

Pearl River Basin, Mississippi Federal Flood Risk Management Project

Flood of Record



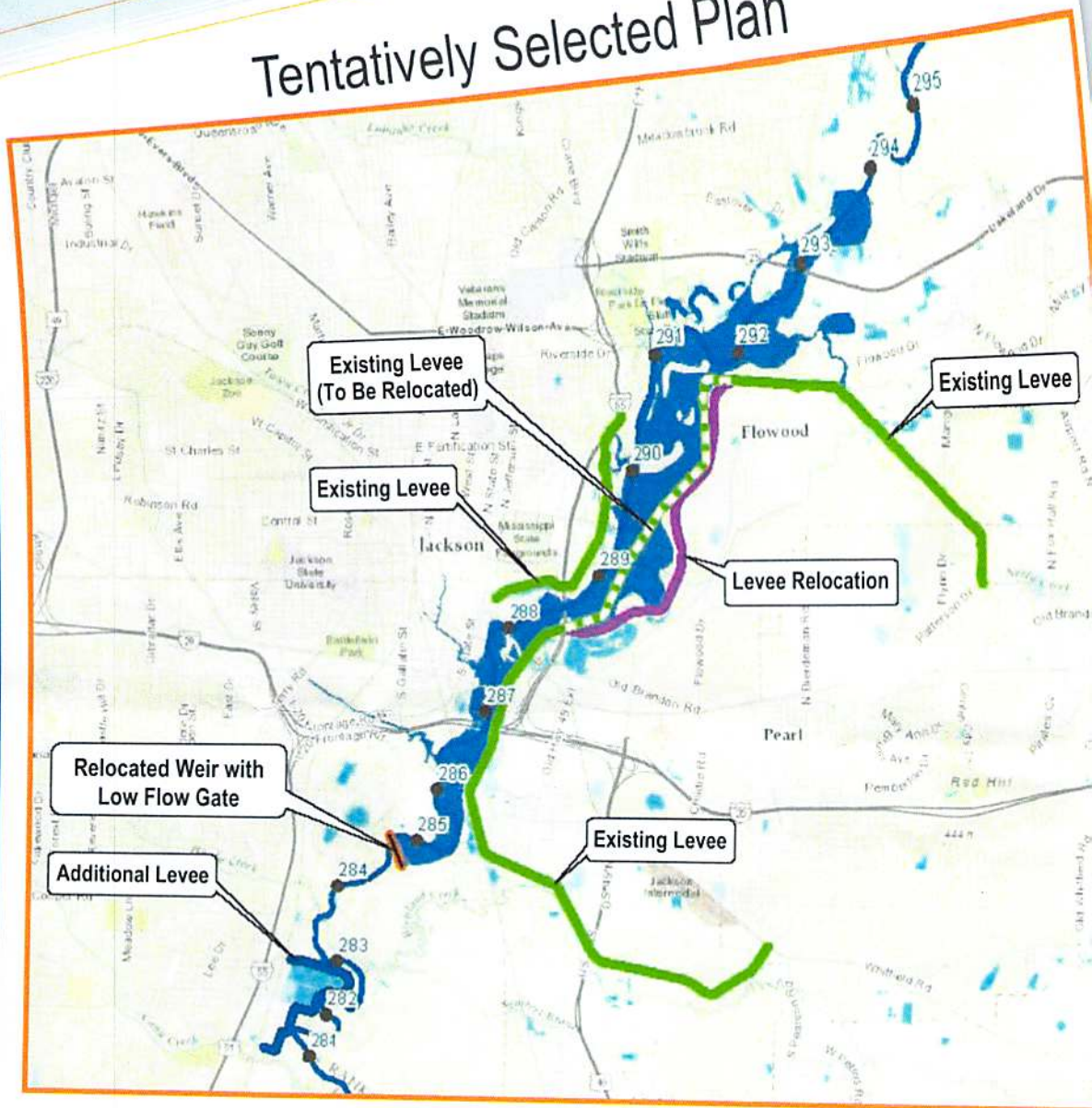
Integrated Draft Feasibility Study & Environmental Impact Statement

Pearl River Basin, Mississippi Federal Flood Risk Management Project

Tentatively Selected Plan

LOCATION

The Pearl River Basin is located in the south-central portion of Mississippi and in a small part of southeastern Louisiana. The entire river drains an area of 8,760 square miles consisting of all or parts of 23 counties in Mississippi and parts of 3 Louisiana parishes. The Jackson Metro study area is primarily affected by headwater flooding caused by the Pearl River. Headwater flooding is caused by unusually heavy rainfall, over the upper Pearl River basin.



The Tentatively Selected Plan for bringing substantive flood risk management to the Jackson Metropolitan Area is a combination of excavating and widening the Pearl River while reinforcing the existing levee system. It also includes relocating and improving an existing weir to a location just downstream from I-20.

Much of the channel within the project reach was previously channelized by the U.S. Army Corps of Engineers. The proposed plan would widen the already channelized river and set back portions of the existing levee system. Lowering the flowlines while maintaining the existing levee elevations will significantly improve the flood risk management, with the anticipated water surface elevation of many of the larger flood events being below the proposed top of flood protection. The improvements greatly increase flood risk management capabilities of this plan during extreme events.

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Current Conditions



The 1979 Easter flood forced more than 17,000 people in Jackson, Flowood, Pearl, Richland and other communities from their homes. Flooding of the Pearl River placed most of Jackson under water. It is among the most costly and devastating floods ever to occur in Mississippi, with \$500 million in damages (equivalent in excess of \$1 billion today). It was the result of the Pearl River being overwhelmed by severe rain upstream. Although less severe than the 1979 flood, another flood event occurred in May, 1983 forcing the evacuation of about 5,000 from the Jackson metro area.

Since the Easter Flood of 1979 and May Flood of 1983, little improvement has been made to reduce flood damage in the Jackson Metro Area. The plan proposed in this feasibility and environmental impact study improves flood risk management throughout the metropolitan area while reducing the risk to critical infrastructure by lowering the flowlines of the Pearl River through channel improvements.



Rankin-Hinds Pearl River Flood and Drainage Control District

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Mr. Leland Speed, State of Mississippi Representative

For more information please
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COMMON QUESTIONS AND CONCERNS

BACKGROUND

Multiple studies have been conducted on this watershed ranging from reconnaissance level studies to feasibility studies. The Rankin-Hinds Pearl River Flood and Drainage Control District, assisted by the Pearl River Vision Foundation, has undertaken this most recent study, the Integrated Draft Feasibility Study and Environmental Impact Statement, for the purpose of providing a recommendation as to federal participation for flood risk management in the Pearl River Watershed.

How will another dam on the river impact the Pearl River?

This project will not build a dam, such as the one in place at the Ross Barnett Reservoir. Rather the existing weir located at the Water Works curve will be removed and relocated approximately six river miles downstream (from River Mile 290.7 to approximately 284). **A weir is designed so that water flows over the top at all times.** Water flowing in from the Ross Barnett Reservoir would flow out of the project area to the downstream channel, in accordance with existing permits, regulations, and inter-agency agreements. Low-flow gates have been included in the weir design that can be opened to allow the required minimum flow to continue even in extreme drought conditions.

Will this project reduce water flows on the Pearl River south of the project area?

This issue has been studied extensively, and no discernible variance in the amount of water flowing in from the Ross Barnett Reservoir to the amount flowing out of the project area to the downstream channel is anticipated. With a mixing zone just downstream of the project, minimum flow requirements will be included in the project's permits. The emergency low-flow gates in the weir will allow the required minimum flow to continue even in drought conditions. Furthermore, other factors influencing downstream water levels including runoff drainage. Approximately $\frac{2}{3}$ of the Pearl River Watershed runoff drains to the river downstream of the proposed project, and this runoff flow will not be impacted by the Tentatively Selected Plan.

Will the project hurt the oyster industry on the Coast?

No discernible difference between the amount of water flowing into the project from the Ross Barnett Reservoir and the amount flowing out of the project area to the downstream channel is anticipated. Permits will require the project to meet minimum outflow levels. Additionally, low-flow gates have been added to the weir to ensure flow is allowed even in extreme drought conditions. With no perceptible decrease in water flowing downstream from Jackson, combined with the fact that $\frac{2}{3}$ of the Pearl River Watershed is draining downstream of the project, the Tentatively Selected Plan should have no impact on salinity levels in the Gulf. Furthermore, beneficial impacts on water quality are anticipated. These benefits include the proposed removal of existing unpermitted solid waste disposal sites in the floodplain and removal and capping of an existing hazardous waste site, which will reduce future contamination from these existing sources.

Will there be public access to the river? Will there be recreational benefits of the project?

One of the great benefits of this flood control project is that it reconnects our communities to the River in a way that is not currently possible. Today, public access is primarily blocked due to the levees and the only boat ramp in the area at Mayes Lake. From there, boating activities are greatly restricted due to the existing weir directly downstream. With this project, the public will be able to access the river on both the Hinds and Rankin county sides and enjoy multi-purpose trails, boat ramps, fishing, and other waterfront amenities throughout the project site. This project will open up the Pearl River for residents of this region and tourists alike to be able to enjoy.

Will evaporation in the project area reduce water levels in the Pearl River south of the project area?

A detailed analysis of average daily flows and evaporation at the proposed project site indicates the potential for 2.5 - 10.1 cubic feet per second (cfs) to be lost to evaporation. Put in context, the historic average annual flow in Jackson is 4,187 cfs. This evaporation estimate does not include the increases in water levels that will occur as a result of rainfall in the project area becoming direct surface water as opposed to the current conditions where it falls upon soil and vegetation and is absorbed. If rainfall and other downstream factors do not come into play, project engineers estimate that annual water flows may possibly decrease by up to 0.06% at the Bogalusa gauge.

Will the project affect the rate of bank caving downstream?

A bank caving study was performed in the late 1990s and early 2000s by the U.S. Army Corps of Engineers (USACE), Vicksburg District because bank caving had become a major concern of landowners and other interested parties. One recommendation from the study included slowing down the bank failure rates by utilizing the Ross Barnett Reservoir to help limit the expected fall in the Pearl River to no more than 2 feet per day. However, the study noted that significant bank caving would continue due to current attacks in the meandering reaches as is typical in sinuous river systems. Changes were made in the reservoir's operation, and discussion with the USACE and some downstream parties indicate the adjustments appear to have helped reduce bank caving rates over the last 15 years.

Water coming into the proposed project from the reservoir upstream will flow through the project reach and over the relocated weir, continuing downstream without a change in the flow or downstream water levels. Therefore, no change in the rate of downstream bank caving is anticipated.