in such appointive office during the recess of the Senate, the Governor shall make a temporary appointment until action at the next meeting of the Senate, when he shall nominate some person to fill such office; and any person so nominated who is confirmed by the Senate shall hold his office during the remainder of the term and until his successor is appointed and qualified. If the Senate is not in session at the time this amendatory Act takes

effect, the Governor shall make temporary appointments as in the case of a vacancy. The appointed members of the State Soil and Water Conservation Districts Advisory Board shall serve for a period of 4 years, beginning on the third Monday in January of the odd-numbered years in which they are appointed, and until their successors are appointed and qualified. The board may invite the Secretary of Agriculture of the United States of America to appoint one person to serve with the above mentioned members in an advisory capacity.

The Board may consult and advise with the qualified persons necessary with regard to the erosion and sediment control provisions of this Act.

(Source: P.A. 80-159.)

(70 ILCS 405/5) (from Ch. 5, par. 110)

Sec. 5. Organization of board.

A majority of the members of the Board shall constitute a quorum and the concurrence of a majority of a quorum shall be required for its determination of any matter. The Board shall elect annually a chairman from among its appointed members. The chairman and members of the Board shall receive no compensation for their services on the Board but shall be entitled to their expenses, including traveling expenses, necessarily incurred in the discharge of their duties on the Board. Except for the Director of the Department, no Board member shall be employed by the Department as a salaried or paid employee. The Board shall keep a full and accurate record of all its proceedings. The Board shall hold such public hearings as may be necessary for the execution of its functions under this Act. The Board shall advise the Department in establishing policy under and in the administration of this Act.

(Source: Laws 1955, p. 189.)

(70 ILCS 405/6) (from Ch. 5, par. 111)

Sec. 6. Powers and duties. In addition to the powers and duties otherwise conferred upon the Department, it shall have the following powers and duties:

(1) To offer such assistance as may be appropriate to the directors of soil and water conservation districts, organized as provided hereinafter, in the carrying out of any of the powers and programs.

(2) To keep the directors of each of said several districts informed of the activities and experience of other such districts, and to facilitate an interchange of advice and experience between such districts and cooperation between them.

(3) To coordinate the programs of the several districts so far as this may be done by advice and consultation.

(4) To seek the cooperation and assistance of the United States and of agencies of this State, in the work of such districts.

(5) To disseminate information throughout the State concerning the formation of such districts, and to assist in the formation of such districts in areas where their organization is desirable.

(6) To consider, review, and express its opinion concerning any rules, regulations, ordinances or other action of the board of directors of any district and to advise such board of directors accordingly.

(7) To prepare and submit to the Director of the Department an annual budget.

(8) To develop and coordinate a comprehensive State erosion and sediment control program, including guidelines to be used by districts in implementing this program. In developing this program, the Department may consult with and request technical

assistance from local, State and federal agencies, and may consult and advise with technically qualified persons and with the soil and water conservation districts. The guidelines developed may be revised from time to time as necessary.

(9) To promote among its members the management of marginal agricultural and other rural lands for forestry, consistent with the goals and purposes of the "Illinois Forestry Development Act".

Nothing in this Act shall authorize the Department or any district to regulate or control point source discharges to waters.

(10) To make grants subject to annual appropriation from the Build Illinois Bond Fund or any other sources, including the federal government, to Soil and Water Conservation Districts and the Soil Conservation Service.

(11) To provide payment for outstanding health care costs of Soil and Water Conservation District employees incurred between January 1, 1996 and December 31, 1996 that were eligible for reimbursement from the District's insurance carrier, Midcontinent Medical Benefit Trust, but have not been paid to date by Midcontinent. All claims shall be filed with the Department on or before January 30, 1998 to be considered for payment under the provisions of this amendatory Act of 1997. The Department shall approve or reject claims based upon documentation and in accordance with established procedures. The authority granted under this item (11) expires on September 1, 1998.

Nothing in this Act shall authorize the Department in any district to regulate or curtail point source discharges to waters.

(Source: P.A. 97-813, eff. 7-13-12.)

(70 ILCS 405/7) (from Ch. 5, par. 112)

Sec. 7. Employees and assistance of other agencies.

Subject to the provisions of the "Personnel Code" enacted by the 69th General Assembly, the Department may employ an administrative officer, technical experts and such other agents and employees, permanent and temporary, as it may require. The Department may call upon the Attorney General of the State for such legal services as it may require. The Department shall require surety bonds for all its officers and employees who are entrusted with funds or property under this Act and shall provide for an annual audit of their accounts. The Department may establish and provide suitable office accommodations and the necessary supplies and equipment.

Upon request of the Department, for the purpose of carrying out any of its functions, the supervising officer of any State agency, or of any State institution of learning shall, in so far as may be possible under available appropriations, and having due regard to the needs of the agency to which the request is directed, assign or detail to the Department members of the staff or personnel of such agency or institution of learning and make such special reports, surveys or studies as the Department may request.

(Source: Laws 1955, p. 2146.)

(70 ILCS 405/8) (from Ch. 5, par. 113)

Sec. 8. Petition for creation of soil and water conservation districts.

Any 25 or more owners of land lying within the limits of the territory proposed to be organized into a district who own at least 10% of the land, by area, within such proposed district may file a petition with the Department asking that a soil and water conservation district be organized in the territory

described in the petition. Such petition shall set forth:

- (1) The proposed name of said district;
- (2) That there is a need, in the interest of the public health, safety, and welfare, for a soil and water conservation district to function in the territory described in the petition;
- (3) A reasonably accurate description of the territory proposed to be organized as a district.
- (4) A request that the Department duly define the boundaries for such district; that a referendum be held within the territory so defined on the question of the creation of a soil and water conservation district in such territory; and that the Department determine that such a district be created.

Where more than one petition is filed covering the same or parts of the same territory, the Department may consolidate all or any of such petitions.

(Source: Laws 1961, p. 530.)

(70 ILCS 405/9) (from Ch. 5, par. 114)

Sec. 9. Notice and hearing.

Within 30 days after such a petition has been filed with the Department, it shall cause due notice to be given of a proposed hearing upon the question of the desirability and necessity, in the interest of the public health, safety, and welfare, of the creation of such district; upon the question of the appropriate boundaries to be assigned to such district; upon the propriety of the petition and other proceedings taken under this Act; and upon all questions relevant to such inquiries. All land occupiers and owners of land lying within the limits of the territory described in the petition, and of lands within any territory considered for addition to such described territory, and all interested parties, shall have the right to attend such hearings and to be heard. If it shall appear upon the hearing that it may be desirable to include within the proposed district, territory outside of the area within which due notice of the hearing has been given, the hearing shall be adjourned and due notice of further hearings shall be given throughout the entire area considered for inclusion in the district, and such further hearing held.

(Source: Laws 1951, p. 428.)

(70 ILCS 405/10) (from Ch. 5, par. 115)

Sec. 10. Findings and determinations of department.

After such hearing, if the Department determines upon the facts presented at such hearing and upon such other relevant facts and information as may be available that there is need in the interest of the public health, safety, and welfare, for a soil and water conservation district to function in the territory considered at the hearing, it shall make and record such determination and shall define by metes and bounds, or by legal subdivisions, the boundaries of such district. In making such determination and in defining such boundaries, the Department shall give due weight and consideration to the following matters which are hereby stated to be the standards which shall guide the considerations of the Department: The topography of the area considered and of the State; the composition of soils therein; the distribution of erosion; the prevailing land use practices; the desirability and necessity of including within the boundaries the particular lands under consideration and the benefits such lands may receive from being included within such boundaries; the relation of the proposed area to existing watersheds and agricultural regions and to other soil conservation districts already organized or proposed for organization under the provisions of this Act, and such other physical, geographical, and economic factors as are

relevant. The territory to be included within such boundaries need not be contiguous. No territory shall be included within the boundaries of more than one district. In cases where territory is proposed to be added to an existing district, the Department shall also consider the attitude of the district directors as expressed at the hearing, by resolution or otherwise.

If the Department determines after such hearing, and after due consideration of the above-mentioned facts and standards that there is no need for a soil and water conservation district for the territory considered at the hearing, it shall record such determination and deny the petition. No subsequent petitions covering the same or substantially the same territory shall be filed as aforesaid until after the expiration of one year from the date of such denial.

(Source: Laws 1961, p. 530.)

(70 ILCS 405/11) (from Ch. 5, par. 116)

Sec. 11. Determination of administrative practicability and feasibility.

After the Department has made and recorded a determination that there is need, in the interest of public health, safety, and welfare, for the organization of a district in a particular territory and has defined the boundaries thereof, it shall consider the question whether the operation of a district within such boundaries with the powers conferred upon soil and water conservation districts in this Act is administratively practicable and feasible. To assist the Department in the determination of such administrative practicability and feasibility, it shall within a reasonable time after entry of the determination that there is need for the organization of the proposed district and the determination of the boundaries thereof, hold a referendum within the proposed district upon the proposition of the creation of the district, and cause due notice of any such referendum to be given.

The question shall be submitted upon ballot in substantially the following form:

Place an X in the square opposite the
proposition for which you desire to vote.

For creation of a soil and water
conservation district of the lands
described below and situated in
the county or counties of (here in-
sert name of county or counties).

Against creation of a soil and
water conservation district of the
lands described below and situated
in the county or counties of (here
insert name of county or counties).

(Here insert description.)

Only owners of land lying within the boundaries of the proposed district as determined by the Department shall be eligible to vote in such referendum, and each such owner of land shall have one vote. Owners of land may vote in person or by absentee ballot.

In all cases where a petition for the organization of a district carries the names of more than 55 per cent of the land owners within the proposed district, the Department may

determine the question of whether the operation of the district is administratively practicable and feasible without holding a referendum.

(Source: Laws 1961, p. 530.)

(70 ILCS 405/12) (from Ch. 5, par. 117)

Sec. 12. Conduct of referenda.

The Department shall pay all expenses for the issuance of such notices and the conduct of such hearings and referenda and shall supervise the conduct of such hearings and referenda. It shall issue appropriate regulations governing the conduct of such hearings and referenda, and providing for the registration prior to the date of the referendum of all eligible voters, or prescribing some other appropriate procedure for the determination of those eligible as voters in such referendum. No informalities in the conduct of such referendum or in any matters relating thereto shall invalidate said referendum or the result thereof if notice thereof shall have been given substantially as herein provided and said referendum shall have been fairly conducted.

(Source: Laws 1951, p. 428.)

(70 ILCS 405/13) (from Ch. 5, par. 118)

Sec. 13. Recordation and determination.

The Department shall publish the result of such referendum. If a majority of the owners of land lying within the district voted in favor of the creation of the district, and if the Department determines that the attitude of such owners, the approximate wealth and income of such landowners, the probable expense of carrying on erosion control operations within such district, and other economic and social factors as may be relevant are such that the operation of such district is administratively practicable and feasible, it shall record such determination and shall proceed with the organization of the district in the manner hereinafter provided. If less than a majority of the owners of land in such district vote in favor of the creation of such district, or if the Department determines that the attitude of such owners, the approximate wealth and income of such landowners, the probable expense of carrying on erosion control operations within such district, and other economic and social factors as may be relevant are such that the operation of the proposed district is not otherwise practicable and feasible, it shall record such determination and deny the petition.

(Source: Laws 1955, p. 189.)

(70 ILCS 405/14) (from Ch. 5, par. 119)

Sec. 14. Organization of district.

If the Department shall determine that the operation of the proposed district is administratively practicable and feasible, it shall appoint 2 temporary directors, who shall hold office until the election and qualification of the permanent board of directors as provided in Section 19. Such district shall be a public body corporate and politic, upon the taking of the following proceedings:

The 2 temporary directors shall present to the Secretary of State an application signed by them, which shall set forth (and such application need contain no detail other than the mere recitals): (1) that a petition for the creation of the district was filed with the Department pursuant to the provisions of this Act, and that the proceedings specified in this Act were taken pursuant to such petition; that the application is being filed in order to complete the organization of the district as a public body, corporate and politic, under this Act; that the

Department has appointed them as temporary directors; (2) the name and official residence of each of the temporary directors; (3) the name which is proposed for the district; and (4) the location of the principal office of the district. The application shall be subscribed and sworn to by each of the said temporary directors before an officer authorized by the laws of this State to take acknowledgments of deeds, who shall certify upon the application that he personally knows the temporary directors and knows them to be the officers as affirmed in the application, and that each has subscribed thereto in the officer's presence. The application shall be accompanied by a statement by the Department, which shall certify (and such statement need contain no detail other than the mere recitals) that a petition was filed, notice issued, and hearing held as aforesaid; that the Department did duly determine that there is need, in the interest of the public health, safety, and welfare, for a soil and water conservation district to function in the proposed territory and did define the boundaries thereof; that notice was given and a referendum held on the question of the creation of such district; and that a majority of the owners of land lying within the district voted in favor of the creation of the district; that thereafter the Department did duly determine that the operation of the proposed district is administratively practicable and feasible and that 2 temporary directors, naming them, were duly appointed. The said statement shall set forth the boundaries of the district as they have been defined by the Department.

(Source: Laws 1961, p. 530.)

(70 ILCS 405/15) (from Ch. 5, par. 120)

Sec. 15. Certificate of organization. The Secretary of State shall examine the application and statement and, if he finds that the name proposed for the district is not identical with that of any other district of this State or so nearly similar as to lead to confusion or uncertainty, he shall receive and file them and shall record them in an appropriate book of record in his office. If the Secretary of State finds that the name proposed for the district is identical with that of any other district of this State, or so nearly similar as to lead to confusion and uncertainty, he shall certify such fact to the Department, which shall thereupon submit to the Secretary of State a new name for the district, which is not subject to such defects. Upon receipt of such new name, free of such defects, the Secretary of State shall record the application and statement, with the name so modified, in an appropriate book of record in his office. When the application and statement have been made, filed, and recorded, as herein provided, the district constitutes a public body corporate and politic. The Secretary of State shall make and issue to the temporary directors a certificate, under the seal of the State, of the due organization of the district, and shall record such certificate with the application and statement. A copy of the statement and the certificate of organization, duly certified by the Secretary of State, shall be recorded with the recorder of the county in which the office of the district is located.

(Source: P.A. 83-358.)

(70 ILCS 405/15.01) (from Ch. 5, par. 120.1)

Sec. 15.01. Whenever it is desired to change the name of an existing district the directors shall submit the proposed new name to the Department, together with their reasons for desiring the change. If the Department approves the change it shall submit the proposed name to the Secretary of State who, if he finds that the proposed name is not identical with that of any

other district of this state or so nearly similar as to lead to confusion or uncertainty, he shall receive and record the change in an appropriate book of record in his office. If the Secretary of State finds that the name proposed for the district is identical with that of any other district of this State, or so nearly similar as to lead to confusion and uncertainty, he shall certify such fact to the Department, which shall thereupon submit to the Secretary of State a new name for the district, which is not subject to such defects and which is satisfactory to the directors. Upon receipt of such new name, free of such defects, the Secretary of State shall record the change in an appropriate book of record in his office.
(Source: Laws 1951, p. 428.)

(70 ILCS 405/16) (from Ch. 5, par. 121)

Sec. 16. Subsequent petitions.

No subsequent petitions covering the same or substantially the same land shall be filed within one year after the denial of a preceding petition.
(Source: Laws 1937, p. 10.)

(70 ILCS 405/17) (from Ch. 5, par. 122)

Sec. 17. Included territory. All of the territory contained within the boundaries of a county or counties shall be a part of the Soil and Water Conservation District whose territories are located within the county or counties except in Cook County in which case all of the territory north of 22nd Street also known as Cermak Road, shall be a part of the North Cook Soil and Water Conservation District and all of the territory of Cook County that is south of 22nd Street also known as Cermak Road, shall be a part of the Will-South Cook Soil and Water Conservation District. The boundaries for any District consolidated after July 1, 1996 in accordance with Section 26a of this Act shall encompass all territory contained within those Districts so consolidating.
(Source: P.A. 91-327, eff. 1-1-00.)

(70 ILCS 405/18) (from Ch. 5, par. 123)

Sec. 18. Certificate evidence of organization.

In any suit, action, or proceeding involving the validity or enforcement of, or relating to, any contract, proceeding, or action of the district, the district shall be deemed prima facie to have been established in accordance with the provisions of this Act upon proof of the issuance of the aforesaid certificate by the Secretary of State. A copy of such certificate duly certified by the Secretary of State shall be admissible in evidence in any such suit, action, or proceeding and shall be proof of the filing and contents thereof.
(Source: Laws 1937, p. 10.)

(70 ILCS 405/19) (from Ch. 5, par. 124)

Sec. 19. Governing body of district.

The governing body of the district shall consist of 5 directors, who shall be owners or occupiers of lands within the district in which they serve.

Five directors shall be elected before March 1 in the year 1948, three of whom shall serve until the first Monday of March, 1950, and the remaining two shall serve until the first Monday of March, 1949. Successive elections shall be held before March 1 of each year and each director so elected shall serve during the two-year period commencing with the first Monday in March of the year in which he was elected.

Any vacancy in the office of director may be filled by

appointment by the remaining directors. The person so appointed shall hold office until the next election at which a member of the governing board of the district is elected. At such election a person shall be elected to fill the vacancy, if there is sufficient time to meet the requirements for nomination. Otherwise, the person appointed to fill the vacancy shall hold office until the expiration of the term of the director whom he succeeded.

(Source: P.A. 76-110.)

(70 ILCS 405/19.01) (from Ch. 5, par. 124.1)

Sec. 19.01. Occupiers of land lying within the district are eligible to hold office and to vote at all elections held in such district except at elections held for the adoption or approval of land-use regulations.

(Source: Laws 1955, p. 189.)

(70 ILCS 405/20) (from Ch. 5, par. 125)

Sec. 20. Nomination, election of directors.

Within 30 days after the issuance of the Secretary of State of the certification of organization of a soil and water conservation district, nominating petitions may be filed with the Department for the nomination of candidates for directors of such district. The Department may extend the time within which such nominating petitions may be filed. After the first election nominating petitions may be filed with the Department not more than 60 days nor less than 20 days prior to the date of the election. No nominating petition shall be accepted by the Department unless it shall be subscribed by 25 or more owners or occupiers of land, or both, lying within the boundaries of such district. Land owners or occupiers, or both, may sign more than one such nominating petition. The names of all nominees on behalf of whom such nominating petitions have been filed in the time herein designated or such further time as may be granted by the Department shall appear, arranged in the alphabetical order of the surnames upon ballots with a square before each name and a direction to insert an X in the square before a number of names equal to the number of directors to be elected, and with instructions to vote for not more than the proper number of directors. Only owners or occupiers of land, or both, lying within the district are eligible to vote in such election and each shall be entitled to cast one ballot. Such ballot may be cast in person or by absentee ballot. The Department shall prescribe regulations governing the conduct of such election and the determination of the eligibility of voters therein, and shall announce the results thereof. The 5 nominees receiving the highest number of votes shall be declared elected.

(Source: Laws 1961, p. 530.)

(70 ILCS 405/20.01) (from Ch. 5, par. 125.1)

Sec. 20.01. Upon petition of the directors of any district, the Department may authorize that district to nominate and elect directors at annual meetings of the owners or occupiers of land, or both, lying within the district rather than according to the provisions of Section 20. Such meetings shall be held on or before March 1 of each year and directors elected at such meetings shall take office in the same manner as those elected pursuant to Section 20.

(Source: Laws 1955, p. 189.)

(70 ILCS 405/21) (from Ch. 5, par. 126)

Sec. 21. Organization of governing body. The directors shall elect one of their members as chairman to hold for such time as the directors may determine but no longer than the term for

which he was elected. A majority of the directors shall constitute a quorum and the concurrence of a majority of a quorum in any matter shall be required for its determination. Directors may receive reasonable compensation for their services not to exceed \$20 per day and may be reimbursed for expenses, including traveling expenses, necessarily incurred in the discharge of their duties. The directors may employ such technical assistants as the district needs. The directors may also employ a secretary and such other officers, agents and employees, permanent and temporary, as they may require and shall determine their qualifications, duties and compensation. The directors may delegate to their chairman or to one or more agents or employees such powers and duties as they deem proper. The directors shall keep a record of all their actions and proceedings and of all resolutions, regulations and orders issued or adopted by them; and shall adopt a seal, which seal shall be judicially noticed.

The directors shall provide for the execution of surety bonds for all employees and officers who shall be entrusted with funds or property; and shall provide for an annual financial report of the results of an examination and review of the accounts of receipts and disbursements in a manner prescribed by the Department.

The directors may provide employee benefits through the Illinois Municipal Retirement Fund if the district meets the applicable requirements of the Illinois Pension Code and the Federal Social Security Act.

The directors may invite any municipal corporation or county located near the territory comprised within the district to designate a representative to advise and consult with the directors of the district on all questions of program and policy which may affect the property, roads, water supply, or other interests of such municipal corporation or county.

(Source: P.A. 90-192, eff. 7-24-97.)

(70 ILCS 405/22) (from Ch. 5, par. 127)

Sec. 22. Powers of districts and directors. A soil and water conservation district organized under the provisions of this Act shall constitute a public body, corporate and politic, exercising public powers, and such district and the directors thereof shall, in addition to the powers created in other Sections of this Act, have the powers enumerated in Sections 22.01 through 22.12, each inclusive.

(Source: P.A. 85-483.)

(70 ILCS 405/22.01) (from Ch. 5, par. 127.1)

Sec. 22.01.

To initiate and conduct surveys, investigations and research and to develop comprehensive plans for the conservation of soil and water resources and for the control and prevention of soil erosion and erosion, floodwater and sediment damages within the district, which plans shall specify in such detail as may be practicable the acts, procedure, performances and avoidances which are necessary or desirable for the effectuation of such plans, including the specification of engineering operations, methods of cultivation, the growing of vegetation, cropping programs, tillage practices, and changes in use of land; and, with the approval and assistance of the Department, to publish such plans and information and bring them to the attention of owners and occupiers of land within the district.

(Source: P.A. 77-1757.)

(70 ILCS 405/22.02) (from Ch. 5, par. 127.2)

Sec. 22.02. To carry out preventive and control measures

within the district including, but not limited to, engineering operations, methods of cultivation, the growing of vegetation, changes in use of land on lands owned or controlled by this State or any of its agencies, with the cooperation of the agency administering and having jurisdiction thereof, and on any other lands within the district upon obtaining the consent of the owners and occupiers of such lands or the necessary rights or interests in such lands.
(Source: Laws 1953, p. 1063.)

(70 ILCS 405/22.02a) (from Ch. 5, par. 127.2a)
Sec. 22.02a.

The Soil and Water Conservation District shall make all natural resource information available to the appropriate county agency or municipality in the promulgation of zoning ordinances or variances. Any person who petitions any municipality or county agency in the district for variation, amendment, or other relief from that municipality's or county's zoning ordinance or who proposes to subdivide vacant or agricultural lands therein shall furnish a copy of such petition or proposal to the Soil and Water Conservation District. The Soil and Water Conservation District shall be given not more than 30 days from the time of receipt of the petition or proposal to issue its written opinion concerning the petition or proposal and submit the same to the appropriate county agency or municipality for further action.
(Source: P.A. 77-1757.)

(70 ILCS 405/22.03) (from Ch. 5, par. 127.3)

Sec. 22.03. To cooperate, or enter into agreements with, and within the limits of appropriations duly made available to it by law, to furnish financial or other aid to, any agency, governmental or otherwise, or any owner or occupier of lands within the district, in the carrying on of erosion-control and flood prevention operations within the district, subject to such conditions as the directors may deem necessary to advance the purposes of this Act.
(Source: Laws 1955, p. 189.)

(70 ILCS 405/22.04) (from Ch. 5, par. 127.4)

Sec. 22.04. To obtain options upon and to acquire, by purchase, exchange, lease, gift, grant, legacy or through condemnation, any property, real or personal, or rights or interests therein necessary for the purpose of the district; to maintain, administer and improve any properties acquired, to receive income from such properties and to expend such income in carrying out the purposes and provisions of this Act; and to sell, lease or otherwise dispose of any of its property or interests therein in furtherance of the purposes and provisions of this Act.
(Source: P.A. 83-388.)

(70 ILCS 405/22.04a)

Sec. 22.04a. Eminent domain. Notwithstanding any other provision of this Act, any power granted under this Act to acquire property by condemnation or eminent domain is subject to, and shall be exercised in accordance with, the Eminent Domain Act.
(Source: P.A. 94-1055, eff. 1-1-07.)

(70 ILCS 405/22.05) (from Ch. 5, par. 127.5)

Sec. 22.05. To make available, on such terms as it shall prescribe, to landowners or occupiers within the district, the use of agricultural and engineering machinery and equipment, and

such other material or equipment as will assist such landowners or occupiers to carry on operations upon their lands for the conservation of soil and water resources and for the prevention and control of soil erosion and erosion floodwater and sediment damages.

Soil and water conservation districts may engage in the direct sale of trees, shrubs, or other plant materials as provided in this Section. Plant materials that may be sold are seeds of annual or perennial plants, bare-root stock, or stock in pots not to exceed one gallon. The plant material shall be advertised as follows:

"These plants are for conservation purposes only and shall not be used as ornamentals or for landscaping."

For purposes of this Section, "stock" means hardwood trees not to exceed 48 inches, conifers not to exceed 36 inches, shrubs not to exceed 24 inches, or any other plant materials not to exceed 24 inches.

(Source: P.A. 90-48, eff. 1-1-98.)

(70 ILCS 405/22.06) (from Ch. 5, par. 127.6)

Sec. 22.06. To construct, improve, operate and maintain such structures as may be necessary for the performance of any of the operations authorized in this Act.

(Source: Laws 1955, p. 189.)

(70 ILCS 405/22.07) (from Ch. 5, par. 127.7)

Sec. 22.07. To take over, by purchase, lease or by voluntary agreement, and to administer, any soil-conservation, water-conservation, flood-prevention, erosion-control or erosion-prevention project located within its boundaries, undertaken by the United States, or by this State or any of its agencies; to manage, as agent of the United States, with its consent, or of this State, with its consent, or of any of its agencies, any such project within its boundaries to act as agent if so desired and requested for the United States, or for this State or any of its agencies, in connection with the acquisition, construction, operation or administration of any such project within its boundaries; to accept donations, gifts and contributions in money, services, materials, or otherwise, from the United States, or from this State or any of its agencies, and from any other source, and to use or expend such district moneys, services, materials, or other contributions in carrying on its operations.

(Source: Laws 1961, p. 530.)

(70 ILCS 405/22.07a) (from Ch. 5, par. 127.7a)

Sec. 22.07a. To cooperate and effectuate agreements with individuals or agencies of government, and to plan, construct, operate, and maintain programs and projects relating to the conservation of the renewable natural resources of soil, water, forests, fish, wildlife, and air in this state, for the control and prevention of soil erosion, floods, flood water and sediment damages, and impairment of dams and reservoirs; to assist in maintaining the navigability of rivers and harbors, and in addition, to cooperate with local interests and agencies of government in providing domestic and industrial municipal and agricultural water supplies and recreational project developments and improvements.

(Source: Laws 1963, p. 3492.)

(70 ILCS 405/22.07b) (from Ch. 5, par. 127.7b)

Sec. 22.07b. Natural area guardians. The governing body of any soil and water conservation district may designate Natural Area Guardians for the purpose of managing natural areas on the

Illinois Natural Areas Inventory and natural areas of regional or local significance designated by the governing body within the district. The powers of the Natural Area Guardians shall include the following:

- (1) Locating and inventorying natural areas of regional or local significance located in the district.
- (2) Managing or restoring natural areas in the district by itself or in cooperation with other organizations.
- (3) Assisting landowners in managing natural areas at the request or with the acquiescence of the landowner.
- (4) Providing education programs concerning natural areas and otherwise promoting public awareness of natural areas and their preservation.

No individual or entity other than a district governing body, as provided in this Section, shall designate Natural Area Guardians.

Natural Area Guardians shall have no power with respect to those areas designated as National Historical Sites or Areas.
(Source: P.A. 87-85.)

(70 ILCS 405/22.08) (from Ch. 5, par. 127.8)

Sec. 22.08. To sue and be sued in the name of the district; to be represented by the Attorney General of the State who shall provide such legal services as may be required; to have perpetual succession unless terminated as hereinafter provided; to make and execute contracts and other instruments, necessary or convenient to the exercise of its powers, to make, and from time to time amend and repeal, rules and regulations not inconsistent with this Act, to carry into effect its purposes and powers. No director or officer serving without compensation, other than reimbursement for expenses and services that are consistent with the provisions of Section 21 of this Act, of a district organized under this Act and exempt, or qualified for exemption, from taxation pursuant to Section 501(c) of the Internal Revenue Code of 1986, as amended, and no employee of such a district while receiving compensation in the conduct of the employee's assigned duties and responsibilities, shall be liable, and no cause of action may be brought, for damages resulting from the exercise of judgment or discretion in connection with the duties or responsibilities of such director, officer or employee unless the act or omission involved willful or wanton misconduct.

(Source: P.A. 86-1173.)

(70 ILCS 405/22.09) (from Ch. 5, par. 127.9)

Sec. 22.09. As a condition to the extending of any benefits under this Act to, or the performance of work upon, any lands not owned or controlled by this State or any of its agencies, the directors may require contributions in money, services, materials, or otherwise to any operations conferring such benefits, and may require land owners to enter into and perform such agreements or covenants as to the permanent use of such lands as will tend to prevent or control erosion thereof; or promote the welfare of the lands of the district.

The District may charge fees to any person who makes a request for services or receives benefits rendered by the District, or who causes or undertakes to cause the District to perform a function prescribed by this Act, including but not limited to any function prescribed by Section 22.02a of this Act, provided that such charges are uniform. The Directors shall maintain a uniform schedule for such fees and may from time to time revise such schedule. The charging of any such fees if uniformly charged and in accordance with a uniform schedule by

any District to any person for any such service or benefits or performance of any such functions prior to the effective date of this amendatory Act of 1975 is ratified.

(Source: P.A. 79-640.)

(70 ILCS 405/22.10) (from Ch. 5, par. 127.10)

Sec. 22.10. To incur indebtedness as they deem proper in the conduct of the business of the district.

(Source: P.A. 84-113.)

(70 ILCS 405/22.11) (from Ch. 5, par. 127.11)

Sec. 22.11. Purchases made pursuant to this Act shall be made in compliance with the "Local Government Prompt Payment Act", approved by the Eighty-fourth General Assembly.

(Source: P.A. 84-1308.)

(70 ILCS 405/22.12) (from Ch. 5, par. 127.12)

Sec. 22.12. To carry out its duties under the Water Use Act of 1983.

(Source: P.A. 85-483.)

(70 ILCS 405/22a) (from Ch. 5, par. 127a)

Sec. 22a. The directors shall file with the Department, upon request of said Department, copies of such ordinances, rules, regulations, orders, contracts, forms and other documents as they shall adopt or employ, and such other information concerning their activities as the Department may require in the performance of its duties under this Act.

(Source: Laws 1953, p. 1063.)

(70 ILCS 405/23) (from Ch. 5, par. 128)

Sec. 23. Adoption of land-use regulations. The directors of any district shall have authority to formulate regulations governing the use of lands within the district in the interest of conserving soil, soil resources, water and water resources and preventing and controlling soil erosion and erosion, floodwater and sediment damages. The directors shall conduct such public meetings and public hearings upon tentative regulations as may be necessary to assist them in this work. The directors shall not have authority to enact such land-use regulations into law until after they shall have caused due notice to be given of their intention to conduct a referendum for submission of such regulations to the land owners within the boundaries of the district for their approval or disapproval of such proposed regulations, shall have held such referendum, and shall have considered the result of such referendum. The proposed regulations shall be embodied in a proposed ordinance. Copies of such proposed ordinance shall be filed with the Department for an expression of opinion. The opinion of the Department and any statement it may issue with reference thereto shall be made known to the owners in such district at least 10 days prior to the date of any referendum thereon. Copies of such proposed ordinance shall be available for distribution among, and inspection by owners and occupiers of land in the district during the period between publications of such notice and the date of the referendum. The notices of the referendum shall recite the contents of such proposed ordinance and shall state where copies of such proposed ordinance may be examined or obtained. The question shall be submitted by ballots, upon which the words "For approval of proposed ordinance No....., prescribing land-use regulations for conservation of soil and water and prevention of erosion" and "Against approval of proposed ordinance No....., prescribing land-use regulations for conservation of soil and water and prevention of erosion" shall

appear, with a square before each proposition and a direction to insert an X mark in the square before one or the other of those propositions. A summary or digest of the provisions of the proposed ordinance shall also appear on such ballots. The directors shall supervise such referendum, shall prescribe appropriate regulations governing the conduct thereof, and shall publish the result thereof. All the owners of land within the district shall be eligible to vote in such referendum and each shall have one vote. Such vote may be cast in person or by absentee ballot. No informalities in the conduct of such referendum or in any matters relating thereto shall invalidate such referendum or the result thereof if notice thereof shall have been given substantially as herein provided and such referendum shall have been fairly conducted.

The directors shall not have authority to enact such proposed ordinance into law unless at least three-fourths of the owners of land voting in such referendum shall vote in such referendum for approval of the proposed ordinance. The approval of the proposed ordinance by three-fourths of the land owners voting on the proposition shall not be deemed to require the directors to enact such proposed ordinance into law. Land-use regulations prescribed in ordinances adopted pursuant to this Section by the directors of any district shall have the force and effect of law in the district and shall be binding and obligatory upon all owners of lands within such district.

Any owner of land within such district may at any time file a petition with the directors asking that any or all of the land-use regulations prescribed in any ordinance adopted by the directors under this Section shall be amended, supplemented, or repealed. Land-use regulations prescribed in any ordinance adopted pursuant to this Section shall not be amended, supplemented, or repealed except in accordance with the procedure prescribed in this Section for adoption of land-use regulations. Referenda on adoption, amendment, supplementation, or repeal of land-use regulations shall not be held more often than once in 6 months.

The regulations to be adopted by the directors under this Section may include:

1. Provisions requiring the carrying out of necessary engineering operations, including the construction of terraces, terrace outlets, check dams, dikes, ponds, ditches, and other necessary structures.

2. Provisions requiring observation of particular methods of cultivation including contour cultivating, contour furrowing, strip cropping, seeding and planting of lands to water-conserving and erosion-preventing plants, trees, grasses, forestation and reforestation.

3. Provisions requiring the permanent retirement from cultivation of highly erosive areas or of areas on which erosion cannot be adequately controlled if cultivation is carried on.

4. Provisions for such other means, measures, operations and programs as may assist conservation of soil and water resources and prevent or control soil erosion in the district.

5. Provisions prohibiting the clearcutting of trees within 30 feet of any navigable waters, except for trees that are included in a forestry management plan approved by the Division of Forest Resources of the Department of Natural Resources. However, these provisions shall not prohibit clearcutting incidental to any project, activity or program that has been permitted, licensed, certified or approved by an agency of federal, State or local government. For the purpose of this item 5, "navigable

waters" means public waters that are usable for water commerce.

However, these provisions shall not prohibit a public utility from maintaining its transmission facilities and rights of way.

The regulations shall be uniform throughout the territory comprised within the district except that the directors may classify the lands within the district with reference to such factors as soil type, degree of slope, degree of erosion threatened or existing, cropping and tillage practices in use, and other relevant factors, and may provide regulations varying with the type or class of land affected, but uniform as to all lands within each class or type. Copies of land-use regulations adopted under this Section shall be printed and made available to all owners and occupiers of lands lying within the district.

No authority exercised by or procedure authorized by a district pursuant to this Section 23 imposes any restriction or mandate on land use practices and other policies of municipalities with respect to land located in that municipality, unless the corporate authorities of that municipality authorize by resolution the application of that district's land use regulations within the municipality's corporate limits.

(Source: P.A. 91-327, eff. 1-1-00.)

(70 ILCS 405/24) (from Ch. 5, par. 129)

Sec. 24. Enforcement of land-use regulations.

The directors shall have authority to go upon any lands within the district to determine whether land-use regulations adopted under the provisions of section 23 of this act are being observed. The directors are further authorized to provide by ordinance that any land owner who shall sustain damages from any violation of such regulations by any other land owner may recover damages at law from such other land owner for such violation.

(Source: Laws 1937, p. 10.)

(70 ILCS 405/25) (from Ch. 5, par. 130)

Sec. 25. Performance of work by the directors.

Where the directors of any district shall find that any of the provisions of land-use regulations prescribed in an ordinance adopted in accordance with the provisions of section 23 hereof are not being observed on particular lands, and that such non-observance tends to increase erosion and is interfering with the prevention or control of erosion and erosion, floodwater and sediment damages on other lands within the district, the directors shall notify the owner of such lands of such non-observance and that upon his failure to comply with the provisions of such land-use regulations within such reasonable time as may be fixed in such notice a petition for authority to perform such work will be presented to the Circuit Court for the county in which the land of the defendant or a major portion thereof, may lie. If the owner of such lands then fails to comply with the provisions of such land-use regulations, the directors may present to such Circuit Court a petition, duly verified, setting forth the adoption of the ordinance prescribing land-use regulations, the failure of the defendant land owner to observe such regulations, and to perform particular work, operations, or avoidances as required thereby, and that such non-observance tends to increase erosion and erosion, floodwater and sediment damages on such lands and is interfering with the prevention or control of erosion on other lands within the district, and praying the court to require the defendant to perform the work, operations, or avoidances within

a reasonable time and to order that if the defendant shall fail so to perform the directors may go on the land, perform the work or other operations or otherwise bring the condition of such lands into conformity with the requirements of such regulations. Upon the presentation of such petition, the court shall cause process to be issued against the defendant, and shall hear the case. If it shall appear to the court that testimony is necessary for the proper disposition of the matter, it may take evidence, or appoint a referee to take such evidence as it may direct and report the same to the court with his findings of fact and conclusions of law, which shall constitute a part of the proceedings upon which the determination of the court shall be made. The court may dismiss the petition; or it may require the defendant to perform the work, operations, or avoidances, and may provide that upon the failure of the defendant to initiate such performance within the time specified in the order of the court, and to prosecute the same to completion with reasonable diligence, the directors may enter upon the lands involved and perform the work or operations or otherwise bring the condition of such lands into conformity with the requirements of the regulations and recover the costs and expenses thereof, with interest at the rate of five per centum per annum, from the land owner of such lands.

The court shall retain jurisdiction of the case until after the work has been completed. Upon completion of such work pursuant to such order of the court the directors may file a petition with the court, a copy of which shall be served upon the defendant in the case, stating the costs and expenses sustained by them in the performance of the work and praying judgment therefor with interest. The court shall have jurisdiction to enter judgment for the amount of such costs and expenses, with interest at the rate of five per centum per annum until paid, together with the costs of suit, including a reasonable attorney's fee to be fixed by the court.
(Source: Laws 1955, p. 189.)

(70 ILCS 405/26) (from Ch. 5, par. 131)

Sec. 26. Cooperation between districts.

The directors of any two or more districts organized under the provisions of this act may cooperate with one another in the exercise of any or all powers conferred in this act.
(Source: Laws 1937, p. 10.)

(70 ILCS 405/26a) (from Ch. 5, par. 131a)

Sec. 26a. Any 25 or more owners of lands lying within the boundaries of any district organized under the provisions of this Act may file, with the Department, a petition proposing the consolidation of such district with one or more adjoining soil conservation districts. Such petition shall set forth: (1) the names of the districts proposed to be consolidated, and (2) the proposed name of the consolidated district.

Within 30 days after such petition is filed the Department shall submit the proposal to the directors of each district proposed to be consolidated. The Directors of each such district, shall within 30 days thereafter, adopt and forward to the Department a resolution approving or disapproving the proposed consolidation.

If the directors of all of the said districts approve the proposals to consolidate such districts, it shall be the duty of the Department to give 10 days notice of the holding of a referendum by causing such notice to be published at least once in one or more newspapers having general circulation within the district and to hold a referendum within each such district upon the proposition or the proposed consolidation. Except as

otherwise provided in this Act, the proposition shall be submitted in accordance with Section 28-3 of the Election Code.

The question at such referendum shall be submitted upon ballots in substantially the following form:

Place an X in the square opposite the proposition for which you desire to vote.

For approval of the proposed
consolidation of (here insert names
of districts to be consolidated)
into one soil and water
conservation district.

Against approval of the
proposed consolidation of (here
insert names of districts to be
consolidated) into one soil and
water conservation district.

Only owners or occupiers of land, or both, lying within the districts are eligible to vote in such referendum and each shall have one vote. Eligible voters may vote in person or by absentee ballot.

If a majority of the votes cast in the referendum in each of such districts are cast in favor of the proposed consolidation and if the Department determines that such consolidation is administratively practicable and feasible, the Chairmen of the directors of the said districts shall present to the Secretary of State through the Department an application for a certificate of organization of the consolidated district. The application shall be signed and sworn to by all of the said chairmen, and shall set forth the names of the constituent districts, the proposed name of the consolidated district, and the location of the office of the consolidated district. The said application shall be accompanied by the statement from the Department which shall set forth (and such statement need contain no details other than the mere recitals) that a petition for the consolidation of the said district was filed, that the proposed consolidation was, by resolution, approved by the governing bodies of all of such districts, that a referendum was held in each of the said districts on the question of the proposed consolidation, and that the result of such referendum showed a majority of the votes cast in each district to be in favor of the proposed consolidation.

The Secretary of State shall receive and file such application and statement and shall record them in an appropriate book of record in his office. When the application and statements have been made, filed, and recorded as herein provided, the consolidation of such districts shall be deemed affected and the consolidated district shall constitute a public body, corporate and politic, vested with all the power of soil and water conservation districts. The Secretary of State shall make and issue to the signers of the application a certificate, under the seal of the State, of the due organization of the said consolidated district, and shall record such certificate with the application and statement. A copy of the statement and certificate of organization, duly certified by the Secretary of State, shall be recorded with the recorder of the county in which the office of the consolidated district is located.

Notwithstanding the other provisions of this Act, if petitions and resolutions to consolidate districts under this Section are filed with the Department before January 1, 2012 and if the Director determines that the consolidation is

administratively practicable and feasible, then the Director may approve the consolidation without the necessity of holding a referendum under this Section, which shall be deemed to have the same effect as if the referendum had been held and approved.

Upon a consolidation of districts, the directors of all such districts shall continue to hold office and serve as a temporary governing body of the consolidated district until the members of a permanent governing body have been elected and have qualified. The provisions of Sections 19, 20 and 21 of this Act that relate to the number, and to the nomination, election and organization of members of the governing bodies of soil and water conservation districts shall govern the selection of the members of the permanent governing body of a consolidated district.

Upon the issuance, by the Secretary of State, of a certificate of organization to a consolidated district, property belonging to the constituent district shall become the property of the consolidated district. All contracts theretofore entered into, to which the constituent districts are parties, shall remain in force and effect for the period provided in such contracts. The consolidated districts shall be substituted for each constituent district as party to such contracts, and shall be entitled to all benefits and subject to all liabilities under such contracts and shall have the same right and liability to perform, to require performance, to sue and to be sued thereon, and to modify or terminate such contracts by mutual consent or otherwise, as the constituent district would have had. Any indebtedness, claim, demand or right owing or belonging to any of the constituent districts shall vest in and become due to the consolidated district, which shall have the right to demand, sue for, recover and enforce the same in its own name. Upon a consolidation of districts, all land-use regulations theretofore adopted and in force and effect within any of the constituent districts shall remain in force and effect throughout the territory for which they were originally adopted, until repealed, amended, supplemented, or superseded by action of the consolidated district.

(Source: P.A. 97-418, eff. 8-16-11.)

(70 ILCS 405/26a.1) (from Ch. 5, par. 131a-1)

Sec. 26a.1. Division of districts. Any 25 or more owners of lands lying within the boundaries of any district organized under this Act which lies in more than one county may file with the Department a petition proposing the division of the district into 2 or more districts along county lines. Such petition shall set forth:

- (1) The name of the district proposed to be divided,
- (2) The proposed names of the districts to be formed from it.
- (3) The proposed boundaries of each of the districts to be formed.

The petition shall be accompanied by an inventory of the property belonging to the district and of its liabilities and a proposed plan for a division of these assets and liabilities between or among the districts proposed to be formed.

Within 30 days after such a petition is filed, the Department shall submit the proposal to the directors of the district proposed to be divided. The directors shall within 30 days thereafter adopt and submit to the Department a resolution approving or disapproving the proposed division.

If the directors disapprove the proposed division, the petition shall be denied. If the directors favor the proposed division, the Department shall give 10 days notice of the holding of a referendum by causing such notice to be published at least once in one or more newspapers having general

circulation within the district and hold a referendum within the district upon the question of the proposed division. Except as otherwise provided in this Act, the proposition shall be submitted in accordance with Section 28-3 of the Election Code. The proposition shall be submitted upon ballots in substantially the following form:

 Place an X in the square opposite the
 proposition for which you wish to vote.

For the division of the
 Soil and Water Conservation District
 into the and Soil and Water
 Conservation Districts with the
 boundaries described below.

Against the division of the
 Soil and Water Conservation District
 into the and Soil and Water
 Conservation Districts with the
 boundaries described below.

(Here insert descriptions of proposed new districts.)

Only owners or occupiers of land, or both, lying within the district are eligible to vote in the referendum. Such vote may be cast in person or by absentee ballot.
 (Source: Laws 1961, p. 530.)

(70 ILCS 405/26a.2) (from Ch. 5, par. 131a-2)

Sec. 26a.2. If a majority of the votes cast in the referendum under Section 26a.1 are cast in favor of the proposed division and if the Department determines that such division is administratively practicable and feasible, the Department shall also determine the boundaries of the proposed new districts, record these determinations and proceed with the division of the district in the manner hereinafter provided. If less than a majority of the votes cast in the referendum are cast in favor of the proposed division or if the Department determines that such division is not administratively practicable and feasible, it shall record such determination and deny the petition.

After the Department has determined that the proposed division is administratively practicable and feasible, it shall consider the proposed division of the district's assets and liabilities. If the plan suggested in the petition appears to be fair and equitable, the Department shall approve it and the assets and liabilities shall be distributed and assumed in accordance therewith. The Department may, however, make whatever modifications in the plan of distribution it deems necessary to make the scheme fair and equitable.

(Source: Laws 1959, p. 2249.)

(70 ILCS 405/26a.3) (from Ch. 5, par. 131a-3)

Sec. 26a.3. After the Department has made and recorded a determination that division of the district is administratively practicable and feasible, the directors of the district shall present to the Secretary of State through the Department an application for the discontinuance of the district and for a certificate of organization for each of the new districts. The application shall be signed and sworn to by the directors and shall set forth the name of the district being divided, the proposed names of the districts being formed and the location of the offices of each of the new districts. The application shall be accompanied by a statement from the Department setting forth

(and such statement need contain no details other than the mere recitals) that a petition for the division of the district was filed, that the proposed division was, by resolution, approved by the governing body of the district, that a referendum was held in the district on the question of the proposed division, and that the result of such referendum showed a majority of the votes cast to be in favor of the proposed division.

The Secretary of State shall receive and file the application and statement and shall record them in an appropriate book of record in his office. When the application and statement had been made, filed and recorded, the division of the district shall be deemed effected and each of the new districts shall constitute a public body, corporate and politic, vested with all the powers of soil and water conservation districts. The Secretary of State shall issue to the signers of the application a separate certificate, under the seal of the State, of the due organization of each of the new districts, and shall record the certificates with the application and statement. A copy of the statement, along with the appropriate certificate of organization, shall be recorded with the recorder of the county in which each new district has its office.
(Source: P.A. 83-358.)

(70 ILCS 405/26a.4) (from Ch. 5, par. 131a-4)

Sec. 26a.4. Upon a division of a district, the directors of the divided district shall continue to hold office and serve as a temporary governing body of each of the new districts until the members of a permanent governing body for each of the new districts have been elected and have qualified. The provisions of Sections 19, 20 and 21 of this Act that relate to the number, and to the nomination, election and organization of members of the governing bodies of soil and water conservation districts shall govern the selection of the members of the permanent governing body for each of the new districts.
(Source: Laws 1961, p. 530.)

(70 ILCS 405/26a.5) (from Ch. 5, par. 131a-5)

Sec. 26a.5. Upon the issuance, by the Secretary of State, of a certificate of organization to the new districts, property and things in action belonging to the original district shall become the property of the new districts in accordance with the plan of distribution approved by the Department. The liabilities of the divided district shall be assumed by the new districts also in accordance with the plan approved by the Department. All contracts theretofore entered into, to which the divided district was a party shall remain in force for the period provided in them. The new district to which they are allotted by the Department shall be substituted for the original district as party to such contracts and shall have the same right and liability to perform, to require performance, to sue and be sued thereon, and to modify or terminate such contracts by mutual consent or otherwise, as original district had. Any indebtedness, claim, demand or right owing or belonging to the original district shall vest in and become due to the new district to which it is allotted, which may demand, sue for, recover and enforce the same in its own name. Upon a division of a district, all land-use regulations theretofore adopted and in force and effect within the district shall remain in force and effect in each of the new districts until repealed, amended, supplemented or superseded by action of the new district.
(Source: Laws 1959, p. 2249.)

(70 ILCS 405/26b) (from Ch. 5, par. 131b)

Sec. 26b. Formation of sub-districts - General tax. Sub-

districts of a Soil and Water Conservation District may be formed in a watershed area as provided in this Act. When duly formed such sub-districts shall have the power to develop and execute plans and programs and projects relating to any phase of flood prevention, flood control, erosion control and control of erosion, floodwater and sediment damages, and to cooperate and enter into agreements with the Secretary of Agriculture of the United States and to carry out, maintain and operate works of improvement pursuant to the "Watershed Protection and Flood Prevention Act" of August 4, 1954, as amended and in addition, such sub-districts shall have the power to levy and collect tax not in excess of .125% of the value of all taxable property within the sub-district, as equalized or assessed by the Department of Revenue, to be used for general corporate purposes of the sub-district.

The Directors of the sub-district shall annually within the first quarter of the fiscal year adopt an appropriation ordinance appropriating such sums of money as are necessary for the cost of operating the sub-district in accordance with the provisions of this Act.

After the adoption of the appropriation ordinance and on or before the second Tuesday in September of each year, the Directors of the sub-district shall ascertain the total amount of the appropriations legally made which are to be provided for from the tax levy for that year. Then, by an ordinance specifying in detail the purposes for which such appropriations have been made and the amounts appropriated for such purposes, the directors of the sub-district shall levy not to exceed the total amount so ascertained upon all the property subject to taxation in the sub-district as the same is assessed and equalized for State and County purposes for the current year. A certified copy of such ordinance shall be filed on or before the first Tuesday in October with the Clerk of each County wherein the sub-district or any part thereof is located.

The Board of Directors of any sub-district shall have power to build, construct, maintain and operate works of improvement, to borrow money and issue bonds and pay for such by special assessment or from the proceeds of the tax hereinbefore authorized, or both, as they by ordinance shall prescribe. The proceedings for borrowing money, issuing bonds, making, levying, collecting and enforcing of any special assessment levied hereunder, the letting of contracts, performance of work and all other matters pertaining to the construction and making of the improvement, shall be the same as nearly as may be as is prescribed in Division 2 of Article 9 of the "Illinois Municipal Code", approved May 29, 1961, as now or hereafter amended; but no special assessments shall be levied upon property situated outside of such sub-district and in no case shall any property be assessed more than it will be benefited by the improvement for which the assessment is levied. Whenever in that article the words "City Council" or the words "Board of Local Improvements" are used, the same shall apply to the board of directors of the respective sub-districts as constituted by this Act; the word "Mayor" or "President" of the "board of local improvements" shall apply to the Chairman of the board of directors of such sub-districts constituted by this Act, and the words applying to the City or its officers in that article shall be held to apply to the respective sub-district created under this act and its officers.

Such sub-districts in the area included within their boundaries shall have and may exercise all of the powers enumerated in Sections 22.01 through 22.09 of this Act, in addition to the powers herein otherwise provided.

(Source: P.A. 81-1509.)

(70 ILCS 405/26b.1) (from Ch. 5, par. 131b-1)

Sec. 26b.1. Petition. When a majority of the land owners in a proposed sub-district who also own a majority of the land in such sub-district desire that a sub-district be organized they shall file a petition with the directors of the district. The area included in the petition need not be contiguous but shall serve compatible purposes. The petition shall contain a legal description of the lands proposed to be included, a brief statement of the reasons for requesting organization of the sub-district and a request that the proposed area be organized as a sub-district. The petition must be signed by a majority of those owning land in the proposed area who also own a majority of such land. Land already in one sub-district cannot be included in another.

(Source: P.A. 77-1757.)

(70 ILCS 405/26b.2) (from Ch. 5, par. 131b-2)

Sec. 26b.2. Hearing. Within 30 days after such a petition has been filed with the directors they shall cause due notice to be given of a hearing upon the practicability and feasibility of creating the proposed sub-district. All interested parties shall have a right to attend such a hearing and to be heard. If it shall appear at the hearing that other lands should be included or that lands included in the petition should be excluded the directors may permit such inclusion or exclusion, provided the petition still meets the requirements of Section 26b.1. No petitioner may withdraw from the petition without the consent of a majority of the other petitioners. The directors shall adjourn the hearing to a day certain, but not sooner than 15 days nor later than 30 days. Further adjournments may be made, but only for good cause.

(Source: Laws 1955, p. 189.)

(70 ILCS 405/26b.3) (from Ch. 5, par. 131b-3)

Sec. 26b.3. Referendum. If the directors determine that the petition meets the requirements of Section 26b.1 and Section 26b.2, they shall, within 30 days after the conclusion of the hearing, give 10 days notice of the holding of a referendum by causing such notice to be published at least once in one or more newspapers having general circulation within the subdistrict. Except as otherwise provided in this Act, the proposition shall be submitted in accordance with Section 28-3 of The Election Code. The proposition shall be submitted upon ballots in substantially the following form:

Place an X in the square opposite the
proposition for which you wish to vote.

For organization of the subdistrict of
the Soil and Water Conservation
District or Districts, described below
including the levy of an annual tax of
not in excess of .125% of the full, cash
value of all taxable property in such
subdistrict.

Against organization of the subdistrict
of the Soil and Water Conservation
District or Districts, described below
including the levy of an annual tax of
not in excess of .125% of the full, cash
value of all taxable property in such
subdistrict.

(Here insert description of proposed subdistrict.)

All legal voters within a proposed subdistrict may vote and if a majority of the votes cast in the referendum are cast in favor of the proposed subdistrict, the directors shall declare that the subdistrict is duly organized, and shall record such fact in their official minutes, together with an appropriate official name or designation for the subdistrict.
(Source: P.A. 84-1308.)

(70 ILCS 405/26b.4) (from Ch. 5, par. 131b-4)

Sec. 26b.4. Certificate of organization - recording. Following entry in the official minutes of the district of the organization of the sub-district, the directors shall certify this fact on a separate form, authentic copies of which shall be recorded with the County Clerk of each county in which any portion of the sub-district lies, and with the State Department of Agriculture.
(Source: Laws 1955, p. 189.)

(70 ILCS 405/26b.5) (from Ch. 5, par. 131b-5)

Sec. 26b.5. Sub-districts in more than one Soil and Water Conservation District. If a proposed sub-district lies in more than one Soil and Water Conservation District, the petition may be presented to the directors of any one of such districts, and the directors of all districts shall act jointly as a board of directors with respect to its formation. Such a sub-district shall be formed in the same manner and shall have the same powers and duties as a sub-district formed in one Soil and Water Conservation District.
(Source: Laws 1963, p. 3492.)

(70 ILCS 405/26b.6) (from Ch. 5, par. 131b-6)

Sec. 26b.6. Governing body of sub-district.) The governing body of any sub-district shall consist of 5 sub-district directors, of legal voting age, who shall be owners of land within the sub-district or resident occupiers of land within the sub-district, in which they serve. Nominating petitions shall be filed and the election of such sub-district directors shall be conducted and held in the manner provided in Section 20 of this Act with respect to the election of directors. The 5 nominees receiving the highest number of votes shall be declared elected. After the first such election, the sub-district directors shall be divided into 3 classes, each consisting as nearly as may be of one-third of the entire number of sub-district directors and one class of sub-district directors shall be elected each year. The term of office of the members of the first sub-district board shall be determined by lot following their election and 2 shall hold office for 3 years, 2 for 2 years and one for one year. Their successors shall hold office for 3 years and shall be nominated and elected, in the manner provided in Section 20 of this Act, in the years in which the respective terms of office of the members of the sub-district board expire.

The governing body of the sub-district shall designate from its membership, a chairman, vice chairman and secretary-treasurer, to serve for a term of one year.

At the close of the fiscal year of each sub-district, a report of the operations of the sub-district for the year, including a report of receipts and expenditures, shall be filed with the board of directors of each Soil and Water Conservation District within which the sub-district or any part thereof lies.

Each sub-district director shall receive for his services while actually engaged in the business of the sub-district, a sum of not to exceed \$20 per day, to be fixed by ordinance. No

sub-district director may receive compensation under this subsection on any day for which he receives compensation under Section 21 of this Act.

(Source: P.A. 79-1003.)

(70 ILCS 405/26b.7) (from Ch. 5, par. 131b-7)

Sec. 26b.7. Addition of territory to a sub-district.

(a) Any one or more owners of land may petition the governing body of the sub-district to have their lands added to the sub-district. The petition shall as nearly as practicable follow the form prescribed in Section 26b.1, except that the provision respecting a majority of the owners shall not apply. A hearing shall be held as nearly as practicable in accordance with the provisions of Section 26b.2. Following the hearing the governing body of the sub-district shall determine whether or not the lands included in the petition, or any portion of them, shall be included in the sub-district. If it is determined that such lands should be added, this fact shall be entered in the official minutes of the sub-district and certified copies of such entry recorded with the county clerk of each county in which any portion of such lands lie, and with the State Department of Agriculture. Thereafter such lands shall be a part of the sub-district.

(b) When a petition for the addition of territory includes any lands the owners of which do not sign the petition, the petition must meet as nearly as practicable the provisions of Section 26b.1, including the requirement that it be signed by a majority of the landowners in the area proposed to be added. Proceedings shall then be had, as nearly as practicable, as prescribed in sections 26b.2, 26b.3 and 26b.4. Petitions under this subsection may include lands lying in more than one county. (Source: Laws 1955, p. 189.)

(70 ILCS 405/26b.8) (from Ch. 5, par. 131b-8)

Sec. 26b.8. Detachment of lands from a sub-district. The owner or owners of lands which have not been, are not and cannot be benefited by their inclusion in the sub-district may petition the governing body of the sub-district to have such land detached. The petition shall describe such lands and pray the governing body to hear the causes why such lands should be detached. Within 30 days after the receipt of such petition the governing body shall conduct a hearing, having first notified the petitioners by mail at least ten days in advance and by causing such notice to be published at least once in one or more newspapers having general circulation within the sub-district. Following the hearing the governing body shall determine whether or not such lands or any portion of them should be detached. If it is determined that lands shall be detached this fact shall be entered in the official minutes of the sub-district, and certified copies of such entry recorded with the county clerk of each county in which any portion of such detached lands lie, and with the State Department of Agriculture. (Source: Laws 1955, p. 189.)

(70 ILCS 405/26b.9) (from Ch. 5, par. 131b-9)

Sec. 26b.9. Discontinuance of sub-district. A sub-district may be discontinued upon petition to the governing body. The petition shall as nearly as practicable meet the conditions specified in section 26b.1. Proceedings shall then be had as nearly as practicable in accord with the provisions of sections 26b.2, 26b.3 and 26b.4. A petition for discontinuance may not be submitted within three years of the date of organization of a sub-district.

(Source: Laws 1955, p. 189.)

(70 ILCS 405/27) (from Ch. 5, par. 132)

Sec. 27. State agencies to cooperate.

Agencies of this State which shall have jurisdiction over, or be charged with the administration of, any State-owned lands, and of any county, or other governmental subdivision of the State, which shall have jurisdiction over, or be charged with the administration of, any county-owned or other publicly owned lands, lying within the boundaries of any district organized hereunder, shall cooperate to the fullest extent practicable with the directors of such districts in the effectuation of programs and operations undertaken by the directors under the provisions of this act.

(Source: Laws 1937, p. 10.)

(70 ILCS 405/28) (from Ch. 5, par. 133)

Sec. 28. Discontinuance of district.

At any time after 3 years after the organization of a district, under the provisions of this Act, any 25 or more owners of land within the limits of such district who own at least 10% of the land, by area, within such district may file a petition with the Department praying that the operations of the district be terminated and the existence of the district discontinued. The Department may conduct such public meetings and public hearings upon such petition as may be necessary to assist it in the consideration thereof.

Within 60 days after such a petition has been received by the Department it shall give due notice of the holding of a referendum, and shall supervise such referendum, and issue appropriate regulations governing the conduct thereof, the question to be submitted by ballots upon which the words "For terminating the existence of the(name of the soil and water conservation district to be here inserted)" and "Against terminating the existence of the(name of the soil and water conservation district to be here inserted)" shall appear with a square before each proposition and a direction to insert an X mark in the square before one or the other of said propositions. Only owners of land lying within the boundaries of the district shall be eligible to vote in such referendum and each shall have one vote. Owners of land may vote in person or by absentee ballot. No informalities in the conduct of such referendum or in any matters relating thereto shall invalidate said referendum or the result thereof if notice thereof shall have been given substantially as herein provided and said referendum shall have been fairly conducted.

(Source: Laws 1961, p. 530.)

(70 ILCS 405/29) (from Ch. 5, par. 134)

Sec. 29. Determination for discontinuance.

The Department shall publish the result of such referendum and shall thereafter consider and determine whether the continued operation of the district is administratively practicable and feasible. If at least a majority of the owners of land within the district shall vote in the referendum on the question of discontinuance, and if a majority of the votes cast in such referendum were in favor of discontinuance or if a majority of the votes cast in such referendum were for continuance or if the Department determines that the attitude of the owners of lands lying within the district, the approximate wealth and income of the land occupiers of the district, the probable expense of carrying on erosion control operations within the district and other economic and social factors as may be relevant are such that the continued operation of the district is not otherwise practicable and feasible, the

Department shall record such determination and shall certify such determination to the directors of the district.

(Source: Laws 1951, p. 428.)

(70 ILCS 405/30) (from Ch. 5, par. 135)

Sec. 30. Winding up district affairs. Upon receipt from the Department of a certification that the Department has determined that the continued operation of the district is not administratively practicable and feasible, the directors shall forthwith proceed to terminate the affairs of the district. The directors shall dispose of all property belonging to the district at public auction and, after settlement of all legal obligations against the district, shall pay over the proceeds of such sale into the State treasury. The directors shall thereupon file an application, duly verified, with the Secretary of State for the discontinuance of such district, and shall transmit with such application the certificate of the Department setting forth the determination of the Department that the continued operation of such district is not administratively practicable and feasible and that all debts of the district have been paid. The application shall recite that the property of the district has been disposed of and the proceeds paid over as in this section provided, and shall set forth a full accounting of such properties and proceeds of the sale. The Secretary of State shall issue to the directors a certificate of dissolution and shall record such certificate in an appropriate book of record in his office. A copy of such certificate of dissolution issued by the Secretary of State shall be recorded with the recorder of the county in which the office of such district is located.

Upon issuance of a certificate of dissolution under the provisions of this section, all ordinances and regulations theretofore adopted and in force within such districts shall be of no further force and effect. All contracts theretofore entered into, to which the district is a party, shall remain in force and effect for the period provided in such contracts. The Department shall be substituted for the district as party to such contracts. The Department shall be entitled to all benefits and subject to all liabilities under such contracts and shall have the same right and liability to perform, to require performance, to sue and be sued thereon, and to modify or terminate such contracts by mutual consent or otherwise, as the directors of the district would have had. Such dissolution shall not affect the lien of any judgment entered under the provisions of Section 25 of this Act, nor the pendency of any action instituted under the provisions of such section, and the Department shall succeed to all the rights and obligations of the district as to such liens and actions.

The Department shall not be required to entertain petitions for the discontinuance of any district nor conduct referenda upon such petitions nor make determinations pursuant to such petitions in accordance with the provisions of this Act, more often than once in 3 years.

(Source: P.A. 83-358.)

(70 ILCS 405/31) (from Ch. 5, par. 136)

Sec. 31. Due notice.

Whenever notice is required to be given under the provisions of this Act, a notice published at least twice, with an interval of at least seven (7) days between the two (2) publication dates, in one or two newspapers of general circulation published within the area; or, if any such newspaper is not published within such area, then by publication in at least one newspaper published outside the area but having general circulation in such area and by posting copies of such notice in at least three

(3) conspicuous places within the area, such posting to include posting at public places where it may be customary to post notices generally, shall be deemed "due notice."
(Source: Laws 1937, p. 10.)

(70 ILCS 405/32) (from Ch. 5, par. 137)

Sec. 32. Absentee voting.

All absentee voting shall be conducted in accordance with the applicable provisions of Article 19 of the Election Code which are not inconsistent with the provisions of this Act, except that the Department shall be substituted for the county clerk in instances referring to application, mailing or delivery, folding, depositing and receipt of ballots.
(Source: Laws 1955, p. 189.)

(70 ILCS 405/33) (from Ch. 5, par. 138)

Sec. 33. Separability clause.

If any provision of this Act, or the application of any provision of any person or circumstance, is held invalid, the remainder of the Act, and the application of such provision to other persons or circumstances, shall not be affected thereby.
(Source: Laws 1937, p. 10.)

(70 ILCS 405/34) (from Ch. 5, par. 138.1)

Sec. 34. All books, papers, records and property under the custody or control of the State Soil Conservation Districts Board at the time this amendatory Act of 1951 takes effect shall be transferred to the Department.

This amendatory Act shall not affect any act done by said Board, any action pending by or against said Board, nor any function of said Board in progress at the time this amendatory Act becomes effective, but in all such instances the Department shall be substituted for said Board.
(Source: Laws 1951, p. 428.)

(70 ILCS 405/35) (from Ch. 5, par. 138.2)

Sec. 35. All districts created and in being under this Act at the time this amendatory Act of 1961 takes effect shall be known as Soil and Water Conservation Districts. Any action or proceeding had or commenced at such time may be continued without amendment of such action or proceeding, and any contract, indebtedness, claim, demand, right or regulation shall not be affected by this amendatory Act.
(Source: Laws 1961, p. 530.)

(70 ILCS 405/36) (from Ch. 5, par. 138.3)

Sec. 36. Guidelines. The Department shall, pursuant to subsection (8) of Section 6 of this Act, adopt and revise guidelines for erosion and sediment control. Before adopting or revising any guidelines, the Department must hold public hearings with respect thereto. At least 30 days notice of the hearing must be given by the Department in such manner as the Department considers as best suited to bring the hearing to the attention of soil and water conservation districts and of all other persons interested in the guidelines or proposed revisions. Like notice must be given by the Department to any person who has filed a request for notice of such hearings. Copies of the proposed guidelines or revisions must be made available to all those receiving notice of the hearing and to any other person, upon request.

In developing its guidelines for implementing and administering the comprehensive State erosion and sediment control program, the Department shall:

(a) base those guidelines on available relevant physical and developmental information concerning the watersheds and drainage basins of the State, including but not limited to, data relating to land use, soils, hydrology, geology, size of land area being disturbed, proximate water bodies and their characteristics, transportation, and public facilities and services;

(b) include any survey of lands and waters as the Department considers appropriate, or as is required by any applicable law, to identify areas with erosion and sediment problems; and

(c) include conservation guidelines for various types of soils and land uses, which guidelines shall include criteria, techniques and methods for the control of erosion and sediment resulting from land disturbing activities.

The program and guidelines shall be made available for public inspection at the office of the Department and shall be provided to any person upon request.

(Source: P.A. 80-159.)

(70 ILCS 405/37) (from Ch. 5, par. 138.4)

Sec. 37. Coastal Zone Management - financing.

The State erosion and sediment control program may not be adopted unless it includes a means of adequately financing the increased district and Department work load to be incurred by the administration and implementation of the plan.

(Source: P.A. 83-172.)

(70 ILCS 405/38) (from Ch. 5, par. 138.5)

Sec. 38. District erosion and sediment control program. Each district in the State shall, within 2 years after the adoption of the State program and guidelines by the Department, develop and adopt a soil erosion and sediment control program and standards that are technically feasible, economically reasonable and consistent with the State program and guidelines developed by the Department.

To assist in developing its program and standards, each district shall name an advisory committee of not less than 8 members who are representative of a wide variety of interests, including but not limited to, agriculture, business, commerce, financing, local government, housing, industry and recreation. The district shall advise and consult with its advisory committee in the development of its program and standards.

Upon the request of a district, the Department shall assist in the preparation of the district's program and standards. Upon its adoption, the district shall submit its program and standards to the Department for review and approval. If a district fails to adopt a program and standards and to submit them to the Department by the time specified in this Section, the Department shall, after such hearings or consultations with the various local interests in the district as it considers appropriate, develop an appropriate program and standards to be carried out by the district.

To carry out its program, a district shall establish conservation standards for various types of soils and land uses. The program shall include criteria, guidelines, techniques and methods for the control of erosion and sediment resulting from land disturbing activities and shall be consistent with the State program and guidelines. Such conservation program standards may be revised from time to time as necessary. Before adopting or revising conservation standards, the district shall, after giving due notice as provided for in Section 31 of this Act, conduct a public hearing on the proposed conservation standards or proposed changes in existing standards.

The program and conservation standards shall be made available for public inspection at the principal office of the

district and shall be provided to any person upon request.
(Source: P.A. 80-159.)

(70 ILCS 405/39) (from Ch. 5, par. 138.6)

Sec. 39. Compliance with standards - cost sharing. Any person engaging in any land disturbing activity shall be encouraged to comply with the standards for erosion and sediment control established by the district, except those land disturbing activities relating to surface mining permitted under Chapter 4 of the Illinois Pollution Control Board regulations. When proposed land disturbing activities are to be performed on State land or by or on behalf of a State agency, the person engaging in the activities may elect to comply with standards established by the Department. If land disturbing activities involve land in more than one district, the person engaging in the activities may elect to comply with standards established by each district or standards established by the Department. He shall notify, in writing, each district involved and the Department concerning the standards he elects to comply with.

Upon request, the district, or the Department, as the case may be, shall make available to any person engaged in a land disturbing activity, adequate information and technical assistance to enable that person to comply with the standards of the district or the Department.

The program adopted by each district shall provide for the sharing by the district of part of the cost of enduring erosion and sediment control devices, structures and practices and shall specify the cost-sharing ratios which shall apply to various types of enduring erosion and sediment control devices, structures and practices in that district. The program adopted by the Department shall, in the same manner, provide for cost-sharing by the Department with respect to enduring erosion and sediment control devices, structures and practices when required in relation to a land disturbing activity involving land in more than one district.

When a land disturbing activity does not comply with district or Department standards, the district or the Department, as the case may be, shall suggest such modifications, terms and conditions as will enable the person engaged in the land disturbing activity to comply with the standards.

(Source: P.A. 80-159.)

(70 ILCS 405/40) (from Ch. 5, par. 138.7)

Sec. 40. Lands not within jurisdiction of district. All lands presently lying within the boundaries of a soil and water conservation district shall remain under the jurisdiction of a soil and water conservation district.

For a period not to exceed 24 months after the effective date of this amendatory Act of 1977, the governing body of any incorporated or unincorporated city or village shall have the authority by resolution to the district and Department to remove all or a part of its land lying within its boundaries from a soil and water conservation district.

(Source: P.A. 80-159.)

(70 ILCS 405/41) (from Ch. 5, par. 138.8)

Sec. 41. Complaints. All complaints for sediment and erosion damages shall be filed with the soil and water conservation districts or the Department if it has jurisdiction. All complaints shall be filed on forms provided by the soil and water conservation districts or the Department.

Upon receipt of a properly filed complaint, the district, or the Department if it has jurisdiction, shall notify the

landowner and occupier and seek consultation with such person or persons to determine whether the standards of this Act are being observed. Notice of the determination by the district board of directors shall be given to the owner and occupier alleged to be in violation of the standards and voluntary compliance with the standards shall be sought.

If a schedule for compliance has not been entered into within one year of Notice of Violation, then the district board shall hold a formal hearing on the Notice of Violation to determine the reason for non-compliance. The district board shall publish and make available its findings to the Department. The Department shall review the complaint and the district board's findings and may, if in its opinion a violation exists, hold a formal hearing to determine why standards are not being observed. The Department shall publish and make available its findings.

(Source: P.A. 80-159.)

(70 ILCS 405/42) (from Ch. 5, par. 138.9)

Sec. 42. Review. All final administrative decisions of any district or of the Department under this Act are subject to judicial review under the Administrative Review Law, and the rules adopted thereunder.

(Source: P.A. 82-783.)

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APPENDIX C-III:

ILLINOIS STATUTE 70 ILCS 1707:

REGIONAL PLANNING ACT



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SPECIAL DISTRICTS

(70 ILCS 1707/) Regional Planning Act.

(70 ILCS 1707/1)

Sec. 1. Short title. This Act may be cited as the Regional Planning Act.

(Source: P.A. 94-510, eff. 8-9-05.)

(70 ILCS 1707/5)

Sec. 5. Purpose. The General Assembly declares and determines that a streamlined, consolidated regional planning agency is necessary in order to plan for the most effective public and private investments in the northeastern Illinois region and to better integrate plans for land use and transportation. The purpose of this Act is to define and describe the powers and responsibilities of the Chicago Metropolitan Agency for Planning, a unit of government whose purpose it is to effectively address the development and transportation challenges in the northeastern Illinois region.

(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/10)

Sec. 10. Definitions.

"Board" means the Board of the Chicago Metropolitan Agency for Planning.

"CMAP" means the Chicago Metropolitan Agency for Planning.

"Chief elected county official" means the Board Chairman in DuPage, Kane, Kendall, Lake, and McHenry Counties and the County Executive in Will County.

"Fiscal year" means the fiscal year of the State.

"IDOT" means the Illinois Department of Transportation.

"MPO" means the metropolitan planning organization designated under 23 U.S.C. 134.

"Members" means the members of the Board.

"Person" means an individual, partnership, firm, public or private corporation, State agency, transportation agency, or unit of local government.

"Policy Committee" means the decision-making body of the MPO.

"Region" or "northeastern Illinois region" means Cook,

DuPage, Kane, Kendall, Lake, McHenry, and Will Counties.

"State agency" means "agency" as defined in Section 1-20 of the Illinois Administrative Procedure Act.

"Transportation agency" means the Regional Transportation Authority and its Service Boards; the Illinois Toll Highway Authority; the Illinois Department of Transportation; and the transportation functions of units of local government.

"Unit of local government" means a unit of local government, as defined in Section 1 of Article VII of the Illinois Constitution, that is located within the jurisdiction and area of operation of the Board.

"USDOT" means the United States Department of Transportation.

(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/15)

Sec. 15. Chicago Metropolitan Agency for Planning; structure.

(a) The Chicago Metropolitan Agency for Planning is established as a political subdivision, body politic, and municipal corporation. The Board shall be responsible for developing and adopting a funding and implementation strategy for an integrated land use and transportation planning process for the northeastern Illinois region.

(b) (Blank.)

(c) The Board shall consist of 15 voting members as follows:

(1) One member from DuPage County appointed cooperatively by the mayors of DuPage County and the chief elected county official of DuPage County.

(2) One member representing both Kane and Kendall Counties appointed cooperatively by the mayors of Kane County and Kendall County and the chief elected county officials of Kane County and Kendall County.

(3) One member from Lake County appointed cooperatively by the mayors of Lake County and the chief elected county official of Lake County.

(4) One member from McHenry County appointed cooperatively by the mayors of McHenry County and the chief elected county official of McHenry County.

(5) One member from Will County appointed cooperatively by the mayors of Will County and the chief elected county official of Will County.

(6) Five members from the City of Chicago appointed by the Mayor of the City of Chicago.

(7) One member from that portion of Cook County outside of the City of Chicago appointed by the President of the Cook County Board of Commissioners.

(8) Four members from that portion of Cook County outside of the City of Chicago appointed, with the consent of the President of the Cook County Board of Commissioners, as follows:

(i) One by the mayors representing those communities in Cook County that are outside of the City of Chicago and north of Devon Avenue.

(ii) One by the mayors representing those communities in Cook County that are outside of the City of Chicago, south of Devon Avenue, and north of Interstate 55, and in addition the Village of Summit.

(iii) One by the mayors representing those communities in Cook County that are outside of the City of Chicago, south of Interstate 55, and west of Interstate 57, excluding the communities of Summit,

Dixmoor, Posen, Robbins, Midlothian, Oak Forest, and Tinley Park.

(iv) One by the mayors representing those communities in Cook County that are outside of the City of Chicago and east of Interstate 57, and, in addition, the communities of Dixmoor, Posen, Robbins, Midlothian, Oak Forest, and Tinley Park.

The terms of the members initially appointed to the Board shall begin within 60 days after this Act takes effect.

(d) The CMAP Board may appoint non-voting members of the Board.

(e) (1) The CMAP Board shall create a Wastewater Committee with the responsibility of recommending directly to the Illinois Environmental Protection Agency (IEPA) the appropriateness of proposed requests for modifications and amendments to the established boundaries of wastewater facility planning areas, requests for the creation of new wastewater facility planning areas, requests for the elimination of existing wastewater facility planning areas, requests for new or expanded sewage treatment facilities, or any other amendments to the State of Illinois Water Quality Management Plan required under the federal Clean Water Act. The Chairmanship of the Wastewater Committee shall rotate every 24 months between the individuals described in subsections (e)(2)(iv) and (e)(2)(v) with the individual identified in subsection (e)(2)(v) serving as chairman for the initial 24-month period commencing on the effective date of this amendatory Act of the 95th General Assembly.

(2) The Wastewater Committee shall consist of 5 members of the CMAP Board designated as follows:

(i) One member of the Wastewater Committee shall be one of the CMAP Board members designated in subsection (c)(1) through (c)(5).

(ii) One member of the Wastewater Committee shall be one of the CMAP Board members designated in subsection (c)(6).

(iii) One member of the Wastewater Committee shall be one of the CMAP Board members designated in subsection (c)(7) or (c)(8).

(iv) One member of the Wastewater Committee shall be a person appointed by the President of the Metropolitan Water Reclamation District of Greater Chicago (and who does not need to serve on the CMAP Board).

(v) One member of the Wastewater Committee shall be a person appointed by the President of the largest statewide association of wastewater agencies (and who does not need to serve on the CMAP Board).

(3) Terms of the members of the Wastewater Committee shall be consistent with those identified in Section 25, except that the term of the member of the Wastewater Committee appointed by the President of the Metropolitan Water Reclamation District of Greater Chicago shall expire on July 1, 2009, and the term of the member of the Wastewater Committee appointed by the President of the largest statewide association of wastewater agencies shall expire on July 1, 2009.

(f) With the exception of matters considered and recommended by the Wastewater Committee directly to the IEPA, which shall require only a concurrence of a simple majority of the Wastewater Committee members in office, concurrence of four-fifths of the Board members in office is necessary for the Board to take any action.

(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/20)

Sec. 20. Duties. In addition to those duties enumerated elsewhere in this Act, the Board shall:

- (a) Hire an executive director to act as the chief administrative officer and to direct and coordinate all staff work.
 - (b) Provide a policy framework under which all regional plans are developed.
 - (c) Coordinate regional transportation and land use planning.
 - (d) Identify and promote regional priorities.
- (Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/25)

(Text of Section before amendment by P.A. 100-479)

Sec. 25. Operations.

(a) Each appointing authority shall give notice of its Board appointments to each other appointing authority, to the Board, and to the Secretary of State. Within 30 days after his or her appointment and before entering upon the duties of the office, each Board member shall take and subscribe to the constitutional oath of office and file it with the Secretary of State. Board members shall hold office for a term of 4 years or until successors are appointed and qualified. The terms of the initial Board members shall expire as follows:

(1) The terms of the member from DuPage County and the member representing both Kane and Kendall Counties shall expire on July 1, 2007.

(2) The terms of those members from Lake, McHenry, and Will Counties shall expire on July 1, 2009.

(3) As designated at the time of appointment, the terms of 2 members from the City of Chicago shall expire on July 1, 2007 and the terms of 3 members from the City of Chicago shall expire on July 1, 2009.

(4) The term of the member appointed by the President of the Cook County Board of Commissioners shall expire on July 1, 2007.

(5) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayors representing those communities in Cook County that are outside of the City of Chicago and north of Devon Avenue shall expire on July 1, 2007.

(6) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayors representing those communities in Cook County that are outside of the City of Chicago, south of Interstate 55, and west of Interstate 57, excluding the communities of Summit, Dixmoor, Posen, Robbins, Midlothian, Oak Forest, and Tinley Park, shall expire on July 1, 2007.

(7) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayor representing those communities in Cook County that are outside of the City of Chicago, south of Devon Avenue, and north of Interstate 55, and, in addition, the Village of Summit, shall expire on July 1, 2009.

(8) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayors representing those communities in Cook County that are outside of the City of Chicago and east of Interstate 57, and, in addition, the communities of

Dixmoor, Posen, Robbins, Midlothian, Oak Forest, and Tinley Park, shall expire on July 1, 2009.

(b) If a vacancy occurs, the appropriate appointing authority shall fill the vacancy by an appointment for the unexpired term. Board members shall receive no compensation, but shall be reimbursed for expenses incurred in the performance of their duties.

(c) The Board shall be so appointed as to represent the City of Chicago, that part of Cook County outside the City of Chicago, and that part of the metropolitan region outside of Cook County on a one man one vote basis. Within 6 months after the release of each certified federal decennial census, the Board shall review its composition and, if a change is necessary in order to comply with the representation requirements of this subsection (c), shall recommend the necessary revision for approval by the General Assembly.

(d) Regular meetings of the Board shall be held at least once in each calendar quarter. The time and place of Board meetings shall be fixed by resolution of the Board. Special meetings of the Board may be called by the chairman or a majority of the Board members. A written notice of the time and place of any special meeting shall be provided to all Board members at least 3 days prior to the date fixed for the meeting, except that if the time and place of a special meeting is fixed at a regular meeting at which all Board members are present, no such written notice is required. A majority of the Board members in office constitutes a quorum for the purpose of convening a meeting of the Board.

(e) The meetings of the Board shall be held in compliance with the Open Meetings Act. The Board shall maintain records in accordance with the provisions of the State Records Act.

(f) At its initial meeting and its first regular meeting after July 1 of each year thereafter, the Board from its membership shall appoint a chairman and may appoint vice chairmen and shall provide the term and duties of those officers pursuant to its bylaws. Before entering upon duties of office, the chairman shall execute a bond with corporate sureties to be approved by the Board and shall file it with the principal office of the Board. The bond shall be payable to the Board in whatever penal sum may be directed and shall be conditioned upon the faithful performance of the duties of office and the payment of all money received by the chairman according to law and the orders of the Board. The Board may appoint, from time to time, an executive committee and standing and ad hoc committees to assist in carrying out its responsibilities.

(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(Text of Section after amendment by P.A. 100-479)

Sec. 25. Operations.

(a) Each appointing authority shall give notice of its Board appointments to each other appointing authority, to the Board, and to the Secretary of State. Within 30 days after his or her appointment and before entering upon the duties of the office, each Board member shall take and subscribe to the constitutional oath of office and file it with the Secretary of State. Board members shall hold office for a term of 4 years or until successors are appointed and qualified. The terms of the initial Board members shall expire as follows:

(1) The terms of the member from DuPage County and the member representing both Kane and Kendall Counties shall expire on July 1, 2007.

(2) The terms of those members from Lake, McHenry, and Will Counties shall expire on July 1, 2009.

(3) As designated at the time of appointment, the

terms of 2 members from the City of Chicago shall expire on July 1, 2007 and the terms of 3 members from the City of Chicago shall expire on July 1, 2009.

(4) The term of the member appointed by the President of the Cook County Board of Commissioners shall expire on July 1, 2007.

(5) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayors representing those communities in Cook County that are outside of the City of Chicago and north of Devon Avenue shall expire on July 1, 2007.

(6) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayors representing those communities in Cook County that are outside of the City of Chicago, south of Interstate 55, and west of Interstate 57, excluding the communities of Summit, Dixmoor, Posen, Robbins, Midlothian, Oak Forest, and Tinley Park, shall expire on July 1, 2007.

(7) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayor representing those communities in Cook County that are outside of the City of Chicago, south of Devon Avenue, and north of Interstate 55, and, in addition, the Village of Summit, shall expire on July 1, 2009.

(8) The terms of those members appointed, with the consent of the President of the Cook County Board of Commissioners, by the mayors representing those communities in Cook County that are outside of the City of Chicago and east of Interstate 57, and, in addition, the communities of Dixmoor, Posen, Robbins, Midlothian, Oak Forest, and Tinley Park, shall expire on July 1, 2009.

(b) If a vacancy occurs, the appropriate appointing authority shall fill the vacancy by an appointment for the unexpired term. Board members shall receive no compensation, but shall be reimbursed for expenses incurred in the performance of their duties.

(c) The Board shall be so appointed as to represent the City of Chicago, that part of Cook County outside the City of Chicago, and that part of the metropolitan region outside of Cook County on a one man one vote basis. Within 6 months after the release of each certified federal decennial census, the Board shall review its composition and, if a change is necessary in order to comply with the representation requirements of this subsection (c), shall recommend the necessary revision for approval by the General Assembly.

(d) Regular meetings of the Board shall be held at least once in each calendar quarter. The time and place of Board meetings shall be fixed by resolution of the Board. Special meetings of the Board may be called by the chairman or a majority of the Board members. A written notice of the time and place of any special meeting shall be provided to all Board members at least 3 days prior to the date fixed for the meeting, except that if the time and place of a special meeting is fixed at a regular meeting at which all Board members are present, no such written notice is required. A majority of the Board members in office constitutes a quorum for the purpose of convening a meeting of the Board.

(e) The meetings of the Board shall be held in compliance with the Open Meetings Act. The Board shall maintain records in accordance with the provisions of the State Records Act.

(f) At its initial meeting and its first regular meeting after July 1 of each year thereafter, the Board from its

membership shall appoint a chairman and may appoint vice chairmen and shall provide the term and duties of those officers pursuant to its bylaws. Before entering upon duties of office, the chairman shall execute a bond with corporate sureties to be approved by the Board and shall file it with the principal office of the Board. The bond shall be payable to the Board in whatever penal sum may be directed and shall be conditioned upon the faithful performance of the duties of office and the payment of all money received by the chairman according to law and the orders of the Board. The Board may appoint, from time to time, an executive committee and standing and ad hoc committees to assist in carrying out its responsibilities.

(g) Open meetings of the Board shall be broadcast to the public and maintained in real-time on the Board's website using a high-speed Internet connection. Recordings of each meeting broadcast shall be posted to the Board's website within a reasonable time after the meeting and shall be maintained as public records to the extent practicable, as determined by the Board. Compliance with the provisions of this amendatory Act of the 100th General Assembly does not relieve the Board of its obligations under the Open Meetings Act.

(Source: P.A. 100-479, eff. 1-1-18.)

(70 ILCS 1707/30)

Sec. 30. Jurisdiction and area of operation. The jurisdiction and area of operation of the Board includes Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will Counties. The Board may enter into agreements with units of local government located outside of, but contiguous to, its jurisdiction and area of operation in order to include those areas in plans for the region. For activities related to the MPO, the jurisdiction of the MPO shall be that area defined by federal requirements.

(Source: P.A. 94-510, eff. 8-9-05.)

(70 ILCS 1707/35)

Sec. 35. General powers and authority. In addition to any other rights, powers, duties, or obligations granted to the Board under this Act or specifically granted to the Board under any other law, the Board has all of the following general powers and authority:

- (1) To sue and be sued in its official name.
- (2) To enter into agreements with units of local government, transportation agencies, State agencies, federal agencies, and persons in order to implement any of the provisions of this Act, including agreements for specialized planning services.
- (3) To accept and expend, for purposes consistent with the purposes of this Act, funds and moneys from any source, including gifts, bequests, grants, appropriations, loans, or contributions made by any person, unit of local government, the State, or the federal government.
- (4) To enter into contracts or other transactions with any unit of local government, transportation agency, State agency, public or private organization, or any other source in furtherance of the purpose of this Act, and to take any necessary action in order to avail itself of such aid and cooperation.
- (5) To purchase, receive, take by grant, gift, devise, or bequest, lease, or otherwise acquire, own, hold, improve, employ, use, and otherwise deal in and with real or personal property, or any interest therein, wherever situated.
- (6) To adopt, alter, or repeal its own bylaws and any rules that the Board deems necessary in governing the

exercise of its authority and the performance of its duties under this Act.

(7) To make purchases under this Act in compliance with the Local Government Prompt Payment Act.

(8) To adopt an annual operating budget and work program for each fiscal year and make appropriations in accordance with the Illinois Municipal Budget Law and to have the power to expend such budgeted moneys.

(9) To exercise any other implied powers that are necessary or convenient for the Board to accomplish its purposes and that are not inconsistent with its expressed powers.

(10) To cooperate with any planning agency of a state contiguous to the region in order to integrate and coordinate plans for development of urban areas in that state with the regional comprehensive plan developed under this Act.

(Source: P.A. 94-510, eff. 8-9-05.)

(70 ILCS 1707/40)

Sec. 40. Public participation; public hearing; Citizens' Advisory Committee.

(a) The Board shall develop, implement, and maintain a process of public participation designed to: (i) inform and involve the public in all of the public activities and decisions of the Board; (ii) provide access to public records and information maintained by the Board; and (iii) provide mechanisms for public suggestions. The Board shall serve as the single point of contact and direct all public involvement activities.

(b) In connection with its review and development of any regional plans and prior to any plan's approval, the Board must hold a public hearing. Notice of the time, date, and place set for the hearing must be published in a newspaper having a general circulation within the Chicago region at least 30 days prior to the date of the hearing. The notice must contain a short explanation of the purpose of the hearing. The hearing may be continued, as deemed necessary by the Board.

(c) The Board shall create a standing Citizens' Advisory Committee to provide continuous and balanced public representation in the development of regional plans and policies.

(Source: P.A. 94-510, eff. 8-9-05.)

(70 ILCS 1707/44)

Sec. 44. Regional Data and Information Program. CMAP shall be the authoritative source for regional data collection, exchange, dissemination, analysis, evaluation, forecasting and modeling. With the involvement of state, regional, and local governments and agencies, CMAP shall create and maintain a timely, ongoing, and coordinated data and information sharing program that will provide the best available data on the region. This program shall include a publicly accessible mechanism for data access and distribution. CMAP's official forecasts shall be the foundation for all planning in the region.

(Source: P.A. 95-677, eff. 10-11-07.)

(70 ILCS 1707/45)

Sec. 45. Regional comprehensive plan. At intervals not to exceed every 5 years, or as needed to be consistent with federal law, the Board shall develop a regional comprehensive plan that integrates land use and transportation. The regional comprehensive plan and any modifications to it shall be developed cooperatively by the Board, with the involvement of

citizens, units of local government, business and labor organizations, environmental organizations, transportation and planning agencies, State agencies, private and civic organizations, public and private providers of transportation, and land preservation agencies. Any elements of the regional comprehensive plan or modifications that relate to transportation shall be developed cooperatively with the Policy Committee. Units of local government shall continue to maintain control over land use and zoning decisions.

Scope of Regional Comprehensive Plan. The Regional Comprehensive Plan shall present the goals, policies, guidelines, and recommendations to guide the physical development of the Region. It shall include, but shall not be limited to:

(a) Official forecasts for overall growth and change and an evaluation of alternative scenarios for the future of the Region including alternatives for public and private investments in housing, economic development, preservation of natural resources, transportation, water supply, flood control, sewers, and other physical infrastructure. It shall present a preferred plan that makes optimum use of public and private resources to achieve the goals of the Plan.

(b) Land use and transportation policies that reflect the relationship of transportation to land use, economic development, the environment, air quality, and energy consumption; foster the efficient movement of people and goods; coordinate modes of transportation; coordinate planning among federal agencies, state agencies, transportation agencies, and local governments; and address the safety and equity of transportation services across the Region.

(c) A plan for a coordinated and integrated transportation system for the region consisting of a multimodal network of facilities and services to be developed over a 20-year period to support efficient movement of people and goods. The transportation system plan shall include statements of minimum levels of service that describe the performance for each mode in order to meet the goals and policies of the Plan.

(d) A listing of proposed public investment priorities in transportation and other public facilities and utilities of regional significance. The list shall include a project description, an identification of the responsible agency, the timeframe that the facility or utility is proposed for construction or installation, an estimate of costs, and sources of public and private revenue for covering such costs.

(e) The criteria and procedures proposed for evaluating and ranking projects in the Plan and for the allocation of transportation funds.

(f) Measures to best coordinate programs of local governments, transportation agencies, and State agencies to promote the goals and policies of the Regional Comprehensive Plan.

(g) Proposals for model ordinances and agreements that may be enacted by local governments.

(h) Recommendations for legislation as may be necessary to fully implement the Regional Comprehensive Plan.

(i) Developing components for regional functional issues including:

(1) A regional housing component that documents the needs for housing in the region and the extent to which private-sector and public-sector programs are meeting those needs; provides the framework for and facilitates planning for the housing needs of the region, including the need for affordable housing, especially as it relates to the location of such housing proximate to job sites, and

develops sound strategies, programs and other actions to address the need for housing choice throughout the region.

(2) A regional freight component, the purpose of which is to create an efficient system of moving goods that supports economic growth of the region and sound regional and community development by identifying investments in freight facilities of regional, State, and national significance that will be needed to eliminate existing and forecasted bottlenecks and inefficiencies in the functioning of the region's freight network; recommending improvements in the operation and management of the freight network; and recommending policies to effect the efficient multi-modal movement of goods to, through, and from the region.

(3) A component for protecting and enhancing the environment and the region's natural resources the purpose of which is to improve the region's environmental health, quality of life, and community well-being by defining and protecting environmentally critical areas; encouraging development that does not harm environmentally critical areas; promoting sustainable land use and transportation practices and policies by local governments.

(4) Optionally, other regional components for services and facilities, including, but not limited to: water, sewer, transportation, solid waste, historic preservation, and flood control. Such plans shall provide additional goals, policies, guidelines, and supporting analyses that add detail, and are consistent with, the adopted Regional Comprehensive Plan.

(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/47)

Sec. 47. Developments of Regional Importance. The Board shall consider the regional and intergovernmental impacts of proposed major developments, infrastructure investments and major policies and actions by public and private entities on natural resources, neighboring communities, and residents. The Board shall:

(a) Define the Scope of Developments of Regional Importance (DRI) and create an efficient process for reviewing them.

(b) Require any DRI project sponsor, which can be either a public or private entity, to submit information about the proposed DRI to CMAP and neighboring communities, counties, and regional planning and transportation agencies for review.

(c) Review and comment on a proposed DRI regarding consistency with regional plans and intergovernmental and regional impacts.

The Board shall complete a review under this Section within a timeframe established when creating the DRI process. A delay in the review process either requested or agreed to by the applicant shall toll the running of the review period. If the Board fails to complete the review within the required period, the review fee paid by the applicant under this Section shall be refunded in full to the applicant. If, however, the applicant withdraws the application at any time after the Board commences its review, no part of the review fee shall be refunded to the applicant.

(Source: P.A. 95-677, eff. 10-11-07.)

(70 ILCS 1707/48)

Sec. 48. Incentives for Creating More Sustainable Communities. CMAP shall establish an incentive program to enable local governments and developers to: create more affordable workforce housing options near jobs and transit; create jobs

near existing affordable workforce housing; create transit-oriented development; integrate transportation and land use planning; provide a range of viable transportation choices in addition to the car; encourage compact and mixed-use development; and support neighborhood revitalization. CMAP shall work with federal, State, regional, and local agencies to identify funding opportunities for these incentives from existing and proposed programs.
(Source: P.A. 95-677, eff. 10-11-07.)

(70 ILCS 1707/50)

Sec. 50. Coordinated regional advocacy.

(a) The Board shall be responsible for identifying regional priorities and providing coordinated advocacy of regional priorities. The Board shall act to ensure that regional priorities are supported by consistent information and that plans of various agencies related to those regional priorities are fully integrated.

(b) The Board shall annually publish a list of regional priorities and major public projects for which it is providing coordinated regional advocacy.
(Source: P.A. 94-510, eff. 8-9-05.)

(70 ILCS 1707/51)

Sec. 51. Certification; cooperation between local and regional plans; plan review.

Certification of regional plan and forecasts. Upon the adoption of a Regional Plan or segment of a Regional Plan, the Board shall certify a copy thereof to the State, each transportation agency and each local government affected by such plan. CMAP's official forecasts and plans shall be the foundation for all planning in the region.

Agencies to provide information and cooperate. Each local government, transportation agency, and State agency shall cooperate with and assist the Board in carrying out its functions and shall provide to the Board all information requested by the Board. Counties and municipalities shall submit copies of any official plans to CMAP, including but not limited to comprehensive, transportation, housing, and capital improvement plans.

Review of county and municipal plans. The Board may review and comment on proposed county and municipal plans and plan amendments within its jurisdiction for consistency with the regional comprehensive plan and maintain a copy of such plans.
(Source: P.A. 95-677, eff. 10-11-07.)

(70 ILCS 1707/55)

Sec. 55. Transportation financial plan.

(a) Concurrent with preparation of the regional transportation and comprehensive plans, the Board shall prepare and adopt, in cooperation with the Policy Committee, a transportation financial plan for the region in accordance with federal and State laws, rules, and regulations.

(b) The transportation financial plan shall address the following matters related to the transportation agencies: (i) adequacy of funding to meet identified needs; and (ii) allocation of funds to regional priorities.

(c) The transportation financial plan may propose recommendations for additional funding by the federal government, the State, or units of local government that may be necessary to fully implement regional plans.
(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/60)

Sec. 60. Transportation decision-making.

(a) The Policy Committee is the federally designated Metropolitan Planning Organization for the Chicago region under the requirements of federal regulations promulgated by USDOT. The Policy Committee shall approve all plans, reports, and programs required of an MPO, including the federally mandated Regional Transportation Plan, Transportation Improvement Program and Unified Work Program.

(b) It is the intent of this Act that the transportation planning and investment decision-making process be fully integrated into the regional planning process.

(c) The Board, in cooperation with local governments and transportation providers, shall develop and adopt a process for making the transportation decisions that require final MPO approval pursuant to federal law. That process shall comply with all applicable federal requirements. The adopted process shall ensure that all MPO plans, reports, and programs shall be approved by the CMAP Board prior to final approval by the MPO.

(d) The Board shall continue directly involving local elected officials in federal program allocation decisions for the Surface Transportation Program and Congestion Mitigation and Air Quality funds and in addressing other regional transportation issues.

(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/61)

Sec. 61. Agency Designated Planning Grant Recipient and Other Designations. The Board is eligible to apply for and receive federal grants for regional planning in the northeastern Illinois region. The Board shall review applications requesting significant federal grants to transportation agencies and local governments based on criteria including conformity with the Regional Comprehensive Plan and relevant functional components.

(Source: P.A. 95-677, eff. 10-11-07.)

(70 ILCS 1707/62)

Sec. 62. Board Funding. In order to carry out any of the powers or purposes of CMAP, the Board shall be involved in the allocation of traditional sources of funds such as those from the federal Metropolitan Planning Program and CMAQ as well as non-traditional federal funds consistent with the Board's broader mission. These funds may be supplemented by fees for services and by grants from nongovernmental agencies. The Board may also pursue and accept funding from State, regional, and local sources in order to meet its planning objectives.

Additional funding shall be provided to CMAP to support those functions and programs authorized by this Act.

(Source: P.A. 95-677, eff. 10-11-07.)

(70 ILCS 1707/63)

Sec. 63. Succession; Transfers Related to NIPC. CMAP shall succeed to all rights and interests of NIPC. Such transfer and succession shall not limit or restrict any power or authority of CMAP exercised pursuant to this Act and shall not limit any rights or obligations of CMAP with respect to any contracts, agreements, bonds or other indebtedness, right or interest relating to any cause of action then in existence of NIPC that shall continue and shall be assumed by CMAP. Funds appropriated or otherwise made available to NIPC shall become available to CMAP for the balance of the current State fiscal year for interim use as determined by CMAP. NIPC shall transfer all of the records, documents, property, and assets of NIPC to CMAP.

(Source: P.A. 95-677, eff. 10-11-07.)

(70 ILCS 1707/65)

Sec. 65. Annual report. The Board shall prepare, publish, and distribute a concise annual report on the region's progress toward achieving its priorities and on the degree to which consistency exists between local and regional plans. Any other reports and plans that relate to the purpose of this Act may also be included.

(Source: P.A. 94-510, eff. 8-9-05; 95-677, eff. 10-11-07.)

(70 ILCS 1707/70)

Sec. 70. Transition period. The transition period must end no later than 36 months after the initial appointment of the Board, provided that sufficient funding sources have been identified and implemented. The Board must fully implement the funding and implementation strategy it is charged with developing and adopting in subsection (a) of Section 15 by the end of the transition period.

(Source: P.A. 94-510, eff. 8-9-05.)

(70 ILCS 1707/99)

Sec. 99. Effective date. This Act takes effect upon becoming law.

(Source: P.A. 94-510, eff. 8-9-05.)

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APPENDIX C-IV:
ILLINOIS STATUTE 20 ILCS 3967:
ILLINOIS RIVER WATERSHED
RESTORATION ACT



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EXECUTIVE BRANCH

(20 ILCS 3967/) Illinois River Watershed Restoration Act.

(20 ILCS 3967/1)

Sec. 1. Short title. This Act may be cited as the Illinois River Watershed Restoration Act.

(Source: P.A. 90-120, eff. 7-16-97.)

(20 ILCS 3967/5)

Sec. 5. Legislative purpose. The restoration and conservation of the Illinois River Watershed is in the ecological and economic interests of the citizens of this State. It is further in the public interest to stimulate watershed management projects by local, State, and federal agencies, local communities, not-for-profit conservation organizations, and private landowners. It is the purpose of this Act to: create a group of leaders representing agriculture, business, conservation, and the environment to encourage the implementation of efforts to restore the Illinois River Watershed in accordance with the recommendations of the Office of the Lieutenant Governor's Integrated Management Plan for the Illinois River Watershed Technical Report (1997); to work with local communities to develop projects and regional strategies; and to make recommendations to appropriate State and federal agencies. This Act is not intended to dilute or replicate existing federal, State, or local programs.

(Source: P.A. 90-120, eff. 7-16-97.)

(20 ILCS 3967/10)

Sec. 10. Definitions. As used in this Act:

"Council" means the Illinois River Coordinating Council.

"Illinois River Watershed" or "watershed" means the lands that drain directly or through tributaries into the Illinois River, including but not limited to lands surrounding the Des Plaines River, Fox River, Kankakee River, La Moine River, Mackinaw River, Sangamon River, Spoon River, and Vermilion River.

(Source: P.A. 90-120, eff. 7-16-97.)

(20 ILCS 3967/15)

Sec. 15. Illinois River Coordinating Council.

(a) There is established the Illinois River Coordinating Council, consisting of 13 voting members to be appointed by the Governor. One member shall be the Lieutenant Governor who shall serve as a voting member and as chairperson of the Council. The Agency members of the Council shall include the Director, or his or her designee, of each of the following agencies: the Department of Agriculture, the Department of Commerce and Economic Opportunity, the Illinois Environmental Protection Agency, the Department of Natural Resources, and the Department of Transportation. In addition, the Council shall include one member representing Soil and Water Conservation Districts located within the Watershed of the Illinois River and its tributaries and 6 members representing local communities, not-for-profit organizations working to protect the Illinois River Watershed, business, agriculture, recreation, conservation, and the environment. The Governor may, at his or her discretion, appoint individuals representing federal agencies to serve as ex officio, non-voting members.

(b) Members of the Council shall serve 2-year terms, except that of the initial appointments, 5 members shall be appointed to serve 3-year terms and 4 members to serve one-year terms.

(c) The Council shall meet at least quarterly.

(d) The Office of the Lieutenant Governor shall be responsible for the operations of the Council. The Office may reimburse members of the Council for ordinary and contingent expenses incurred in the performance of Council duties.

(e) This Section is subject to the provisions of Section 405-500 of the Department of Central Management Services Law (20 ILCS 405/405-500).

(Source: P.A. 94-793, eff. 5-19-06.)

(20 ILCS 3967/20)

Sec. 20. Duties of the Council. The Council shall:

(1) periodically review activities and programs administered by State and federal agencies that directly impact the Illinois River Watershed;

(2) work with local communities and organizations to encourage partnerships that enhance awareness and capabilities to address watershed and water resource concerns and to encourage strategies that protect, restore, and expand critical habitats and soil conservation and water quality practices;

(3) work with State and federal agencies to optimize the expenditure of funds affecting the Illinois River Watershed;

(4) advise and make recommendations to the Governor and State agencies on ways to better coordinate the expenditure of appropriated funds affecting the Illinois River Watershed, including Illinois River 2020;

(5) encourage local communities to develop watershed management plans to address stormwater, erosion, flooding, sedimentation, and pollution problems and shall encourage projects for the natural conveyance and storage of floodwaters, the enhancement of wildlife habitat and outdoor recreation opportunities, the recovery, management, and conservation of the Illinois River and its tributaries, the preservation of farmland, prairies, and forests, and the use of measurable economic development efforts that are compatible with the ecological health of the Watershed and this State;

(6) help identify possible sources of additional funding for watershed management projects; and

(7) advise and make recommendations to the Governor on funds and the priority of projects.

To the extent practical, the Council shall perform its duties in accordance with the Office of the Lieutenant Governor's Integrated Management Plan for the Illinois River Watershed Technical Report (1997).

(Source: P.A. 92-181, eff. 7-27-01.)

(20 ILCS 3967/25)

Sec. 25. Agency duties. State agencies represented on the Council shall provide to the Council, on request, information concerning agency programs and activities that impact the restoration of the Illinois River Watershed.

(Source: P.A. 90-120, eff. 7-16-97.)

(20 ILCS 3967/99)

Sec. 99. Effective date. This Act takes effect upon becoming law.

(Source: P.A. 90-120, eff. 7-16-97.)

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APPENDIX C-V: MINNESOTA STATUTES 103B.101: BOARD OF WATER AND SOIL RESOURCES

103B.101 BOARD OF WATER AND SOIL RESOURCES.

Subdivision 1. **Membership.** The Board of Water and Soil Resources is composed of 15 appointed members knowledgeable of water and soil problems and conditions within the state and five ex officio members.

Subd. 2. **Voting members.** (a) The members are:

- (1) three county commissioners;
- (2) three soil and water conservation district supervisors;
- (3) three watershed district or watershed management organization representatives;
- (4) three citizens who are not employed by, or the appointed or elected officials of, a state governmental office, board, or agency;
- (5) one township officer;
- (6) two elected city officials, one of whom must be from a city located in the metropolitan area, as defined under section 473.121, subdivision 2;
- (7) the commissioner of agriculture;
- (8) the commissioner of health;
- (9) the commissioner of natural resources;
- (10) the commissioner of the Pollution Control Agency; and
- (11) the director of the University of Minnesota Extension Service.

(b) Members in paragraph (a), clauses (1) to (6), must be distributed across the state with at least four members but not more than six members from the metropolitan area, as defined by section 473.121, subdivision 2.

(c) Members in paragraph (a), clauses (1) to (6), are appointed by the governor. In making the appointments, the governor may consider persons recommended by the Association of Minnesota Counties, the Minnesota Association of Townships, the League of Minnesota Cities, the Minnesota Association of Soil and Water Conservation Districts, and the Minnesota Association of Watershed Districts. The list submitted by an association must contain at least three nominees for each position to be filled.

(d) The membership terms, compensation, removal of members and filling of vacancies on the board for members in paragraph (a), clauses (1) to (6), are as provided in section 15.0575.

Subd. 3. [Repealed, 1997 c 28 s 4]

Subd. 4. **Employees.** The board may employ an executive director in the unclassified service and other permanent and temporary employees in accordance with chapter 43A. The board may prescribe the powers and duties of its officers and employees and may authorize its employees and members of the board to act on behalf of the board.

Subd. 5. **Officers.** The governor shall appoint a chair from among the members of the board in subdivision 2, paragraph (a), clauses (1) to (4), with the advice and consent of the senate. The board shall elect a vice-chair and any other officers that it considers necessary from its membership.

Subd. 6. **Quorum.** A majority of the board is a quorum.

Subd. 7. **Hearings, orders, and rulemaking.** The board may hold public hearings and adopt rules and orders necessary to execute its duties.

Subd. 8. [Repealed, 1997 c 28 s 4]

Subd. 8a. **Bylaws and conflict of interest.** The board shall adopt bylaws that include provisions to prevent or address conflict of interest.

Subd. 9. **Powers and duties.** In addition to the powers and duties prescribed elsewhere, the board shall:

(1) coordinate the water and soil resources planning and implementation activities of counties, soil and water conservation districts, watershed districts, watershed management organizations, and any other local units of government through its various authorities for approval of local plans, administration of state grants, contracts and easements, and by other means as may be appropriate;

(2) facilitate communication and coordination among state agencies in cooperation with the Environmental Quality Board, and between state and local units of government, in order to make the expertise and resources of state agencies involved in water and soil resources management available to the local units of government to the greatest extent possible;

(3) coordinate state and local interests with respect to the study in southwestern Minnesota under United States Code, title 16, section 1009;

(4) develop information and education programs designed to increase awareness of local water and soil resources problems and awareness of opportunities for local government involvement in preventing or solving them;

(5) provide a forum for the discussion of local issues and opportunities relating to water and soil resources management;

(6) adopt an annual budget and work program that integrate the various functions and responsibilities assigned to it by law; and

(7) report to the governor and the legislature by October 15 of each even-numbered year with an assessment of board programs and recommendations for any program changes and board membership changes necessary to improve state and local efforts in water and soil resources management.

The board may accept grants, gifts, donations, or contributions in money, services, materials, or otherwise from the United States, a state agency, or other source to achieve an authorized or delegated purpose. The board may enter into a contract or agreement necessary or appropriate to accomplish the transfer. The board may conduct or participate in local, state, or federal programs or projects that have as one purpose or effect the preservation or enhancement of water and soil resources and may enter into and administer agreements with local governments or landowners or their designated agents as part of those programs or projects. The board may receive and expend money to acquire conservation easements, as defined in chapter 84C, on behalf of the state and federal government consistent with the Camp Ripley's Army Compatible Use Buffer Project.

Any money received is hereby deposited in an account in a fund other than the general fund and appropriated and dedicated for the purpose for which it is granted.

Subd. 10. **Committee for dispute resolution.** A committee of the board is established to hear and resolve disputes, appeals, and interventions under sections 103A.301 to 103A.341; 103B.101; 103B.231; 103B.345; 103D.535; 103D.537; and 103G.2242, subdivision 9. The committee is appointed by the board chair. The board shall adopt bylaws governing committee membership and duties.

Subd. 11. [Repealed, 2009 c 172 art 2 s 32; 2009 c 176 art 1 s 52]

Subd. 12. **Authority to issue penalty orders.** (a) Except as provided under subdivision 12a, the board may issue an order requiring violations to be corrected and administratively assessing monetary penalties of up to \$10,000 per violation for violations of this chapter and chapters 103C, 103D, 103E, 103F, and 103G, any rules adopted under those chapters, and any standards, limitations, or conditions established by the board.

(b) Administrative penalties issued by the board under paragraph (a) or subdivision 12a, may be appealed according to section 116.072, if the recipient of the penalty requests a hearing by notifying the commissioner in writing within 30 days after receipt of the order. For the purposes of this section, the terms "commissioner" and "agency" as used in section 116.072 mean the board. If a hearing is not requested within the 30-day period, the order becomes a final order not subject to further review.

(c) Administrative penalty orders issued under paragraph (a) or subdivision 12a, may be enforced under section 116.072, subdivision 9. Penalty amounts must be remitted within 30 days of issuance of the order.

Subd. 12a. **Authority to issue penalty orders.** (a) A county or watershed district with jurisdiction or the Board of Water and Soil Resources may issue an order requiring violations of the water resources riparian protection requirements under sections 103F.415, 103F.421, and 103F.48 to be corrected and administratively assessing monetary penalties up to \$500 for noncompliance commencing on day one of the 11th month after the noncompliance notice was issued. The proceeds collected from an administrative penalty order issued under this section must be remitted to the county or watershed district with jurisdiction over the noncompliant site, or otherwise remitted to the Board of Water and Soil Resources.

(b) Before exercising this authority, the Board of Water and Soil Resources must adopt a plan containing procedures for the issuance of administrative penalty orders by local governments and the board as authorized in this subdivision. This plan, and any subsequent amendments, will become effective 30 days after being published in the State Register. The initial plan must be published in the State Register no later than July 1, 2017.

(c) Administrative penalties may be reissued and appealed under paragraph (a) according to section 103F.48, subdivision 9.

Subd. 13. **Drainage stakeholder coordination.** The Board of Water and Soil Resources shall work with drainage stakeholders to foster mutual understanding and provide recommendations for drainage system management and related water management, including recommendations for updating the drainage law in chapter 103E and other related provisions. The board may convene informal working groups or work teams to develop information, education, and recommendations.

Subd. 14. **Local water management coordination.** (a) The board may adopt resolutions, policies, or orders that allow a comprehensive plan, local water management plan, or watershed management plan, developed or amended, approved and adopted, according to chapter 103B, 103C, or 103D to serve as substitutes for one another or be replaced with a comprehensive watershed management plan. The board may also develop criteria for incorporating or coordinating the elements of metropolitan county groundwater plans in accordance with section 103B.255. The board shall, to the extent practicable, incorporate a watershed

approach when adopting the resolutions, policies, or orders, and shall establish a suggested watershed boundary framework for development, approval, adoption, and coordination of plans.

(b) The board shall work with local government stakeholders and others to foster mutual understanding and develop recommendations for local water management and related state water management policy and programs. The board may convene informal working groups or work teams to develop information, education, and recommendations. Local government units may develop and carry out TMDL implementation plans, or their equivalent, as provided in chapter 114D, as part of the local water management plans and responsibilities under chapters 103B, 103C, and 103D.

Subd. 15. Local water management boundary and plan determinations and appeals. (a) Local government units may either submit a request for a plan boundary determination as part of a plan approval request or apply separately for a plan boundary determination from the board before requesting plan approval. Local government units must provide written documentation of the rationale and justification for the proposed boundary. The board may request additional information needed to make a plan boundary determination.

(b) Local government units may appeal a board decision to deny approval of a plan or the establishment of a plan boundary. An appeal of a board decision may be taken to the state Court of Appeals and must be considered an appeal from a contested case decision for purposes of judicial review under sections 14.63 to 14.69. Local government units may request the board's dispute resolution committee or executive director to hear and make recommendations to resolve boundary and plan implementation disputes.

Subd. 16. Water quality practices; standardized specifications. The Board of Water and Soil Resources shall work with state and federal agencies, academic institutions, local governments, practitioners, and stakeholders to foster mutual understanding and provide recommendations for standardized specifications for water quality and soil conservation protection and improvement practices and projects. The board may convene working groups or work teams to develop information, education, and recommendations.

Subd. 17. Wetland stakeholder coordination. The board shall work with wetland stakeholders to foster mutual understanding and provide recommendations for improvements to the management of wetlands and related land and water resources, including recommendations for updating the Wetland Conservation Act, developing an in-lieu fee program as defined in section 103G.005, subdivision 10g, and related provisions. The board may convene informal working groups or work teams to provide information and education and to develop recommendations.

History: 1990 c 391 art 2 s 2; 1992 c 399 s 1; 1997 c 28 s 1-3; 1997 c 109 s 1; 2004 c 228 art 1 s 23; 1Sp2005 c 1 art 2 s 116; 2007 c 57 art 1 s 103; 2009 c 176 art 1 s 23,24; 2010 c 298 s 1; 1Sp2010 c 1 art 14 s 5; 1Sp2011 c 2 art 5 s 63; 2012 c 272 s 28-33; 1Sp2015 c 2 art 2 s 11; 1Sp2015 c 4 art 4 s 72,73; 2016 c 85 s 1,2

APPENDIX C-VI:
MINNESOTA STATUTES 103B.211:
JOINT POWERS WATERSHED
MANAGEMENT ORGANIZATION

103B.211 JOINT POWERS WATERSHED MANAGEMENT ORGANIZATION.

Subdivision 1. **Authority.** (a) Any agreement under section 471.59 to jointly or cooperatively manage or plan for the management of surface water in a watershed delineated pursuant to subdivision 2, as required by sections 103B.205 to 103B.255, may provide, in addition to other provisions authorized by section 471.59, for a joint board having:

(1) the authority to prepare, adopt, and implement a plan for the watershed meeting the requirements of section 103B.231;

(2) the authority to review and approve local water management plans as provided in section 103B.235;

(3) the authority of a watershed district under chapter 103D to regulate the use and development of land in the watershed when one or more of the following conditions exists:

(i) the local government unit exercising planning and zoning authority over the land under sections 366.10 to 366.181, 394.21 to 394.37, or 462.351 to 462.364, does not have a local water management plan approved and adopted in accordance with the requirements of section 103B.235 or has not adopted the implementation program described in the plan;

(ii) an application to the local government unit for a permit for the use and development of land requires an amendment to or variance from the adopted local water management plan or implementation program of the local unit; or

(iii) the local government unit has authorized the organization to require permits for the use and development of land;

(4) the authority of a watershed district under section 103D.625, to accept the transfer of drainage systems in the watershed, to repair, improve, and maintain the transferred drainage systems, and to construct all new drainage systems and improvements of existing drainage systems in the watershed, provided that: (i) projects may be carried out under the powers granted in sections 103B.205 to 103B.255 or chapter 103D or 103E; and (ii) proceedings of the board with respect to the systems must be in conformance with the watershed plan adopted under section 103B.231;

(5) the authority of a watershed district under section 103D.911 to adopt a budget and decide on the total amount necessary to be raised from ad valorem tax levies to meet the budget;

(6) the authority of a watershed district under section 103D.915 to certify its budget with the auditor of each county having territory within the joint powers watershed management organization;

(7) the authority of a watershed district under section 103D.901 to file approved assessment statements with each affected county; and

(8) other powers necessary to exercise the authority under clauses (1) to (3), including the power to enter into contracts for the performance of functions with governmental units or persons.

(b) The Board of Water and Soil Resources shall adopt rules prescribing minimum requirements for the content of watershed management organization joint powers agreements.

(c) Decisions by a joint powers board may not require more than a majority vote, except a decision on a capital improvement project, which may require no more than a two-thirds vote.

Subd. 2. **Review of watershed boundaries.** Before commencing planning under section 103B.231, a watershed management organization established pursuant to section 471.59 and this section shall submit a map delineating the boundaries of the watershed to the Board of Water and Soil Resources for review and comment on the conformance of the boundaries with the requirements of sections 103B.205 to 103B.255. The board shall have 60 days to comment.

Subd. 3. **Jurisdiction over nonmembers.** (a) A watershed management organization established by agreement pursuant to subdivision 1 may exercise the authority provided in the agreement throughout the watershed delineated, including territory in statutory and home rule charter cities and towns that are not members of the organization, if the cities and towns that are not members consent to the exercise of authority within their jurisdictions and if the membership of the organization includes:

(1) the county or counties having jurisdiction over all of the territory of the watershed that is within the cities and towns that are not members of the organization; and

(2) either cities and towns having jurisdiction over at least 50 percent of the land area of the watershed and comprising at least three-quarters of all of the cities and towns having territory in the watershed, or cities and towns having jurisdiction over at least 75 percent of the land area of the watershed.

(b) The county or counties identified in paragraph (a), clause (1), are responsible for watershed management activities and may exercise authority under sections 103B.205 to 103B.255 in and for consenting cities and towns that are not members of the organization.

Subd. 4. **Appropriations from small watercourses.** (a) This subdivision applies in Hennepin and Ramsey Counties to the following public waters:

(1) a public water basin or wetland wholly within the county that is less than 500 acres; or

(2) a protected watercourse that has a drainage area of less than 50 square miles.

(b) An appropriation of water that is below the minimum established in section 103G.271, subdivision 4, for a nonessential use, as defined under section 103G.291, is prohibited unless a permit is obtained from the watershed district or watershed management organization having jurisdiction over the public water basin, wetland, or watercourse. The watershed district or watershed management organization may impose a fee to cover the cost of issuing the permit. This subdivision must be enforced by the home rule charter or statutory city where the appropriation occurs. Violation of this subdivision is a petty misdemeanor, except that a second violation within a year is a misdemeanor. Affected cities shall mail notice of this law to affected riparian and adjoining landowners.

Subd. 5. [Repealed, 1991 c 199 art 1 s 16]

History: 1990 c 391 art 2 s 7; 1990 c 601 s 8; 1991 c 199 art 1 s 15; 1995 c 184 s 2

APPENDIX C-VII:
MINNESOTA STATUTES 103B.451:
SOUTH DAKOTA-MINNESOTA
BOUNDARY WATERS COMMISSION

103B.451 SOUTH DAKOTA-MINNESOTA BOUNDARY WATERS COMMISSION.

Subdivision 1. **Establishment.** An interstate commission known as the South Dakota-Minnesota Boundary Waters Commission is established. The members of the commission shall be the secretaries of the department of water and natural resources and the department of game, fish and parks of South Dakota and the commissioners of natural resources and the Pollution Control Agency of Minnesota. The fifth member shall be a qualified engineer appointed for a four-year term by the mutual consent of the governors of Minnesota and South Dakota.

Subd. 2. **Authority.** (a) The commission shall have power and authority:

(1) to investigate and determine the most desirable and beneficial levels of boundary waters artificially controlled and to prescribe a plan for controlling and regulating water levels;

(2) to hold hearings and take evidence as may be presented, either after complaint or upon its own initiative, as to the desirability of any water level and plan of regulation, and to issue orders concerning the same which in its opinion are for the best interests of the public;

(3) to plan, propose, coordinate and hold hearings on lake protection and rehabilitation projects for boundary waters; and

(4) to accept and distribute grants from any source for the purposes set forth in this section.

(b) The commission shall seek the advice of local units of government and encourage them to implement projects voluntarily and to enter into agreements with one another for that purpose. The commission itself has no authority to implement lake protection or rehabilitation projects.

Subd. 3. **Advisory committee.** The commission shall establish one local advisory committee for all commission activities. A majority of the members of the committee shall be elected officials of local governmental units, including tribal governments, within the boundary waters watershed with an equal number of representatives from each state. The advisory committee shall be consulted prior to any activity conducted by the commission.

Subd. 4. **Hearings.** (a) Hearings must be held at a time and place designated by the commission in counties affected by the subject matter.

(b) At least two weeks' published notice of the hearings must be given by publication of the notice in a legal newspaper in each county bordering on the boundary waters that may be affected by the subject matter of the hearing.

(c) All final orders of the commission must be published once each week for two consecutive weeks in a legal newspaper in each county bordering on the boundary waters that may be affected. The printer's affidavit of publication of all notices and orders must be filed with the commission. Hearings held pursuant to this section shall not be subject to the requirements of chapter 14.

Subd. 5. **Appeals.** Any party aggrieved by any order or any determination of the commission under this section may appeal to the district court or to the circuit court, as the case may be, of a county in either state where the subject matter of the order or the determination is wholly or partially located, or to the district court of the county in either state where its capitol is located. Notice of appeal must be served upon the commission within 30 days from the last date of publication of the order appealed from. Appeals may

likewise be taken from the judgments of the district court or the circuit court, as the case may be, to the appellate courts of their respective states as in other civil cases.

History: *1990 c 391 art 2 s 29*

APPENDIX C-VIII:

MINNESOTA STATUTES 103D.201:

WATERSHED DISTRICT PURPOSES

103D.201 WATERSHED DISTRICT PURPOSES.

Subdivision 1. **General purposes.** To conserve the natural resources of the state by land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources, the establishment of watershed districts is authorized under this chapter.

Subd. 2. **Specific purposes.** A watershed district may be established for any of the following purposes:

- (1) to control or alleviate damage from flood waters;
- (2) to improve stream channels for drainage, navigation, and any other public purpose;
- (3) to reclaim or fill wet and overflowed land;
- (4) to provide a water supply for irrigation;
- (5) to regulate the flow of streams and conserve the streams' water;
- (6) to divert or change all or part of watercourses;
- (7) to provide or conserve water supply for domestic, industrial, recreational, agricultural, or other public use;
- (8) to provide for sanitation and public health, and regulate the use of streams, ditches, or watercourses to dispose of waste;
- (9) to repair, improve, relocate, modify, consolidate, and abandon all or part of drainage systems within a watershed district;
- (10) to control or alleviate soil erosion and siltation of watercourses or water basins;
- (11) to regulate improvements by riparian property owners of the beds, banks, and shores of lakes, streams, and wetlands for preservation and beneficial public use;
- (12) to provide for hydroelectric power generation;
- (13) to protect or enhance the water quality in watercourses or water basins; and
- (14) to provide for the protection of groundwater and regulate its use to preserve it for beneficial purposes.

History: 1990 c 391 art 4 s 6

APPENDIX C-IX:

MINNESOTA STATUTES 103D.905:

FUNDS OF WATERSHED DISTRICT

103D.905 FUNDS OF WATERSHED DISTRICT.

Subdivision 1. **Generally.** The money of a watershed district consists of the funds established in this section.

Subd. 2. **Organizational expense fund.** (a) An organizational expense fund, consisting of an ad valorem tax levy, shall not exceed 0.01596 percent of estimated market value, or \$60,000, whichever is less. The money in the fund shall be used for organizational expenses and preparation of the watershed management plan for projects.

(b) The managers may borrow from the affected counties up to 75 percent of the anticipated funds to be collected from the organizational expense fund levy and the counties affected may make the advancements.

(c) The advancement of anticipated funds shall be apportioned among affected counties in the same ratio as the net tax capacity of the area of the counties within the watershed district bears to the net tax capacity of the entire watershed district. If a watershed district is enlarged, an organizational expense fund may be levied against the area added to the watershed district in the same manner as provided in this subdivision.

(d) Unexpended funds collected for the organizational expense may be transferred to the administrative fund and used for the purposes of the administrative fund.

Subd. 3. **General fund.** A general fund, consisting of an ad valorem tax levy, may not exceed 0.048 percent of estimated market value, or \$250,000, whichever is less. The money in the fund shall be used for general administrative expenses and for the construction or implementation and maintenance of projects of common benefit to the watershed district. The managers may make an annual levy for the general fund as provided in section 103D.911. In addition to the annual general levy, the managers may annually levy a tax not to exceed 0.00798 percent of estimated market value for a period not to exceed 15 consecutive years to pay the cost attributable to the basic water management features of projects initiated by petition of a political subdivision within the watershed district or by petition of at least 50 resident owners whose property is within the watershed district.

Subd. 4. **Bond fund.** A bond fund consists of the proceeds of special assessments, storm water charges, loan repayments, and ad valorem tax levies pledged by the watershed district for the payment of bonds or notes issued by the watershed district. The bond fund is to be used for the payment of the principal of, premium or administrative surcharge, if any, and interest on the bonds and notes issued by the watershed district and for payments required to be made to the federal government under section 148(f) of the Internal Revenue Code of 1986, as amended through December 31, 1996.

Subd. 5. **Construction or implementation fund.** (a) A construction or implementation fund consists of:

- (1) the proceeds of watershed district bonds or notes or of the sale of county bonds;
- (2) construction or implementation loans from the Pollution Control Agency under sections 103F.701 to 103F.755, or from any agency of the federal government; and
- (3) special assessments, storm water charges, loan repayments, and ad valorem tax levies levied or to be levied to supply funds for the construction or implementation of the projects of the watershed district, including reservoirs, ditches, dikes, canals, channels, storm water facilities, sewage treatment facilities, wells, and other works, and the expenses incident to and connected with the construction or implementation.

(b) Construction or implementation loans from the Pollution Control Agency under sections 103F.701 to 103F.755, or from an agency of the federal government may be repaid from the proceeds of watershed district bonds or notes or from the collections of storm water charges, loan repayments, ad valorem tax levies, or special assessments on properties benefited by the project.

Subd. 6. **Preliminary fund.** A preliminary fund consists of funds authorized to be provided. The preliminary fund is to be used for preliminary work on proposed works of the watershed district.

Subd. 7. **Repair and maintenance funds.** Repair and maintenance funds are established under section 103D.631, subdivision 2.

Subd. 8. **Survey and data acquisition fund.** (a) A survey and data acquisition fund is established and used only if other funds are not available to the watershed district to pay for making necessary surveys and acquiring data.

(b) The survey and data acquisition fund consists of the proceeds of a property tax that can be levied only once every five years. The levy may not exceed 0.02418 percent of estimated market value.

(c) The balance of the survey and data acquisition fund may not exceed \$50,000.

(d) In a subsequent proceeding for a project where a survey has been made, the attributable cost of the survey as determined by the managers shall be included as a part of the cost of the work and the sum shall be repaid to the survey and data acquisition fund.

Subd. 9. **Project tax levy.** In addition to other tax levies provided in this section or in any other law, a watershed district may levy a tax:

(1) to pay the costs of projects undertaken by the watershed district which are to be funded, in whole or in part, with the proceeds of grants or construction or implementation loans under sections 103F.701 to 103F.755;

(2) to pay the principal of, or premium or administrative surcharge, if any, and interest on, the bonds and notes issued by the watershed district pursuant to section 103F.725; or

(3) to repay the construction or implementation loans under sections 103F.701 to 103F.755.

Taxes levied with respect to payment of bonds and notes shall comply with section 475.61.

History: 1990 c 391 art 4 s 69; 1995 c 199 s 56,57; 1997 c 231 art 2 s 2-4; 1Sp2001 c 5 art 3 s 4; 2011 c 107 s 107; 2013 c 143 art 14 s 11-13

APPENDIX C-X:

MINNESOTA STATUTES 103E.011:

DRAINAGE AUTHORITY POWERS

103E.011 DRAINAGE AUTHORITY POWERS.

Subdivision 1. **Generally.** The drainage authority may make orders to:

- (1) construct and maintain drainage systems;
- (2) deepen, widen, straighten, or change the channel or bed of a natural waterway that is part of the drainage system or is located at the outlet of a drainage system;
- (3) extend a drainage system into or through a municipality for a suitable outlet; and
- (4) construct necessary dikes, dams, and control structures and power appliances, pumps, and pumping machinery as provided by law.

Subd. 2. **Draining water basins and watercourses.** A drainage authority may not drain a water body or begin work or activity regulated by the public-waters-work permit requirement under section 103G.245 in a watercourse until the commissioner determines that the water body or watercourse is not public waters. If a water body or watercourse is determined to be public waters, the drainage proceedings are subject to section 103G.215 relating to replacing public waters and the water bank program.

Subd. 3. **Permission of commissioner for work in public waters; application.** (a) The drainage authority must receive permission from the commissioner to:

- (1) remove, construct, or alter a dam affecting public waters;
- (2) establish, raise, or lower the level of public waters; or
- (3) drain any portion of a public water.

(b) The petitioners for a proposed drainage project or the drainage authority may apply to the commissioner for permission to do work in public waters or for the determination of public waters status of a water body or watercourse.

Subd. 4. **Flood control.** The drainage authority may construct necessary dams, structures, and improvements and maintain them to impound and release flood water to prevent damage. The dams, structures, and improvements may be constructed with or without a drainage project. For a water body or watercourse that is not public waters the drainage authority may:

- (1) lower or establish the level of water in the water body or watercourse to control flood waters;
- (2) build structures and improvements to maintain a water body or watercourse for flood control or other public purposes; and
- (3) construct dikes or dams in a water body to maintain water at the level designated by the drainage authority and to drain part of the water body.

Subd. 5. **Use of external sources of funding.** Notwithstanding other provisions of this chapter, a drainage authority may accept and use funds from sources other than, or in addition to, those derived from assessments based on the benefits of the drainage system for the purposes of wetland preservation or restoration or creation of water quality improvements or flood control. The sources of funding authorized under this subdivision may also be used outside the benefited area but must be within the watershed of the drainage system.

History: 1990 c 391 art 5 s 2; 2000 c 488 art 3 s 27

