



Modification of Caernarvon Diversion

January 2013

U.S. ARMY CORPS OF ENGINEERS

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The Louisiana Coastal Area (LCA) program focuses on critical, near-term ecosystem restoration projects and studies, as approved in the Water Resources Development Act of 2007. The program goal is to slow the current trend of coast-wide wetland loss and resource degradation.

Several restoration techniques are employed in this program, including river diversions, marsh creation and barrier island restoration. Overall, the program is focused on a systematic approach to coastal restoration using larger projects to restore natural features and ecosystem processes.



The Modification of Caernarvon Diversion project is a restoration feature project that would assess changes in the operation of the Caernarvon project to increase wetland creation and restoration outputs for this structure. The project was authorized under the Water Resources Development Act of 2007 - Section 7006(e)(1)(C) and the State of Louisiana's Coastal Protection and Restoration Authority (CPRA) is the cost-share partner in the development and implementation of this project.

Project Location

The project focuses on the existing Caernarvon Diversion located at river mile 81.5 on the east bank of the Mississippi River, 15 miles downstream from New Orleans, just below the community of Caernarvon, Louisiana.

Project Goals

The primary study goal is to evaluate modifications to Caernarvon Diversion operations to increase wetland creation and restoration outputs that will contribute to achieving and sustaining a coastal ecosystem that can support and protect the environment, economy, and culture of southern Louisiana and thus contribute to the well-being of the Nation.

Objectives

The objectives of the Modification of Caernarvon Diversion project, with respect to the study area, include the following:

- 1:** Sustain or increase marsh elevations across the Breton Sound Study Area by optimizing sediment and nutrient introduction and to improve wetland productivity.
- 2:** Increase above and below ground plant biomass by at least 20 percent through optimizing freshwater, sediment (bulk density), and nutrient distribution and by mitigating stressors.
- 3:** Maintain a salinity gradient that supports transitions from fresh to intermediate, intermediate to brackish and brackish to salt marsh.

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Project Features

The present Caernarvon freshwater diversion structure, constructed in 1991, is designed to divert up to 8,000cfs of freshwater; however, the actual amount of diverted flow depends on a detailed annual operational plan which correlates with projected river stages and hunting/migrating seasons. The proposed restoration feature study would assess changes in the operation of the Caernarvon project to increase wetland creation and restoration outputs for this structure. Modified operation of this structure would allow an increase in the freshwater introduction rate to accommodate the wetland building function of the system. This study would identify any changes to this feature's operation that would increase restoration outputs. The proposed project will also investigate the economical effects to commercial fisheries and the environmental impacts to aquatic wildlife and vegetation due to the possible deviations to the operational schedule. Real estate/flowage easement acquisitions and a potential for oyster lease acquisitions may be necessary for this project as changes in the operation of the structure may enlarge the current project flood footprint. The Modification of Caernarvon Diversion study will be coordinated with the new White Ditch diversion structure/project.

Project Status

The project was initiated with the signing of the Feasibility Cost Share Agreement on June 5, 2009. Hydraulics and Hydrology (H&H) modeling is near completion to inform the study process. Completion of a final report with a recommendation was scheduled for November 2013.

By request of the State of Louisiana's Coastal Protection and Restoration Authority in October 2012, the feasibility study for this project has been suspended.

Anyone seeking additional information on the Modification of Caernarvon Diversion project can visit the Louisiana Coastal Area program website at www.lca.gov.

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