Environmental Management & Planning

Client
Environmental Protection Agency

Location
Bayou Lafourche, Louisiana, USA

Design for Removal of Sediments from Bayou Lafourche, EPA Region 6, Louisiana

CH2M HILL was recently retained to perform the design for removal and beneficial reuse of the sediment in the upper reaches of Bayou Lafourche. The intent of the project is to provide the 30-percent design of the removal methodology and material handling aspects The removal of the sediments from Bayou Lafourche is proposed as part of a Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) freshwater diversion project that will allow an increased volume of freshwater from the Mississippi River to be diverted down the bayou in an effort to nourish degraded coastal wetlands with sediments and nutrients.

Approximately 6.7 million cubic yards of sediments are proposed to be removed by hydraulic dredge from a 55 mile stretch of Bayou Lafourche in Louisiana from Donaldsonville to Lockport. In 1999, the USACE—New Orleans District conducted an initial survey of this segment of the Bayou and divided the channel into eight stability “reaches” or segments. Louisiana Department of Transportation and Development boring logs from 50 stations along the length of the bayou were used to characterize the channel margins. The reaches were selected based on the sediment borings and represent similar geologic conditions and design values.

Currently, the proposed disposal alternatives for sediments include open-water disposal into the Mississippi River of sediments removed near Donaldsonville, with the remaining sediments to be placed as beneficial topsoil on existing sugar cane croplands adjacent to the bayou.
One hundred cropland disposal areas will be needed, each totaling approximately 30 acres, and will be temporarily converted to confined disposal facilities. The disposal sites will be confined with earthen dikes and the effluent produced during dewatering is expected to flow to swamps and wetlands adjacent to the sites. Once the sediments have dried, it is expected that the disposal areas shall return to functioning sugarcane fields.