



Morganza to the Gulf, Louisiana, Hurricane and Storm Damage Risk Reduction Project, Final Supplemental Environmental Impact Statement



Appendix M – Draft Water Control Plan

August 2026

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EISX-202-00-MVN-1783435937

Morganza to the Gulf of Mexico, Louisiana

Draft Water Control Structure Operations Plan

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1 Introduction

The following is a draft operation plan for the navigation gates, flood gates, and environmental control structures that are incorporated into the Morganza to the Gulf (MTG) Levee System. Within the first year of structure operations, the USACE would finalize the water control manual. If parameters, thresholds, and/or triggers are changed, the USACE would initiate a re-analysis of potential impacts. If these analyses identify potential impacts beyond the scope of this SEIS, NEPA and environmental compliance would be updated to include a re-evaluation of impacts to significant habitat and appropriate mitigation for those impacts.

The following plan must be routinely reevaluated, at least every 5 years, by USACE New Orleans District. Updates may include, but are not limited to, increasing trigger water surface elevations to account for sea level rise, updating closure/reopening procedure for specific environmental conditions such as salinity, sedimentation, or impacts to wetlands, and updating instantaneous gages that are acceptable for use in determining closure or reopening of structures and gates.

2 Operating Plan

Table 1 includes operation guidance for the structures located within each levee reach shown in Figure 1. The system is designed to be closed to prevent interior flooding due to elevated exterior water levels. While storm surge from a named storm is the most common cause of elevated exterior water levels, other conditions, such as Atchafalaya River flooding, may also necessitate closure to prevent interior flooding. The structures will be closed if either 1) a named storm is in the Gulf of Mexico that is threatening the Louisiana coast, or 2) a water surface elevation trigger is reached (levee reach and structure dependent; guidelines are in Table 1). Historic gage data from the USGS, USACE, and CRMS was utilized to approximate appropriate water surface elevation triggers. For each group of levee reaches, the selected trigger water surface elevations (2.5 and

3.0 ft. NAVD88) correspond to annual exceedance probabilities that lie between those of 50% (2-year) and 20% (5-year) AEPs, as estimated using CHS-LA (Coastal Hazards System – Louisiana) for storm surge probabilities in the basin.

The HNC Lock structure has additional salinity triggers listed in Section 3.

No structure or gate can be closed or reopened when the pressure head differential exceeds the design capability. Additionally, no structure or gate can be reopened until the storm force winds have dropped to a level which is safe for personnel to access the area and operate the machinery.

All real-time water surface elevations used to determine closure or reopening should be read at the location of the structure or gate.

If there is not a gage at the structure or gate location, the following gages are acceptable to use to retrieve instantaneous stages in and around the MTG Levee System. It is imperative that the stages obtained from the USGS website are converted to water surface elevations in NAVD88 (if necessary) using the conversion published on the gage's page, which is also listed below. Gages both internal of and external to the MTG Levee System may be used to determine a closure, but only gages external of the MTG Levee System may be used to determine reopening.

2.1 Gages Internal to the MTG Levee System

[USGS 07381150 Bayou Lafourche at Lockport, LA](#)

- Subtract 3.9 feet from the stage to get elevation in NAVD88

[USGS 07381355 Company Canal at Salt Barrier near Lockport, LA](#)

- Subtract 1.18 feet from the stage to get elevation in NAVD88

[USGS 07381324 Bayou Grand Caillou at Dulac, LA](#)

- Add 0.36 feet from the stage to get elevation in NAVD88

2.2 Gages external to the MTG Levee System

[USGS 073813498 Caillou Bay SW of Cocodrie, LA](#)

- Subtract 0.41 feet from the stage to get elevation in NAVD88

[USGS 292952090565300 CRMS 0411-H01-RT](#)

- Subtract 0.91 feet from the stage to get elevation in NAVD88

[USGS 07381349 – Caillou Lake \(Sister Lake\) SW of Dulac, LA](#)

- Subtract 1.03 feet from the stage to get elevation in NAVD88

[USGS 07380330 Bayou Perot at Point Legard near Cutoff, LA](#)

- Add 1.67 feet to the stage to get elevation in NAVD88

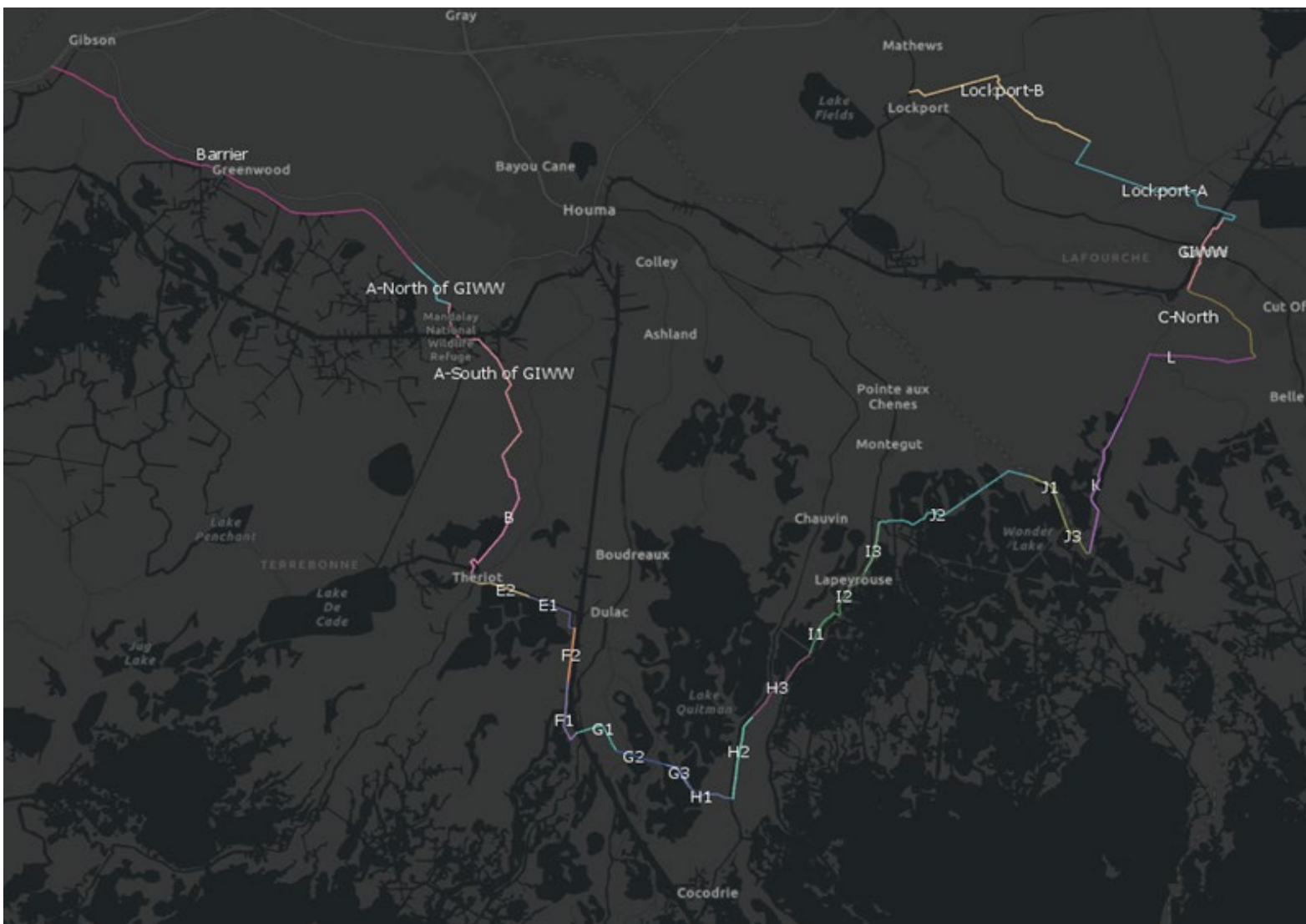


Figure 1: Morganza to the Gulf Levee Reaches



Figure 2: Gage Monitoring Locations

Table 1. Morganza to the Gulf Structure Operation Guidance (Excluding the HNC Lock)

Reach Name	Structures/Gates	Closure Conditions ³	Reopening Conditions
Barrier Reach	Bayou Black Floodgate Shell Canal West Floodgate (Stoplog Gate) Shell Canal East Floodgate NAFTA Canal Environmental Control Structures	1. A named storm is in the Gulf of Mexico that is threatening the Louisiana coast, <u>OR</u> 2. The water surface elevation measured at the gate/structure location reaches +3.0 ft NAVD88	1. The water surface elevation on the outside of the gate/environmental control structure drops below +3.0 ft NAVD88 , <u>AND (for ONLY Navigation Gates)</u>
Reach A North of GIWW	Environmental Control Structures		1. The NHC small craft advisory no longer applies to the area, 2. The channel has been cleared of debris or obstructions so that navigation can safely resume.
Reach A South of GIWW	Minors Canal Floodgate GIWW West ¹ Environmental Control Structures		
Reach B	Marmande Canal Floodgate (Stoplog Gate) Falgout Canal Floodgate ¹	1. A named storm is in the Gulf of America that is threatening the Louisiana coast, <u>OR (for ONLY Navigation Gates)</u> 2. The water surface elevation measured at the gate location reaches +2.5 ft NAVD88 , <u>OR (for ONLY Environmental Control Structures)</u> 2. The water surface elevation measured at the structure location (or nearest approved instantaneous gage) reaches +3.0 ft NAVD88 .	1. The water surface elevation measured on the exterior of the System at the gate location drops below +2.5 ft NAVD88 , <u>OR</u> 1. The water surface elevation measured on the exterior of the System at the environmental control structure location drops below +3.0 ft NAVD88 , <u>AND (for ONLY Navigation Gates)</u> 1. The NHC small craft advisory no longer applies to the area, 2. The channel has been cleared of debris or obstructions so that navigation can safely resume.
Reach E (1&2)	Bayou Dularge Floodgate Environmental Control Structures		
Reach F ² (1&2)	Bayou Grand Caillou Floodgate ¹		
Reach G (1-3)	Four Point Bayou Floodgate (Stoplog Gate) Environmental Control Structures		
Reach H (1-3)	Bayou Petit Caillou Floodgate ¹ Placid Canal Floodgate ¹ Environmental Control Structures		
Reach I (1-3)	Bush Canal Floodgate ¹ Bayou Terrebonne Floodgate Humble Canal Floodgate		
Reach J (1-3)	Bayou Pointe Aux Chenes Floodgate ¹ Environmental Control Structures		
Reach K	Environmental Control Structures		
Reach L	Grand Bayou Floodgate ¹ Proposed Structure at Bayou Blue		

Table 1. Morganza to the Gulf Structure Operation Guidance (Excluding the HNC Lock)			
Reach Name	Structures/Gates	Closure Conditions ³	Reopening Conditions
GIWW Reach	Larose Floodgate	1. A named storm is in the Gulf of Mexico that is threatening the Louisiana coast, <u>OR</u> 2. The water surface elevation measured at the gate/structure location reaches +3.0 ft NAVD88	1. The water surface elevation on the outside of the gate/environmental control structure drops below +3.0 ft NAVD88 , <u>AND (for ONLY Navigation Gates)</u>
Lockport Reach A	GIWW East ¹		1. The NHC small craft advisory no longer applies to the area, 2. The channel has been cleared of debris or obstructions so that navigation can safely resume.
Lockport Reach B	Environmental Control Structures		
Reach J	Environmental Control Structure #1 and #2	Managed according to current LA Wildlife and Fisheries Permit.	Managed according to current LA Wildlife and Fisheries Permit.

Notes:

1. Structure contains culverts within or adjacent to the floodgate for continued flow passage when the gate is closed. Most culverts include a flap gate and/or sluice gate that can also be closed if the closure conditions are reached.
2. All water surface elevations should be read at the gate or structure location to satisfy closure conditions. If the gate or structure does not have a gage on location, the water surface elevation must be taken from an approved gage. See Sections 2.1 and 2.2, above, for approved gages.
3. NHC = National Hurricane Center

3 HNC Lock and Floodgate Draft Operations Plan

FLOOD CONTROL:

Based on the Flood Closure Criteria from the Final RPEIS dated May 2013, the HNC Lock and Floodgate will be closed once a watch has been issued by the National Hurricane Center AND the stage measured at the gate location reaches +2.5 ft NAVD88. The gates can only be reopened once the watch has been discontinued AND the stages on the differential between the interior water level and exterior water level is equal to or less than the +1.0 feet as measured on the upstream and downstream staff gage AND the channel has been cleared of obstructions.

SALINITY CONTROL:

The HNC Lock and floodgate would be closed for salinity only if:

1. Flows in the Atchafalaya River are below 100,000 cfs as measured at Simmesport gage (USGS 07381490) or
2. If a gage on the outside of the Lock Complex exceeds a salinity value that has been correlated with preventing exceedance of the maximum allowable chloride level of 250 ppm as defined in EPA's secondary drinking water standard at the Houma Treatment Plant. The structure should be closed for at least 12 hours and fluctuations in chloride levels should be monitored and recorded hourly.

The HNC Lock complex may be opened when all of the following criteria have been met:

1. After monitoring chloride levels over the 12 hour period at the new gage on the outside of the Lock complex drops below the salinity closure trigger.

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OPERATION PLAN			TERREBONNE LEVEE & CONSERVATION DISTRICT HOUMA NAVIGATION CANAL LOCK COMPLEX TERREBONNE PARISH, LA. T20S, R17E, SECTS 16 & 21	
Date:	Drawn By:	Sheet No.:	Revisions:	
June 2017	CDL	50	Revision No.:	Date:
			6	02/13/2019
			6	02/14/2019
			7	06/12/2019
			8	08/20/2019
			9	12/12/2019
			10	04/24/2020
Scale:	Approved By:	File No.:	Notes:	
N.T.S.	CDL	154607	Rev. Op. Plan Language	
			Mitigation Revisions	
			Trehaba Rev. Corps	
			Mitigation Constr. Elev.	
			DNR Comment Letter	
			Rev Mitigation Acreage	

