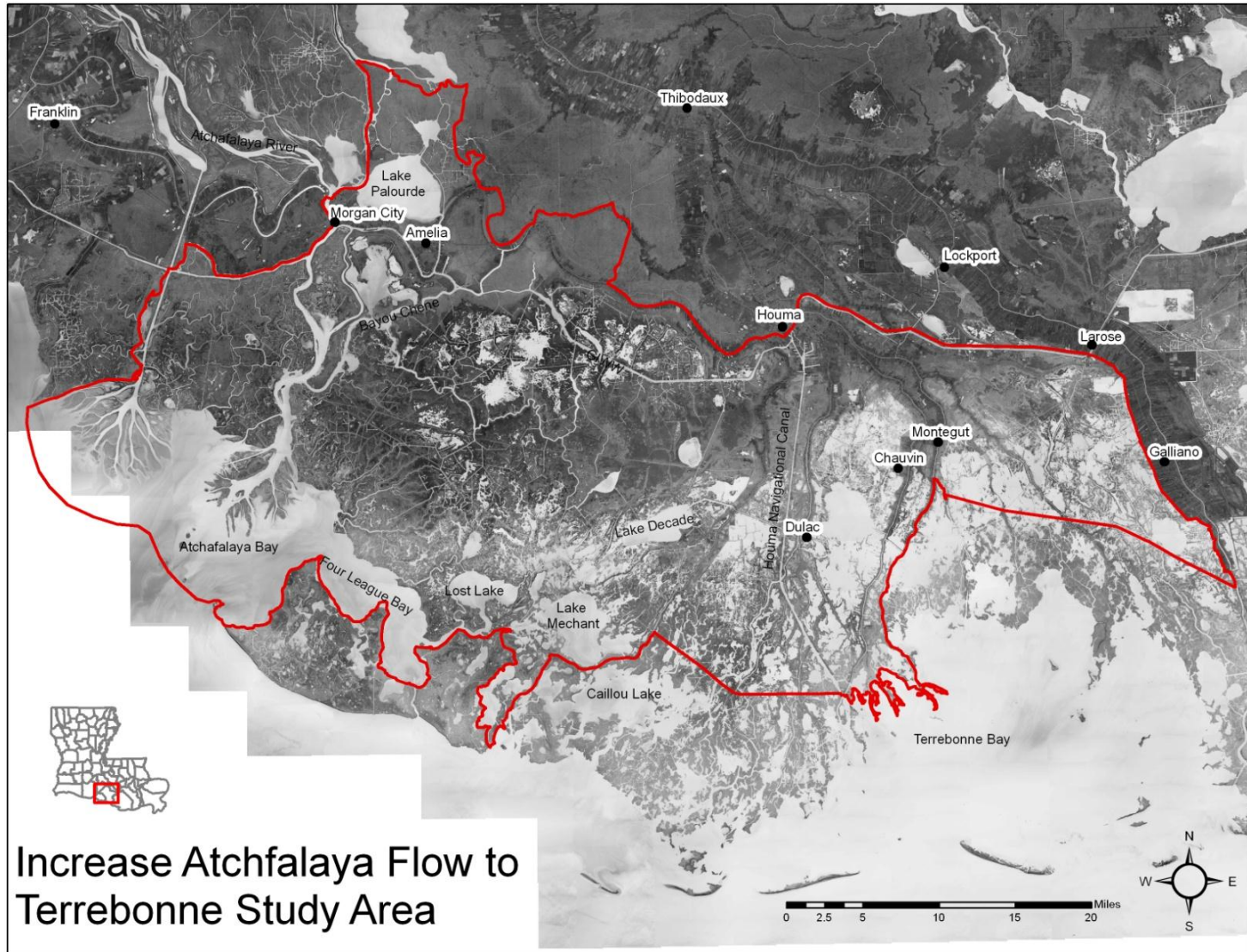




# Increase Atchafalaya Flow to Terrebonne Study Area



# Purpose and Need



## Purpose:

- Utilize freshwater and sediment from the Atchafalaya River in order to build, maintain and sustain wetlands within the Terrebonne Basin.

## Need:

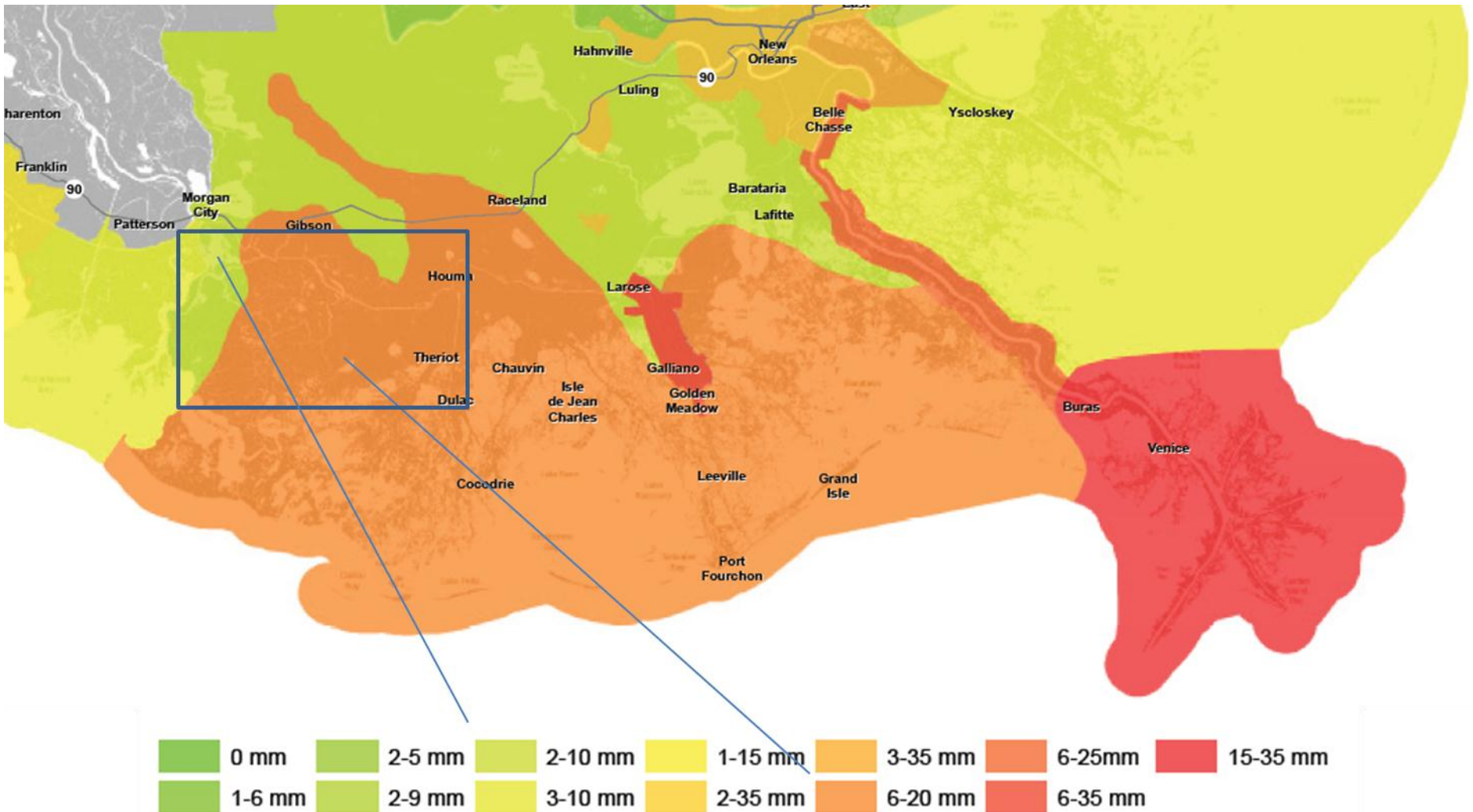
- Needed in order to achieve, in part, the goals of the 2012 Louisiana Coastal Master Plan and to address hydrologic alterations within the Terrebonne Basin.
- The lack of both freshwater and sediment inputs have resulted in increased saltwater intrusion and high subsidence rates, contributing significantly to wetland loss rates within the Basin.

Photo: Maarten Kluijver



# Land Loss Drivers

## *Subsidence*



# Land Loss Drivers

## *Hydrologic Modifications*



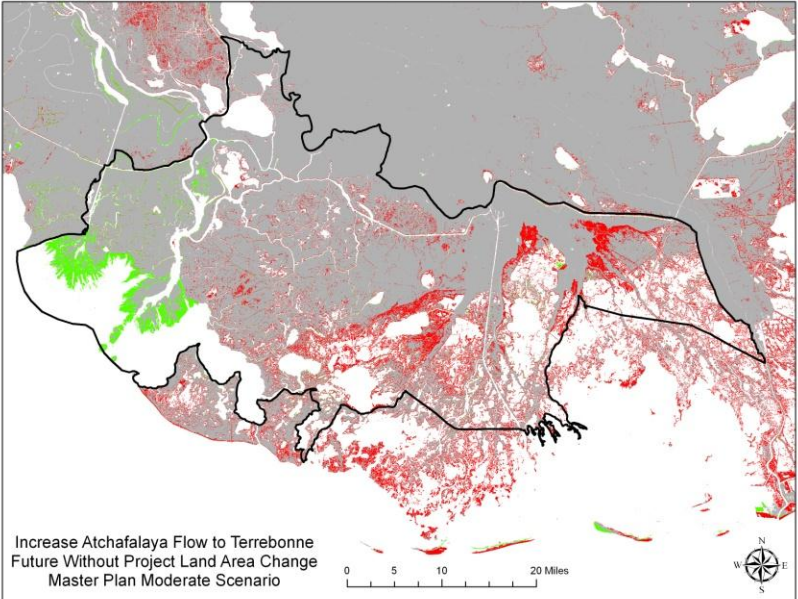
# Future Without Project

## *Landloss Projections*

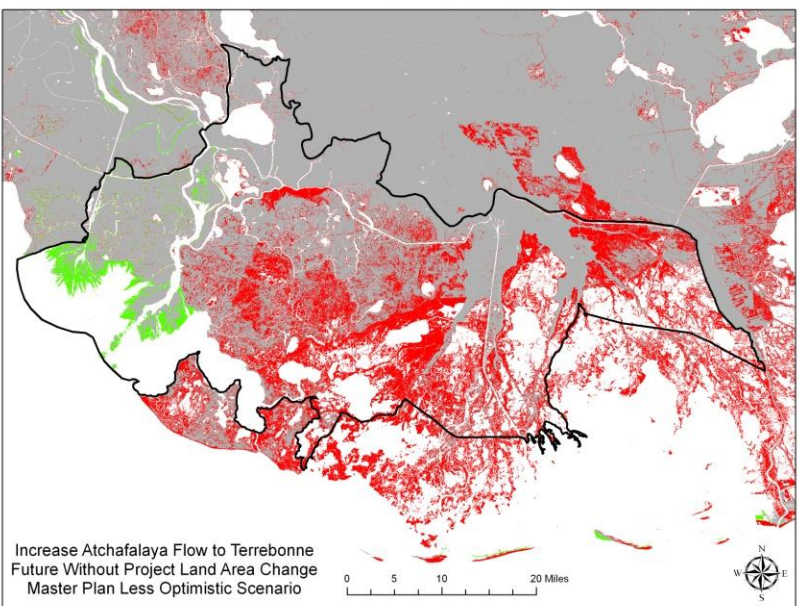
### Factors Accounted for by Our Scenarios

- ▶ Sea Level Rise
- ▶ Subsidence
- ▶ Storm Intensity
- ▶ Storm Frequency
- ▶ River Discharge / Sediment Load
- ▶ River Nutrient Concentration
- ▶ Rainfall
- ▶ Evapotranspiration
- ▶ Marsh Collapse Threshold

## Moderate Scenario



## Less-Optimistic Scenario



# Master Plan

## *Increase Atchafalaya Flow to Terrebonne*

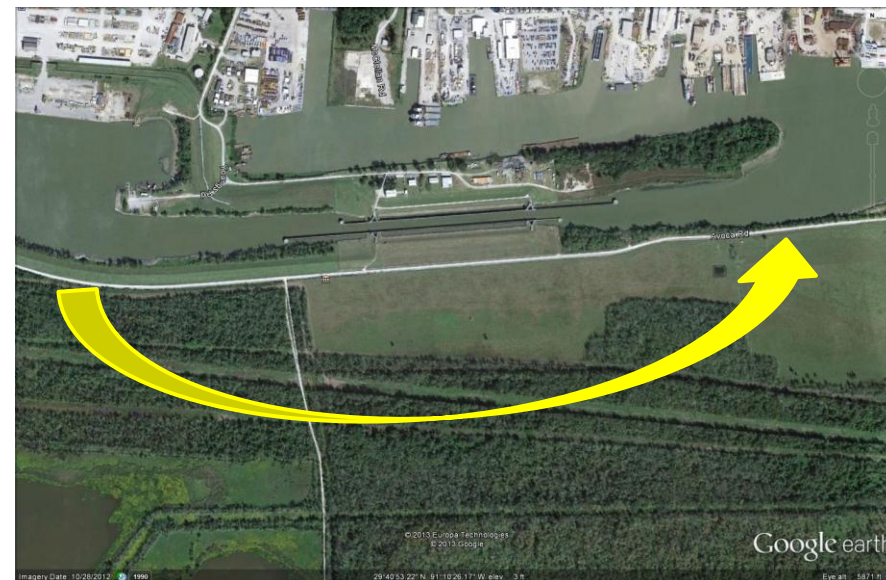
- 20 cfs Capacity Diversion near Bayou Boeuf Lock
- Dredging of GIWW to -25'
- Marsh Creation using dredged material

Year 50 Land Area: + 8295 acres



# Other Major Projects

- **Bayou Chene Floodgate**
  - Will provide flood risk reduction to Morgan City Area
- **Bayou Boeuf Lock**
  - Part of the MR&T levee network
  - Proposed location for diversion structure





# Other Major Projects

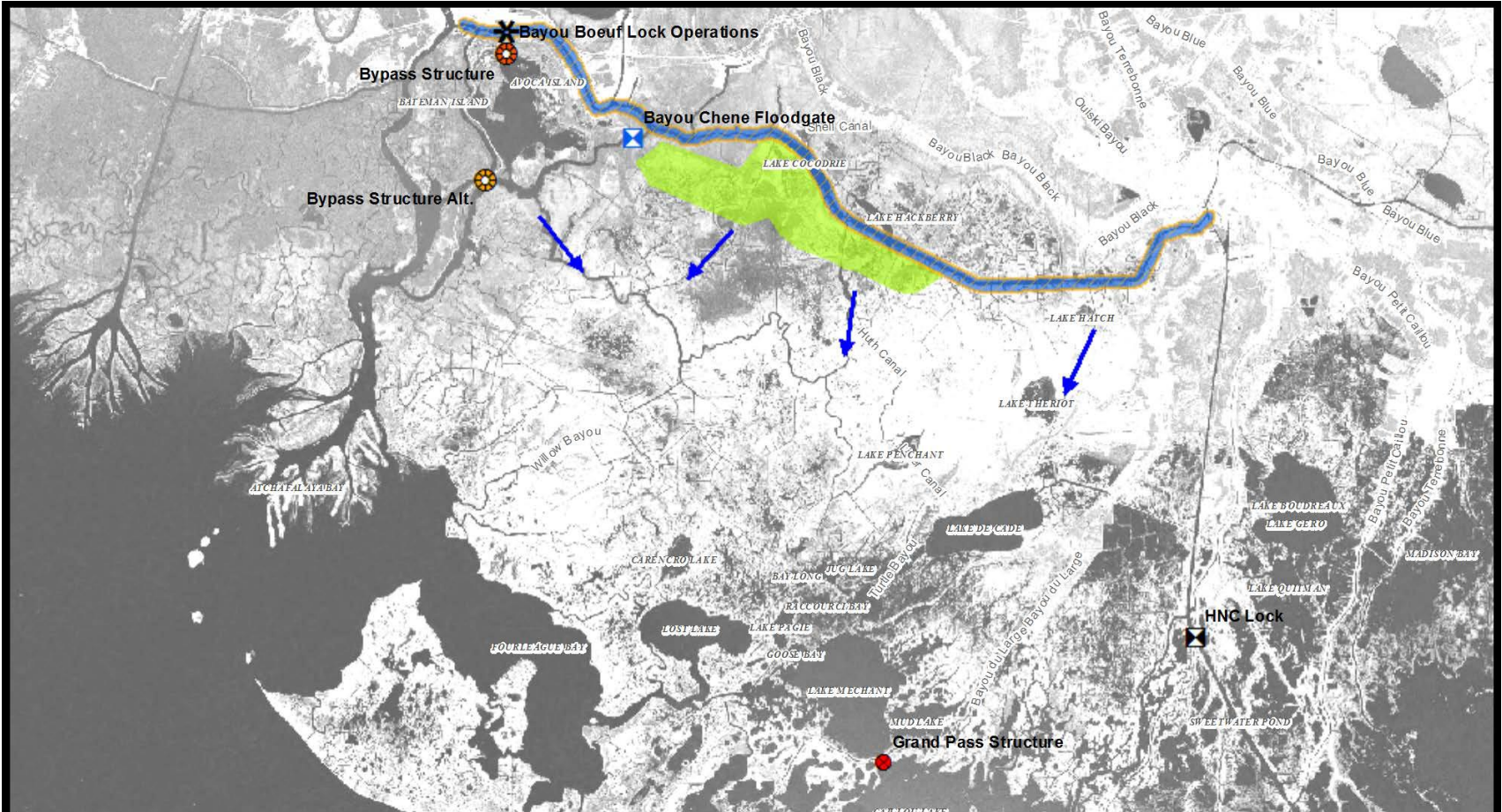
## Houma Navigation Canal Lock

- Part of the Morganza to the Gulf flood risk reduction project
- Operating for ecological restoration as well as flood control

Photos: Maarten Kluijver






# Plan Formulation: Components




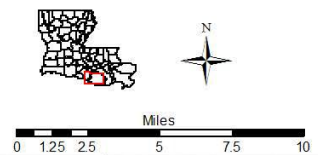
## Alternatives

### Alternative 1 - Master Plan

-  Bypass Structure
-  Dredging of GIWW
-  Marsh Creation

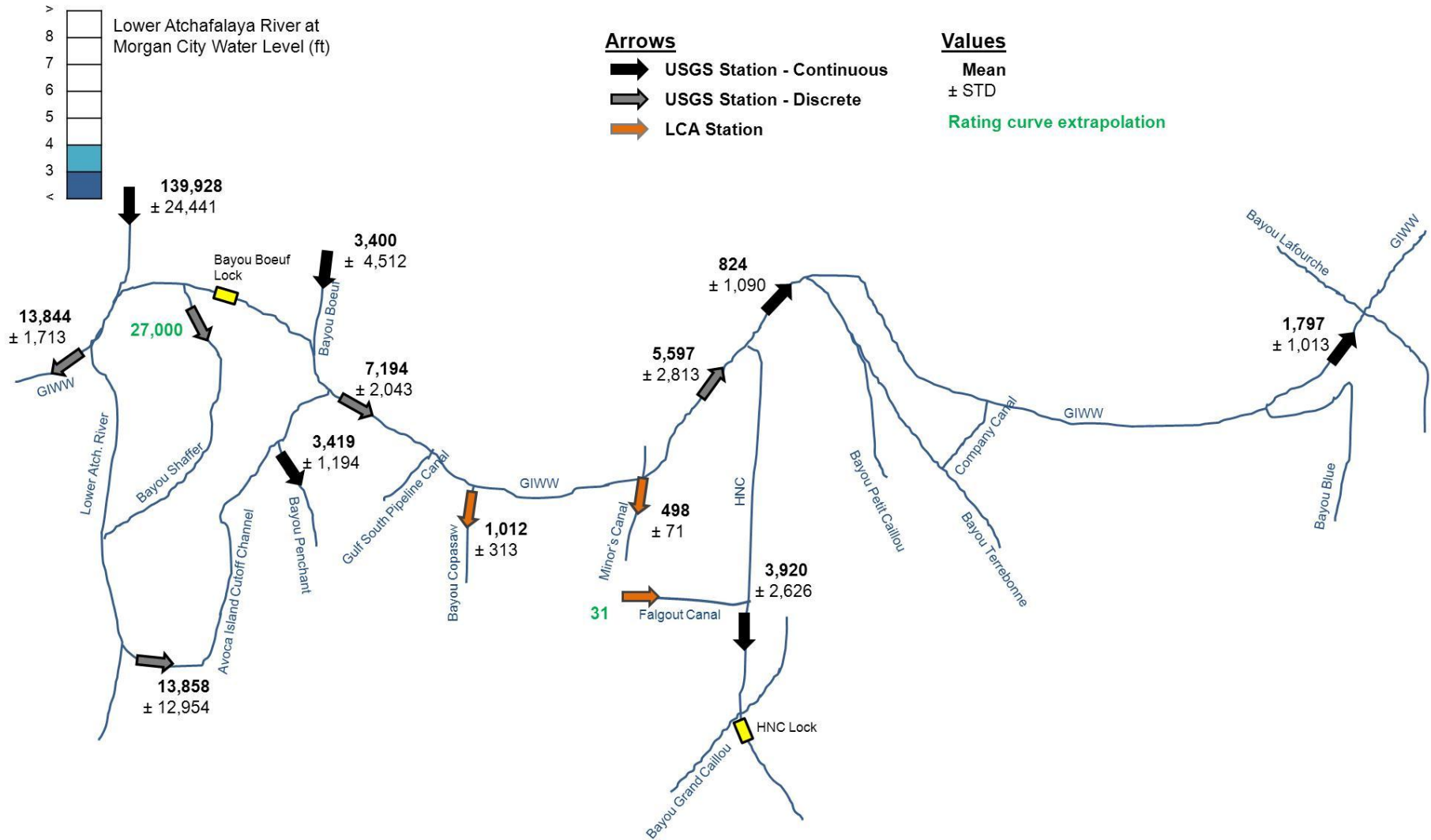
### Other Building Blocks

-  Bayou Boeuf Lock Operation
-  Bayou Chene Floodgate
-  HNC Lock
-  Southward Flow Distribution
-  Dredging of GIWW (various depths)
-  Bypass Structure Alt.
-  TE66 project features



# Water Balance

## Existing Conditions



# Plan Formulation: Components

- Bayou Boeuf Diversion
- Avoca Island Diversion
- Bayou Boeuf Lock Operations
- GIWW Dredging
- Bayou Chene Floodgate
- HNC Lock
- Grand Pass Structure
- Southward Flow Distribution







Coastal Protection and  
Restoration Authority of Louisiana

# Questions?

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Authority of Louisiana