



SUBMISSION DOCUMENTATION

DELINEATION OF PROVISIONAL WATERSHED REGIONS

Prepared for consideration by the Council on Watershed Management on Aug. 8, 2019

BACKGROUND

In an effort to enhance coordination and improve the overall effectiveness of statewide floodplain management, the State of Louisiana investigated current efforts, resources, and overall management structures affecting flood protection and water resources statewide in response to JBE EO 18-16, commonly referred to as the Louisiana Watershed Initiative (LWI or the Initiative). The LWI acknowledges that a comprehensive watershed-based approach to floodplain and flood risk management will allow Louisiana to manage floodplains consistently using best practices across the state and will result in flood risk reduction statewide.

KEY CONSIDERATIONS

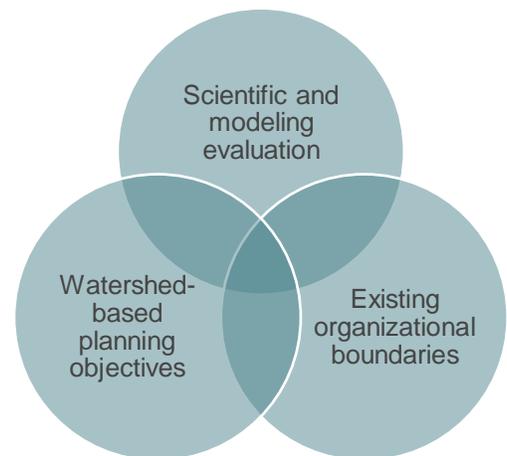
In order to meet the state's objectives for managing future flood risk, watershed boundaries with a regional scale are recommended in accordance with the following key considerations:

- Scientific data and models
- Watershed-based planning objectives
- Existing organizational boundaries

SCIENTIFIC DATA AND MODELS

There are various systems of delineating watersheds based on analysis of how water naturally moves relative to geographic features such as topography, hydrologic features and floodplain dynamics.

The USGS has delineated watersheds throughout the U.S. at varying scales in a multi-layer approach and maintains these data in the Watershed Boundary Dataset (WBD) stewarded by the Louisiana Department of Environmental Quality on behalf of the state. USGS refers to these watersheds as hydrologic units (HUs). 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 is represented by a unique hydrologic unit code (HUC). Louisiana's basin boundaries were based on mapping from the 1950s. As such, Louisiana is moving toward the USGS' WBD system as the source of watershed boundaries, and the LWI's Data and Modeling TAG is in the process of procuring watershed models completed at the HUC8 scale. There are 59 HUC8 scale watersheds in the





state of Louisiana. More detail on Louisiana’s watershed delineations are available within the LWI’s Phase I report located at watershed.la.gov.

USGS Hydrologic Units (HUs) at the HUC8 scale served as a starting point for the process of delineating regions for the Initiative; however, this system does not consider coastal flood dynamics, or how urban development or infrastructure may alter the movement of water.

WATERSHED-BASED PLANNING OBJECTIVES

The planning scale and physical planning boundaries contribute to achieving watershed-based planning objectives. Land use and project decisions may impact smaller HUC8 watersheds or could impact whole basins or have cross-watershed impacts depending on the size of the project. The planning scale and physical planning boundaries should never be smaller than the scale and area upon which such actions will have an effect. Additionally, the planning scale should maximize ability to leverage capacity (i.e., staff and funding) and capability (i.e., skills and authority) to understand and address flood risk.

HUC8 watersheds are roughly the size of a single parish. Coordinating and leveraging resources at this scale would be limited, and land use and project decisions made at this scale are likely to frequently impact other planning configurations. There are roughly 18 watersheds at the HUC6 scale and 12 at the HUC4 scale in Louisiana. Moving toward a HUC6 or HUC4 watershed size would facilitate multi-jurisdictional coordination to achieve watershed-based planning objectives, but may ignore existing infrastructure, population centers, and existing flood control structures. Thus, creating flexibility to combine or adjust HUC6 and HUC4 boundaries—while maintaining adherence to HUC8 boundaries—provides flexibility to enhance watershed management capability while also maintaining consistency with watershed models completed at the HUC8 scale.

EXISTING ORGANIZATIONAL BOUNDARIES

Existing organizational boundaries were considered when evaluating and recommending provisional watershed boundaries. These include parish boundaries, planning and development districts, levee boards, water and drainage districts, soil and conservation districts, and more. Existing working relationships have also been considered, as many of these organizations already facilitate cross-jurisdictional coordination.

PREVIOUS STUDIES AND INVESTIGATIONS

In 2014, CPRA and DOTD published a report in response to Senate Concurrent Resolution 39 (SCR39) that investigated existing organizational bodies with flood control responsibilities (Louisiana State Legislature 2013). Under SCR39, the analysis team gathered baseline data, reviewed relevant statutes, consulted with districts, analyzed existing alignments of all state-created governing entities for flood control, and developed several science-based scenarios for further study of the potential to re-align flood control governance statewide. According to the study (DOTD et al. 2014a):



There are more than 250 governmental entities with legal authority over surface water in Louisiana. Of these, roughly 75 were created in state law, including the state’s 26 levee districts. Some entities are within one area of a parish, some align with parish boundaries, and others cross a number of parishes. In addition to levee districts, their missions are diverse in purpose and mission, ranging from reservoir commissions to soil and water conservation districts. These entities present potential challenges for the state as it works judiciously to manage and regulate the state’s water resources and protect communities from hurricanes and floods. In addition, the state must be prudent to ensure financing is available to construct, operate, and maintain the appropriate infrastructure in order to meet these goals.

In 2019, DOTD—in close coordination with the Initiative—published a report in response to the Senate Resolution 172 that provided recommendations including the establishment, implementation, and enforcement of floodplain management plans for each watershed in Louisiana, including the evaluation of potential alignment boundaries.

The FHBA3 alignment (shown right compared to existing population centers) takes into consideration flood control governance alignments, considers existing water management infrastructure and actions, reflects major basins in the state where water management efforts are similar and focused and would enable the coordinated management of hydraulic structures and planned risk reduction actions. It also may allow for proposed longer-term, more formalized coalitions to potentially accommodate regional ecosystem management, which would support the goals and objectives of the Initiative.

SR 172 Report: FHBA3 Alignment



RELATED PROGRAMS

It is important to also recognize that multiple programs, separate from the LWI, inform floodplain management plan development and must be coordinated with the LWI in order to appropriately leverage findings, resources, and outcomes. At present, the Louisiana State Law Water Code Committee is researching U.S. and international water resource management laws to help Louisiana incorporate groundwater and surface water management best practices in the future (Louisiana State Legislature 2014). The LWI acknowledges that it is important to consider investigations into the Water Code and into flood control planning configurations that could ultimately affect or be affected by



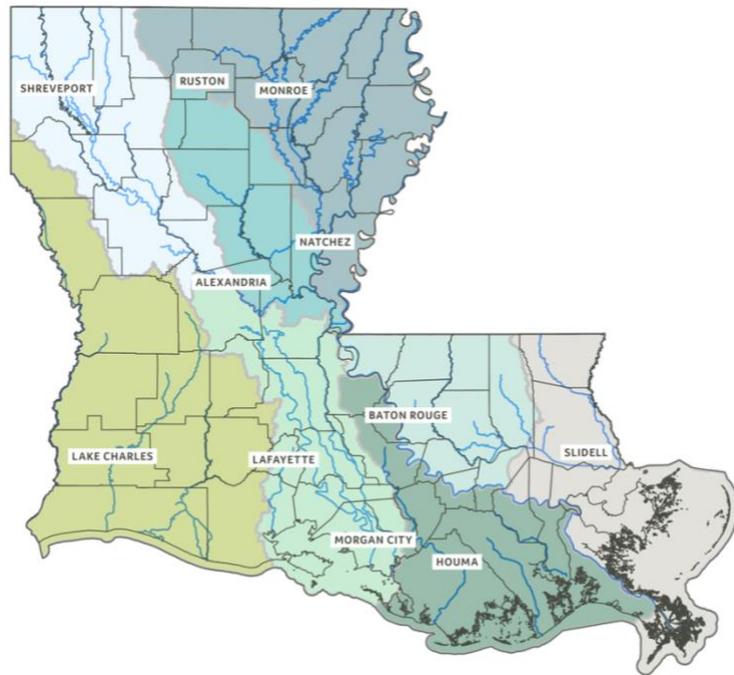
watershed-based planning geographic configurations. The LWI's goal is that the selected geographic scale and boundaries should not preclude or complicate the state's ability to act in either of these related and parallel initiatives.

PRELIMINARY MAP

In its initial watershed boundary assessment, the Initiative focused on the FHBA3 alignment because it was termed most favorable by DOTD's report addressing SR 172, and would not preclude next steps in the SCR 39 investigation. Additionally, adoption of this or a similar alignment could possibly provide a pilot and data points related to SCR 39 or the Water Code prior to any legislative action.

Through a series of meetings that took place from January to March 2019, and in close coordination with representatives of all agencies participating in the Initiative, a limited number of HUC8 watersheds were shifted within the FHBA3 alignment to better reflect the regional management scale, support ongoing resiliency initiatives and organizations (i.e. Ouachita Strong Resiliency Initiative), recognize existing levee districts, address population centers, and reflect similar water management challenges. The results of this decision-making are reflected in the adjacent map titled, "Initiative Provisional Geographic Boundaries."

Initiative Provisional Geographic Boundaries

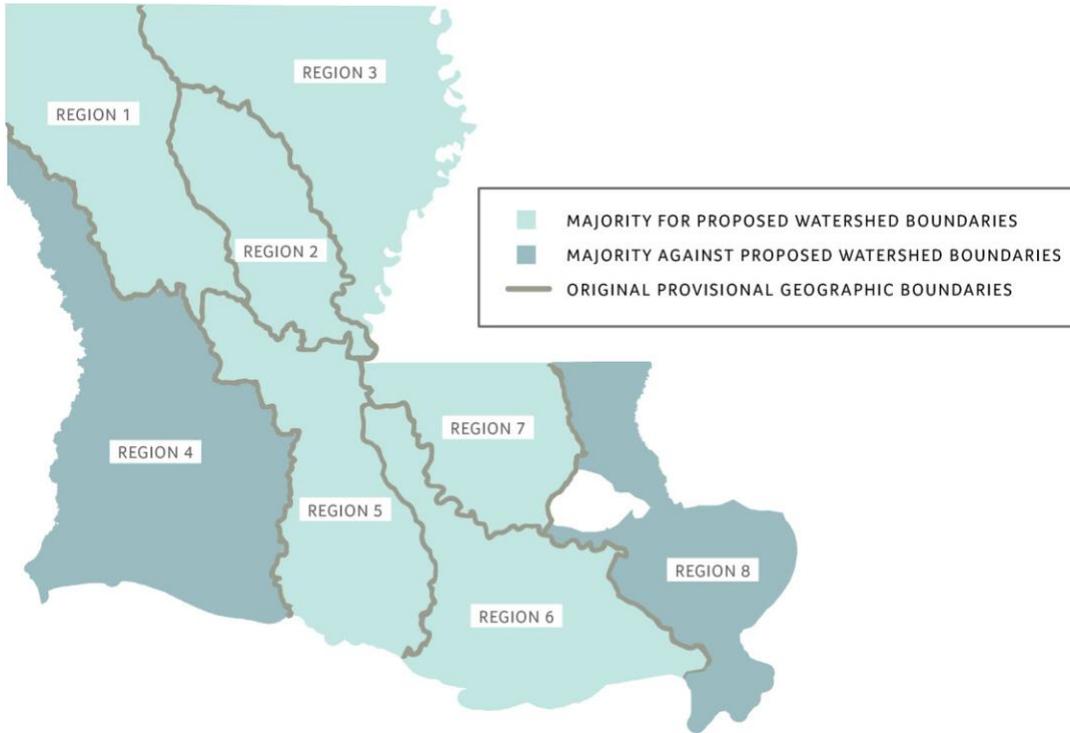


STAKEHOLDER INPUT

The above preliminary map was utilized by the LWI to collect input from local governments with the intent to incorporate feedback prior to requesting acceptance from the Council on Watershed Management. In a robust series of parish leadership meetings held across the state from April to July 2019, the Initiative hosted more than 350 total attendees, and generated more than 120 survey responses in support and against proposed preliminary boundaries. In careful consideration of both comments made in these meetings and survey results shown in the below map, the LWI reached the recommendation as presented to the Council on Watershed Management on Aug. 8, 2019 (attached herein and dated Aug. 8, 2019).



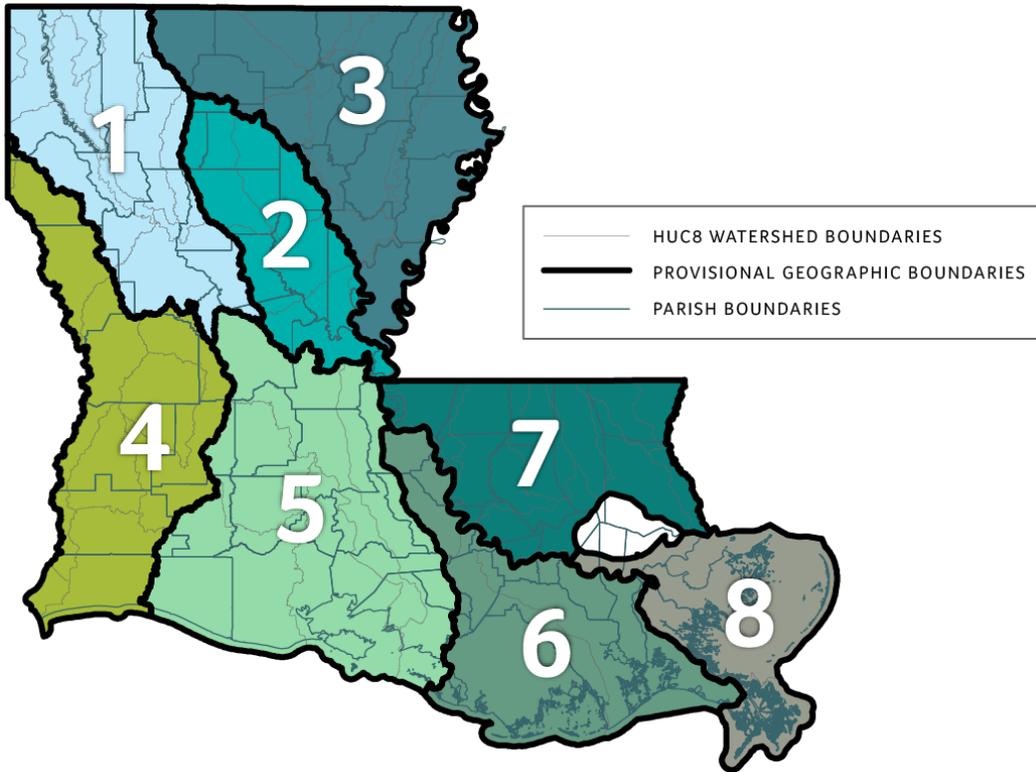
PROVISIONAL GEOGRAPHIC BOUNDARIES: REGIONAL SUPPORT



Note: Of those survey respondents who noted their status as “against” their originally proposed watershed regional boundaries, total respondents from each region were varied. These responses included Region 4 (23 of 29 respondents “against”), and Region 8 (5 of 9 respondents “against”). As such, survey responses were considered in coordination with feedback collected during the more than 30 individual meetings held with parish leaders throughout the state for recommended adjustments to the recommended provisional watershed boundaries.



RECOMMENDED WATERSHED BOUNDARIES



For more detail on these recommended watershed boundaries, see the “Provisional Watershed Regions” recommendation document submitted to the Council on Watershed Management for consideration on Aug. 8, 2019.