East Bank and Vicinity, Louisiana, IHNC Basin, Water Control Plan

Purpose

The purpose of this document and the scheduled public meeting is to solicit input for the development of the water control plan for the IHNC Basin. The Seabrook Gate Complex and The IHNC Surge Barrier were constructed as part of the hurricane and storm damage risk reduction system (HSDRRS) and serve as boundaries for the IHNC basin in the Greater New Orleans Metropolitan Area.

Introduction

The addition of the Seabrook Gate Complex and IHNC Surge Barrier Structure to the East Bank and Vicinity, LA Hurricane and Storm Damage Risk Reduction System (HSDRRS) project will significantly change the course and operation of the perimeter defense. The Seabrook Gate Complex and IHNC Surge Barrier Structure will provide a barrier to defend against the 100-yr storm surge into the IHNC and GIWW Canals, and thus remove approximately 33 miles of levees, 20 miles of floodwalls and 135 floodgates from the primary line of hurricane defense. The project features along the IHNC and GIWW Canals, bounded by the IHNC Lock on the south end of the IHNC, the Seabrook Gate Complex on the north end of the IHNC and the IHNC Surge Barrier Structure on the east end of the GIWW, serve to provide as a secondary line of risk reduction during a storm event and form a detention basin to store rainfall, pumped drainage and any potential storm surge overtopping.

The IHNC Basin Water Control Plan will contain the instructions and supporting information for when and why to operate the project features of the Seabrook Gate Complex and IHNC Surge Barrier Structure to reduce the risk of hurricane and storm surge damage in Orleans and St. Bernard Parishes.

Figure 1: IHNC Basin, East Bank & Vicinity, Louisiana

Figure 2: Schematic of Seabrook Floodgate Complex (located on the IHNC near Lake Pontchartrain)

Figure 3: IHNC Surge Barrier (located on the GIWW near Lake Borgne)

Schedule

The East Bank and Vicinity LA, IHNC Water Control Plan will be implemented when the Corps of Engineers submits the notice of construction completion to the Coastal Protection and Restoration Authority of Louisiana Board (CPRAB), the Non-Federal Sponsor. This notification is currently scheduled to occur in April 30th, 2013.

System Features

The project is located in Orleans Parish and St. Bernard Parish in the State of Louisiana. The project's water control structures are part of HSDRRS; Lake Pontchartrain and Vicinity and are located on the boundaries of the IHNC basin. This basin includes 5.5 miles of the IHNC waterway and 7 miles of the GIWW. The IHNC connects the Mississippi River to Lake Pontchartrain and the GIWW connects to the IHNC and forms the connection with Lake Borgne and navigable waterways in the east. One of the new structures in the HSDRRS is a surge barrier across the marsh west of Lake Borgne, The IHNC Surge Barrier. This barrier is located near the confluence of the GIWW and the MRGO and includes three different control structures. The second barrier is the Seabrook Gate Complex and is located near the confluence of the IHNC basin and Lake Pontchartrain. This barrier will reduce storm surge impacts from Lake Pontchartrain. A third connection with external water bodies is provided by the IHNC Lock. The IHNC Lock enables navigation from the Mississippi River to the IHNC/GIWW and vice versa. This lock has no water control function in the IHNC water system and will therefore not be discussed in the water control plan.

There are five Orleans Parish drainage pumping stations that discharge into the IHNC basin. Pumping Station No. 19, Dwyer Pumping Station, Amid Pumping Station, Grant Pumping Station and Elaine Pumping Station. The Michoud Facility also operates a drainage pumping station that discharges into the Basin. During closure of the Seabrook Gate Complex and the IHNC Surge Barrier drainage pumping station discharge is detained within the basin.

The design water surface elevation for the GIWW and IHNC canals is 8.0-ft[1] where the detention basin levees will be maintained between elevations El. 12 feet and El. 22 feet and detention basin floodwalls are maintained between El. 11 feet and El. 21 feet, therefore providing allowances for uncertainty, wind set up and waves.

Water Control Plan Formulation

Under non-tropical event conditions, the Seabrook Gate Complex and IHNC Surge Barrier gates remain open. The gates will only be closed, except for exercising, when a tropical storm threatens the vicinity.

The CPRAB in coordination with the USACE, United States Coast Guard and local authorities, has decision support tools to aid in determining if and when to close and operate structures when a tropical event threatens the metropolitan area. These tools utilize computer models and records from past storms to analyze National Hurricane Center storm tracking data. A storm surge atlas has been developed from more than 300 storm tracks to provide an immediate estimate of surge depth.

The current conceptual plan is to close the gates for storm surges anticipated to be greater than 5ft in the IHNC Basin. The gates are to be closed with the lowest practicable water level possible to maximize storage in the basin.

The Seabrook Gate Complex and IHNC gates will be re-opened as soon as conditions permit. Gate opening conditions include: (1) the threat of increasing storm surge has passed, (2) flood side water levels outside of the surge barrier are less than water levels within the detention basin and falling, and (3) water level difference between flood side and protected side is small enough to prevent scour.

Contents of the East Bank and Vicinity, LA, IHNC Basin Water Control Plan

The contents of a Water Control Manual are prescribed by USACE Engineering Regulation **ER 1110-2-8156, Preparation of Water Control Manuals**, 31 August 1995. The Table of Contents is shown below. As the Table of Contents makes apparent, much of the information in the manual is background information about the location, purpose, authorization, and cooperative agreements for the projects; as well as hydrologic, hydraulic, industrial, environmental and cultural conditions for the area served by the project. Most of this background information has been presented in the planning

[1] All elevations in this document have units of feet NAVD88, 2004.65 Epoch.

and design documents that preceded authorization and construction. This document is intended to illustrate the current concept for some of the key items noted in the Master Water Control Manual Table of Contents, but which have not yet been finalized.

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