VERMILION RIVER CUTOFF (TV-03)

I. INTRODUCTION

I.1. Project Description

The project consists of a continuous foreshore rock dike along 6,269 feet (1,911 meters) of the east bank of the Vermilion River Cutoff in Vermilion Parish (figure 1). The project was authorized for construction under the 1st Priority Project List (PPL) and was constructed in January and February 1996.

The earliest project document is a one-page feasibility analysis dated 1/09/91. The objective stated in that document is to reestablish a section of the marsh bank along the west side of the Vermilion River Cutoff (VRC) through measures that induce settling of suspended sediment, as well as provide a place for beneficial use of dredged material from future maintenance dredging. At that time it appears there was an assumption that the VRC would have to be dredged in the near future and that the project could be designed to aid in using the dredged material beneficially. Apparently, that was a false assumption since there is no further mention of it in later project documents and the U.S. Army Corps of Engineers (USACE) has not dredged in the area. The project features, as described in that document, would include a sediment-trapping device (rubble mound structure). The project features, as stated in the candidate project proposal dated 9/27/91, include a rock-armored structure, along with a wave-dampening brush fence and vegetative plantings, along an eroded section of the west bank of the VRC.

The project justification and objectives in the candidate project proposal are not consistent. The justification was to protect the marsh area behind the navigation waterway (assumed to mean east of the VRC) and to restore at least 11 acres of marsh (assumed to be between the rock-armored structure and the wave-dampening brush fence). The objective was to reestablish a section of marsh along the west side of the VRC. There is no mention in the objective statement about the need to protect the east shoreline of the VRC, which appears to always have been a primary objective. The purposes of the project, as described in the environmental assessment (EA) dated 10/93, are to prevent erosion of a portion of the east bankline of the VRC, thereby contributing to the protection of the several thousand acre Onion Lake wetland and open water complex east of the VRC (paraphrased).

The original project area, as shown on a map attached to the 1991 project proposal was a long, narrow rectangular area covering a section of the VRC and both its banks. That was the area used for the WVA. A check of the WVA variables and the project information sheet (attached to the project proposal) verified the correlation between the project area map and the Wetland Value

Figure 1. Location of Vermilion River Cutoff Shoreline Protection project (TV-03).

Assessment (WVA) variables. The 1st PPL report has the same map as the project proposal. The size of the area used for WVA analysis was 202 acres (82 hectares).

The project area, as shown on the map included with the EA, includes one large "island" and two much smaller islands lying between the VRC and Onion Lake, a different area from that used for the WVA. According to the EA, the size of this area is approximately 200 acres (80 hectares). The area is actually about 160 acres (65 hectares), based on digitizing done for this report. According to Bob Bosenberg, who prepared the EA, a meeting was held between representatives of the USACE and the Louisiana Department of Natural Resources (LDNR) shortly after a memo detailing the need to modify the project was prepared on 10/23/92. At that meeting, the need to modify the project and the project area was agreed to, but there is no documentation of that meeting in the project file. A new project area map was prepared and included in the EA. There has not been a WVA conducted for the revised project design, nor for the project area as shown in the EA.

The project boundary, as shown on a later map, based on 1993 photography, includes only the large island on the east side of the VRC. The map appears to be based on the map contained in the EA but does not include the two smaller islands. The west shoreline of the large island is the only place where project features are located according to the as-built drawings. One of the smaller islands had disappeared by the time construction occurred and the other island was left unprotected.

The only feature constructed, according to USACE files, is a rock dike along the east side of the VRC. The total length of dike is 6,520 feet (1,987 meters) or 6,269 feet (1,911 meters) in a straight line (Narrative Completion Report, 2/13/96). There is information in the files that suggests that the LDNR would implement some sediment trapping features on the west side of the VRC at a later date. Team members have verified that no additional work has been done around the project area since the rock dike construction. Some investigations were conducted for a sediment-trapping device, but high cost estimates prevented further development of the plan.

I.2. Project Personnel

Project Phase	Name	Position	Agency
Planning	Bob Bosenberg	Biologist	USACE
Implementation	Garrett Broussard	Project Engineer	LDNR
Planning and Implementation	Beth Cottone	Project Manager	USACE
Planning and Implementation	Dom Elguezabal	Senior Project Manager	USACE
Planning	Gerry Giroir	Project Design Team	USACE
Implementation	Melvin Guidry	Project Engineer	LDNR

Project Phase	Name	Position	Agency
and Monitoring			
Implementation and Monitoring	Herb Juneau	Construction Engineer (early) & Project Manager (late)	USACE & LDNR
Monitoring	Ralph Libersat	Monitoring Manager	LDNR
Implementation	Al Mistrot	Project Inspector	USACE
Monitoring	Christine Thibodeaux	Monitoring Manager	LDNR

II. PLANNING

II.1. Causes of Loss

What was assumed to be the major cause of land loss in the projected area?
The major causes of land loss in the project area were assumed to be wind-generated wave erosion and vessel-generated wave erosion (Project Proposal, 1991).

What were assumed to be the additional causes of land loss in the projected area?
No other causes of land loss in the project area could be found in the files.

II.2. Background

The selected restoration method was a modification of the original plan as explained in Section I. The background information for the change of plan is detailed in a 10/23/92 memo prepared by Bob Bosenberg. The impetus for the design change came from Mr. Bosenberg. Important points made in the memo include:

- Vessel-induced waves were determined to be a greater cause of erosion along the east bank of the VRC than wind-induced waves.
- The originally proposed rock structure along the west bank of the VRC would cut off the supply of sediments that is causing desirable siltation in the bay to the west of the VRC.
- The shallowness of the bay on the west side of the VRC attenuates waves and would be compatible with a sediment-capturing feature.
- Armoring of the points of land along the west side of the VRC is worthy of consideration because they are subject to waves from navigation and wind.

II.3. Project Goals and Objectives

How were the goals and objectives for the project determined?
The project was authorized for construction under the 1st PPL. At that time, little emphasis was placed on development of goals and objectives. The emphasis at the time was to "put projects on the ground" and not undertake additional studies. As stated in the 2nd paragraph under Section I.1., the objectives stated in the 9/27/91 project proposal do not correspond well with the project justification.

The final monitoring plan was prepared in 11/1/94 and revised in 1998. The goals and objectives were not revised. The project objectives from the monitoring plan are:

- Maintain and protect approximately 54 acres of brackish marsh along the eastern side of the VRC that will contribute to the integrity of several thousand acres of the Onion Lake wetland complex.
- Prevent the VRC from widening into adjacent marshes.

The specific goal is:

- Decrease the rate of shoreline erosion along the east bank of the Vermilion River Cutoff adjacent to Onion Lake through the use of a rock breakwater.

Are the goals and objectives clearly stated and unambiguous?
The objectives of monitoring plans, at the time of writing, incorporated both the specific (quantified) and the un-quantified (non-specific) objectives of the project, and this is reflected in the first objective statement. Therefore, the objectives are both non-ambiguous and ambiguous. The first part of the first objective about maintaining and protecting 54 acres (21.9 hectares) of marsh is straightforward and non-ambiguous. But, the second part about protecting the Onion Lake wetland complex is ambiguous since the Onion Lake wetland complex is not even defined. The second objective is ambiguous since the statement does not define the boundary of the area prevented from widening.

One of the team members determined that the 54-acre (21.9 hectare) figure came from the WVA. It was obtained by taking the erosion rate of 23.33 feet (7.11 meters) per year (calculated from analysis of 1955 and 1985 photography) and multiplying it by 5,000 feet (1,524 meters) of shoreline, which was the approximate size of the opening along the west bank of the VRC. The calculation is 23.33 x 5,000 x 20 / 43560 = 53.5 ~ 54 acres.

To calculate the amount of marsh protected by the project as constructed, the length of shoreline protected should be multiplied by the calculated erosion rate of 23.33 feet per year. Using the straight-line length of the rock dike: 6,269 x 23.33 x 20 / 43560 = 67 acres

Are the goals and objectives attainable?
The project goal is easily attainable, since only a small decrease in the erosion rate would achieve the goal. The goals and objectives reflect the need to prevent further shoreline erosion in the project area. The project should be able to protect at least 54 acres of shoreline from erosion, since the 54 acres was based on a shorter length f shoreline. The objective of contributing to the integrity of the Onion Lake complex is vague and does not reflect the cause of land loss. There appears to be no basis for that objective, other than a similar statement made in the EA, from which it was likely copied.

Do the goals and objectives reflect the causes of land loss in the project area?
The specific goal statement implies that shoreline erosion along the entire east bank of the VRC is addressed by the project. Also, the amount of decrease in the erosion rate is not specified. However, the goal describes the area of protection better than the project objectives.

III. ENGINEERING

III.1. Design Feature(s)

What construction features were used to address the major cause of land loss in the project area?
A rock dike was used to address shoreline erosion from vessel waves, which was determined to be the major cause of land loss. The dike was built in the water, very near the east bank of the VRC. The dike did not exactly follow the shoreline, but cut across some coves and inlets.

Three points of land on the west side of the VRC were supposed to be protected with rock as part of the construction contract. During construction, the amount of rock needed per linear foot of dike on the east bank was considerably higher than the estimates. Modifications were made in the rock dike design during construction (see Section III.2.), but the amount of rock used per linear foot of dike was still higher than estimated. Due to escalating costs, the rock protection on the west side of the channel was deleted from the contract, and has not been constructed.

What construction features were used to address the additional causes of land loss in the project area?
The rock dike was also meant to address any wind-blown wave erosion that was occurring along the east bank of the VRC.

What kind of data was gathered to engineer the features?
Once a decision was made to change the project from the west bank of the VRC to the east bank during project planning, no borings or surveys were collected. The designers used some general subsurface data for the area as provided by Del Britsch of the USACE. Geotechnical Branch would have been responsible for computing both construction and long-term settlement. However, there may not have been a calculation of long-term settlement. Even if an estimate for long-term settlement had been made, it was just guess and wouldn't mean much since we now can figure out what it really is. There was a calculation for construction settlement, but it couldn't be found in the project files due to the transfer of personnel that worked on the project (Interview with designers, 3/29/02).

There was much more settlement than anticipated due to an unexpected relatively thin layer of Holocene muck on top of the Pleistocene material. Vibracores were taken during construction to determine if the high settlement rate was due to a localized problem area or the general condition along the bankline. Based on the

relatively thin layer of Holocene muck, there should be no significant long-term settlement (Interview with designers, 3/29/02).

What engineering targets were the features trying to achieve?
The design was for dike with a +4-foot (+1.2 meter) NGVD elevation and a 10-foot (3-meter) berm on the channel side. Side slopes were to be 1 vertical on 3 horizontal. The design was meant to completely stop shoreline erosion along the protected bankline.

III.2. Implementation of Design Feature(s)

Were construction features built as designed? If not, which features were altered and why?
The dike design called for a dike to be tied into the top of bank with a 1 on 2 side slopes on the protected side, a five-foot (1.5 meter) crown width, a 1 on 3 side slopes on the channel side, and a 10-foot (3 meter) wide, 3-foot (0.9 meter) thick berm. The crown would be at elevation +4.0 feet (+1.2 meters) NGVD. The dike and berm were to be placed on geotextile.

During project construction, the design was modified. Apparently, the USACE and LDNR project managers approved the changes. The elevation was reduced to +3.5 feet (+1.1 meters) NGVD, the crown width was reduced to 4 feet (1.2 meters), and the berm was reduced to 7 feet (2.1 meters) wide. The design was modified because the amount of rock required for each linear foot of dike was much higher than estimated. During early construction, about 7.3 tons (6.6 metric tons) of rocks were being used per foot. The design estimate was 4.5 to 5 tons (4.1 to 4.6 metric tons) per linear foot. The overall average used for the project was 6.5 tons (5.9 metric tons) per foot.

The big bust on the amount of rock necessary for construction was a "team effort". The following items are from an interview of designers conducted on 3/29/02:

- Construction Division allowed the contractor to build the dike somewhat different than the drawings, which may have used more rock.
- The compliance cross-sections were changed in the field from every 200 feet to every 400 feet (61–122 meters). This allowed the contractor to overbuild the cross-section in-between compliance sections. (The contractor normally overbuilds in order to make sure they don't have to go back and fix a problem. Also, the contractor is getting paid by the unit for rock, so they want to use as much as possible.)
- There was a problem with the hydrograph and the surveys being on different datum planes. It is not known if this problem has been resolved.
- Engineering division did not add-in a "tolerance" for the quantity estimate, which is normally done when there is a small amount of construction settlement predicted.
- The biggest factor of all was the unexpected settlement that occurred due to not having borings from the dike footprint.

In addition to the modification of the dike design, the southernmost 915 feet (279 meters) of rock dike was deleted from the contract and the point protection on the west side of the VRC was deleted from the contract. These modifications were necessary due to cost overruns. An interesting observation was made during construction – one of the small islands to be protected on the south end of the project had been eroded away between the time surveys had been taken and project construction. Even if this area hadn't been taken out of the project during construction because of the cost overrun, there would have been a modification necessary since the island had disappeared.

III.3. Operation and Maintenance

Were structures operated as planned? If not, why not?
The structure (rock dike) is a passive structure and no operation is needed.

Are the structures still functioning as designed? If not, why not?
The monitoring plan does not include any measurements of the dike. Field investigators report that the dike appears to have decreased in elevation in some places.

Up-to-date surveys are necessary to determine how well it is functioning. Team members report that there may be a need for maintenance.

Was maintenance performed?
Maintenance was anticipated and has been built into the project maintenance plan. The structure is still functioning. Additional surveys are planned to determine if and how much the dike has settled. No maintenance has been performed.

IV. PHYSICAL RESPONSE

IV.1. Project Goals

Do monitoring goals and objectives match the project goals and objectives?
As stated earlier, there were no written project goals and objectives written before development of the monitoring program, except for an objective mentioned in an early document that doesn't apply to the project as constructed.

The 54 acres of loss to be prevented by the project was based on the results of the WVA. However, the WVA estimate was based on a project design that was substantially modified at a later date. A revised WVA should have been done for the revised project, and the monitoring plan should have been based on the revised project design.

In addition to the revisions mentioned above, the project was modified during construction with less shoreline protection constructed, compared to the amount described in the plans and specifications.

The monitoring plan does not have a goal for protecting anything but the shoreline from erosion, but aerial photography of a larger area is being done. It is suggested that aerial photography not be flown unless it is addressing some goal of the project.

The final monitoring plan was written about two years before the project was constructed. The revised final plan of 1998 does not address the problems noted above. The monitoring plan needs to be revised and new objective and goal statements developed.

IV.2. Comparison to adjacent and/or healthy marshes

IV.2.1. Elevation

What is the range of elevations that support healthy marshes in the different marsh types?
Unknown.

Does the project elevation fall within the range for its marsh type?
Unknown.

Did the project meet its target elevation?
The project was not meant to affect marsh elevation.

What is the subsidence rate and how long will the project remain in the correct elevation range?
Unknown.

IV.2.2. Hydrology

What is the hydrology that supports healthy marshes in the different marsh types?
Monitoring does not address this issue, but it appears that the marshes in the project area are relatively stable, except that they are being lost to chronic shoreline erosion. The healthy marshes are open to normal tidal exchange and freshwater input from the Vermilion River.

Does the project have the correct hydrology for its marsh type?
The project does not significantly affect the hydrology of the project area.

What were the hydrology targets for the project and were they met?
There were no hydrology targets.

IV.2.3. Salinity

What is the salinity regime that supports healthy marshes in the different marsh types?
Not relevant to the project.

Does the project have the correct salinity for its marsh type?
Unknown, but assumed so since the marsh is very stable except for shoreline erosion.

What were the salinity targets for the project and were they met?
Not relevant to the project.

IV.2.4. Soils

What is the soil type that supports healthy marshes in the different marsh types?
The marsh behind the rock dike is growing in Lafitte muck.

Does the project have the correct soil for its marsh type?
Unknown

IV.2.5. Shoreline Erosion

How have shoreline erosion rates changed in the project area compared to nearby reference areas?
In 1995 and 1997, GPS points were taken of the shoreline position. These data were supposed to be digitized and used to compare to photography from 1993. Monitoring personnel report that the data were not usable since they were collected in a format that was not compatible with the current system. In 1999, GPS points along the shoreline were taken again and overlaid on historic photography from 1993. The data showed an apparent loss of 3.74 acres and a gain of 0.06 acres (3.68 acres net loss) of shoreline, but the loss could have occurred before the project was built.

In 1998, 2000, and 2002, field measurements were made at the 5 settlement plate locations along the dike. Comparing the data sets, there was some accretion at two locations, while there was no shoreline movement at the other three locations between 1998 and 2000. Comparing the 2000 and 2002 data, the three plates showed accretion and two showed loss. Overall, between 1998 and 2002, three plates showed accretion, one plate showed loss, and one plate showed no change. The direct measurements between the rock dike and the shoreline (in feet) at the five settlement plates are as follows. Plate 1003 is the northernmost plate and plate 1007 is the southernmost plate.

Plate	2/25/98	2/1/00	Net (98-00)	7/9/02	Net (00-02)	Net (98-02)
1003	63.4	63.4	0.0	50.1	-13.3	-13.3
1004	40.85	40.85	0.0	36.85	-4.0	-4.0
1005	70.6	65.15	-5.45	55.6	-9.55	-15.00
1006	23.35	23.35	0.0	27.85	+4.5	+4.5
1007	13.9	11.95	-1.95	13.9	+1.95	0.0

IV.2.6. Other

Describe any other physical characteristics of the project that have bearing on the projects' success.
Elevation, hydrology, salinity, and soils were not assumed to be a problem in the project area. None of these variables are being monitored. For this project, all we will know is shoreline position – we will not know anything about vertical accretion, toe scour, or other elevation data, unless that information is collected under the O&M budget.

IV.3. Suggestions for physical response monitoring

Are there other variables that could be monitored to substantially increase the ability to understand the results of the project?
Surveys across the rock dike should be taken to determine if any toe scour, settlement, or accretion is occurring.

V. BIOLOGICAL RESPONSE

V.1. Project Goals

As stated earlier, there were no project goals and objectives written before development of the monitoring program. There are no goals in the monitoring program addressing biological response.

V.2. Comparison to adjacent and/or healthy marshes

V.2.1. Vegetation

What is the range in species composition and cover for healthy marshes in each type?
Unknown.

Does the project have the correct species composition and cover for its type?
Unknown.

What were the vegetation targets for this project and were they met? If not, What is the most likely reason?
Unknown.

V.2.2. Landscape

What is the range in landscapes that supports healthy marshes in different marsh types?
Pre-construction aerial photography of the project area was collected in 1993 and was classified into land and water. The 194-acre (79-hectare) project area contained 148 acres (60 hectares) of land (76%) and 46 acres (18.7 hectares) of water (24%). Post-construction photography is scheduled for fall 2002 and 2011

and will be used to investigate whether the integrity of the project area is being maintained.

In order to investigate change in acreage to date, the shoreline was digitized from the November 1993 photography to serve as a baseline, and May 1999 DGPS shoreline surveys were overlain. DGPS surveys had been taken in 1995 and 1997, but were unusable because of the format in which they were taken. Since project construction was completed in February 1996 and the post-construction survey was conducted in May 1999, a true pre-construction acreage change could not be obtained using the 1993 photography for the pre-construction condition. A comparison of the 1993 photography and the 1999 DGPS indicates a decrease in land and a commensurate increase water of 4.4 acres (1.8 ha). It is important to note that this is the amount of land lost along the shoreline of the VRC, not the entire project area.

The WVA predicted that the project would prevent 2.70 acres/yr (1.09 hectares/yr) of wetland loss that would have occurred without the project. Observations of fall 2000 photography that was collected for the brown marsh study shows that the northern end of the shoreline is continuing to erode, but the rest of the shoreline and interior marsh appears to be stable. This observation does not correspond with the data from the shoreline markers, which indicate that the northern sites are accreting and the southern sites are eroding or are not changing.

Is the project changing in the direction of the optimal landscape? If not, what is the most likely reason?
The project is an attempt to stabilize remaining marsh. It appears to be working.

V.2.3. Other

USGS land/water shows that between 1997-1999 there was a loss of 1.81 acres (0.73 hectares) and a gain of 0.16 acres (0.65 hectares) in the project area (Powerpoint presentation on the CD Rick Raynie provided to Academic Working Group Members.

V.3. Suggestions for biological response monitoring

Are there other variables that could be monitored to substantially increase the ability to understand the results of the project?
None were identified.

VI. ADAPTIVE MANAGEMENT

VI.1. Existing improvements

What has already been done to improve the project?
No action has been taken to improve the project.

VI.2. Project effectiveness

Are we able to determine if the project has performed as planned? If not, why?
Project effectiveness is difficult to address for this project since the project was completely redesigned during project planning and the monitoring plan does not reflect some of the changes made to the project during construction. The success criteria should be the stabilization of the shoreline behind the rock dike. Surveys of the rock dike and shoreline will be conducted in the near future to determine if the dike has stopped erosion of the shoreline.

What should be the success criteria for this project?
The success criteria should be the stabilization of the shoreline behind the rock dike. Surveys of the rock dike and shoreline will be conducted in the near future to determine if the dike has stopped erosion of the shoreline.

VI.3. Recommended improvements

What can be done to improve the project?
The following are recommended improvements:

- Add more rock to the existing dike as determined necessary through the maintenance and monitoring programs to maintain the elevation of the dike.
- Extend the rock dike to the south to protect the area that would have been protected if cost overruns had not occurred.
- Armor the three points of land along the west side of the Vermilion River Cutoff that would have been protected if cost overruns had not occurred.
- Revise the monitoring plan to reflect the current project design.
- Aerial photography is being flown in years 2, 9, and 17 to document the land/water ratio in an area for which there are no project goals. Either the photography needs to be discontinued or a goal needs to be added to assess project effects in that area.
- On all shoreline protection projects, maintenance surveys should be used to monitor and evaluate shoreline protection features. The maintenance survey would need to include a DGPS shoreline survey of the vegetated marsh edge in both the project and a reference area (if available).

VI.4. Lessons learned

The following lessons have been learned:

- Up to date surveys should be taken before projects are constructed.
- Datum planes need to be decided upon and agreed to by all parties involved before project construction. This problem has been solved for PPL9 and subsequent projects. For those projects, monuments will be constructed within or near the project area.

- Soil borings need to be taken in order to design the project properly. This is a straightforward requirement that should not be overlooked in order to save money or time.
- The cross section of rock dikes may be reduced from the designs originally proposed by the USACE. The USACE is changing its attitude toward dikes used for coastal restoration projects.
- Need to update Wetland Value Assessment and monitoring plan to reflect the project as actually constructed. There should be some guidance from the CWPPRA Task Force, Technical Committee, or Planning and Evaluation Subcommittee related to the need to revise WVA's.
- For projects that were modified during construction, the monitoring plans need to be revised to reflect the actual project design.
- Projects should not be modified during construction because of cost overruns. Today, there are methods that can be used to provide additional funding for project construction if overruns occur during construction.

VII. SUPPORTING DOCUMENTATION

VII.1. Published References

Louisiana Coastal Wetlands Conservation and Restoration Task Force. 1991. Candidate Project Fact Sheet in Priority List Report. Appendix E, Tab M. 7 pp.

Louisiana Department of Natural Resources. 1998. Final Revised Monitoring Plan for the Vermilion River Cutoff Project (T/V-03). 5 pp.

U.S. Army Corps of Engineers, New Orleans District. 1993. Environmental Assessment for the Vermilion River Cutoff Project. EA#181. 21 pp.

VII.2. Unpublished Sources

Agency	Date	Agency Contact	Content	Short Description	Pages
LDNR	1991 (JAN)	Steve Underwood	Feasibility Analysis	Analysis on Feasibility of Project - Earliest known project document	1
USACE	1991 (SEP)	Richard Boe	Wetland Value Assessment Worksheet	N/A	2
Unknown	1991 (SEP)	Unknown	Secondary Criteria	Letters of intent, avg. annual acres, rates of land loss, shoreline erosion rate, level of public support, etc.	2
LDNR	1992	Unknown	Project Information Sheet	Detailed listing of Project Information	6
USACE	1992 (OCT)	Bob Bosenberg	Memo	Recommendations for project modifications	7
USACE	1992 (NOV)	Unknown	Meeting summary	Handwritten notes of a meeting to discuss design changes	1
USACE	1993 (JAN)	Van Stutts	Memo	Memo documenting approval to modify project design	1
USACE	1993 (MAR)	Van Stutts	Memo	Memo explaining proposed change in plan of protection	1
USACE	1993 (NOV)	Bob Bosenberg	Memo	Memo about the Status of the Project	1

USACE	1993 (DEC)	Bob Bosenberg	Finding of No Significant Impact (FONSI)	Description of Action, Factors, Public Involvement, Conclusion	2
USACE	1994 (FEB) to 1996 (SEP)	Bill Hicks	Project Fact Sheets	Six facts sheets prepared by the USACE over a two-year period	7
USACE	Late 1995	Unklnown	Construction Information Sheets	Information about inconsistent surveys written shortly after construction contract was awarded	3
USACE	1996 (JAN)	Ron Legendre	Memo	Memo requesting funds for an increase in armor stone quantity	1
USACE	1996 (JAN)	Bob Bosenberg	Memo	Memo with suggested remedies for dealing with project modifications	1
USACE	1996 (JAN)	Dom Elguezabal	Memo	Memo discussing changes to the project contract	1
USACE	Early 1996	Unknown	Project Modification Sheet	Construction modification to delete southernmost bank protection and corner erosion protection	1
USACE	Early 1996	Unknown	Project Modification Sheet	Construction modification to change dike height, crown width, berm width, etc.	1
USACE	1996 (FEB)	Al Mistrot	Narrative Completion Report	Detailed Report of the Project	8
USACE	1996 (FEB)	Unknown	As-built Drawings	Project plans as constructed	3
NWRC	1999 (MAR)	Unknown	Aerial Photo	1993 Project Boundary Map	1
USACE & LDNR	2000 (MAY)	Multiple	Operation, Maintenance, Repair, Replacement and Rehabilitation Plan	Detailed Planning of Vermilion Cutoff Bank Erosion Protection	6
USACE	2002 (MAR)	Richard Boe	Interview w/Jason Binet, Gerry Giroir, and Chris Alfonso	Interview Report	1

VIII. PROJECT REVIEW TEAM

Jason Binet	USACE
Richard Boe (team leader)	USACE
Marty Floyd	NRCS
Mel Guidry	LDNR
John Jurgensen	NRCS
Ralph Libersat	LDNR
Wes McQuiddy	EPA
Joy Merino	NMFS
Andy Nyman	LSU
Christine Thibodeaux	LDNR
Deetra Washington	LDNR

APPENDIX A: INFORMATION CHECK SHEET

Project Name and Number: TV-03 Vermilion River Cutoff- Shoreline
Date: July 2, 2002

INFORMATION TYPE	YES	NO	N/A	SOURCE
Fact Sheet – *Included in package*	X			Richard Boe (USACE), PPL RTC
Project Description – *Included in Fact Sheet*	X			Richard Boe (USACE), Pre-selection plan
Project Information Sheet – *Included in package*	X			Richard Boe (USACE)
Wetland Value Assessment - *Included in package*	X			Richard Boe (USACE), (DNR); re-done when project changed?
Environmental Assessment – *Included in package, also includes a project history appendix*	X			Richard Boe (USACE), (DNR)
Project Boundary – *Map included*	X			Richard Boe (USACE)
Planning Data – *Many memos, letters, and other correspondence included in package*	X			Richard Boe (USACE)
Permits – *WQC and 404*	X			Richard Boe (USACE)
Landrights – *No issues found*	X			Richard Boe (USACE)
Cultural Resources – *One letter included*	X			Richard Boe (USACE)
Preliminary Engineering Design – *See interview report, included*	X			Richard Boe (USACE)
Geotechnical – *See interview report, included*	X			Richard Boe (USACE)
Engineering Design – *See interview report, included*	X			Mel Guidry (DNR)
As-built Drawings – *Included in package*	X			Mel Guidry (DNR)
Modeling Output			X	
Construction Completion Report – *Included in package. Other construction information also included.*	X			Mel Guidry (DNR)
Engineering Data – *See interview report, included*	X			Mel Guidry (DNR), survey 1998 (top pf plates), and x-sections
Monitoring Plan – *Included in package*	X			(DNR), www.saveLAwetlands.org
Monitoring Reports	X			(DNR), www.saveLAwetlands.org
Supporting Literature	X			
Monitoring Data				
Operations Plan			X	
Operations Data			X	
Maintenance Plan: O&M Plan – *Included in package*	X			Mel Guidry (DNR)
Maintenance Data	X			Mel Guidry (DNR)
O&M Reports: Annual inspection rpts	X			Mel Guidry (DNR);
Other:				
Cost Share Agreement	X			USACE and LDNR
Data Needs:				
Re-survey x-sections, top of plates				
Look at old maps to I.D. old channel locations as a possible indication of why rocks settled rapidly				

Major project change was made during project planning.
Modifications were made to the plans during construction because of high settlement.