CLASSIFICATION: UNCLASSIFIED

CENWK STAFF SUMMARY SHEET

ACTION: ____ FOR INFORMATION ____ FOR GUIDANCE
____ FOR APPROVAL ____ OTHER
X FOR SIGNATURE

CONTROL NUM: 20060659
SUSPENSE DATE

OFFICE SYMBOL: CENWK-PM-PR
DATE: 22 March 2006

SUBJECT: Missouri River Fish and Wildlife Mitigation Program – Jameson Island.

PURPOSE: Missouri River Fish and Wildlife Mitigation Program (Jameson Island) under WRDA 86 and 99.

BACKGROUND/DISCUSSION:

a. Project Implementation Report – Includes NEPA Review/Environmental Assessment, Agency Coordination, Cultural Resources Coordination, Environmental Permits and Clearances, and Technical Documents.

b. Finding of No Significant Impact: Request **SIGNATURE** of DE at red tab.

RECEIVED
REGULATORY BRANCH
06 MAR 28 PM 1:11

RECOMMENDATION:
Recommend that the DE sign the FONSI (at red tab) and return package to PM-PR.

COORDINATION

OFC SYMBOL	ACTION	CONCUR	NONCONCUR	SIGNATURE	DATE	PHONE
3 EC-HH	Coordination	CB			27 Mar 06	816 389-3482
4 OD-R	Coordination				04 Apr. 06	816-389-3657
5 OC	Coordination				4/11/06	

INITIALS/DATE			INITIALS/DATE	
1	SECTION CHIEF	3/27/06		EXECUTIVE ASSISTANT
2	BRANCH CHIEF	3/27/06	6	DEPUTY FOR PM 4/11/06
			7	DEPUTY COMMANDER
			8	COMMANDER

ACTION OFFICER (Name, Grade, Phone, Signature)

Matthew D. Vandenberg, GS12, X 3146

NWK Form 1530 (Nov 03) PREVIOUS EDITION OBSOLETE

left msg for pickup - 17 April

DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106-2896

Finding of No Significant Impact

Jameson Island
Chute Construction Project
Saline County, Missouri

Project Summary

The U.S. Army Corps of Engineers, Kansas City District (CENWK), in cooperation with the U.S. Fish and Wildlife Service, proposes to construct the Jameson Island Chute Construction Project, under the authority of the Water Resources Development Acts of 1986 and 1999 (WRDA 86 and 99). The proposed project involves the construction of a 9,630 lineal foot chute, with corresponding shallow water habitat areas. The project purpose is to create shallow water habitat for the benefit of large river fish, including the pallid sturgeon, and provide additional connectivity with the Missouri River and its floodplain. This project is also designed to help mitigate for the loss of habitat that resulted from the construction, operation, and maintenance of the Missouri River Bank Stabilization and Navigation Project (BSNP). The project is located just northeast of Arrow Rock, Missouri, along Main Street, which provides easy access to the area. The area is located within Saline County, Missouri and is adjacent to the right descending bank of the Missouri River at river miles 213 to 214. The area lies in portions of Sections 19 and 20, Township 50 North, Range 18 West.

Alternatives

Four alternatives were considered; three build alternatives and the "No Action" alternative. Each of the three build alternatives would involve the construction of a chute to connect the Missouri River to its floodplain, the creation of shallow water habitat, and the improvement of aquatic and terrestrial habitat for the benefit of a variety of migratory and resident species. The four alternatives considered were the: (1) Small Chute Alternative, (2) Large Chute Alternative, (3) Medium Chute Alternative, and (4) the No Development alternative.

*1) **Small Chute Alternative (PREFERRED).*** Alternative 1 consists of the construction of an approximately 9,630 lineal foot chute in order to create shallow water habitat and provide additional connectivity with the Missouri River.

2) Large Chute Alternative. Alternative 2 consists of the construction of an approximately 15,515 lineal foot chute in order to create shallow water habitat and provide additional connectivity with the Missouri River.

3) Medium Chute Alternative. Alternative 3 consists of the construction of an approximately 11,425 lineal foot chute in order to create shallow water habitat and provide additional connectivity with the Missouri River.

4) No Action Development. The No Development Alternative represents the alternative of no action by the Federal government. No activities to develop fish and wildlife habitat would be undertaken as part of the No Development alternative. The USFWS currently holds fee title to the Jameson Island Construction Site and is currently managing the land. Without future development activities, no additional floodplain reconnection would be established to the area and terrestrial habitats would recolonize naturally over many years. This alternative could also be considered the natural succession alternative because the habitat that would develop at the site over the long-term would be solely dependent on the processes of natural succession acting on the area. There would be no increase in shallow water habitat with this alternative because no modifications to river structures would occur to allow erosion of the riverbank. This alternative would not reconnect the river to the floodplain except under conditions where river structures or levees are degraded and breached by natural river erosion and scour processes. No additional recreational features would be constructed, but the site would contain public recreational uses such as fishing, bird watching, photography, hunting, and hiking.

Recommended Plan

The recommended plan is Alternative 1 and is described in detail in the Environmental Assessment. Of the four (4) alternatives considered, this plan is recommended because it fulfills all of the program and site-specific goals for the Jameson Island Chute Construction Site, maximizes beneficial environmental benefits, avoids impacts to existing wetlands to the maximum extent, and results in no significant adverse impacts to the environment.

Summary of Environmental Impacts

For the construction of the chute and shallow water areas, approximately 44 acres of mature cottonwood and willow trees, and approximately 3 acres of wetlands would be impacted. The completed project will create aquatic riverine habitat which was lost during construction of the BSNP, and provide varied habitat conditions to assist species of concern with feeding, breeding, and sheltering.

Other environmental impacts include noise and disturbance from construction equipment and construction workers during the construction phase of the project. However, the impacts associated with the construction of the project are short term/minor impacts.

Mitigation Measures

The proposed project will more than off set the impacts to the 43.9 acres of mature cottonwood and willow trees currently existing on accreted lands, as well as any temporary construction related impacts. In addition, the project has incorporated minimization and mitigation measures to off set the impacts to the three acres of wetlands. These measures include avoiding wetland areas through curvature and bends in the proposed chute during construction, breaching low lying berms to provide a more reliable hydrology to area wetlands, and carving or scraping the opposite sides of impacted wetland areas, equal to the area of impact, to ensure no net loss of wetland habitat.

Public Availability

The proposed project was circulated to the public and resource agencies through a Public Notice, Number 200600659, dated January 26, 2006, with a thirty-day comment period ending on February 24, 2006. The notice was mailed to adjacent landowners, state and federal resources agencies and other interested parties. In addition, the Public Notice was available for public/agency review and comment on the CENWK-Regulatory Branch's webpage, at http://www.nwk.usace.army.mil/regulatory/public_notices.htm.

Conclusion

Fish and Wildlife Mitigation Projects completed by the Corps of Engineers under the WRDA 86 and 99, generally do not require the preparation of an Environmental Impact Statement. These projects are designed to result in a positive biological output and, therefore, also typically have a beneficial social impact for the local economy. Additionally, the adverse effects are typically minor/short-term and construction related.

After evaluating the anticipated environmental, economic, and social effects of the proposed activity, it is my determination that construction of the proposed Jameson Island Chute Construction Project does not constitute a major Federal action that would significantly affect the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date: 17 April 2006

Michael A. Rossi
Colonel, Corps of Engineers
District Engineer

[redacted]

Missouri River Bank Stabilization and Navigation

Fish and Wildlife Mitigation Program

Jameson Island Unit

USFWS Big Muddy Fish and Wildlife Refuge

Chute Construction Project

Project Implementation Report

March 2006

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

Chapter 1
Introduction

1.1 INTRODUCTION

The Missouri River Fish and Wildlife Mitigation Program (Mitigation Program) was authorized by the Water Resources Development Acts of 1986 and 1999 (WRDA86 and WRDA99) to develop fish and wildlife habitat along the lower Missouri River from Sioux City, Iowa, to the mouth near St. Louis, Missouri, to mitigate for the loss of habitat that resulted from construction, operation, and maintenance of the Missouri River Bank Stabilization and Navigation Project (BSNP). The Jameson Island Unit of the Big Muddy National Fish and Wildlife Refuge was purchased by the U.S. Fish and Wildlife Service in fee title from willing sellers between 1995 and 1997 for the purpose of preserving and restoring potions of the Missouri River floodplain and its fish and wildlife habitat. This Project Implementation Report (PIR) includes an Environmental Assessment consistent with the National Environmental Policy Act (NEPA). It provides an analysis of alternatives and a detailed description of the recommended plan for habitat and chute development at the Jameson Island Chute Construction Site. This PIR also contains an evaluation of environmental impacts related to the development of aquatic and terrestrial habitat consistent with the requirements of pertinent Federal regulations including NEPA, the Endangered Species Act (ESA), the National Historic Preservation Act (NHPA), and Section 404 of the Clean Water Act (CWA).

1.1.1 PROJECT AUTHORITY

The Jameson Island Unit was acquired by the US Fish and Wildlife Service as part of the Big Muddy National Fish and Wildlife Refuge. A portion of the site will be developed with a chute as part of the US Corps of Engineer's Mitigation Program. The Mitigation Program was initially authorized in Section 601(a) of WRDA86 (Public Law 99-662). The

authorization included the acquisition and development of 29,900 acres of land, and habitat development on an additional 18,200 acres of existing public land in the states of Iowa, Kansas, Missouri, and Nebraska. The total amount of land authorized for mitigation by WRDA86 was 48,100 acres.

Section 334(a) of WRDA99 (Public Law 106-3) modified the Mitigation Program by increasing the amount of acreage to be acquired and/or mitigated by 118,650 acres. Therefore, the total amount of land authorized for mitigation is currently 166,750 acres.

The Corps prepared a *Feasibility Report and Environmental Impact Statement* in 1981 on the original Mitigation Program of 48,100 acres. After Congress modified the Mitigation Program by WRDA99, the Corps initiated a *Supplemental Environmental Impact Statement* (SEIS) in September 2001 for the additional 118,650 acres. The SEIS was completed in early 2003 and the *Record of Decision* (ROD) was signed in June 2003.

1.1.2 Project Description and Location

The proposed project would develop fish and wildlife habitat at the Jameson Island Unit. Habitat development activities would include creating a chute and shallow water areas for big river fish including the endangered pallid sturgeon. The proposed project is described in more detail in Chapter 2 of this report.

The Jameson Island Unit is a 1,871-acre rural area located just northeast of Arrow Rock, Missouri. The area is located within Saline County, Missouri and is adjacent to the right descending bank of the Missouri River at river miles 213 to 214. The area is easily accessible by taking Main Street through Arrow Rock to Godsey's Diggings, thence the gravel road behind the Lyceum Theater to the refuge parking lot and information kiosk. The area lies in portions of Sections 19, Township 50 North, Range 18 West, and in Section 20, Township 50 North, Range 18 West (Figure 1-1).

Development of the Jameson Island Chute Construction Site is the responsibility of the Corps. The Reaffirmation Report (Corps 1990) established that for the Mitigation Program, the Kansas City District would have responsibility for projects in Missouri and Kansas and the Omaha District would have responsibility for projects in Iowa and Nebraska. Between 1995 and 1997, the Jameson Island Unit was purchased by the

USFWS to manage as part of the Big Muddy National Fish and Wildlife Refuge. The USFWS has implemented low maintenance operation plans for the area to let the land recover to natural conditions on its own.

1.1.3 Previous Related Reports

The following previous reports are related to this PIR:

- U.S. Army Corps of Engineers, Missouri River Division, 1981. *Missouri River Fish and Wildlife Mitigation Iowa, Nebraska, Kansas, and Missouri Final Feasibility Report and Final Environmental Impact Statement.*
- U.S. Army Corps of Engineers, Kansas City District, 1990. *Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project, Reaffirmation Report.*
- U.S. Fish and Wildlife Service, 1980. *Missouri River Stabilization and Navigation Project, Sioux City, Iowa to Mouth Detailed Fish and Wildlife Coordination Act Report.*
- U.S. Army Corps of Engineers, Kansas City and Omaha Districts, 2003. *Missouri River Fish and Wildlife Mitigation Project, Final Supplemental Environmental Impact Statement and Record of Decision.*
- U.S. Army Corps of Engineers, Missouri River Division, 2004. *Missouri River Fish and Wildlife Mitigation Program, Program Management Plan.*
- U.S. Army Corps of Engineers, Missouri River Division, 1990. *Missouri River Bank Stabilization and Navigation, Fish and Wildlife Mitigation Project, Real Estate Design Memorandum #1.*
- U.S. Fish and Wildlife Service, 1994. *The Big Muddy National Fish and Wildlife Refuge Final Environmental Impact Statement.*

1.1.4 Project Goals and Objectives

The overall goal for the Jameson Island Unit, as a component of the Mitigation Program, is to develop fish and wildlife habitat. Beginning shortly after authorization by WRDA86,

the Agency Coordination Team (ACT, discussed in more detail in Section 1.4) has been involved in Mitigation Program guidance and has helped establish overall objectives to:

- Maximize aquatic and terrestrial habitat and species diversity;
- Reconnect the river to the floodplain, and;
- Develop each site to optimize habitat conditions for that individual site.

The specific goals for the Jameson Island Chute Construction Site were developed to contribute to meeting the overall Mitigation Program authorization and to maximize habitat potential for the site. The Corps and the U.S. Fish and Wildlife Service (USFWS) identified these site-specific goals and objectives during project formulation, discussions between the two agencies, and in the field observations of site conditions. The site-specific goals identified include:

1) Create a more diverse riverine habitat by eroding the existing bank of the Missouri River to create shallow water habitat; and
2) Establish (and/or maintain) a chute and backwater area to reconnect the river to the floodplain.

Table 1-1 summarizes the acres of habitat types that currently exist at the Jameson Island Unit, the desired future acres of habitat that would result from implementation of the goals for the site, and project outputs (i.e., net habitat changes).

1.1.5 Scope of Study

The scope of this study is confined to the project area shown on Figure 1-1. Alternatives considered in this study were limited to those techniques that would restore or preserve terrestrial and/or aquatic habitat on the acres currently owned at the project site. A supplement to this PIR would be needed if additional acres were acquired. All permanent project features would be constructed on government-owned land.

Table 1-1. Site Habitat Goals

General Habitat Type	Existing Acres	Future Acres	Output
Side Channels and Chutes	15	59	44
Lakes, Ponds, and Scour Holes	2	2	0
Developed	2	2	0
Barren	41	41	0
Deciduous Forest	1480	1436	-44
Shrub land	250	250	0
Grassland	20	20	0
Cultivated	0	0	0
Forested Wetlands	25	25	0
Emergent Wetlands	10	10	0
Shrub Scrub Wetlands	25	25	0


US Army Corps of Engineers
Kansas City District
in cooperation with
Jameson Island
Shallow Water Habitat
Alternatives
August 2005
Existing SWH
Chute Alternatives
Option 1
Option 2
Option 3
SWH Alternatives
Excavation
Spoil
BSNP Structure
Dike
Revetment
Distance Marker
River Mile
Ag Levee
Federal Levee
Non-Fed Levee
215
214
212
211
0
2,000
4,000
8,000 Fee
Not to scale
Saline City
HOWARD
Lisbon
SALINE
Jameson Island
Arrow Rock
Petersburg
COOPER
Not to scale
N

Figure 1-1

1.2 PURPOSE OF AND NEED FOR ACTION

The purpose of the Mitigation Program, and the site-specific project, is to mitigate the loss of fish and wildlife habitat due to the Bank Stabilization and Navigation Project (BSNP) for the Missouri River. The Rivers and Harbors Act of 1912, 1925, 1927, and 1945 authorized the BSNP. The existing BSNP extends 735 miles from Sioux City, Iowa to the mouth near St. Louis, Missouri and maintains a nine-foot deep by 300-foot wide channel. The BSNP consists mainly of revetments along the outsides of bends and transverse dikes along the insides of bends to force the river into a single active channel that is self-maintaining.

The need for the Mitigation Program, and the site-specific project, rests in the loss of a unique floodplain ecosystem that included diverse fish and wildlife habitat and species, and the changing public values that have placed significant importance on reestablishing these important fish and wildlife species and ecological resources. The historic variety and quality of aquatic habitats have been eliminated or altered by construction of the navigation channel. Dikes and revetments have greatly reduced the meandering of the river, and flooding of the river has resulted in accretion of lands that have allowed for expansion of agricultural practices into the historic floodplain. The Corps estimated that by 2003, approximately 522,000 acres of fish and wildlife habitat in the natural channel and meander belt of the Missouri River was lost as a result of the construction, operation, and maintenance of the BSNP.

Habitat loss and resultant adverse impacts to fish and wildlife resources need to be mitigated as authorized by Congress through WRDA86 and WRDA99. Acquisition and development of lands along the Missouri River need to occur to mitigate the resources lost to channelization and bank stabilization.

Development of the Jameson Island Chute Construction Project for fish and wildlife habitat would contribute to achieving the goals and purposes of the Mitigation Program to help mitigate for the loss of habitat that resulted from the BSNP.

1.3 SITE SELECTION

Real Estate Design Memorandum No. 1 (1990) and Supplement No. 1 to Real Estate Design Memorandum No. 1 (2002) established site selection criteria for the Mitigation

Program. Further criteria resulted from the Joint Real Estate Project Management Plan (2002), the SEIS (2003), and the Program Management Plan (PgMP; 2005). The criteria included the following:

- The land in private ownership could be acquired from willing sellers.
- The size of the area was greater than 100 acres.
- The area would not adversely affect navigation, carrying capacity of existing levees, or flood-carrying capacity of the existing floodway.
- The area was a large contiguous tract suitable for terrestrial woodland, grassland, and wetland development, with a remnant chute and backwater that could be restored.
- Emphasis will be given to acquiring the remaining larger contiguous tracts of bottomland timber, areas of wetland or former wetland that could be restored, areas that could be developed to provide terrestrial forest and grassland habitat, and areas where chutes or backwaters could be restored.
- Acquisition of agricultural land should be limited except where the area has high potential for development or where a willing seller is available.
- Consideration will be given to the establishment or preservation of native floodplain prairie habitats.
- The area was part of the meander belt of the Missouri River.
- Public access to areas will not be a determining factor in acquisition.
- Sites chosen for establishment of wetlands will include enough adjacent land so that excessive sedimentation can be prevented and appropriate terrestrial non-forested habitat can be provided.
- Sites chosen for acquisition or development will be based on state and Federal agency input and support.
- Projected operation and maintenance costs will be considered in the selection of acquisition and development sites.

The Jameson Island Chute Construction Site was selected as a potential development site on review of historic and current aerial photography and on-site evaluations. The Jameson Island Chute Construction Site met the above stated criteria. In addition, the construction site was determined to have several attributes that made it favorable as a development site. These include its location in and around other protected sites (Lisbon Bottoms), opportunities to enhance the hydrology of existing wetlands, opportunities to create additional wetlands, and opportunities to create a chute and shallow water areas for big river fish including the endangered pallid sturgeon. After preliminary investigations and studies were completed, the area was recommended for development planning by the Corps of Engineers and the US Fish and Wildlife Service (Service).

1.4 AGENCY COORDINATION

The Mitigation Program ACT meets quarterly. Representatives from the USFWS, Natural Resource Conservation Service (NRCS), Iowa Department of Natural Resources (IDNR), Kansas Department of Wildlife and Parks (KDWP), Missouri Department of Conservation (MDC), and the Nebraska Game and Parks Commission (NGPC) along with the Kansas City and Omaha Districts of the Corps comprise the ACT. The initial responsibility of the ACT was to develop selection criteria for screening and prioritizing general areas to identify willing sellers for potential mitigation sites. The ACT also meets to discuss future activities, priorities, funding, and other issues related to implementing, managing, and monitoring the Mitigation Program.

Coordination between the Kansas City District and the US Fish and Wildlife Service has been occurring throughout the planning process for development of the Jameson Island Chute Construction Site via telephone calls, emails, and meetings. An Agency coordination email, dated November 28, 2005, with an attached Draft of this PIR was sent to the appropriate Federal and state resource agencies requesting information and their comment regarding the Proposed Action. A copy of this email and the Agency responses can be found in Appendix A.

On January 25, 2006, a description of the proposed project was circulated to the public and resource agencies through Public Notice No. 200600659 issued jointly by the Kansas City District and the Missouri Department of Natural Resources, Water Pollution Control Program. The public notice included a thirty-day comment period that ended on

February 24, 2006, and provided instructions for the public to provide comments on the proposed project. The public notice also included information on the Corps preliminary determination to prepare a Finding of No Significant Impact (FONSI) for the project and a draft Section 404(b)(1) Evaluation. The public notice was mailed to adjacent landowners, individuals/agencies/businesses listed on the NWK-Regulatory Branch's general, state of Missouri and Saline County mailing lists. The agencies provided information on Federally listed and proposed threatened and endangered species, state species of special concern, natural communities, and sites of historic or archeological significance. A copy of the public notice, list of recipients, and comments can be found in Appendix A of this Final PIR.

Chapter 2

Alternatives

2.1 INTRODUCTION

This chapter presents the alternatives considered for the development of fish and wildlife habitat at the Jameson Island Construction Site. The Corps considered four alternatives including: 1) the Small Chute Alternative (PREFERRED), 2) the Large Chute Alternative, 3) the Medium Chute Alternative and, 4) the No Development Alternative. Alternatives one, two, and three are the development alternatives. These alternatives were evaluated against their ability to fulfill the previously described site objectives. This chapter includes a description of each alternative, an evaluation of the alternatives, and a detailed description of the recommended alternative. The following sections describe the alternatives developed for the Jameson Island Chute Construction Site.

2.2 ALTERNATIVES

2.2.1 First Alternative (PREFERRED)

Alternative 1, the Small Chute Alternative, consists of the construction of an approximately 9,630 lineal foot chute in order to create shallow water habitat, improve aquatic and fisheries habitat, and provide additional connectivity with the Missouri River. The chute would be constructed with side slopes of 1.5 horizontal to 1 vertical, and a construction width of 100 feet. The plan is designed to encourage erosion of both the right and left descending banks to allow the chute to naturally meander to a maximum design width of 200 feet. Construction of the chute would be performed using a dredger with material discharged into to the main river channel between river miles 214.2 to

214.5 and 211.3 to 211.2. The discharge pipe from the dredge will be placed four to six feet from the channel bottom to ensure sediments will be immediately washed downstream. Material slated for removal below the Ordinary High Water Mark (OHWM) elevation of 597.5 feet includes approximately 900,000 cubic yards of sandy soil and rock, where 866,500- and 33,500- cubic yards of material will be excavated for the chute and grade control structure, respectively. Approximately 7,000 tons of quarry-run rock will be placed below the OHWM at near River Mile 213 for the Grade Control Structure to limit the final width of the chute. The total area of impact would cover approximately 43.9 acres and remove 1.8 acres of mature cottonwood trees and 42.1 acres of willow saplings. Trees removed from the chute alignment will be placed in mounds along the chute alignment, or in habitat areas. Please refer to Appendix D, Design Analysis Report, for further details on chute construction.

Using data on daily river stage, collected from the Booneville, Nebraska monitoring station, one can see that the proposed chute will have relatively good flow most of the time under a variety of stage conditions. Only rarely, and for short periods of time, will the chute run dry. Please refer to Appendix D for graphs depicting the outcome of stage and flow at the Booneville Gauge.

The monitoring, operation, and maintenance for the proposed enhancement site is similar for each of the build alternatives and is detailed in Section 2.4 of this report. Please refer to this section for a detail description of monitoring and the operation and maintenance plans.

The proposed chute construction at Jameson Island will be similar to the Lisbon Island Chute project in size, shape, and development as well as the two being located adjacent to one-another and within the tightest combination of bends on the entire Missouri River. This tight configuration of bends has resulted in a large assortment of shallow water habitat, which has been shown to be ideal habitat for juvenile pallid sturgeon.

2.2.2 Second Alternative

Alternative 2, the Large Chute Alternative, consists of the construction of an approximately 15,515 lineal foot chute in order to create shallow water habitat, improve

aquatic and fisheries habitat, and provide additional connectivity with the Missouri River. The chute would be constructed with side slopes of 1.5 horizontal to 1 vertical, and a construction width of 100 feet. The plan is designed to encourage erosion of both the right and left descending banks to allow the chute to naturally meander to a maximum design width of 200 feet. Construction of the chute would be performed using a dredger with material cast into the Missouri River. Material slated for removal below the Ordinary High Water Mark (OHWM) elevation of 598.4 feet includes approximately 1,450,000 cubic yards of sandy soil and 4,590 cubic yards of rock. Approximately 7,000 cubic yards of rock will then be placed below the OHWM at near River Mile 213 for the Grade Control Structure to limit the final width of the chute. The total area of impact would cover approximately 71.2 acres and remove 69.5 acres of deciduous forest (mature cottonwoods) and 0.8 acres of barren land.

2.2.3 Third Alternative

Alternative 3, the Medium Chute Alternative, consists of the construction of an approximately 11,425 lineal foot chute in order to create shallow water habitat, improve aquatic and fisheries habitat, and provide additional connectivity with the Missouri River. The chute would be constructed with side slopes of 1.5 horizontal to 1 vertical, and a construction width of 100 feet. The plan is designed to encourage erosion of both the right and left descending banks to allow the chute to naturally meander to a maximum design width of 200 feet. Construction of the chute would be performed using a dredger with material cast into the Missouri River. Material slated for removal below the Ordinary High Water Mark (OHWM) elevation of 598.4 feet includes approximately 1,069,000 cubic yards of sandy soil and 4,590 cubic yards of rock. Approximately 7,000 cubic yards of rock will then be placed in the two rock grade control structure below the OHWM near River Mile 213 for the Grade Control Structure to limit the final width of the chute. The total area of impact would cover approximately 52.4 acres and remove 34.4 acres of deciduous forest, 6.6 acres of barren land, 4.1 acres of emergent wetland, 1.2 acres of grassland, and 5.9 acres of shrub scrub.

2.2.4 No Development Alternative

The No Development alternative represents the alternative of no action by the Corps of Engineers. No additional activities to develop fish and wildlife habitat would be undertaken as part of the No Development alternative, although the U.S. Fish and Wildlife Service would continue to manage the area for fish and wildlife habitat. The USFWS currently holds fee title to the Jameson Island Unit and is currently managing the land. Without future development activities, no additional floodplain reconnection would be established to the area and terrestrial habitats would recolonize naturally over many years, or according to the USFWS management plans. This alternative could also be considered the natural succession alternative because the habitat that would develop at the site over the long-term would be solely dependent on the processes of natural succession acting on the area. There would be no increase in shallow water habitat with this alternative because no modifications to river structures would occur to allow erosion of the riverbank. This alternative would not reconnect the river to the floodplain except under conditions where river structures or levees are degraded and breached by natural river erosion and scour processes. No additional recreational features would be constructed, but the site would continue to contain public recreational uses such as fishing, bird watching, photography, hunting, and hiking.

2.3 EVALUATION OF ALTERNATIVES

All three of the build alternatives would fulfill the overall program goals of developing diverse fish and wildlife habitat. Alternative 1 would fulfill all of the project goals, impact the least amount of existing terrestrial habitat, minimize disturbance to wetland acreage, aid in flood damage reduction by allowing more water to contact the floodplain, and the creation of the chute and shallow water areas would provide habitat for a variety of game and non-game fish and wildlife species. Additionally, the chute would be available to the public for a variety of outdoor activities. The other alternatives differ mainly in the timeframe in which the habitat benefits would be realized likely due to the size of the chutes, the construction times needed to fulfill chute construction, the amount of land accessible to the walking public, the amount of mature trees removed, and the velocities in which water flows through the chutes (Appendix D). Water velocity flows somewhat slower through the preferred alternative than through the other build alternatives. The

No Development Alternative would not establish a shallow water chute, shallow water habitat areas, or reconnect the Missouri River to its floodplain.

All three of the build alternatives would result in similar environmental consequences, varying primarily in the magnitude of benefits. Beneficial impacts to biological resources including aquatic and terrestrial habitats, and minimization of adverse impacts to terrestrial habitat and wetlands would be best achieved with Alternative 1. Beneficial impacts to biological resources as a result of Alternatives 2 and 3 would be similar to Alternative 1 but would result in differing amounts of overall chute habitat. In time, the chute will likely increase the amount of habitats (e.g., shore, sandbars, and open water) beneficial to certain species of shorebirds and waterfowl. The creation of these fisheries habitat types would potentially provide resting, forage, spawning, and rearing habitat throughout the year, particularly during the spring when water levels rise. Minimal benefits to fisheries would be realized from the No Development alternative. Short-term impacts to air, noise, water quality, and soils related to construction activities would occur with all of the build alternatives. These impacts would be minimal. All three build alternatives would result in beneficial impacts to recreational opportunities in the project area, and incremental benefits to lowering flood stages in the Missouri River as a result of the newly cut chutes. Continued regional benefits from increased floodwater retention capacity on the Missouri River floodplain would provide incremental flood protection for residences and properties downstream. These beneficial impacts would vary by alternative mainly due to the length of the chute, existing habitat impacted, the diversity of quality habitats created, and the period of time required for the habitats to develop. Over time, it is anticipated that there would be an increase in fishing, hunting, bird watching, and other public uses both on the river and on land. A differing amount and diversity of quality habitats would be realized by the other build alternatives. The amount and diversity of quality habitat resulting from the No Development Alternative would be dependent on natural succession. For all three build alternatives, the diversity of both game and non-game species would be dependent on the types of habitat created and the management practices associated with each alternative. All three build alternatives would have short-term adverse effects to pallid sturgeon and bald eagle in the form of disturbance during construction. Any disturbance would be temporary in nature and would cease when construction has been completed. Additionally, because

the proposed project area contains adjacent shallow water habitat areas (Lisbon Island) and large expanses of mature willow and cottonwood trees, impacts to the normal behavior of the pallid sturgeon and eagle will be respectively minimized. When completed, the project will provide increased aquatic habitat for foraging, nesting, spawning, rearing and roosting; therefore, the proposed project is likely to benefit the pallid sturgeon and bald eagle. None of the alternatives would affect navigation on the Missouri River.

Alternative 1 was selected for implementation at the Jameson Island Chute Construction Site. The alternative was recommended because it fulfills all of the program and site-specific goals for the Jameson Island Chute Construction Site, maximizes acreage easily accessible to the walking and boating public, minimizes impacts to mature trees, minimizes impacts to existing wetlands to the maximum extent, avoids impacts to private lands, and results in no significant adverse impacts to the environment.

Certain species would be temporarily displaced during construction of project features but would likely return to the area after construction is complete. Species of limited mobility may be destroyed. No adverse impacts to fish species are anticipated. The creation of additional and more diverse and productive habitat types are anticipated to benefit fish and wildlife so any impacts to species (displacement, avoidance, disturbance, etc.) during construction would be considered insignificant. Terrestrial habitat would continue to be abundant for many bird and mammal species. Reptiles, and particularly amphibians, are expected to benefit greatly because of the additional aquatic habitat and nutrients that would develop. Fish species, including the pallid sturgeon, are likely to benefit from increased habitat, food sources, and nutrients that are developed and washed into the river following high precipitation events. Long-term and cumulative impacts to fish and wildlife resources are expected to be beneficial because of an expected increase in habitat types and abundance.

Table 2-1. - Comparison of Environmental Consequences of Alternatives Evaluated

Environmental and Socioeconomic Resources	Alternatives 2 and 3	Preferred Alternative Alternative 1	No Development Alternative
Topography	Insignificant adverse impacts and minor beneficial impacts through changes in surface topography and creation of SWH.	Insignificant adverse impacts and minor beneficial impacts through changes in surface topography the creation of SWH.	No impacts
Soils	Insignificant short-term adverse impacts resulting from the loss of soils by scour action.	Insignificant short-term adverse impacts resulting from the loss of soils by scour action.	No impacts
Aquatic Resources	Short-term insignificant adverse impacts resulting from disturbance during river structure modifications and increases in turbidity impacting water temperatures and dissolved oxygen content. Minor short-term beneficial impacts resulting from increased sediment load simulating historic conditions and increased turbidity lowering light transmission for species adapted to these conditions. Long-term beneficial impacts resulting from the creation of chute and SWH.	Short-term insignificant adverse impacts resulting from disturbance during river structure modifications and increases in turbidity impacting water temperatures and dissolved oxygen content. Minor short-term beneficial impacts resulting from increased sediment load simulating historic conditions and increased turbidity lowering light transmission for species adapted to these conditions. Long-term beneficial impacts resulting from the creation of chute and SWH.	Significant adverse impact as no chute or SWH would be created.
Terrestrial/Wetland Resources	Short-term impacts resulting from disturbance during construction. Long-term beneficial impacts resulting from the increase in quality habitat.	Short-term impacts resulting from disturbance during construction. Long-term beneficial impacts resulting from the increase in quality habitat.	Long-term beneficial impacts resulting from natural succession of terrestrial habitat.
Wildlife	Insignificant short-term impacts resulting from disturbance during construction. Long-term beneficial impacts through the creation of wildlife habitat.	Insignificant short-term impacts resulting from disturbance during construction. Long-term beneficial impacts through the creation of wildlife habitat.	Long-term beneficial impacts resulting from the development of wildlife habitat through natural succession.

Environmental and Socioeconomic Resources	Alternatives 2 and 3	Preferred Alternative Alternative 1	No Development Alternative
Threatened and Endangered Species **(Bald Eagle, Pallid Sturgeon)**	Short-term insignificant adverse impacts resulting from disturbance to species during construction. Long-term beneficial impacts resulting from the creation of valued habitats (aquatic and terrestrial).	Short-term insignificant adverse impacts resulting from disturbance to species during construction. Long-term beneficial impacts resulting from the creation of valued habitats (aquatic and terrestrial).	Significant adverse impact as no SWH would be created. Long-term beneficial impacts resulting from the increase of valued terrestrial habitats through natural succession.
Land Cover	No significant adverse impacts	No significant adverse impacts	No significant adverse impacts
Historic Properties and Archaeological Sites	No impact.	No impact.	No impact.
Steamboat Wrecks	No impact.	No impact.	No impacts.
Accreted Lands	No impact.	No impact.	No impacts.
Water Quality	Short-term insignificant adverse impacts resulting from increased sediment load. Long-term beneficial impacts resulting from enhancing existing wetlands and river habitats.	Short-term insignificant adverse impacts resulting from increased sediment load. Long-term beneficial impacts resulting from enhancing existing wetlands and river habitats.	No impacts.
Air Quality	Short-term insignificant adverse impacts resulting from increased emissions (fugitive dust) during construction.	Short-term insignificant adverse impacts resulting from increased emissions (fugitive dust) during construction.	No impact.
Noise	Short-term insignificant adverse impacts resulting from increased noise during construction.	Short-term insignificant adverse impacts resulting from increased noise during construction.	No impact.
Population and Income	Insignificant beneficial impacts to local economy during and after construction through increased spending.	Insignificant beneficial impacts to local economy during and after construction through increased spending.	No impacts.

Environmental and Socioeconomic Resources	Alternatives 2 and 3	Preferred Alternative Alternative 1	No Development Alternative
Recreation and Aesthetics	Short-term insignificant adverse impacts resulting from the inaccessibility of the site during construction. Long-term beneficial impacts resulting from increased recreational opportunities, habitat, and greater diversity of features. .	Short-term insignificant adverse impacts resulting from the inaccessibility of the site during construction. Long-term beneficial impacts resulting from increased recreational opportunities, habitat, and greater diversity of features.	No impacts.
Navigation	No impacts.	No impacts.	No impacts.

2.4 DESCRIPTION OF RECOMMENDED ALTERNATIVE

The following list of activities would be part of the recommended alternative (Alternative 1). The approximate location of the new side channel chute and shallow water habitat development along the Missouri River are shown in Figure 1-1. Final locations would be completed during detailed design of the Jameson Island Chute Construction Site.

- The construction of shallow water habitat in the Missouri River through excavation and spoil placement would be completed and would likely result in the creation of a maximum of approximately 44 acres of shallow water habitat. However, the construction of shallow water habitat would result in the loss of existing habitats, predominantly mature cottonwood and willow trees, as these lands would be lost to erosion.

- The construction of a new side channel chute on the Missouri River would create additional habitat. Conceptually, a side channel chute would consist of notching existing bank revetments and pile dikes and excavating a 100-foot minimum width channel with steep (1.5H:1V) side slopes. The maximum scour width would be approximately 200 feet. The side channel chute would be approximately 9,630 feet long. Grade control structures would be installed to limit the scour of the chute's banks to maximum width of 200 feet; however, some natural meandering may develop over time. This side channel chute would provide additional hydraulic connection to the Missouri River floodplain and would increase the quantity and quality of shallow water habitat to maximize

aquatic and fisheries at the site. It is estimated that 19.0 to 43.9 acres of additional shallow water habitat would be created from the construction of a new side channel chute. Construction of the side channel chute would be designed to prevent the slough from capturing significant amounts of silt and debris, and to allow it to be self-maintaining.

- Long-term maintenance of existing and newly created habitats would be performed.
- Monitoring of the habitat improvements would be performed. Monitoring and evaluation of the Jameson Island Chute Construction Site is discussed further in Section 5.2, Monitoring and Evaluation (M&E) Plan.
- Adaptive management of the Jameson Island Chute Construction Site would be performed. For the purposes of this PIR and the management of the Jameson Island Chute Construction Site, adaptive management would be defined as the adaptation of techniques to better meet the desired results for the site. Adaptive management would be used to help achieve the desired conditions identified for the Jameson Island Chute Construction Site, not to change the goals identified for the site. Adaptive management is an overarching process whereby an experiment is formulated to test a particular hypothesis, monitors it, collects data, analyses that data and reformulates that experiment based on the results. The refuges Comprehensive Conservation Planning process will eventually develop formal goals for the site. Given the purpose of the refuge (i.e., to restore and conserve native habitats and dynamic river processes of the Missouri River), it is entirely possible that there may not be a static end point, but rather a suite of riverine and floodplain habitats that occur over the long run at the refuge.

Chapter 3

Affected Environment

3.1 INTRODUCTION

This chapter presents the affected environment for the Jameson Island Chute Construction Site. The affected environment is the baseline against which potential beneficial and adverse impacts caused by the action are evaluated. The existing conditions described in this chapter for the Jameson Island Unit are based on the current state of the site and not as the site was at the time of purchase by the USFWS (1995 through 1997). Various sources of information were used to compile the affected environment presented in this chapter including: field investigations, geographic information systems data, literature searches, review of maps and aerial photography, agency coordination, and previous reports.

3.2 HISTORY OF THE PROJECT AREA

Prior to construction of the BSNP, the lower Missouri River was uncontrolled and meandered across the floodplain. This created a highly dynamic environment through the physical processes of erosion, deposition, and accretion. The historical lower Missouri River consisted of numerous islands, channels, sandbars, and slack water supporting vegetation in various stages of succession. Historically, the Jameson Island Unit would have consisted of an area where the meander of the Missouri River across the floodplain would have resulted in a dynamic area. In addition, the proportions of habitat types would have been constantly changing due to the physical processes mentioned previously. Following construction of the BSNP, accreted lands in the area of the Jameson Island Unit were created, claimed, and converted to cropland. At the time

of purchase by the USFWS, the Jameson Island Unit was primarily woodland and cropland. The lands were purchased from willing sellers between 1995 and 1997. The USFWS has managed the site since the time of its purchase, through low maintenance operations in order to let the land recover to pre-agricultural conditions on its own.

3.3 GEOLOGICAL RESOURCES

The geological resources include the physical surface and subsurface features of the Jameson Island Unit such as topography, geology, and soils.

3.3.1 TOPOGRAPHY

The Jameson Island Unit lies within the Dissected Till Plains (Missouri River Alluvial Plains subsection) of the Central Lowlands physiographic province (USGS 2003). Generally, the topography of the area is fairly level due to historic flooding, erosion patterns, and controlled drainage associated with a floodplain location. Drainage for the site is achieved naturally, through sandy and silty loam soils.

3.3.2 GEOLOGY

The Jameson Island Unit is situated within a complex system of natural alluvial deposition and erosion resulting from the changing course of the Missouri River in geologic time; however; construction of the BSNP caused significant amounts of human induced alluvial deposition and erosion to occur in a relatively short period of time (less than 100 years). The site is located within one of the narrowest parts of the lower reaches (below the mouth of the Platte River in Nebraska) of the Missouri River valley where the valley generally ranges from five to seven miles wide (Dahl 1961). The Missouri River flows across Pennsylvanian strata in the general area of the site. Pennsylvanian strata are comprised of sandstone, shale, limestone, clay, and coal deposits (Schaper 2002).

Overlying the bedrock in the general area of the Jameson Island Unit are typically alluvial clays; sand and gravels, with a few poorly consolidated sandstones; glacial (ice deposited) tillites and gravels; and eolian (wind blown) clays and loess of the Tertiary/Quaternary Period (Shaper 2004).

The floodplain deposits in the river valley bottom consist of geologically recent unconsolidated alluvium. In general, the alluvium can consist of upper zones of fine-grained clays and silts and deeper zones of coarser grained sands. Past river meanders have left a system of remnant channels, and sandbars, many of which have been filled in with river sediments and by man.

3.3.3 Soils

The soils in the Jameson Island Unit are made up of a variety of different types, and the following information is based on pre-1993 flood surveys. From descending order, the soils types include Grable very fine Sandy Loam, Leta Silty Clay, Sarpy Loamy Fine Sands, Waldron Silty Clay, and Haynie – Waldron Complex Soils. Grable soils consist of very deep, well-drained soils. These soils formed in 18 to 30 inches of calcareous silty alluvium and the underlying sandy alluvium. Grable soils are located on floodplains and in river valleys under tree cover. The surface water runoff is low and the natural drainage condition of the soil is well drained. Leta soils are formed in clayey alluvium over loamy alluvium. These soils are located on flood plains of river valleys under tree and grass cover. The surface water runoff class is high and the natural drainage condition of the soil is somewhat poorly drained. Sarpy soils consist of very deep, excessively drained soils. These soils are located on flood plains and in river valleys under trees, grass, and other herbaceous cover. These soils are not considered prime farmland due to the low available water capacity. Waldron soils consist of very deep, somewhat poorly drained soils formed in recent, stratified clayey and loamy alluvial sediments. Permeability is slow in the upper part and slow to moderate in the lower part. These soils are located on floodplains and in river valleys under tree cover. The surface water runoff is low and the natural drainage condition of the soil is somewhat poorly drained. The Haynie soils consist of very deep, moderately well drained soils. These soils formed in calcareous alluvium and are located on flood plains and in river valleys under trees, grass, and other herbaceous cover. The surface water runoff is low and the natural drainage condition of the soil is moderately well drained.

3.4 PRIME AND UNIQUE FARMLAND

Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, oilseed crops, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion [7 U.S.C. 4201 (c)(1)(A)]. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding (USDA 1993). Congress passed the Farmland Protection Policy Act (PL 97-98; 7 U.S.C. 4201 et seq.) with the stated purpose of minimizing the unnecessary and irreversible conversion of farmland to nonagricultural uses by Federal programs.

The Jameson Island Unit contains the following soil types, which are listed as prime farmland soils: Grable Very Fine Sandy Loam, Leta Silty Loam, Sarpy Loamy Fine Sands, Waldron Silty Clay, and Haynie-Waldron Silty Complex. These soil types comprise approximately 1,871 acres of the Jameson Island Unit.

3.5 BIOLOGICAL RESOURCES

Biological resources include the native or introduced plants and animals and the habitats in which they occur. The resources discussed in this section include aquatic resources including fisheries; terrestrial/wetland resources including vegetation communities, wildlife populations; and species that are candidates for, or listed as, threatened or endangered.

3.5.1 AQUATIC RESOURCES

Aquatic resources include aquatic habitat, fisheries, and other aquatic biota of the Jameson Island Unit. Aquatic habitat on the Jameson Island Unit consists of the Missouri River, which borders the site, shallow water habitat within the dike field along the banks of the mitigation site, and an existing channel. Principal fish species in the lower Missouri River include emerald shiner (*Notropis* atherinoides), river carpsucker (*Carpiodes* carpio), channel catfish (*Ictalurus* punctatus), gizzard shad (*Dorosoma* cepedianum), red shiner (*Notropis* lutrensis), shorthead redhorse (*Moxostoma* macrolepidotum), carp (*Cyprinus carpio), and* golden eye (*Hiodon* alosoides) (Pflieger

1975). Pallid and shovelnose sturgeon and paddlefish (*Polyodon* spathula) are also found in the lower Missouri River (Corps 2001).

Sport fish include channel catfish, white crappie (*Pomoxis annularis*), black crappie (*Pomoxis nigromaculatus*), sauger (*Stizostedion canadense*), flathead catfish (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), walleye (*Stizostedion vitreum*), northern pike (*Esox lucius*), and paddlefish (Pflieger 1975). Species important to the commercial fishery on the lower Missouri River include buffalo (*Ictiobus* spp.), carp, and freshwater drum (*Aplodinotus grunniens*); (Corps 1995).

3.5.2 TERRESTRIAL/WETLAND RESOURCES

Currently, approximately 15 acres of the Jameson Island Unit consists of side channels and chutes. Approximately 2 acres of the site are ponds and scour holes. Approximately 2 acres are developed and 41 acres are barren. Approximately 1,480 acres consist of deciduous forest, 250 acres are shrub lands, and 20 acres are grasslands. Additionally, 60 acres are considered wetlands. These wetlands consist of 25 acres of forested wetlands, 10 acres of emergent wetlands, and 25 acres are shrub scrub wetlands.

3.5.3 WILDLIFE

The Jameson Island Unit provides habitat for numerous wildlife species. Common mammalian species likely to occur in remnant bottomland forest and agricultural fields within the site include; gray squirrel (*Sciurus carolinesis*), cottontail rabbit (*Sylvilagus floridanus*), red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*) and white-tailed deer (*Odocoileus virginianus*).

Common furbearers likely to occur within the site include: mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), beaver (*Castor Canadensis*), otter (*Lontra Canadensis*), and raccoon (*Procyon lotor*). Other furbearers expected to occur within the site include: opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and long-tailed weasel (*Mustela frenata*).

Upland game birds expected to occur within the site include bobwhite quail (*Colinus virginianus*), and wild turkey (*Meleagris gallopavo*). Common songbirds likely to occur

within the site include mourning dove (*Zenaida macroura*), American robin (*Turdus migratorius*), eastern kingbird (*Tyrannus tyrannus*), American goldfinch (*Carduelis tristis*), red-winged blackbird (*Agelaius* phoeniceus), eastern bluebird (*Sialia* sialis), northern cardinal (*Cardinalis cardinalis*), northern oriole – Baltimore race – (*Icterus galbula*), and brown thrasher (*Toxostoma rufum*), among others. The Big Muddy National Fish and Wildlife Refuge maintains a list of neotropical migratory species that are particularly important at the site. It is interesting to note the greater than average numbers and diversity of species that occur at the site.

The Missouri River Valley is an important nesting and feeding area along the Central Flyway for many migratory waterfowl species including wood duck (*Aix sponsa*), blue-winged teal (*Anas discors*), green-winged teal (*Anas crecca*), mallard (*Anas platyrhynchos*), gadwall (*Anas strepera*), northern pintail (*Anas acuta*), Canada goose (*Branta Canadensis*), and snow goose (*Chen caerulescens*), among others. In additional to these fairly common species, the management of the Refuge by the U.S. Fish and Wildlife Service has resulted in a greater diversity and abundance of neotropical migratory species. The reader may obtain a list of these species by contacting the Big Muddy National Fish and Wildlife Refuge.

3.5.4 Threatened and Endangered Species

Information was requested from the USFWS and the MDC via Public Notice No. 200600659 and in an email dated November 28, 2205 (Appendix A), regarding Federally and state listed threatened, endangered, candidate species, or species of special concern that have potential to occur at the Jameson Island Construction Site. Comments from the USFWS are included in Appendix A. Table 3-2 provides a list of species that have the potential to occur on or adjacent to the project site.

Table 3-1. - Federal and State listed species with potential to occur on or adjacent to, the Jameson Island Chute Construction Site

Common Name	Scientific Name	Status
Bald Eagle	*Haliaeetus leucocephalus*	Federally Threatened State Listed as Endangered
Pallid Sturgeon	*Scaphirynchus albus*	Federally Endangered State Listed as Endangered

Bald eagles are common migrants and regular winter residents along the Missouri River. Bald eagles are regular breeders in the vicinity of the Jameson Island Unit and utilize riparian woodlands along rivers and streams for nesting, perching, and roosting sites. Bald eagles are currently listed as threatened; however, the species was proposed for delisting in 1999. The decision for delisting has been delayed until the USFWS determines how the species would be managed if delisted.

The pallid sturgeon generally occurs in the main channel of the large, turbid, free-flowing Missouri River, in the lower segments of some major tributaries, and in the shallow water of these areas. Modification of the natural Missouri River hydrograph, habitat loss, fish migration blockage, pollution, hybridization, and over harvesting are likely responsible for pallid sturgeon decline (USFWS 1993). Naturally occurring side channels and chutes that provide shallow water habitat for pallid sturgeon spawning have been greatly reduced in the channelized Missouri River as a result of the BSNP.

Since 2002, biologists from the Columbia Fishery Resources Office have collected 12 pallid sturgeons from inside and around the Lisbon Chute/Jameson Island Complex (Appendix A). The pallid sturgeons collected inside and around the Lisbon Chute/Jameson Island Complex were young and smaller relative to those collected in other bends of the Lower Missouri River, possibly indicating that this area acts as a staging habitat for juveniles. This is most likely because of the physical nature of the area. Lisbon Chute and Jameson Island are located within the tightest combination of bends on the entire Missouri River. This tight configuration of bends combined with the development of the Lisbon Chute has resulted in a large assortment of shallow water habitat, which has been shown to be ideal habitat for juvenile pallid sturgeon.

3.6 LAND COVER

The land cover at the Jameson Island Unit currently contains 1870 acres of habitat conducive to a variety of fish and wildlife species. Exact habitat types are detail above in Section 3.5.2, Terrestrial/Wetland Resources. Areas of channels and chute remnants, developed and barren lands, shrub land, grassland, forest, and a variety of wetlands vegetation occur within the overall project area but are mostly outside the area proposed for chute creation. The site where the new chute will be constructed consists primarily of deciduous forest habitat made up of mature cottonwoods and willow saplings.

3.7 CULTURAL RESOURCES

Cultural resources are defined as any area of past human activity, occupation, or use, identifiable through inventory, historical documentation, or oral evidence. Cultural resources include, but are not limited to, archeological sites, buildings or structures, cemeteries, and traditional cultural properties.

Background research of the area was conducted to determine if any previously recorded cultural resources were present in the Jameson Island project area. This research included a review of the National Register of Historic Places (NRHP) for sites listed on the NRHP, archeological and historic structure site location maps at the Missouri State Historic Preservation Office (SHPO), and shipwreck location maps in the Kansas City District office.

The review found no NRHP sites, previously recorded archeological sites, historic structures, or shipwrecks in the location of the project area. However, five shipwrecks including the Sam Gety (1867), the New San Gaty (1868), Tom Rodgers (1887), Benton No. 2 (1895), and Ployboy No. 2 (1877) have been recorded southeast of the project area. The nearest shipwreck to the project area is apparently the New Sam Gaty mapped approximately 0.2 miles west of the southern project boundary. In addition, review of historic Missouri River channel location maps found that the project area is entirely accreted land and not likely to contain buried archeological deposits.

The entire proposed project area is part of the Big Muddy National Fish and Wildlife Refuge in Saline County, Missouri. The project was coordinated with the Missouri SHPO by letter on December 12, 2005. Because the project area consists of recently

accreted lands and therefore has a low probability of containing intact archeological sites or historic structures, the Kansas City District recommended that no survey be conducted for the proposed project. The SHPO concurred with this recommendation in a letter dated January 10, 2006. The project has been coordinated with affiliated federally recognized Native American tribes.

3.7.1 Historic Properties and Archaeological Sites

No archeological sites or historic structures are recorded in the project area. Because the project area consists of recently accreted land, no historic properties are likely for the project area.

3.7.2 Shipwrecks

Five shipwrecks including the Sam Gety (1867), the New San Gaty (1868), Tom Rodgers (1887), Benton No. 2 (1895), and Ployboy No. 2 (1877) have been recorded southeast of the project area. The nearest shipwreck to the project area is apparently the New Sam Gaty mapped approximately 0.2 miles west of the southern project boundary. In addition, review of historic Missouri River channel location maps found that the project area is entirely accreted land and not likely to contain buried archeological deposits.

3.8 WATER QUALITY

The most recent water quality survey conducted by the Corps (July 1991) measured temperature, pH, dissolved oxygen, and total suspended solids twice over a two-weak period in August and September 1990. Temperature ranged from 29 degrees Celsius (°C) to 27°C; pH was 8.1 to 8.2; dissolved oxygen was 9.8 milligrams per liter (mg/l) to 8.0 mg/l; and total suspended solids were measured at 97 mg/l and 46 mg/l. These results were fairly consistent with those from other collection points along the Missouri River; however, there was no explanation provided for the large differences in total suspended solids between the sampling events.

These parameters have an effect on the fisheries in the Missouri River. High temperatures decrease the amount of dissolved oxygen. The temperature for the Missouri River must not be above 32.2 °C and the dissolved oxygen concentration must

not be below 5.0 mg/l based on Federally approved water quality standards (Corps 1994). Section 303(d) of the Water Quality Act requires states to identify waters for which existing required pollution controls are not stringent enough to meet state water quality standards. States are required to establish total maximum daily loads (TMDLs) for these waters (see 40 CFR 130.7). The state of Missouri has placed the Missouri River on the 303(d) List of Impaired Water Bodies due to fish and wildlife habitat loss.

3.9 AIR QUALITY

Air quality in a given location is described by the concentrations of various pollutants in the atmosphere. The quality of the air is measured against National Ambient Air Quality Standards (NAAQS) set by the U.S. Environmental Protection Agency. The Jameson Island Unit is located in an attainment area, which is an area wherein the concentrations of all criteria pollutants meet the NAAQS.

3.10 NOISE

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are designated as noise. Noise can be stationary or transient and intermittent or continuous. The Jameson Island Unit is located in a rural setting. Existing noise levels in the proposed project area are highly variable. Noise sources include traffic from Cumberland Church Road, distant railroad sounds, aircraft over flights, and natural sounds such as wind through trees, flowing water in outfall structures and the Missouri River, and sounds from wildlife. Lands surrounding the proposed site include agricultural lands, wetlands, prairie, and other private lands.

3.11 SOCIOECONOMIC RESOURCES

Socioeconomic resources are the part of the human environment that includes the economic, demographic, and social characteristics of individuals and communities.

3.11.1 POPULATION AND INCOME

As of the census of 2000, there are 23,756 people, 9,015 households, and 6,013 families residing in Saline County. The racial makeup of the county is 90.03% White, 5.39% Black or African American, 0.31% Native American, 0.35% Asian, 0.21% Pacific

Islander, 2.09% from other races, 1.62% from two or more races, and 4.42% are Hispanic or Latino.

The population is spread out with 24.30% under the age of 18, 12.00% from 18 to 24, 25.20% from 25 to 44, 22.30% from 45 to 64, and 16.30% who are 65 years of age or older. The median age is 37 years old. For every 100 females, there are 96.10 males. The median income for a household in the county is $32,743, and the median income for a family is $39,234. Males have a median income of $27,180 verses $19,431 for females. The per capita income for the county is $16,132. A total of 13.20% of the population and 10.50% of families are below the poverty line.

3.11.2 Recreation and Aesthetics

The Jameson Island Unit is managed by the USFWS as part of The Big Muddy National Fish and Wildlife Refuge. The USFWS allows approved recreational activities for the public at the site such as hunting, fishing, nature study, wildlife viewing, photography, hiking, and nature walking.

The aesthetics of the Jameson Island Unit are typical of many rural areas along the Missouri River. Riparian woodlands, wetlands, and grasslands make up the area and surrounding landscape. The Missouri River, shallow water areas, and chutes are an important visual resource and make up the surrounding waterscape.

3.11.3 Navigation

Missouri River flows are managed in part, for commercial navigation on the Missouri River. Navigation on the Missouri River is limited to the normal ice-free season, with a full-length flow support season of 8 months (Corps 2001). At Sioux City, the full-length support season extends from March 23 to November 22 and at St. Louis the full-length support season extends from April 1 to December 1 (Corps 2001).

Chapter 4
Environmental Consequences

4.1 INTRODUCTION

This chapter presents the evaluation of beneficial and adverse impacts of the alternatives including if there is the potential for significant impacts of the Federal action on the human environment. The analysis focused on identifying types of impacts and estimating their potential significance in various environmental and socioeconomic resource areas. The environmental impacts of the implementation and site selection process for the Mitigation Program were previously evaluated and documented in the *Feasibility Report and Environmental Impact Statement* (Corps 1981) and the *Supplemental Environmental Impact Statement* (Corps 2003). Thus, this PIR only evaluates those impacts anticipated from the construction and operation of the alternatives specific to the Jameson Island Chute Construction Site. The environmental effects presented in this chapter would be the same for all build alternatives unless noted otherwise.

The concept of "significance" used in this chapter encompasses several factors, including the magnitude of change from existing conditions and the likelihood of the change to occur. An impact is considered adverse when the outcome of the action results in undesirable effects. A beneficial impact can result if the current condition is improved or if an existing undesirable effect is lessened.

Adverse impacts can be mitigated by different means such as through avoidance or minimization of adverse effects. Beneficial and adverse impacts, including unavoidable adverse effects, are discussed in each resource section of this chapter.

4.2 GEOLOGICAL RESOURCES

Geological resources are limited, non-renewable resources whose characteristics can easily be degraded by physical disturbances. An impact to geological resources would be significant if it depletes a regional or local resource, affects the rate of erosion, changes the characteristics of the soil, or becomes a less natural condition. Geological resources on the Jameson Island Unit would be affected from ground disturbance associated with river structure modifications and construction of a side channel chute and shallow water habitat areas.

4.2.1 TOPOGRAPHY

The topography of the Jameson Island Unit would be affected due to potential river structure modification (dike, revetment and bank notching; and associated channels) of the development activities. Additionally, activities associated with developing side chute would affect the topography of the site. Due to the relatively level topography of the area, any impacts to topography would be considered insignificant.

The purpose of the Mitigation Program is to restore the Jameson Island Chute Construction Site to a condition similar to that of the Missouri River floodplain prior to its channelization. Reconnecting the Missouri River to its floodplain by allowing migration of floodwaters across the site and allowing erosion of the river bank by scour action would result in dynamic changes in surface topography which would be considered a beneficial impact. The resulting shallow water habitat would resemble a more natural topography at the site, similar to that which occurred prior to the BSNP. Therefore, implementation of the build alternatives would provide minor beneficial impacts to topography. The No Development Alternative would have no affect on topography.

4.2.2 GEOLOGY

The development alternatives would include activities to erode and/or excavate the current riverbank area in order to create shallow water habitat. All activities would only affect alluvial deposits and not underlying bedrock or exposed bedrock outcroppings. Therefore, none of the alternatives would affect geology.

4.2.3 SOILS

The intent of the Jameson Island Chute Construction project is to induce erosion by the scour action of water flows, which would impact local soil conditions. This would be an unavoidable impact. Excavating soils for river structure modifications and construction of the side channel chute could cause temporary increases in sediment loads and turbidity. Excavated material would be disposed of by placing the material riverward of the former high bank or by disposing it directly into the river. Material disposed of into the river would be graded or placed in such a manner as to minimize adverse impacts. Excavated or in-place material would not impede the flow of water into or out of the river structure modifications or the inlet and outlet of the side channel chute. Although the existing soils would eventually be scoured away along the bank of the river and within the side channel chute, the rivers constant flow would continue to deposit alluvial soils. The sediments deposited from flooding would positively affect vegetative growth by adding nutrients to the soils and increasing productivity.

Control measures would be implemented to ensure that undesirable pollutants from construction activities would not be discharged in storm water runoff. Disturbed areas not subjected to the rivers scouring action or construction of the side channel chute would be seeded and stabilized after construction with appropriate mixtures of native seed.

Although short-term impacts would occur to the soils at the Jameson Island Chute Construction Site as a result of the development alternatives, the long-term effect of these impacts would be beneficial by restoring and creating additional acres of fish and wildlife habitat through the development of shallow water habitat and wetlands, respectively. Additionally, the increased sediment load within the river would help stimulate the rivers historic conditions of continued erosion and deposition. The No Action Alternative is not anticipated to cause any adverse effects on soils.

4.3 PRIME AND UNIQUE FARMLAND

Soils designated as prime farmland could be found within the area of the Jameson Island Chute Construction Site; however, these areas are no longer protected from flooding. Therefore, the development alternatives would not have a long-term impact to

prime or unique farmland soils. In addition, because the site was purchased as part of The Big Muddy National Fish and Wildlife Refuge with the intent to restore the area to a more natural condition, adjacent areas contain large expanses of prime or unique farmland, and the area is no longer levee protected, the impact is not considered significant or adverse. The No Development Alternative would not affect prime or unique farmland soils.

4.4 BIOLOGICAL RESOURCES

Biological resources include the native or introduced plants and animals and the habitats in which they occur. Aquatic resources include fisheries, and terrestrial/wetland resources include vegetation communities and wildlife populations. Species that are candidates for, or listed as, threatened or endangered are included in both aquatic and terrestrial/wetland resources. Impacts to these resources would be from the construction and operation of the Jameson Island Chute Construction Site. An adverse impact would be significant if the viability of a biological resource of the area was jeopardized, with little likelihood of reestablishment to its original state or the action would result in the taking[1] of a listed threatened or endangered species. The significance of the impact would also be dependent upon the importance of the resource and its relative occurrence in the vicinity of the site. No adverse impacts are anticipated at the Jameson Island Construction site.

4.4.1 AQUATIC RESOURCES

No significant adverse impacts to aquatic resources are anticipated. The fisheries resource associated with the Jameson Island Construction Site could temporarily be disturbed during river structure modifications, and by activities associated with the construction of the side channel chute and shallow water habitat areas. Temporary increases in turbidity could impact water temperatures and dissolved oxygen content;

[1] The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

however, any impact would be considered short-term, construction related, and insignificant.

Temporary impacts from incidental discharges into the Missouri River channel are possible, but would also be insignificant because of anticipated staging and timing of river structure modifications and construction of the side channel chute. Incidental discharges of sediment from construction activities into the Missouri River could also provide a benefit. An increase in sediment load within the Missouri River would help simulate historic conditions of the river and would provide additional sediment for downstream deposition and improvement of shallow water habitat conditions. Increased turbidity lowers light transmission into the water. This could benefit species adapted to these conditions.

An important intent of the development alternatives is to create and restore fisheries habitat. It is expected that approximately 44 acres of shallow water habitat will be available from the construction of the side channel chute, depending on final bottom width of the chute and scouring action of the banks. Long-term and cumulative beneficial impacts to aquatic habitat outweigh the temporary adverse impacts to the resources that would occur. The river structure modifications and resulting scouring of the Missouri River bank plus the creation of a new side channel chute would create shallow water habitat. Deep holes, shallow flats, and backwater habitats would be expected to develop. These areas would provide habitat for fish species, macro-invertebrates, and plankton and provide a critical forage base needed for larval and juvenile fish. Populations of fish species, including the endangered pallid sturgeon, that have been declining in numbers, would benefit from shallow water habitat development. Creation of shallow water habitat would provide a beneficial effect to the Missouri River fishery. The No Development Alternative would not adversely affect aquatic resources.

4.4.2 Terrestrial/Wetland Resources

The build alternatives would result in the conversion of approximately 43.9 to 71.2 acres of mature cottonwood and willow trees to shallow water and open-water areas at the Jameson Island Chute Construction Site, after natural meander width is achieved. An additional minimal amount of terrestrial habitat may be temporarily disturbed due to river structure modifications and other activities associated with construction of the side

channel chute. As the side channel chute site matures over time, additional bottomland forest and grassland habitats will re-colonize along the edges of the chute and in the areas previously disturbed by construction. The diversity of habitats created and the number of species able to utilize the site after construction will more than offset the impacts to terrestrial habitat due to conversion. As such, the impacts to terrestrial resources related to the construction of the side channel chute are considered insignificant. The proposed project would impact a total of 3.04 acres of wetland habitat due to chute construction and access route construction. These areas have been avoided to the maximum extent possible through alterations in chute and access road design. Based on national and state policy regarding a "no net loss" of wetland habitat, the Corps has incorporated mitigation measures into the project description. These measures include enhancing existing in-kind wetland areas during construction by the breaching of old berms, expanding existing wetlands by scraping edges of the impacted wetlands, and allowing conditions for natural regeneration of forested wetlands. With these measures in place, the impacts to existing wetlands resulting from the construction of the proposed project are considered insignificant. Please refer to the mitigation proposal contained in Appendix D of this PIR. The No Development Alternative would not have any direct impacts to the terrestrial or wetland habitat at the Jameson Island Unit.

4.4.3 WILDLIFE

Impacts to wildlife inhabiting the Jameson Island Chute Construction Site would occur and are unavoidable. During construction, species would be temporarily displaced, but would likely return to the area after construction is completed. Species with limited mobility could be destroyed. Over the long-term, it is anticipated that wildlife would benefit from creation of more diverse and productive terrestrial and aquatic habitats so any impacts during construction would be insignificant. Side channel chute construction would provide habitat diversity for numerous waterfowl species and shorebirds. Terrestrial habitat would continue to be abundant for many bird and mammal species. Reptiles, and particularly amphibians, are expected to benefit greatly because of the additional wetland and aquatic habitat that would develop. Long-term and cumulative impacts to wildlife resources are expected to be beneficial because of an expected

increase in habitat types and abundance. The No Development Alternative would not adversely affect wildlife species.

4.4.4 Threatened and Endangered Species

The proposed project is located in a geographic area with potential presence of the threatened bald eagle and the endangered pallid sturgeon. The goal of the Mitigation Program, of which the Jameson Island Chute Construction Site is a component, is to restore fish and wildlife habitat along the lower Missouri River. In addition, all project features are designed to enhance, create, or restore terrestrial and aquatic habitat at the Jameson Island Chute Construction Site. These activities would result in long-term benefits to the federally listed species identified by increasing habitat for breeding, feeding, and sheltering.

The bald eagle may be affected by the proposed project since large trees that may be used for roosting will be cleared for chute construction. Human activity (i.e., construction) in the vicinity of wintering bald eagles is likely to affect eagles by causing disruptions to the normal behavior, removing potential roosting/perching trees, and by displacing eagles to non-preferred, marginal habitat. Any disturbance would be temporary in nature and would cease when construction has been completed. Additionally, because the proposed project area contains adjacent large expanses of mature willow and cottonwood trees, impacts to the normal behavior of the eagle will be minimized. When completed, the project will provide increased aquatic habitat for foraging and roosting; therefore, the proposed project is likely to benefit the bald eagle.

The proposed project at the Jameson Island Chute Construction Site would create approximately 44 acres of chute habitat and as of yet an undetermined amount of shallow water habitat. This would provide additional habitat for the pallid sturgeon. The proposed project is anticipated to result in beneficial effects to the pallid sturgeon through increases in spawning, rearing, nursery, feeding, and sheltering habitat. The No Development Alternative would not have the positive effects to bald eagle and pallid sturgeon because it would not provide the additional feeding, breeding, and sheltering aspects that the proposed project provides.

4.5 LAND COVER

Approximately 44 acres of mature cottonwood and willow trees will be cleared for the creation of the side channel chute at the Jameson Island Construction Site during construction of the Preferred Alternative. No significant adverse impacts to vegetation cover types are expected from this construction because an abundance of similar habitat exists on site and adjacent to the project area, and the fact that this area has accreted due to the past channel modifications made to the Missouri River.

Habitat restoration components of the build alternatives are expected to help recreate or mimic land and aquatic conditions present prior to the BSNP. Beneficial effects to the terrestrial land cover are expected over both the short and long-term as the project area matures. Successional forests that were once prominent on the site and along the Missouri River would once again become established. Increased levels of vegetation would likely result in a long-term beneficial impact on soil control. The No Development Alternative would not affect land cover and would not provide the long-term benefits of the preferred alternative in terms of species and habitat diversity.

4.6 CULTURAL RESOURCES

Federal agencies are required to determine the effect of their actions on cultural resources, which include historic and archeological resources under the *National Historic Preservation* Act (NHPA) [16 USC 470 *et* sec., as amended]. NHPA requires that certain steps be taken to ensure that cultural resources are located, identified, evaluated, and protected or impacts mitigated. Section 106 coordination has been initiated with the Missouri SHPO and affiliated Native American Tribes. The SHPO has concurred that adequate documentation has been provided (36 CFR Section 800.11), and that there will be "no historic properties affected" by the current project

(Appendix B).

In the unlikely event that unanticipated archeological materials are discovered during construction, work in the area of discovery shall cease and the Kansas City District will be notified. The Kansas City District Cultural Resource Manager would then notify the Missouri SHPO and appropriate federally recognized Native American Tribes.

4.6.1 Historic Properties and Archaeological Sites

No archeological sites or historic structures were recorded in the project area; therefore, none will be impacted.

4.6.2 Shipwrecks

No shipwrecks were recorded in the project area; therefore, none will be impacted.

4.7 WATER QUALITY

Physical disturbances during construction could have an adverse impact on water quality. Significant impacts would be those that would affect water quality in a manner that would exceed Federal and state standards, including degrading an existing use.

No significant adverse impacts are anticipated to the water quality of the Missouri River. Construction on site could temporarily increase sediment load and suspended solids in the Missouri River, and decrease water clarity and light penetration. These impacts would be unavoidable but short-term and insignificant.

Methods to reduce discharges of pollutants in storm water runoff form the construction areas (e.g., Best Management Practices) would be implemented. Construction of the Jameson Island Chute Construction Site would impact more than one acre, thus requiring a general permit for storm water discharge for land disturbances from the Missouri Department of Natural Resources (an NPDES permit). The general permit and associated storm water pollution prevention plan would address control issues for pollutants during and after construction. Construction activities would also comply with any conditions recommended by the Corps and Missouri Department of Natural Resources in issuing respectively the Section 404 authorization and 401 water quality certification. Construction activities at the Jameson Island Chute Construction Site would not cause an exceedance of Federal or state water quality standards; therefore, no significant adverse impacts would result. The No Development Alternative would not affect water quality.

4.8 AIR QUALITY

Direct air quality impacts that would occur at the Jameson Island Chute Construction Site would result from construction activities including excavation, grading, and construction-related traffic. An air quality impact would be considered significant if it results in a violation of NAAQS. No significant adverse impacts are expected to air quality at the site.

Increases in fugitive dust (suspended particulate matter) and increases in exhaust emissions from construction activities would be unavoidable; however, these impacts would be temporary and would be relatively low emission levels. These pollutants are expected to disperse quickly; therefore, any impact would be minimal. When necessary, construction access roads would be watered to minimize the escape of fugitive dust during high wind speeds and periods of high construction-vehicle activity. The No Development alternative would not experience any construction related air quality effects.

4.9 NOISE

The noise impacts from the build alternatives at the Jameson Island Chute Construction Site are related to the magnitude of the noise levels generated by construction activities and the proximity of sensitive noise receptors. A sensitive noise receptor is commonly defined as the occupants of a facility or location where a state of quietness is a basis for use. These locations include residences, hospitals, churches, and wilderness areas. Some species of protected wildlife are also considered to be sensitive noise receptors, for instance, the bald eagle.

The human response to noise is generally subjective (e.g., annoyance). Temporary increases in ambient noise levels at the Jameson Island Chute Construction Site would be caused by construction activities. No adverse impacts to human sensitive receptors are anticipated because no such receptors are within close proximity of the site.

Noise impacts to wildlife vary depending on a species hearing ability, time of year, and physical condition. Species behavior, mating, and feeding activities can be adversely affected due to increases in noise levels. The No Development Alternative would have no noise affects.

4.10 SOCIOECONOMIC RESOURCES

Impacts to socioeconomic resources would be associated with construction activities and the operation of the Jameson Island Chute Construction Site as a conservation area. Impacts would be significant if the proposed project would noticeably affect the local economy, labor market, or land use.

4.10.1 POPULATION AND INCOME

Impacts from construction and implementation of the development alternatives are not expected to have any impact on population and income of the local area. Population trends and composition in the local area are not anticipated to change. An influx of some construction dollars may provide for temporary increases to the local economy. Any possible increases to the local economy, though beneficial, would be insignificant. Long-term revenue in the local community could increase slightly from additional recreational opportunities. No amount of land would be removed from crop production; therefore, no impacts to the local agricultural economy would be expected.

4.10.2 RECREATION AND AESTHETICS

No adverse impacts to recreation facilities or opportunities at the Jameson Island Unit are expected. Temporary impacts to recreation opportunities could occur during construction if the Jameson Island Chute Construction Site would be closed to the public for safety reasons. This could be considered inconvenient to some public users, though it would be insignificant. USFWS approved recreational activities for the public at the site include hunting, fishing, nature study, wildlife viewing, photography, and hiking. These recreational activities are expected to increase once the project is complete. Thus, long-term beneficial impacts are expected.

Visual impacts would be temporary and would occur during construction of the recommended alternative; however, no significant adverse impacts to aesthetics and the surrounding landscape are expected. Over the long-term, the visual aesthetic values of the area should improve as a result of the increased habitat and a greater diversity of features on the site and its transformation to a more natural condition.

4.10.3 NAVIGATION

No adverse impacts to navigation are expected from construction and operation of the Jameson Island Chute Construction Site for any of the alternatives. The U.S. Congress requires the Corps to maintain a 9-foot deep by 300-foot wide navigation channel. The Corps intends that the navigation channel would not be adversely affected by the alternatives. Activities associated with construction of the side chute channel are not expected to adversely impact navigation.

4.11 CUMULATIVE EFFECTS

Cumulative effects of the Mitigation Program were addressed in the SEIS (2003). The SEIS evaluated cumulative effects on the following topics:

- *Land acquisition*
- *Economic impacts*
- *Recreation*
- *Navigation*
- *Water Resources (including water quality)*
- *Flood Control*

Cumulative effects associated with these resource categories do not need to be evaluated in the PIR because there are no extraordinary site-specific circumstances that necessitate an additional cumulative impacts analysis. However, there are other cumulative effects not addressed in the SEIS that would result from the construction and operation of the Jameson Island Chute Construction Site. These include the following:

- Regional increases in fish and wildlife populations resulting from site-specific habitat development activities on the land use. Increases in regional habitat quality should positively correlate to increases in fish and wildlife resources in terms of species diversity and abundance.
- Continued regional benefits from increased floodwater retention capacity on the Missouri River floodplain would provide incremental flood protection for residences and properties downstream.

- Overall beneficial increases in terrestrial and aquatic habitat that support the bald eagle and pallid sturgeon that would benefit feeding, breeding, and sheltering. The state imperiled pale bulrush could potentially benefit as well through habitat modifications.
- Regional beneficial improvements in water quality from the filtering affects of wetland habitats on the Jameson Island Chute Construction.
- Regional increases in public land availability for recreational opportunities.

4.12 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable resource commitments due to construction and operation of the Jameson Island Chute Construction Site include the loss of some Federal funds, labor, energy, and construction materials used to plan, design, construct, and monitor the project.

4.13 FUTURE WITHOUT-PROJECT CONDITION

Without construction and operation of the Jameson Island Chute Construction Site, activities to develop fish and wildlife habitat would not be undertaken. The USFWS currently holds fee title to the Jameson Island Unit and is currently managing the land. Without future development activities, terrestrial habitats would continue to recolonize naturally over many years, and no additional shallow water habitat would be created. Natural succession would occur. The habitat that would develop at the Site over the long-term would be solely dependent on the processes of natural succession acting on the area. No additional recreational features would be constructed, but the site would be open to the public for recreational uses such as bird watching, hiking, fishing, and hunting.

4.14 ENVIRONMENTAL COMPLIANCE

This section summarizes the statutory and regulatory environmental compliance requirements and discusses the major Federal and state permits and clearances that would be required for the approval and implementation process for the Jameson Island Chute Construction Site. The applicability and status of these environmental

requirements is presented below in Table 4-1 and a discussion of the most important requirements follows the table.

Table 4-1: Compliance of Preferred Alternative with Environmental Protection Statutes and Other Environmental Requirements

Federal Environmental Requirements	Applicability	Status a,b,c,d
Archeological Resources Protection Act, 16 U.S.C. 470, et. seq.	Applicable	Full Compliance
Clean Air Act, as amended, 42 U.S.C. 7401-7671g, et. seq.	Applicable	Full Compliance
Clean Water Act (Federal Water Pollution Control Act),	Applicable	Full Compliance
Coastal Zone Management Act, 16 U.S.C. 1451, et. seq.	Not Applicable	Not Applicable
Endangered Species Act, 16 U.S.C. 1531, et. seq.	Applicable	Full Compliance
Estuary Protection Act, 16 U.S.C. 1221, et. seq.	Not Applicable	Not Applicable
Federal Water Project Recreation Act, 16 U.S.C. 4601-12, et. seq.	Applicable	Full Compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et. seq.	Applicable	Full Compliance
Land and Water Conservation Fund Act, 16 U.S.C. 4601-4, et. seq.	Not Applicable	Not Applicable
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et. seq.	Not Applicable	Not Applicable
National Environmental Policy Act, 42 U.S.C. 4321, et. seq.	Applicable	Full Compliance
National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470a, et. seq.	Applicable	Full Compliance
Rivers and Harbors Act, 33 U.S.C. 403, et. seq.	Applicable	Full Compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et. seq.	Applicable	Full Compliance
Wild and Scenic River Act, 16 U.S.C. 1271, et. seq.	Not Applicable	Not Applicable
Farmland Protection Policy Act, 7 U.S.C. 4201, et. seq.	Applicable	Full Compliance
Protection & Enhancement of the Cultural Environment (Executive Order 11593)	Applicable	Full Compliance
Floodplain Management (Executive Order 11988)	Applicable	Full Compliance
Protection of Wetlands (Executive Order 11990)	Applicable	Full Compliance
Environmental Justice (Executive Order 12898)	Applicable	Full Compliance

a. Full Compliance. Having met all requirements of the statute for the current stage of planning (either pre-authorization or post-authorization)
b. Noncompliance. Violation of a requirement of the statute.
c. Not applicable. No requirements for the statute required; compliance for the current stage of planning.

4.14.1 Environmental Policy

The Corps is preparing this PIR for the Jameson Island Chute Construction Site. The PIR documents the planning for the mitigation site and will provide the information needed to ensure compliance with respect to environmental considerations.

Federal agencies use the *National Environmental Policy Act* (NEPA) [42 USC 4321 et seq.] to evaluate the environmental impacts of a proposed project. Through the NEPA process, public officials and citizens are given opportunity to be involved in the environmental review and receive information about environmental impacts before any decisions are made on Federal actions regarding the proposed projects. This PIR is intended to serve as the documentation necessary to incorporate the NEPA process into the Missouri River mitigation planning and implementation. If no significant impacts are determined, a Finding of No Significant Impact (FONSI) would be prepared and NEPA compliance would be fulfilled.

4.14.2 Water Resources

Section 404 – Discharge of Dredged or Fill Material into waters of the United States. Department of the Army authorization pursuant to Section 404 of the Clean Water Act is required for the construction of the side channel and the discharge of material into the Missouri River. The side channel construction and the modification of the existing dikes and revetments and the associated bank excavation for the creation, restoration and enhancement of SWH in the Missouri River is authorized under Nationwide Permit (NWP) #27 for Stream and Wetland Restoration Activities. The text of the 2002 NWP #27 and the General Conditions are attached in Appendix C. Since the construction of the side channel and modification of the existing structures and bank excavation is authorized by a general permit (NWP #27) subject to the Section 404(b)(1) Guidelines, an individual evaluation of the guidelines is not required. By initialing on the cover memo, OD-R concurs that the proposed project is in compliance with Section 404 of the Clean Water Act and the decision and procedures utilized are consistent with the requirements of the Regulatory Program.

Section 401 – Water Quality Certification. State water quality certification was approved for the 2002 NWP #27 by both the Missouri Department of Natural Resources (MDNR)

and the Corps of Engineers, as described in the Public Notice dated September 28, 2005. The Public Notice and the blanket Water Quality Certification Conditions for the NWP #27 are attached in Appendix C.

Section 402 – National Pollution Discharge Elimination System (NPDES) Storm Water Discharge Permit. An NPDES permit exemption was requested with the Missouri Department of Natural Resources under the "Small scale pilot projects or demonstration projects for beneficial use" exemption. This request was detailed in a letter to MDNR, dated March 30, 2004. The Kansas City District has applied for a general storm water-operating permit for all Missouri River Fish and Wildlife Mitigation Projects and Shallow Water Habitat Development Projects in our District in the State of Missouri. The General Permit is still under review. The original exemption was granted in a letter dated April 7, 2004, and extended an additional year in a letter from MDNR on May 17, 2005. The expiration of the permit exemption is April 7, 2006.

4.14.3 Biological Resources

Federal agencies are required to determine the effects of their actions on Federally listed endangered or threatened species and their critical habitats under the *Endangered Species Act* (ESA) [16 USC 1531 et seq.]. Steps must be taken by the Federal agency to conserve and protect these species and their habitat, and to avoid or mitigate any potentially adverse impacts resulting from the implementation of the proposed project.

The *Fish and Wildlife Coordination Act* (16 U.S.C. 661, et seq.) provides the basic authority for USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires that when the Corps constructs, licenses or permits water resource development projects that they first consult with USFWS (and the National Marine Fisheries Service in some instances) and state fish and wildlife agencies regarding the impacts on fish and wildlife resources and measures to mitigate these impacts. Full consideration is to be given to USFWS recommendations and recommendations have been agreed to in the Missouri River Fish and Wildlife Mitigation Project Environmental Impact Statement dated March 2003. Coordination under this Act was provided during the public comment period under Public Notice No. 200600659. The USFWS in a letter dated January 27, 2006, stated

that the activity "is not likely to adversely affect federally listed species or designated critical habitat, and consequently, concluded section 7 consultation under the ESA. The MDNR responded in an email dated February 23, 2006, and provided recommendations for the avoidance of wetland impacts and a reevaluation of the deposition of soils into the Missouri River. These recommendations will be included in the final design of the chute. Copies of the Agency's and public responses can be found in Appendix A.

4.14.4 Cultural Resources

Federal agencies are required to determine the effect of their actions on cultural resources, which include historic and archaeological resources under the *National Historic Preservation Act* (NHPA) [16 USC 470 et seq., as amended]. NHPA requires that certain steps be taken to ensure that cultural resources are located, identified, evaluated, and protected or impacts mitigated. Section 106 coordination has been initiated with the Missouri SHPO and affiliated Native American Tribes. The SHPO has stated that "adequate documentation has been provided (36 CFR Section 800.11)", that there will be "no historic properties affected" and has concurred that no further work is required for the project (Appendix B).

In the unlikely event that unanticipated archeological materials are discovered during construction, work in the area of discovery shall cease and the Kansas City District will be notified. The Kansas City District Cultural Resources Manager would then notify the Missouri SHPO and appropriate federally recognized Native American tribes.

4.14.5 Air Quality

The Federal policy to protect and enhance the quality of the air to protect human health and the environment is established under the *Clean Air Act* [42 USC 7401 et seq., as amended]. Impacts to air quality are considered to be insignificant. Therefore, no additional actions would be required for full compliance.

Chapter 5

Other Considerations

5.1 INTRODUCTION

The recommended alternative for the Jameson Island Chute Construction Site includes various activities, previously described, to develop fish and wildlife habitat. This section describes the monitoring and evaluation plan, operations and maintenance plan, real estate considerations, implementation responsibilities, views, cost estimates, schedules, and conclusions and recommendations for the Jameson Island Chute Construction Site recommended alternative.

5.2 MONITORING AND EVALUATION (M&E) PLAN

The purpose of the site M&E plan is to establish goals for monitoring and evaluating and to guide the pre- and post-construction collection of physical and biological information. This information would be used to evaluate any changes or improvements to the Jameson Island Chute Construction Site and as a tool to measure the success of the proposed project in helping to achieve the goals of the overall Mitigation Program. Information obtained could also be used to compare the Jameson Island Chute Construction Site to the success of past and future mitigation sites.

The M&E Committee by the ACT was established to develop an M&E plan for the Mitigation Program. This committee included representatives from the Corps, USFWS, IDNR, KDWP, MDC, and NGPC. A draft of the M&E Plan has been completed.

The goal of the M&E plan is to understand the physical and biological responses to Mitigation Program actions within an adaptive management context. The objectives of the M&E plan include the following:

- Track location, type, and physical characteristics of each mitigation site;
- Quantify habitat use and population responses of key species;
- Recommend program adaptations based on new information;
- Gain an understanding of the physical and biological responses through time; and
- Formalize information transfer among all to communicate lessons-learned and increase the effectiveness of project actions.

Because of this program's significant financial investment, it is important to learn how constructed mitigation sites are performing and apply adaptive management, as needed, on existing and future sites to maximize habitat potential. This information will help determine the program's level of success and provide a basis for future adaptive management. By monitoring the mitigation sites and collecting basic habitat data, the ACT can determine whether the mitigation sites are performing as expected. Utilizing information obtained through the monitoring of sites will enable decision makers to recommend improvements to existing sites and make more informed decisions about planning and design of future sites. The M&E committee has agreed to a three-tiered M&E program. Tier 1 will gather data on the physical aspects of the mitigation sites, Tier 2 will document the project's biologic response, and Tier 3 activities will include focused research to test a specific hypothesis.

Tier 1 data is limited to physical data on mitigation sites. The physical data will include habitat delineations, cross sections, hydrographs, etc. Habitats will be classified using the National Wetland Inventory (NWI) and the National Land Cover Data (NLCD) classification system. Aquatic and wetland habitats will be classified using the NWI and all uplands habitats will be classified using the NLCD system. The Mitigation Program will document the existing baseline habitat conditions for each mitigation site to establish the baseline habitats that existed prior to acquisition. This data will be established and maintained by the Corps as a GIS land cover data layer. The Corps or its contractors

will perform tier 1 efforts. In general, the baseline condition of new sites will be documented during site-specific design activities and NEPA compliance.

Tier 2 activities utilize standardized protocol, as approved by the M&E committee, to monitor the biologic response at select mitigation sites. The committee has established native riverine fish species as being the highest priority for monitoring followed by birds, reptiles, and amphibians. This monitoring may also track changes in both quality and quantity of a species' preferred habitat. Tier 2 activities may characterize the habitat in greater detail using the NWI and NLCD systems, as appropriate. This additional data on habitat will be added to the GIS land cover data layer maintained by the Corps. These monitoring activities will be completed by the mitigation site's land managing agency and funded through the site's annual management plan. It is not yet clear if Tier 2 monitoring will be conducted at the Jameson Island Chute Construction site as sites for this monitoring have already been chosen. If resources allow, additional sites may be added.

Specific research activities will be Tier 3 activities and will test a specific hypothesis relevant to the Mitigation Program. These activities may include more rigorous research techniques and sampling protocol. As with Tier 2 monitoring, these research projects will be completed by the mitigation site's land managing agency and funded through the site's annual management plan. For Tier 3 research, the land managing agency will also decide how to conduct these activities (i.e., in-house labor, contract, academic institution, etc.). Research results will be reported in annual progress reports and final reports. The M&E committee will meet annually to review all on-going monitoring activities and decide on future activities based on available appropriations. Tier 3 research will receive lower priority for funding than Tier 1 or Tier 2 monitoring activities.

Monitoring efforts may reveal the need for adaptive management at the Jameson Island Chute Construction Site. As an example, adaptive management efforts might become necessary on the site if drought conditions persist or flooding results in damage to project features or vegetative plantings. Additionally, the biotic response of the habitat development measures, results of the M&E plan, changing site conditions and opportunities to focus on achieving the maximum restoration benefits possible at each site may also require changes to the site through adaptive management. If any re-work

were needed to restore the area, the Corps would pay for it with Construction General funds. If the re-work were considered a major change to the recommended alternative identified in this PIR, a supplemental to this PIR would be required.

The M&E committee established two subcommittees to develop the program's mitigation efforts. These protocols are "living" documents that may be modified to better facilitate future-monitoring activities, as needed (i.e., improved sampling methods, additional informational needs, etc.). A team of biologists, representative of the four state fish and game agencies and Federal agencies affiliated with various Missouri River projects, including pallid sturgeon projects, provided the framework for these plans and protocols. These biologists provided knowledge and experience regarding the fish and bird communities of the Missouri River ecosystem, including the pallid sturgeon. The fish monitoring protocol includes standard operating procedures for fishery sampling gears, sampling segments, sampling strategies, sampling experimental design, and collection of micro-habitat characteristic data.

Standardized protocols for monitoring of fish and avian response are included as an appendix to the M&E Plan that has been prepared by the M&E Committee. The M&E Plan also includes guidance on schedule, funding, quality control, acquisition strategy, and communications regarding M&E activities for the Mitigation Program. The M&E Plan and appendices will be made available on the Mitigation Program website (http://www.nwk.usace.army.mil/projects/mitigation).

5.3 OPERATIONS AND MAINTENANCE (O&M) PLAN

The USFWS would continue to operate and maintain the Jameson Island Unit as part of The Big Muddy National Fish and Wildlife Refuge. The Corps would operate and maintain the Jameson Island Chute Site. O&M activities at the Jameson Island Chute Construction Site would include a continuation of basic land management practices as well as continued wetland habitat development, vegetative plantings of native grasses and trees, weed control, and signage. The Corps will prepare an O&M Manual for the Jameson Island Chute Construction Site.

5.4 REAL ESTATE CONSIDERATIONS

The Jameson Island Unit is 1,687 acres and is owned by the USFWS. The USFWS purchased the land from willing private sellers between 1995 and 1997. The USFWS currently manages all lands on the site as part of The Big Muddy National Fish and Wildlife Refuge and would continue to do so upon completion of the project. Management of the chute and shallow water areas would fall under the responsibility of the Corps.

5.5 IMPLEMENTATION RESPONSIBILITIES

The Corps is responsible for study management and coordination with the USFWS and other affected/interested agencies. The Corps will prepare and submit the subject PIR and complete all environmental review and coordination requirements. The Corps will then prepare any design plans that may be required, finalize any plans and specifications, prepare and implement a monitoring and evaluation plan, advertise and award a construction contract, perform construction contract supervision and administration, develop an O&M manual, ensure O&M is carried out in accordance with the O&M manual, and develop and implement the real estate agreement and O&M agreement. In the event of flood damages to the project, the Corps will evaluate and complete the work necessary to reestablish project features. The Corps is responsible for management of the project features at the Jameson Island Chute Construction Site and for any other activities outlined as Corps responsibility in any O&M agreements.

5.6 COST ESTIMATE

The total estimated cost of the Jameson Island Chute Construction Site includes: design, construction, and construction management. See Table 5-1 below for the Jameson Island Chute Construction Site cost estimate.

Table 5-1 - Cost Estimate

Activity	Cost ($)
Design	200,000
Construction	4,000,000
Construction Management	100,000
Total	**4,300,000**

Source: Corps, Jameson Island Chute Construction Habitat Restoration Plan, March 2006

The Jameson Island Chute Construction Site project would be Federally funded in its entirety. If Federal funds are not available to accomplish general operations, management and maintenance at the site, then such work would likely be deferred or not accomplished. The annual O&M costs are estimated at $10,000. The cost estimate would be updated throughout the life of the project as project features are further defined.

5.7 SCHEDULE

Table 5-2. Jameson Island

Chute Construction Site Project Schedule

Milestone	Scheduled	Actual
Cooperative Agreement Signed	TBD	TBD
PIR Started	July 2005	July 2005
PIR Approved	March 2006	March 2006
Plans Started	July 2005	July 2005
Plans Reviewed	February 2006	February 2006
Plans Approved	April 2006	TBD

Milestone	Scheduled	Actual
Construction Started	July 2006	TBD
Construction Completed	July 2007	TBD

5.8 CONCLUSIONS AND RECOMMENDATIONS

Habitat development at the Jameson Island Chute Construction Site has been identified as a priority project for inclusion into the Mitigation Program. The USFWS and ACT concur. The value of the area as wildlife habitat prior to acquisition was minimal due to the majority of the area being in agricultural use. Development at the Jameson Island Chute Construction Site would restore wetland, prairie, bottomland forest, and create shallow water habitat through construction of a side chute channel. These activities would greatly enhance the site's value as fish and wildlife habitat.

It is recommended that the Preferred Alternative be constructed as described in this PIR. The Preferred Alternative would result in the greatest beneficial benefits to fish and wildlife habitat and would not significantly adversely affect the human environment.

References

Berner, L: M. 1951. *Limnology of the lower Missouri River.* Ecology 32:1-12.

National Research Council (NRC). 2002. *The Missouri River ecosystem: exploring the prospects of recovery.* National Academy Press, Washington, D.C.

Richards, Joseph M. 1999. Water-Quality and Ground-Water Hydrology of the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri – 1992-99.

U.S. Army Corps of Engineers (Corps). 2004. *Missouri River Fish and Wildlife Mitigation Program, Program Management Plan.* Kansas City District.

--------2003. *Missouri River Fish and Wildlife Mitigation Project, Final Supplemental Environmental Impact Statement.* Kansas City and Omaha Districts.

------- 2001. *Main Report Revised Draft Environmental Impact Statement. Volume 1: Missouri River Master Water Control Manual Review and Update Study.* Northwestern Division, Omaha, Nebraska.

------- 1995. *Floodplain Management Assessment of the Upper Mississippi River, Lower Missouri River, and major tributaries. Appendix C: Environmental Resource Inventory.* St. Paul District, St. Paul, Minnesota.

------- 1994. *Missouri River Master Water Control Manual Review and Update, Volume 3A: Low Flow Studies, Gavins Point Dam to St. Louis, Missouri.* Missouri River Division.

------- 1990. *Missouri River Bank Stabilization and Navigation, Fish and Wildlife Mitigation Project, Real Estate Design Memorandum No. 1.* Missouri River Division.

------- 1990. *Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project Reaffirmation Report.* Missouri River Division, Omaha, Nebraska.

------- 1981. *Missouri River Fish and Wildlife Mitigation Iowa, Nebraska, Kansas, and Missouri Final Feasibility Report and Final Environmental Impact Statement.* Missouri River Division, Omaha District, Omaha, Nebraska.

Appendix A

Public and Agency Coordination

On January 25, 2006, a description of the proposed project was circulated to the public and resource agencies through Public Notice No. 200600659 issued jointly by the Kansas City District and the Missouri Department of Natural Resources, Water Pollution Control Program. The public notice included a thirty-day comment period that ended on February 24, 2006, and provided instructions for the public to provide comments on the proposed project. The public notice also included information on the Corps preliminary determination to prepare a Finding of No Significant Impact (FONSI) for the project and a draft Section 404(b)(1) Evaluation. The public notice was mailed to individuals, agencies, and businesses listed on the NWK-Regulatory Branch's general, state of Missouri and Saline County mailing lists. A copy of the public notice is included in this appendix, along with a copy of the mailing list.

Prior to the publishing of the Public Notice, preliminary information was requested from various resource agencies, and initial comments were received from an adjacent landowner concerning the proposed project. The emails between these entities and the Corps, provided in this appendix, include: the January 19, 2006, general concurrence from the Corps Regulatory Office with the preliminary wetland determination; the January 6, 2006, email from the USFWS providing general comments on the Project Implantation Report, which were incorporated into the proposed project description; a copy of the USFWS 2002 to 2005 "Summary of Pallid Sturgeon Captures for Lisbon and Jameson Islands", which was used to provide additional detail on the endangered pallid sturgeons in the "project area"; and concerns from Mr. Troy Gordon on possible flooding impacts to his land resulting from the proposed project.

Comments from entities in general concurrence with the proposed project were received during the Public Notice process, and also are provided in this appendix. These comments include: a copy of the January 27, 2006, response from the USFWS stating that the proposed activity is not likely to adversely affect federally listed species or critical habitat, and consequently, concluding section 7 consultation under the ESA; a copy of the January 18 and 30, 2006 SHPO responses stating that adequate documentation has been provided (36 CFR Section 800.11) and that there will be "no historic properties affected" by the current project; a copy of the February 1, 2006, "no

objection" facsimile from the Repatriation Tribal Historic Preservation Office of the Pawnee Nation of Oklahoma; a copy of the January 31, 2006, response from the Omaha Tribe of Nebraska stating that the proposed project is not expected to affect historic lands, a copy of the February 23, 2006, letter from the Winnebago Tribe of Nebraska stating that that they have no village sites, grave site, or sacred sites in the proposed project area, and a copy of the February 21, 2006, letter from the Osage Tribe of Oklahoma stating that the proposed project is not expected to affect historic lands

Letters and emails with specific comments received during the public comment period are included in this appendix. Specific comments and respective responses are provided below.

February 23, 2006. Janine Orrison, Friends of the Big Muddy.

Comment 1. *Will the cleared trees from the chute footprint that are being placed along the high bank wash into the chute during flood events and cause a logjam and block the chute?* **RESPONSE**: The Corps was aware of the potential for downed trees to enter the chute and cause logjams. As such, engineers on the proposed project took into consideration the radius of curvature per channel width of the Missouri River and designed the proposed chute based on this formula. In addition, the tree will be placed no closer than 100 feet to the top bank of the chute to minimize their entrance into the chute. Finally, as a result of previous planning, engineers have designed the constructed bottom width of the newly created chute to be 100 feet rather than 75 feet, and considered with the radius of curvature per channel width, best professional judgment suggests that logjams will not be problematic.

Comment 2. *Why was the access road and chute pathway cleared before the public comment period ended?* **RESPONSE**: Although the Corps had a preferred chute alternative in mind prior to conclusion of the public comment period, no "independent" decision on final chute alignment had been made by the Corps. However, some clearing was occurring in order for the Corps to obtain better information on topography and soil conditions to aid in development of the final design.

February 23, 2006. Troy Gordon, Friends of the Big Muddy.

Comment 1. *The proposed project is directly affecting Mr. Gordon's property, especially since the access road is half way on his property.* **RESPONSE:** The Corps had obtained permission from the USFWS to proceed with initial work and was instructed to "stay right" of existing Refuge signs to avoid impacts on adjacent lands. However, because Mr. Gordon has expressed concern on this issue, the Corps, in consultation with Mr. Gordon, is currently working on temporary and permanent Right of Entry Agreements to address this concern.

Comment 2. *Why was the access road and chute pathway cleared before the public comment period ended?* **RESPONSE:** See above.

Comment 3. *Adjacent property owners were not specifically notified.* **Response:** Adjacent property owners will be specifically notified to solicit their comments before the chute construction proceeds.

Comment 4. *The proposed project will flood adjacent lands, particularly when cuts are made in old berms on refuge land.* **RESPONSE:** Based on aerial photographs, topographic maps, ground truthing and designed berm cuts, adjacent lands will not be impacted by the proposed project. The cuts to be made by the Corps in the old berm will be at the same invert elevation as the existing north and south beaches currently found in this berm. Additionally, these cuts will direct water into the interior of the old chute thereby providing no increased frequency in area flooding.

February 23, 2006. Missouri Department of Natural Resources.

Comment 1. The proposed project will impact 3.04 acres of wetlands. Based on the national and state policies of "no net loss of wetland habitat", the project should include avoidance measures and off set any impacts to wetlands that are unavoidable with in-kind habitat. **RESPONSE:** Concur. The Corps has included avoidance measures by

routing the chute around area wetlands, and for those unavoidable impacts, has included mitigation measures to provide in-kind habitat adjacent to impacted wetlands, during or immediately after, construction.

Comment 2. *The deposition of 900,000 cubic yards of soil directly into the Missouri River over a short period of time could have significant impacts on mussel beds or other sensitive species within the river system.* **RESPONSE:** The deposition of dredged material will be placed within the navigation channel of the Missouri River. The placement of sediment in this location, with swift moving waters and deep bottoms, will minimize adverse affects to in-stream biota as limited numbers of biota have been found in these areas. The sediment that will be added to the river will not obstruct the navigation channel and will be carried downstream where the additional nutrient load can aid in the filter feeding of stream biota. Additionally, the sediment deposition will aid in the creation of additional shallow water and sandbar habitat downstream. The USFWS and the MDC have stated that deposition of dredged material in the navigation channel is desired for the very same reasons stated above. Finally, although the stated concern relates to current in-stream biota, the total amount of dredged material being placed for chute construction is only a very small fraction of that which was historically inputted into the river.

Comment 3. *All conditions of the NWP 27 should be included as part of the proposed project.* **RESPONSE:** Concur. The preliminary determination that was made in the public notice to authorize the proposed work for this project under Nation Wide Permit 27 will be finalized.

March 1, 2006. Missouri Department of Conservation.

Comment 1. *The historic chute location should be used as the site for the proposed project.* **RESPONSE:** This site was ruled out in order to decrease impacts to area wetlands and avoid the cutting of old growth cottonwood trees.

Comment 2. *A shorter and wider chute than that proposed should be considered.* **RESPONSE:** A shorter chute would require a steeper gradient and thereby, increased velocities for natural maintenance purposes. A chute with increased length can provide reduced velocities, greater sinuosity, and increased diversity.

Comment 3. Logjams *may form with the current construction width of 75 feet.* **RESPONSE:** Concur. See comment above.

Comment 4. *The 200-foot cleared path for the chute footprint should be maintained to prevent regrowth of willow and cottonwoods that may hinder erosion of the pilot channel to the design width of 200 feet.* **RESPONSE:** Based on information from previous chute projects, most of the regrowth occurring within the cleared footprint is easily eroded or undercut by the pilot channel. These inputs provide a valuable habitat type referred to as in-stream woody debris. Some tree regrowth does hinder erosion of the channel but this provides a more natural condition for the chute and is preferred. Additionally, the majority of regrowth that does become well established has tended to be above the high water mark and, has not presented a problem in chute meander and formulation.

Vandenberg, Matthew D NWK

From: Pointer, James K NWK
Sent: Thursday, January 19, 2006 1:17 PM
To: Vandenberg, Matthew D NWK
Subject: RE: Jameson Island JD determination

Matt,

The soils map and the map of the potential alignments for the Jameson Chute are not legible, however, if your estimate of 3.04 acres of wetland impacts for the Jameson Island chute project is based on NRCS soil survey data and U.S. Fish and Wildlife Service NWI mapping then we would be in general concurrence with your preliminary determination. Please note that this is not an approved wetland determination, and that a formal wetland delineation would need to be performed in accordance with the.1987 manual in order for us to be able to make an approved determination.

Kenny

-----Original Message-----
From: Vandenberg, Matthew D NWK
Sent: Thursday, January 19, 2006 7:26 AM
To: Pointer, James K NWK
Subject: Jameson Island JD determination

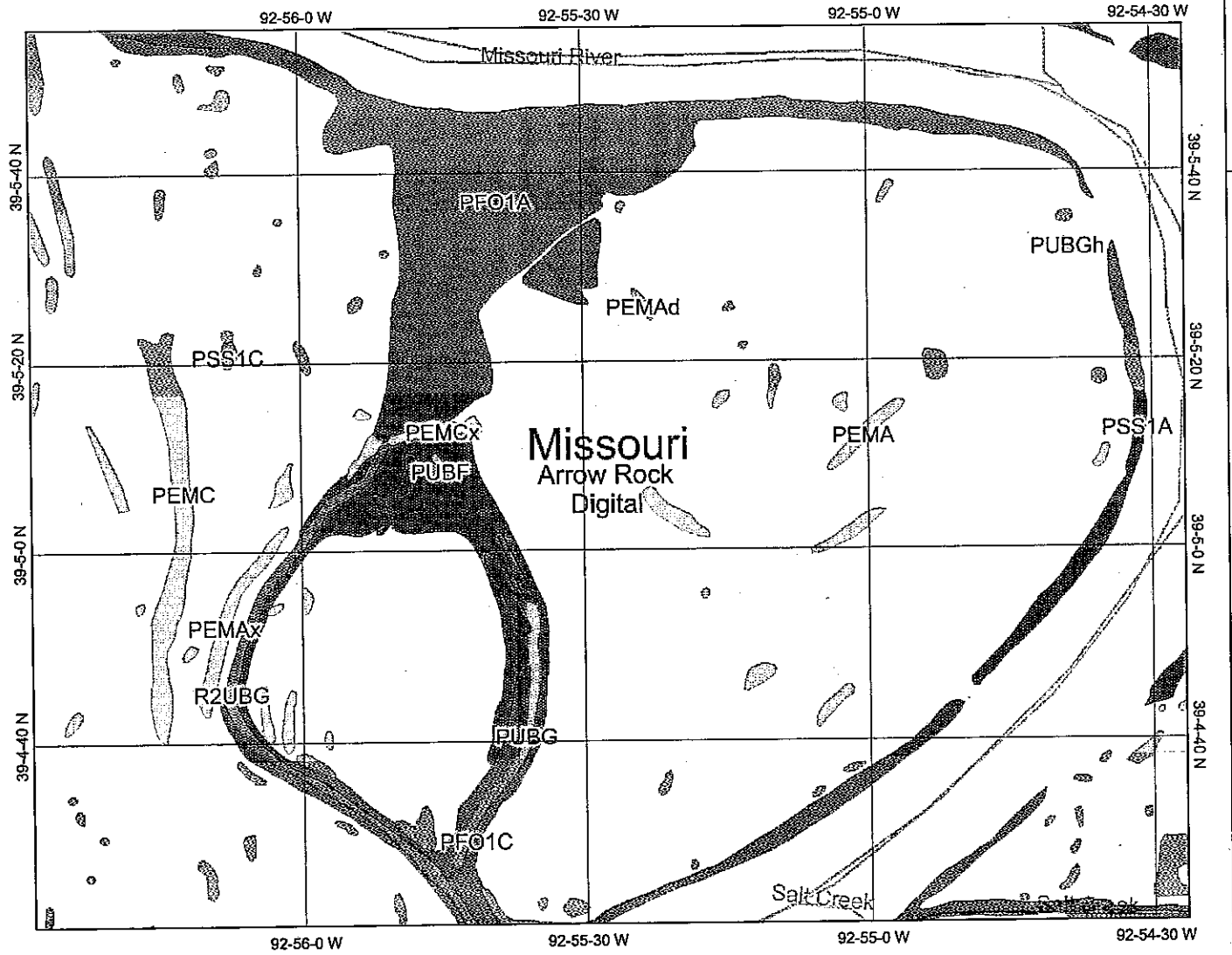
Kenny,
I'm getting ready to prepare a Public Notice for the Jameson Island (Big Muddy National Fish and Wildlife Refuge) Chute Construction Site. In reviewing aerial photos, USFWS NWI maps, NRCS soil survey data, and GIS data where we placed the proposed chute over the NWI map, we have determined that approximately 3.04 acres of wetlands occur along the alignment of the chute and access area. I have provided the maps in PDF for your information. The first map is the NWI wetlands map, followed by the overlay with a delineation of wetlands types and acreages, then the soils map which is somewhat difficult to read, but contains soils types that are rarely to occasionally flooded. The last two maps are chute alignments (Option 1 is preferred) and a map showing existing levees.

PM-PR request your concurrence with this preliminary determination.

I understand that you are busy but if you could turn this around quickly, It would be greatly appreciated. Thanks in advance.

Matthew Vandenberg
Corps of Engineers
Kansas City District Office
PM-PR
816-983-3146

Jameson Island

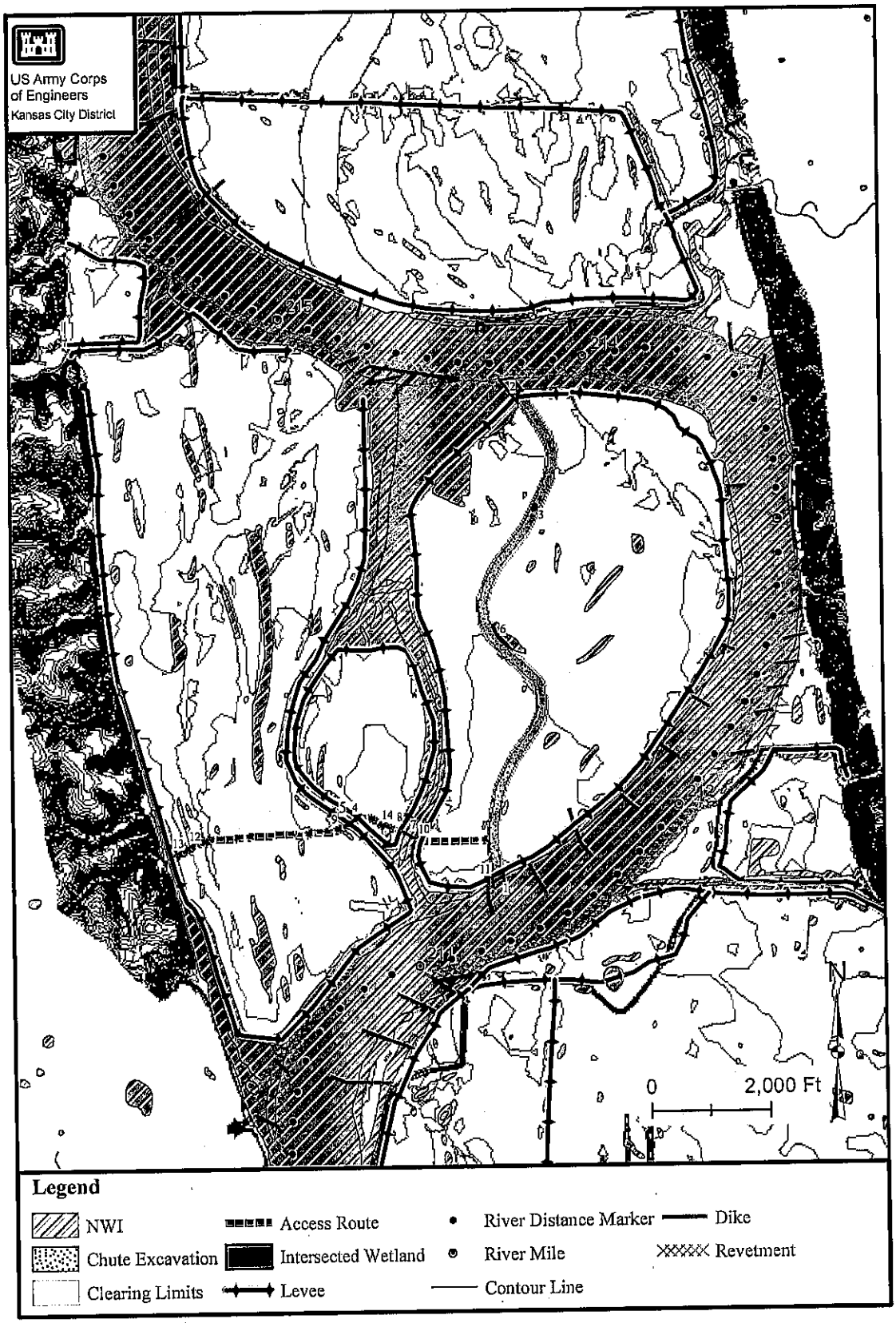


Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- CONUS Cities
- CONUS USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Waterbodies
- NHD Streams
- Canadian Waterbodies
- CONUS Counties 100K
- Urban Areas 300K
- CONUS States 100K
- South America
- North America

Map center: 39° 5' 8" N, 92° 55' 28" W

Scale: 1:27,127


US Army Corps
of Engineers
Kansas City District
N
0
2,000 Ft
Legend
NWI
Chute Excavation
Clearing Limits
Access Route
Intersected Wetland
Levee
River Distance Marker
River Mile
Contour Line
Dike
Revetment

Access Total	0.2090	(acres)
Chute Clearing Total	2.8287	(acres)

Map Label	ATTRIBUTE	Acres Intersected	Square Feet Intersected	Activity
1	R2UBH	0.483494031	21061	Clearing
2	PFO1A	1.549196511	67483	Clearing
3	PEMA	0.161799816	7048	Clearing
4	PFO1A	0.025688705	1119	Access (Temporary)
5	R2UBG	0.02187787	953	Access (Temporary)
6	PEMA	0.266069789	11590	Clearing
7	PUBG	0.033976125	1480	Access (Temporary)
8	PFO1C	0.028236915	1230	Access (Temporary)
9	PFO1A	0.030463728	1327	Access (Temporary)
10	PFO1C	0.026905418	1172	Access (Temporary)
11	PFO1A	0.368158861	16037	Clearing
12	PEMC	0.011616162	506	Access (Temporary)
13	PEMCx	0.000505051	22	Access (Temporary)
14	PEMA	0.029706152	1294	Access (Temporary)
	Total	3.0377		

Saline

Legend **Locator Map**

County Boundaries

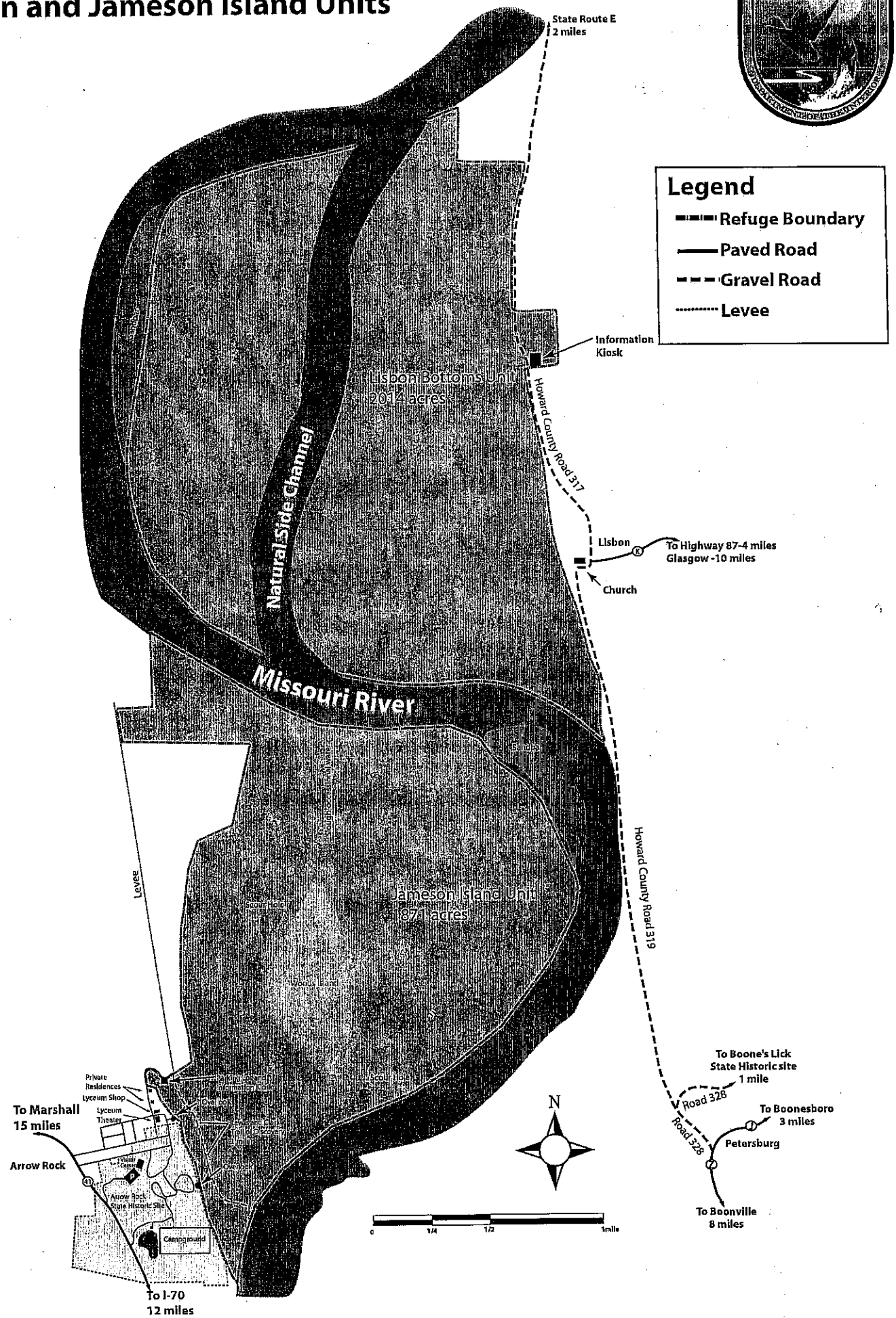
Incorporated Areas

- City
- Town
- Village
- Census Designated Place
- Other

SSURGOII Soil Map

- Bremer Silt Loam, Rarely Flooded (Br)
- Dameron Silt Loam, 0 to 3 Percent Slopes, Occasionally Flooded (10A)
- Grable Very Fine Sandy Loam, Loamy Substratum, Rarely Flooded (13)
- Haynie Silt Loam, Occasionally Flooded (Hn)
- Haynie Silt Loam, Rarely Flooded (24)
- Haynie-Waldron Complex, Occasionally Flooded (26)
- Hodge Loamy Fine Sand, Occasionally Flooded (Ho)
- Knox Silt Loam, 14 to 30 Percent Slopes, Severely Eroded (KnE3)
- Knox Silt Loam, 5 to 9 Percent Slopes (KnC)
- Leslie Silt Loam, 2 to 5 Percent Slopes (37B)
- Leta Silty Clay, Occasionally Flooded (Le)
- Leta Silty Clay, Occasionally Flooded (40)
- Macksburg Silt Loam, 1 to 4 Percent Slopes (43B)
- Menfro Silt Loam, 14 to 30 Percent Slopes (MnE)
- Menfro Silt Loam, 14 to 35 Percent Slopes (53F)
- Menfro Silt Loam, 3 to 9 Percent Slopes (53C)
- Menfro Silt Loam, 3 to 9 Percent Slopes, Eroded (53C2)
- Menfro Silt Loam, 5 to 9 Percent Slopes (MnC)
- Menfro Silt Loam, 9 to 14 Percent Slopes, Eroded (53D2)
- Menfro Silt Loam, 9 to 14 Percent Slopes, Severely Eroded (MnD3)
- Nodaway Silt Loam, Occasionally Flooded (Nd)
- Nodaway Silt Loam, Occasionally Flooded (63)
- Norris-Rock Land Complex, 10 to 30 Percent Slopes (NoE)
- Pits, Quarries (100)
- Riverwash (Rw)
- Sarpy Loamy Fine Sand, 0 to 4 Percent Slopes, Rarely Flooded (70A)
- Sarpy Sand, Occasionally Flooded (Sa)
- Sibley Silt Loam, 5 to 9 Percent Slopes, Eroded (73C2)
- Waldron Silty Clay, Occasionally Flooded (86)
- Water (W)
- Water, More Than 40 Acres (W)
- Weller Silt Loam, 5 to 9 Percent Slopes, Eroded (90C2)

Big Muddy National Fish and Wildlife Refuge
Lisbon and Jameson Island Units



Vandenberg, Matthew D NWK

From: Vandenberg, Matthew D NWK
Sent: Monday, November 28, 2005 1:18 PM
To: 'tom_bell@fws.gov'; 'barbara_moran@fws.gov'; 'Jane.Epperson@mdc.mo.gov'
Subject: Jameson Island Mitigation Site
Attachments: Jameson Island PIR December 2005.doc

Folks,
Attached is a DRAFT copy of the Project Implementation Report (PIR) for the Jameson Island Mitigation Project for your review and input. Please provide any additional information on T&E species that you deem appropriate for the report and please help in the area of existing conditions (Table 1-1). Chance Bitner in our engineering section has the plan drawings and technical design analysis if you also would like to review these, just let me know.
Thank you very much for your initial review and input on this project.

Matthew Vandenberg
Environmental Resources Specialist; CENWK-PM-PR
Kansas City District, Corps of Engineers
Phone 816-983-3146
FAX 816-426-2142

Vandenberg, Matthew D NWK

From: Jane_Ledwin@fws.gov
Sent: Friday, January 06, 2006 9:32 AM
To: Vandenberg, Matthew D NWK
Cc: Barbara_Moran@fws.gov; Wedge_Watkins@fws.gov; Bitner, Chance J NWK
Subject: Comments on Jameson Island PIR - preliminary draft

Dear Matt -

Thanks for providing a preliminary draft of the PIR for the Jameson Island Chute for our review. I'm sending fairly informal comments at this point because the document needs to be redrafted before it is circulated for comments outside our agencies. While I appreciate the efficiency of boilerplate frameworks for these projects, a chute on a unit of the Fish and Wildlife Service's National Refuge System has fundamental differences from Corp-purchased mitigation sites that are managed by other agencies.
Many of our comments are related to those differences.

Specific Comments:

Title Page - Revise to Jameson Island Chute Construction Site. This will help clarify that the chute, not the site, is the mitigation feature. This revision should be made throughout the document, i.e., Chute Constructions site, not mitigation site.

Section 1.1 Revise to "The Jameson Island Unit of the Big Muddy NFWR was purchased by the U.S. Fish and Wildlife Service in fee title....."

Section 1.1.1 - see above comments regarding mitigation site.

Section 1.1.2 - My understanding of the project includes only chute development, not terrestrial, wetland and prairie habitats. This should be corrected. Last paragraph has several inaccuracies and contradicts previous text that notes the Service purchased the site as a refuge. This needs to be corrected.

1.1.3 Include the Big Muddy NFWR FEIS in the list.

1.1.4 While the mitigation project, in general, includes coordination among the partners, the current chute project was developed by the Corps and the
US Fish and Wildlife Service. USFWS should replace MDC in the text. I'm
unaware of MDC participation of site-specific goals for this project. If this is correct, what was their input? If not, please revise. In addition, in 2007, the refuge will begin development of a full-fledged management plan through their Comprehensive Conservation Plan (CCP) Process which will establish resources goals for this unit. That process involves public input, comment and review.

1.3 This Section needs to be corrected and consistent with previous sections regarding acquisition of the site as a refuge unit, not a Corps mitigation site. In addition, the same is true of Lisbon Bottoms, which is NOT a mitigation project, although some mitigation dollars have gone into shallow water habitat development in this area. Much to the Corps credit, the Lisbon Site and the Jameson Site demonstrate the innovation, flexibility, and opportunities available when Corps river operations works closely with the resources agencies to improve fish and wildlife habitat within Missouri River operations. Much of the chute work and shallow water habitat development on Jameson was done through Corps O&M during unusually high water years.

1.4 Acquisition of Jameson Island was a Service -led effort, not a result of a collective ACT team recommendation. The text should be corrected.
Again, I am not aware of a great deal of MDC involvement. but understand NRCS plans to attend an on-site visit to discuss project features and chute alignment.

2.2.1 - Good opportunity to compare the proposed chute to Lisbon in size, development, complexity, etc. Would also help to characterize the amount of flow through the alternatives at different stages, as well as how often there will be flow in the chute.

2.2.4 - This section needs to be rewritten to reflect that as a unit of the USFWS refuge system, the site is and will be managed for fish and wildlife habitat. The project will allow additional aquatic habitat development that is well beyond the scope of the Service authority, as well as technical expertise and resources.

2.3 - Is there any affect to flood stages by increasing high flow conveyance in this area and also opening up the floodplain? Further, it is not clear how amphibians would benefit through the chute project in that amphibians are not abundant in most areas accessible to fish, which eat the eggs and young. Also, we suggest you include a justification for short-term adverse effects to pallid sturgeon and bald eagle. While both occur in the area, it is unclear what adverse effects you expect.

2.4 - Second to last bullet - Adaptive management is not something that one does "as necessary." It is an overarching process whereby one/a groups formulates an experiment to tests a particularly hypothesis, monitors it, collects data, analyses that data and reformulates the experiment/management based on the results. At this point, most mitigation sites are being management as typical wildlife management areas, although a few sites are trying some new construction or management techniques. To date, very little data has been collected to document effects, and much of that is focused on aquatic habitats, as we have so many questions in that arena, as well as a backlog of restoration work on the river. This is not a criticism, but rather an effort to give the reader as accurate a description as possible of how this project will be managed and "adjusted and necessary." As previously noted, the refuges Comprehensive Conservation Planning process will eventually develop formal goals for the site. Given the purpose of the refuge, i.e., to restore and conserve native habitats and dynamic river processes of the Missouri River, it is entirely possible that there may be not static end point, but rather a suite of riverine and floodplain habitats that occur over the long term.

3.3.2 - The Jameson Unit is located in one of the narrowest parts of the Lower Missouri River valley, unusual in comparison to most of the lower river.

3.5.3 - Big Muddy NFWR has a bird list for this area. Neotropical migratory species are particularly important at this site. While the Species you listed occur there, they are fairly common throughout Missouri, and it would be nice to underscore the greater than average diversity of species (and abundance of some) that occur at the site.

Table 3-2 - delete Eastern Massasauga. Only know extant populations in MO are on Squaw Creek NWR and Swan Lake NWR. Suggest you include records of pallid sturgeon in the area. Contact Wyatt Doyle, USFWS, CMFRO, 573.234.2132, x 111. It's always helpful to include site-specific information when you can.

4.3 - Floodplain soils that ostensibly fall within the category of prime farmland often need to be flood protected to qualify. This may apply to soils at this site, which no longer is levee protected. In addition, the numerous floods of the 1990s significantly reorganized floodplain soils, so historic soil surveys should be used with care.

4.4.1 See previous comment on explaining the adverse effects to aquatic species.

4.4.3 See previous comment regarding amphibians and fish.

4.5 - Please explain what emergent vegetation will colonize this site?
Based on species observed at the Lisbon chute, there can be a great variety of communities that succeed here depending on frequency and depth of flooding. Nonetheless, very few emergent wetlands species are found, much less persist in the dynamic environment of the chute.

4.11 - Good. This is the first mention I've seen of increased floodwater retention. See previous comment on this and suggest you add it to that section.

5.2 - MDC is not the land managing agency for this site, which is owned and operated by the Service. At this point, I think it is premature to assume the Corps will collect Tier 2 monitoring data at this site. The sites for that monitoring have already been chosen. If resources allow, certainly
sites can be added, but that would be in the future. See previous
comments on AM.

5.3 - The Corps would operate and maintain the chute project. The Jameson Unit would be

managed by the Service. See previous comments regarding management plans and revise to better reflect them. Suggest deleting food plot establishment. Delete entire next paragraph.

5.5 - The Act generally does not collectively discuss the details of site/project management. Those are handled primarily through the Corps and the land management agency, in coordination with the USFWS, Ecological Services.

In summary Matt, it's a start. should be easy enough to make these changes. I suggest if you can, tag along on the field trip on the 11th to the site and get an on the ground appreciation for the proposed chute as well as Lisbon bottoms. Thanks for your coordination on this, and hope to see you on the field trip.

Jane Ledwin

****
Jane Ledwin
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
101 Park DeVille Drive
Columbia, Missouri 65203
Phone 573/234-2132, extension 109
email jane_ledwin@fws.gov
****

Vandenberg, Matthew D NWK

From: Vandenberg, Matthew D NWK
Sent: Monday, January 09, 2006 9:09 AM
To: 'wyatt_doyal@fws.gov'
Subject: Pallid sturgeon/Big Muddy NFWR

Wyatt,
Jane Ledwin suggested that I contact you regarding records of pallid sturgeon occurrence at the Big Muddy National Fish and Wildlife Refuge. I am currently working on the Jameson Island Unit Project Implementation Plan for chute construction at the site, and Jane felt it would be helpful to include some site-specific information concerning pallid sturgeon in the report. Could you please provide some input on this? Thanks in advance for your assistance.

Matthew Vandenberg
Environmental Resource Specialist
U.S. Army Corps of Engineers
Kansas City District
816/983-3146

Vandenberg, Matthew D NWK

From: Wyatt_Doyle@fws.gov
Sent: Wednesday, February 01, 2006 1:33 PM
To: Vandenberg, Matthew D NWK
Subject: Lisbon/Jameson pallids

Attachments: Utrup Lisbon Doc.doc

Utrup Lisbon Doc.doc (712 KB)

(See attached file: Utrup Lisbon Doc.doc)

Wyatt J. Doyle
Branch Chief (Corps Operations)

Columbia Fisheries Resources Office (USFWS)
101 Park DeVille Dr.
Columbia, MO 65203
(573) 234-2132 x111
(573) 234-2182 fax

Summary of Pallid Captures for Lisbon and Jameson Islands

Nick Utrup (CMFRO/USFWS)

January, 2006

Since 2002, biologists from the Columbia Fishery Resources Office (CMFRO) have collected 12 pallid sturgeon from inside and around the Lisbon Chute/Jameson Island Complex (Figure 1). This area is located on the Arrow Rock, Salt Creek, and Saline City bends of the Missouri River (between river mile 210.6 and 219.9), near the towns of Arrow Rock and Lisbon, Missouri.

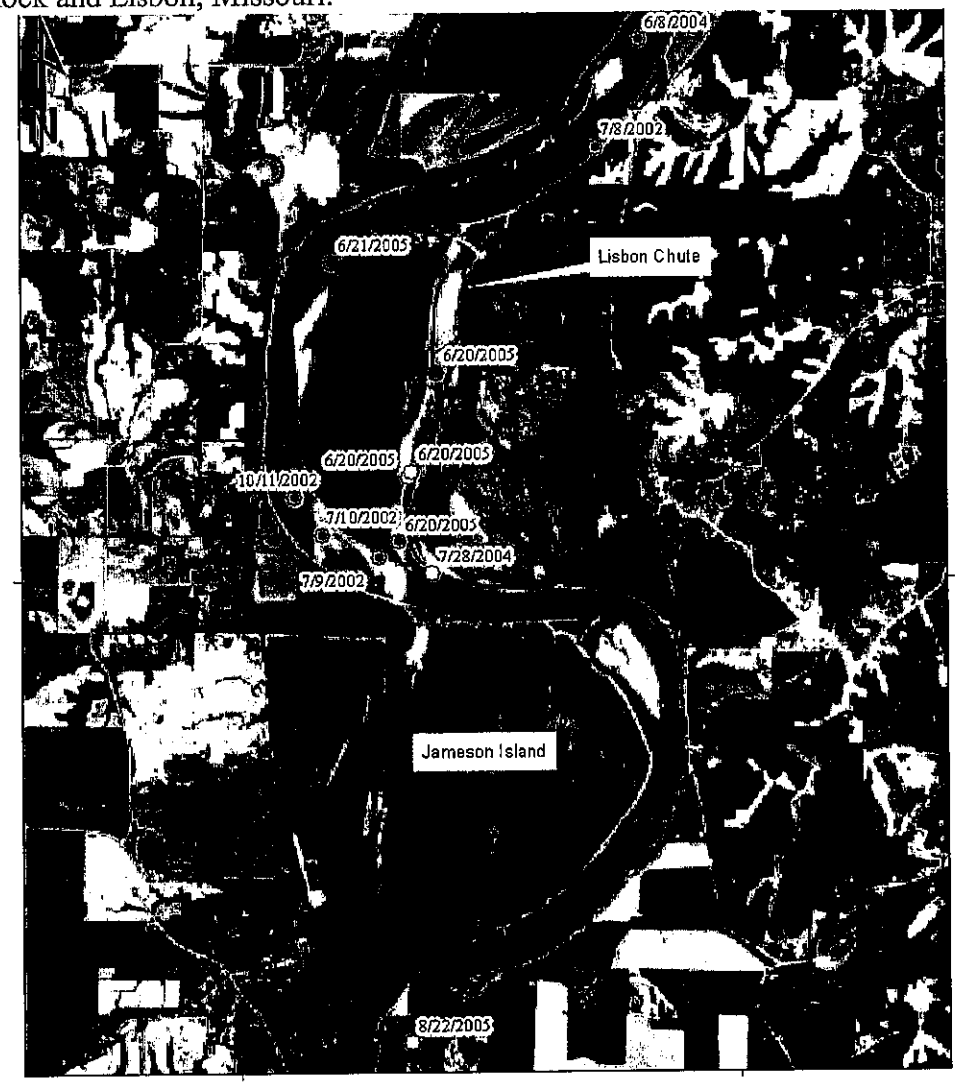


Figure 1. Aerial photo (near infrared) of the Lisbon Chute/Jameson Island Complex obtained from the National Agricultural Imagery Program, flown on 24 June 2003. Points are individual pallid captures identified by date and gear type.

Male pallid sturgeon have been estimated to mature at five to seven years of age (≈ 700 mm) and females at the ages of 12-15 (≈ 900 mm). Pallids collected inside and around the Lisbon Chute/Jameson Island Complex ranged from 231 to 683 mm with a mean length of 459.83 mm (Table 1). Relative to those collected in other bends of the Lower Missouri River, pallids collected in this area were young, possibly indicating that this area acts as a staging habitat for juveniles. This is most likely because of the physical nature of the area. Lisbon Chute and Jameson Island are located within the tightest combination of bends (Arrow Rock, Salt Creek, and Saline City) on the entire Missouri River. This tight configuration of bends combined with the development of the Lisbon Chute has resulted in a large assortment of shallow water habitat, which has been shown to be ideal habitat for juvenile pallid sturgeon.

Table 1. Related information about pallid sturgeon captured from inside and around the Lisbon Chute/Jameson Island Complex. Data collected by CMFRO from 2002 through 2005.

Set Date	River Mile	Length (mm)	Weight (g)	Gear	Temperature	Turbidity (NTU)	Wild?	Stock Date*
7/8/2002	219.0	522	470	OT16	-	-	No	4/25/2002
7/9/2002	215.0	301	50	OT16	-	-	No	4/11/2002
7/10/2002	215.0	231	20	OT16	-	-	Yes	
10/11/2002	215.0	382	173	OT16	-	-	No	4/11/2002
6/8/2004	219.0	683	1160	OT16	23.0	950	Yes	
7/28/2004	214.9	365	-	TN	25.7	162	No	6/25/2003
6/20/2005	215.0	390	185	OT16	25.4	258	No	-
6/20/2005	215.6	393	195	TN	26.1	404	No	-
6/20/2005	215.6	631	855	TN	26.1	-	Yes	
6/20/2005	216.6	535	470	TN25	26.5	404	Yes	
6/21/2005	217.2	488	360	TN25	26.1	352	No	7/16/2003
8/22/2005	210.6	597	-	TN	27.0	615	Yes	

* Non-wild pallid sturgeon were stocked near Booneville, Missouri

Vandenberg, Matthew D NWK

From: Vandenberg, Matthew D NWK
Sent: Thursday, January 26, 2006 10:11 AM
To: 'Friends of Big Muddy'
Cc: Bitner, Chance J NWK
Subject: RE: Proposed Chute at Jameson Island

Mr. Gordon,
Thank you for your email concerning the proposed construction of a chute at the Jameson Island Unit of the FWS Big Muddy Refuge. I have included an internet link http://www.nwk.usace.army.mil/regulatory/public_notices.htm to the Public Notice which provides details on the proposed project, and is intended to solicit comments from interested parties such as you. After your review of this Notice, the Corps would appreciate any additional comments that you may still have concerning the proposed project.

The intent of the proposed chute is to provide additional fish and wildlife habitat while minimizing any impacts to existing habitat, especially wetlands and avoiding any impacts to private property.

Although I am not a hydraulic engineer (I have cc'd Chance Bitner of the Corps who could provide additional information on this aspect of the project), I believe the chute would not affect flood stage or would slightly decrease the frequency and duration of flooding in areas adjacent to the chute as "flood" waters would occupy the newly constructed chute and be contained, to a point, within its banks during increases in Missouri River flow. The Corps has also taking steps in the design of the chute to allow flood waters to escape the chute to surrounding low level areas to aid in the restoration of wetlands, through strategic cuts in old berms on Refuge land.

I applaud your efforts in enrolling your land in the Wetland Reserve Program, and can ensure you that the chute creation will have no adverse affects on your land. As such, I would recommend that you proceed with your tree planting management plan using the trees you and the Missouri Department of Conservation Resource Forester have selected and currently have on order.

Again, thank you for your interest in the proposed chute project, and if you have any additional concerns or comments, please do not hesitate to contact me.

Matthew Vandenberg
Environmental Resource Specialist
US Army Corps of Engineers
Kansas City District

-----Original Message-----
From: Friends of Big Muddy [mailto:friends@friendsofbigmuddy.org]
Sent: Thursday, January 26, 2006 8:59 AM
To: Vandenberg, Matthew D NWK
Subject: Proposed Chute at Jameson Island
Importance: High

Mr. Vandenberg:

I own land adjacent to the Jameson Island Unit of the Big Muddy National Wildlife Refuge near Arrow Rock. In talking to refuge staff, I have learned that the U.S. Army Corps of Engineers has begun survey work to cut a chute on refuge property across the river bend. I understand that you are in charge of this project.

I am very concerned that I have not been consulted about this work. Because I am an adjacent landowner, this will directly impact my land. It has the

potential to dewater wetland cells on my land, as well as increase the frequency and duration of flooding on my land. Please contact me immediately and let me know the full scope of what the U.S. Army Corps of Engineers is considering with this project.

Note that I am not necessarily opposed to the project, just very concerned that I have not been consulted. My land is in the floodplain, so any work that you do will affect it. The land is enrolled in the Wetland Reserve Program, and I expect it to flood on occasion. However, I am in the process of planting trees on the area in coordination with a Missouri Department of Conservation Resource Forester as part of the creation of a management plan for my land. Changing the flooding regime will alter what species are appropriate to plant. The trees are already on order for planting this spring, so I need to know immediately if I need to attempt to cancel the delivery.

Please contact me immediately with full details of your plans.

Troy Gordon
9705 N Rt. E
Harrisburg, MO 65256
537-424-9051
mailto:tgordon@friendsofbigmuddy.org

PUBLIC NOTICE

US Army Corps
of Engineers
Kansas City District

Permit No. 200600659
Issue Date: January 25, 2006
Expiration Date: February 24, 2006

REC'D JAN 27 2006

30-Day Notice

JOINT PUBLIC NOTICE: This public notice is issued jointly with the Missouri Department of Natural Resources, Water Pollution Control Program. The Department of Natural Resources will use the comments to this notice in deciding whether to grant Section 401 water quality certification. Commenters are requested to furnish a copy of their comments to the Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102.

APPLICANT: Kansas City District, Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106-2896

PROJECT LOCATION (As shown on the attached drawings): The proposed project is located in and along the right over bank of the Missouri River, between river miles (RM) 214.3 and 211.3. The Jameson Island Unit occupies 1,871 acres of land on the western floodplain. This land is owned and managed by the U.S. Fish and Wildlife Service as part of the Big Muddy National Fish and Wildlife Refuge. The site is located just northeast of Arrow Rock, Missouri in Sections 19 and 20, Township 50 North, Range 18 West, in Saline County, Missouri.

AUTHORITY: The Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project as authorized in the Water Resources Development Acts of 1986 and 1999 (Public Law 99-662) and Section 404 of the Clean Water Act (33 USC 1344).

ACTIVITY (As shown on the attached drawings): **PROPOSED WORK:** The U.S. Army Corps of Engineers (USACE) proposes to restore fisheries and wildlife habitat at the Big Muddy National Fish and Wildlife Refuge, at a site known as the Jameson Island Unit. Aerial maps of the Jameson Island Unit area indicate that there was a historic chute traversing the area. This chute diverted water from the Missouri River near RM 214.6 and returned it back near RM 211. Placement of revetments and closure dikes during the construction of the Missouri River Bank Stabilization and Navigation Project (BSNP) greatly reduced flows through the chute and resulted in aquatic habitat degradation. At present, this historic chute is not connected to the river. This project proposes to reestablish a side channel chute in this general vicinity of the Missouri River and add to the development of Shallow Water Habitat (SWH) in the Missouri River.

DRAWINGS: The attached drawings provide location details of the proposed project.

PROPERTY ADJACENT TO PROJECT AREA: Property adjacent to the project site is owned by the USFWS. Property owners adjacent to the proposed project area will be notified directly to inform them of the project and to request their comments.

CULTURAL RESOURCES: The proposed project has been reviewed in compliance with the National Historic Preservation Act of 1966 (Public Law 89-665). Background research that consisted of a review of the National Register of Historic Places (NRHP), a site records search, and a review of historic channel and shipwreck maps was conducted for the project. No historic properties listed in the NRHP were identified in the project area. A search of records with the Missouri State Historic Preservation Officer (SHPO) identified no previously recorded archeological sites or historic structures in the immediate area. A number of shipwrecks including the Sam Gaty (1867), the New Sam Gaty (1868), Plow Boy No. 2 (1877), Tom Rodgers (1887), and Benton No. 2 (1895) are mapped south-southeast of the proposed project area. Arrow Rock Historic Site is situated along the bluff line approximately one mile south-southeast of the project area.

An accreted land study conducted by the Corps found that the entire project area consists of accreted land, with most of the accretion occurring since 1879. Because the project area consists of recently accreted land and no archeological sites, historic structures, or shipwrecks have been recorded in the project area, it is unlikely that the project would impact historic properties or sites that may be eligible for inclusion on the NRHP. Therefore, we have determined that an archeological survey of the project area is not warranted. SHPO concurred with this determination in a letter dated January 10, 2006. However, the Corps will take into consideration any information from affiliated Native American tribes or the public on any sites or traditional cultural properties that may be of concern.

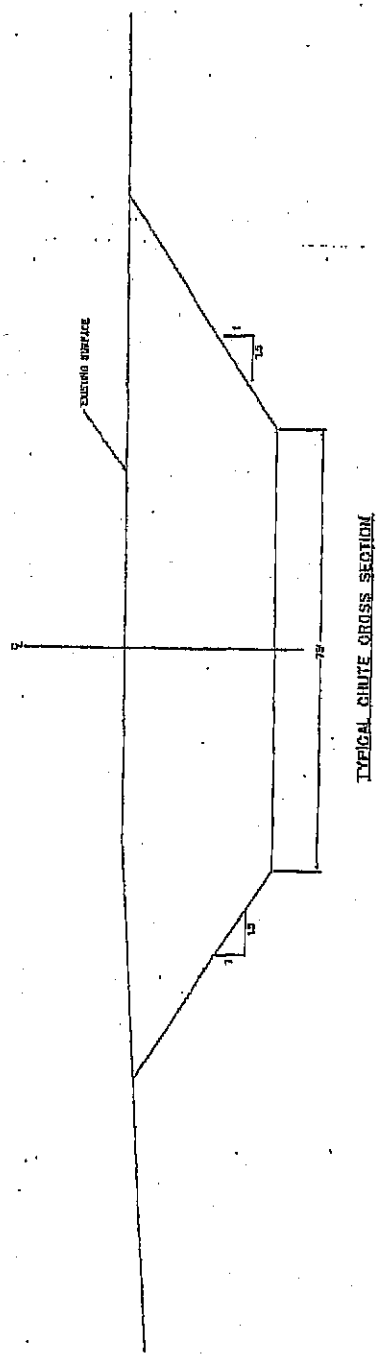
ENDANGERED SPECIES: In compliance with the Endangered Species Act, a preliminary determination has been made that the described work is not likely to adversely affect species designated as threatened or endangered or adversely modify or destroy critical habitat. In order to complete our evaluation of this activity, comments are being solicited from the U.S. Fish and Wildlife Service and other interested agencies and individuals.

FLOODPLAINS: This activity is being reviewed in accordance with Executive Order 11988, Floodplain Management, which discourages direct or indirect support of floodplain development whenever there is a practicable alternative. By this public notice, comments are requested from individuals and agencies that believe the described work will adversely impact the floodplain.

WATER QUALITY CERTIFICATION: Section 401 of the Clean Water Act (33 USC 1341) requires that all discharges of dredged or fill material must be certified by the appropriate state agency as complying with applicable effluent limitations and water quality standards. This public notice serves as an application to the state in which the discharge site is located for certification of the discharge. The discharge must be certified before Department of the Army authorization can be issued. Certification, if issued, expresses the state's opinion that the discharge will not violate applicable water quality standards.

PRELIMINARY SECTION 404(b)(1) EVALUATION REPORT
PUBLIC NOTICE NO. 200600659

	YES	POTENTIAL EFFECTS	NO
I. Physical Effects			
A. Potential destruction of wetlands.....		X	
B. Impact on water column.....		X	
C. Covering of benthic communities.....		X	
II. Chemical-Biological Interactive Effects			X
A. Adverse effect of chemical constituents on water column.....			X
B. Adverse effect of chemical constituents on benthos			
III. Applicable Water Quality Standards			
A. Will activity be in conformance with applicable standards?.....	X		
IV. Selection of Disposal Sites			
A. Impacts of fill material on chemical, physical, and biological integrity of aquatic ecosystem.....		X	
B. Have the needs for the proposed activity been considered?.....	X		
C. Have alternatives been considered?.....	X		
D. Impacts on water uses at the proposed disposal site		X	
E. Have mitigation measures to minimize harmful effects been considered?.....	X		
V. Contamination of Fill Material			X
A. Contamination of fill material if from a land source.....			
VI. Mixing Zone			X
A. Have mixing zone determinations been established for each disposal site?.....			
VII. Impacts to Navigation			X
A. Impairment to maintenance of navigation.			
B. Economic impact on navigation and anchorage.....			X
VIII. Public Participation and Coordination			
A. Will a public interest review be conducted?.....	X		



TYPICAL CHUTE CROSS SECTION

NOT TO SCALE

"The U.S. Fish and Wildlife Service has reviewed the subject proposal and accompanying information and determined that the activity as described is not likely to adversely affect federally listed species or designated critical habitat. Consequently, this concludes section 7 consultation. Please contact the Missouri Department of Conservation (573/522-4115) for state listed species of concern"

Field Supervisor — Date 2/7/06

CULTURAL RESOURCE ASSESSMENT
Section 106 Review

CONTACT PERSON/ADDRESS

Matthew Vandenberg
Corps of Engineers, Kansas City District
Environmental Resources Section
601 East 12th Street, Room 843
Kansas City, Missouri 64106

C:

Joe Cothern, EPA
Tim Meade, COE/KC

PROJECT:

Kansas City District Application No. 200600659, Jameson Island Unit

FEDERAL AGENCY

COE

COUNTY:

SALINE

The State Historic Preservation Office has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:

☐ After review of initial submission, the project area has a low potential for the occurrence of cultural resources. A cultural resource survey, therefore, is not warranted.

☒ Adequate documentation has been provided (36 CFR Section 800.11). There will be "no historic properties affected" by the current project.

☐ An adequate cultural resource survey of the project area has been previously conducted. It has been determined that for the proposed undertaking there will be "no historic properties affected".

For the above checked reason, the State Historic Preservation Office has no objection to the initiation of project activities. PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK ARE CHANGED, A BORROW AREA IS INCLUDED IN THE PROJECT, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of compliance with Section 106 of the National Historic Preservation Act, as amended.

By: Mark A. Miles
Mark A. Miles, Deputy State Historic Preservation Officer

January 30, 2006
Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176, Jefferson City, Missouri 65102
For additional information, please contact Judith Deel, (573) 751-7862. Please be sure to refer to the project number: 003-SA-06

CULTURAL RESOURCE ASSESSMENT
Section 106 Review

CONTACT PERSON/ADDRESS

Timothy Meade
Cultural Resource Manager
Corps of Engineers, Kansas City District
700 Federal Building
Kansas City, Missouri 64106-2896

C:

Joe Cothern, EPA

PROJECT:

Jameson Island Wetlands Restoration Project

FEDERAL AGENCY

COE

COUNTY:

SALINE

The State Historic Preservation Office has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:

☐ After review of initial submission, the project area has a low potential for the occurrence of cultural resources. A cultural resource survey, therefore, is not warranted.

☒ Adequate documentation has been provided (36 CFR Section 800.11). There will be "no historic properties affected" by the current project.

☐ An adequate cultural resource survey of the project area has been previously conducted. It has been determined that for the proposed undertaking there will be "no historic properties affected".

For the above checked reason, the State Historic Preservation Office has no objection to the initiation of project activities. PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK ARE CHANGED, A BORROW AREA IS INCLUDED IN THE PROJECT, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of compliance with Section 106 of the National Historic Preservation Act, as amended.

By: _____ **January 18, 2006**
Mark A. Miles, Deputy State Historic Preservation Officer **Date**

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176, Jefferson City, Missouri 65102
For additional information, please contact Judith Deel, (573) 751-7862. Please be sure to refer to the project number: 002-SA-06

DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106-2896

December 12, 2005

REPLY TO
ATTENTION OF

Environmental Resources Section
Planning Branch

Mr. Mark Miles
Director and Deputy State Historic Preservation Officer
State Historic Preservation Office
Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102-0176

Dear Mr. Miles:

The U.S. Army Corps of Engineers, Kansas City District's Missouri River Fish and Wildlife Project is planning a wetland restoration project on Jameson Island in Saline County. This project is one component of the larger mitigation project that is being conducted at various locations on the Missouri River. The proposed Jameson Island project has not been previously coordinated with your office. The proposed project would include federal funding. This letter initiates Section 106 coordination for this project location.

The proposed project would construct a chute approximately 9630 feet in length to create shallow water habitat, improve aquatic and fisheries habitat, and provide additional connectivity to the Missouri River (Attachment 1 and 2). The chute would be constructed with side slopes of 1.5 horizontal to 1 vertical and would have a construction width of 100 feet. The project would encompass approximately 43.9 acres. Shallow water habitat areas would be developed through excavation and the placement of soil along the right bank. Approximately four shallow habitat areas would be created after the chute meandering has ceased. Two other alternatives had been considered for the proposed project but have since been abandoned for various reasons.

A number of shipwrecks including the Sam Getty (1867), the New Sam Getty (1868), Plow Boy No. 2 (1877), Tom Rodgers (1887), and Benton No.2 (1895) are mapped south-southeast of the proposed project area (Attachment 3). Arrow Rock Historic Site is situated along the bluff line approximately 1.0 mile south-southeast of the project area. The Kansas City District has no information on archeological sites or historic structures that may be situated within the project area. However, an accreted land study conducted by the Corps found that the entire project area consists accreted land, with most of the accretion occurring since 1879 (see Attachment 3).

Given, that the project area consists entirely of recently accreted lands, it is unlikely that the proposed project will impact archeological sites or historic structures. Therefore, we request your concurrence that the proposed project will have no effect on historic properties and that the project proceed with no further consultation from your office. If previously recorded archeological sites or historic structures are present within the proposed project area or your office deems that a survey is warranted, the Corps would conduct any necessary investigations.

In the unlikely event that archeological materials are discovered during construction, work in the area of discovery will cease and the discovery investigated by a qualified archeologist. The findings on the discovery would be coordinated with your office and appropriate federally recognized Native American tribes, if appropriate.

Thank you for your consideration in this matter. If you have any questions or have need of further information please contact me at (816) 983-3138 or at Timothy.M.Meade@usace.army.mil.

Sincerely,

Enclosure

Timothy Meade
Cultural Resource Manager

Vandenberg, Matthew D NWK

From: Repatriation Tribal Historic Preservation Office [pawneeodyssey@yahoo.com]
Sent: Wednesday, February 01, 2006 10:43 AM
To: Vandenberg, Matthew D NWK
Subject: Permit # 200600659

Dear Sir: In regards to this project, (# 200600659), the Pawnee Nation has no objections to the project. Thank you.

Francis Morris
Repatriation Coordinator, THPO
Pawnee Nation of Oklahoma

OMAHA TRIBE OF NEBRASKA

P. O. Box 368
Macy, Nebraska 68039

EXECUTIVE OFFICER
Eleanor Baxter, Chairperson
Orville Cayou, Vice-Chairman
Crystal Appleton, Treasurer
Rodney Morris, Secretary

TRIBAL ADMINISTRATION

(402) 837-5391
FAX (402) 837-5308

MEMBERS
Mitch Parker
Bert Walker
Barry D. Webster

January 31, 2006

Mr. Matthew Vandenberg
US Army Corps of Engineers
Environmental Resource Section
601 East 12th Street, Room 843
Kansas City, Missouri 64106

RE: Permit #200600659

Dear Mr. Vandenberg;

I am writing this letter in regards to the comment letter received by the Omaha Tribe in regards to a response for comment according to the National Historic Preservation Act.

It is our intention to state yes, it is our historical lands. However, if there has been previous disturbance of soil then no response should be required. Also, that if there should or happen to be an inadvertent discovery, your process should immediately be to contact me at the address of this letter.

The contact person will be myself and if you have any other questions, please do not hesitate to contact us at your convenience. I can be reached at (402) 846-5166.

Thank you for your time and attention.

Tony Provost – Historical Preservation Officer

WINNEBAGO TRIBE OF NEBRASKA

P.O. Box 687 • Winnebago, Nebraska 68071 • PH: 402-878-2272 • Fax: 402-878-2963
Web: info@winnebagotribe.com

February 23, 2006

Mathew Vandenberg
US Army Corps of Engineers
Environment Resource Section
601 East 12th Street
Kansas City, Missouri 64106

Re: Permit No. 200600659

Dear Mr. Mathew Vandenberg,

Thank you for your letter. The Cultural Preservation Office would like to inform you that the Winnebago Tribe of Nebraska had no village sites, grave sites, or sacred sites in the area of the proposed construction. If there are cultural properties or human remains discovered in the proposed construction area, can you please notify my office at 402-878-3313. Thank you.

Sincerely,

Emily DeLeon

Emily Lucy De Leon
Temporary Director,
Repatriation and Cultural Preservation Office
(402) 878-3313

PM-PR

TRIBAL HISTORIC PRESERVATION OFFICE

February 21, 2006

US Army Corps of Engineers
Mathew Vandenberg
601 E. 12th St.
Kansas City, MS 64106-2896

RE: Permit No. 200600659

To Whom It May Concern:

The Osage Tribe of Oklahoma has evaluated the above reference sites, and we have determined that the sites could have religious or cultural significance to the Osage Tribe being our former reservation & homeland. However, if construction activities should expose Osage archeological materials, such as bone, pottery, chipped stone, etc., we ask that construction activities cease, and this office be contacted so that an evaluation can be made.

Should you have any questions, you can reach me at (918) 287-5332.

Thank you.

Sincerely,

John C. Shaw
Project Specialist

627 Grandview, Pawhuska, OK 74056, (918) 287-5446, Fax (918) 287-5562

Friends of Big Muddy
PO Box 58
Columbia, MO 65205
friends@friendsofbigmuddy.org
www.friendsofbigmuddy.org

February 23, 2006

Mr. Matthew Vandenberg
U.S. Army Corps of Engineers
Environmental Resource Section
601 E 12th St., Room 843
Kansas City, MO 64106

Comments on Public Notice No. 200600659: Proposed Chute for Jameson Island Unit, Big Muddy National Fish and Wildlife Refuge

Friends of Big Muddy strongly supports the proposed chute for the Jameson Island Unit of the Big Muddy National Fish and Wildlife Refuge. We believe this work will increase the connection of this refuge unit with the Missouri River and help to develop Shallow Water Habitat necessary for many of the aquatic species of the Missouri River.

We concur with the location that was chosen for this chute. While ideally we would have liked to have seen the historic chute reopened, the presence of mature trees in the historic chute location provides a sound rational for locating the chute to the east of the historic chute. We do believe that this chute as designed will quickly begin to develop similar properties to a naturally occurring chute.

We also strongly support the deposition of spoil material into the Missouri River. This will prevent the chute from having spoil piled along the bank. The chute that was constructed at Overton Bottoms North clearly shows that spoil on the bank retards the development of the chute. Not having that spoil along the chute bank will allow the chute to more quickly begin to evolve and function.

We are somewhat concerned the cleared trees from the chute footprint are being placed along the high bank adjacent to the chute alignment. We hope that during flood events, these trees do not wash into the chute channel, forming a logjam and blocking the chute. This was a problem at Overton Bottoms North, although the source of the trees was not from the chute construction.

Finally, we find it extremely disturbing that the access road and chute pathway have already been cleared, before the public notice comment period ends. While we do support the project, if we know of reasons to locate the chute in a different place because of historic sites or other reasons, we know that once the pathway is cleared, the chute is unlikely to be relocated. Similarly, we do have concerns over the pathway of the access road through some areas that function as sloughs during major precipitation events. Had we been able to comment on the access road, we could have suggested other routes, which might have been less damaging to these areas. In the future, we strongly suggest that you allow the public to comment on proposed projects before they are begun so the public's comments can be taken into account when the project is implemented.

Friends of Big Muddy is a group that supports the Big Muddy National Fish and Wildlife Refuge and the Missouri River ecosystem. We have done a number of projects at the Jameson Island Unit of the refuge, including help construct the trail that leads to the Missouri River.

Sincerely,

Janine Orrison
Secretary, Friends of Big Muddy

Vandenberg, Matthew D NWK

From: Troy Gordon [tgordon@friendsofbigmuddy.org]
Sent: Thursday, February 23, 2006 9:44 PM
To: Vandenberg, Matthew D NWK
Cc: Bitner, Chance J NWK
Subject: Comments on Public Notice No. 200500659

February 23, 2006

Troy Gordon
9705 N Rt. E
Harrisburg, MO 65256

Mr. Matthew Vandenberg
U.S. Army Corps of Engineers
Environmental Resource Section
601 E 12th St., Room 843
Kansas City, MO 64106

Mr. Vandenberg:

The following are my comments on Public Notice No. 200500659.

I own land adjacent to the Jameson Island unit of the Big Muddy National Fish and Wildlife Refuge. Any work done on the refuge will have a direct affect on me, especially since my property includes half of the access road for the interior of the refuge unit. Additionally, the project will increase the frequency of flooding of my property

I am appalled that the U.S. Army Corps of Engineers has already constructed the access road and cleared the path for this chute before the public notice comment period has ended. I have consulted two different environmental law attorneys. Both have said it is a clear violation of the National Environmental Policy Act for this work to begin before the comment period has ended. Since clearing the path of the chute before the comment period ends presupposes that the cleared path will be the pathway used, it mocks the purpose of the public comments if the comments were to suggest another pathway for the chute. I have been told by one of the attorneys that I could file an injunction against the Army Corps of Engineers and stop all work on the project if I so desired. That is not my goal, but I still find it very upsetting that the work has already proceeded.

I am also appalled that I did not receive notification of the proposed project until I inquired about it via e-mail after hearing about it from someone else. The public notice clearly states, "Property owners adjacent to the proposed property area will be notified directly to inform them of the project and request their comments" (p. 3). This did not happen. Since I did not receive notification, I suspect that the other two property owners in the river bottoms, Robert Thompson and Evans Properties LP were also not notified. I would strongly suggest that you notify the other two landowners and solicit their comments before this project proceeds.

This lack of notice is especially galling since preliminary plans for the proposed chute show one of the possible pathways as going directly through my land. If that had been the pathway selected, did you intend to notify me at some point, or just show up and begin clearing my land of trees and let me discover it one day when I was there?

It is also my understanding that the U.S. Army Corps of Engineers does not have the authority to trespass on private property without authorization. I own half of the access road that has been used by the U.S. Army Corps of Engineers to access the refuge interior. At no time has my authorization been sought for the U.S. Army Corps of Engineers to trespass on my property for the construction of the access road and clearing of the chute path.
Ironically, I received an e-mail from Mr. Chance Bitner today--almost a month after the clearing was done with many vehicles already using my part of the road--asking me to call him to discuss my property. I am certainly willing to discuss the issue with him and will

contact him on Monday. I have in the past given the U.S. Fish and Wildlife Service complete authorization to enter my property at any time. This authorization does not extend to the U.S. Army Corps of Engineers. By this letter, I am notifying you that you must have written authorization from me to use my road in the future. I am willing to grant the permission for the duration of this project, however, I expect to be asked and have a formal agreement in writing defining the extent of trespass that I am authorizing before you proceed.

I also wish to take issue with a statement made by Mr. Matthew Vandenberg made in an e-mail to me dated January 26, 2006. Mr. Vandenberg stated, "[I] can ensure you that the chute creation will have no adverse affects on your land." He also stated in the e-mail, "I believe the chute would not affect flood stage or would slightly decrease the frequency and duration of flooding in areas adjacent to the chute as "flood" waters would occupy the newly constructed chute and be contained, to a point, within its banks during increases in Missouri River flow." Yet, in the very next sentence, he states, "The Corps has also taking [sic] steps in the design of the chute to allow flood waters to escape the chute to surrounding low level areas to aid in the restoration of wetlands, through strategic cuts in old berms on Refuge land." It does not take a hydrologist to understand if you cut berms and encourage flood waters to escape the chute into low-level areas surrounding the chute, then you are going to increase flooding of land in the river bottoms. True, you have 25 to 44 additional acres to absorb flood waters, but that is minimal acreage compared to the amount of acre-feet of water in the Missouri River during a flood event. Flood waters nearer my land because of the chute are going to increase the frequency of flooding of my land. The refuge land and my property are bisected by numerous chutes and waterways that hold water during major precipitation events and when the river floods. These chutes and waterways quickly fill and flood water moves throughout the area.

Although I am very upset with how the U.S. Army Corps of Engineers has gone about this project, I nonetheless support the creation of this chute. Yes, it will probably increase the flooding of my land. However, my land is enrolled in the Wetland Reserve Program, so increasing the frequency of flooding of the land is not necessarily something I oppose. I do have plans to plant trees on my property this spring, but the trees I am planting for the most part are not going to be harmed by occasional inundations. I need to know about plans so I can chose the best planting spots, but I do support the chute. The proposed chute will help to restore the backwater areas on the Missouri River that were largely eliminated by the U.S. Army Corps of Engineers with the Missouri River Bank Stabilization and Navigation Project.
I strongly support these efforts to recreate this necessary aquatic habitat.

If it were not for the demonstrated hubris of the U.S. Army Corps of Engineers in how this project has been pushed forward, I would have no reservations about it whatsoever. As it is, I think that the two other adjacent landowners need to be notified about the project, and I will discuss with Mr. Bitner access to my land for the duration of this project. Once I have made a written agreement with the U.S. Army Corps of Engineers regarding trespass onto my land, then I do not object to the project continuing.

Sincerely,

Troy Gordon

Vandenberg, Matthew D NWK

From: Don Boos [don.boos@dnr.mo.gov]
Sent: Thursday, February 23, 2006 8:37 AM
To: Vandenberg, Matthew D NWK
Cc: Carl Stevens; Brown, Doyle MVS; Hansen, Rick MVS
Subject: RE: Army Corps of Engineers, Kansas City District, PN06-00659/CEK002684

The Missouri Department of Natural Resources' Water Protection Program has reviewed Public Notice No. PN06-00659/CEK002684 in which the applicant has proposed to restore fisheries and wildlife habitat at the Big Muddy National Fish and Wildlife Refuge, at a site known as the Jameson Island Unit. Aerial maps of the Jameson Island Unit area indicate that there was a historic chute traversing the area. This chute diverted water from the Missouri River near river mile (RM) 214.6 and returned it back near RM 211.

Placement of revetments and closure dikes during the construction of the Missouri River Bank Stabilization and Navigation Project (BSNP) greatly reduced flows through the chute and resulted in aquatic habitat degradation. At present, this historic chute is not connected to the river. This project proposes to re-establish a side channel chute in this general vicinity of the Missouri River and add to the development of Shallow Water Habitat (SWH) in the Missouri River.

The chute restoration and shallow water habitat development at the Big Muddy National Fish and Wildlife Refuge, Jameson Island Unit, includes the construction of a flow-through pilot chute with an initial bottom width of 75 feet (the chute will be designed to erode naturally to a maximum width of 200 feet) in the general area of the historic chute channel. The chute will be approximately 9,730 feet in length. The chute will be constructed with 1.5H on 1V side slopes and the average depth of excavation will be 20 feet. The invert of the chute is to be constructed at –6 Construction Reference Plane (CRP), to create immediate shallow water habitat in the chute, allow the chute to evolve over time, and minimize the bedload entering the chute from the main channel. One rock grade control structure will be placed at –6 CRP to control the invert elevation and chute width near the upper 1/3 point location along the chute length. Approximately 7,000 tons of rock will be placed in the rock grade control structure. Rock placed on the control structure will be consistent with quarry-run rock used for construction and operation and maintenance of the BSNP, i.e., stone fill dikes and revetments. Existing stone and/or pile dikes and revetments along the chute alignment will be notched a minimum of 200-feet to allow future widening of the chute through erosion. It is estimated that approximately 900,000 cubic yards of material will be excavated for the project. The excavated spoil material will be disposed of directly in the Missouri River. Prior to construction, a 200-ft wide path will be cleared along the alignment to allow room for the chute footprint and access lanes. Cleared trees will be placed along the high bank adjacent to the chute alignment. The cleared trees consist of recent growth over the last 10 to 12 years, which are primarily cottonwood and willow trees.

Chute construction will create approximately 25 acres of shallow water habitat immediately after construction, and at least 44 acres after the chute erodes to the design width.

The purpose of the project is to create shallow water habitat by increasing the aquatic habitat with a side channel chute, and returning sediments to the river from recently accreted lands formed by deposits of modern alluvium in and around the dike fields. A preliminary determination has been made that the proposed work would be authorized by Nationwide Permit No. 27, Stream and Wetland Restoration Activities.

A preliminary jurisdictional determination indicated that approximately 3.04 acres of emergent wetlands would be impacted in the proposed project site. The completed project will restore and mitigate the aquatic riverine habitat lost during construction of the BSNP, which resulted in the creation of these emergent wetlands. Approximately 25 to 44 acres of aquatic habitat will be created by the project; therefore, further mitigation will not be required.

The proposed project is located in and along the right over bank of the Missouri River, between RM 214.3 and 211.3. The Jameson Island Unit occupies 1,871 acres of land on the western floodplain. This land is owned and managed by the U.S. Fish and Wildlife Service as part of the Big Muddy National Fish and Wildlife Refuge. The site is located just northeast of Arrow Rock, Missouri, in Sections 19 and 20, Township 50 north, Range 18 west in Saline County, Missouri.

We offer the following comments:

1. While the purpose of the project, creation of shallow water habitat along a major river, is believed to be positive in terms of the overall aquatic environment, we do have some concerns with the loss of wetlands. Wetlands were once a significant component of Missouri's natural heritage, accounting for almost 11 percent of its surface area. Historical wetland losses in Missouri have been significant. This department and other federal and state agencies are directed to implement a policy of no net loss of wetlands in permitting and certification work, and, therefore, the wetlands impact should be avoided or minimized if possible. While 20+ acres of shallow aquatic habitat is being initially created by the project, and the destroyed wetlands were inadvertently created by man as other destructive behavior was underway, it is still the National and State Policies that there be no net loss of our remaining wetlands. Therefore, it is believed that the project should include the avoidance of impacts to these wetlands or construction of not less than 3.04 acres of wetlands as part of this project. The replacement of wetlands with lakes and other forms of habitat is constantly being proposed to these offices and is consistently refused, for consistency it appears this project should be treated the same. Mitigation, particularly for wetlands, must remain "in-kind."

2. The deposition of some 900,000 cubic yards of soil directly into the Missouri River during construction should be reconsidered. While this sum of soil may have been accreted over a period of years within the historic chute and behind the constructed dikes, it would be inadvisable to release this sum of soil into the river over a short period of time as a matter of convenience. Such a release could have a significant impact on mussel beds or other sensitive species within the river system and should be re-evaluated.

3. All conditions of the NWP 27 should be included as part of this project.

Thank you for the opportunity to comment on this proposed project. If you have any questions, please contact Don Boos of the NPDES Permits and Engineering Section at (573) 751-1404.

DB:pc

MISSOURI DEPARTMENT OF CONSERVATION

Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180

Telephone: 573/751-4115 ▲ Missouri Relay Center: 1-800-735-2966 (TDD)

JOHN D. HOSKINS, Director

March 1, 2006

Matthew Vandenberg
U.S. Army Corps of Engineers
Environmental Resources Section
601 East 12th Street
Room 843
Kansas City, MO 64106

Dear Mr. Vandenberg,

Thank you for the opportunity to comment on the proposed Jameson Island mitigation project (Public Notice Number 200600659) in Saline County, Missouri. The Missouri Department of Conservation (MDC) is the state agency responsible for fish, forest and wildlife resources in Missouri. MDC participates in project review when projects might affect those resources. MDC comments and recommendations are for your consideration and are offered to reduce impacts to natural resources in the project area.

Although the project description and map indicates a historic chute occurred on the area, from near RM 214.6 to near RM 211, the proposed new chute is in a different location. This proposed location does not appear to be a former chute. During the 1990s scouring occurred adjacent (landward) to the upstream opening of the historic chute. Since historic and recent high water events have demonstrated a tendency for the river to create a new chute at this location, perhaps this area may be more appropriate location for the new chute.

If the historic chute area is not selected for the new chute, perhaps a shorter but wider chute can be created by moving the pilot channel riverward of the proposed site. The proposed chute will be approximately 9,730 feet (1.84 miles) in length with a maximum width of 200 feet, creating about 44 acres of shallow water habitat. A chute one half the length (4,865 feet or 0.92 mile) and twice the width (400 feet) would create the same amount of shallow water habitat - 44 acres. Perhaps, a shorter and wider chute would create better shallow water habitat since lower water velocities would occur at higher river stages.

A logjam may form with such a narrow (75 feet) designed pilot channel. MDC recommends that engineers and hydrologists analyze the probability of logjam formation at the head of the chute and subsequent impact on shallow water habitat creation if such an event occurs.

The proposed work will clear a 200-foot wide path for the chute footprint, but there is no mention of maintaining this cleared area after the pilot channel is dug. The applicant might consider measures to prevent the regrowth of willow and cottonwood trees in this cleared area. Regrowth can be quite rapid and might hinder erosion of the pilot channel to achieve the design width (200 feet) of the new chute.

Sincerely,

STUART MILLER
POLICY COORDINATOR

c: Patricia Conger, MODNR WPCP, Rick Hansen, USFWS, Carl Stephens, USEPA,

Vandenberg, Matthew D NWK

From: Stuart Miller [Stuart.Miller@mdc.mo.gov]
Sent: Friday, February 24, 2006 3:21 PM
To: Vandenberg, Matthew D NWK
Cc: patricia.conger@dnr.mo.gov; stevens.carl@epamail.epa.gov; Hansen, Rick MVS; Tim Grace; Dale Humburg
Subject: Jameson Island PN 200600659

Matthew Vandenberg
U.S. Army Corps of Engineers
Environmental Resources Section
601 East 12th Street
Room 843
Kansas City, MO 64106

Dear Mr. Vandenberg,

Thank you for the opportunity to comment on the proposed Jameson Island mitigation project (Public Notice Number 200600659) in Saline County, Missouri. The Missouri Department of Conservation (MDC) is the state agency responsible for fish, forest and wildlife resources in Missouri.
MDC participates in project review when projects might affect those resources. MDC comments and recommendations are for your consideration and are offered to reduce impacts to natural resources in the project area.

Although the project description and map indicates a historic chute occurred on the area, from near RM 214.6 to near RM 211, the proposed new chute is in a different location. This proposed location does not appear to be a former chute. During the 1990s scouring occurred adjacent (landward) to the upstream opening of the historic chute. Since historic and recent high water events have demonstrated a tendency for the river to create a new chute at this location, perhaps this area may be more appropriate location for the new chute.

If the historic chute area is not selected for the new chute, perhaps a shorter but wider chute be created by moving the pilot channel riverward of the proposed site. The proposed chute will be approximately 9,730 feet (1.84 miles) in length with a maximum width of 200 feet, creating about 44 acres of shallow water habitat. A chute one half the length (4,865 feet or 0.92 mile) and twice the width (400 feet) would create the same amount of shallow water habitat - 44 acres. Perhaps, a shorter and wider chute would create better shallow water habitat since lower water velocities would occur at higher river stages.

A logjam may form with such a narrow (75 feet) designed pilot channel.
MDC recommends that engineers and hydrologists analyze the probability of logjam formation at the head of the chute and subsequent impact on shallow water habitat creation if such an event occurs.

The proposed work will clear a 200-foot wide path for the chute footprint, but there is no mention of maintaining this cleared area after the pilot channel is dug. The applicant might consider measures to prevent the regrowth of willow and cottonwood trees in this cleared area. Regrowth can be quite rapid and might hinder erosion of the pilot channel to achieve the design width (200 feet) of the new chute.

A hard copy is in the mail.

C: Patricia Conger, MODNR WPCP, Rick Hansen USFWS, Carl Stevens, USEPA,

Stuart Miller
Policy Coordinator
Missouri Department of Conservation
PO Box 180
Jefferson City, MO 65102-0180

573-522-4115 x3378 (voice)
573-526-4495 (FAX)

PUBLIC NOTICE

US Army Corps
of Engineers
Kansas City District

Permit No. 200600659
Issue Date: January 25, 2006
Expiration Date: February 24, 2006

30-Day Notice

JOINT PUBLIC NOTICE: This public notice is issued jointly with the Missouri Department of Natural Resources, Water Pollution Control Program. The Department of Natural Resources will use the comments to this notice in deciding whether to grant Section 401 water quality certification. Commenters are requested to furnish a copy of their comments to the Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102.

APPLICANT: Kansas City District, Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106-2896

PROJECT LOCATION (As shown on the attached drawings)**:** The proposed project is located in and along the right over bank of the Missouri River, between river miles (RM) 214.3 and 211.3. The Jameson Island Unit occupies 1,871 acres of land on the western floodplain. This land is owned and managed by the U.S. Fish and Wildlife Service as part of the Big Muddy National Fish and Wildlife Refuge. The site is located just northeast of Arrow Rock, Missouri in Sections 19 and 20, Township 50 North, Range 18 West, in Saline County, Missouri.

AUTHORITY: The Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project as authorized in the Water Resources Development Acts of 1986 and 1999 (Public Law 99-662) and Section 404 of the Clean Water Act (33 USC 1344).

ACTIVITY (As shown on the attached drawings)**: PROPOSED WORK:** The U.S. Army Corps of Engineers (USACE) proposes to restore fisheries and wildlife habitat at the Big Muddy National Fish and Wildlife Refuge, at a site known as the Jameson Island Unit. Aerial maps of the Jameson Island Unit area indicate that there was a historic chute traversing the area. This chute diverted water from the Missouri River near RM 214.6 and returned it back near RM 211. Placement of revetments and closure dikes during the construction of the Missouri River Bank Stabilization and Navigation Project (BSNP) greatly reduced flows through the chute and resulted in aquatic habitat degradation. At present, this historic chute is not connected to the river. This project proposes to reestablish a side channel chute in this general vicinity of the Missouri River and add to the development of Shallow Water Habitat (SWH) in the Missouri River.

The chute restoration and shallow water habitat development at the Big Muddy National Fish and Wildlife Refuge, Jameson Island Unit, includes the construction of a flow-through pilot chute with an initial bottom width of 75 feet (the chute will be designed to erode naturally to a maximum width of 200 feet) in the general area of the historic chute channel. The chute will be approximately 9,730 feet in length. The chute will be constructed with 1.5H on 1V side slopes and the average depth of excavation will be 20 feet. The invert of the chute is to be constructed at –6 Construction Reference Plane (CRP), to create immediate shallow water habitat in the chute, allow the chute to evolve over time, and minimize the bedload entering the chute from the main channel. One rock grade control structure will be placed at –6 CRP to control the invert elevation and chute width near the upper 1/3 point location along the chute length. Approximately 7,000 tons of rock will be placed in the rock grade control structure. Rock placed on the control structure will be consistent with quarry-run rock used for construction and operation and maintenance of the BSNP, i.e. stone fill dikes and revetments. Existing stone and/or pile dikes and revetments along the chute alignment will be notched a minimum of 200-ft to allow future widening of the chute through erosion. It is estimated that approximately 900,000 yd^3 of material will be excavated for the project. The excavated spoil material will be disposed of directly in the Missouri River. Prior to construction, a 200-ft wide path will be cleared along the alignment to allow room for the chute footprint and access lanes. Cleared trees will be placed along the high bank adjacent to the chute alignment. The cleared trees consist of recent growth over the last 10 to 12 years, which are primarily cottonwood and willow trees. Chute construction will create approximately 25 acres of shallow water habitat immediately after construction, and at least 44 acres after the chute erodes to the design width.

The purpose of the project is to create shallow water habitat by increasing the aquatic habitat with a side channel chute, and returning sediments to the river from recently accreted lands formed by deposits of modern alluvium in and around the dike fields.

A preliminary determination has been made that the proposed work would be authorized by Nationwide Permit No. 27, Stream and Wetland Restoration Activities.

WETLANDS: A preliminary jurisdictional determination indicated that approximately 3.04 acres of emergent wetlands would be impacted in the proposed project site. The completed project will restore and mitigate the aquatic riverine habitat lost during construction of the BSNP, which resulted in the creation of these emergent wetlands. Approximately 25 to 44 acres of aquatic habitat will be created by the project; therefore, further mitigation will not be required.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) OF 1968, as amended: The Corps has made a preliminary determination that the proposed project would not result in significant degradation of the human environment and therefore the proposed project would support a Finding of No Significant Impact (FONSI). The Corps will utilize comments received in response to this Public Notice to complete our evaluation of the project for compliance with the requirements of NEPA, and other Federal, state, and local regulations, including this review for project compliance with the requirements of Section 404 of the Clean Water Act. The Corps has made a preliminary determination that the project as proposed would not be contrary to the public interest and is in compliance with the Section 404(b)(1) Guidelines.

DRAWINGS: The attached drawings provide location details of the proposed project.

PROPERTY ADJACENT TO PROJECT AREA: Property adjacent to the project site is owned by the USFWS. Property owners adjacent to the proposed project area will be notified directly to inform them of the project and to request their comments.

CULTURAL RESOURCES: The proposed project has been reviewed in compliance with the National Historic Preservation Act of 1966 (Public Law 89-665). Background research that consisted of a review of the National Register of Historic Places (NRHP), a site records search, and a review of historic channel and shipwreck maps was conducted for the project. No historic properties listed in the NRHP were identified in the project area. A search of records with the Missouri State Historic Preservation Officer (SHPO) identified no previously recorded archeological sites or historic structures in the immediate area. A number of shipwrecks including the Sam Gaty (1867), the New Sam Gaty (1868), Plow Boy No. 2 (1877), Tom Rodgers (1887), and Benton No. 2 (1895) are mapped south-southeast of the proposed project area. Arrow Rock Historic Site is situated along the bluff line approximately one mile south-southeast of the project area.

An accreted land study conducted by the Corps found that the entire project area consists of accreted land, with most of the accretion occurring since 1879. Because the project area consists of recently accreted land and no archeological sites, historic structures, or shipwrecks have been recorded in the project area, it is unlikely that the project would impact historic properties or sites that may be eligible for inclusion on the NRHP. Therefore, we have determined that an archeological survey of the project area is not warranted. SHPO concurred with this determination in a letter dated January 10, 2006. However, the Corps will take into consideration any information from affiliated Native American tribes or the public on any sites or traditional cultural properties that may be of concern.

ENDANGERED SPECIES: In compliance with the Endangered Species Act, a preliminary determination has been made that the described work is not likely to adversely affect species designated as threatened or endangered or adversely modify or destroy critical habitat. In order to complete our evaluation of this activity, comments are being solicited from the U.S. Fish and Wildlife Service and other interested agencies and individuals.

FLOODPLAINS: This activity is being reviewed in accordance with Executive Order 11988, Floodplain Management, which discourages direct or indirect support of floodplain development whenever there is a practicable alternative. By this public notice, comments are requested from individuals and agencies that believe the described work will adversely impact the floodplain.

WATER QUALITY CERTIFICATION: Section 401 of the Clean Water Act (33 USC 1341) requires that all discharges of dredged or fill material must be certified by the appropriate state agency as complying with applicable effluent limitations and water quality standards. This public notice serves as an application to the state in which the discharge site is located for certification of the discharge. The discharge must be certified before Department of the Army authorization can be issued. Certification, if issued, expresses the state's opinion that the discharge will not violate applicable water quality standards.

PUBLIC INTEREST REVIEW: The decision to issue authorization will be based on an evaluation of the probable impact including the cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, esthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and, in general, the needs and welfare of the people. The evaluation of the impact of the activity on the public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency under authority of Section 404(b) of the Clean Water Act (33 USC 1344). The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny an authorization for this proposal. To make this decision, comments are used to address impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COMMENTS: This notice is provided to outline details of the above-described activity so this District may consider all pertinent comments prior to determining if issuance of an authorization would be in the public interest. Any interested party is invited to submit to this office written facts or objections relative to the activity on or before the public notice expiration date. Comments both favorable and unfavorable will be accepted and made a part of the record and will receive full consideration in determining whether it would be in the public interest to issue the Department of the Army authorization. Copies of all comments, including names and addresses of commenters, may be provided to the applicant. Comments should be mailed to the address shown on page 1 of this public notice.

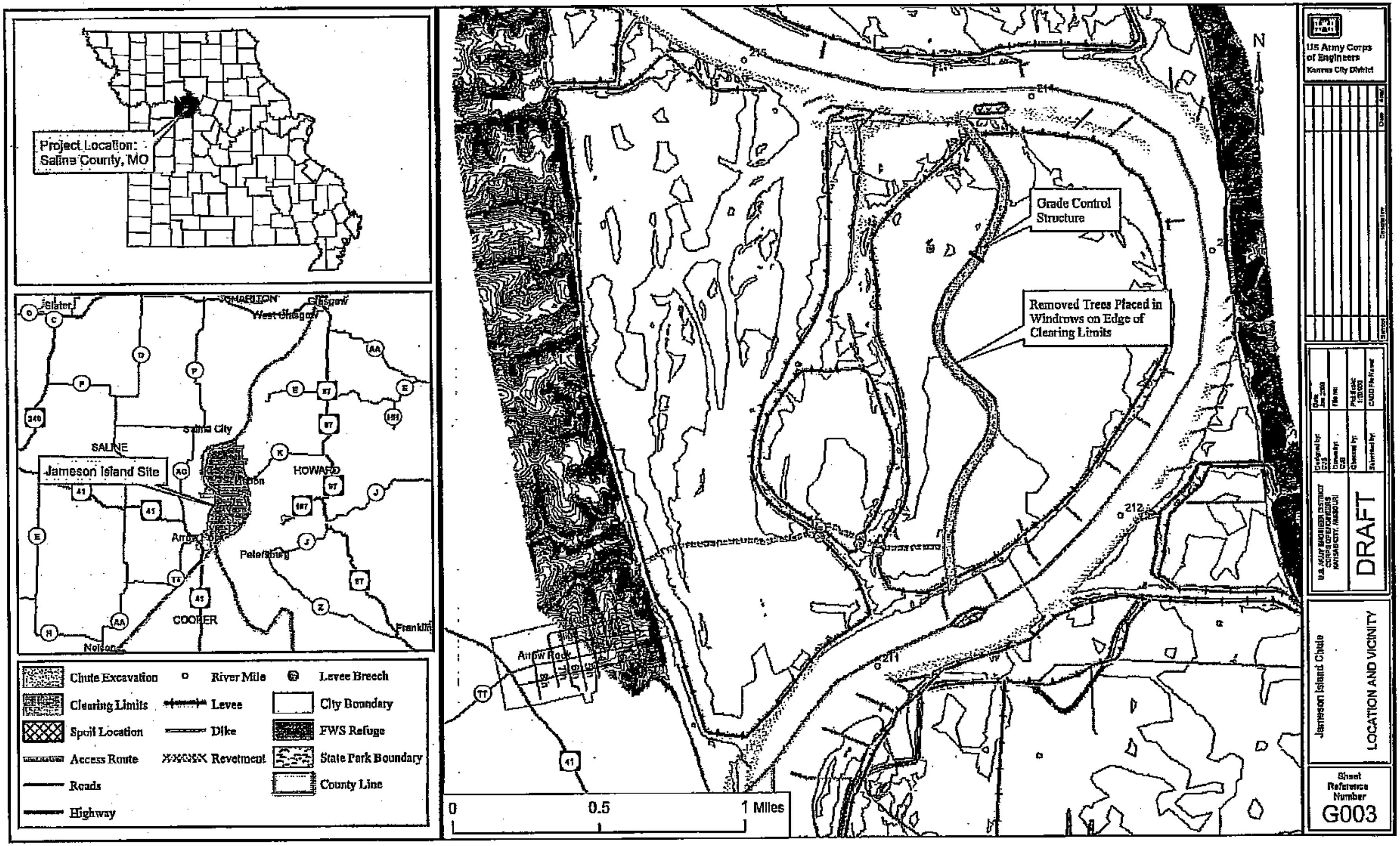
PUBLIC HEARING: Any person may request, in writing, prior to the expiration date of this public notice, that a public hearing be held to consider this application. Such requests shall state, with particularity, the reasons for holding a public hearing.

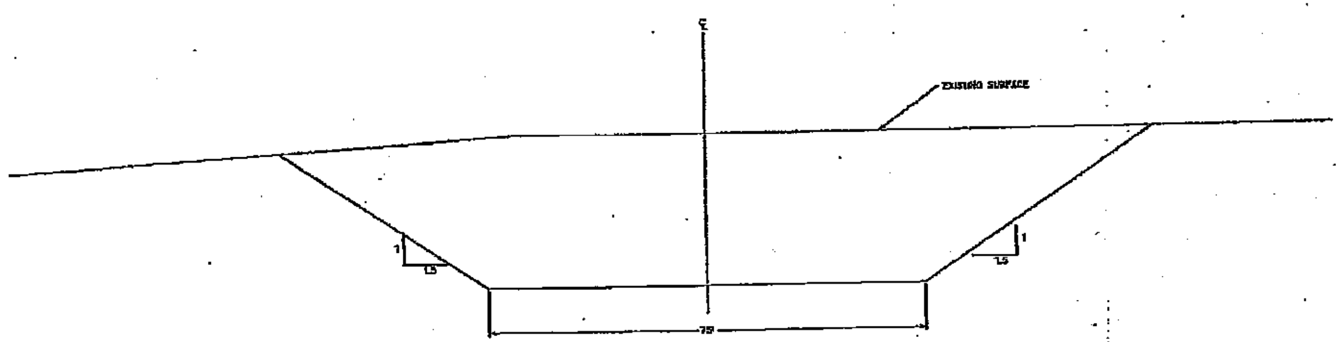
ADDITIONAL INFORMATION: Additional information about this application may be obtained by contacting Mr. Matthew Vandenberg, U.S. Army Corps of Engineers, Environmental Resources Section, 601 East 12th Street, Room 843, Kansas City, Missouri 64106, at telephone 816-983-3146, (FAX 816-426-2142) or via e-mail at matthew.d.vandenberg@usace.army.mil. All comments to this public notice should be directed to the above address.

NOTICE TO EDITORS: This notice is provided as background information for your use in formatting news stories. This notice is not a contract for classified display advertising.

PRELIMINARY SECTION 404(b)(1) EVALUATION REPORT
PUBLIC NOTICE NO. 200600659

	YES	POTENTIAL EFFECTS	NO
I. Physical Effects			
A. Potential destruction of wetlands.....		X	
B. Impact on water column.....		X	
C. Covering of benthic communities.....		X	
II. Chemical-Biological Interactive Effects			
A. Adverse effect of chemical constituents on water column.....			X
B. Adverse effect of chemical constituents on benthos			X
III. Applicable Water Quality Standards			
A. Will activity be in conformance with applicable standards?.....	X		
IV. Selection of Disposal Sites			
A. Impacts of fill material on chemical, physical, and biological integrity of aquatic ecosystem.....		X	
B. Have the needs for the proposed activity been considered?.....	X		
C. Have alternatives been considered?.....	X		
D. Impacts on water uses at the proposed disposal site		X	
E. Have mitigation measures to minimize harmful effects been considered?.....	X		
V. Contamination of Fill Material			
A. Contamination of fill material if from a land source.....			X
VI. Mixing Zone			
A. Have mixing zone determinations been established for each disposal site?.....			X
VII. Impacts to Navigation			
A. Impairment to maintenance of navigation.			X
B. Economic impact on navigation and anchorage.....			X
VIII. Public Participation and Coordination			
A. Will a public interest review be conducted?.....	X		


Project Location:
Saline County, MO
Jameson Island Site
SALINE
HOWARD
COOPER
Slater
West Glasgow
Glasgow
Saline City
Petersburg
Franklin
Nelson
Chute Excavation
River Mile
Levee Breech
Clearing Limits
Levee
City Boundary
Spoil Location
Dike
FWS Refuge
Access Route
Revetment
State Park Boundary
Roads
County Line
Highway
Grade Control Structure
Removed Trees Placed in Windrows on Edge of Clearing Limits
Arrow Rock
N
215
214
213
212
211
0
0.5
1 Miles
US Army Corps of Engineers
Kansas City District
DRAFT
Jameson Island Chute
LOCATION AND VICINITY
Sheet Reference Number
G003



TYPICAL CHUTE CROSS SECTION

NOT TO SCALE

US Army Corps of Engineers Kansas City District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

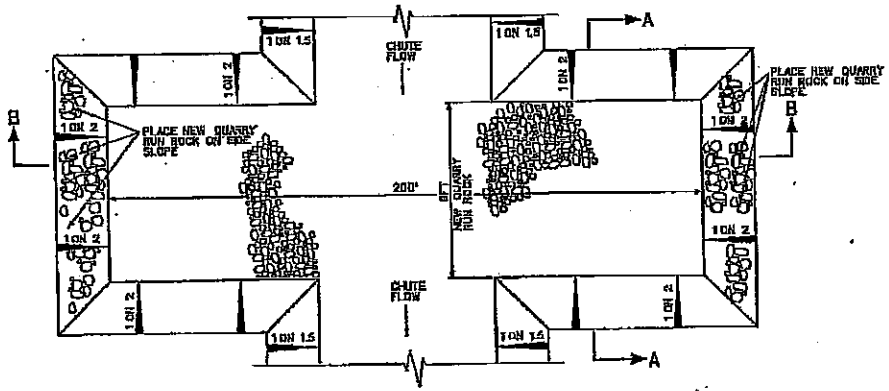
DRAFT

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

TYPICAL CROSS SECTION

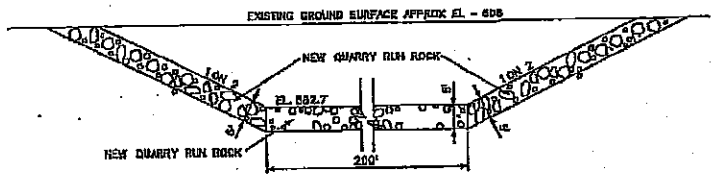
Sheet reference number

CG301

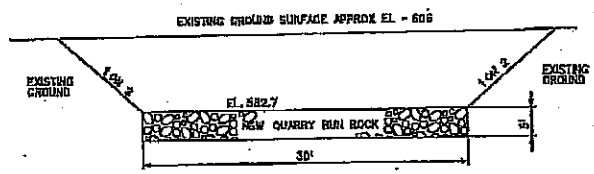


CONTROL STRUCTURE STATION 68+20

NOT TO SCALE



SECTION B-B



SECTION A-A

SEE TYPICAL CHUTE PROFILE

US Army Corps of Engineers Kansas City District

DRAFT

CONTROL STRUCTURES

Sheet reference number

CC501

THOMPSON & MITCHELL
ATTORNEYS AT LAW
ATTN: WILLIAM RANDOLPH WEBER
200 NORTH THIRD STREET
ST. CHARLES, MO 63301

MISSOURI DEPARTMENT OF CONSERVATION
POLICY COORDINATION
BOB ZEIHMER
P.O. BOX 180
JEFFERSON CITY, MO 65102-0180

U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES, Room 208
ECOLOGICAL SERVICES
101 PARK DEVILLE DR, SUITE A
COLUMBIA, MO 65203

COMMANDER (OAN)
EIGHTH COAST GUARD DISTRICT
501 MAGAZINE STREET
NEW ORLEANS, LA 70130-3396

KIM SILAGY
P.O. BOX 25
BRUSH PRAIRIE, WA 98606

HON. JOHN C. STOUFFER
PRESIDING COMMISSIONER
COUNTY COURTHOUSE, ROOM 101
MARSHALL, MO 65340

MISSOURI DEPARTMENT OF NATURAL RESOURCES
ATTN: PAT CONGER
P.O. BOX 176
JEFFERSON CITY, MO 65101

ENVIRONMENTAL PROTECTION AGENCY
WATER RESOURCES PROTECTION BRANCH
ATTN: JASON DANIELS
901 N. 5TH
KANSAS CITY, KS 66101

THE KANSAS CITY STAR
DAVID GOLDSTEIN
MISSOURI CORRESPONDENT
1729 GRAND AVENUE
KANSAS CITY, MO 64108

JANICE LORRAIN
ORC
P.O. Box 1814
AVA, MO 65608-1814

U.S. Fish and Wildlife Service
ATTN: Susan Blackford
315 Houston, Suite E
Manhattan, KS 66502

Osage Nation
Jim Gray
P.O. Box 779
Pawhuska, OK 74056

KEN MIDKIFF
OZARK CHAPTER SIERRA CLUB
1007 N. COLLEGE, SUITE 1
COLUMBIA, MO 65201-4794

Cheyenne River Sioux Tribe
of South Dakota
Harold C. Frazier, Chairman
P.O. Box 590
Eagle Butte, SD 57625

McKINNEY ASSOCIATES
LEON E. McKINNEY, P.E.
1323 BENTLEY PLACE DRIVE
CHERSTERFIELD, MO 63005-4491

U.S. ARMY ENGINEER DISTRICT
MEMPHIS
ATTN: REGULATORY BRANCH-CEMVM-CO-R
167 N. MAIN STREET, ROOM B202
MEMPHIS, TN 38103-1894

NATURAL RESOURCES CONSERVATION SERVICE
JOHN L. BAKER
4549 STATE ROAD H
FULTON, MO 65251-5465

DREDGE AMERICA
9555 NW HIGHWAY N
KANSAS CITY, MO 64153

American Rivers
POSTMASTER
315 MAIN
JEWELL, KS 66949

A.C. HOYLE COMPANY
ATTN: A.C. HOYLE
BOX 580
IRON MOUNTAIN, MI 49801-0580

AMERENUE
ATTN: MARK JORDON
P.O. BOX 780
JEFFERSON CITY, MO 65102

AMERICAN COMMERCIAL MARINE FLEETING
AMERICAN COMMERCIAL BARGE LINES
700 E. DAVIS STREET
ST. LOUIS, MO 63111-3637

ATLANTIC-MEECO, INC.
1501 EAST GENE STIPE BLVD.
McALESTER, OK 74501

BIG RIVER CONSTRUCTION COMPANY
115 N 10TH STREET
NEBRASKA CITY, NE 68410-0277

DOCK HARDWARE & MARINE FABRICATION
P.O. BOX 489
THOMASTON, CT 06787-0489

CARGO CARRIERS
P.O. BOX 765
COLUMBIA, IL 62236

COALITION FOR THE ENVIRONMENT
6267 DELMAR BLVD.
ST. LOUIS, MO 63130

COMMANDER (OAN), EIGHTH COAST GUARD DISTRICT
HALE BOGGS FEDERAL BUILDING
501 MAGAZINE STREET
NEW ORLEANS, LA 70130-3396

DEMOCRAT NEWS
P.O. BOX 100
MARSHALL, MO 65340

DIRECTOR, ADVISORY COUNCIL ON HISTORIC
PRESERVATION
OLD POST OFFICE BUILDING
1100 PENNSYLVANIA AVENUE NW, ROOM 809
WASHINGTON, DC 20004

FEDERAL EMERGENCY MANAGEMENT AGENCY-
REGION VII
MITIGATION DIVISION
2323 GRAND BOULEVARD, ROOM 900
KANSAS CITY, MO 64108-2670

FEDERAL ENERGY REGULATORY COMMISSION
230 S. DEARBORN STREET, ROOM 3130
CHICAGO, IL 60604

GATES CONSTRUCTION CORP
P.O. BOX 030127
2747 RICHMOND TERRACE
STATEN ISLAND, NY 10303

HARCRO, INC.,
A DIVISION OF ARB, INC.
P.O. BOX 3429
CONROE, TX 77305-3429

INTERNATIONAL DOCK PRODUCT, INC
FRANK TURK, VICE PRESIDENT
3101 S.W. 25TH STREET BAY 100
PEMBROKE PARK, FL 33009

KEN STRICKLAND
WATER STRUCTURES UNLIMITED
P. O. BOX 206
CARLOTTA, CA 95528

KING FIBER
ATTN: TERRY NORIEGA
6439 E. 30TH STREET
INDIANAPOLIS, IN 46219

LEIGH HENRY
HUNTON AND WILLIAMS
1900 K STREET NW
WASHINGTON, DC 20006

MACZUK INDUSTRIES, INC.
P.O. BOX 198
NEW HAVEN, MO 63068

MATERIALS INTERNATIONAL
STEVE KULP
4501 CIRCLE 75 PARKWAY, SUITE E5370
ATLANTA, GA 30339

MIDWEST CONSTRUCTION COMPANY
406 N 22ND STREET
NEBRASKA CITY, NE 68410

MISSOURI DEPARTMENT OF CONSERVATION
ATTN: POLICY COORDINATION
P.O. BOX 180
JEFFERSON CITY, MO 65102-0180

MOKAN REGIONAL COUNCIL
1302 FARAON STREET
ST. JOSEPH, MO 64501

MR. DAVID PENTZIEN
PENTZIEN, INC.
6969 GROVER STREET
OMAHA, NE 68106

NATIONAL PARK SERVICE - MIDWEST REGION
ATTN: REGIONAL DIRECTOR
601 RIVERFRONT DRIVE
OMAHA, NE 68102-4226

REVETMENT SYSTEMS
P.O. BOX 518
HUMBLE, TX 77347

RO CONTRACTING COMPANY
P.O. BOX 26
MAYO, FL 32066

SEA TECHNOLOGY, LTD.
RHONDA WILKINS
P.O. BOX 489
GLOUCESTER, VA 23061

SHOREMASTER, INC.
1 SHOREMASTER DRIVE, P.O. BOX 358
FERGUS FALLS, MN 56537

STEPHEN W. PARKER
S. W. PARKER & ASSOCIATES
12321 CHERRY STREET
KANSAS CITY, MO 64145

TECHNIDOCK, INC.
CHARLES H. SIMOLA, PRESIDENT
P.O. BOX 334
SPECULATOR, NY 12164

ALAN S. CALDWELL
8601 RIGGS
OVERLAND PARK, KS 66212

AMERICAN COMMERCIAL LINES, INC.
P.O. BOX 610, 1701 E. MARKET STREET
JFFERSONVILLE, IN 47130

BLASKE MARINE SERVICE
P.O. BOX 117
ALTON, IL 62002

DIXIE CARRIERS, INC.
BOX 1537
HOUSTON, TX 77251

HONORABLE TODD TIAHRT
5457 SUMMER LEAF LANE
ALEXANDRIA, VA 22312-3293

J. FERRELL
#59 SHERWOOD HARBOR
PORTAGE DES SIOUX,, MO 63373

JIM GALLAGHER
864 GRANDUER
SEBASTIAN, FL 32958-8800

JOE HYDE
PO BOX 15301
KANSAS CITY, MO 64106-0301

KAW VALLEY ENGINEERING
1333 NORTHEAST BARRY ROAD
KANSAS CITY, MO 64155

KIM SILAGY
P.O. BOX 25
BRUSH PRAIRIE, WA 98606

MARINA & DOCK SUPPLY, INC.
3367 EUCHEE CHAPEL RD
SPRING CITY, TN 37381-6271

MIKE FARLEY
175 QUINDARO
FLORISSANT, MO 63034

MS. ANDREA WEISS
2332 SEVEN PINES DRIVE
ST. LOUIS, MO 63146

RALPH J. KIEFFER, ATTORNEY AT LAW
834 SW FILLMORE ST.
TOPEKA, KS 66606

SCOTT D. DYE
2222 BLUFF BLVD
COLUMBIA, MO 65201-0102

SENATOR JIM TALENT
U. S. SENATE
WASHINGTON, DC 20510

SUN TRANSPORTATION COMPANY
P.O. BOX 442, ROUTE B
BOONVILLE, MO 65233

TROY GORDON
P.O. BOX 58
COLUMBIA, MO 65205-0058

WYATT PHILLIPS
15290 HIGHWAY 135
BOONVILLE, MO 65233

Crow Creek Sioux Tribe
of South Dakota
Duane Big Eagle, Chairman
P.O. Box 50
Fort Thompson, SD 57339

Oglala Sioux Tribe
of South Dakota
John Yellow Bird Steele, President
P.O. Box H
Pine Ridge, SD 57770

Three Affiliated Tribes
of North Dakota
Tex Hall, Chairman
404 Frontage Road
New Town, ND 58763

Ho-Chunk Nation of Wisconsin
George Lewis, President
P.O. Box 667
Black River Falls, WI 54615

Iowa Tribe of Kansas
and Nebraska
Lewis DeRoin, Chairman
3345 B Thrasher Road
White Cloud, KS 66094-4028

Kickapoo Tribe of Oklahoma
Danny Kaskaske, Chairman
P.O. Box 70
McCloud, OK 74851

Prairie Band Potawatomi Nation
Zachariah Pahmahmie, Chairman
Government Center
16281 Q Road
Mayette, KS 66509

Santee Sioux Tribe of Nebraska
Robert Trudell, Chairman
108 Spirit Lake Avenue West
Niobrara, NE 68760-6605

Winnebago Tribe of Nebraska
John Blackhawk, Chairman
P.O. Box 687
Winnebago, NE 68071

Sac and Fox Tribe of the
Mississippi in Iowa
Homer Bear, Chairman
349 Meskwaki Road
Tama, IA 52339-9629

E. Bernadette Huber, Tribal Chairman
Iowa Tribe of Oklahoma
Route 1, Box 721
Perkins, OK 74059

Kickapoo Tribe of Kansas
Steve Cadue, Chairperson
P.O. Box 271
Horton, KS 66439

Sac and Fox Nation of Oklahoma
Kay Rhoads, Principal Chief
Route 2, Box 246
Stroud, OK 74079

Spirit Lake Tribe
of North Dakota
Valentino White, Sr., Chairman
P.O. Box 359
Fort Totton, ND 58335

Yankton Sioux Tribe
of South Dakota
Madonna Archambeau, Chairwoman
P.O. Box 248
Marty, SD 57361

Cheyenne-Arapaho Tribes
of Oklahoma
Robert Tabor, Chairman
P.O. Box 38
Concho, OK 73022

Kickapoo Traditional Tribe of Texas
Raul Garza, Chairman
HC 1, Box 9700
Eagle Pass, TX 78852

Sac and Fox Nation of Missouri
Sandra Keo, Chairperson
305 N. Main Street
Hiawatha, KS 66434

ENVIRONMENTAL PROTECTION AGENCY
MR. CARL STEVENS
901 NORTH 5TH
KANSAS CITY, KS 66101

COMMANDER
U.S. COAST GUARD GROUP
UPPER MISSISSIPPI RIVER
300 MAIN STREET, SUITE 500
KEOKUK, IA 52632

MAGNOLIA MARINE TRANSPORT CO.
C/O CAPTAIN LESTER CRUSE
P.O. BOX 308
VICKSBURG, MS 39181

HyPower, The Power Pedestal Company
Beth Tindle
900 North Owalla
Claremore, OK 74017

LAWRENCE EICHLER
ROUTE 1, BOX 357
LINCOLN, MO 65338

U.S. Coast Guard
CWO Paul Putkey
300 Main St, Suite 500
Keokuk, IA 52632

U.S. Coast Guard
Lt. Fred Stipkovits
1222 Spruce Street, Ste 8
St. Louis, MO 63103

Delaware Tribe
Larry Joe Brooks, Chief
220 NW Virginia Avenue
Bartlesville, OK 74003

Delaware Nation
Bruce Gonzales, President
PO Box 825
Anadarko, OK 73005

Fort Sill Apache Tribe of Oklahoma
Jeff Houser, Chairman
Route 2, Box 121
Apache, OK 73006

Jicarilla Apache Nation
Claudia Vigil-Muniz, President
PO Box 507
Dulce, NM 87528

Apache Tribe of Oklahoma
Alonzo Chalepah, Chairman
PO Box 1220
Anadarko, OK 73005

Mescalero Apache Tribe
Sara Misquez, President
PO Box 176
Mescalero, NM 88340

Northern Cheyenne
Tribe of Montana
Geri Small, President
PO Box 128
Lame Deer, MT 59043

Comanche Nation
Wallace Coffee, Chairman
PO Box 908
Lawton, OK 73502

Kaw Nation
Guy Munroe, Chairman
Drawer 50
Kaw City, OK 74641

Kiowa Tribe of Oklahoma
Clifford McKenzie, Chairman
PO Box 369
Carnegie, OK 73015

Omaha Tribe of Nebraska
Donald Grant, Chairman
PO Box 368
Macy, NE 68039

Otoe-Missouria Tribe of Oklahoma
Jim Grant, Chairman
8151 Highway 77
Red Rock, OK 74651

Pawnee Indian Tribe of Oklahoma
George E. Howell, President
PO Box 470
Pawnee, OK 74058

Ponca Tribe of Oklahoma
Dwight Buffalo Head, Chairman
20 White Eagle Drive
Ponca City, OK 74601

Ponca Tribe of Nebraska
Mark Peniska, Jr., Chairman
PO Box 288
Niobrara, NE 67860-6605

Citizen Band Potawatomi
Indian Tribe of Oklahoma
John A. Barrett, Chairman
1901 S. Gordon Cooper Drive
Shawnee, OK 74801

Wichita and Affiliated Tribes
Gary McAdams, President
PO Box 729
Anadarko, OK 73005

Wyandotte Nations
Leaford Bearskin, Chief
PO Box 250
Wyandotte, OK 74370

Absentee-Shawnee Tribe
Kenneth Blanchard, Governor
2025 S. Gordon Cooper Drive
Shawnee, OK 74801-9381

Eastern Shawnee Tribe
of Oklahoma
Charles Enyart, Chief
PO Box 350
Seneca, MO 64865

Shawnee Tribe
Ron Sparkman, Chairman
PO Box 189
Miami, OK 74355

Cherokee Nation
Chad Smith, Principal Chief
PO Box 948
Tahlequah, OK 74465

United Keetoowah
Band of Cherokee
Dallas Proctor, Chief
PO Box 746
Tahlequah, OK 74465-0746

Miami Tribe
Floyd Leonard, Chief
PO Box 1326
202 S. Eight Tribes Trail
Miami, OK 74355

Rosebud Sioux Tribe
of South Dakota
Charle Columbe, President
PO Box 430
Rosebud, SD 66434

DARRELL DORSEY
BOARD OF PUBLIC UTILITIES
NEARMAN CREEK POWER PLANT
P.O. BOX 4088
KANSAS CITY, KS 66104

Marsha Willyard
Lathrop and Gage
2345 Grand Blvd, Suite 2800
Kansas City, MO 64108-2612

Sac and Fox of the Mississippi In Iowa
Johnathan Buffalo
349 Meskwaki Road
Tama, IA 52339-9629

Sac and Fox Nation of Oklahoma
Sandra Massey
Route 2, Box 246
Stroud, OK 74079

PN Electronic Mailing List

Name	Name	Name	Company	Address	City	State	Zip Code	EmailAddress	
First	Middle	Last		Street					
			Advertiser-Courier	P.O. Box 350	Hermann	MO	65041	donac@ktis.net	
			Ameremue	Osage Plant, 617 River Road	Eldon	MO	65026	pthompson@ameren.com	
Mary		Jungk	Andrew County Natural Resources Conservation Service	105 Highway West	Savannah	MO	64485	mary.jungk@mo.usda.gov	
Rodney		Saunders	Andrew County Natural Resources Conservation Service	105 Highway West	Savannah	MO	64485	rodney.saunders@mo.usda.gov	
Ted		Utz	Andrew County Natural Resources Conservation Service	105 Highway West	Savannah	MO	64485	ted.utz@mo.usda.gov	
Kathy		Sullivan	Aqua Barrier					kathy@aquabarrier.com	
Tonya		Cochran	Aqua-Terra Constructing & Engineering Systems, Inc.	P.O. Box 10260	Gulfport	MS	39505-0260	aquatera@bellsouth.net	
Jim		Mason	Arkansas River Coalition	3302 Hood Street	Wichita	KS	67204-4427	jmason15@cox.net	
Ron		Owen	Atchison County Natural Resources Conservation Service	302 East Highway 136	Rock Port	MO	64482	ron.owen@mo.usda.gov	
			B & F Engineering, Inc.	928 Airport Road	Hot Springs	AR	71913	jamesm@bnfeng.com	
Harold		Kline	Barber County Natural Resources Conservation Service	800 West 3rd	Medicine Lodge	KS	67104	harold.kline@ks.usda.gov	
Dick		Elliott	Bartlett & Company	4800 Main	Kanas City	MO	64112	delliott@bartlett-grain.com	
Bill		Brouk	Benton County Natural Resources Conservation Service	Route 1, Box 338-D	Lincoln	MO	65338	bill.brouk@mo.usda.gov	
Roger		Korenstra	Better Way Products, Inc.	70891 CR 23	New Paris	IN	46553	dockbox@npcc.net	
			Boone County Commission	801 East Walnut Street, #245	Columbia	MO	65201-4862	commission@boonecountymo.org	
Bob		Hagedorn	Boone County Natural Resources Conservation Service	1715 West Worley Street #C	Columbia	MO	65203-1068	bob.hagedorn@mo.usda.gov	
Robert	D.	Sholl	Burns and McDonnell	9400 Ward Parkway	Kansas City	MO	64114	bsholl@burnsmcd.com	
Tommy		Robins	Butler County Natural Resources Conservation Service	Rural Route 6, Box 43	Poplar Bluff	MO	63901-8700	tommy.robins@mo.usda.gov	
			Butler County, Kansas	205 W. Central, Room 105	El Dorado	KS	67042	dlutz@bucoks.com	
			Caldwell County Commission	2057 South Highway 13	Kingston	MO	64650	ccbridge@cameron.net	
			California Democrat	319 South High Street	California	MO	65018	caldem1@yahoo.com	
Dave		Johnson	Carroll County Natural Resources Conservation Service	Route 1, Box 211C	Carrollton	MO	64633	dave.johnson@mo.usda.gov	
			Cedar County Republican	P.O. Box C	Stockton	MO	65785	marilyne@cpimo.com	
			Chase County Commission	Court House	Cottonwood Falls	KS	66845	cs_county_clerk@wan.kdor.state.ks.us	
			Chautauqua County Road & Bridge	215 North Chautauqua	Sedan	KS	67361	cqrb2000@yahoo.com	
			Cherokee County Engineer	Courthouse	Columbus	KS	66725	ckeng@columbus-ks.com	
Mike		Geisel	City of Chesterfield	16052 Swingley Ridge Road	Chesterfield	MO	63017	mgeisel@chesterfield.mo.us	
Michael		Gregory	City of Shawnee, Kansas	11110 Johnson Drive	Shawnee	KS	66203	mgregory@cityofshawnee.org	
L.	D.	Shannon	City of Topeka, Water Production	3245 Waterworks Drive	Topeka	KS	66606-1984	lshannon@topeka.org	
Ned		Valentine	Clay Center Dispatch	Box 519, 805 5th Street	Clay Center	KS	67432	dispatch@claycenter.com	
Mary		Brown	Clay County Commission	712 Fifth Street, P.O. Box 98	Clay Center	KS	67432	cyclerk@kansas.net	
			Commander - Eight Coast Guard District	1222 Spruce Street	St. Louis	MO	63103-2832	rwiebusch@cgstl.uscg.mil	
Mike		Heronemus	Daily Union, The	P.O. Box 129, 222 W. Sixth Street	Junction City	KS	66441	editor@dailyu.com	
David		Tolen	Daviess County	102 North Main	Gallatin	MO	64640	jidavi@sospublicmail.state.mo.us	

PN Electronic Mailing List

Tracy		Smith	Daviess County Natural Resources Conservation Service	209 Ash Street	Gallatin	MO	64640-1185	tracy.smith@mo.usda.gov	
			Democrat Leader	P.O. Box 32	Fayette	MO	65248-0032	newspapr@mcmsys.com	
James		Krueger	Dickinson County Natural Resources Conservation Service	326 NE 14th	Abilene	KS	67410	james.krueger@ks.nrcs.usda.gov	
Mike		Stevenson	Dock Hardware & Marine Fabrication	60 Napco Drive	Terryville	CT	67876	dockshardware1@optonline.net	
			Douglas County	1242 Massachusetts	Lawrence	KS	66044	dgcopubw@douglas-county.com	
Philip		Chegwidden	Ellsworth County Natural Resources Conservation Service	402 West Old 40 Highway #1	Ellsworth	KS	67439	philip.chegwidden@ks.usda.gov	
Manuel		Barnes	Environmental and GIS Consulting, Inc.	314 South Main	Bentonville	AR	72712	egis@egis-env.com	
Emily		Detrich	Environmental Protection Agency	901 North 5th	Kansas City	KS	66101	detrich.emily@epa.gov	
Carl		Stevens	Environmental Protection Agency	901 North 5th	Kansas City	KS	66101	stevens.carl@epa.gov	
Jason		Daniels	Environmental Protection Agency	901 North 5th	Kansas City	KS	66101	daniels.jason@epa.gov	
Stephanie		Green	ETC, Inc.	No. 39 Wolf Pen Hollow	Camdenton	MO	65020	madamstephanie@aol.com	
Bo		Wendleton	Farm Service Agency	601 Business Loop 70 West, Suite 225	Columbia	MO	65203	bo.wendleton@mo.usda.gov	
			Finney County Commission	P.O. Box M	Carden City	KS	67846	clerk@finneycounty.org	
Amanda		Shaw	Finney County Natural Resources Conservation Service	2106 East Spruce	Garden City	KS	67846-9552	amanda.shaw@ks.usda.gov	
Douglas	B.	Gaines	Gaines Soil Consulting	8611 Wieseman Road	Worden	IL	62097	dbgaines@madisontelco.com	
John		Henry	Geary County Conservation District	841 South Washington	Junction City	KS	66441	john.henry@ks.usda.gov	
Gary		Barker	Gentry County Natural Resources Conservation Service	510 E. Highway 136	Albany	MO	64402	gary.barker@mo.usda.gov	
			Gove County	P.O. Box 128	Gove	KS	67636	go_county_clerk@wan.kdor.state.ks.us	
			Grant County Commission	108 South Glenn	Ulysses	KS	67880	clerk@pld.com	
Mike		Kinsey	Gray County Natural Resources Conservation Service	P.O. Box 567, 909 E. Avenue A	Cimarron	KS	67835	mike.kinsey@ks.usda.gov	
Kevin		Nelson	Greeley County Natural Resources Conservation Service	Box 400,126 East Greeley	Tribune	KS	67879	kevin.nelson@ks.usda.gov	
			Greenwood County Commission	311 North Main	Eureka	KS	67045	greenwoodcountyclerk@yahoo.com	
			Grundy County Court	Courthouse	Trenton	MO	64685	jjgrun@sospublicmail.state.mo.us	
Chris		Hoskinson	Harper County Natural Resources Conservation Service	803 Fanning Drive	Anthony	KS	67003-2810	chris.hoskinson@ks.nrcs.usda.gov	
Gregory		Bauer	Harper County Natural Resources Conservation Service	803 Fanning Drive	Anthony	KS	67003-2810	gregory.bauer@ks.nrcs.usda.gov	
			Harrington & Cortelyou, Inc.	127 West 10th Street	Kansas City	MO	64105	mhuck@hcbridges.com	
Doug		Peterson	Harrison County Natural Resources Conservation Service	Bethany Field Office,1400 North 41st Street	Bethany	MO	64402	doug.peterson@mo.usda.gov	
			Hayes Daily News	P.O. Box 857	Hays	KS	67601	mcorn@dailynews.net	
Daniel		VanPetten	HNTB Corporation	P.O. Box 419299	Kansas City	MO	64141	dvanpetten@hntb.com	
Marilyn		Roberts	Holt County Natural Resources Conservation Service	118 West Davis Street	Mound City	MO	64470	marilyn-roberts@mo.nacdnet.org	
Steve		Mauzey	Howard County Natural Resources Conservation Service	745 State Road DD	Fayette	MO	65248	steve.mauzey@mo.usda.gov	
Owen		GoodenKauf	HWS Consulting Group, Inc.	825 J Street, P.O. Box 80358	Lincoln	NE	68501-0358	goodkauf@hws-con.com	
			Interstate Marine Terminals	P.O. Box 43	Boonville	MO	65233	imt@mid-mo.net	
			J.D. Fields & Company, Inc.	313 Plainfield/Naperville Road, P.O. Box 250	Plainfield	IL	60544	jdfieldsmidwest@aol.com	
Bruce	L.	Yonke	Jackson County Natural Resources Conservation Service	307 Montana	Holton	KS	66436	bruce.yonke@ks.nrcs.usda.gov	
Nancy		Riley	Jackson County Public Works Department	103 North Main Street, Room 102	Independence	MO	64050	nriley@gw.co.jackson.mo.us	
Robert		Russell	Jefferson County	3709 Quail Creek Court	Lawrence	KS	66047	rrussell@sunflower.com	

PN Electronic Mailing List

R.		Teaford	Jefferson County Commission	P.O. Box 322	Oskaloosa	KS	66066	rteaford@ruralnet1.com	
Grant		Butler	Jefferson County Natural Resources Conservation Service	10820 Highway 21, C-57	Hillsboro	MO	63050	grant.butler@mo.usda.gov	
David		Howard	Johnson County Natural Resources Conservation Service	727 East PCA Road	Warrensburg	MO	64093	david.howard@mo.usda.gov	
Don		Hovey	Johnson County, Kansas					don.hovey@jocoks.com	
Norman		Bowers	Johnson County, Kansas	1800 W. 56 Highway	Olathe	KS	66061	norman.bowers@jocoks.com	
Carol		Kuhn	K & K Environmental	700 North Walnut Street	Olathe	KS	66061	kuhnc@prodigy.net	
C.	Elaine	Giessel	Kansas Chapter, Sierra Club	11705 W. 101st Terrace	Overland Park	KS	66214	elaine.giessel@kansas.sierraclub.org	
			Kansas Department of Agriculture	109 SW 9th Street, 2nd Floor	Topeka	KS	66612-1283	jdarrah@kda.state.ks.us	
			Kansas Department of Agriculture	425 Main, P.O. Box 192	Stockton	KS	67669	lbristow@kda.state.ks.us	
			Kansas Department of Health and Environment-Bureau of Water	Building 283, Forbes Field	Topeka	KS	66620	nps@kdhe.state.ks.us	
Scott		Satterwaite	Kansas Department of Health and Environment-Bureau of Water					ssattert@kdhe.state.ks.us	
			Kansas Department of Transportation	915 SW Harrison, 9th Floor	Topeka	KS	66612	brucef@ksdot.org	
Rob		Unruh	Kansas Department of Wildlife & Parks	Route 1, Box 66A	Webber	KS	66970	robu@wp.state.ks.us	
			Kansas Department of Wildlife and Parks- Wilson State Park	Rural Route 1, Box 181	Sylvan Grove	KS	67481	wilsonsp@wp.state.ks.us	
Russell	W.	LaForce	Kansas Department of Wildlife and Parks-Office of the Secretary	900 SW Jackson, Suite 502	Topeka	KS	66612-1233	russell@wp.state.ks.us	
Arch		Naramore	Kansas Key Press	900 New Jersey	Lawrence	KS	66044	atamail@kansaskeypress.com	
			Kearny County Engineer	Box 129	Lakin	KS	67860	kcrb@pld.com	
Bob		Kessler	Knowledge Communications Technologies	9809 Mercier	Kansas City	MO	64114	robtkessler@earthlink.net	
Ken		Berry	Knox County Natural Resources Conservation Service	East Reid Street, Route 1	Edina	MO	63537	ken.berry@mo.usda.gov	
David		Grossman	L.G. Barcus & Sons, Inc.	1430 State Avenue	Kansas City	KS	66102	david.grossman@barcus.com	
Tony		Bittiker	Lafayette/Johnson County Natural Resources Conservation Service	120 West 19th	Higginsville	MO	64037	tony.bittiker@mo.usda.gov	
			Lawrence County Natural Resources Conservation Service	10733 Highway 39	Mount Vernon	MO	65712	lcswcd@sofnet.com	
Gary		Rader	Leavenworth County Natural Resources Conservation Service	2050 Spruce	Leavenworth	KS	66048	gary.rader@ks.nrcs.usda.gov	
Brian		Lensing	Lensing Earthworks, Inc.	P.O. Box 376	Rhineland	MO	65059	bclensing@ktis.net	
Jason		Rode	Lensing Earthworks, Inc.	P.O. Box 376	Rhineland	MO	65059	jrode@ktis.net	
Tim		Coy	Lewis County Natural Resources Conservation Service-Monticello Field Office	502 South Washington	Monticello	MO	63457	tim.coy@mo.usda.gov	
			Lincoln County Highway Department	216 East Lincoln Avenue	Lincoln	KS	67445	lincolnhwydept@nckcn.com	
Monty		Breneman	Lincoln County Natural Resources Conservation Service	112 East Court, P.O. Box 156	Lincoln	NE	67455-0156	monty.breneman@ks.nrcs.usda.gov	
			Lincoln New Era	P.O. Box 280	Lincoln	MO	65338	ovpinc@earthlink.net	
Joel		Grant	Linn County Natural Resources Conservation Service	121 Pershing Road	Brookfield	MO	64628	joel.grant@mo.usda.gov	
Ron		Briggs	Linn County Natural Resources Conservation Service	431 Spruce Street, Box 88	Mound City	KS	66056	ron.briggs@ks.nrcs.usda.gov	
			List-Clark Construction Company	6811 West 63rd Street	Overland Park	KS	66202	mvbeggs@list-clark.com	
James		Maberry	Livingston County Natural Resources Conservation Service-Chillicothe Field Offi	1100 Morton Parkway	Chillicothe	MO	64601	james.maberry@mo.usda.gov	
George		Taylor	Livingston County Natural Resources Conservation Service-Chillicothe Field Offi	1100 Morton Parkway	Chillicothe	MO	64601	george.taylor@mo.usda.gov	
			Logan County Commission	710 W. 2nd	Oakley	KS	67748	lg_county_clerk@wan.kdor.state.ks.us	
Mark		Snow	Macon Chronicle-Herald	204 Bourke Street	Macon	MO	63552	maconch@istmacon.net	
			Marina Power & Lighting, Inc.	149 Warwick Court	Williamsburg	VA	23185	sales@marinapower.com	

PN Electronic Mailing List

Gary		Sheide	Marina Ventures. Ltd.	2501 Boston Street	Baltimore	MD	21224	marinaventures@erols.com	
Gary		Schuler	Marion County Natural Resources Conservation Service	303 Eisenhower Drive	Marion	KS	66361	gary.schuler@ks.usda.gov	
			Marshall County Advocate	P.O. Box 271	Marysville	KS	66508	sgray@mvleadvocate.com	
W.	G.	Praderio	Massman Construction Company	P.O. Box 8458	Kansas City	MO	64114	wpraderio@massman.net	
Glenn		Kourik	McDonough Marine Service	2200 West Port Plaza, Suite 305	St. Louis	MO	63146	gkourik@marmac.net	
Thomas		Flowers	Meade County Natural Resources Conservation Service	P.O. Box D	Meade	KS	67864-0098	thomas.flowers@ks.usda.gov	
			Merco Marine	60 Merco Road	Wellsburg	WV	26070	merco@mercomarine.com	
Alan		Morris	Miami County Admininistrator	201 South Pearl, Suite 200	Paola	KS	66071	amorris@micoks.net	
Marlene		Nagel	Mid America Regional Council	600 Broadway, #300 Rivergate	Kansas City	MO	64105	mnagel@marc.org	
Kathy		Zuehlke	Midwest Electric Products, Inc.	P.O. Box 910, 58155 240 Street	Mankato	MN	56001	kathy.zuehlke@indsys.ge.com	
Scott		Hamilton	Missouri Department of Conservation					scott.hamilton@mdc.mo.gov	
Brian	D.	Canaday	Missouri Department of Conservation	P.O. Box 180	Jefferson City	MO	65102	brian.canaday@mdc.mo.gov	
Mike		Smith	Missouri Department of Conservation					mike.smith@mdc.mo.gov	
Rob		Pulliam	Missouri Department of Conservation					rob.pulliam@mdc.mo.gov	
Kenda		Flores	Missouri Department of Conservation					kenda.flores@mdc.mo.gov	
Andy		Austin	Missouri Department of Conservation					andy.austin@mdc.mo.gov	
Jane		Epperson	Missouri Department of Conservation					jane.epperson@mdc.mo.gov	
Richard		Meade	Missouri Department of Conservation					richard.meade@mdc.mo.gov	
Todd		Gemeinhardt	Missouri Department of Conservation	3424 NW Duncan Road	Blue Springs	MO	64015	todd.gemeinhardt@mdc.mo.gov	
Jake		Allman	Missouri Department of Conservation					jake.allman@mdc.mo.gov	
Pam		Lanigan	Missouri Department of Conservation					pam.lanigan@mdc.mo.gov	
Timothy	B.	Grace	Missouri Department of Conservation	1907 Hillcrest Drive	Columbia	MO	65201	timothy.grace@mdc.mo.gov	
Craig		Fuller	Missouri Department of Conservation	2350 South Jefferson	Lebanon	MO	65536	craig.fuller@mdc.mo.gov	
Dale		Cornelius	Missouri Department of Conservation	Route 2, Box 247	Camdenton	MO	65020	dale.cornelius@mdc.mo.gov	
George		Kromrey	Missouri Department of Conservation	P.O. Box 248	Sullivan	MO	63080	george.kromrey@mdc.mo.gov	
Bob		Legler	Missouri Department of Conservation	P.O. Box 138	West Plains	MO	65775	bob.legler@mdc.mo.gov	
Chris		Vitello	Missouri Department of Conservation	2630 North Mayfair	Springfield	MO	65803	craig.vitello@mdc.mo.gov	
Stuart		Miller	Missouri Department of Conservation	PO Box 180	Jefferson City	MO	65102	stuart.miller@mdc.mo.gov	
Harold		Kerns	Missouri Department of Conservation	701 NE College Drive	St. Joseph	MO	64507	harold.kerns@mdc.mo.gov	
Scott	J.	Voney	Missouri Department of Conservation-Central Regional Office	1907 Hillcrest Drive	Columbia	MO	65201	scott.voney@mdc.mo.gov	
Pat		Conger	Missouri Department of Natural Resources	P.O. Box 176	Jefferson City	MO	65102-0176	patricia.conger@dnr.mo.gov	
Frances		Klahr	Missouri Department of Natural Resources-Hazardous Waste Program-Superfund Section					frances.klahr@dnr.mo.gov	
Cathy		Sala	Missouri Department of Natural Resources-Historic Preservation Program	P.O. Box 176	Jefferson City	MO	65102	cathy.sala@dnr.mo.gov	
Jan		Skouby	Missouri Department of Transportation	P.O. Box 270	Jefferson City	MO	65102	jan.skouby@modot.mo.gov	
Gayle		Unruh	Missouri Department of Transportation	P.O. Box 270	Jefferson City	MO	65102	gale.unruh@modot.mo.gov	
Steve		Stone	Missouri Limestone Producers	P.O. Box 1725	Jefferson City	MO	65102	stone-steve@mail.ultraweb.net	

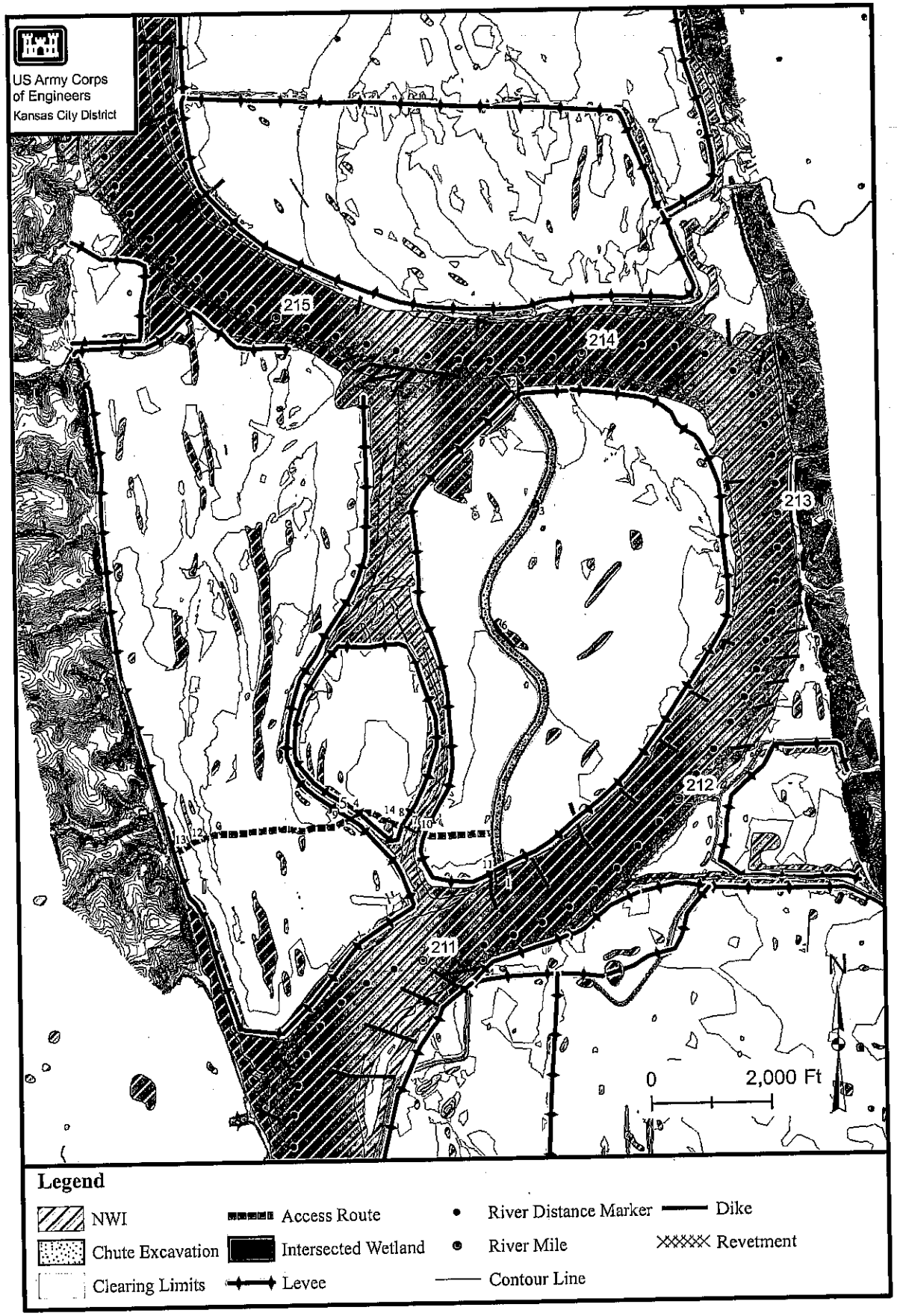
			Moniteau County Natural Resources Conservation Service	410 West Buchanan	California	MO	65018	ric.heckman@mo.usda.gov	
Jodi		Cushenbery	Montgomery County Natural Resources Conservation Service	Rural Route 3, Box 290A	Independence	KS	67301-9803	jodi.cushenbery@ks.nrcs.usda.gov	
Joseph		Hecht	Morris County Natural Resources Conservation Service	209 Hockaday	Council Grove	KS	66846	joseph.hecht@ks.nrcs.usda.gov	
			Natoma Publishing	P.O. Box 160	Natoma	KS	67651	natomanews@ruraltel.net	
David		Wright	Natural Resources Conservation Service	254 Jackson, Route 2, Box 2800	Hermitage	MO	65668	david.wright@mo.usda.gov	
Gary		Bruner	Natural Resources Conservation Service	100 North Angela	Paola	KS	66071	gary.bruner@ks.usda.gov	
Brian		Schulze	Natural Resources Conservation Service	112 N. Bell	Beloit	KS	67420	brian.schulze@ks.usda.gov	
Ken		Urban	Natural Resources Conservation Service	2715 Canterbury Drive	Hays	KS	67601	ken.urban@ks.nrcs.usda.gov	
Greg		Wingfield	Nature Conservancy, The	700 SW Jackson, Suite 804	Topeka	KS	66603	gwingfield@tnc.org	
Terry		Harper	Neodesha Derrick	P.O. Box 356, 502/504 Main	Neodesha	KS	66757	derrick@terraworld.net	
James		Triplett	Neosho Basin Advisory Committee	1701 South Broadway	Pittsburg	KS	66726-5889	jtriplet@pittstate.edu	
Tim		Gogolski	Osage County Natural Resources Conservation Service	115 West 17th	Lyndon	KS	66451	timothy.gogolski@ks.usda.gov	
			Osage Valley Publishing, Inc.					ovpinc@earthlink.net	
			Osborne County Commissioners and Road Supervisor	423 West Main, Courthouse	Osborne	KS	67473	william@imaima.com	
			Osborne County Farmer	210 West Main	Osborne	KS	67473	ospubco@ruraltel.net	
Jennifer		Cleveland	Ottawa County Conservation District	877 Laurel, Suite A	Minneapolis	KS	67467-3002	jennifer.cleveland@ks.nrcs.usda.gov	
			Pettis County Commission	Court House, 415 South Ohio	Sedalia	MO	65301	cpettis@iland.net	
Jean		Stapel	Phillips County Natural Resources Conservation Service	1717 Highway 183	Phillipsburg	KS	67661	jean.stapel@ks.usda.gov	
Bruce		Perkins	Platte Land Trust-Brush Creek Mid-Shed Project	10150 Ambassador Drive, Suite 100	Kansas City	MO	64153	plattelandtrust@yahoo.com	perkinslimnolab@earthlink.net
Fred		Ward	Randolph County Commission	110 South Main	Huntsville	MO	65259	ward@mcmsys.com	
Dee		Vanderburg	Randolph County Natural Resources Conservation Service	Rural Route 3, Box 135	Moberly	MO	65270	dee.vanderburg@mo.usda.gov	
Keith		Kisner	Rawlins County Natural Resources Conservation Service	East Highway 36, P.O. Box 195	Atwood	KS	67730-0195	keith.kisner@ks.nrcs.usda.gov	
Paul		Reitz	Reitz & Jens, Inc.	1055 Corporate Square Drive	St. Louis	MO	63132	preitz@reitzjens.com	
Terry		Alstatt	Republic County Natural Resources Conservation	1319 23rd Street	Belleville	KS	66935-2533	terry.alstatt@ks.usda.gov	
			Republican Clipper	P.O. Box 351	Bethany	MO	64424	rclipper@gmn.net	
Richard		Chinn	Richard Chinn Environmental Training	804 Cottage Hill Way	Brandon	FL	33511-8098	info@richardchinn.com	
			Riley County - County Engineer	110 Court House Plaza	Manhattan	KS	66502-0012	jward@co.riley.ks.us	
			Riley County Commission	Courthouse	Manhattan	KS	66502	rvargo@co.riley.ks.us	
			Rooks County Highway Department	303 South Walnut	Stockton	KS	67669-2150	rocordbr@ruraltel.net	
			Rushing Marine Corporation	P.O. Box 440	Jackson	MO	63755-0440	rniker@rushingmarine.com	
Andy		Phelps	Russell County Natural Resources Conservation Service	125 E. 7th	Russell City	KS	67665	andy.phelps@ks.nrcs.usda.gov	
Terri		Bruner	Schuyler County Natural Resources Conservation Service	Route U, P.O. Box 249	Lancaster	MO	63548-0249	terri.bruner@mo.usda.gov	
			Sedgwick County	1144 South Seneca	Wichita	KS	67212-4443	rlgeorge@sedgwick.gov	
			Sedgwick County	1144 South Seneca	Wichita	KS	67213	jweber@sedgwick.gov	
Manuel		Gross	Shafer, Kline & Warren, Inc.	11100 West 91st Street	Overland Park	KS	66214-3216	gross@skw-inc.com	
James		Dutt	Shannon & Wilson, Inc.	2043 Westport Center Drive	St. Louis	MO	63146	jdutt@shanwil.com	
Murray		Meierhoff	Shannon & Wilson, Inc.	11500 Olive Boulevard Suite 276	St. Louis	MO	63141-7126	mlm@shanwil.com	

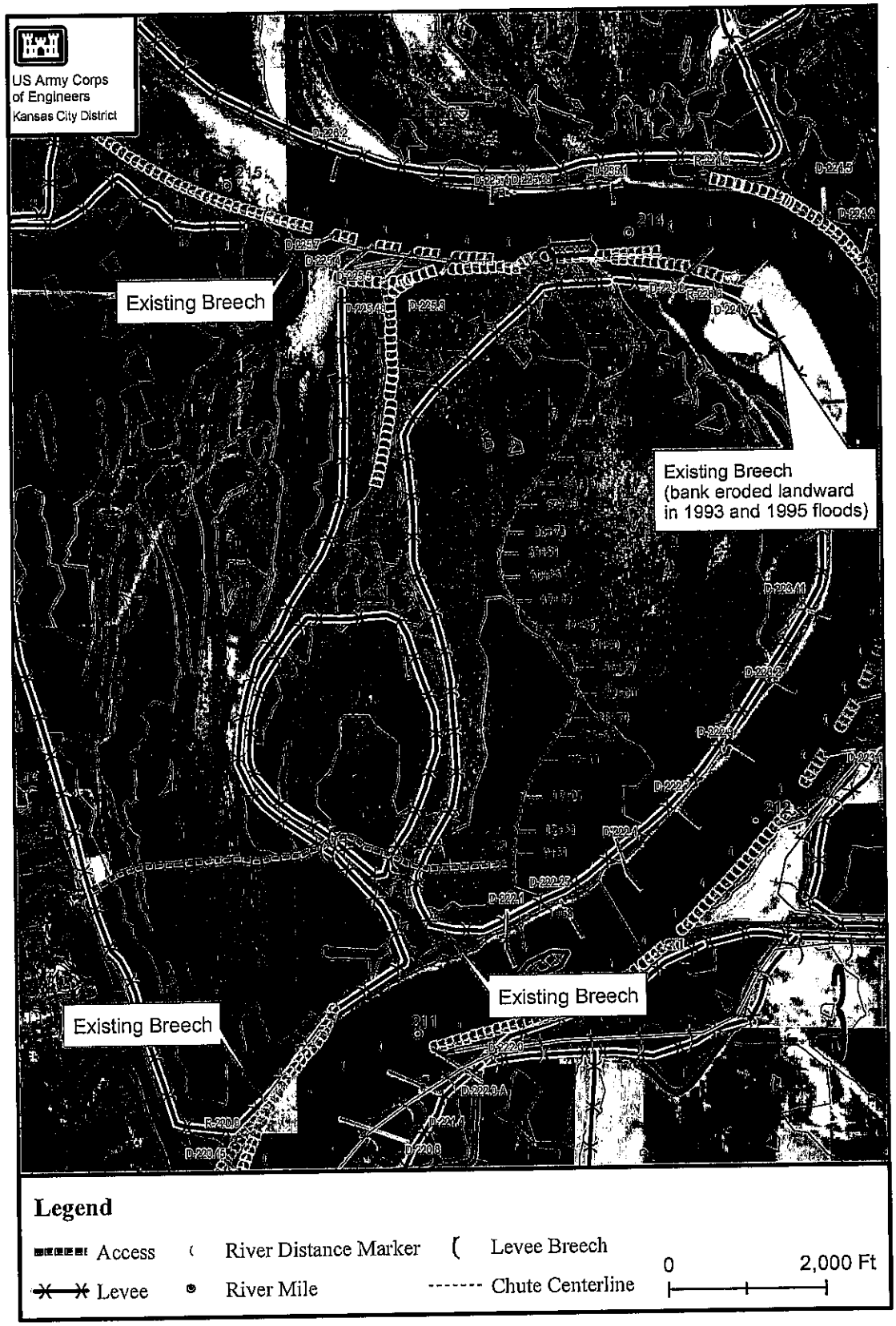
PN Electronic Mailing List

Dennis		Brinkman	Shawnee County Natural Resources Conservation Service	3231 SW Van Buren, Suite 2	Topeka	KS	66611-2291	dennis.brinkman@ks.nrcs.usda.gov	
Steven	G.	Lauer	St. Charles County Planning Department	201 North Second, Suite 420	St. Charles	MO	63301	ctypnz@mail.win.org	
			St. Clair County Commission	P.O. Box 405	Osceola	MO	64776-0405	ijstcl@sospublicmail.state.mo.us	
Curtis		Gooch	St. Clair County Natural Resources Conservation Service	3835 NE Highway 13	Osceola	MO	64776-9500	curtis.gooch@mo.usda.gov	
			St. Mary's Star	P.O. Box 190	St. Marys	KS	66536-0190	star@oct.net	
Stuart		Lawson	Sullivan County Natural Resources Conservation Service	Route 1, Box 1B	Milan	MO	63556	stuart.lawson@mo.usda.gov	
			Sumner County Natural Resources Conservation Service	320 North Jefferson	Wellington	KS	67152	matt.markley@ks.nrcs.usda.gov	
			Techno Marine					sbourque@technomarine.ca	
James		VanBlaricon	Terracon Companies, Inc.	2111 West Harry	Wichita	KS	67214	jivanblaricon@terracon.com	
Edwin	G.	Harvey	Thompson Coburn	One Mercantile Center	St. Louis	MO	63101-1693	eharvey@thompsoncoburn.com	
			Tipton Times		Tipton	MO		times@vernonpublishing.com	
Cheryl		Hammond	Today Data					info@todaydata.com	
			Tonganoxie Mirror	P.O. Box 920	Tonganoxie	KS	66086	ctrowbridge@tonganoxie.com	
Mike		Grogan	Trego County Natural Resources Conservation Service	519 Russell	Wakeeney	KS	67672	mike.grogan@ks.nrcs.usda.gov	
Natha		McAllister	Tri-County Weekly	K-K Printings, 105 S. Broadway, P.O. Box 137	Jamesport	MO	64648	nert@grm.net	
Christopher		White	U.S. Army Corps of Engineers, Kansas City District, Planning Branch					christopher.m.white@usace.army.mil	
Mark		Frazier	U.S. Army Corps of Engineers, Kansas City District, Regulatory Branch					mark.d.frazier@usace.army.mil	
Brenda		Kinion	U.S. Army Corps of Engineers, Tulsa District, Regulatory Branch	1645 South 101st East Avenue	Tulsa	OK	74128	brenda.kinion@usace.army.mil	
			U.S. Coast Guard					Rreid@grpumr.uscg.mil	
Susan		Blackford	U.S. Fish and Wildlife Service	315 Houston, Suite E	Manhattan	KS	66502	susan_blackford@fws.gov	
Chad		Remley	USDA/NRCS	760 South Broadway	Salina	KS	67401-4642	chad.remley@ks.usda.gov	
David		Clyman	Vernon County Natural Resources Conservation Service	100 West Allison	Nevada	MO	64772	david.clyman@mo.usda.gov	
			W.G. Jaques Company	2183 NW 86th Street	Des Moines	IA	50325	jaques@wgjaques.com	
Tracy		Freeman	Wabaunsee County Natural Resources Conservation Service	Rural Route 2, Box 1	Alma	KS	66401	tracy.freeman@ks.usda.gov	
Ted		Houser	Wallace County Natural Resources Conservation Service	P.O. Box 608	Sharon Springs	KS	67758-0608	ted.houser@ks.nrcs.usda.gov	
			Washington County News	P.O. Box 316	Washington	KS	66968	washnews@washingtonks.net	
			Washington County Public Works Department	P.O. Box 277	Washington	KS	66968	wcpw@washingtonks.net	
Dianne		Hedquist	Water District No. 1 of Johnson County	7601 Holliday Drive	Kansas City	KS	66101	dhedquist@waterone.org	
			Water District No. 1 of Johnson County	7601 Holliday Drive	Kansas City	KS	66101	spaterson@waterone.org	
			Wellington Daily News		Wellington	KS	67152	wdn@idir.net	
Steve		Wooden	Wilson County Natural Resources Conservation Service	704 North Miami	Marshall	MO	65340	steve.wooden@mo.usda.gov	
Norman		Nelson						gn728@hotmail.com	
Debbie		Hays						scouthays@sbcglobal.net	
Vicki		Richmond						vic@kc.rr.com	
Jerry		Bassett						orddglb@aol.com	
Bob		Phillips		16315 Dearborn Drive	Stilwell	KS	66085	bob.phillips@mail.sprint.com	
David		Mesker						dwmesker@earthlink.net	

PN Electronic Mailing List

								malldritt@cyberlodge.com	
Lance		Burr		16 East 13th Street	Lawrence	KS	66044	lancewburr@sunflower.com	
David		Blackford		12 Doral Lane	Holiday Island	AR	72631-5116	lida37@arkansas.net	
Laura		Calwell		5610 West 61st Terrace	Shawnee Mission	KS	66202	creativechoice@yahoo.com	
Mike		Farley		175 Quindaro	Florissant	MO	63034	farley_mike@email.msn.com	
John	L.	Walker		P.O. Box 559	Camdenton	MO	65020	scotchjw@aol.com	
Joe		Gibbs		1115 Club Meadows Drive	Columbia	MO	65203	jbg6267@aol.com	
William		Beacom						bbeacom@pionet.net	
			Last Update - 9 December 2005						


US Army Corps
of Engineers
Kansas City District
215
214
213
212
211
N
0
2,000 Ft
Legend
NWI
Chute Excavation
Clearing Limits
Access Route
Intersected Wetland
Levee
River Distance Marker
River Mile
Contour Line
Dike
Revetment


US Army Corps
of Engineers
Kansas City District
Existing Breech
Existing Breech
(bank eroded landward
in 1993 and 1995 floods)
Existing Breech
Existing Breech
Legend
Access
Levee
River Distance Marker
River Mile
Levee Breech
Chute Centerline
0
2,000 Ft

Appendix B

Cultural Resources

CULTURAL RESOURCE ASSESSMENT
Section 106 Review

CONTACT PERSON/ADDRESS

Timothy Meade
Cultural Resource Manager
Corps of Engineers, Kansas City District
700 Federal Building
Kansas City, Missouri 64106-2896

C:

Joe Cothern, EPA

PROJECT:

Jameson Island Wetlands Restoration Project

FEDERAL AGENCY

COE

COUNTY:

SALINE

The State Historic Preservation Office has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:

[ ] After review of initial submission, the project area has a low potential for the occurrence of cultural resources. A cultural resource survey, therefore, is not warranted.

[X] Adequate documentation has been provided (36 CFR Section 800.11). There will be "no historic properties affected" by the current project.

[ ] An adequate cultural resource survey of the project area has been previously conducted. It has been determined that for the proposed undertaking there will be "no historic properties affected".

For the above checked reason, the State Historic Preservation Office has no objection to the initiation of project activities. PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK ARE CHANGED, A BORROW AREA IS INCLUDED IN THE PROJECT, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of compliance with Section 106 of the National Historic Preservation Act, as amended.

By: _____ January 18, 2006
Mark A. Miles, Deputy State Historic Preservation Officer — Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176, Jefferson City, Missouri 65102
For additional information, please contact Judith Deel, (573) 751-7862. Please be sure to refer to the project number:
002-SA-06

DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106-2896

December 12, 2005

REPLY TO
ATTENTION OF

Environmental Resources Section
Planning Branch

Mr. Mark Miles
Director and Deputy State Historic Preservation Officer
State Historic Preservation Office
Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102-0176

Dear Mr. Miles:

The U.S. Army Corps of Engineers, Kansas City District's Missouri River Fish and Wildlife Project is planning a wetland restoration project on Jameson Island in Saline County. This project is one component of the larger mitigation project that is being conducted at various locations on the Missouri River. The proposed Jameson Island project has not been previously coordinated with your office. The proposed project would include federal funding. This letter initiates Section 106 coordination for this project location.

The proposed project would construct a chute approximately 9630 feet in length to create shallow water habitat, improve aquatic and fisheries habitat, and provide additional connectivity to the Missouri River (Attachment 1 and 2). The chute would be constructed with side slopes of 1.5 horizontal to 1 vertical and would have a construction width of 100 feet. The project would encompass approximately 43.9 acres. Shallow water habitat areas would be developed through excavation and the placement of soil along the right bank. Approximately four shallow habitat areas would be created after the chute meandering has ceased. Two other alternatives had been considered for the proposed project but have since been abandoned for various reasons.

A number of shipwrecks including the Sam Getty (1867), the New Sam Getty (1868), Plow Boy No. 2 (1877), Tom Rodgers (1887), and Benton No.2 (1895) are mapped south-southeast of the proposed project area (Attachment 3). Arrow Rock Historic Site is situated along the bluff line approximately 1.0 mile south-southeast of the project area. The Kansas City District has no information on archeological sites or historic structures that may be situated within the project area. However, an accreted land study conducted by the Corps found that the entire project area consists accreted land, with most of the accretion occurring since 1879 (see Attachment 3).

Given, that the project area consists entirely of recently accreted lands, it is unlikely that the proposed project will impact archeological sites or historic structures. Therefore, we request your concurrence that the proposed project will have no effect on historic properties and that the project proceed with no further consultation from your office. If previously recorded archeological sites or historic structures are present within the proposed project area or your office deems that a survey is warranted, the Corps would conduct any necessary investigations.

In the unlikely event that archeological materials are discovered during construction, work in the area of discovery will cease and the discovery investigated by a qualified archeologist. The findings on the discovery would be coordinated with your office and appropriate federally recognized Native American tribes, if appropriate.

Thank you for your consideration in this matter. If you have any questions or have need of further information please contact me at (816) 983-3138 or at Timothy.M.Meade@usace.army.mil.

Sincerely,

Enclosure

Timothy Meade
Cultural Resource Manager

Appendix C

Environmental Permits and Clearances

NATIONWIDE PERMIT No. 27
STREAM AND WETLAND RESTORATION ACTIVITIES

Activities in waters of the US associated with the restoration of former waters, the enhancement of degraded tidal and non-tidal wetlands and riparian areas, the creation of tidal and non-tidal wetlands and riparian areas, and the restoration and enhancement of non-tidal streams and non-tidal open water areas as follows:

(a) The activity is conducted on:

(1) Non-Federal public lands and private lands, in accordance with the terms and conditions of a binding wetland enhancement, restoration, or creation agreement between the landowner and the U.S. Fish and Wildlife Service (FWS) or the Natural Resources Conservation Service (NRCS), the National Marine Fisheries Service, the National Ocean Service, or voluntary wetland restoration, enhancement, and creation actions documented by the NRCS pursuant to NRCS regulations; or

(2) Reclaimed surface coal mine lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the OSM or the applicable state agency (the future reversion does not apply to streams or wetlands created, restored, or enhanced as mitigation for the mining impacts, nor naturally due to hydrologic or topographic features, nor for a mitigation bank); or

(3) Any other public, private or tribal lands;

(b) *Notification:* For activities on any public or private land that are not described by paragraphs (a)(1) or (a)(2) above, the permittee must notify the District Engineer in accordance with General Condition 13; and

(c) Planting of only native species should occur on the site.

Activities authorized by this NWP include, to the extent that a Corps permit is required, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms; the installation of current deflectors; the enhancement, restoration, or creation of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or create stream meanders; the backfilling of artificial channels and drainage ditches; the removal of existing drainage structures; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; mechanized land clearing to remove non-native invasive, exotic or nuisance vegetation; and other related activities.

This NWP does not authorize the conversion of a stream to another aquatic use, such as the creation of an impoundment for waterfowl habitat. This NWP does not authorize stream channelization. This NWP does not authorize the conversion of natural wetlands to another

aquatic use, such as creation of waterfowl impoundments where a forested wetland previously existed. However, this NWP authorizes the relocation of non-tidal waters, including non-tidal wetlands, on the project site provided there are net gains in aquatic resource functions and values. For example, this NWP may authorize the creation of an open water impoundment in a non-tidal emergent wetland, provided the non-tidal emergent wetland is replaced by creating that wetland type on the project site. This NWP does not authorize the relocation of tidal waters or the conversion of tidal waters, including tidal wetlands, to other aquatic uses, such as the conversion of tidal wetlands into open water impoundments.

Reversion. For enhancement, restoration, and creation projects conducted under paragraphs (a)(3), this NWP does not authorize any future discharge of dredged or fill material associated with the reversion of the area to its prior condition. In such cases a separate permit would be required for any reversion. For restoration, enhancement, and creation projects conducted under paragraphs (a)(1) and (a)(2), this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration, enhancement, or creation activities). The reversion must occur within five years after expiration of a limited term wetland restoration or creation agreement or permit, even if the discharge occurs after this NWP expires. This NWP also authorizes the reversion of wetlands that were restored, enhanced, or created on prior-converted cropland that has not been abandoned, in accordance with a binding agreement between the landowner and NRCS or FWS (even though the restoration, enhancement, or creation activity did not require a Section 404 permit). The five-year reversion limit does not apply to agreements without time limits reached under paragraph (a)(1). The prior condition will be documented in the original agreement or permit, and the determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Before any reversion activity the permittee or the appropriate Federal or state agency must notify the District Engineer and include the documentation of the prior condition. Once an area has reverted to its prior physical condition, it will be subject to whatever the Corps Regulatory requirements will be at that future date. (Sections 10 and 404)

Note: Compensatory mitigation is not required for activities authorized by this NWP, provided the authorized work results in a net increase in aquatic resource functions and values in the project area. This NWP can be used to authorize compensatory mitigation projects, including mitigation banks, provided the permittee notifies the District Engineer in accordance with General Condition 13, and the project includes compensatory mitigation for impacts to waters of the US caused by the authorized work. However, this NWP does not authorize the reversion of an area used for a compensatory mitigation project to its prior condition. NWP 27 can be used to authorize impacts at a mitigation bank, but only in circumstances where it has been approved under the Interagency Federal Mitigation Bank Guidelines.

EXCERPTS FROM JANUARY 15, 2002 FEDERAL REGISTER
(INCLUDING CORRECTIONS PUBLISHED 13 FEBRUARY 2002)

C. Nationwide Permit General Conditions

The following General Conditions must be followed in order for any authorization by an NWP to be valid:

1. Navigation. No activity may cause more than a minimal adverse effect on navigation.

2. Proper Maintenance. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.

3. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

4. Aquatic Life Movements. No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

5. Equipment. Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.

6. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with the case specific conditions added by the Corps or by the state or tribe in its Section 401 Water Quality Certification and Coastal Zone Management Act consistency determination.

7. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

8. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

9. Water Quality.

(a) In certain states and tribal lands an individual 401 Water Quality Certification must be obtained or waived (See 33 CFR 330.4(c)).

(b) For NWPs 12, 14, 17, 18, 32, 39, 40, 42, 43, and 44, where the state or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management requirements). Another important component of water quality management is the

establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWPs). This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.

10. Coastal Zone Management. In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived (see 33 CFR 330.4(d)).

11. Endangered Species.

(a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the FWS or NMFS the District Engineer may add species-specific regional endangered species conditions to the NWPs.

(b) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their world wide web pages at http://www.fws.gov/r9endspp/endspp.html and ***http://www.nfms.gov/prot_res/esahome.html*** respectively.

12. Historic Properties. No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR part 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

13. Notification.

(a) Timing; where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the notification is complete within 30 days of the date of receipt and can request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the notification is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

(2) If notified in writing by the District or Division Engineer that an Individual Permit is required; or

(3) Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Notification: The notification must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) For NWPs 7, 12, 14, 18, 21, 34, 38, 39, 40, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));

(5) For NWP 7 (Outfall Structures and Maintenance), the PCN must include information regarding the original design capacities and configurations of those areas of the facility where maintenance dredging or excavation is proposed;

(6) For NWP 14 (Linear Transportation Projects), the PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the US and a statement describing how temporary losses of waters of the US will be minimized to the maximum extent practicable;

(7) For NWP 21 (Surface Coal Mining Activities), the PCN must include an Office of Surface Mining (OSM) or state-approved mitigation plan, if applicable. To be authorized by this NWP, the District Engineer must determine that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are minimal both individually and cumulatively and must notify the project sponsor of this determination in writing;

(8) For NWP 27 (Stream and Wetland Restoration Activities), the PCN must include documentation of the prior condition of the site that will be reverted by the permittee;

(9) For NWP 29 (Single-Family Housing), the PCN must also include:

(i) Any past use of this NWP by the Individual Permittee and/or the permittee's spouse;

(ii) A statement that the single-family housing activity is for a personal residence of the permittee;

(iii) A description of the entire parcel, including its size, and a delineation of wetlands. For the purpose of this NWP, parcels of land measuring ¼-acre or less will not require a formal on-site delineation. However, the applicant shall provide an indication of where the wetlands are and the amount of wetlands that exists on the property. For parcels greater than ¼-acre in size, formal wetland delineation must be prepared in accordance with the current method required by the Corps. (See paragraph 13(f));

(iv) A written description of all land (including, if available, legal descriptions) owned by the prospective permittee and/or the prospective permittee's spouse, within a one mile radius of the parcel, in any form of ownership (including any land owned as a partner, corporation, joint tenant, co-tenant, or as a tenant-by-the-entirety) and any land on which a purchase and sale agreement or other contract for sale or purchase has been executed;

(10) For NWP 31 (Maintenance of Existing Flood Control Facilities), the prospective permittee must either notify the District Engineer with a PCN prior to each maintenance activity or submit a five year (or less) maintenance plan. In addition, the PCN must include all of the following:

(i) Sufficient baseline information identifying the approved channel depths and configurations and existing facilities. Minor deviations are authorized, provided the approved flood control protection or drainage is not increased;

(ii) A delineation of any affected special aquatic sites, including wetlands; and,

(iii) Location of the dredged material disposal site;

(11) For NWP 33 (Temporary Construction, Access, and Dewatering), the PCN must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources;

(12) For NWPs 39, 43 and 44, the PCN must also include a written statement to the District Engineer explaining how avoidance and minimization for losses of waters of the US were achieved on the project site;

(13) For NWP 39 and NWP 42, the PCN must include a compensatory mitigation proposal to offset losses of waters of the US or justification explaining why compensatory mitigation should not be required. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(14) For NWP 40 (Agricultural Activities), the PCN must include a compensatory mitigation proposal to offset losses of waters of the US. This NWP does not authorize the relocation of greater than 300 linear-feet of existing serviceable drainage ditches constructed in non-tidal streams unless, for drainage ditches constructed in intermittent non-tidal streams, the District Engineer waives this criterion in writing, and the District Engineer has determined that the project complies with all terms and conditions of this NWP, and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively;

(15) For NWP 43 (Stormwater Management Facilities), the PCN must include, for the construction of new stormwater management facilities, a maintenance plan (in accordance with state and local requirements, if applicable) and a compensatory mitigation proposal to offset losses of waters of the US. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(16) For NWP 44 (Mining Activities), the PCN must include a description of all waters of the US adversely affected by the project, a description of measures taken to minimize adverse effects to waters of the US, a description of measures taken to comply with the criteria of the NWP, and a reclamation plan (for all aggregate mining activities in isolated waters and non-tidal wetlands adjacent to headwaters and any hard rock/mineral mining activities);

(17) For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work; and

(18) For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

(c) Form of Notification: The standard Individual Permit application form (Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b) (1)–(18) of General Condition 13. A letter containing the requisite information may also be used.

(d) District Engineer's Decision: In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary.

The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed compensatory mitigation plan. The District Engineer must review the plan within 45 days of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP. If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either:

(1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an Individual Permit;

(2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or

(3) that the project is authorized under the NWP with specific modifications or conditions. Where the District Engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitigation plan is required under item (2) above, no work in waters of the US will occur until the District Engineer has approved a specific mitigation plan. (e) Agency Coordination: The District Engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. For activities requiring notification to the District Engineer that result in the loss of greater than ½-acre of waters of the

US, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered. As required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act, the District Engineer will provide a response to NMFS within 30 days of receipt of any Essential Fish Habitat conservation recommendations. Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.

(f) Wetland Delineations: Wetland delineations must be prepared in accordance with the current method required by the Corps (For NWP 29 see paragraph (b)(9)(iii) for parcels less than (¼-acre in size). The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate.

14. Compliance Certification. Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include:

(a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

15. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre).

16. Water Supply Intakes. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

17. Shellfish Beds. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.

18. Suitable Material. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the CWA).

19. Mitigation. The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset adverse effects on the aquatic environment that are more than minimal.

(a) The project must be designed and constructed to avoid and minimize adverse effects to waters of the US to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring a PCN, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.

(d) Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, ¼-acre of wetlands cannot be created to change a ¾-acre loss of wetlands to a ½-acre loss associated with NWP 39 verification. However, ½-acre of created wetlands can be used to reduce the impacts of a ½-acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.

(e) To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purposes. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineers may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.

(g) Compensatory mitigation proposals submitted with the "notification" may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the US.

(h) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

20. Spawning Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of a important spawning area are not authorized.

21. Management of Water Flows. To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the

fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelizing will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow. This condition is only applicable to projects that have the potential to affect waterflows. While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.

22. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restricting its flow shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the US, or discharges of dredged or fill material.

23. Waterfowl Breeding Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

24. Removal of Temporary Fills. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

25. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the District Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Except as noted below, discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, and 44 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the US may be authorized by the above NWPs in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the USFWS or the NMFS has concurred in a determination of compliance with this condition.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with General Condition 13, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The District Engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

26. Fills Within 100-Year Floodplains. For purposes of this General Condition, 100-year floodplains will be identified through the existing Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or FEMA-approved local floodplain maps.

(a) Discharges in Floodplain; Below Headwaters. Discharges of dredged or fill material into waters of the US within the mapped 100-year floodplain, below headwaters (i.e. five cfs), resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, 43, and 44.

(b) Discharges in Floodway; Above Headwaters. Discharges of dredged or fill material into waters of the US within the FEMA or locally mapped floodway, resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, and 44.

(c) The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.

27. Construction Period. For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12-months after such date (including any modification that affects the project). For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps. For projects that have been verified by the Corps, an extension of a Corps approved completion date maybe requested. This request must be submitted at least one month before the previously approved completion date.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other Federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

E. Definitions

Best Management Practices (BMPs): BMPs are policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural. A BMP policy may affect the limits on a development.

Compensatory Mitigation: For purposes of Section 10/404, compensatory mitigation is the restoration, creation, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Creation: The establishment of a wetland or other aquatic resource where one did not formerly exist.

Enhancement: Activities conducted in existing wetlands or other aquatic resources that increase one or more aquatic functions.

Ephemeral Stream: An ephemeral stream has flowing water only during and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Farm Tract: A unit of contiguous land under one ownership that is operated as a farm or part of a farm.

Flood Fringe: That portion of the 100-year floodplain outside of the floodway (often referred to as "floodway fringe").

Floodway: The area regulated by Federal, state, or local requirements to provide for the discharge of the base flood so the cumulative increase in water surface elevation is no more than a designated amount (not to exceed one foot as set by the National Flood Insurance Program) within the 100-year floodplain.

Independent Utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent Stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of Waters of the US: Waters of the US that include the filled area and other waters that are permanently adversely affected by flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent above-grade, at-grade, or below-grade fills that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the US is the threshold measurement of the impact to existing waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and values. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Impacts to ephemeral streams are not included in the linear foot measurement of loss of stream bed for the purpose of determining compliance with the linear foot limits of NWPs 39, 40, 42, and 43. Waters of the US temporarily filled, flooded, excavated, or drained, but restored to preconstruction contours and elevations after construction, are not included in the measurement of loss of waters of the US.

Non-tidal Wetland: A non-tidal wetland is a wetland (i.e., a water of the US) that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open Water: An area that, during a year with normal patterns of precipitation, has standing or flowing water for sufficient duration to establish an ordinary high water mark. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. The term "open water" includes rivers, streams, lakes, and ponds. For the purposes of the NWPs, this term does not include ephemeral waters.

Perennial Stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Permanent Above-grade Fill: A discharge of dredged or fill material into waters of the US, including wetlands, that results in a substantial increase in ground elevation and permanently converts part or all of the waterbody to dry land. Structural fills authorized by NWPs 3, 25, 36, etc. are not included.

Preservation: The protection of ecologically important wetlands or other aquatic resources in perpetuity through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection and/or enhancement of the overall aquatic ecosystem.
Restoration: Re-establishment of wetland and/or other aquatic resource characteristics and function(s) at a site where they have ceased to exist, or exist in a substantially degraded state.

Riffle and Pool Complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Single and Complete Project: The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers (see definition of independent utility). For linear projects, the "single and complete project" (i.e., a single and complete crossing) will apply to each crossing of a separate water of the US (i.e., a single waterbody) at that location. An exception is for linear projects crossing a single waterbody several times at separate and distant locations: each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies.

Stormwater Management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater Management Facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and BMPs, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream Bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream Channelization: The manipulation of a stream channel to increase the rate of water flow through the stream channel. Manipulation may include deepening, widening, straightening, armoring, or other activities that change the stream cross-section or other aspects of stream channel geometry to increase the rate of water flow through the stream channel. A channelized stream remains a water of the US, despite the modifications to increase the rate of water flow.

Tidal Wetland: A tidal wetland is a wetland (i.e., water of the US) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line (i.e., spring high tide line) and are inundated by tidal waters two times per lunar month, during spring high tides.

Vegetated Buffer: A vegetated upland or wetland area next to rivers, streams, lakes, or other open waters which separates the open water from developed areas, including agricultural land. Vegetated buffers provide a variety of aquatic habitat functions and values (e.g., aquatic habitat for fish and other aquatic organisms, moderation of water temperature changes, and detritus for aquatic food webs) and help improve or maintain local water quality. A vegetated buffer can be established by maintaining an existing vegetated area or planting native trees, shrubs, and herbaceous plants on land next to open-waters. Mowed lawns are not considered vegetated buffers because they provide little or no aquatic habitat functions and values. The establishment and maintenance of vegetated buffers is a method of compensatory mitigation that can be used in conjunction with the restoration, creation, enhancement, or preservation of aquatic habitats to ensure that activities authorized by NWPs result in minimal adverse effects to the aquatic environment. (See General Condition 19.)

Vegetated Shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: A waterbody is any area that in a normal year has water flowing or standing above ground to the extent that evidence of an ordinary high water mark is established. Wetlands contiguous to the waterbody are considered part of the waterbody.

PUBLIC NOTICE

US Army Corps
of Engineers
Kansas City District

Date: December 17, 2003

Special Public Notice
Section 401 Water Quality Certification (WQC) Accepted
for Select Nationwide Permits (NWPs) in Missouri

On November 14, 2003, the Northwestern Division Engineer accepted Missouri Department of Natural Resources (MDNR) conditional WQCs for the following NWPs: 3, 4, 5, 6, 7, 12, 13, 14, 18, 27, 33, 36, 40, 41, 42 and 43. The conditions of these WQCs apply to all activities authorized by these NWPs.

In accordance with NWP General Condition 9, individual WQC is required from MDNR for the following NWPS: 15, 16, 17, 19, 20, 21, 22, 23, 25, 29, 30, 31, 32, 34, 37, 38, 39 and 44.

NWPs 1, 2, 8, 9, 10, 11, 24, 28 and 35 are authorized under Section 10 of the Rivers and Harbors Act of 1899 only and do not require WQC.

The Kansas City District has posted the Federal Register text of the January 15, 2002 (67 FR 2020-2095) NWPs, and corrections to the Federal Register, on our Internet Regulatory Program page: http://www.nwk.usace.army.mil/regulatory/regulatory.htm.

We have also posted the May 2, 2002, Missouri Regional Conditions for the NWPs, and the approved MDNR WQCs for the select NWPs, on our Internet Regulatory Program page.

Please direct questions concerning the current NWPs, the NWP General and Regional Conditions, and the accepted MDNR WQCs to the Kansas City District, Corps of Engineers, ATTN: Mark D. Frazier, CENWK OD-R, 700 Federal Building, 601 East 12th Street, Kansas City, Missouri, 64106, or call 816-983-3664, or email mark.d.frazier@usace.army.mil.

You may contact MDNR with questions concerning the accepted WQCs, or to request an individual WQC, by writing to the Missouri Department of Natural Resources, Water Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or by calling 573-751-1404 (FAX: 573-526-5797) or by email: wpcs401cert@dnr.mo.gov. Additional information is available at MDNR's Internet page: http://www.dnr.state.mo.us/wpscd/wpcp/homewpcp.htm.

diameter, and fragmented asphalt, since these materials are usually not substantial enough to withstand erosive flows;

b. Concrete with exposed rebar;
c. Tires, vehicles or vehicle bodies, construction or demolition debris are solid waste and are excluded from placement in the waters of the state; and
d. Liquid concrete, including grouted riprap, if not placed as part of an engineered structure.

Recycled concrete may be used provided that it is clean material broken into appropriately sized pieces (greater than 12 inches) of riprap with no protruding rebar.

8. Instream culverts shall be sized and placed to maintain a depth of water at least as deep as the channel directly upstream of the crossing. Structures creating water velocities in excess two feet per second during average annual discharge shall be avoided. If preconstruction velocities exceed two feet per second, then structures shall not increase existing velocities. There shall be no drop between the downstream end of the culverts and the downstream water surface elevation.

WATER POLLUTION CONTROL PROGRAM
Missouri General Water Quality Certification Conditions for NWP 27
(Stream and Wetland Restoration Activities)

Pursuant to Section 401 of the Clean Water Act of 1972 the following best management practices are included as conditions in the Section 404 U.S. Army Corps of Engineers' Nationwide Permit (NWP). These conditions ensure that stream and wetland restoration activities do not violate the Water Quality Standards of the State of Missouri resulting in permanent damage to habitat, increased turbidity, reduced bank and channel stability, and impacts to the biological and chemical integrity of the waterbody. Jurisdictional definitions for this activity are explained in the NWP.

Any land disturbance activities disturbing one or more acres of total area for the entire project requires a storm water permit from the Water Pollution Control Program for land disturbance activities. Note that this is one acre of area disturbed for the total project, not one acre of waters of the United States. For questions, please contact the Water Pollution Control Program's Permit Section at (573) 751-6825.

Petroleum products spilled into any waterbody or on the banks where the material may enter waters of the state shall be immediately cleaned up and disposed of properly. Any such spills of petroleum shall be reported as soon as possible to the Missouri Department of Natural Resources' 24-hour Environmental Emergency Response number at (573) 634-2436.

Pursuant to Chapter 644.038, RSMo, the department certifies this nationwide permit without conditions for the construction of highways and bridges approved by the Missouri Highway and Transportation Commission, as it applies to impacts in all waters of the state.

1. This certification does not allow the filling of a jurisdictional spring or a spring with connectivity to a jurisdictional stream.

2. Care shall be taken to keep machinery out of the waterway as much as possible. Fuel, oil and other petroleum products, equipment and any solid waste shall not be stored below the ordinary high water mark at any time or in the adjacent floodway beyond normal working hours. All precautions shall be taken to avoid the release of wastes or fuel to streams and other adjacent waterbodies as a result of this operation.

3. Clearing of vegetation/trees shall be the minimum necessary to accomplish the activity.

4. The riparian area, banks, etc., shall be restored to a stable condition to protect water quality as soon as possible. Seeding/planting of native vegetation, mulching and needed fertilization shall be within three days of final contouring, or as soon as possible as seasonal timing permits. On-site inspections of these areas shall be conducted by the permittee as necessary to ensure successful revegetation and stabilization, and to ensure that erosion and deposition of soil in waters of the state is not occurring from this project.

5. Only clean, nonpolluting fill shall be used.

6. Work shall be conducted during low flow whenever possible.

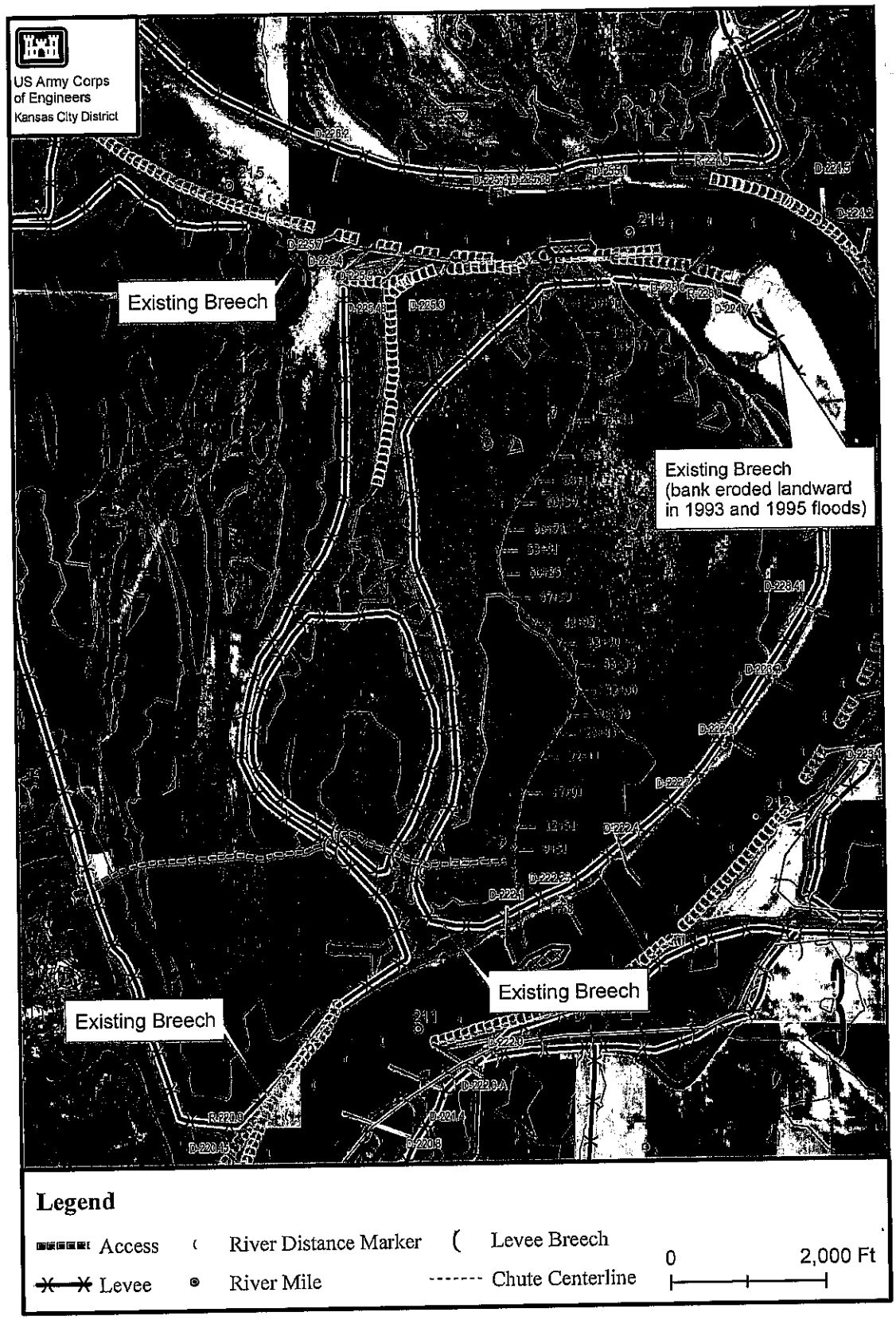
7. The following materials are not suitable for bank stabilization and should not be used due to their potential to cause violations of the general criteria of the Water Quality Standards, 10CSR 20-7.031 (3) (A) – (H):
   a. Earthen fill, gravel, broken concrete where the majority of material is less than 12 inches in diameter, and fragmented asphalt, since these materials are usually not substantial enough to withstand erosive flows;
   b. Concrete with exposed rebar;
   c. Tires, vehicles or vehicle bodies, construction or demolition debris are solid waste and are excluded from placement in the waters of the state; and
   d. Liquid concrete, including grouted riprap, if not placed as part of an engineered structure.

   Recycled concrete may be used provided that it is clean material broken into appropriately sized pieces (greater than 12 inches) of riprap with no protruding rebar.

8. Instream culverts shall be sized and placed to maintain a depth of water at least as deep as the channel directly upstream of the crossing. Structures creating water velocities in excess two feet per second during average annual discharge shall be avoided. If preconstruction velocities exceed two feet per second, then structures shall not increase existing velocities. There shall be no drop between the downstream end of the culverts and the downstream water surface elevation.

Appendix D

Technical Documents


US Army Corps
of Engineers
Kansas City District
Existing Breech
Existing Breech
(bank eroded landward
in 1993 and 1995 floods)
Existing Breech
Existing Breech
Legend
Access
Levee
River Distance Marker
River Mile
Levee Breech
Chute Centerline
0
2,000 Ft

Chute Construction Total	2.83	(acres)
Access Route Total	0.21	(acres)
Total NWI	3.04	(acres)

Map Label	Wetland Type	Acres Intersected	Activity	Mitigation
1	R2UBH	0.483	Chute Construction	In-kind acres created with chute
2	PFO1A	1.549	Chute Construction	Will naturally regenerate following construciton along edges of chute
3	PEMA	0.162	Chute Construction	Shallow Scrape adjacent to exisitng in-kind wetland of 0.17 acres
4	PFO1A	0.026	Access Route	Levee Breach
5	R2UBG	0.022	Access Route	Levee Breach
6	PEMA	0.266	Chute Construction	Shallow Scrape adjacent to exisitng in-kind wetland of 0.27 acres
7	PUBG	0.034	Access Route	Levee Breach
8	PFO1C	0.028	Access Route	Levee Breach
9	PFO1A	0.030	Access Route	Levee Breach
10	PFO1C	0.027	Access Route	Levee Breach
11	PFO1A	0.368	Chute Construction	Will naturally regenerate following construciton along edges of chute
12	PEMC	0.012	Access Route	Levee Breach
13	PEMCx	0.001	Access Route	Levee Breach
14	PEMA	0.030	Access Route	Levee Breach

*Levee breaches will create 0.37 acres of wetland habitat through excavation of abandoned levees.
The 0.37 acres of levee breaches are to be used to replace the 0.21 acres along the access route.
A total of 4 breaches are to excavated, each 100-ft long, and approximately 40-ft wide.

MISSOURI RIVER MILES 211.3 TO 214.2

DRAFT

SALINE COUNTY, MO

JAMESON ISLAND
MISSOURI RIVER MITIGATION

JULY 2005

SOLICITITATION NO. X

US Army Corps of Engineers
Kansas City District
You Matter - We Care

INDEX

SHEET NO.	TITLE	FILE NO.	CADD FILE NO.
	GENERAL		
G001	COVER		M005_C-G001.DGN
G002	INDEX & LEGEND		M005_C-G002.DGN
G003	LOCATION AND VICINITY		M005_C-G003.DGN
G004	NOTES		M005_C-G004.DGN
	GENERAL		
CS100	OVERALL PLAN VIEW		M005_C-CS100.DGN
	PLAN AND PROFILE		
CS101	PLAN AND PROFILE - STA. 0+00 TO STA. 12+00		M005_C-CS101.DGN
CS102	PLAN AND PROFILE - STA. 12+00 TO STA. 24+00		M005_C-CS102.DGN
CS103	PLAN AND PROFILE - STA. 24+00 TO STA. 36+00		M005_C-CS103.DGN
CS104	PLAN AND PROFILE - STA. 36+00 TO STA. 48+00		M005_C-CS104.DGN
CS105	PLAN AND PROFILE - STA. 48+00 TO STA. 60+00		M005_C-CS105.DGN
CS106	PLAN AND PROFILE - STA. 60+00 TO STA. 72+00		M005_C-CS106.DGN
CS107	PLAN AND PROFILE - STA. 72+00 TO STA. 84+00		M005_C-CS107.DGN
CS108	PLAN AND PROFILE - STA. 84+00 TO STA. 96+00		M005_C-CS108.DGN
	CROSS SECTIONS & DETAILS		
CG301	TYPICAL CROSS SECTIONS		M005_CG301.DGN
CG501	CONTROL STRUCTURES		M005_CG501.DGN
CG502	REVETMENT MODIFICATION		M005_CG502.DGN

LEGEND

(RIVER IMPROVEMENTS)

- PILE DIKE W/TERMINAL
- PILE DIKE OR REVETMENT (BURIED)
- ROCK FILL DIKE, REVETMENT OR CHUTE CLOSURE
- ROCK FILL BANK PROTECTION
- PILE DIKE W/ROCK FILL
- PILE REVETMENT
- PILE REVETMENT W/SCREEN PILES
- PILE REVETMENT W/SUSPENDED MATTRESS
- PILE REVETMENT W/ROCK FILL
- PILE REVETMENT W/ROCK FILL (PILING BROKEN OFF)
- STANDARD REVETMENT
- ABATIS
- RETARD
- LEVEES
- PROPOSED STABILIZED CHANNEL LINE
- MILES ABOVE MOUTH (1960 ADJUSTMENT)

US Army Corps of Engineers
Kansas City District

Symbol	Description	Date	Appr.

Designed by: CJB | Dated: JULY 2005
Drawn by: CDS | File no.:
Checked by: | Plot scale:
Submitted by: | CADD File Name:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

DRAFT

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

INDEX & LEGEND

Sheet reference number:
G002

Sheet number: G003

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

LOCATION AND VICINITY

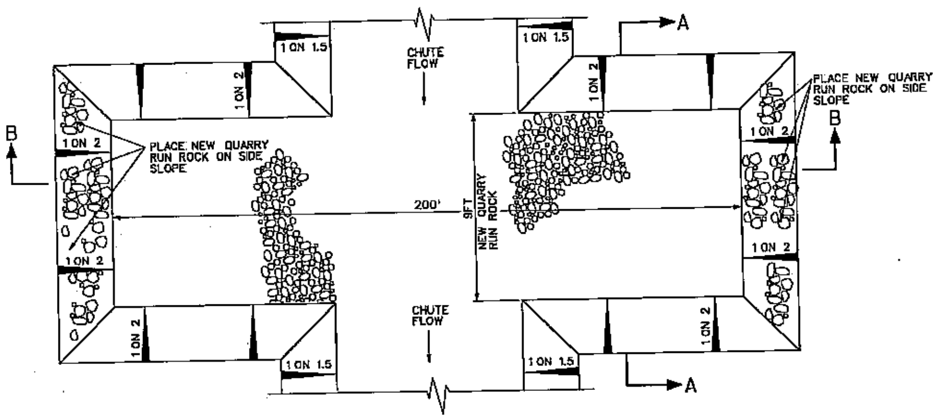
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

DRAFT

Designed by: CMB	Date: JULY 2005
Drawn by: CCC	File no.
Checked by:	Plot scale:
Submitted by:	CADD File Name:

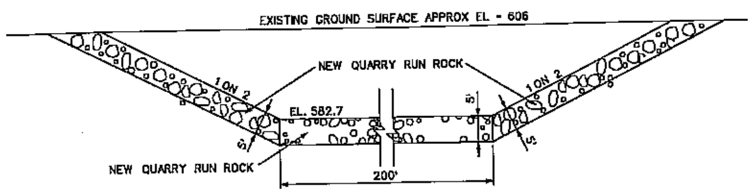
Symbol	Description	Date	Appr.

US Army Corps of Engineers Kansas City District

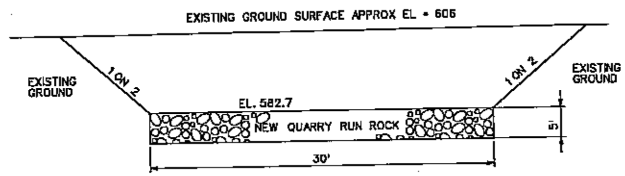


CONTROL STRUCTURE STATION 68+20

NOT TO SCALE



SECTION B-B



SECTION A-A

SEE TYPICAL CHUTE PROFILE

US Army Corps of Engineers Kansas City District

Symbol	Description	Date	Appr.

U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI

DRAFT

Designed by: CJB	Date: JULY 2005
Drawn by: CCG	File no.
Checked by:	Plot scale:
Submitted by:	CADD File Name:

MISSOURI RIVER JAMESON ISLAND MITIGATION PROJECT

CONTROL STRUCTURES

Sheet reference number: CG501

TYPICAL CHUTE CROSS SECTION

NOT TO SCALE

Sheet reference number: CC301

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

TYPICAL CROSS SECTION

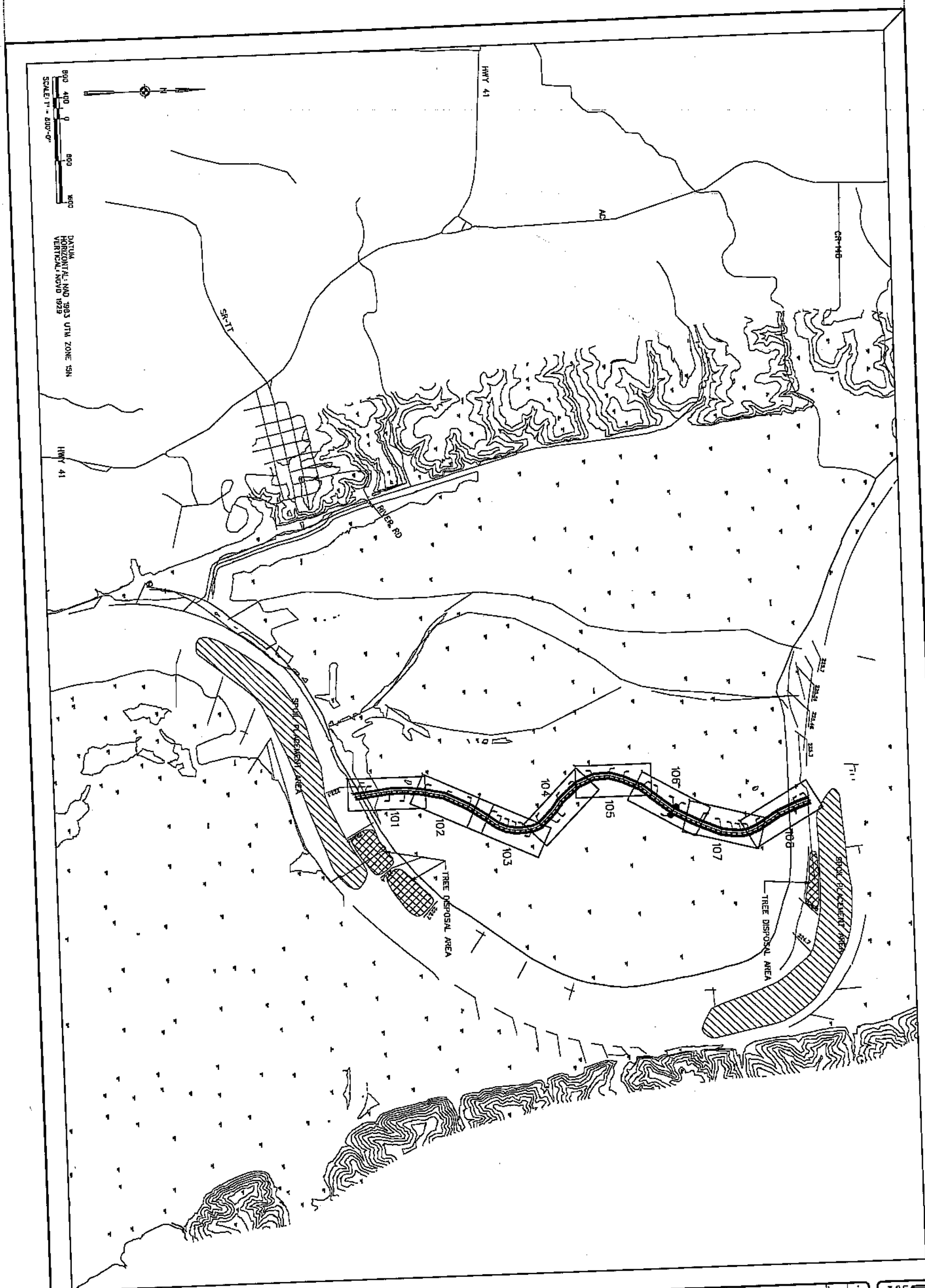
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

DRAFT

Designed by: EJB	Date: JULY 2005
Drawn by: CCC	File no. *
Checked by: *	Plot scale: *
Submitted by: *	CADD File Name: *

Symbol	Description	Date	Appr.

US Army Corps of Engineers
Kansas City District

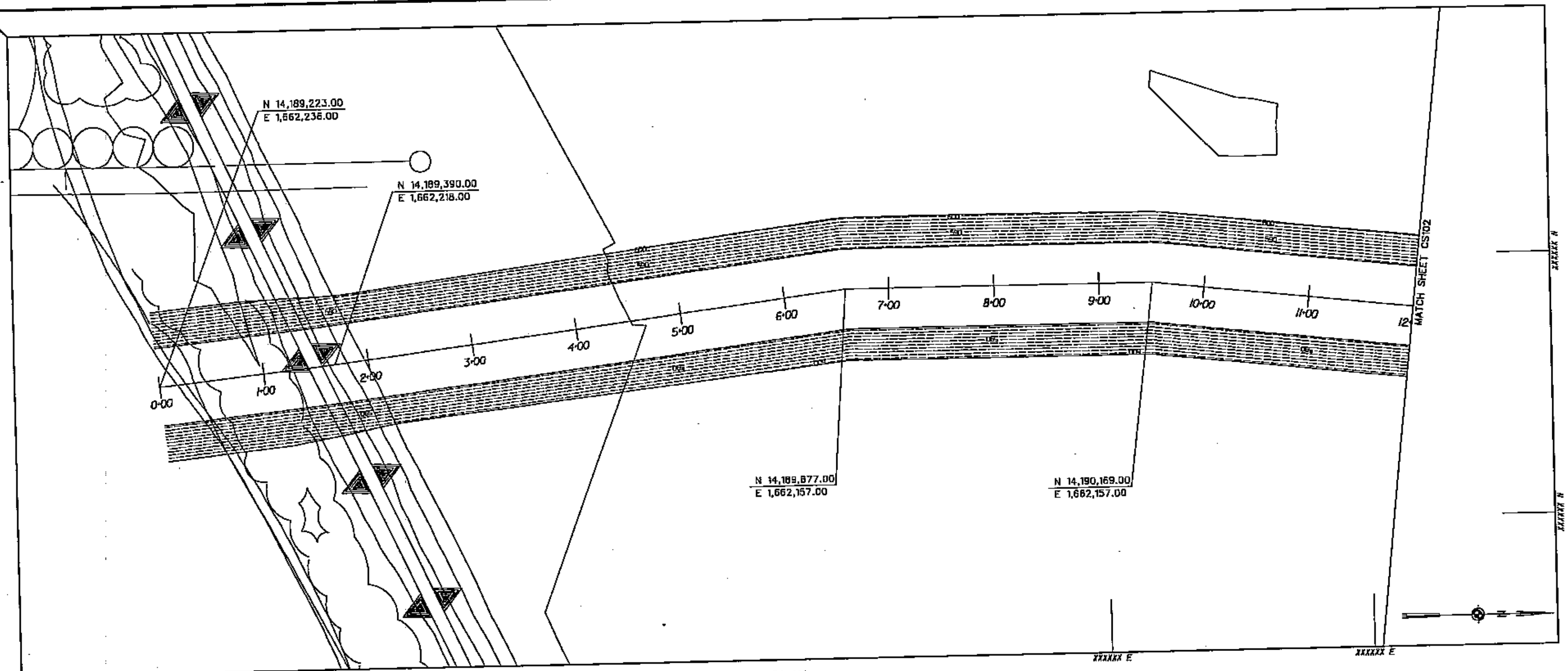


Sheet reference number: CS100	MISSOURI RIVER JAMESON ISLAND MITIGATION PROJECT	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI
	OVERALL PLAN VIEW	DRAFT

Designed by: CJB	Date: JULY 2005
Drawn by: CCC	File no.
Checked by:	Plot scale: 1:800
Submitted by:	CADD File Name: M005_C-CS100.dgn

Symbol	Description	Date	Appr.

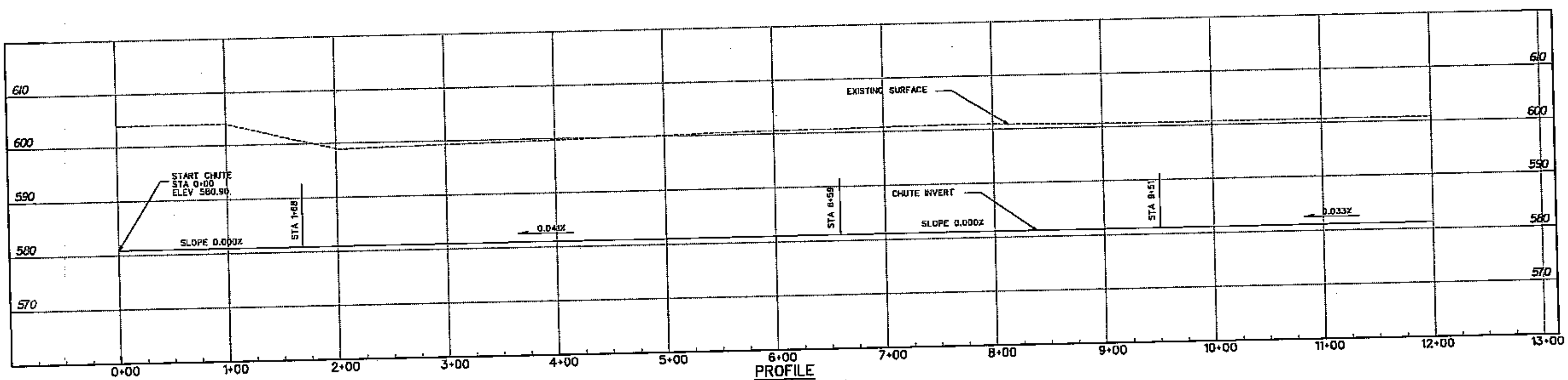
US Army Corps of Engineers
Kansas City District



DATUM
HORIZONTAL: NAD 1983 UTM ZONE 15N
VERTICAL: NGVD 1929
U.S. SURVEY FEET

PLAN

SCALE IN FEET



PROFILE
VERTICAL SCALE: 1" = 10'-0"
HORIZONTAL SCALE: 1" = 50'-0"

US Army Corps of Engineers
Kansas City District

Symbol	Description	Date	Appr.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

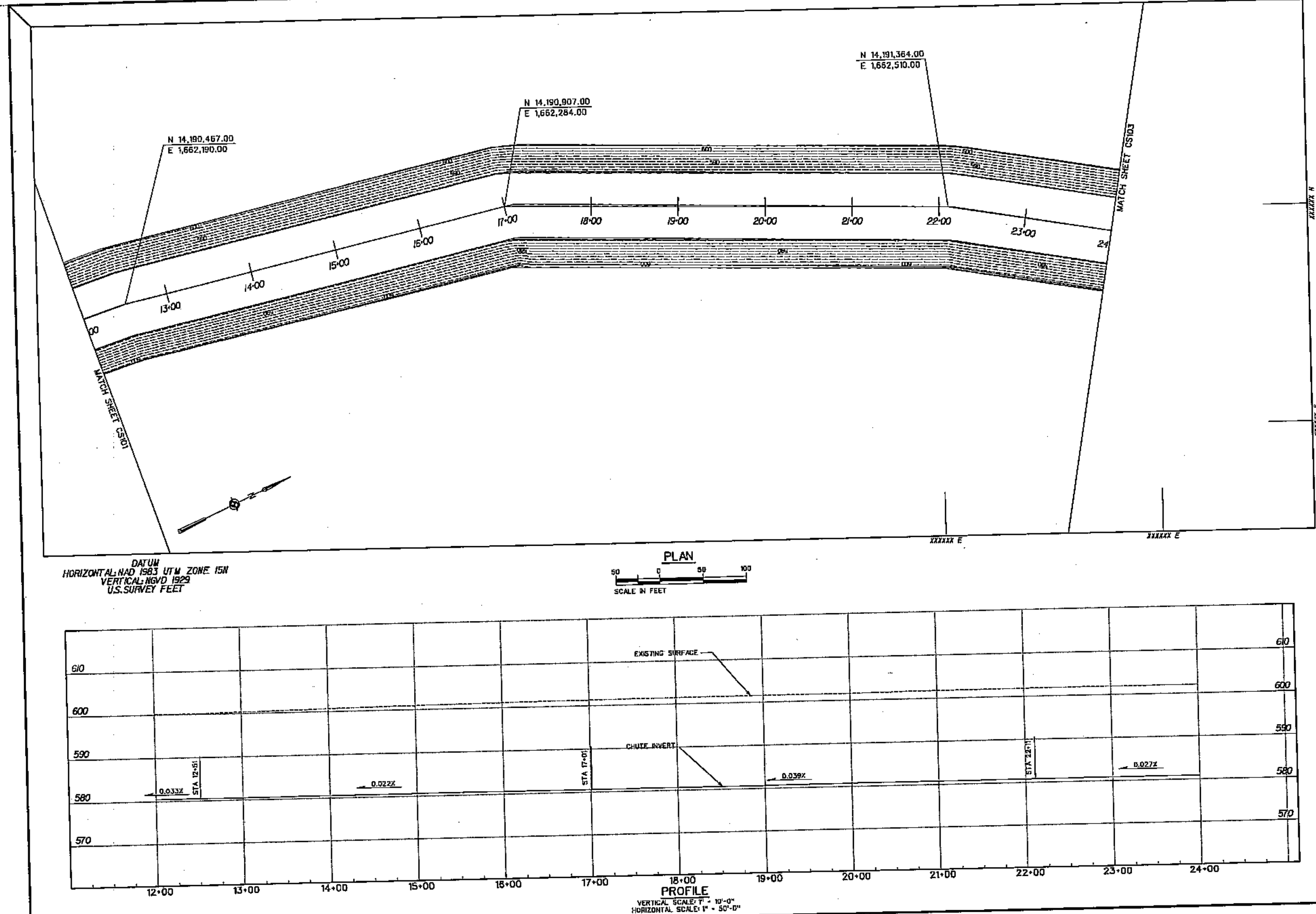
DRAFT

Designed by: CJB	Date: JULY 2005
Drawn by: CCG	File no.
Checked by:	Plot scale:
Submitted by:	CADD File Name:

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

PLAN AND PROFILE
STA 0+00 TO STA 12+00

Sheet reference number:
CS101



US Army Corps of Engineers
Kansas City District

Symbol	Description	Date	Appr.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

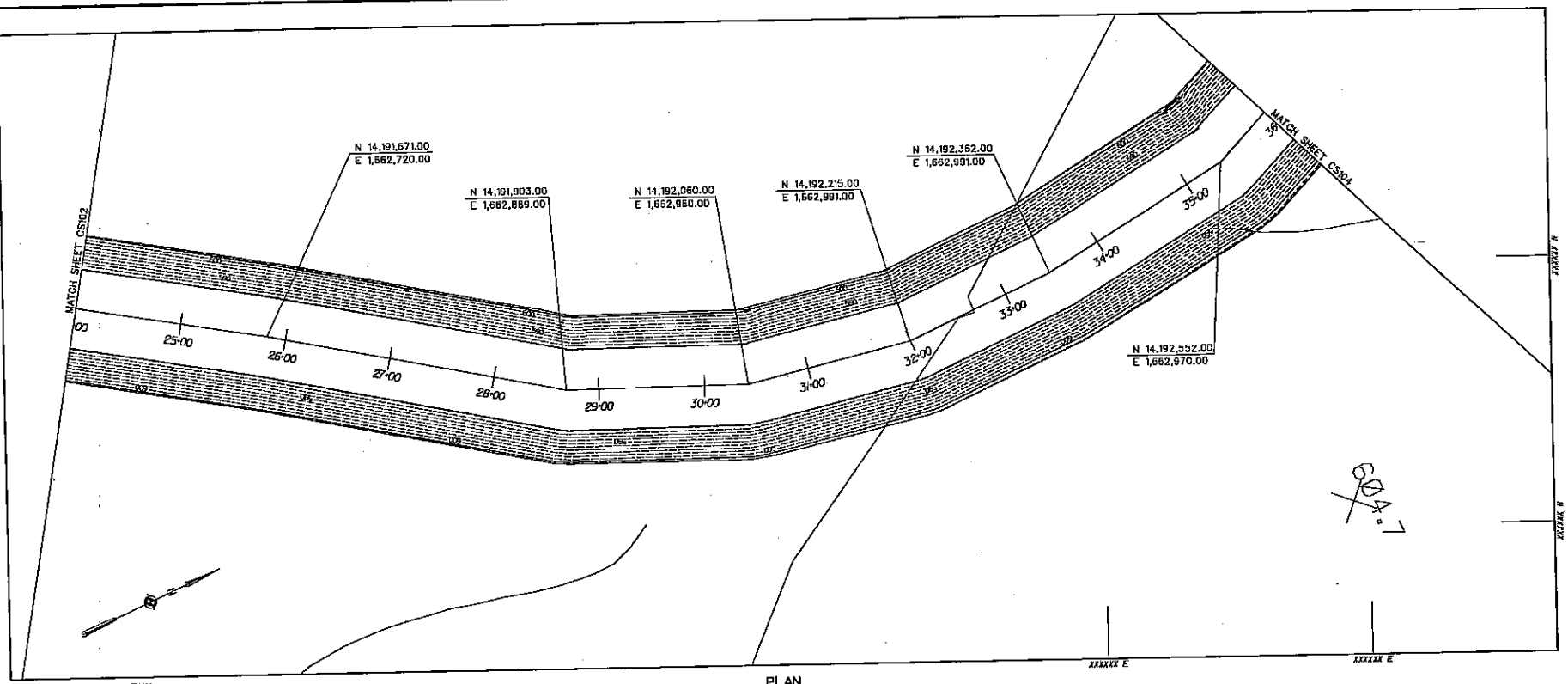
DRAFT

Designed by: CJB	Date: JULY 2005
Drawn by: CCC	File no.
Checked by:	Plot scale:
Submitted by:	CADD File Name:

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

PLAN AND PROFILE
STA 12+00 TO 24+00

Sheet reference number:
CS102

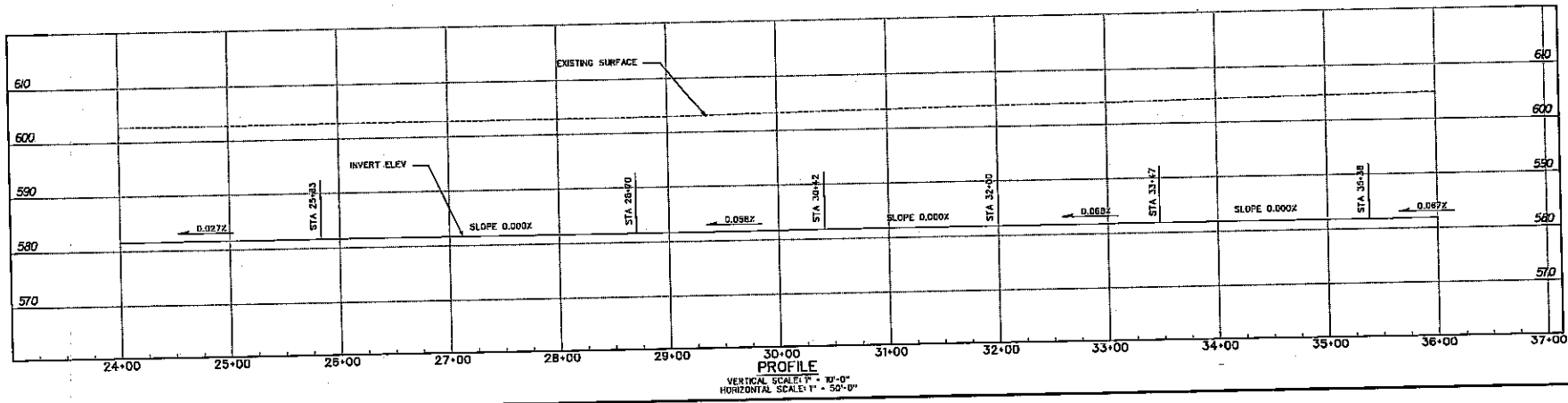


PLAN

50 0 50 100

SCALE IN FEET

DATUM
HORIZONTAL: NAD 1983 UTM ZONE 15N
VERTICAL: NGVD 1929
U.S. SURVEY FEET



PROFILE
VERTICAL SCALE: 1" = 10'-0"
HORIZONTAL SCALE: 1" = 50'-0"

US Army Corps of Engineers
Kansas City District

Symbol	Description	Date	Appd

Designed by: EJB	Date: JULY 2005		CADD File Name:
Drawn by: CCC	File no.	Plot scale:	
Checked by:			
Submitted by:			

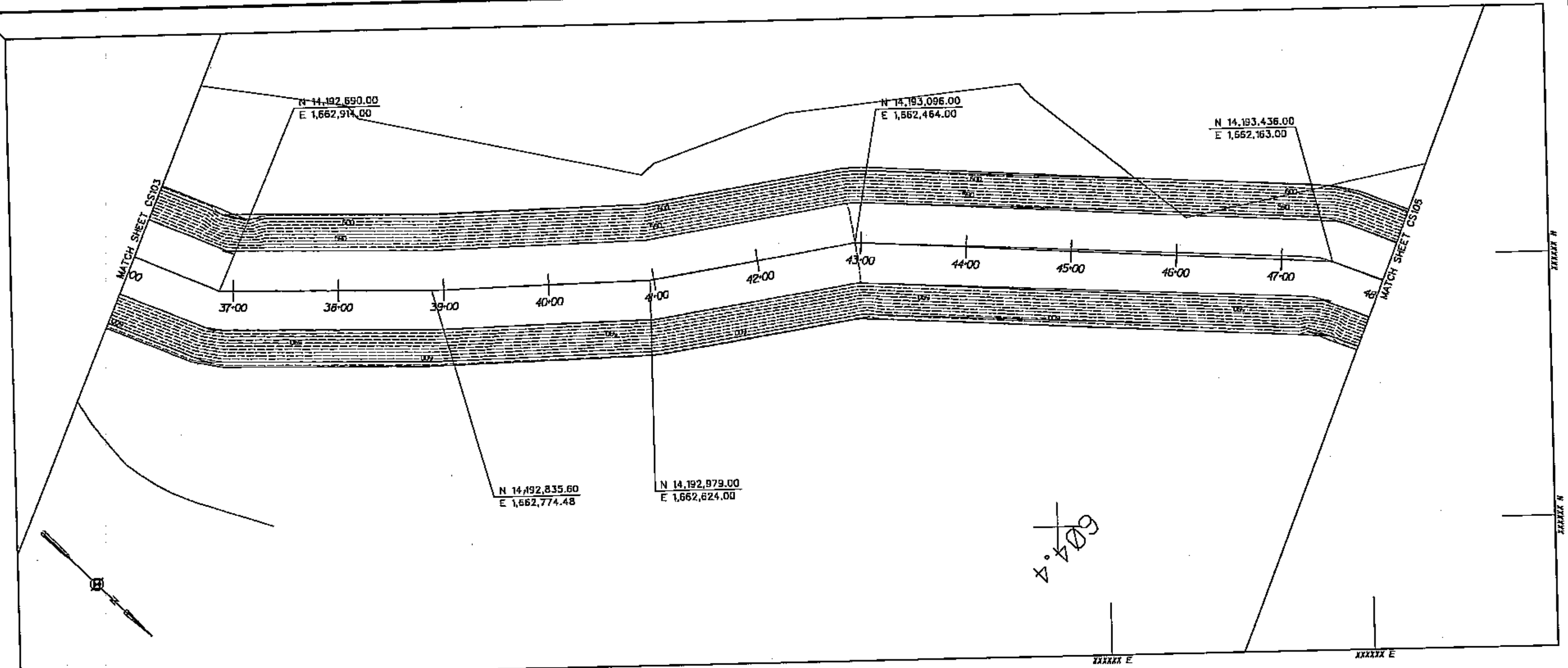
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

DRAFT

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

PLAN AND PROFILE

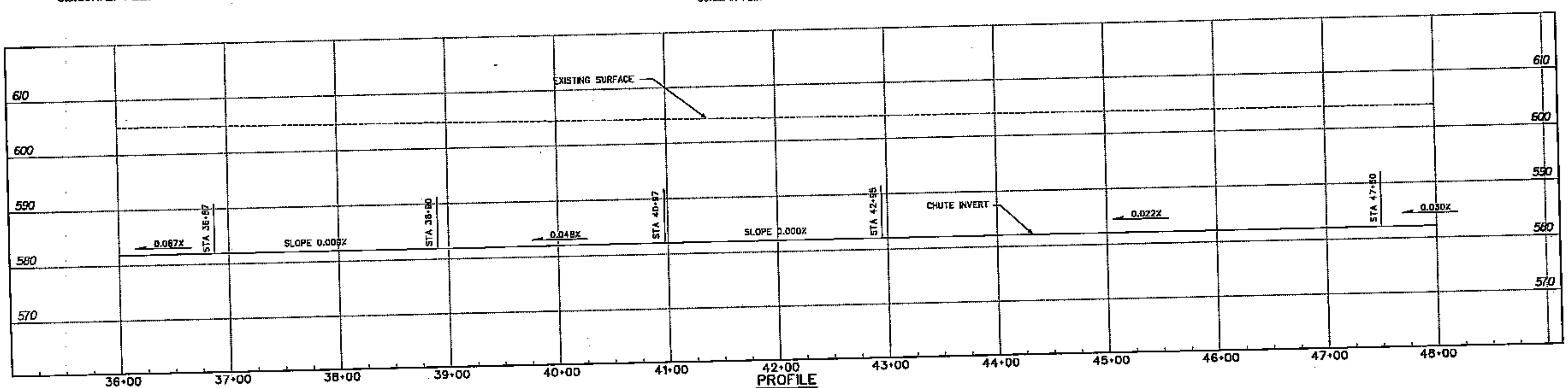
Sheet reference number:
CS103



DATUM
HORIZONTAL: NAD 1983 UTM ZONE 15N
VERTICAL: NGVD 1929
U.S. SURVEY FEET

PLAN

50 0 50 100
SCALE IN FEET



PROFILE
VERTICAL SCALE: 1" = 10'-0"
HORIZONTAL SCALE: 1" = 50'-0"

US Army Corps of Engineers
Kansas City District

Symbol	Description	Date	Appr.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

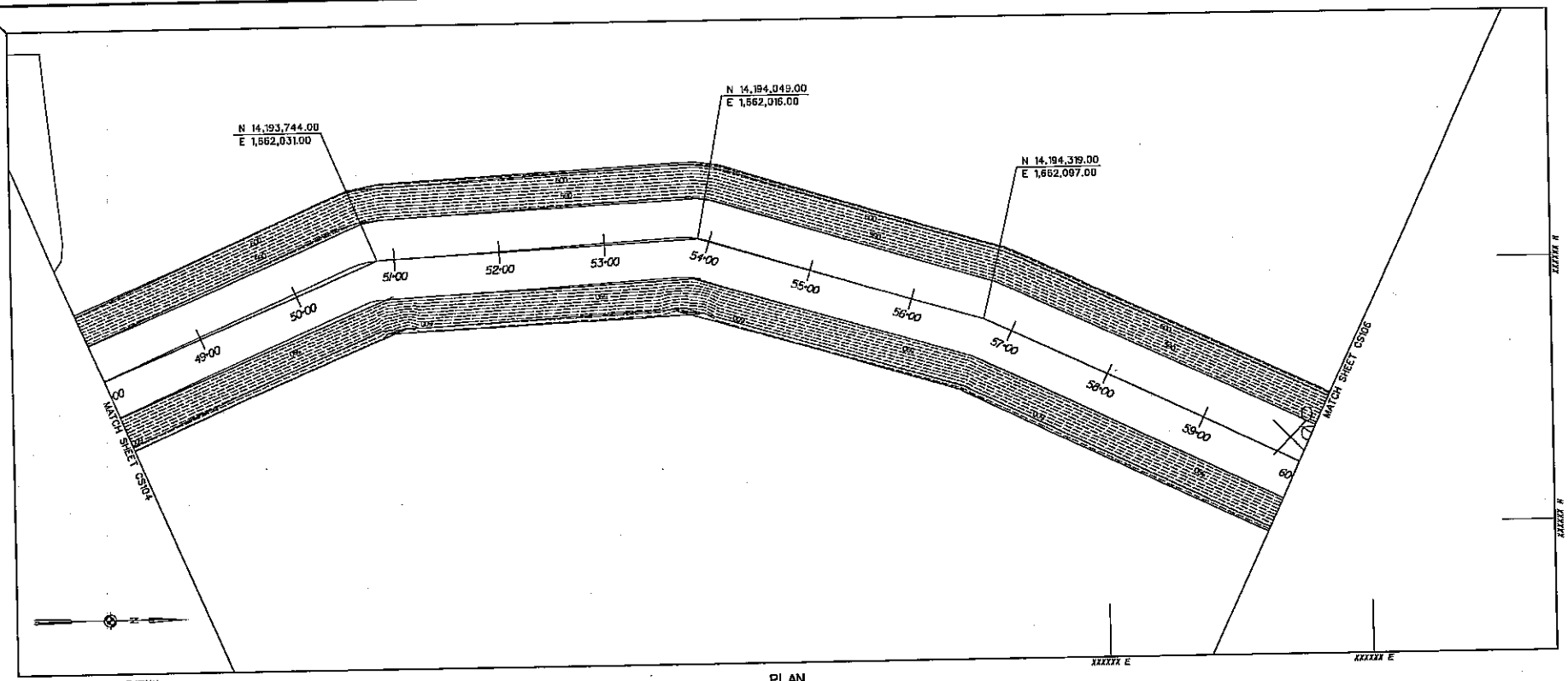
DRAFT

Designed by: TJM	Date: JULY 2005
Drawn by: DCO	File no.
Checked by:	Plot scale:
Submitted by:	CADD file name:

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

PLAN AND PROFILE
STA 36+00 TO STA 48+00

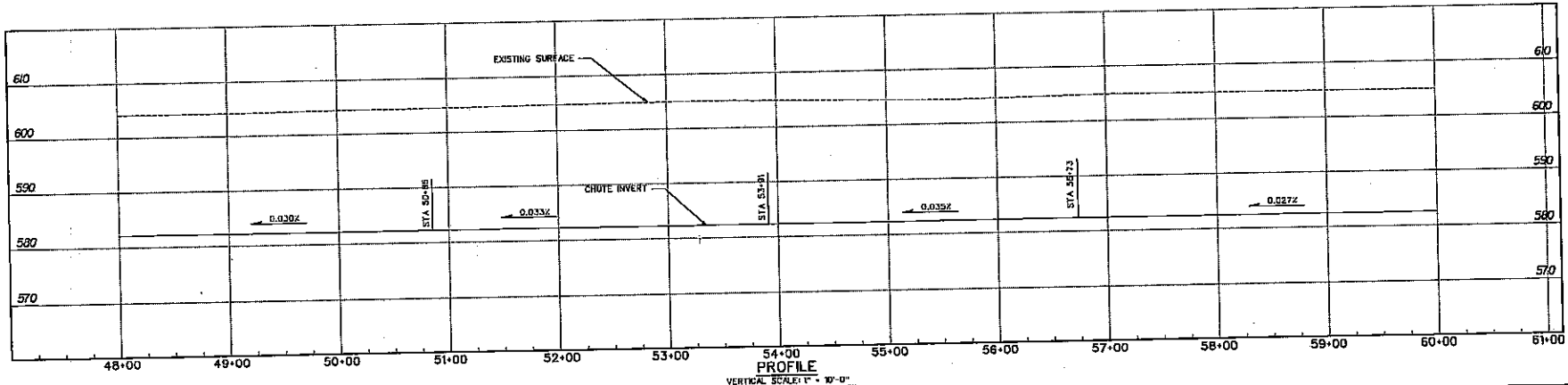
Sheet reference number:
CS104



DATUM
HORIZONTAL: NAD 1983 UTM ZONE 15N
VERTICAL: NGVD 1929
U.S. SURVEY FEET

PLAN

SCALE IN FEET



PROFILE
VERTICAL SCALE: 1" = 10'-0"
HORIZONTAL SCALE: 1" = 50'-0"

US Army Corps of Engineers
Kansas City District

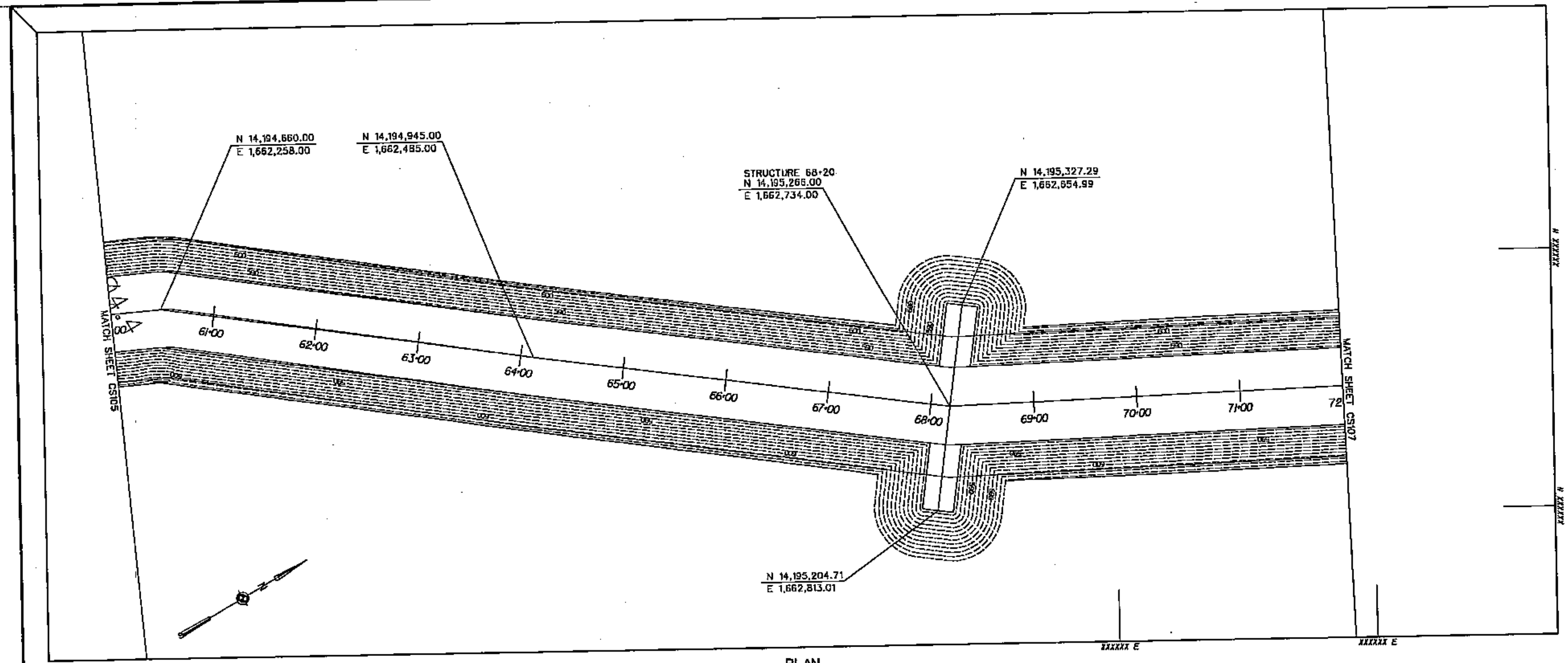
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

DRAFT

MISSOURI RIVER
ANDESON ISLAND
MITIGATION PROJECT

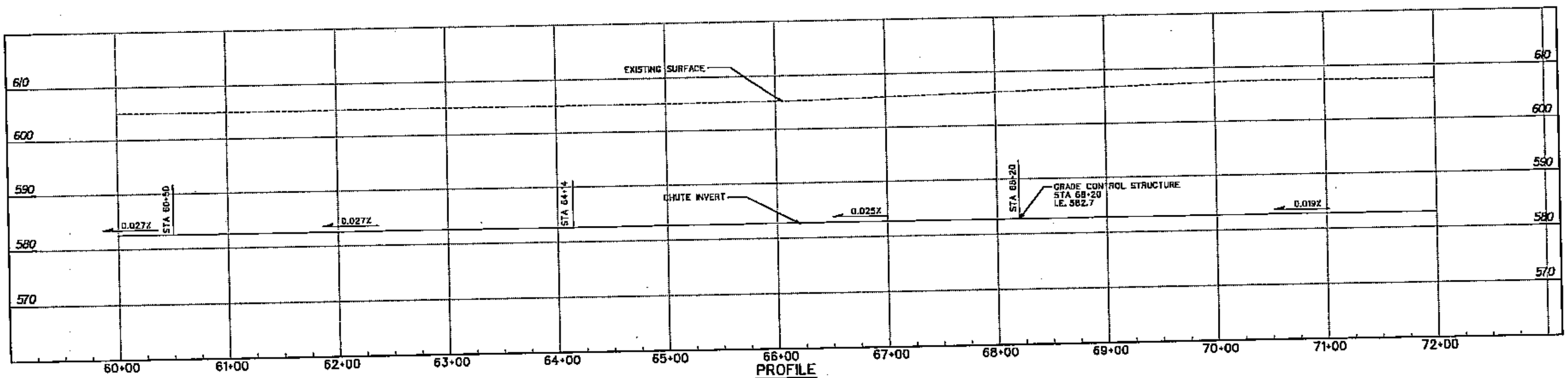
PLAN AND PROFILE
STA 48+00 TO STA 60+00

Sheet reference number
CS105



DATUM
HORIZONTAL: NAD 1983 UTM ZONE 15N
VERTICAL: NGVD 1929
U.S. SURVEY FEET

PLAN
50 0 50 100
SCALE IN FEET



PROFILE
VERTICAL SCALE: 1" = 10'-0"
HORIZONTAL SCALE: 1" = 50'-0"

US Army Corps of Engineers
Kansas City District

Symbol	Description	Date	Appr.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

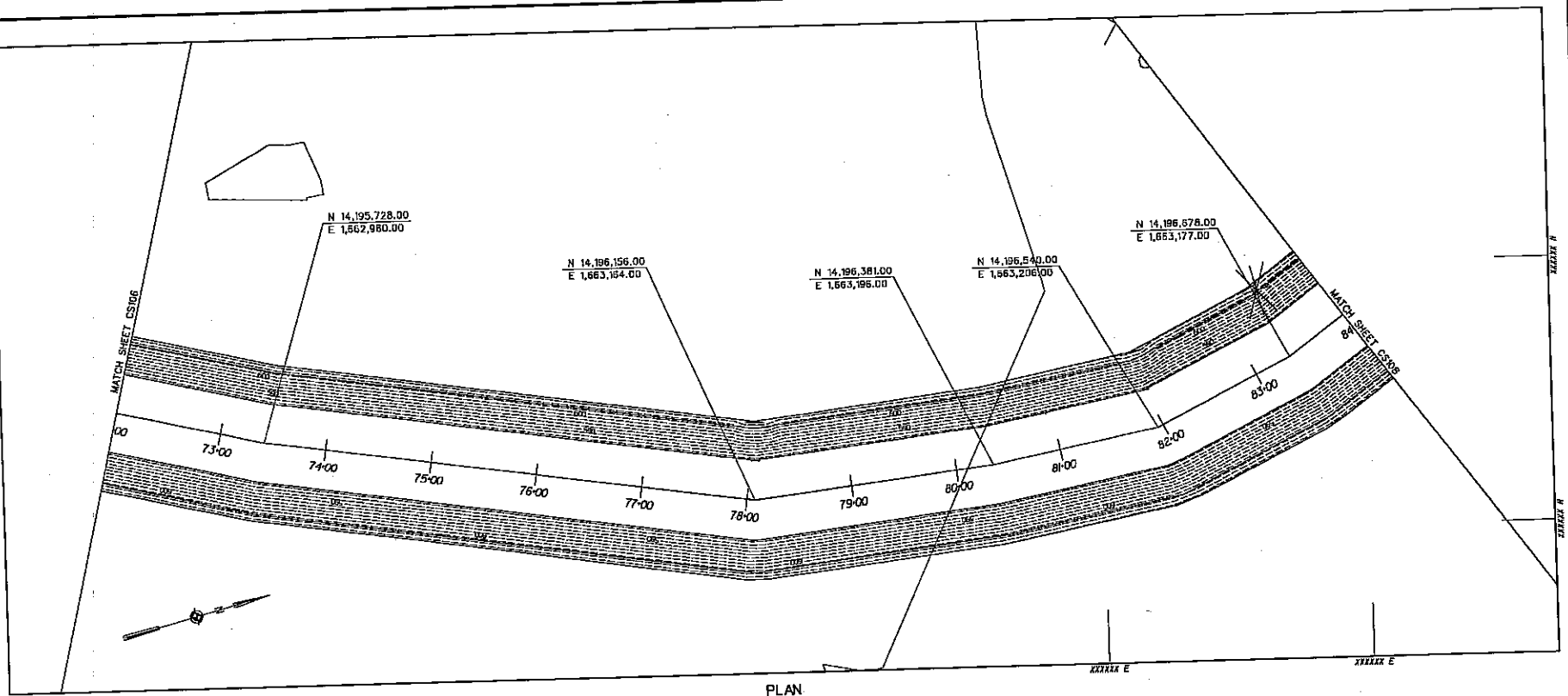
DRAFT

Designed by: CJB	Date: JULY 2005
Drawn by: CCC	File no.
Checked by:	Plot scale:
Submitted by:	CADD File Name:

MISSOURI RIVER
JAMESON ISLAND
MITIGATION PROJECT

PLAN AND PROFILE
STA 60+50 TO STA 72+00

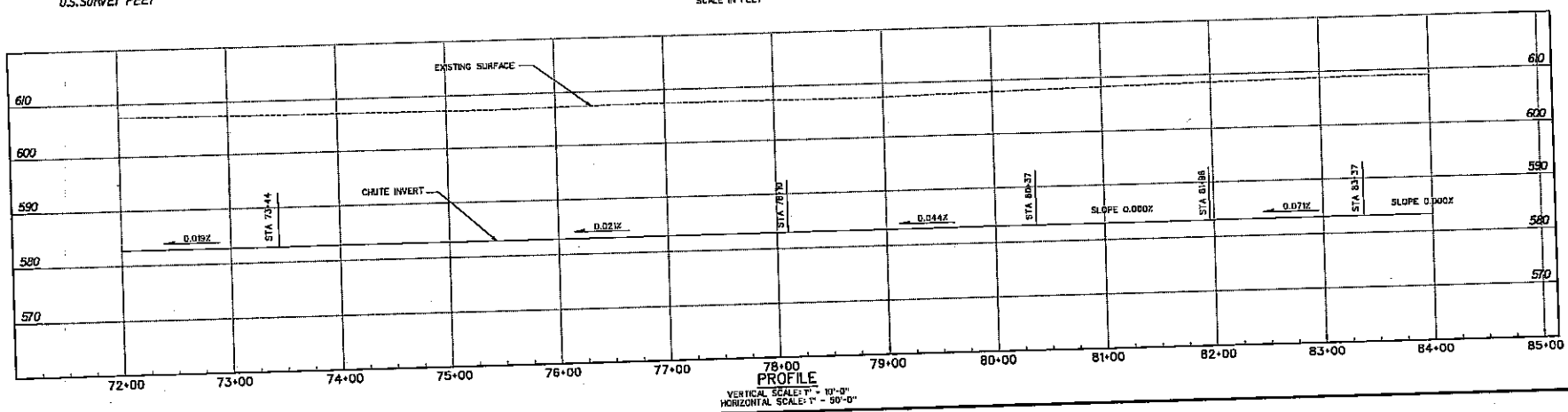
Sheet reference number:
CS106



PLAN

SCALE IN FEET

DATUM
HORIZONTAL: NAD 1983 UTM ZONE 15N
VERTICAL: NGVD 1929
U.S. SURVEY FEET



PROFILE
VERTICAL SCALE: 1" = 10'-0"
HORIZONTAL SCALE: 1" = 50'-0"

US Army Corps of Engineers
Kansas City District

No.	Description	Date

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

Date: JULY 2005
File no.:
Plot scale:
CADD File Name:

DRAFT

MISSOURI RIVER
AUTHORIZED
MITIGATION PROJECT

PLAN AND PROFILE
STA 72+00 TO STA 84+00

Sheet reference number:
CS107