Coastal Protection and Restoration Authority of Louisiana

State of Louisiana
Coastal Protection and Restoration Authority

2014 Annual Inspection Report

for

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)

State Project Number TE-28
Priority Project List 3

April 28, 2014
Terrebonne Parish

Prepared by:

Travis Byland
CPRA
Operations Division
Thibodaux Regional Office
1440 Tiger Drive, Suite B
Thibodaux, La. 70301

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Appendices

I. Introduction

The Brady Canal Hydrologic Restoration Project consists of 7,653 acres located in the Terrebonne Basin, within the Bayou Penchant - Lake Penchant watershed in Terrebonne Parish, Louisiana. The project is bounded by Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou Decade and Turtle Bayou to the south, Superior canal to the east, and Little Carencro Bayou and Voss Canal to the west (Appendix A – Project Features Map).

The Brady Canal Project is a hydrologic restoration project consisting of the installation and maintenance of a fixed crest weir with barge bay, a rock plug, several variable crest weir structures, earthen embankments and overflow banks, rock dikes, rock armored earthen embankments and rock armored channel liners. These structures were designed to reduce the adverse tidal affects and saltwater intrusion in the project area and to promote freshwater introduction for better utilization of available freshwater, and retain sediment, as well as to encourage re-establishment of emergent and sub-aquatic vegetation in eroded areas (Folse, August 2003)

The Brady Canal Hydrologic Restoration Project (TE-28) is co-sponsored by the Natural Resource Conservation Service (NRCS) and the Coastal Protection and Restoration Authority (CPRA) of Louisiana. The project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended and approved on the third Priority Project List.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Brady Canal Hydrologic Restoration Project (TE-28) is to evaluate the constructed project features, identify any deficiencies, and prepare a report detailing the condition of the project features including recommendations for corrective actions, as needed. Should it be determined that corrective actions are required, CPRA shall provide in the inspection report, a detailed cost estimate for engineering, design, bidding, construction oversight and supervision, project contingencies, and an assessment of the urgency of such repairs (LDNR_CRD; Pyburn and Odom, 2002 OM&R Plan). The annual inspection report also contains a summary of the completed maintenance projects and an estimated projected budget for the upcoming three (3) years for operations, maintenance and rehabilitation. The three (3) year projected operations and maintenance budget is shown in Appendix C. A summary of completed operation and maintenance projects are outlined in Section IV of this report.

An inspection of the Brady Canal Hydrologic Restoration Project (TE-28) was held on April 21, 2014 with clear skies and calm wind. In attendance for the inspection were Brian Babin, Laurie Rodrigue, and Adam Ledet, and Travis Byland from CPRA, Quin Kinler from NRCS, Francis Fields with Apache Minerals, Inc. and Shannon Buquet with ConocoPhillips. The inspection began at the intersection of Bayou Decade and Turtle Bayou, progressed along the

perimeter of the project area including the lake rim of Jug Lake, and concluded along the Brady Canal near the Apache Camp.

The field inspection included a complete visual inspection of all constructed features within the project area. Photographs of all project features were taken during the field inspection and are shown in Appendix B. Staff gauge readings, where available, were documented and used to estimate approximate water elevations, elevations of rock weirs, earthen embankments, and other project features.

III. Project Description and History

The Brady Canal Hydrologic Restoration project is bisected by the Mauvais Bois Ridge, resulting in different hydrologic regimes to the north and south of the ridge. The northern section of the project area receives freshwater and sediments which are provided by over-bank flow from Bayou Penchant, Little Carencro Bayou, and Brady Canal (USDA/NRCS 1995). The Mauvais Bois Ridge forms a barrier through the project area reducing the outflow of freshwater to the southern portion of the project area. Freshwater and sediment retention in the southern portion of the project area has diminished due to unimpeded through-flow and tidal exchange combined with a lack of freshwater introduction from the north (USDA/NRCS 1995). In addition, oilfield access canals extending from within the project area to the Bayou Decade levee ridge have also increased tidal exchange and provided direct routes for saltwater intrusion and a reduction in freshwater and sediment retention (USDA/NRCS 1995).

Major changes to the hydrology of the Penchant Basin, both natural and human induced, have resulted in a complex hydrologic setting (USDA/NRCS 1995). Under natural hydrologic conditions, the Penchant Basin is confined by natural levee ridges and is open to the west and southwest where it connects with the Lower Atchafalaya River, Atchafalaya Bay, and Fourleague Bay. Historically, this hydrologic setting produced an estuarine system created by freshwater introduction in the upper basin and tidal exchange with the bays. Over time, hydrologic conditions in the Penchant Basin were altered by the construction of numerous canals, levees, local water management structures, and major public works projects. Some of the major projects that have contributed to the change in the hydrologic conditions of the basin are the Atchafalaya Basin Floodway, the Avoca Island Levee project along the Lower Atchafalaya River, the Gulf Intracoastal Waterway (GIWW), the Bayou Chene, Boeuf, and Black Projects, the rock weir at Wax Lake, and the Houma Navigation Canal (USDA/NRCS 1995).

The objective of the Brady Canal Hydrologic Restoration Project is to maintain and enhance existing marshes in the project area by reducing the rate of tidal exchange and improving the retention of introduced freshwater and sediment (Folse T., 1998). Specific goals of the project are to (1) decrease the rate of marsh loss, (2) maintain or increase the abundance of plant species typical of a freshwater and intermediate marsh, (3) decrease variability in water level within the project area, (4) decrease variability in salinities in the southern portion of the project, (5) increase vertical accretion within the project area and (6) increase the frequency of occurrence of SAV within the project area. (Folse T., 1998)

The Brady Canal Hydrologic Restoration Project (TE-28) was completed in July 2000 and involved the installation of the following project features:

Structure 6 – fixed crest weir with barge bay
Structure 7 – rock plug
Structure 10 – stabilization rock armored channel liner
Structure 14 – fixed crest weir with variable crest section
Structure 20 – stabilization rock armored channel liner
Structure 21 – fixed crest weir with three (3) variable crest sections
Structure 23 – fixed crest weir with two (2) variable crest sections
Structure 24 – fixed crest weir
4,405 linear ft. – rock armored earth embankment
3,660 linear ft. – rock dike
8,531 linear ft. – Earthen embankment
Maintenance of existing over-flow banks (21,600 ft.)

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of maintenance projects and operation tasks performed since the completion of the Brady Canal Hydrologic Restoration (TE-28) project.

Under Article II of the Brady Canal Cost Share Agreement, the landowners, ConocoPhillips, formerly Burlington Resources and the Apache Minerals Corporation were granted in-kind service credits to repair existing earthen embankments within the project area. Below is a description of work and cost associated with the maintenance performed by the landowners:

In Kind Service Credits

7/30/2007 – Apache Corporation contracted Dupre Brothers Construction, Inc. of Houma, La. to repair several breaches along the east bank of Jug Lake and reinforce earthen embankment tie-ins adjacent to variable crest weir structures #21, #23, and #24. The repairs were completed on 7/30/2008 at a total cost of $9,103.12

9/30/2006 – Conoco Phillips contracted Dupre Brothers, Inc. of Houma, La. to repair several breaches along Carencro Bayou, Little Carencro Bayou and Brady Canal using material from adjacent bayous. The total cost for refurbishment and repair of these breaches was $25,890.

9/20/2006 - Apache Corporation contracted Frisco Construction Co. Inc. of Houma, La. to repair breaches and refurbish low areas of the spoil banks along the east bank of Jug Lake and embankment tie-ins adjacent to structures #21, #23 and #24. The repairs were completed on 9/20/2006 at a total cost of $9,265.

10/31/2003 - Apache Corporation contracted Berry Bros. General Contractors to completed 5,050 linear feet of levee refurbishment along the west bank of Jug Lake. The cost for the levee refurbishment including construction oversight was $34,284.87. Following the levee refurbishment, Shaw Coastal performed an as-built survey of the repairs at a cost of $5,100.60. The total project cost for this maintenance event was $39,385.47.

8/15/2003 – ConocoPhillips, formerly Burlington Resources, completed the repair of two (2) large breaches along Little Carencro Bayou following Hurricane Lili. The maintenance project was completed on 8/15/2003 at a total cost of $31,642.57, including construction oversight and administration.

10/21/2002 - Apache Corporation contracted Frisco Construction Co. to repair and restore the existing levee embankment along Turtle Bayou, Superior Canal, and along the west bank of Jug Lake. This work was completed at a total cost of $5,310,.

Brady Canal Breach Repair Project (2003) – LDNR: This maintenance project was completed on August 13, 2003 and included the installation of approximately 9,667 tons of riprap along the north bank of Bayou Decade, 2,325 linear feet of levee refurbishment and earthen breach repair along Turtle Bayou and Superior Canal, and replacement of a timber pile on the navigational aid structure at Weir 6. The cost associated with the engineering, design and construction of the 2003 Brady Canal Breach Repair Project is as follows:

Construction:	$471,329.65
Engineering & Design:	$ 54,473.00
Bidding:	$ 4,100.00
Construction Administration:	$ 8,020.00
Construction Oversight:	$ 49,635.00
As-built Survey and Drawings:	$ 12,873.00
Project Total:	$600,430.65

Brady Canal 2012 Maintenance Project – This maintenance project began in October 2013. It includes the refurbishment of 13,900 linear feet of earthen embankment, the rock armoring of the embankment tie-ins on 3 water control structures in Jug Lake, the replacement of two (2) timber dolphins at Structure No. 6 and three (3) warming signs at Structure No. 10, and a breach repair. The total project costs associated with surveying, engineering, design, and construction of the 2012 maintenance project are as follows:

Construction:	$1,353,636.25
Surveying:	$ 60,303.00
Engineering & Design:	$ 99,958.76
Construction Admin/Inspections:	$ 179,386.38

Total Project Cost: $1,693,284.39

Structure Operations: In accordance with the operation schedule outlined in the Operation and Maintenance Plan, Structures #14, #21, and #23 have been operated twice annually beginning in April 2002. Below is a summary of costs incurred for structure operations:

03/02	Pyburn & Odom	$9,772.50
09/02	CEEC	$4,674.00
03/03	CEEC	$4,022.58
09/03	CEEC	$3,612.93
03/04	Shaw Coastal	$4,676.18
09/04	Shaw Coastal	$5,365.25
03/05	T. Baker Smith	$8,804.83
09/05	T. Baker Smith	$8,886.60
03/06	T. Baker Smith	$7,668.59
09/06	T. Baker Smith	$9,970.37
03/07	T. Baker Smith	$8,602.12
09/07	T. Baker Smith	$9,203.61
03/08	T. Baker Smith	$7,595.99
10/08	Apache Minerals	$6,000.00
03/09	Apache Minerals	$6,000.00
10/09	Apache Minerals	$6,000.00
03/10	Apache Minerals	$6,000.00
10/10	Apache Minerals	$6,000.00
03/11	Apache Minerals	$6,000.00
10/11	Apache Minerals	$6,000.00
03/12	Apache Minerals	$6,000.00
10/12	Apache Minerals	$6,000.00
03/13	Apache Minerals	$6,000.00
09/13	Apache Minerals	$6,000.00
03/14	Apache Minerals	$6,000.00

Prior to the scheduled operations in September 2008, the CPRA entered into a sole-source agreement with Apache Minerals for the landowner to assume responsibility of operating all water control structures associated with the Brady Canal (TE-28) project. The cost proposal submitted by Apache to complete this work in accordance with terms of the agreement is $12,000, annually. Apache began structure operations in October 2008.

Navigational Aids Maintenance: During the operation and maintenance phase of the Brady Canal Hydrologic Restoration (TE-28) Project, the navigational aids at Structure 6 along Bayou Decade have been repaired several times. Below are the dates and costs associated with the repair and maintenance of these navigation lights:

2/2007 – LDNR received bids for a state-wide maintenance contract for inspection, diagnostic testing and maintenance of twenty-seven (27) navigational aid systems at ten (10) separate locations throughout the state. Four (4) the twenty-seven (27) navigational aid structures are located at Structure 6 within the Brady Canal project area. The total cost of the state-wide maintenance contract is approximately $83,000 annually, with an option to extend the contract for an additional two (2) years. Inspections of the navigational aids at Structure 6 began in February 2007 under the current maintenance contract.

11/2003 – Ernest P. Breaux Electrical Inc. replaced 20 lamps, 4 – batteries, 1 – lamp changer, 1 – photo cell at structure 6. The cost for parts and labor to service these navigational aids was $4,132.30.

8/2002 - Automatic Power, Inc. of Larose, La. performed trouble shooting services to determine a schedule of parts requiring replacement – Cost: $465

8/2002 – B&B Electromatic of Norwood, La. repaired the navigation lights at structure 6 including parts and labor for a total cost of $2,039.

V. Inspection Results

Structure 6 – Fixed crest weir with barge bay

Structure 6 appears to be in good overall condition. There are no signs of erosion or wash-outs around the steel bulkheads and embankment tie-ins. The navigational lights and navigational signs are visible. As part of the 2012 Maintenance Project, two (2) of the timber pile dolphins on the west side of the structure were replaced and fitted with new navigational signs. These timber pile dolphins appear to be in good condition and no maintenance is needed at this time. (See Appendix B, Photos 23 through 25)

Structure 7 – Rock Plug

Structure 7 appears to be in good overall condition. There are no signs of extensive settlement of the rock plug or signs of erosion around the earthen embankment tie-ins. The warning signs and supports for this structure also appear to be in good condition. This structure does not require maintenance at this time. (See Appendix B, Photo #27)

Structure 10 – Stabilization rock armored channel liner

This structure appears to be in good overall condition. There is no additional settlement of the rock observed from previous inspections. From previous inspections, the warning sign timbers on the northeast side of the structure were no longer vertical. As part of the 2012 Maintenance Project, these three (3) warning signs and supports were replaced. The remaining warning signs and supports remain in good condition. (See Appendix B, Photos 28 through 29)

Structure 14 – fixed crest weir w/ variable crest section

This structure appears to be in good overall condition. There is no visible damage to the railings, platform, steel bulkhead, or warning signs and their timbers. Some noticeable signs of erosion near the embankment tie-ins remain, however, by comparing the pictures of this year to previous annual inspections it appears this area has stabilized as the erosion has not been progressing. Without a full breach around the embankment tie-in, this structure is still operating as designed. (See Appendix B, Photos 30 through 32)

Structure 20 – Stabilization rock armored channel liner

This structure is in good overall condition. As noted in previous annual inspections, there has been some settlement of the rock rip rap on the exposed sides and submerged crest of the structure. In 2012, it was determined the crest of the submerged channel liner has settled to a depth of -5.7 NAVD88, which translates to approximately 1.0' of settlement since construction. All other warning signs and timber supports are in good condition. Structure 20 was excluded from the 2012 Maintenance Project, but the earthen embankment was refurbished up to the structures eastern embankment tie-in. (See Appendix B, Photo 20)

Structure 21 – fixed crest weir w/ three (3) variable crest sections

Structure 21 is in good overall condition. There is no visible damage to the steel bulkhead, railings, platform, or the warning signs and their support timbers. As part of the 2012 Maintenance Project, Structure 21 had both of its embankment tie-ins refurbished and then rock armored with 50 linear feet of rip rap to prevent any further erosion around the ends of the structure. There has not been any visual settlement of the rip rap following the completion of the maintenance project. Due to this maintenance, the structure is again operating as designed. (See Appendix B, Photos 16 through 18)

Structure 23 – fixed crest weir w/ two (2) variable crest sections

This structure is in good overall condition. There is no visible damage to the steel bulkhead, railings, platform, or the warning signs and their support timbers. As part of the 2012 Maintenance Project, Structure 23 had both of its embankment tie-ins refurbished and then rock armored with rip rap for 50' in each direction to prevent any further erosion around the ends of the structure. There has not been any visual settlement of the rip rap following the completion of the maintenance project. Since the refurbishment has closed the breaches around the structure, the structure is now operating as intended. (See Appendix B, Photos 11 through 14)

Structure 24 – fixed crest weir

Structure 24 is in good overall condition. There is no visible damage to the steel bulkhead, railings, platform, or the warning signs and their support timbers. As part of the 2012 Maintenance Project, Structure 24 had both of its embankment tie-ins refurbished and then rock armored with 50 linear feet of rip rap to prevent any further erosion around the ends of the structure. There has not been any visual settlement of the rip rap following the completion

of the maintenance project. Due to this maintenance, the structure is again operating as designed. (See Appendix B, Photos 9 through 10)

Earthen Embankments

The inspection of the earthen embankments progressed from Superior Canal, Turtle Bayou, Bayou Decade, through Voss Canal, Bayou Carencro, and concluded along Brady Canal. The earthen embankments along Turtle Bayou and Superior Canal are in good condition. There are visual variations in the elevation and vegetation, but no observed breaches in the embankment. The earthen embankments along Bayou DeCade and Voss Canal are also in good condition. These areas have seen some erosion, but with little to no change observed since the previous inspections, there is little threat of these areas breaching. The earthen embankment along Bayou Carencro had some visual low spots identified during this inspection. This section of the project boundary is designated as an overflow bank, so without a full breach, maintenance is not needed at this time.

As part of the 2012 Maintenance Project, approximately 13,900 linear feet of earthen embankment around the rim of Jug Lake was refurbished (See Appendix B, Photos 7 through 8). The refurbished sections were designated as the most critical areas along the lake rim, some of which were no longer existent due to years of erosion and deterioration. These repairs to the earthen embankment now prevent large amounts of high saline water into an area that is predominantly brackish and allows three (3) water control structures to operate as designed that were previously ineffective. During the annual inspection, it was noted that the repaired earthen embankments had severe cut banks due to wave action in the lake. However, the cut banks seem to be isolated along the slope on the lake side of the embankment and don't appear to be occurring past the crest of the embankment. The embankment is covered with vegetation and no breaches are present. The erosion of the embankment should slow as this vegetation increases. There are no recommendations for corrective action at this time, but the embankment will need to be monitored on future inspections.

Rock Armored Embankments

Breach 7 located along the oil field access canal connecting to Superior canal is in good overall condition. There is no observed settlement along the length of the embankment and no erosion or washouts around the embankment tie-ins. There are no recommendations for corrective action at this time, but it will continue to be monitored on future inspections. (See Appendix B, Photos 1 through 3)

Breach 6 located along Brady Canal adjacent to an existing timber bulkhead, was closed as part of the 2012 Maintenance Project. A geotextile fabric was used to line the breach before it was filled with rock rip rap. There was no visual settlement of the rip rap. (See Appendix B, Photos 33)

The rock armored embankments and rock dikes found along the north bank of Bayou Decade and Voss Canal are in good condition. The rock dike along Bayou Decade between Jug Lake and Turtle Bayou appears to be in fair condition with isolated low areas and moderate displacement of rock riprap (See Appendix B, Photos 4 through 6). The earthen embankment

with rock revetment west of Structure 7 along Bayou Decade appears to be in good condition with no apparent settlement. The earthen embankment with rock revetment beginning at the intersection of Bayou Decade and Voss Canal had some initial settlement after construction but has experienced little change since previous inspections. Despite some minor deficiencies, the structures appear to be operating as intended.

VI. Conclusions and Recommendations

Since annual inspections of the Brady Canal Hydrologic Restoration (TE-28) project began in 2001, a number of deficiencies have been documented that required maintenance and/or refurbishment. In January 2010, CPRA initiated maintenance of the Brady Canal Project – 2012 Maintenance Project by contracting Arcadis, Inc. of Baton Rouge to perform the design and the preparation of the necessary contract documents for maintenance of the deficiencies outlined in Section V of this report. The 2012 Maintenance Project was the second major maintenance event, with the first being the 2003 Maintenance Project to refurbish earthen embankments along Turtle Bayou, Superior Canal, and the installation of the rock dike along the north bank of Bayou Decade between Turtle Bayou and Jug Lake was completed. As noted above in Section V there are only a few areas of minor concern throughout the TE-28 Project area. These areas of concern should be closely monitored in upcoming annual inspections in order to determine if these problem areas continue to worsen. At this time, none of these areas are preventing the features from achieving the project goals, therefore no maintenance is recommended at this time.

References:

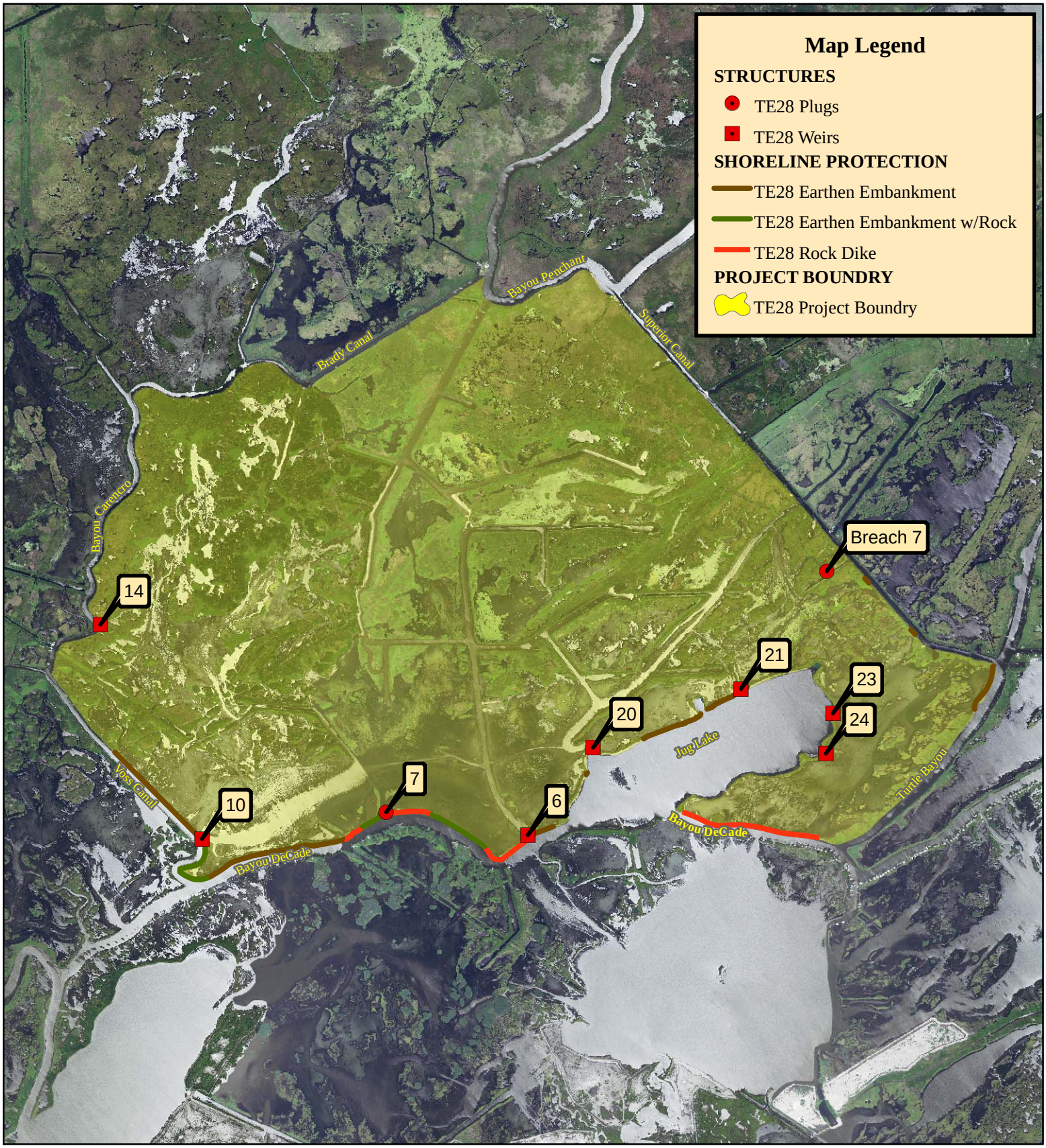
Folse, T. August 2003. Monitoring Plan for the Brady Canal Hydrologic Restoration Project (TE-28), Louisiana Department of Natural Resources, Coastal Restoration Division, 16pp.

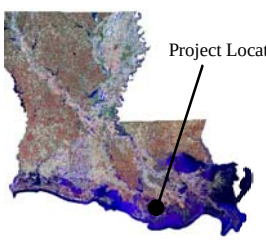
Louisiana Department of Natural Resources – Coastal Restoration Division and Pyburn and Odom, Inc. 2002. Operation, Maintenance and Rehabilitation Plan for the Brady Canal Hydrologic Restoration Project (TE-28)

United States Department of Agriculture – Natural Resources Conservation Service 1995. Project Plan and Environmental Assessment for the Brady Canal Hydrologic Restoration Project.

Appendix A

Project Features Map





TE28 - Brady Canal Hydrologic Restoration

PROJECT FEATURES MAP

0 1 2 Miles

0 1.5 3 Kilometers

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Data Source:

Coastal Protection and Restoration Authority
Operations Division
Thibodaux Field Office

2010 NAIP Aerial

Date: August 2011

Appendix B

Photographs

Photo 1: Breach 7 located in an oilfield access canal off of Superior Canal. There is no visible settlement or displacement of the rock fill material.

Photo 2: View of the embankment tie-in on the northeast end of Breach 7

Photo 3: View of the embankment tie-in on the southwest end of Breach 7

Photo 4: Close up view of the rock armored embankment along the north side of Bayou DeCade between Turtle Bayou and Jug Lake taken from Bayou DeCade

Photo 5: View of the rock armored embankment along the north side of Bayou DeCade between Turtle Bayou and Jug Lake taken from Bayou DeCade

Photo 6: View of the rock armored embankment along the north side of Bayou DeCade between Turtle Bayou and Jug Lake taken from Bayou DeCade

Photo 7: View of the earthen embankment on the souteast bank of Jug Lake

Photo 8: View of the earthen embankment near Structure 24 on the southeast bank of Jug Lake

Photo 9: View of the rock armored embankment tie-in located on the southern end of Structure 24

Photo 10: View of the rock armored embankment tie-in on the northern end of Structure 24

Photo 11: View of the rock armored embankment on the southern end of Structure 23

Photo 12: View of Structure 23 variable crest weir timbers, warning signs and steel piping

Photo 13: View of the rock armored embankment tie-in located on the northern side of Structure 23

Photo 14: View of the newly refurbished embankment located north of Structure 23 in Jug Lake

Photo 15: View of the refurbished embankment on the northern bank of Jug Lake

Photo 16: View of the rock armored embankment tie-in on the east side of Structure 21

Photo 17: View of Structure 21 variable crest weir timbers, warning signs and steel piping

Photo 18: View of the rock armored embankment tie-in on the west side of Structure 21

Photo 19: View of the refurbished embankment on the northwest bank of Jug Lake

Photo 20: View of Structure 20 rock armored channel liner warning signs

Photo 21: View of the embankment on the southwest bank of Jug Lake

Photo 22: View of the refurbished embankment on the northern bank of Bayou DeCade

Photo 23: View of the eastern end of Structure 6 and rock armored embankment

Photo 24: View of the eastern end of Structure 6 and embankment tie-in bulkhead

Photo 25: View of Structure 6 replaced timber pile dolphin included in 2012 Maintenance Project

Photo 26: View of rock dike along the north bank of Bayou Decade just west of Structure 6

Photo 27: View of Structure 7 rock plug along the north bank of Bayou Decade

Photo 28: View of northern end of Structure 10 fixed crest rock weir with barge bay

Photo 29: View of southern end of Structure 10 fixed crest rock weir with barge bay

Photo 30: View of Structure 14 southern embankment tie-in bulkhead

Photo 31: View of Structure 14 northern embankment tie-in bulkhead

Photo 32: Overall view of Structure 14 variable crest weir timbers, warning signs, and steel piping

Photo 33: Breach Repair 6 located on Brady Canal

Appendix C

Three Year Budget Projection and Worksheets

Brady Canal/ TE-28 / PPL 3 (2014-2017)
Three-Year Operations & Maintenance Budgets

Project Manager	O & M Manager	Federal Sponsor	Prepared By
	Adam Ledet	*NRCS*	*Travis Byland*

	2014/2015	2015/2016	2016/2017
Maintenance Inspection	$ 6,650.00	$ 6,850.00	$ 7,055.00
Structure Ops/ Nav Aid	$ 22,000.00	$ 22,000.00	$ 22,000.00
OCPR Administration	$ 2,500.00	$ 2,500.00	$ 2,500.00
Maintenance/Rehabilitation	$ -	$ 79,250.00	$ -

14/15 Description: Structure Operation, Navigational Aid maintenance and repairs

E&D	
Construction	
Construction Oversight	
Sub Total - Maint. And Rehab.	$ -

15/16 Description: Structure Operatons, Navigational Aid maintenance and repairs; routine overflow embankment repairs.

E&D	$ -
Construction	$ 67,000.00
Construction Oversight	$ 12,250.00
Sub Total - Maint. And Rehab.	$ 79,250.00

16/17 Description: Structure Operations, and Navigational AidMaintenance

E&D	$ -
Construction	$ -
Construction Oversight	$ -
Sub Total - Maint. And Rehab.	$ -

	2014/2015	2015/2016	2016/2017
Annual O&M Budgets	**$ 31,150.00**	**$ 189,850.00**	**$ 31,555.00**

2014 - 2017 O &M Budget (3 yr Total)	**$ 252,555**
Unexpended O & M Funds	**$967,131**
Remaining O & M Budget (Projected)	**$714,576**

OPERATIONS & MAINTENANCE BUDGET WORKSHEET

Project: TE-28 Brady Canal Hydrologic Restoration

FY 14/15 –

Administration		$ 2,500*
O&M Inspection & Report		$ 6,650
Operation/Navigational Aid:		$ 22,000**
Maintenance:		$
E&D:	$ 0	
Construction:	$ 0	
Construction Oversight:	$ 0	

Operation and Maintenance Assumptions:
Structure Operations: 3 – structures are operated twice annually by landowner for a total $15,000**, OCPR Navigational Aid inspection, maintenance and repairs: $7,000**
CPRA Administration: $2,500

FY 15/16 –

Administration		$ 2,500*
O&M Inspection & Report		$ 6,850
Operation/Navigational Aid:		$ 22,000**
Maintenance:		$ 79,250
E&D:	$ 0	
Construction:	$ 67,000	
Construction Oversight:	$ 12,250	

Operation and Maintenance Assumptions:
Structure Operations: 3 – structures are operated twice annually by landowner for a total $15,000**, OCPR Navigational Aid inspection, maintenance and repairs: $7,000**
CPRA Administration: $2,500

Construction Cost:

Embankment construction:	$67,004
1,340 lft @ $50/lft.	
CPRA Construction Oversight:	$12,500
	$79,250

FY 16/17 –

Administration		$ 2,500*
O&M Inspection & Report		$ 7,055
Operation/Navigational Aid:		$ 22,000**
Maintenance:		$
E&D:	$ 0	
Construction:	$ 0	
Construction Oversight:	$ 0	

Operation and Maintenance Assumptions:
Structure Operations: 3 – structures are operated twice annually by landowner for a total $15,000**, OCPR Navigational Aid inspection, maintenance and repairs: $7,000**
CPRA Administration: $2,500

2014-2017 Accounting

Total Estimated Expenditures:	**$2,222369.71**
Current O&M Funding (Lana Report):	**$3,033,526.00**
Current Unexpended O&M Funds:	**$ 967,131.29**