



**State of Louisiana
Office of Coastal Protection and
Restoration
Operations Division**

2015 Annual Inspection Report

for

**CAERNARVON OUTFALL
MANAGEMENT
(BS-03a)**

State Project Number BS-03a
Priority Project List 2

June 2015
Plaquemines Parish

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I. Introduction

The Caernarvon Outfall Management Project (State Project No. BS-03a) was approved on the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) Second Priority Project List. The project is located to the south and west of Big Mar, a body of water which formed as the result of a failed agricultural impoundment. The project features are located entirely in Plaquemines Parish, and the project outfall area encompasses 15,556 acres in Plaquemines Parish. Project features are located on a number of streams in the outfall area. A map of the project area is included in Appendix A.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Caernarvon Outfall Management Project (BA-03a) is to evaluate the constructed project features to identify any deficiencies and to prepare a report detailing the condition of project features and recommending corrective actions needed. Should it be determined that corrective actions are needed, CPRA shall provide a detailed cost estimate for engineering, design, supervision, inspection, and construction contingencies, and an assessment of the urgency of such repairs (O&M Plan May 15, 2003). The annual inspection report also contains a summary of maintenance projects and an estimated projected budget for the upcoming three (3) years for operation, maintenance and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C. A summary of past operation and maintenance projects completed since completion of the Caernarvon Outfall Management Project are outlined in Section IV.

This annual inspection of the Caernarvon Outfall Management Project (BA-03a) was performed on June 30th, 2015. Weather consisted of partly cloudy skies, a temperature of approximately 86°F, and winds out of the SW at around 6 knots. Taking part in the inspection were: David Chambers and Erin Plitsch of CPRA, the non-federal sponsor; Loland Broussard, Brandon Samson and Doug Baker of NRCS, the federal sponsor; and Rob Buck and Albertine Kimble of SeaTow, the operations and maintenance contractor. On the date of the inspection, the diversion structure was closed. The Marsh Gage reading was 0.00 feet NGVD and the River Gage reading was approximately +9.50 feet NGVD, although the numbers and markings on the gage near the water surface were illegible due to fouling from the river. Except as otherwise noted, the photographs included in Appendix B were taken at the time of the inspection.

Note: R. E. Buck Inc. DBA SeaTow Westbank, the O & M contractor for this diversion and the outfall project are often called upon to conduct specific inspections and perform maintenance tasks periodically between these annual inspections.

III. Project Description and History

The Caernarvon Freshwater Diversion Structure on the east bank of the Mississippi River near Big Mar, was placed into operation in August 1991. The Caernarvon structure was funded by the Water Resources Development Act and constructed for the purpose of diverting Mississippi River water through Big Mar into the marshes to the south and west of Big Mar. Since the early 1900's, these

marshes had deteriorated, largely due to being isolated from direct river influxes by the construction of levees. This isolation, with the resultant absence of minerals and nutrients formerly regularly deposited during high river stages, caused a net loss of the organic soils prevalent in the project area. The specific mechanisms causing the soil loss included natural subsidence, erosion, salt water intrusion and oxidation.

In addition to the losses due to Mississippi River levee construction, the increased construction of navigation and oil/gas canals in the project area contributed to the problem. These straight canals provided a perfect avenue for saltwater intrusion, and the canals' high water velocity led to increased erosion rates.

An earlier hurricane also contributed to the loss of wetlands in the project area. In 1965, storm surges from Hurricane Betsy traveled over the above-discussed canals, and the forested swamp area in the northern part of the project area was destroyed by salt stress as the salt water from the storm surge became trapped behind Tigers Ridge.

From 1932 to 1990, approximately 5,550 acres of land in the project area were converted to open water via the above-discussed mechanisms. By 1978, saltwater intrusion had transformed the project area from a primarily intermediate marsh to primarily a brackish marsh. In addition, Hurricane Katrina (2005) caused significant damage to the entire project area.

The Caernarvon Freshwater Diversion Structure was intended to counter some of the mechanisms causing wetlands loss in the project area, primarily saltwater intrusion. Specifically, the Caernarvon structure was intended to increase wildlife and fisheries productivity, enhance emergent marsh vegetation growth, and reduce marsh loss.

The structure has a design discharge capacity of approximately 8,000 cubic feet of freshwater per second. Presently, 80% of the diversion water exits to the southeast via Bayou Mandeville into Lake Lery. With 80% flowing to the southeast of Big Mar, only 20 % flows to the more-deteriorated marshes to the southwest of Big Mar. Prior to Hurricane Katrina, Gustav (2008) and Ike (2008), those percentages were closer to 66%—34%, respectively. An additional problem is that, prior to the present Caernarvon Outfall Management Project, much of the flow of water to the southwest channeled rapidly to the lower reaches of the basin and did not inundate the interior marshes as was originally intended. The present project promotes better utilization and distribution of water from the Caernarvon Freshwater Diversion Structure. As designed, project features allow water from the channels to flow into the marsh interior and cause the water to be retained in the marsh for a longer period of time.

The Caernarvon Diversion Outfall Management Project took one year to complete, starting on June 11, 2001 and completing on June 14, 2002. Because of change orders and other contractual issues, the Final Acceptance was not made until September 10, 2002. The Outfall Project receives fresh water from the Mississippi River through the Caernarvon Diversion Structure located on the east bank of the Mississippi River near the St. Bernard / Plaquemines Parish line. The Outfall Project benefit area consists of 18,200 acres and is bounded by the Forty Arpent Canal levee to the north and west, and by Lake Lery, Bayou Mandeville, and the Caernarvon Canal to the east. The southern boundary is a composite of undifferentiated marsh, Reggio Canal, the Pipeline Canal, and River aux Chenes.

The objective of the Outfall Project is to promote better utilization and distribution of freshwater and nutrients from the Mississippi River, introduced in the project area by the Caernarvon Structure, during low-diversion discharge periods. Management of the outfall will allow the water from existing channels into the interior of the marshes. Placement of plugs and culverts along with designated spoil bank restoration is expected to enhance water retention and distribution within the project area.

The project features are listed below:

Inspection photos of the features are shown in Appendix B of this report. Elevations are NAVD 88.

A. Site/Structure # 13 – Earthen channel plug with riprap armor located along the west bank of Bayou Mandeville. The plug is set at an elevation of +4.0 ft. and is 100 ft. long x 100 ft. wide with 18 inches of riprap armor. The crest of the structure is 10 ft. wide. The plug includes a one (1) 48” diameter corrugated aluminum pipe which passes through the rock fill plug at an elevation of -3.5 ft. with an aluminum combination gate attached to the pipe on the interior side of the marsh. A timber walkway to the gate is at elevation +4.0.

B. Site/Structure # 25 - Earthen channel plug with riprap armor located on the Forty Arpent Canal near Big Mar. The plug is set at an elevation of +4.0 ft. and is 169 ft. long and 100 ft. wide with 18 inches of riprap armor. The crest of the structure is 10 ft. wide. The plug includes two (2) 48” diameter corrugated aluminum pipes which pass through the rock fill (and are supported by the rock fill) at an elevation of -4.0 ft. Earth fill has been placed on each side of the rock fill. Aluminum canal gates are attached to the end of each pipe on the exterior side of the marsh. A timber walkway to the gates is at elevation +4.0.

C. Site/Structure # 26 – Earthen channel plug with riprap armor plate located along Reggio Canal spoil bank. The plug is set at a crest elevation of +4.0 ft. and is 154 ft. long and 100 ft. wide and is capped with 18 inches of riprap rock. The crest of the structure is 10 ft. wide. The plug includes four (4) 48” corrugated aluminum pipe which pass through the earthen material at an elevation of -4.0 ft. Aluminum canal gates are attached to the end of each pipe on the exterior side of the marsh. The pipe and gates are supported by a timber pile system. A timber walkway is installed at elevation +4.0 ft.

D. Site/Structure # 32 – Riprap channel plug across an unnamed channel which flowed into Lake Lery at the west end of the lake. The plug is 117 ft. long and the 6 ft. wide plug crest is set at +4.0 ft. The 70 ft. stretch of channel from the plug eastward to Lake Lery has 2 feet thick riprap placed on both channel banks. Upon implementation of the BS-16 CWPPRA Project, this structure site will be completely covered with the spoil bank restoration feature of that project and will no longer be a component of the BS-03a Project. Construction of the BS-16 Project began in March 2015 and is scheduled to continue through April 2016.

E. Site/Structure # 40 – Earthen channel plug with riprap armor along the Reggio canal spoil bank. The plug is 142 ft. long and 100 ft. wide. The crest of the structure is 10 ft. wide and is set at an elevation of +4.0 ft. The plug includes 2- 48” diameter corrugated aluminum pipes which pass through the rock fill at an elevation of -4.0 ft. Earth fill was placed on each side of the rock fill. The entire structure is capped with an 18” thick layer of rip-rap. Aluminum canal gates are attached to the ends of the aluminum pipes on the exterior side of the marsh. The pipe and gates are supported by a timber pile system, and a timber walkway to the gates is installed at elevation +4.0 ft.

F. Site/Structure # 50 – Earthen channel plug with riprap armor along the west bank of Bayou Mandeville. The plug is 55 ft. long and 100 ft. wide. The crest of the structure is 10 ft. wide and is set at an elevation of +4.0 ft. The plug includes one (1) 48” diameter corrugated aluminum pipe through an aggregate embankment at an elevation of -3.5 ft. The embankment is capped with an 18” thick layer of rip-rap. The pipe has a combination gate attached on the pipe end on the interior side of the marsh. The pipe and gate are supported by a timber pile system, and a timber walkway to the gate is installed at elevation +4.0.

G. Site/Structure #51 – Riprap plug across a pipeline channel that flows into Bayou Mandeville. The plug is approximately 150 ft. long x 30 ft. wide. The plug crest is set at elevation +4.0 ft. This was an existing structure during the construction of the BS-03a Project and will be maintained by the pipeline company.

H. Site/Structure # 52 – Earthen channel plug with riprap armor along DP Canal spoil bank. The plug is 100 ft. long and 100 ft. wide. The crest of the structure is 10 ft. wide and is set at an elevation of +4.0 ft. The plug includes two (2) 36” diameter corrugated aluminum pipes through the embankment at -3.0 ft. The embankment is capped with a 18” thick layer of riprap. Aluminum combination gates are attached to the end of each pipe on the interior side of the marsh. The two pipes are supported by a timber pile system, and a timber walkway to the gates is installed at elevation +4.0.

I. Site/Structure # 54 – Earth fill channel plug with riprap armor located at the intersection of Reggio Canal and Promised Land Canal. The plug is 140 ft. long and 150 ft. wide. The crest of the structure is 10 ft. wide and is set at an elevation of +4.0 ft. The plug includes two (2) 48” diameter corrugated aluminum pipes through the rock fill portion of the embankment at an elevation of -4.0 ft. Earth fill was placed of each side of the rock fill. The entire embankment is capped with a 18” thick layer of riprap. Aluminum canal gates are attached to the end of each pipe on the exterior side of the marsh. The pipes and gates are supported by a timber pile system, and a timber walkway to the gates installed at elevation +4.0 ft.

As a maintenance event following the installation of Structure #54, the existing spoil bank on the south side of Promised Land Canal was degraded in three locations on the west side of Structure # 54. The excavated material was placed on the south side behind the existing spoil bank.

J. Site/Structure # 56 - Rock riprap channel plug across an unnamed channel on the east side of the Reggio Canal. The plug is 208 ft. long and the side slopes of the plug are 3 horizontal to 1 vertical. The crest of the structure is 6 ft. wide and is set at an elevation of +4.0 ft.

K. Site #57 – Consists of 5,315 linear feet of spoil bank restoration along the east side of the Reggio Canal between the Delacroix Canal and Site # 54. The spoil bank restoration consists of an earth fill embankment placed on existing spoil to an elevation of +4.0 ft. with a 12 ft. top width and 3 horizontal to 1 vertical side slopes. The entire length of embankment was seeded to permanent vegetation.

L. Site # 58 – Consists of 5,244 linear ft. of spoil bank restoration along the west side of Bayou Mandeville between the Delacroix Canal and Site # 13. The spoil bank restoration consists of an earth fill embankment placed on existing spoil to an elevation of +4.0 ft. with a 12 ft. top width and

3 horizontal to 1 vertical slope. The entire length of embankment was seeded to permanent vegetation.

M. Site/Structure # 60 – Rock fill channel plug at the intersection of Reggio Canal and an existing pipeline canal. The plug is 200 ft. long and 100 ft. wide. The crest of the structure is 10 ft. wide and set at an elevation of +4.0. The adjacent earthen plug with riprap armor includes two (2) 36” diameter corrugated aluminum pipes through the earthen plug at an elevation of -3.0 ft. The entire length of the plug is capped with an 18” layer of riprap. Aluminum combination gates are attached to the end of each aluminum pipe on the interior side of the marsh. The pipes and gates are supported by a timber pile system, and a timber walkway to the gates is installed at elevation +4.0 ft.

IV. Summary of Past Operation and Maintenance Projects

General Maintenance

In March 2004, three flow meters were installed at structures #26, #40, and #54 to monitor the flow of fresh water into the interior marshes and determine if it was necessary to maintain the associated channels to increase flow through these structures. These meters were damaged during Hurricane Katrina in August 2005. In September 2011, new flow meters were installed to replace the previously damaged meters. Due to storms and malfunctioning equipment, the first full and complete set of flow data was not received until March 2012. Later that same year, the sensor of the flow meter at structure #26 was damaged, and the decision was made to discontinue monitoring at this site. The flow monitoring data that has been collected since the meters were initially installed has shown that structure #40 receives little flow, structure #26 has moderate flow, and structure #54 received that highest flow of the three monitored structures. Although these flow meters were prone to maintenance issues that interrupted the data collection efforts at times, the flow data collected over the years was sufficient to evaluate the performance of these structures. In December 2014, the two remaining flow meters were removed. The performance of these structures currently is monitored through visual inspection.

The inspection team noted breaches in the spoil banks adjacent to three different structures: #13, #50, and #52. The dredging contractor for the Delacroix (DC) Canal plugged the breach at #52 in July 2011, but that breach was reopened soon after. Site #13 and site #50 had breaches at the tie-in of the rock dike and the canal bank. Between the 2014 and 2015 annual inspections, the O&M Contractor repaired the breaches at Site#13 and at Site #50 using materials taken from Site #32, which will be incorporated into the restored Lake Lery shoreline under the BS-16 CWPRRA project. Although these repaired sections matched the adjacent elevations, they lacked the width of the original design section.

The O & M Contractor implements a maintenance schedule that keeps the project features in good operating condition. The new O & M Contractor will perform inspection and maintenance tasks in accordance with the same schedule. Some of the O & M tasks include: lubricating and periodic operation of each structure, cleaning and maintaining the wooden platforms, and spraying of the area for unwanted vegetation and insects. Periodic inspections of all project features also are performed and deficiencies are corrected.

2015 Structure Operations

The structure operation calls for sluice gates to remain open except during waterfowl season, when the gates at structures #52 and #60 may be operated at the discretion of the landowner. Combination gates are to operate passively as designed year-round; however, some were not in the lowered position, probably because adjacent breaches and/or low areas have rendered the structures ineffective. The contractor continues to perform periodic O & M of each of the gated structures; this includes cleaning and maintaining the timber platforms and periodic inspections as directed by CPRA.

In May 2014, the contract for operation of the main diversion structure was re-bid, with the operation and maintenance of the outfall structures included. That contract went into effect on July 1, 2014 and has been renewed for 2015. Upon agreement with both parties, the contract may be renewed annually over a three year period. The current three year period will end on June 30th, 2017.

V. Inspection Results (See Appendix B for photos of each site)

The diversion structure was not flowing during the inspection, so the project area was not subjected to diversion flows. When flowing, the diverted waters exit Big Mar on the southern end along a stretch of submerged or failed canal bank. On the date of the Annual Inspection, the inspection team determined that structure #25 was inaccessible. However, the structure was inspected by David Chambers and John Troutman of CPRA just one week prior on June 23, 2015. Similarly, structure #32 was omitted from the inspection, because Hurricane Katrina rendered the structure ineffective, and the shallow depth of Lake Lery rendered the structure inaccessible via outboard-powered boat. The spoil created by the Delacroix Canal dredging in 2011 has vegetated with shrubs, tall grasses, and willow trees.

- A. Site/Structure # 13** – The gap that previously was observed on the north end of the rock dike had been repaired with material from Site #32 . There was no flow between the marsh and Bayou Mandeville observed and the newly placed rock appeared to be stacked to the proper elevation. The combination gate was in the up/open operating position to allow maximum uninterrupted tidal exchange into the marsh. The gate has a slight tilt, but it is not affecting the function. The timber walkway still lays separated from its support beam at one end. (See Photos 1, 2 & 3)
- B. Site/Structure # 25** – The inspection team did not attempt to inspect this feature due to inaccessibility at the time of the inspection. During a June 23, 2015 inspection, the structure appeared to be in good condition, although the gates were overdue to be greased on exercised. (See Photos 4, 5 & 6 taken 6/23/15)
- C. Site/Structure # 26** – The gates were in the open position allowing water flow. There is thick vegetation covering the earthen/rock closure. The flow meter at this site was damaged during Isaac in September 2012, and was subsequently removed based on the decision to discontinue flow monitoring at this structure. The structure and outfall channel appeared to be in good condition. (See Photos 7 & 8)

- D. Site/Structure # 32** – The team did not inspect this feature because this rock closure will be incorporated into the BS-16 project which will restore the shoreline along this section of Lake Lery. Additionally, Hurricane Katrina devastated this portion of the lake rim rendering the structure ineffective. (Photo 9)
- E. Site/ Structure # 40** – The gates remain in the open position. The structure and outfall channel are in good condition. The flow meter at this site was removed in December 2014 based on the decision to discontinue flow monitoring at this structure. (See Photos 10 & 11)
- F. Site/Structure # 50** – The combination gate was in the up/open position. The breaches that previously were observed at the structure tie-ins to the south and to the north had been repaired with material from Site #32 . There was no flow between the marsh and Bayou Mandeville observed and the newly placed rock appeared to be stacked to the proper elevation. The timber walkway remains bowed. (See Photos 12, 13 & 14)
- G. Site/Structure #51** – Plug is heavily vegetated. Maintenance is not required at this structure. (No Photo)
- H. Site/Structure #52** – The two combination gates were in the up/open position. The breach previously repaired by the dredging contractor has been re-opened and is between 10-15 feet in width. The breach is allowing unimpeded flow between the channel and marsh. (Photos 15, 16 & 17)
- I. Site/Structure # 54** – The gates remain in the open position. No flow was visible through the culverts. The flow meter at this site was removed in December 2014 based on the decision to discontinue flow monitoring at this structure. (Photos 18 & 19)
- J. Site/ Structure # 56** – Although the water level was lower than the rock dike crest, the water was observed to overtop the rock during the 2013 inspection with a diversion flow of 717 cfs and a marsh gage reading of +1.76 feet NGVD. Vegetation remains on the entire rock closure. Soon after construction, the middle section of the plug subsided approximately 0.5 feet more than the sides. One warning sign is still leaning severely and is partially submerged (Hurricane Katrina damage). (Photo 20)
- K. Site # 57** – The spoil bank along the side of the Reggio Canal was well vegetated with grasses, shrubs and trees. No gaps in the spoil bank were noted (No Picture)
- L. Site # 58** –The vegetation on the spoil bank along the sides of the Bayou Mandeville includes grasses, shrubs, and trees. (No Picture). However, the aforementioned gaps were noted adjacent to structures #13 and #50.
- M. Site/Structure # 60** – The two combination gates were in the up/open position. The overall condition of the structure is good. There is a low area of the rock adjacent to the structure that water flows over at higher marsh water levels. (Photos 21, 22 & 23)

VI. Conclusions and Recommendations

Project Condition

CPRA concludes that the outfall management project needs evaluation by both federal and state parties to determine the effectiveness of the culverts and plugs. Many of the sectors outlined in the original project no longer have distinct borders. A maintenance event of this project would include using rock or sheet piling to close gaps and fill failure areas to reestablish the sector boundaries.

The CWPPRA project South Lake Lery Marsh Creation and Shoreline Restoration (BS-16) is currently under construction. Although budget constraints have modified the Lake Lery shoreline rehabilitation for the western shoreline, the rock closure (structure #32) will be incorporated into this project. The project modification removed the marsh fill cell located behind the western shoreline.

Priority Gap Closures

With the recent closures of the priority gaps noted along Bayou Mandeville adjacent to structure #13 and structure #50, it is recommended that these gaps be monitored and maintained, especially while the material from site #32 is accessible. The continued maintenance of the closure of these gaps is a priority and the gaps will allow flow that does enter the marsh south of Big Mar to short-circuit back to Bayou Mandeville where the vast majority of diversion flow is already going. From past experiences regarding spoil bank repairs at the site, light weight rip rap is subject to vandalism in which unauthorized persons move rocks to clear a passage for navigation and earthen repairs tend to wash away when subjected to higher diversion flows, at least until they are well vegetated with deep-rooted flora. Therefore, it is recommended that these gaps be monitored and rocks added as required to maintain the closures.

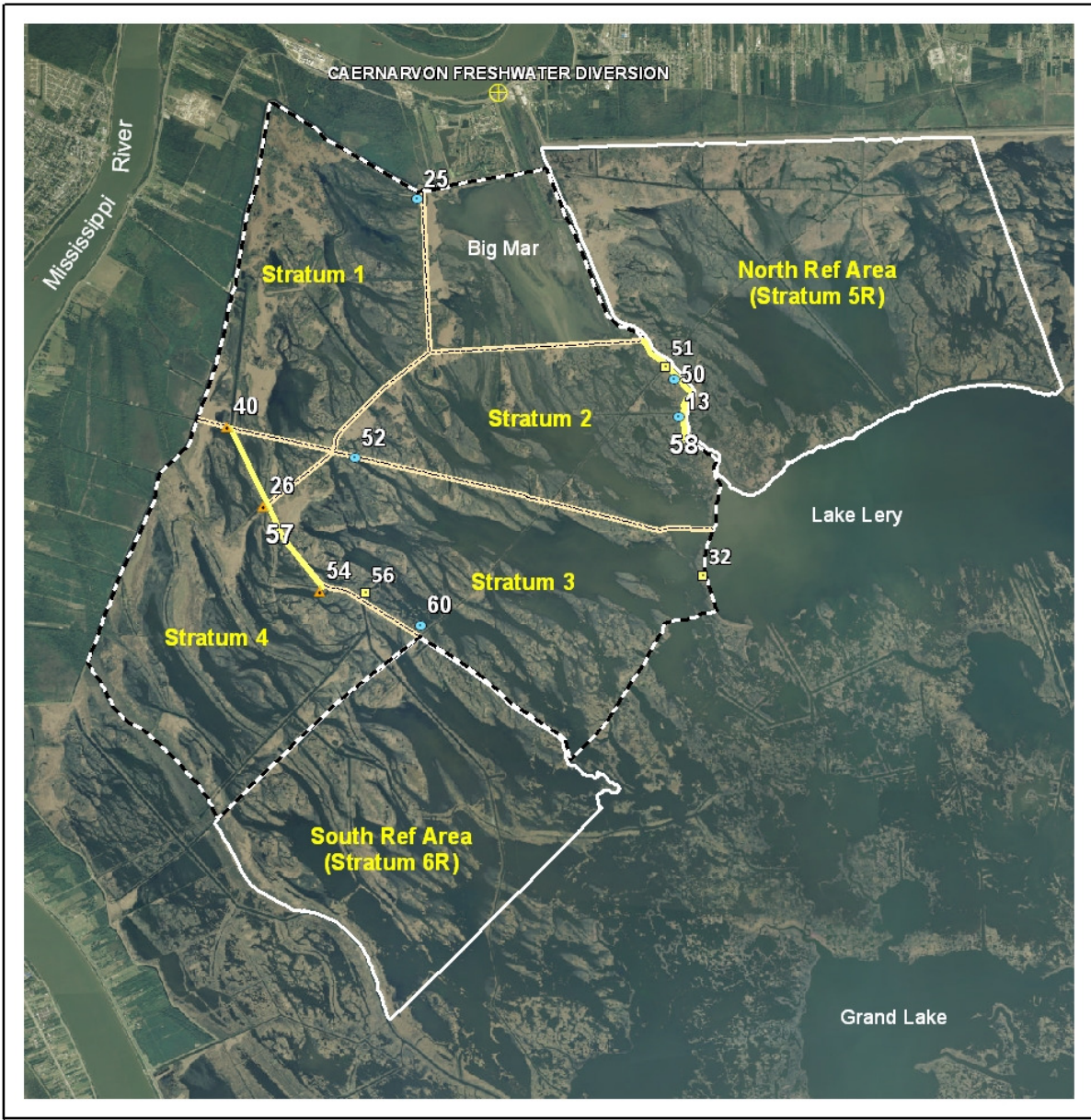
In addition to the gaps at structure #13 and structure #50, there is also a gap adjacent to structure #52 and a low area by structure #60. An investigation of the spoil banks along the various canals in the outfall area revealed the presence of several other gaps that would render repairs at #52 and #60 ineffective. However, once the BS-16 project is completion of the western shoreline of Lake Lery is restored, it is recommended that the effectiveness of these structures and the outfall project, in general, be evaluated to identify maintenance items or modifications that can enhance the goals of the project while working in a complimentary fashion with the new topography and flow regimes of the system.

Structures

Another recommendation is to repair the decks at structures #13 and #50. The deck at structure #13 is not attached to the supports at one end, and the deck at structure #50 is bowed.

The warning sign at site #56 needs to have the piling re-driven in an upright position.

APPENDIX A
Project Features Map



Caernarvon Diversion Outfall Management (BS-03a)

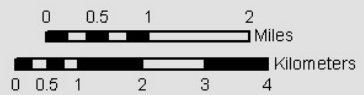


Date: 2011-04-25
 Map ID: OCPR-NOFO-SM0066

- Rock Riprap Plug
- Culvert with Interior Combination Gate
- Culvert with Exterior Sluice Gates
- Spoil Bank Restoration
- Strata_Boundaries
- BS-03a Project Boundary
- Reference Areas

Data Source:
 Office of Coastal Protection and Restoration
 GIS Spatial Database Engine

2008 DOQQ Satellite Imagery
 GCS_North_American_1983



APPENDIX B

Photographs



Photo No. 1, Site 13



Photo No. 2, Site 13



Photo No. 3, Site 13



Photo No. 4, Site 25 (6-23-15)



Photo No. 5, Site 25 (6-23-15)



Photo No. 6, Site 25 (6-23-15)



Photo No. 7, Site 26



Photo No. 8, Site 26



[Photo No. 9, Site 32 \(2012 pre-Isaac\)](#)



[Photo No. 10, Site 40](#)



Photo No. 11, Site 40



Photo No. 12, Site 50



Photo No. 13, Site 50



Photo No. 14, Site 50



[Photo No. 15, Site 51](#)



[Photo No. 16, Site 52](#)



Photo No. 17, Site 52



Photo No. 18, Site 54



Photo No.19, Site 54



Photo No. 20, Site 56



Photo No. 21, Site 60



Photo No. 22, Site 60



Photo No. 23, Site 60

Appendix C

Three-Year Operations & Maintenance Budgets

2015 Annual Inspection Report
 CAERNARVON OUTFALL MANAGEMENT
 State Project No. BS-03a

Caernarvon Outfall Management (BS-03a)																																											
Federal Sponsor: NRCS																																											
Construction Completed : September 10, 2002																																											
																				CPRA Project Estimate	CWPPRA Allocated Money																						
Current Approved O&M Budget	Year 0	Year - 1	Year -2	Year -3	Year -4	Year -5	Year -6	Year -7	Year -8	Year -9	Year -10	Year -11	Year -12	Year -13	Year -14	Year -15	Year -16	Year - 17	Year -18	Year -19	Project Life Budget	Currently Funded (Sum YR 0 to YR 19)																					
June 2015	FY03	FY 04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22																							
State O&M	\$3,870	\$3,971	\$4,074	\$4,180	\$265,424	\$4,400	\$4,514	\$4,632	\$4,752	\$301,775	\$5,002	\$5,133	\$5,266	\$5,403	\$343,113	\$5,687	\$5,835	\$5,987	\$6,143	\$56,773	\$1,045,934	\$1,045,934																					
Corps Admin																					\$0	\$0																					
Federal S&A																					\$0	\$0																					
Total																					\$1,045,934	\$1,045,934																					
Projected O&M Expenditures																				Remaining Project Life	Current 3 year Request (FY16, 17, 18)																						
Maintenance Inspection									\$4,752	\$4,876	\$5,002	\$5,133	\$5,266	\$5,403	\$5,543	\$5,687	\$5,835	\$5,987	\$6,143	\$6,302	\$40,900	\$16,633																					
General Maintenance																					\$0	\$0																					
Structure Operation									\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$350,000	\$150,000																					
Federal S&A									\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$35,000	\$15,000																					
State S&A									\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$70,000	\$30,000																					
E&D									\$10,000												\$0	\$0																					
Surveys									\$15,000												\$0	\$0																					
Construction									\$265,000												\$0	\$0																					
Construction Oversight									\$5,000												\$0	\$0																					
Total					\$0	\$0	\$0	\$0	\$364,752	\$69,876	\$70,002	\$70,133	\$70,266	\$70,403	\$70,543	\$70,687	\$70,835	\$70,987	\$71,143	\$71,302	\$495,900	\$211,633																					
Total O&M Expenditures from COE Report (Inception to present)				\$708,972.19	LanaReport May2015				Current O&M Budget less COE Admin										Current Project Life Budget less COE Admin					\$1,045,934																			
State O&M Expenditures not submitted for in-kind credit				\$0					<i>(State O&M Currently Funded + Fed S&A Currently Funded)</i>										<i>(State O&M Project Life Budget + Fed S&A Project Life Budget)</i>					\$1,045,934																			
Federal Sponsor MIPRs (if applicable) (REQUESTED MONEY)				\$0					Remaining Available O&M Budget										Total Projected Project Life Budget					\$1,204,872																			
Total Estimated O&M Expenditures (as of May 2015)				\$708,972.19					<i>(Current O&M - Total Est. O&M Expenditures)</i>										<i>(Remaining Project Life + Total Estimated O&M Expenditures)</i>					\$1,204,872																			
Incremental Funding Request Amount FY16-FY18												\$ (125,328.81)			3 year surplus			Project Life Budget Request Amount					\$158,938																				
Notes:																																											
1. The year-by-year figures for the current Approved O&M Budget are based on the BEAST approved at the 6/3/09 Task Force meeting. This spreadsheet was a correction to the BEAST submitted for the Fall 2008 funding requests.																																											
<table border="1"> <thead> <tr> <th rowspan="2">Previous O&M Funding Requests</th> <th colspan="2">Baseline</th> <th rowspan="2">Currently Funded</th> </tr> <tr> <th>Approved Funding</th> <th>2013</th> <th>2014</th> </tr> </thead> <tbody> <tr> <td>State O&M</td> <td></td> <td></td> <td>\$0</td> </tr> <tr> <td>Corps Admin</td> <td></td> <td></td> <td>\$0</td> </tr> <tr> <td>Federal S&A</td> <td></td> <td></td> <td>\$0</td> </tr> <tr> <td>Total</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> </tbody> </table>																					Previous O&M Funding Requests	Baseline		Currently Funded	Approved Funding	2013	2014	State O&M			\$0	Corps Admin			\$0	Federal S&A			\$0	Total	\$0	\$0	\$0
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Appendix D

Field Inspection Form

2015 Annual Inspection Report
 CAERNARVON OUTFALL MANAGEMENT
 State Project No. BS-03a

FIELD INSPECTION CHECK SHEET							
Project No. / Name:	Caernarvon Outfall Management BS-03a			Date of Inspection:	6/30/2015	Time:	10:30 AM
Structure No.	See Report Section III			Inspector(s):	CPRA: David Chambers, Erin Plitsch NRCS: Loland Broussard, Doug Baker, Brandon Samson		
Structure Description:	See Report Section III			Water Level:	Marsh: 0.0 NAVD88	River:	+9.50 NAVD88
Type of Inspection:	2015 Annual Inspection			Weather Conditions:	Cloudy and Warm, Wind Calm (0 cfs Diversion)		
Item	Condition	Physical Damage	Corrosion	Photo	Observations and Remarks		
CMP Culverts Earthen / Rock Embankment	Good	Minor	None	Appendix B	Culverts appear to be clear. Water surface elevations were .5-1 foot below the crest of the structures. Extent of scouring needs to be determined. Breach present at site #52. There is an area of low rock at site #60.		
Water Control Gates	Good	None	Moderate	Appendix B	All water Control Gates appear to be in good condition. The O&M contractor has been reportedly lubricating, cleaning, and operating all gates on a scheduled basis. Gears on the gates are clean. Bolts holding gearbox to the gate structure are stainless steel.		
Rock Canal Closures	Good	See Remarks	N/A	Appendix B	The rock plug at structure #56 appears to have settled thus allowing overflows during diversion operation. Depth of settlement needs to be determined.		
Timber Piling at Culverts	Good	None	None	Appendix B	Structure #13 is listing as the timber piles settle unevenly. All other timber pilings are in good condition. One warning sign at site #56 leans severely and needs to be cleaned and re-driven.		
Timber walkways at Culverts	Good	See Remarks	N/A	Appendix B	Minor damage consists of bowing deck boards. Site #13 still has the timber walkway separated from its support beam at one end.		
Spoilbank Restoration	Fair	Minor	N/A	Appendix B	Vegetation (grasses, shrubs, and trees) has flourished along the banks. Minor scouring is evident at shoreline/water surface interface. CPRA needs to check with Delacroix Corp on the conditions of their marsh management permit.		
Flow Meters	N/A	N/A	N/A	N/A	Flow meters installed at structures No. 26, 40, and 54 were placed back online in 2011. Flow meter at structure #26 was removed due to damage and not replaced. The two remaining flow meters were also removed in 2014.		