



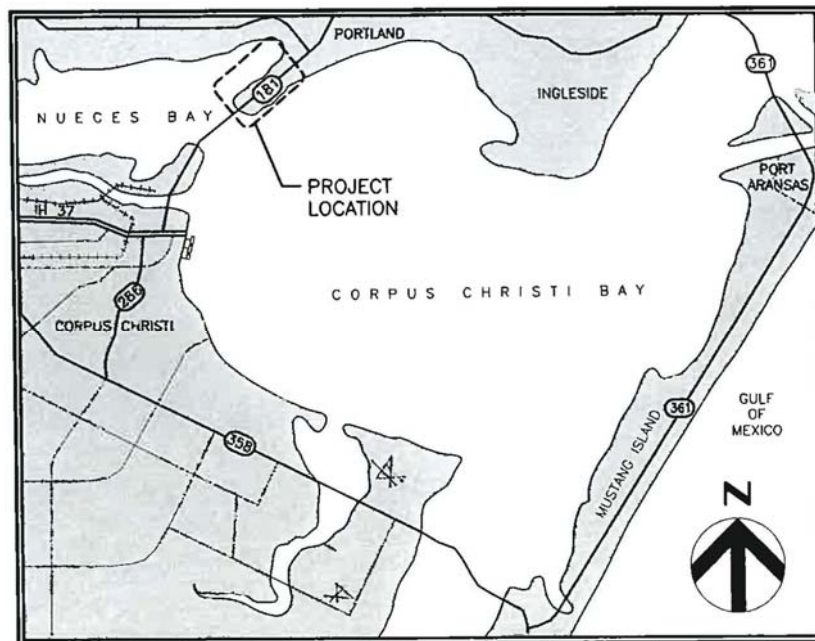
Coastal Bend Bays & Estuaries Program, Inc.

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Nueces Bay Portland Causeway Marsh Restoration CMP Cycle 15 Final Report

August 29, 2012

Submitted To
Texas General Land Office
P.O. Box 12873-2873
Austin, TX 78711



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NA10NOS4190207.



Project Background and Summary

In 2005 and 2006, Coastal Bend Bays and Estuaries Program (CBBEP) conducted an alternatives analyses and conceptual design for the restoration of 160 acres of marsh habitat adjacent in Nueces Bay, adjacent to the U.S. Highway 181 causeway between the cities of Corpus Christi (Nueces County) and Portland (San Patricio County), Texas. Historically, this area consisted of significant amounts of *Spartina* marsh habitat. Approximately 180 acres of marsh were lost directly to dredging and construction of the causeway in the late 1940s, and a further 160 acres were lost to subsequent erosion and subsidence.

The project's initial construction phase, which was funded in part by a CMP Cycle 13 grant award, was completed in 2010. The initial construction phase 1) restored 76 acres of marsh complex, 2) constructed a protective outer-berm, providing another 12 acres of elevated planting area, and 3) created a 72-acre confined cell between the terraces and outer-berm, allowing for the future placement of dredged material to create additional marsh habitat.

The project's second construction phase, funded by the CMP Cycle 15 grant award, calls for the placement of dredged material into the 72-acre confined cell to create a broad expanse of plantable (with *Spartina alterniflora*) saltmarsh complex. Final design specifications for this phase were completed in 2011, and construction is on-going as of the date of this report.

CMP Cycle 15 funds brought construction to approximately 75% completion. Construction is continuing, utilizing CMP Cycle 16 (and matching) funds.

Site Visit Reports and Photographs

Attached are site-visit reports prepared by the project engineer (HDR Engineering), with photographs taken at different times throughout the second construction phase.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 02/15/2012

By: L. Augustin

Conditions During Site Visit:

- Tide elevation approximately +0.5' NAVD
- Overcast, light rain

Completed Work:

- Initial survey complete.
- Pre-construction hazard survey complete.
- Temporary access corridor staked.
- Cell 3 toe berm staked.
- Mobilization of CAT 320D.
- Approximately 350' of Cell 3 toe berm has been constructed.

Work In-progress:

- Project staking ongoing.
- Mobilization ongoing.
- Fuel tank and miscellaneous supplies arrived on site during visit.
- Construction of Cell 3 toe berm.

Problems Identified:

1. Contractor is having difficulty constructing toe berm because of high water levels. RFI No. 1 was submitted on 2/13/2012 requesting permission to excavate outside of cells for closing and repairing toe berm.

Clarifications/Directions Given:

1. Refer to RFI No. 1 response dated 2/15/2011. Limited excavation outside of cells is acceptable. Final survey transects may need to be extended and/or added to cover additional excavation/borrow trenches.

Review of Upcoming Construction Activities:

- Installation of temporary fence in staging area.
- Dredge and pipeline expected on site next week.
- Construction of Cell 3 toe berm ongoing.

Review of Project Schedule:

- Work appears to be on schedule.

Attachments: Digital photographs.



Tide staff installed by Contractor on existing warning sign.



Temporary access corridor staked.



Construction of Cell 3 Toe Berm.



Construction of Cell 3 Toe Berm.



Construction of Cell 3 Toe Berm.



Construction of Cell 3 Toe Berm.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 03/01/2012

By: L. Augustin

Conditions During Site Visit:

- Tide elevation approximately +0.5' NAVD
- Clear, sunny

Completed Work:

- Initial survey complete.
- Pre-construction hazard survey complete.
- Temporary access corridor staked.
- Cell 3 toe berm complete.
- Mobilization of CAT 320D.
- Marsh mound center points for M10, M11 and M12 staked.

Work In-progress:

- Project staking ongoing.
- Mobilization ongoing.

Problems Identified:

1. None.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Installation of temporary fence in staging area.
- Dredge and pipeline mobilization.
- Construction of marsh mounds M10, M11 and M12.

Review of Project Schedule:

- Work is approximately one week behind schedule. Contractor is having difficulty coordinating dredge mobilization. Dredge anticipated to arrive no later than Monday. Pipe expected to be mobilized with dredge.

Attachments: Digital photographs.



Cell 3 Toe Berm.



Cell 3 Toe Berm.



Cell 3 Toe Berm.



Cell 3 Toe Berm.



Cell 3 Toe Berm.



Temporary access corridor..

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 03/09/2012

By: L. Augustin

Note: Dustin Cravey, Leo Trevino and Cameron Perry were also present.

Conditions During Site Visit:

- Overcast, rain

Completed Work:

- Initial survey complete.
- Pre-construction hazard survey complete.
- Temporary access corridor staked.
- Cell 3 toe berm complete.
- Mobilization of CAT 320D, dredge pipe, airboat, fuel tanks, and other miscellaneous items.
- Marsh mound center points for M10, M11 and M12 staked.

Work In-progress:

- Project staking ongoing.
- Mobilization ongoing.

Problems Identified:

1. Contractor has experienced theft at project site.

Clarifications/Directions Given:

1. Contractor may secure staging area. Staging area is property of CBBEP, entrance and exits may be blocked, and temporary fences may be installed.

Review of Upcoming Construction Activities:

- Dredge mobilization.
- Construction of marsh mounds M10, M11 and M12.

Review of Project Schedule:

- Work is approximately two weeks behind schedule. Dredge is expected to arrive on site today (3/9/2012) at approximately 2:30 pm. Contractor provided a revised schedule to HDR. Revised schedule shows completion of demobilization by May 11, 2012. The contract completion date is July 6, 2012; construction is scheduled to finish approximately 2 months ahead of the required completion date.

Attachments: Contractor's revised schedule

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 03/12/2012

By: L. Augustin

Conditions During Site Visit:

- Clear, sunny
- Tide elevation approximately +1.0' NAVD

Completed Work:

- Initial survey complete.
- Pre-construction hazard survey complete.
- Temporary access corridor staked.
- Cell 3 toe berm complete.
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete.
- Marsh mound center points for M10, M11 and M12 staked.
- Fused HDPE pipe.

Work In-progress:

- Project staking ongoing.
- *Ike* is dredging within Flotation Channel/Borrow Area A near Station 3+00.
- Construction of Marsh Mound M11.

Problems Identified:

1. Contractor has experienced theft at project site.

Clarifications/Directions Given:

1. Contractor may secure staging area. Staging area is property of CBBEP, entrance and exits may be blocked, and temporary fences may be installed.

Review of Upcoming Construction Activities:

- Construction of marsh mounds M10 and M12.

Review of Project Schedule:

- Work is behind original schedule. Contractor anticipates a 4,000 CY/day production rate working 10-12 hour days.

Attachments: Digital Photographs



Marsh excavator securing dredge pipe at M11 discharge point.



Pumping mound M11.



IMS dredge *Ike*, view from Cell 3 facing northwest.



Ike dredging within Flotation Channel/Borrow Area A.



Dredge pipe and floats.



HDPE dredge pipe across outer berm.



IMS dredge *Ike*.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 03/21/2012

By: L. Augustin

Conditions During Site Visit:

- Clear, sunny
- Tide elevation approximately +1.3' NAVD

Completed Work:

- Initial survey complete.
- Pre-construction hazard survey complete.
- Temporary access corridor staked.
- Cell 3 toe berm complete.
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete.
- All marsh mound center points and toe berm centerlines staked
- Fused HDPE pipe.

Work In-progress:

- *Ike* is dredging within southeastern portion of Borrow Area A adjacent to the flotation channel.
- Construction of Marsh Mound M11 (nearing completion).

Problems Identified:

1. None.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Construction of marsh mound M12 anticipated to start on 3/22/2012.

Review of Project Schedule:

- Work is approximately one week behind original schedule. Contractor anticipates a 4,000 CY/day production rate working 10-12 hour days.

Attachments: Digital Photographs



Toe berm and mound stakes.



Marsh Mound M11.



Marsh mound M11.



Mound M11 side slopes.



Ike dredging within Borrow Area A.



Dredge pipe and floats.



Ike dredging within Borrow Area A.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 03/28/2012

By: E. Rooney

Conditions During Site Visit:

- Tide elevation approximately +0.9' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor staked
- Cell 3 toe berm complete
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- All marsh mound center points and toe berm centerlines staked
- Fused HDPE pipe
- Marsh Mound M11 complete (pending acceptance survey)

Work In-progress:

- *Ike* is dredging within southeastern portion of Borrow Area A approximately 600 ft from baseline at Station 3+00 (Contractor estimate)
- Construction of Marsh Mound M10

Problems Identified:

1. None.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Contractor expects Marsh Mound M10 to be completed by Friday (3/30/12). Construction of M12 will commence after completion of M10.

Review of Project Schedule:

- Work is approximately one week behind original schedule.

Attachments: Digital Photographs



Construction of Marsh Mound M10.



Construction of Marsh Mound M10.



Marsh mound M11 and Cell 3 toe berm.



Ike dredging within Borrow Area A.



Dredge pipe and floats.



Ike dredging within Borrow Area A.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 04/13/2012

By: L. Augustin

Conditions During Site Visit:

- High winds, tide elevation approximately $\pm 1.8'$ NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor staked
- Cell 3 toe berm complete
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- All marsh mound center points and toe berm centerlines staked
- Fused HDPE pipe
- Marsh mounds M10, M11 and M12 complete (pending acceptance survey)

Work In-progress:

- No dredging work was being performed during site visit. Contractor was performing maintenance on dredge and CAT. New dredge computer has been ordered and software is in the process of being installed.

Problems Identified:

1. Dredge computer and software were stolen on Easter Sunday.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Construction of Cell 1 toe berm.
- Additional topping off of marsh mound M11.

Review of Project Schedule:

- Work is approximately one month behind original schedule.

Attachments: Digital Photographs



Marsh Mound M10.



Marsh Mound M11.



Marsh mound M12.



Ike within Borrow Area A.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 04/24/2012

By: L. Augustin

Conditions During Site Visit:

- Sunny, tide elevation approximately +1.2' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor staked
- Cell 3 toe berm complete
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- All marsh mound center points and toe berm centerlines staked
- Fused HDPE pipe
- Marsh mounds M10, M11 and M12 complete (pending acceptance survey)

Work In-progress:

- Dredging within Borrow Area A near Station 5+00, approximately 400' to the NW.
- Construction of marsh mound M3.
- Construction of Cell 1 toe berm.

Problems Identified:

1. None.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Construction of Cell 1 toe berm.
- Construction of marsh mound M4.

Review of Project Schedule:

- Work is approximately one month behind original schedule.

Attachments: Digital Photographs



Dredge discharging at marsh mound M3.



Dredge discharging at marsh mound M3.



Marsh mound M11. Note equilibration of side slopes.



Marsh mound M10.



Marsh mound M12.



Dredge and discharge pipe over outer berm.



Ike dredging within Borrow Area A.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 05/21/2012

By: L. Augustin

Conditions During Site Visit:

- Sunny, tide elevation approximately +0.9' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor, marsh mound center points, and toe berms staked
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- Cell 3 and Cell 1 toe berm complete.

Work In-progress:

- Dredging within Borrow Area A near Flotation Channel Station 22+00.
- Construction of marsh mound M1.

Problems Identified:

1. Based on review of initial survey for Cell 3, the marsh mound side slopes do not meet the minimum slope requirement specified in the Contract Documents.

Clarifications/Directions Given:

1. Contractor may move discharge pipe as required to achieve design template for each mound. Engineer reviewed design intent to create gently sloping, emergent mound features.

Review of Upcoming Construction Activities:

- Topping off of mounds M10, M11 and M12 in Cell 3 to flatten out side slopes.
- Topping off of mounds M2, M3, and M4 in Cell 1 to flatten out side slopes.

Review of Project Schedule:

- Work is approximately six weeks behind original schedule. Contractor is bringing in additional crew early next week to start working 24 hours/day, 7 days/week. The night crew will work on pumping the foundation of the new mounds. The day crew will top off the mound foundation to broaden and flatten out the slopes.

Attachments: Digital Photographs



Marsh mounds M1, M2 and M3 (front to back).



Dredge discharging at marsh mound M1.



Relocating dredge pipe at marsh mound M1.



Marsh mound M3.



Marsh mound M4.



Marsh mounds M2 and M2 (front to back).



Ike dredging within Borrow Area A.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 05/31/2012

By: L. Augustin

Conditions During Site Visit:

- Sunny, tide elevation approximately +0.6' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor, marsh mound center points, and toe berms staked
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- Cell 3 and Cell 1 toe berm complete.

Work In-progress:

- Contractor repairing dredge pump.

Problems Identified:

1. None.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Topping off of mounds M1, M2, M3, and M4 in Cell 1 to flatten out side slopes.
- Construction of mound M5.
- Once Cell 1 is complete Contractor intends on moving to Cell 3 to top off mounds M10, M11 and M12.

Review of Project Schedule:

- Work is approximately six weeks behind original schedule.

Attachments: Digital Photographs



Marsh mound M1.



Marsh mound M1.



Marsh mound M2.



Marsh mound M2.



Relic oyster shells discharged onto marsh mound M2.



Marsh mound M3.



Marsh mound M2 (front) and marsh mound M3 (back).



Marsh mound M3.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 06/20/2012

By: L. Augustin & C. Perry

Conditions During Site Visit:

- Overcast, tide elevation approximately +1.8' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor, marsh mound center points, and toe berms staked
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- Cell 3 and Cell 1 toe berm complete.

Work In-progress:

- No dredging work was being performed during site visit. Contractor was repairing clogged dredge pipe.
- Mound M9 in Cell 2 approximately 50% complete.
- Contractor reported that construction of Cell 2 toe berm was approximately 50% complete.

Problems Identified:

1. None.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Topping off of mounds M5, M10 and M11 to flatten out side slopes.
- Construction of Cell 2 toe berm and interior mounds.

Review of Project Schedule:

- Work is behind schedule and is not anticipated to be substantially complete by contract completion date (7/6/2012). Contractor will provide an updated schedule to CBBEP on 6/25/2012. See attached meeting notes.

Attachments: Digital Photographs



Marsh mound M1.



Marsh mound M1.



Marsh mound M2.



Marsh mound M2.



Relic oyster shells discharged onto marsh mound M2.



Marsh mound M3.



Marsh mound M2 (front) and marsh mound M3 (back).



Marsh mound M3.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 06/29/2012

By: L. Augustin

Conditions During Site Visit:

- Sunny, tide elevation approximately +1.7' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor, marsh mound center points, and toe berms staked
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- Cell 3 and Cell 1 toe berm complete.
- Cell 2 toe berm 50% complete.

Work In-progress:

- Construction of marsh mound M7.

Problems Identified:

1. None.

Clarifications/Directions Given:

1. None.

Review of Upcoming Construction Activities:

- Continued construction of marsh mound M7, followed by construction of marsh mound M8.
- Once Cell 2 is complete Contractor intends on moving to Cell 3 to top off mounds M10 and M12.

Review of Project Schedule:

- Work is approximately six weeks behind original schedule.

Attachments: Digital Photographs



Construction of marsh mound M7.



Construction of marsh mound M7.



Marsh mound M9.



Marsh mound M11.



Marsh mound M10.



Marsh mound M12.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 07/19/2012

By: L. Augustin

Conditions During Site Visit:

- Sunny, tide elevation approximately +0.8' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor, marsh mound center points, and toe berms staked
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- Cell 1, 2 and 3 toe berm complete.

Work In-progress:

- None. Dredge temporarily down to repair clogged pipe.

Problems Identified:

1. Material placement doesn't appear uniform on marsh mound M10.

Clarifications/Directions Given:

1. Contractor shall place additional material as required to create uniform marsh features that meet mound elevation and slope requirements. Material placement shall not be focused along survey transect locations.

Review of Upcoming Construction Activities:

- Continued construction and topping off of marsh mounds.

Review of Project Schedule:

- Work is approximately one week behind updated schedule submitted on 6/26/2012. Contract completion date is 8/3/2012.

Attachments: Digital Photographs



Marsh mound M5.



Marsh mound M4.



Marsh mound M6.



Marsh mound M8.



Marsh mound M10.



Marsh mound M12.



Marsh mound M11.

COASTAL BEND BAYS & ESTUARIES PROGRAM**PORTLAND CAUSEWAY MARSH RESTORATION (DREDGING)****SITE VISIT / CONSTRUCTION STATUS REPORT**

Date of Site Visit: 08/16/2012

By: C. Perry

Conditions During Site Visit:

- Sunny, tide elevation approximately +0.85' NAVD

Completed Work:

- Initial survey complete
- Pre-construction hazard survey complete
- Temporary access corridor, marsh mound center points, and toe berms staked
- Mobilization of CAT 320D, 12" IMS Dredge 5012 (*Ike*), HDPE pipe, hoses, airboat, additional work boat, fuel tanks, and other miscellaneous items complete
- Cell 1, 2 and 3 toe berm complete.

Work In-progress:

- Pumping between mounds M1 and M2. Material was placed between M2 and M3 to help bring areas up and increase planting area between the mounds to offset lower slopes on the outer edges of the mounds.
- Contractor dredging the channel. Reach 1 has been dredged and dredge is moving into Reach 2. Material between BC1 and BC7 being placed within the mounds/cells. Material between alignment points BC7 and BC17 will be placed in area designated in Work Change Directive No.1.

Problems Identified:

1. Crest on M8 needs to be raised and repaired.

Clarifications/Directions Given:

1. Contractor shall place additional material between mounds M1 and M5, M5 and M4, M12 and M11, M10 and M11, M8 and M7, M7 and M6, and M6 and M9. The Contractor will also move the pipe to allow for more area at or above planting elevation.

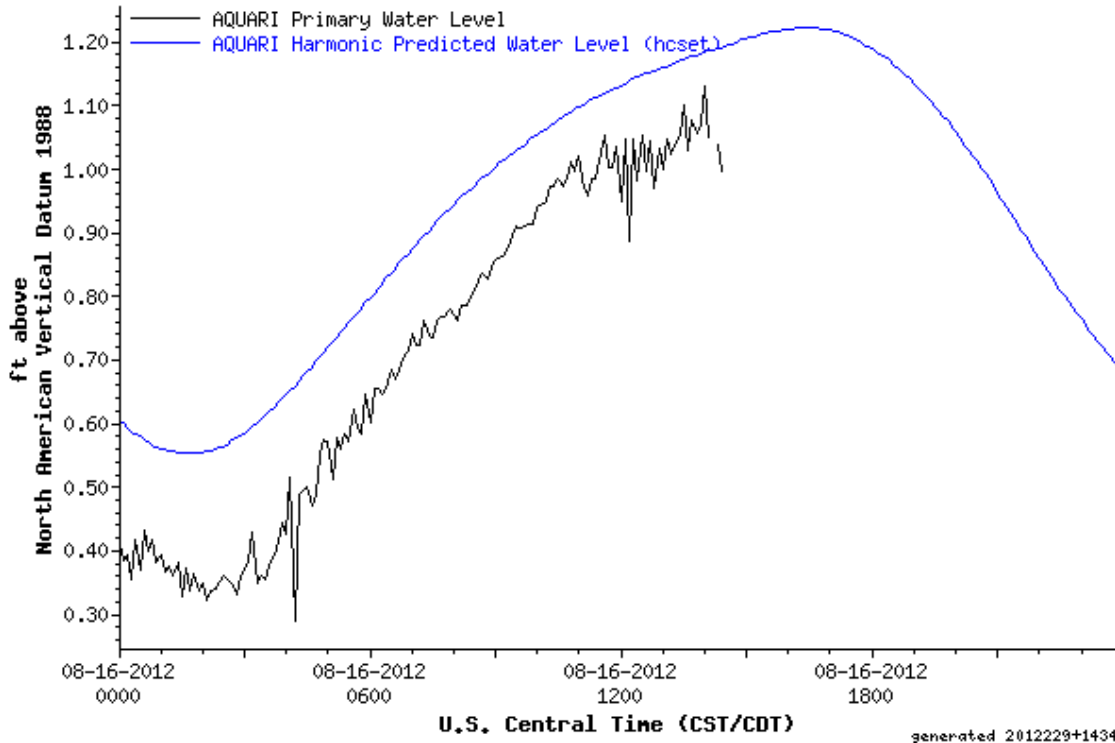
Review of Upcoming Construction Activities:

- Continued construction and topping off of marsh mounds.
- Perform work for Change Order No. 2.

Review of Project Schedule:

- Work is approximately one week behind updated schedule submitted on 6/26/2012. Contract completion date is 8/3/2012.

Attachments: Digital Photographs



Tide during site visit.



Material being pumped between M1 and M2.



Material placed between M2 and M3. M3 shown and newly placed material on the left.



Material placed between M2 and M3. M2 shown and newly placed material on the right.



Marsh mound M8. Crest needs to be rebuilt



Dredge located near the end of Reach 1.