DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

16 July 2020

Reply to:
U.S. Army Corps of Engineers
St. Louis District
Environmental Compliance Section (PD-C)
1222 Spruce Street
St. Louis, MO 63103-2833

Dear Sir or Madam:

The St. Louis District, U.S. Army Corps of Engineers has prepared a draft Environmental Assessment (EA) with unsigned Finding of No Significant Impact (FONSI) to evaluate the off-channel dredging of a 0.3 mile section of the Middle Mississippi River at Minton Point (River Mile 54).

Under the National Environmental Policy Act of 1969, as amended, the St. Louis District is distributing this letter to notify concerned agencies, interest groups, and individuals of the proposed project and to solicit comments from those persons or organizations who may be interested in or affected by the project. The FONSI is unsigned and will only be signed after comments received as a result of this public review have been considered. The electronic version of draft EA and unsigned FONSI are available online at:
https://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/MintonPointBiopEA2020.pdf

The St. Louis District of the U.S. Army Corps of Engineers is proposing to perform off-channel dredging in order to enhance and diversify aquatic habitat at Minton Point. Approximately 205,000 cubic yards of material would be dredged starting at the mouth of Picayune Chute and extending approximately 1,200 yards downstream. The dredge disposal material would be repurposed to build ephemeral sandbar habitat adjacent to the dredging location. Environmental impacts associated with the proposed project are outlined in the draft EA.

Please provide any comments you may have regarding this project to Rachel Steiger of the Environmental Compliance Section, at **telephone** 314-331-8027 or **e-mail** at Rachel.L.Steiger@usace.army.mil. Written comments may be sent to the address above, ATTN: Environmental and Planning Branch (PD-C, Steiger). In order for comments to be considered prior to a final decision being made, they must be received by this office by close of business on 17 August 2020.

Sincerely,

TC Allen

Teri C. Allen, Ph.D.
Chief, Environmental Compliance Section

DRAFT ENVIRONMENTAL ASSESSMENT
WITH
FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL DREDGING
MINTON POINT
ALEXANDER COUNTY, ILLINOIS
MISSISSIPPI RIVER, MILES 53.7 to 54.5

July 2020

Regional Planning and Environmental Division North
Environmental Compliance Section
U.S. Army Corps of Engineers
St. Louis District
1222 Spruce Street
St. Louis Missouri 63103-2833

US Army Corps of Engineers
REGIONAL PLANNING & ENVIRONMENTAL NORTH
ST. PAUL•ROCK ISLAND•ST. LOUIS

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Chapter 1 Purpose and Need for Action

1.1 Introduction

The U.S. Army Corps of Engineers Mississippi Valley Division St. Louis District (CEMVS), proposes to enhance aquatic habitat by performing environmental dredging at one location on the Middle Mississippi River (MMR) near river mile (RM) 54 (Figure 1) in Alexander County, Illinois.

This Draft Environmental Assessment (EA) and unsigned Finding of No Significant Impact (FONSI) have been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's Regulations (40 Code of Federal Regulations §1500-1508), as reflected in the Corps Engineering Regulation 200-2-2.

1.2 Authorization

The St. Louis District of the U.S. Army Corps of Engineers is charged with obtaining and maintaining a navigation channel on the Middle Mississippi River (MMR) that is nine feet deep, 300 feet wide with additional width in bends as necessary. The MMR is defined as that portion of the Mississippi River that lies between its confluence with the Ohio and the Missouri Rivers (Figure 1). This ongoing project is also commonly referred to as the Regulating Works Project (Project). As authorized by Congress, the Project utilizes river training structures, revetments, rock removal and mechanical dredging to manage sediment and maintain bank stability, ensuring adequate navigation depth and width. Bank stabilization is achieved by revetment and river training structures, while sediment management is achieved by river training structures and mechanical dredging. The long-term goal of the Project, as authorized by Congress, is to obtain and maintain a navigation channel and reduce federal expenditures by alleviating the amount of annual maintenance dredging through the construction of regulating works.

The existing conditions and environmental consequences of the Project are thoroughly documented in the 1976 Environmental Impact Statement (1976 EIS) covering the Project – *Mississippi River between the Ohio and Missouri Rivers (Regulating Works)*, (USACE 1976), and the 2017 Supplementary Environmental Impact Statement (SEIS): *Final Supplement I to the Final Environmental Statement, Mississippi River between the Ohio and Missouri Rivers (Regulating Works)* (USACE 2017) (2017 SEIS).

The 1976 EIS, 2017 SEIS, and all other applicable background information and documentation can be found here and are hereby incorporated by reference into this draft EA:

http://www.mvs.usace.army.mil/Missions/Navigation/SEIS/Library.aspx

1.3 Need for Action

In performing this responsibility of maintaining a navigation channel on the MMR, the Corps is committed to complying with the Endangered Species Act (ESA). In executing responsibilities under the ESA, the Corps recognizes that there is to be deference to the U.S. Fish and Wildlife Service (Service). It is incumbent upon the Service to provide biological advice and guidance that allows the Corps to achieve compliance with the ESA within the Corps' statutory authorities and appropriations. Through implementation of the proposed federal action described herein, the District would remain in compliance with the ESA for the Regulating Works Project.

Through a voluntary formal consultation process between the Corps and the Service, a Biological Opinion for the Operation and Maintenance of the 9-foot Navigation Channel on the Upper Mississippi River System (UMRS) was submitted to the Corps from the Service on May 15, 2000 (USFWS 2000; hereinafter also referred to as the Service's Biological Opinion). The Upper Mississippi River System was defined in the Biological Opinion as the commercially navigable portions of the Mississippi (Upper River Miles 0-854), Illinois (River Miles 0-327), Kaskaskia, Minnesota, St. Croix, and Black rivers (UMRS). There are multiple Corps authorized projects for the 9-foot navigation channel within the UMRS, including the Regulating Works Project.

After continued discussions, the Corps submitted a letter to the Service on August 11, 2000. This letter described how the Corps proposed to proceed with the future operation and maintenance of the 9-foot channel navigation projects for the UMRS in light of its ESA obligations and the information provided to the Corps in the Service's Biological Opinion.

The Service's Biological Opinion provided a number of requirements under a "Reasonable and Prudent Alternative" to avoid the likelihood of jeopardizing the continued existence of the federally endangered pallid sturgeon (*Scaphirhynchus albus*). One such requirement was to implement aquatic habitat restoration measures in the MMR that are expected to benefit the pallid sturgeon, such as using dredge disposal material to restore habitat. Further, the Service's Biological Opinion provided "Reasonable and Prudent Measures" to minimize the incidental take of the federally endangered least tern (*Sterna antillarum*), such as using dredge disposal material in the MMR to restore sandbar habitat. The proposed environmental dredging described herein is being conducted in accordance with the Reasonable and Prudent Alternative and the Reasonable and Prudent Measures of the Service's Biological Opinion for these two species.

1.4 Proposed Federal Action

The proposed Federal action is implementation of an environmental dredging pilot project that would occur at one proposed site, Minton Point, RM 54 on the MMR. The goal of the proposed project is to restore habitat for two federally endangered species: the pallid sturgeon and the interior least tern, and to garner information on the efficacy of the flex-pipe, in hopes of refining the District's approach to aquatic habitat restoration in the MMR. The proposed project consists

of performing off-channel dredging in order to enhance lateral connectivity of aquatic habitat while simultaneously using the dredge disposal material to build ephemeral sandbar habitat in the MMR. Specifically, sediment would be dredged from a targeted area outside the navigation channel using either a hydraulic dustpan or a cutterhead dredge, and the dredge disposal material would be concentrated on an existing high elevation area via flexible-floating dredge pipe (flex-pipe). Performing this action at the proposed site would increase the lateral connectivity of aquatic habitat, create exposed sandbar habitat, and enhance the overall bathymetric diversity within the MMR.

1.5 Scoping

Scoping is an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping was conducted early in the planning process using a variety of communication methods with affected public, agencies, organizations, and tribes. The input received during the scoping process will be incorporated in the process of decision making for this project; however, the District must ultimately make the decision whether to implement the Proposed Action.

1.5.1 Tribal Scoping

The United States government has a unique legal relationship with federally recognized American Indian Tribes, based on the inherent powers of Tribal sovereignty and self-government. The District will uphold this special relationship and implement its activities in a manner consistent with it. Communication with 28 federally recognized tribes affiliated with the St. Louis District was initiated by the District's tribal liaison with a Corps letter dated 19 January, 2018 (Appendix B). The District's tribal liaison determined that additional scoping was unnecessary despite the age of the Corps letter due to the fact that no changes were made to the proposed project at Minton Point. All responses to this coordination received by the District will be included in the final version of this report.

1.5.2 Public Review and Comments

This environmental assessment will be made available to the public for a 30-day public review period. The report will be made available on the District's website along with mailed and emailed letters of public availability to interested members of the public (Appendix C) addressing where to find the report and how to provide comments.

1.5.3 Agencies and Organization Scoping

The District began initial planning for environmental dredging after the flex-pipe was purchased in 2011. The details of this specific project, including the location of project site, were developed through a collaborative effort with the Service and the Illinois Department of Natural Resources (IDNR). These agencies provided input on the project objectives, project location, and project monitoring.

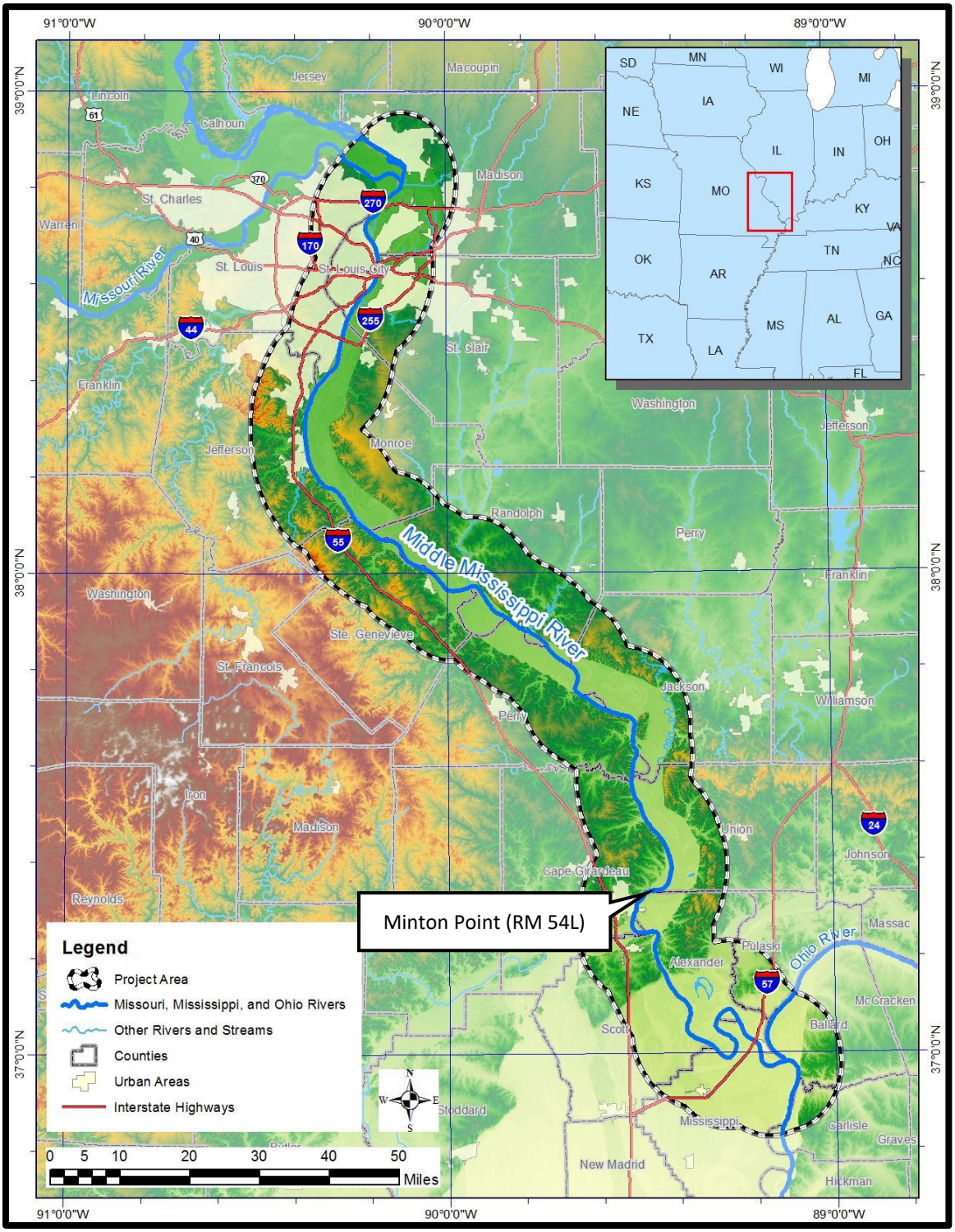

Figure 1. Location of proposed environmental dredging site in relation to the Regulating Works Project Area.

Chapter 2. Alternatives Including the Proposed Action

This chapter presents the alternatives being considered for the Environmental Dredging Project. It describes the No Action Alternative and one action alternative in detail and provides a summary comparison.

2.1 Alternative Development

NEPA requires agencies to evaluate a range of reasonable alternatives to a proposed Federal action. The alternatives were developed to meet the purpose and need of the proposal, while minimizing and avoiding environmental impacts. The proposed action alternative was developed from input provided through scoping. Through a collaborative effort with the River Resources Action Team (RRAT - described in the 2017 SEIS), the District developed the Proposed Action.

Initially, the team evaluated and selected potential pilot project locations throughout the MMR in which to perform environmental dredging and use dredge disposal material to create pallid sturgeon and least tern habitat. When identifying potential sites, the team considered a myriad of factors, including the latest bathymetric surveys, river planform, river training structures, side channel locations, sediment and water quality, recent and future dredging activities, and any known future construction activities or ongoing planning efforts. Accounting for these factors, the team selected sites where the highest ecosystem gains could be realized while not adversely impacting the navigation channel or future construction/planning efforts. More specifically, sites were selected if they provided both an opportunity to link aquatic habitats laterally, and exhibited the appropriate bathymetric conditions with which to use dredge disposal material to build up sandbar habitat.
Minton Point was one of the selected sites selected for further evaluation.

2.2 Alternatives Considered in Detail

Based on planning and coordination with the resource partners, two alternatives were considered for further detailed analysis. The two alternatives are summarized as follows:

- **Alternative 1 (No Action)**: If implemented, dredging and flex-pipe would not be used to enhance lateral connectivity of aquatic habitat, nor create sandbar habitat. The current bathymetry at the proposed site would remain relatively unchanged unless future channel maintenance dredging is completed or the local configuration of river training structures is modified.

- **Alternative 2 (Proposed Action)**: If implemented, the District would hydraulically dredge near the channel border at Minton Point, enhancing depths and lateral flow at the site while simultaneously using the dredge disposal material to build up sandbar habitat.

The existing conditions and impacts of each alternative on environmental resources are compared and described in Chapter 3, Affected Environment and Environmental Consequences.

2.3 Details of Preferred Alternative

Under the Proposed Action alternative, the District would perform environmental dredging in order to enhance depths and lateral flow at the Minton Point while simultaneously using the dredge disposal material to build up sandbar habitat. The specific dredge cut and disposal area has been delineated, and was tailored to the characteristics of the location (e.g., bathymetry, river training structures, side channels). Site specific details are described below (Table 1).

Table 1. Description of the Proposed Action Alternative.

River Mile	Site Name	Purpose	Dredge Area	Dredge Volume
54 L	Minton Point	Increase aquatic connectivity between Picayune Chute and the main channel, and increase the elevation and bathymetric diversity of the sandbar located on the inside bend	12.7 acres	205,000 cubic yards

The objective at the Minton Point site (Figure 2) is to increase aquatic connectivity between Picayune Chute and the main channel, and increase the elevation and bathymetric diversity of the sandbar located on the inside bend. Performing a dredge cut along the left descending bank (LDB) near the lower end of Picayune Chute is expected to promote flow through the lower end of the chute, thereby preserving energy a greater distance and further scouring the dredged area. A dredge cut approximately 1,200 yards long (12.7 acres) would be performed in between the LDB and the lower half of the sandbar, ending near the lower end of Picayune Chute. An estimated 205,000 cubic yards of dredge disposal material would be discharged on an existing high elevation area at the lower tip of the sandbar (RM 54 - 54.3), increasing the average elevation within the disposal area. Dredge activity scheduling will be dependent on multiple factors, including but not limited to river stage, fish spawning season (15 April to 30 June), and Least Tern breeding and nesting seasons (15 May to 31 August).

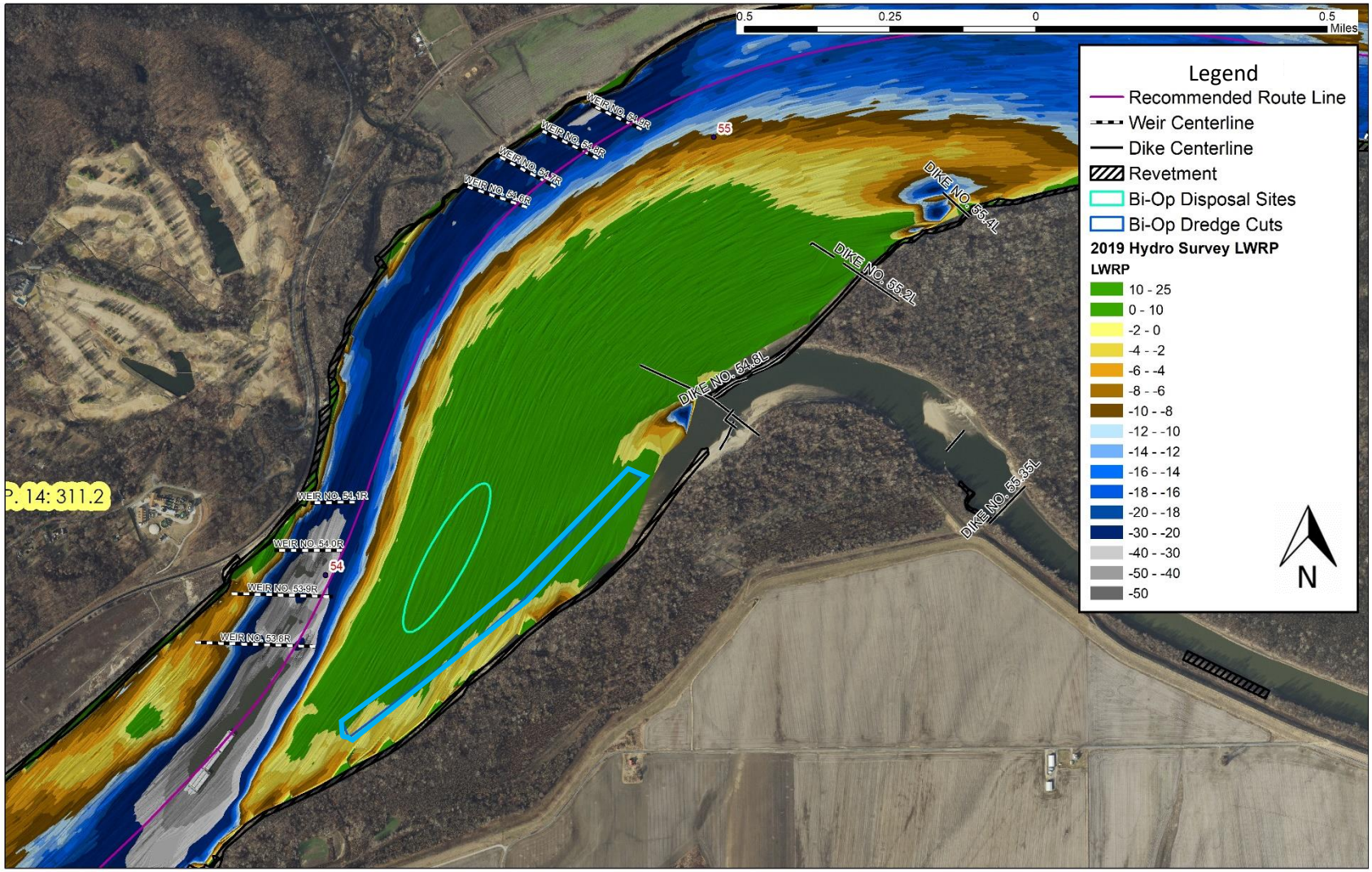

Figure 2. Minton Point work site bathymetric survey performed in 2019, with the proposed dredge cut (blue box) and location of dredge disposal and sandbar creation (green circle).

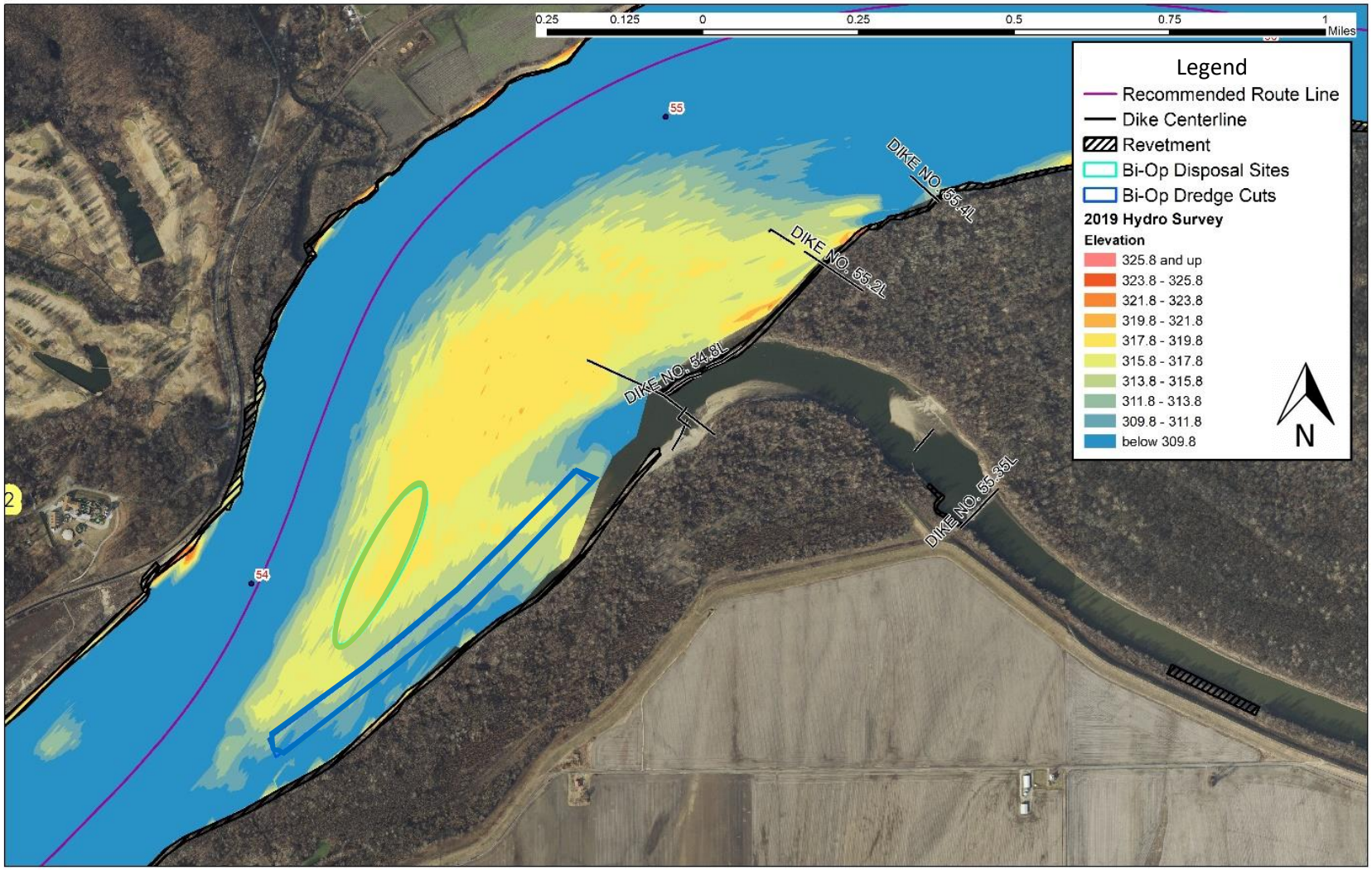

Figure 3. Minton Point sandbar Bathymetric survey performed in 2019, with the proposed dredge cut (blue box) and location of dredge disposal and sandbar creation (green circle). 0 LWRP is 311.8ft.

2.4 Project Monitoring

In order to determine the physical characteristics of the created sandbar habitat and how changes to the habitat occur over time, pre- and post-construction monitoring of the project would be conducted. A preliminary monitoring protocol for the physical component of the project has been developed, and is summarized herein. A complete monitoring protocol will be developed at a future date with input solicitation from the Missouri Department of Conservation, IDNR, and the Service.

Physical monitoring of the created sandbar would include fine scale multi-beam bathymetric surveys and acoustic Doppler current profile (ADCP) surveys. An initial survey (bathymetry and ADCP) would be conducted just prior to construction in order to provide a baseline against which post-construction data would be compared. This would be followed by a post-construction survey to gauge the immediate effects to the physical environment and aquatic habitat. These surveys would be used to detect changes in bathymetry, elevation, and rates of erosion. Annual post-construction surveys would continue until the site returns to pre-construction conditions or until the conditions become stabilized and a new baseline is established.

The ability to adequately perform post-construction surveys is dependent on the project area being inundated, allowing survey vessels to maneuver safely above the project features. Therefore, a schedule of post-construction surveys has not been established; rather, survey dates would be dictated by river stages.

Chapter 3. Affected Environment and Environmental Consequences

This section presents details on the historic and existing conditions of resources within the work area that would potentially be affected by the No Action alternative and the Proposed Action alternative, as well as a comparison of the effects that are likely to result from these alternatives.

3.1 Summary of Environmental Consequences

The existing resources in the work area and the anticipated impacts associated with the two Alternatives are both consistent with the information described in the 1976 EIS and 2017 SEIS. As such, and pursuant to CEQ regulations and guidance to minimize the size of NEPA documents by not duplicating analyses or presenting redundant information, this section incorporates by reference the description of the affected environment and the environmental consequences included in the aforementioned documents with no need for additional details as to the specific work area. Therefore, many resource categories (i.e. air quality, climate change, environmental justice, prime or unique farmland, socioeconomic resources, stages) will not be described any further in this document and the analyses and impacts described are

incorporated by reference. The Proposed Action Alternative work is confined strictly to aquatic areas; no work would occur upon land, and no terrestrial impacts are anticipated for the proposed project. As such, a more detailed description of terrestrial resources (e.g., forests, soils, wildlife) is not included in this report. Other resource categories (e.g., fishery resources, historic and cultural resources) as they relate specifically to this work will be described further with the appropriate amount of additional site-specific details regarding their existing conditions and the associated impacts of both Alternatives.

Further, an analysis of the Regulating Works Project's cumulative effects is presented in the 2017 SEIS. This analysis is incorporated by reference. Based on this analysis, the incremental impacts of the Proposed Action Alternative are not anticipated to be significant.

3.2 Physical Setting

The Minton Point proposed site is located on the LDB of the MMR between river miles 53.7 - 54.5. The site is located on an inside bend at the bottom end of Picayune Chute, approximately two miles upstream from the city of Cape Girardeau, Missouri. The LDB in the area is lined with revetment, and the bottom end of Picayune Chute has a notched closure structure that extends riverward, thus performing as a traditional river training structure as well. The right descending bank (RDB) is also lined with revetment, but has two separate fields of submerged weirs that aid in steering the thalweg away from the RDB.

The sandbar on the inside bend is relatively large compared to most other sandbars in the MMR, approximately 200 acres in size. Multibeam bathymetric surveys (2011, 2019) reveal the sandbar has relatively uniform elevations, with an average of approximately +4 to +6 feet low water reference plane (LWRP), and a maximum elevation between +6 and +8 feet LWRP. Multibeam surveys and aerial imagery also reveal lower elevations between the sandbar and the left bank, due to scour from flow exiting Picayune Chute during higher river stages.

Impacts of the No Action Alternative on Physical Setting - Under the no action alternative, the physical characteristics of the proposed dredging site is expected to remain in its current condition, as described above. The configuration and design of revetment and river training structures would remain unchanged. The District would continue to monitor the structures annually, and perform maintenance and rehabilitation work where necessary to ensure that structures remain at their design elevations and function as intended. The District's maintenance procedure for river training structures usually entails simply adding additional rock to degraded structures, to meet their design standards and elevations. Small changes to structure elevations resulting from maintenance work could potentially affect the local bathymetry of the project site by modifying flow patterns, and thus depositional and scour areas as well. Ultimately, subtle changes to bathymetry will occur over time, but no significant immediate changes are anticipated.

Impacts of the Proposed Action on Physical Setting - Similar to the no action alternative, the proposed action would not result in significant changes to the physical layout of the work site. Revetment and river training structures would not be modified, and all other physical characteristics would remain similar to their descriptions in Section 3.1. However, implementation of the proposed action would have direct beneficial impacts to the physical setting of the proposed project site by enhancing bathymetric diversity and improving habitat for pallid sturgeon and least tern.

Section 2.3 and Figure 2 provides the details and delineations of the proposed dredge cuts and disposal areas. The bed elevation of the dredging and disposal areas would be lowered and raised, respectively, by approximately 10 ft. The achievable elevation is entirely dependent on a number of variables including the river stage once the dredge is mobilized and on site, as well as the elevation of the dredging and disposal areas at that time. Due to these uncertainties, and the District's inability to control or predict these conditions, a specific target elevation has not been established for this project.

3.3 Water Quality and HTRW

Water quality for the project location is expected to be similar to that of the MMR, which is described in the 2017 SEIS. Water quality monitoring has been conducted in the MMR since 1991 through the Corps Upper Mississippi River Restoration Program's Long Term Resource Monitoring (LTRM) element. Analysis of LTRM data (Johnson and Hagerty 2008) shows that although MMR water quality has improved, it currently exceeds suggested nutrient (total nitrogen and phosphorus) guidelines either part of the time (nitrogen) or most of the time (phosphorous). During major storm events, raw sewage still enters the river because of sewage treatment plant overloads due to combined (sewage/stormwater) sewage systems. Water quality measurements taken in the main channel of the MMR from 1991 to 2013 (Upper Mississippi River Restoration Program Long Term Resource Monitoring element) show that turbidity averages approximately 99 NTUs but ranges between 6 NTUs and 755 NTUs. The average annual minimum value during that time period was 21 NTUs and the average annual maximum was 396 NTUs.

Sediments from the project area were evaluated during fall 2017 using vibracoring and laboratory analysis. Cores were collected using a systematic pattern every ~150 meters. Plastic tubes, 12' long by 4" diameter were used to collect core samples; however, the actual lengths of recovered sediments were dependent upon depth to refusal and loss during retrieval. Seven samples were collected at depths ranging from 48" – 119" ($\bar{x}$ = 70.71 ; CI = 21.75). Materials from each core were composited, and classified as gravel (>2.0mm), sand (0.05 – 2mm), and fine (<0.05mm) sediments (Figure 4). Among all samples, sand was the dominant substrate ($\bar{x}$ = 90%), followed by gravel ($\bar{x}$ = 8%), and fine sediments ($\bar{x}$ = 1%; Figure 4). All samples were

comprised of less than 20% fine sediments; thus, elutriate testing was not required (Illinois Title 35 – Section 395.205). Concentrations of Pb and Zn were $\bar{x}$ = 2.13 mg/kg and $\bar{x}$ = 11.59 mg/kg respectively, which is below the EPAs suggested threshold concentration for aquatic life. Neither Hg nor PCBs were detected.

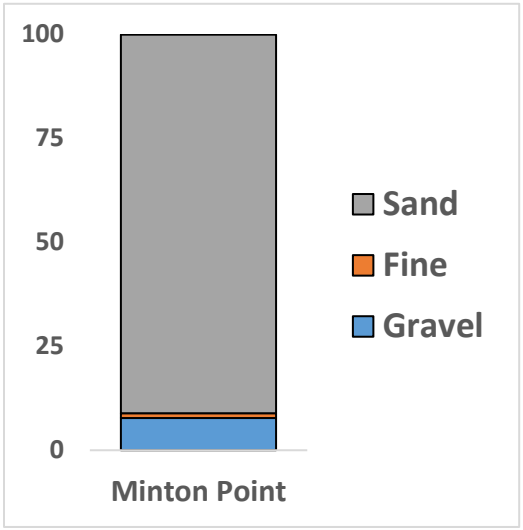

Figure 4. Sediment classification by percent grain size from proposed dredge cut. Grain size classifications were defined as gravel (>2.0mm), sand (0.05 – 2mm), and fine (<0.05mm) sediments.

Section 303(d) of the Clean Water Act requires states to generate lists of impaired water bodies every two years. Impaired water bodies are those that do not meet state water quality standards for the water bodies' designated uses. The project area does not include any impaired waters listed on the 2018 303(d) list for Missouri (MDNR 2018) or Illinois (IL EPA 2018).

An Illinois Section 401 water quality certification has been issued for the project. Certifications will require dredging operations to use best management practices during construction to minimize downstream turbidity. Examples may include proper use of equipment, sediment curtains, and flocculants. A dredge management and operation plan should be developed and reviewed prior to construction.

Impacts of the No Action Alternative on Water Quality and HTRW - Under the no action alternative, the proposed dredging activity would not be implemented and therefore no temporary or permanent changes to water quality conditions would occur. Localized water quality conditions at the proposed dredging location would remain similar to the overall water quality condition of the MMR. The aforementioned sediment constituents revealed through vibracore sampling would likely remain in the sediment and not be exposed to the water column.

Impacts of the Proposed Action on Water Quality and HTRW - Increases in suspended sediment and turbidity due to implementation are expected within the immediate vicinities of the proposed dredging and dredge disposal locations. The increased suspended sediment and reduced water clarity would be local and minor compared to the natural sediment load of the river, and would cease soon after construction completion. Impacts of short-term changes in turbidity are further diminished when compared to the variability in background suspended sediment levels in a river such as the MMR that naturally experiences dramatic fluctuations in turbidity (USACE 2017).

3.4 Fishery Resources

The existing condition of fishery resources within the vicinity of the proposed work site is consistent with the description provided in the 2017 SEIS. Namely, the assemblage of aquatic organisms (i.e., fish and macroinvertebrates) that are likely to occur in these areas are presumably the same as what commonly occurs throughout the MMR. Fish macrohabitat features found at the site are also similar to the descriptions provided in the 2017 SEIS. Habitat types in the area fall under common Mississippi River habitat classifications (see Barko et al. 2004, Phelps et al. 2010), including main channel, unstructured main-channel border, structured main-channel border, and side channels. Because of this, the proposed work area likely fulfills the habitat requirements for the major habitat guilds of large river fishes: fluvial specialists, fluvial dependents, and macrohabitat generalists.

Some research suggests that main channel sandbar habitat may be necessary for the survival and eventual recruitment of larval pallid sturgeon. After collecting young-of-year (age-0) sturgeon (*Scaphirhynchus spp*.) from the Missouri River from 2007 - 2009, Ridenour et al. (2011) found that age-0 sturgeon were relatively more abundant at rootless dikes and channel sandbar habitats, when compared to other macrohabitat types (e.g., wing dike, bankline, wooded island), and that these two habitat types were most often characterized by high velocity current and sand substrate. They do concede, however, that pallid sturgeon may behave differently in the MMR. For example, Phelps et al. (2010) collected age-0 sturgeon in greater abundance from low velocity areas in the MMR, such as channel borders and downstream island tips. Regarding substrate, Phelps et al. (2010) also noted a link between sand substrate and greater abundance of age-0 sturgeon, and Allen et al. (2007) documented juvenile pallid sturgeon selecting sand substrate over other substrate types (e.g., gravel, wood). Research on pallid sturgeon habitat use suggests this relatively long lived species requires multiple habitat types throughout its life, and that habitat utilization may be different for populations inhabiting different river systems, which may be related to the severity and type of anthropogenic modifications that afflict these different systems (i.e., impounded vs. channelized). However, there does seem to be some consensus on what substrate type this species most likely prefers (i.e., sand).

Regarding freshwater mussels, surveys conducted by Keevin et al. (2013) on the MMR demonstrate that mussel abundance and diversity is extremely low in main channel border habitat, and that no true mussel beds are known to exist in the MMR. They attribute this to unstable sand substrate, the continuous downstream movement of sand waves, and the high level of turbidity that enters the MMR from the Missouri River. Past surveys also suggest that side channels in the MMR are more supportive to mussel populations than are main channel areas, although densities are also very low in the side channels and the fauna is typically composed of species that occur in backwater habitats (Keevin and Cummings 2000). Three species (*Anodonta grandis*, *Leptodea fragilis*, and *Potamilus ohiensis*) made up 87.5 percent of the total number of specimens collected during Keevin and Cummings' (2000) mussel survey of the MMR.

Impacts of the No Action Alternative on Fishery Resources- Under the no action alternative, the proposed dredge cut would not be performed, and dredge disposal material would not be used to build upon the existing high elevation area. The elevation of this area is not expected to change significantly, and would continue to provide only moderate bathymetric/habitat diversity. The District conducts annual inspections of its river training structures, and addresses those in need of maintenance. Therefore, it is expected that river training structures would be maintained to their design elevation and dimensions, and would continue to produce the observed scour holes and depositional areas revealed by recent bathymetric surveys (Figure 2). Thus, the aquatic habitat found is expected to remain in its current condition. The area would continue to provide moderate habitat diversity, and the local assemblage of aquatic organisms would likely remain similar to what commonly occurs throughout the MMR.

Impacts of the Proposed Action on Fishery Resources - Under the proposed action, the overall aquatic habitat within the proposed project site would be improved. In particular, the overall bathymetric diversity of this area would be enhanced as that the difference in elevation between deep and shallow areas would be increased. By dredging near the bank, and concentrating the disposal between the dredge cut and the navigation channel, the preferred alternative would create a localized mosaic of main channel sandbar habitat, while simultaneously improving lateral connectivity of aquatic habitat.

Dredging sand from specified areas of the MMR and using it to build sandbar habitat, increasing heterogeneity, is expected to provide habitat to pallid sturgeon of all life stages (i.e., larval, juvenile, and adult). Further, as the river stage fluctuates over time and the shallow areas (i.e., dredge disposal areas) become exposed, they will likely mimic the hydraulic conditions of downstream island tips, and serve as this important habitat type that is likely preferred by pallid sturgeon in the MMR (see Hurley et al. 2004, Phelps et al. 2010). Ultimately, because of the enhanced habitat heterogeneity, the proposed project may result in greater abundance of pallid sturgeon within the immediate area.

Regarding the remainder of the MMR fish assemblage, especially the species that occur most abundantly throughout the MMR (see Section 3.3.2 of the 2017 SEIS), it is anticipated that their abundance within the project area would also increase. The proposed dredge cut would increase the duration of off-channel habitat availability throughout the year, and concentrating the disposal material on existing high elevation areas would ensure shallow water habitat is available during higher river stages. Increasing the bathymetric diversity within the proposed project site would better meet the habitat requirements for many of the fish species that inhabit the MMR.

Given that mussels occur scattered and in low densities within the MMR, it is not likely that any mussels would be present within the dredge cut or the dredge disposal locations. However, any mussels that did happen to occupy the proposed work area could be entrained or smothered during project implementation, as would other benthic invertebrates.

3.5 Federally Threatened and Endangered Species: Tier II Biological Assessment

This section is being used to satisfy the requirements of completing a Tier II Biological Assessment for this project. In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the St. Louis District consulted with the Service, Marion Ecological Services Sub-Office. Through the Service's Information, Planning, and Conservation (IPaC) System, a list of threatened and endangered species that could potentially occur within the vicinity of the project area was provided on 10 April 2020 (Consultation Code: 03E18100-2020-SLI-0520; Event Code: 03E18100-2020-E-01389). According to the Service, five federally endangered species and three federally threatened species may occur within the project area (Table 3). There is no federally designated critical habitat in the proposed project area.

Table 2. Federally listed threatened and endangered species that could potentially occur within the vicinity of the project area.

Species	Status	Habitat
Gray bat (*Myotis grisescens*)	Endangered	Caves: feeding – rivers/reservoirs adjacent to forests
Indiana bat (*Myotis sodalis)*	Endangered	Hibernates in caves and mines. Maternity and foraging habitat: small stream corridors with well-developed riparian woods; upland and bottomland forests
Northern long-eared bat (*Myotis septentrionalis)*	Threatened	Hibernates in caves and mines; swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer
Pallid sturgeon (*Scaphirhynchus albus*)	Endangered	Mississippi and Missouri Rivers
Least tern (*Sterna antillarum*)	Endangered	Large rivers - nest on bare alluvial and dredge disposal islands
Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Threatened	Small to medium sized streams with mixed sand and gravel substrate

Gray Bat

The gray bat (*Myotis grisescens)* occurs in several Illinois and Missouri counties where it inhabits caves during both summer and winter. With rare exceptions, gray bats live in caves year-round. During the winter gray bats hibernate in deep, vertical caves. In the summer, they roost in caves which are scattered along rivers. These caves are in limestone karst areas of the southeastern United States. They do not use houses or barns. This species forages over rivers and reservoirs adjacent to forests.

***Impacts of the Proposed Action on Gray Bat* -** The proposed action does not call for the removal of any trees; all dredging and dredge disposal activity would be completed by river-based equipment and would not result in the destruction of any caves. Further, temporary stressors that result from dredging activities (e.g., noise, emissions) are not expected to be severe enough to adversely affect gray bats near the proposed dredging location. As such, this alternative *may affect, but is not likely to adversely affect* the gray bat.

Indiana Bat

The range of the Indiana bat (*Myotis sodalis*) includes much of the eastern half of the United States. Indiana bats migrate seasonally between winter hibernacula and summer roosting

habitats. Winter hibernacula include caves and abandoned mines. Females emerge from hibernation in late March or early April to migrate to summer roosts. During the summer, the Indiana bat frequents the corridors of small streams with well-developed riparian woods, as well as mature upland forests. It forages for insects along stream corridors, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of croplands, along wooded fencerows, and over farm ponds in pastures. Females form nursery colonies under the loose bark of trees (dead or alive) and/or cavities, where each female gives birth to a single young in June or early July. A maternity colony may include from one to 100 individuals. A single colony may utilize a number of roost trees during the summer, typically a primary roost tree and several alternates. Some males remain in the area near the winter hibernacula during summer months, but others disperse throughout the range of the species and roost individually or in small numbers in the same types of trees as females.

Impacts of the Proposed Action on Indiana Bat - The proposed action does not call for the removal of any trees; all dredging and dredge disposal activity would be completed by river-based equipment and would not result in the destruction of any forested riparian habitat. Further, temporary stressors that result from dredging activities (e.g., noise, emissions) are not expected to be severe enough to adversely affect Indiana bats inhabiting caves nearby. However, the potential exists for these stressors to alter the behavior of Indiana bats roosting in trees near the proposed dredging location. As such, the proposed action *may affect, but is not likely to adversely affect* the Indiana bat.

Northern Long-Eared Bat

The northern long-eared (*Myotis septentrionalis*) bat is a federally threatened bat species. The northern long-eared bat is sparsely found across much of the eastern and north central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. Northern long-eared bats spend winter hibernating in large caves and mines. During summer, this species roosts singly or in colonies underneath bark, in cavities, and in crevices of both live and dead trees. Foraging occurs in interior upland forests. Forest fragmentation, logging and forest conversion are major threats to the species. One of the primary threats to the northern long-eared bat is the fungal disease, white-nose syndrome, which has killed an estimated 5.5 million cave-hibernating bats in the Northeast, Southeast, Midwest and Canada. Suitable northern long-eared bat summer habitat may occur in the forested areas adjacent to the project area.

Impacts of the Proposed Action on Northern Long-Eared Bat - The proposed action does not call for the removal of any trees; all dredging and dredge disposal activity would be completed by river-based equipment and would not result in the destruction of any forested riparian habitat. Further, temporary stressors that result from dredging activities (e.g., noise, emissions) are not expected to be severe enough to adversely affect northern long-eared bats roosting in

trees near the proposed dredging location. However, the potential exists for these stressors to alter the behavior of northern long-eared bats roosting near the proposed dredging location. As such, the proposed action *may affect, but is not likely to adversely affect* the northern long-eared bat.

Pallid Sturgeon

The pallid sturgeon is a federally endangered big-river fish species. It is the position of the Service that over time, river training structures have adversely affected pallid sturgeon by impacting the quality and quantity of habitats in the MMR to which the species is adapted (e.g., braided channels, irregular flow patterns, flood cycles, extensive microhabitat diversity, and turbid waters). According to the Service, this loss of habitat has reduced pallid sturgeon reproduction, growth, and survival by (1) decreasing the availability of spawning habitat; (2) reducing larval and juvenile pallid sturgeon rearing habitat; (3) reducing the availability of seasonal refugia; and (4) reducing the availability of foraging habitat (USFWS 2000). In addition to the habitat changes, reduction in the natural forage base for the pallid sturgeon is likely another factor contributing to the species decline (Mayden and Kuhajda 1997, USFWS 2000). The Service states that river training structures have also altered the natural hydrograph of the MMR by contributing to higher water surface elevations at lower discharges than in the past and to a downward trend in annual minimum stages (Simons et al. 1974, Wlosinski 1999, USFWS 2000). As a result, areas that were historically aquatic habitats are now dry at low discharges (Wlosinski 1999). This has potentially reduced the availability of pallid sturgeon spawning habitat through the loss of habitat heterogeneity (USFWS 2000).

Impacts of the Proposed Action on Pallid Sturgeon- The proposed action was developed to directly benefit the pallid sturgeon and contribute to the implementation of the Reasonable and Prudent Alternative provided in the Service's 2000 Biological Opinion. In particular, restoration of sand bars was ranked as a high priority in the Service's Biological Opinion, due to the importance of this habitat to larval and juvenile pallid sturgeon.

Hydraulic dredging in the MMR inevitably has some risk of "taking" pallid sturgeon through entrainment, which would likely result in direct mortality. However, based on an observed entrainment rate for shovelnose sturgeon (*Scaphirhynchus platorynchus*) in the MMR, and the most recent estimate of the pallid sturgeon to shovelnose sturgeon population ratio in the MMR, the District has concluded the proposed action has a low chance of entraining pallid sturgeon.

More specifically, by monitoring the dredging activity and entrainment that resulted from one of the District's previous projects (Phase 3 North Berms Dredging) that occurred near the confluence of the Missouri and Mississippi Rivers, Ecological Specialists Inc. (2010) found that 0.081 shovelnose sturgeon were entrained for every 1,000 cubic meters of material dredged. Further, recent mark/recapture efforts aimed at estimating the population size of pallid

sturgeon in the MMR did not result in enough recaptures to produce a viable population estimate, but did allow for a shovelnose sturgeon population estimate (USFWS et al. 2016). By using the latest genetic analyses to determine what individuals are "true pallids," then applying the capture ratio of pallid sturgeon to shovelnose sturgeon to the population estimate of shovelnose sturgeon in the MMR, that effort produced the latest population ratio estimate of 1 pallid sturgeon for every 572.5 shovelnose sturgeon in the MMR.

The proposed action calls for an estimated 205,000 cubic yards (156734 cubic meters) of sediment to be dredged within the MMR. By applying the observed shovelnose sturgeon entrainment rate of 0.081 for every 1000 cubic meters of dredged material, and the newly estimated pallid sturgeon to shovelnose sturgeon ratio of 1/572.5, the proposed action would entrain an estimated 0.022 pallid sturgeon. Based on these data, the proposed action would have less than a three percent chance of entraining one pallid sturgeon. Given the low likelihood of entraining pallid sturgeon, the fact that proposed dredging would occur outside the presumed window of pallid sturgeon reproduction (12 April - 30 June), and the fact that the proposed action would ultimately benefit pallid sturgeon through habitat enhancement, the District has concluded that the proposed action *may affect, but is not likely to adversely affect* pallid sturgeon.

Least Tern

The interior population of the least tern (*Sterna antillarum*) is characterized as a colonial, migratory waterbird, which resides and breeds along the Mississippi River during the spring and summer. Least tern arrive on the Mississippi River from late April to mid-May. Reproduction takes place from May through August, and the birds migrate to the wintering grounds in late August or early September (USACE, 1999). Sparsely vegetated portions of sandbars and islands are typical breeding, nesting, rearing, loafing, and roosting sites for least tern along the MMR. Nests are often at higher elevations and well removed from the water's edge, a reflection of the fact that nesting starts when river stages are relatively high (USACE, 1999).

Given the highly dynamic nature of the historic MMR planform, the ability to return to previously used colony sites is not likely a critical life history requirement. The availability of sandbar habitat to least terns for breeding, nesting, and rearing of chicks from 15 May to 31 August is a key variable in the population ecology of this water bird. Only portions of sandbars that are not densely covered by woody vegetation and are emergent during the 15 May to 31 August period are potentially available to least terns (USACE, 1999).

Least terns are almost exclusively piscivorous (Anderson, 1983), preying on small fish, primarily minnows (Cyprinidae). Prey size appears to be a more important factor determining dietary composition than preference for a particular species or group of fishes (Moseley, 1976; Whitman, 1988, USACE, 1999). Fishing occurs close to the nesting colonies and may occur in both shallow and deep water, in main channel and backwater habitats. Radiotelemetry studies

have shown that least tern will travel up to 2.5 miles to fish (Sidle and Harrison, 1990; USACE 1999). Along the Mississippi River, individuals are commonly observed hovering and diving for fish over current divergences (boils) in the main channel, in areas of turbulence, over eddies along natural and revetted banks, and at "run outs" from floodplain lakes where forage fish may be concentrated (USACE, 1999; Niles and Hartman, 2009).

Impacts of the Proposed Action on Least Tern - The proposed action could have a beneficial effect for nesting least tern. Using dredge disposal material to create sandbar habitat could increase the total area of nesting habitat available to least terns in the MMR, depending on river stage fluctuations within a few years after project completion. This would improve the potential for successful reproduction and recruitment of least tern. Although likely to prove beneficial to least tern, short term stressors brought on by construction activities (e.g., noise, emissions) may negatively affect least tern. Thus, the project *may affect, but is not likely to adversely affect* least tern.

Rabbitsfoot Mussel

The rabbitsfoot mussel (*Quadrula cylindrica*) is a federally threatened freshwater mussel species. Parmalee and Bogan (1998) described the following habitat requirements for the rabbitsfoot mussel. The rabbitsfoot mussel is primarily an inhabitant of small to medium-sized streams and some larger rivers. It usually occurs in shallow areas along the bank and adjacent runs and shoals where the water velocity is reduced. Specimens may also occupy deep water runs, having been reported in 9-12 feet of water. Bottom substrates generally include sand and gravel. This species occurs in the lower 20 miles of the St. Francis River in Missouri (USFWS, 2009), and in the Ohio River in Alexander County, Illinois.

Impacts of the Proposed Action on Rabbitsfoot Mussel - Historically, the rabbitsfoot mussel is not known to occur in the Mississippi River. Therefore, the Proposed Action will have *no effect* on the rabbitsfoot mussel.

3.6 Historic, Cultural, and Tribal Resources

During the summer of 1988 when the Mississippi River was at a particularly low level, the St. Louis District conducted an aerial survey of exposed wrecks between Saverton, Missouri, and the mouth of the Ohio River (Norris, 2003). The nearest wreck to the proposed project area is located 1.25 miles upstream off of Devils Island, Alexander County, Illinois. The river bed in the project area was surveyed in 2013 and no topographic anomalies suggesting wrecks are visible on the resulting bathymetric maps.

Impacts of the No Action Alternative on Historic and Cultural Resources - Under the no action alternative, there would be no risk to any known historic or cultural resources that may exist within the project area.

Impacts of the Proposed Action on Historic and Cultural Resources - All proposed dredging would be carried out via dredge, without recourse to land access; therefore, any effects are limited to submerged cultural resources. Primary among these are historic period shipwrecks. The continual river flow and associated sedimentary erosion, deposition, and reworking make it highly unlikely that any more ephemeral cultural material remains on the river bed.

Given the features' construction method (with no land impact), the previous disturbance of the riverbed, the channel history recorded for the location in the nineteenth century, and the lack of any survey evidence for extant wrecks, it is our opinion that the proposed undertaking will have no significant effect on cultural resources.

The Illinois SHPO concurred that the proposed action would not affect listed or eligible historic properties via email dated 15 April 2020. A copy of this correspondence is included in Appendix B. If, however, cultural resources were to be encountered during construction, all work would stop in the affected area and further consultation would take place.

Via a letter dated 19 January, 2018, consultation with 28 federally recognized tribes affiliated with the St. Louis District has been initiated and will continue as necessary during project implementation. All corresponding documents associated with this consultation have been included in this EA (Appendix B). If cultural resources were to be encountered during construction, all work would stop in the affected area and further consultation would take place.

Chapter 4. Relationship to other Environmental Laws and Regulations

Table 3. Federal policy compliance status.

Federal Laws[1]	Compliance Status
Abandoned Shipwreck Act of 1987, as amended, 43 USC § 2101, et seq.	Full
American Indian Religious Freedom Act, as amended, 42 USC § 1996	Full
Archaeological and Historic Preservation Act, as amended, 54 USC § 312501, et seq.	Full
Bald and Golden Eagle Protection Act, as amended, 16 USC § 668, et seq.	Full
Clean Air Act, as amended, 42 USC § 7401, et seq.	Full
Clean Water Act, as amended, 33 USC § 1251, et seq.	Full
Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 USC § 9601, et seq.	Full
Endangered Species Act, as amended, 16 USC § 1531, et seq.	Partial[3]
Farmland Protection Policy Act, as amended, 7 USC § 4201, et seq.	Full
Federal Water Project Recreation Act, as amended, 16 USC §460l-12, et seq. and 16 USC § 662	Full
Fish and Wildlife Coordination Act, as amended, 16 USC § 661, et seq.	Partial[3]
Flood Control Act of 1944, as amended, 16 USC § 460d, et seq. and 33 USC § 701, et seq.	Full
Food Security Act of 1985, as amended, 16 USC § 3801, et seq.	Full
Land and Water Conservation Fund Act of 1965, as amended, 16 USC § 460l-4, et seq.	Full
Migratory Bird Treaty Act of 1918, as amended, 16 USC § 703, et seq.	Full
National Environmental Policy Act, as amended, 42 USC § 4321, et seq.	Partial[4]
National Historic Preservation Act, as amended, 54 USC § 300101, et seq.	Full
National Trails System Act, as amended, 16 USC § 1241, et seq.	Full
Noise Control Act of 1972, as amended, 42 USC § 4901, et seq.	Full
Resource Conservation and Recovery Act, as amended, 42 USC § 6901, et seq.	Full
Rivers and Harbors Appropriation Act of 1899, as amended, 33 USC § 401, et seq.	Full
Wilderness Act, as amended, 16 USC § 1131, et seq.	Full
Executive Orders[2]	
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, EO 12898, February 11, 1994, as amended	Full
Floodplain Management, EO 11988, May 24, 1977, as amended	Full
Invasive Species, EO 13112, February 3, 1999, as amended	Full
Protection and Enhancement of Environmental Quality, EO 11991, May 24, 1977	Full
Protection and Enhancement of the Cultural Environment, EO 11593, May 13, 1971	Full
Protection of Wetlands, EO 11990, May 24, 1977, as amended	Full
Recreational Fisheries, EO 12962, June 7, 1995, as amended	Full
Responsibilities of Federal Agencies to Protect Migratory Birds, EO 13186, January 10, 2001	Full
Trails for America in the 21st Century, EO 13195, January 18, 2001	Full

[1] Also included for compliance are all regulations associated with the referenced laws. All guidance associated with the referenced laws were considered. Further, all applicable Corps of Engineers laws, regulations, policies, and guidance have been complied with but not listed fully here.

[2] This list of Executive Orders is not exhaustive and other Executive Orders not listed may be applicable.

[3] Required permits, coordination, and concurrence will be sought during public review period.

[4] Full compliance will be achieved after a NEPA decision document is signed.

Chapter 5. List of Preparers

Table 4. List of report preparers, including their role and level of experience.

Name	Role	Experience
Lance Engle	Dredging Project Manager	20 years; Channel Maintenance Dredging
Damn Lamm	Hydraulic Engineer	22 years; Hydraulic Engineer
Mike Rodgers	Project Manager	20 years; Water Resources Field, Professional Engineer
Shane Simmons	Environmental Writer	7 years; Fisheries Biologist
Mark Smith, Ph.D.	Cultural Resources	21 years; Cultural Resource Management
Rachel Steiger	Environmental Lead	1 year; Wildlife Biologist

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FINDING OF NO SIGNIFICANT IMPACT

Environmental Dredging
Minton Point
Alexander County, Illinois
Mississippi River, Miles 53.7 To 54.5

1. In accordance with the National Environmental Policy Act, I have reviewed and evaluated the documents concerning the Environmental Dredging Phase 1 project. As part of this evaluation, I have considered:

    a. Existing resources and the No Action Alternative.

    b. Impacts to existing resources from the Proposed Action.

2. The possible consequences of these alternatives have been studied for physical, environmental, cultural, social and economic effects, and engineering feasibility. My evaluation of significant factors has contributed to my finding:

    a. The work would enhance habitat diversity in the Middle Mississippi River. This would be accomplished by dredging outside of the navigation channel to enhance lateral flow and aquatic connectivity, and using the flex-pipe to concentrate dredge disposal material in specific locations in order to build sandbar habitat and enhance overall bathymetric diversity.

    b. No significant adverse impacts to federally threatened or endangered species are anticipated.

    c. No significant impacts to natural resources are anticipated, including fish and wildlife resources. The proposed work would have no effect upon significant historic properties or archaeological resources. There would be no appreciable degradation to the physical environment (e.g., stages, air quality, and water quality) due to the work. There would be no significant impacts to socioeconomic resources. No low-income or minority populations, or prime and unique farmland are located in the proposed work area, and thus would not be significantly impacted.

    d. The No Action Alternative was evaluated and determined to be unacceptable as the St. Louis District is obligated to perform such activities to remain in compliance with the Endangered Species Act.

3. Based on the evaluation and disclosure of impacts contained within the Environmental Assessment, I find no significant impacts to the human environment are likely to occur as a result of the proposed action. Therefore, an Environmental Impact Statement will not be prepared prior to proceeding with the proposed environmental dredging.

_____ _____

(Date)

Bryan K. Sizemore
Colonel, U.S. Army
District Commander

Draft Environmental Assessment
With Finding of No Significant Impact
Environmental Dredging
Minton Point, Alexander County, Illinois

Appendices

Appendix A. Clean Water Act Section 404(b)(1) Evaluation
Appendix B. Agency and Tribal Government Coordination
Appendix C. Distribution List

Appendix A. Clean Water Act Section 404(b)(1) Evaluation

CLEAN WATER ACT
SECTION 404(b)(1) EVALUATION

Environmental Dredging – Minton Point, Middle Mississippi River (RM 53.7 – 54.5)

July 2020

Contents

CLEAN WATER ACT
SECTION 404(b)(1) Evaluation

1. PROJECT DESCRIPTION

A. Location.

The U.S. Army Corps of Engineers (Corps), Mississippi Valley Division (MVD), St. Louis District (District), proposes to enhance aquatic habitat by performing environmental dredging at Minton Point on the Middle Mississippi River (MMR) between river miles (RM) 53.7 – 54.5. The proposed dredging is located within Alexander County, Illinois. The MMR is defined as the reach that lies between its confluences with the Ohio and Missouri Rivers.

B. General Description.

The goal of the proposed project is to restore habitat for two federally endangered species: the pallid sturgeon (*Scaphirhynchus albus*) and the interior least tern (*Sterna antillarum*), and to garner information on the efficacy of the flex-pipe, in hopes of refining the District's approach to aquatic habitat restoration in the MMR. The proposed project consists of performing off-channel dredging in order to enhance lateral connectivity of aquatic habitat while simultaneously using the dredge disposal material to build ephemeral sandbar habitat in the MMR. Specifically, sediment would be dredged from a targeted area outside the navigation channel using a hydraulic dustpan or cutterhead dredge, the dredge disposal material would be concentrated on existing high elevation areas via flexible-floating dredge pipe (flex-pipe). Performing this action would increase the lateral connectivity of aquatic habitat, create exposed sandbar habitat, and enhance the overall bathymetric diversity throughout the MMR.

C. Authority and Purpose.

The St. Louis District of the U.S. Army Corps of Engineers is charged with obtaining and maintaining a navigation channel on the MMR that is nine feet deep, 300 feet wide with additional width in bends as necessary. The MMR is defined as that portion of the Mississippi River that lies between its confluence with the Ohio and the Missouri Rivers. This ongoing Project is also commonly referred to as the Regulating Works Project. As authorized by Congress, the Project utilizes bank stabilization, rock removal, and sediment management to maintain bank stability and ensure adequate navigation depth and width. Bank stabilization is achieved by revetment and river training structures, while sediment management is achieved by river training structures. The Project is maintained through dredging and any needed maintenance to already constructed features. The long-term goal of the Project, as authorized by Congress, is to obtain and maintain a navigation channel and reduce federal expenditures by alleviating the amount of annual maintenance dredging through the construction of regulating works.

Through a voluntary formal consultation process between the Corps and the Service, a Biological Opinion for the Operation and Maintenance of the 9-foot Navigation Channel on the Upper

Mississippi River System (UMRS) was submitted to the Corps from the Service on May 15, 2000 (USFWS 2000; hereinafter also referred to as the Service's Biological Opinion). The Upper Mississippi River System was defined in the Biological Opinion as the commercially navigable portions of the Mississippi (Upper River Miles 0-854), Illinois (River Miles 0-327), Kaskaskia, Minnesota, St. Croix, and Black rivers (UMRS). There are multiple Corps authorized projects for the 9-foot navigation channel within the UMRS, including the Regulating Works Project.

After continued discussions, the Corps submitted a letter to the Service on August 11, 2000. This letter described how the Corps proposed to proceed with the future operation and maintenance of the 9-foot channel navigation projects for the UMRS in light of its ESA obligations and the information provided to the Corps in the Service's Biological Opinion of May 15, 2000. The Service's Biological Opinion provided a number of requirements under a "Reasonable and Prudent Alternative" to avoid the likelihood of jeopardizing the continued existence of the federally endangered pallid sturgeon. One such requirement was to implement aquatic habitat restoration measures in the MMR that are expected to benefit the pallid sturgeon, such as using dredge disposal material to restore habitat. Further, the Service's Biological Opinion provided "Reasonable and Prudent Measures" to minimize the incidental take of the federally endangered least tern, such as using dredge disposal material in the MMR to restore sandbar habitat. The proposed project is being conducted in accordance with the Reasonable and Prudent Alternative and the Reasonable and Prudent Measures of the Service's Biological Opinion for these two species.

D. Description of the Proposed Action Alternative.

Details for the proposed dredging are displayed below in Table 1.

Table 1. Description of the Proposed Action Alternative.

River Mile	Site Name	Purpose	Dredge Area (acres)	Dredge Volume (cubic yards)
54 L	Minton Point	Increase aquatic connectivity between Picayune Chute and the main channel, and increase the elevation and bathymetric diversity of the sandbar located on the inside bend	12.7	205,000

E. General Description of the Dredged/Fill Material.

Sediment cores were collected by vibracoring within the proposed dredge cuts during fall 2017. Cores were collected using a systematic pattern every ~150 meters; thus, seven samples were collected at Minton Point. Plastic tubes, 12 ft long and 4" in diameter were used to collect samples; however, the actual lengths of recovered sediments was dependent upon depth to refusal and loss during retrieval. Sediment samples were processed by the Applied Research and Development Laboratory, Mount Vernon IL. Materials from each core were composited, and classified as gravel (>2.0mm), sand (0.05 – 2mm), and fine (<0.05mm) sediments (Figure 1).

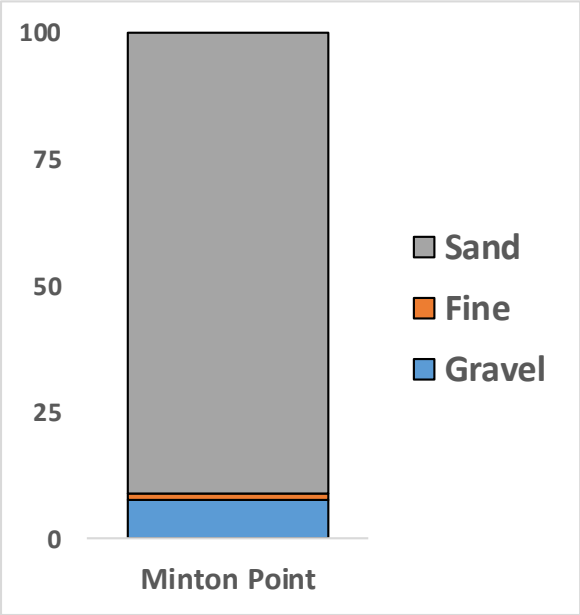


Figure 1. Sediment classification by percent grain size from proposed dredge cut. Grain size classifications were defined as gravel (>2.0mm), sand (0.05 – 2mm), and fine (<0.05mm) sediments.

F. Description of the Placement and Removal Method.

Sediment would be dredged from the targeted area outside the navigation channel using a hydraulic dustpan or cutterhead dredge, the dredge disposal material would be concentrated on existing high elevation areas via flex-pipe. The hydraulic dustpan dredge was specifically designed by the Corps for use on the Mississippi River as it is efficient at excavating sand material from the riverbed. Water jets at the end of the suction head, or dustpan, agitate the sand into a slurry which is then pumped up into the dredge and transported through the flex-pipe to the dredge disposal location. Cutterhead dredge is equipped with a rotating cutter apparatus surrounding the intake end of the suction pipe, allowing it to efficiently dig and pump all types of alluvial materials and compacted deposits, such as clay and hardpan. Because of this it is a commonly used dredging vessel and is generally the most efficient and versatile. The floating flexible pipeline has advantages over typical rigid pontoon pipeline because the discharge end of the pipe can be held in a fixed location instead of side-casting the dredged material. With flexible pipeline, as long as the discharge location is within a certain distance of the dredge, the position of the discharge can be fixed irrespective of the location of the dredge. Fixed-point discharge allows the buildup of material to higher elevations than is normally possible with the traditional side-casting method using rigid pontoon pipeline. This technique can be used to place "piles" of material to create expanses of shallow sandbar and/or ephemeral island habitat.

2. FACTUAL DETERMINATIONS

A. Physical Substrate Determinations

I. Elevation and Slope.

There would be an immediate change in substrate elevation and slope over the extent of the dredged area and the dredge disposal area. The bed elevation of the dredging and disposal areas would be lowered and raised, respectively, by roughly 10 to 20 ft at each work site. The achievable elevation at each site is entirely dependent on a number of variables; including, the river stage once the dredge is mobilized and on site, as well as the elevation of the dredging and disposal areas at that time. Due to these uncertainties, and the District's inability to control or predict these conditions, specific target elevations have not been established for this project. Regardless of the final elevations after project implementation, the overall physical setting of the work sites would be modified in a beneficial manner, providing habitat for the endangered pallid sturgeon, and possibly providing nesting habitat for least tern as well.

II. Sediment Type.
The work area is located within the main stem of the MMR, which is composed mainly of sands with some gravels, silts, and clays. See Figure 1 for the general sediment composition of the proposed dredging location.

III. Fill Material Movement.
The heavier substrate constituents (i.e., gravel and sand) are expected to settle within the disposal area with only minimal downstream drift, depending on flow velocity during implementation. Fine material would drift further downstream before settling out. Fine material comprises a small percentage of the substrate composition at the proposed site. Additionally, the MMR is a naturally turbid stretch of river due to the high suspended sediment load that enters from the Missouri River, and the aquatic fauna of the MMR is highly adapted to the high turbidity levels.

IV. Physical Effects on Benthos.
The proposed dredging would has the potential to affect benthic macroinvertebrate resources through direct removal of individual organisms (entrainment) at the dredging site and by burying organisms at the disposal sites. The degree to which macroinvertebrate resources would be impacted is largely a factor of the density of the organisms in the area of the dredge cut and disposal location at the time of implementation.

Historic and present mussel abundance and diversity in the MMR is relatively low, and no mussel beds are known to exist. Mussels occur scattered and in low densities within the MMR, and it is not likely that any mussels would be present within the dredge cut or the dredge disposal locations. However, any mussels that did happen to occupy the proposed work areas could be entrained or smothered during project implementation, as would other benthic invertebrates. These organisms would be expected to recolonize the project area within a year after project completion.

V. Actions Taken to Minimize Impacts.
Use of the flex-pipe for dredge disposal will allow dredge operators to concentrate the dredged sediment in a pre-determined fixed location. This will minimize the overall area where temporary adverse effects (e.g., increased suspended sediment, smothering of benthic invertebrates) would occur.

B. Water Circulation, Fluctuation, and Salinity Determinations

I. Water.
No permanent adverse changes in water chemistry are expected following proposed environmental dredging. Odor, taste, pH, temperature and dissolved gas changes would not be permanently affected. Turbidity (as measured by total suspended solids) is expected to temporarily increase during construction.

II. Current Patterns and Circulation.
Circulation and flow patterns would be slightly altered in the immediate vicinity of the dredging and dredge disposal areas. The dredge cut would allow for a greater volumes of water to fluctuate through the dredged area. The hydraulic patterns around the disposal location would be altered as well, likely becoming more turbulent as flow is forced to meander around the increased bathymetric elevation.

III. Normal Water Level Fluctuations.
Stages at average and high flows both in the vicinity of the work area and on the MMR are expected to be similar to current conditions. Stages at low flows on the MMR show a decreasing trend over time and this trend is expected to continue with or without implementation of the Proposed Action Alternative.

IV. Actions Taken to Minimize Impacts.
Use of the flex-pipe for dredge disposal will allow dredge operators to concentrate the dredged sediment in a pre-determined fixed location. This will minimize the overall area where temporary adverse effects (e.g., increased suspended sediment, smothering of benthic invertebrates) would occur.

C. Suspended Particulate/Turbidity Determinations

I. Expected Changes in Suspended Particles and Turbidity Levels in Vicinity of Placement Site.
Increases in suspended sediment and turbidity due to implementation are expected to be greatest within the immediate vicinity of the proposed dredging and dredge disposal locations. The increased sediment load would be local and minor compared to the natural sediment load of the river. This would cease soon after construction completion.

II. Effects on Chemical and Physical Properties of the Water Column

a. Light Penetration. There would be a temporary reduction in light penetration until sediments suspended as part of construction activities settled out of the water column.
b. Dissolved Oxygen. No adverse effects expected.
c. Toxic Metals and Organics. No adverse effects expected.
d. Aesthetics. No adverse effects expected.

III. Effects on Biota.

The work would likely result in some short-term displacement of biota in the immediate vicinity of construction activities due to temporary decreases in water quality and disturbance by dredging equipment.

IV. Actions Taken to Minimize Impacts.
Use of the flex-pipe for dredge disposal will allow dredge operators to concentrate the dredged sediment in a pre-determined fixed location. This will minimize the overall area where temporary adverse effects (e.g., increased suspended sediment, smothering of benthic invertebrates) would occur.

D. Contaminant Determinations.

Bulk sediment toxicity tests (see Section D) revealed the average lead and zinc concentrations at the proposed site ($\bar{x}$ = 2.13 mg/kg and $\bar{x}$ = 11.59 mg/kg respectively) fall below threshold the concentrations for aquatic life suggested by the Environmental Protection Agency (EPA). Neither Hg nor PCBs were detected.

E. Aquatic Ecosystem and Organism Determinations

I. Effects on Plankton.
The proposed dredging would likely have temporary, minor effects on plankton communities in the immediate vicinity of the work area due to expected temporary increases in suspended sediment levels. This would cease after project completion.

II. Effects on Benthos.
Sediments at structure placement sites likely harbor oligochaetes, chironomids, caddisflies, turbellaria, and other macroinvertebrates. The proposed dredging activity would eliminate some of these organisms. Benthic fishes would be expected to temporarily avoid the area during implementation. Greater utilization of the location by fish is expected after implementation due to enhanced bathymetric diversity, flow diversity, and improved aquatic connectivity.

III. Effects on Nekton.
Nekton would be temporarily displaced during dredging activity, but would return shortly after completion. Greater utilization of the area by fish may occur after construction due to the enhanced aquatic connectivity, bathymetric diversity, and local hydraulic conditions.

IV. Effects on Aquatic Food Web.
Temporary reductions in macroinvertebrate and fish communities at the proposed dredging location would not significantly impact the aquatic food web in the MMR. Improvements in aquatic habitat subsequent to completion should benefit the aquatic food web.

V. Effects on Special Aquatic Sites.
There are no special aquatic sites within the work area.

VI. Threatened and Endangered Species.
The proposed project is being conducted in accordance with the Reasonable and Prudent Alternative and the Reasonable and Prudent Measures of the Service's 2000 Biological Opinion.

However, presence of threatened or endangered species at the dredging locations is discussed in the Environmental Assessment and Biological Assessment for the Proposed Action Alterative. No adverse effects to T&E species are anticipated.

VII. Other Wildlife.
The proposed action would occur entirely within open water areas, with no land based activity. As such, no impacts to other wildlife (e.g., terrestrial wildlife) are anticipated.

VIII. Actions Taken to Minimize Impacts.
Use of the flex-pipe for dredge disposal will allow dredge operators to concentrate the dredged sediment in a pre-determined fixed location. This will minimize the overall area where temporary adverse effects (e.g., increased suspended sediment, smothering of benthic invertebrates) would occur.

F. Proposed Placement Site Determinations

I. Mixing Zone Determinations.
The dredge disposal material is composed primarily of sand (see Section D), which will quickly settle out of the water column and deposit within the dredge disposal location. Depending on the river discharge and stage during implementation, some sand material will be transported downstream before settling. As mentioned above, some of the finer substrate constituents will remain suspended in the water column for a longer duration before settling.

II. Determination of Compliance with Applicable Water Quality Standards.
Section 401 state water quality certification will be acquired prior to implementation of the Proposed Action.

III. Potential Effects on Human Use Characteristics.
The proposed work would have no adverse impact on municipal or private water supplies; water-related recreation; aesthetics; or parks, national and historic monuments, national seashores, wilderness areas, research sites or similar preserves. Commercial and recreational fishing is scarce throughout the MMR, consisting primarily of the occasional hoop net or trot line, and of catfishing from the bankline near public boat ramps. These activities would not be impacted by the Proposed Action Alternative.

G. Determinations of Cumulative Effects on the Aquatic Ecosystem.
Given the purpose and nature of the Proposed Alternative, no adverse cumulative effects are anticipated. Rather, the proposed environmental dredging would alleviate some of the adverse effects of past actions by enhancing bathymetric diversity and aquatic habitat in the MMR, which may have been reduced over time with the development of the navigation channel. As such, the overall burden of cumulative effects on the MMR would be reduced as a direct result of the Proposed Action Alternative.

H. Determinations of Secondary Effects on the Aquatic Ecosystem.
No adverse secondary effects would be expected to result from the Proposed Action Alternative.

3. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON PLACEMENT

A. No significant adaptations of the 404(b)(1) guidelines were made relative to this evaluation.

B. Alternatives that were considered for the Proposed Action Alternative included:

1. No Action Alternative - Under the No Action Alternative, District's flex-pipe would not be used to enhance lateral connectivity of aquatic habitat, nor create sandbar habitat. The current bathymetry at the proposed site would remain relatively unchanged until future channel maintenance dredging is completed or the local configuration of river training structures is modified.

2. Proposed Action Alternative - The proposed Federal action is implementation of dredging from a targeted area outside the navigation channel using a hydraulic dustpan or cutterhead dredge, the dredge disposal material would be concentrated on an existing high elevation area with the flex-pipe. Performing this action would increase the lateral connectivity of aquatic habitat, create exposed sandbar habitat, and enhance the overall bathymetric diversity throughout the MMR.

C. Certification under Section 401 of the Clean Water Act will be attained prior to implementing work at the site, Minton Point, Illinois.

D. The proposed fill activity is in compliance with Applicable Toxic Effluent Standards of Prohibition under Section 307 of the Clean Water Act.

E. No significant impact to threatened or endangered species is anticipated from this work. Prior to construction, full compliance with the Endangered Species Act would be documented.

F. No municipal or private water supplies would be affected by the Proposed Action Alternative, and no degradation of waters of the United States is anticipated.

G. The work area is situated along an inland freshwater river system. No marine sanctuaries are involved or would be affected by the Proposed Action Alternative.

H. The materials used for construction would be chemically and physically stable and non-contaminating

I. The proposed dredging activity would not have a significant adverse effect on human health and welfare, recreation and commercial fisheries, plankton, fish, shellfish, wildlife, or special aquatic sites. No significant adverse effects on life stages of aquatic life and other wildlife dependent on aquatic ecosystems are expected to result. The proposed construction activity would have no significant adverse effects on aquatic ecosystem diversity, productivity, and

stability. No significant adverse effects on recreational, aesthetic, and economic values would occur.

J. No other practical alternatives have been identified. The Proposed Action Alternative is in compliance with Section 404(b)(1) of the Clean water Act, as amended. The Proposed Action Alternative would not significantly impact water quality, would enhance aquatic habitat within the MMR, and would ultimately contribute to the ongoing ESA compliance effort for the Regulating Works Project.

_____ _____

(Date)

Bryan K. Sizemore
Colonel, U.S. Army
District Commander

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397

JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

217/782-3362

APR - 8 2020

U.S. Army Corps of Engineers, St. Louis District
ATTN: Regulatory Branch (Travis Schepker)
1222 Spruce Street
St. Louis, MO 63103-2833

Re: U.S. Army Corps of Engineers - Environmental Dredging Phase 1 - Middle Mississippi River (Multiple County)
Log No. C-0025-19 [CoE appl. # CEMVS-PD-P]
CWA § 401 Certification

Sir or Madam:

This Agency received a Section 401 water quality certification request from U.S. Army Corps of Engineers requesting necessary comments concerning the subject project involving proposed hydraulic dredging to create enhanced habitat (sandbars) for endangered pallid sturgeon and least tern. We offer the following comments.

Based on the information included in this submittal, it is our engineering judgment that the proposed project may be completed without causing water pollution as defined in the Illinois Environmental Protection Act, provided the project is carefully planned and supervised.

These comments are directed at the effect on water quality of the construction procedures involved in the above described project and are not an approval of any discharge resulting from the completed facility, nor an approval of the design of the facility. These comments do not supplant any permit responsibilities of the applicant toward the Agency.

This Agency hereby issues certification under Section 401 of the Clean Water Act (PL 95-217), subject to the applicant's compliance with the following conditions:

1. The applicant shall not cause:

   a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;

   b. water pollution defined and prohibited by the Illinois Environmental Protection Act;

   c. interference with water use practices near public recreation areas or water supply intakes; or

   d. violation of applicable provisions of the Illinois Environmental Protection Act.

2. The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.

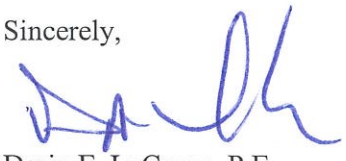
3. Construction activities shall be conducted in a manner to minimize resuspension of materials in the water column. Techniques such as careful equipment use, construction during favorable weather

conditions that minimize turbulence and transport of suspended contaminants and other methods such as turbidity curtains should be used as necessary to minimize re-suspension of sediment material. Turbidity curtains shall be used in accordance with the current version of the "Illinois Urban Manual" https://illinoisurbanmanual.org/ Practice Standard for Floating Silt Curtain (no. 917).

This certification becomes effective when the Department of the Army, Corps of Engineers includes the above conditions # 1 through # 3 as conditions of the requested permit pursuant to Section 404 of PL-95-217.

This Section 401 water quality certification does not grant immunity from any enforcement action found necessary by this Agency to meet its responsibilities in prevention, abatement, and control of water pollution.

Sincerely,



Darin E. LeCrone, P.E.
Manager, Industrial Unit, Permit Section
Division of Water Pollution Control

DEL:DRG:C-0025-19_401 WQ Certification_20Feb19.docx

cc: IEPA, Records Unit
IEPA, DWPC, FOS,
IDNR, OWR, Springfield
USEPA, Region 5
U.S. Army Corps of Engineers, 1222 Spruce Street, St. Louis, MO 63103
Travis Shepker,
DRG

Appendix B. Agency and Tribal Government Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Southern Illinois Sub-Office
Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
Phone: (618) 997-3344 Fax: (618) 997-8961
http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

In Reply Refer To: April 10, 2020
Consultation Code: 03E18100-2020-SLI-0520
Event Code: 03E18100-2020-E-01389
Project Name: Minton Point FlexPipe Dredging

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated respresentative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website

http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects and projects that include installing towers that use guy wires or are over 200 feet in height, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act *(*16 U.S.C. 703 *et seq*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Southern Illinois Sub-Office
Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
(618) 997-3344

Project Summary

Consultation Code: 03E18100-2020-SLI-0520

Event Code: 03E18100-2020-E-01389

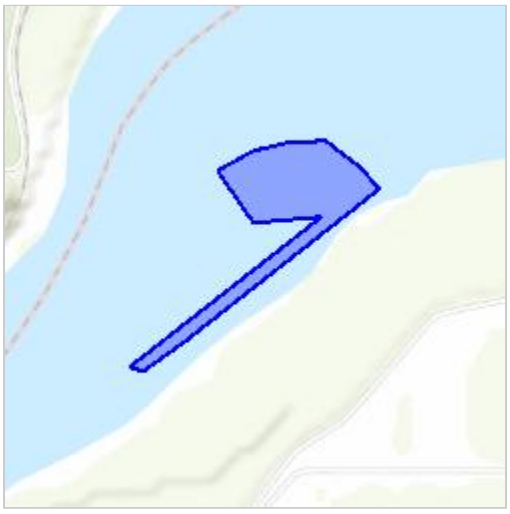
Project Name: Minton Point FlexPipe Dredging

Project Type: DREDGE / EXCAVATION

Project Description: USACE St. Louis Division is interested in conducting maintenance dredging on the Middle Mississippi River near Minton Point (RM 53.7-54.5) to increase aquatic connectivity between Picayune Chute and the main channel, and use dredge material to increase the elevation and bathymetric diversity of the sandbar located on the inside bend. Dredge area: 12.7 acres; dredge volume: 205,000 cubic yards; timing dependent on river stage and pallid sturgeon reproduction window.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.327043094132236N89.48634392955105W



Counties: Alexander, IL

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7162

Clams

NAME	STATUS
Rabbitsfoot *Quadrula cylindrica cylindrica*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5165

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant: US Army Corps of Engineers
Contact: Rachel Steiger
Address: 1222 Spruce Street
St. Louis, MO 63103

IDNR Project Number: 2008854
Date: 04/28/2020

Project: Minton Point Flexpipe Dredge
Address: 37.3290471952, -89.4851800152, McClure

Description: The U.S. Army Corps of Engineers proposes to enhance aquatic habitat by performing environmental dredging at Minton Point (RM 54) on the Middle Mississippi River, Union and Alexander Counties, Illinois. The goal of the proposed project is to restore habitat for two federally endangered species: the pallid

Natural Resource Review Results

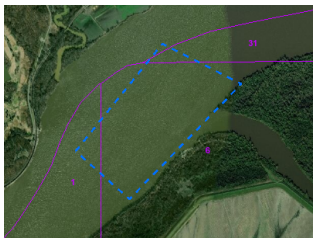
The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

American Eel *(Anguilla rostrata)*
Indiana Bat *(Myotis sodalis)*
Mississippi Kite *(Ictinia mississippiensis)*

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.



County: Alexander

Township, Range, Section:
14S, 3W, 6
14S, 4W, 1
, ,

County: Union

Township, Range, Section:
, ,
, ,
13S, 3W, 31

IL Department of Natural Resources Contact
Bradley Hayes
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
U.S. Army Corps of Engineers

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

Illinois Department of
Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

JB Pritzker, Governor
Colleen Callahan, Director

April 28, 2020

Rachel Steiger
US Army Corps of Engineers
1222 Spruce Street
St. Louis, MO 63103

RE: Minton Point Flexpipe Dredge
Project Number(s): 2008854
County: Alexander, Union

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Bradley Hayes
Division of Ecosystems and Environment
217-785-5500

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

November 15, 2017

Engineering and Construction Division
Curation and Archives Analysis Branch (EC-Z)

Ms. Rachel Leibowitz
Illinois State Historic Preservation Office
Illinois Dept. of Natural Resources
Attn: Review & Compliance/Old State Capital
One Natural Resources Way
Springfield, Illinois 62702

Subject: Environmental Dredging Phase 1

Dear Ms. Leibowitz:

The United States Army Corps of Engineers (Corps), St. Louis District, is presently planning the creation of sandbar habitat in the Mississippi River using dredge material. The work comprises the Environmental Dredging Phase 1 Project. We are contacting your office to initiate consultation under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulation 36 CFR 800.

Background

Beginning in 1824, the Congress of the United States authorized the Secretary of the Army, by and through the Corps, to make improvements to the Mississippi River, and some of its major tributaries, for the purpose of obtaining and maintaining an inland navigation channel for waterway commercial transportation throughout the United States. Ultimately for the Mississippi River, Congress authorized obtaining and maintaining at least a nine foot deep navigation channel from the Gulf of Mexico to Minneapolis, Minnesota, through multiple projects by various methods and management.

Congress authorized the ultimate plan for how the navigation channel should be obtained and maintained for a majority of the Middle Mississippi River (from the confluence of the Ohio River to the confluence of the Missouri River) in the Rivers and Harbors Act of 1910 and eventually established the current navigation channel

dimensions of nine feet deep and not less than 300 feet wide, with additional width in the bends as required, in the Rivers and Harbors Act of 1927.

In performing this responsibility, the Corps is committed to complying with the Endangered Species Act (ESA). In executing responsibilities under the ESA, the Corps recognizes that there is to be deference to the U.S. Fish and Wildlife Service (Service). It is incumbent upon the Service to provide biological advice and guidance that allows the Corps to achieve compliance with the ESA within the Corps' statutory authorities and appropriations. Through implementation of the proposed federal action described herein, St. Louis District will remain in compliance with the ESA for the Regulating Works Project.

Through a voluntary formal consultation process between the Corps and the Service, a Biological Opinion for the Operation and Maintenance of the 9-foot Navigation Channel on the Upper Mississippi River System (UMRS) was submitted to the Corps from the Service on May 15, 2000. After continued discussions, the Corps submitted a letter to the Service on August 11, 2000. This letter described how the Corps proposed to proceed with the future operation and maintenance of the 9-foot channel navigation projects for the UMRS in light of its ESA obligations and the information provided to the Corps in the Service's Biological Opinion.

The Service's Biological Opinion provided a number of requirements under a "Reasonable and Prudent Alternative" to avoid the likelihood of jeopardizing the continued existence of the federally endangered pallid sturgeon. One such requirement was to implement aquatic habitat restoration measures in the Middle Mississippi River (MMR) that are expected to benefit the pallid sturgeon, such as using dredge disposal material to restore habitat. Further, the Service's Biological Opinion provided "Reasonable and Prudent Measures" to minimize the incidental take of the federally endangered interior least tern, such as using dredge disposal material in the MMR to restore sandbar habitat. This project is being conducted in accordance with the Reasonable and Prudent Alternative and the Reasonable and Prudent Measures of the Service's Biological Opinion.

Project

The proposed Federal action is implementation of an environmental dredging pilot project that would occur at five location in the MMR (Figure 1). The goal of the proposed project is to restore habitat for two federally endangered species: the pallid sturgeon and the interior least tern, and to garner information on the efficacy of the flex-pipe, in hopes of refining the District's approach to aquatic habitat restoration in the MMR. The proposed project consists of performing off-channel dredging in order to enhance lateral connectivity of aquatic habitat while simultaneously using the dredge disposal material to build ephemeral sandbar habitat in the MMR. Specifically, sediment would be dredged from targeted areas outside the navigation channel using a hydraulic dustpan dredge and the dredge disposal material would be concentrated on existing high elevation areas via flexible-floating dredge pipe (flex-pipe). Performing this action at the five proposed sites would increase the lateral connectivity of aquatic

habitat, create exposed sandbar habitat, and enhance the overall bathymetric diversity throughout the MMR.

The five locations chosen for the preferred alternative are listed below (Table 1, Figures 2-6). Only one location in in Illinois.

Table 1. Project Locations

Project Area	River Mile	County	State
Waters Point	158R (Right descending bank)	Jefferson	Missouri
Lower Establishment	130R (Right descending bank)	Ste. Genevieve	Missouri
Chevron RM90	90.4R (Right descending bank)	Perry	Missouri
Owl Creek	83R (Right descending bank)	Perry	Missouri
Minton Point	54L (Left descending bank)	Alexander	Illinois

Potential Effects on Cultural Resources

All the project work will be undertaken via the river, without recourse to land access; therefore, any effects are limited to submerged cultural resources. Primary among these are historic period shipwrecks. Given the continual river flow and associated sedimentary erosion, deposition, and reworking, it is highly unlikely that any ephemeral cultural material remains on the river bed.

Possible Shipwrecks

During the summer of 1988 when the Mississippi River was at a particularly low level, the St. Louis District conducted an aerial survey of exposed wrecks between Saverton, Missouri, and the mouth of the Ohio River (Norris 2003). The nearest observed wreck to each of the project areas is listed in Table 2.

Table 2. Nearest known wrecks to project areas.

Project Area	Distance
Waters Point	0.2 miles
Lower Establishment	4.5 miles
Chevron RM90	8.5 miles
Owl Creek	2.3 miles
Minton Point	1.3 miles

The nearest wreck to any project area is located approximately 900 feet upstream of the Waters Point site on the landward side of Hoppies Marina in Jefferson County, Missouri. Last recorded by the Corps in 1988, it is unknown how much of the wreck is still extant (Figure 7). Corps hydraulic engineers believe there will be no impacts to the wreck from the proposed project. Not only is it upstream of the project area, but the rock outcropping at Waters Point causes a channel crossing from the right descending bank to the left descending bankline, in turn causing the area downstream of the point to historically be a depositional area. Figure 8 shows the Corps' hydrologic model demonstrating this dynamic.

The river bed in the project areas is surveyed every few years, with the latest processed surveys having been completed between 2013 and 2017. No topographic anomalies

suggesting wrecks are visible on the resulting bathymetric maps of the project areas (Figures 2-6). Prior to project commencement additional surveys are planned, which will similarly be examined for anomalies.

Summation

Given the features' construction method (with no land impact), the previous disturbance of the riverbed, and the lack of any survey evidence for extant wrecks that would be impacted, it is our opinion that the proposed undertaking will have no significant effect on cultural resources.

If you have any questions or comments, please feel free to contact me at (314) 331-8466 or Dr. Mark Smith at (314) 331-8831 (e-mail: mark.a.smith4@usace.army.mil).

Sincerely yours,

Michael K. Trimble, Ph.D.
Chief, Curation and Archives Analysis Branch

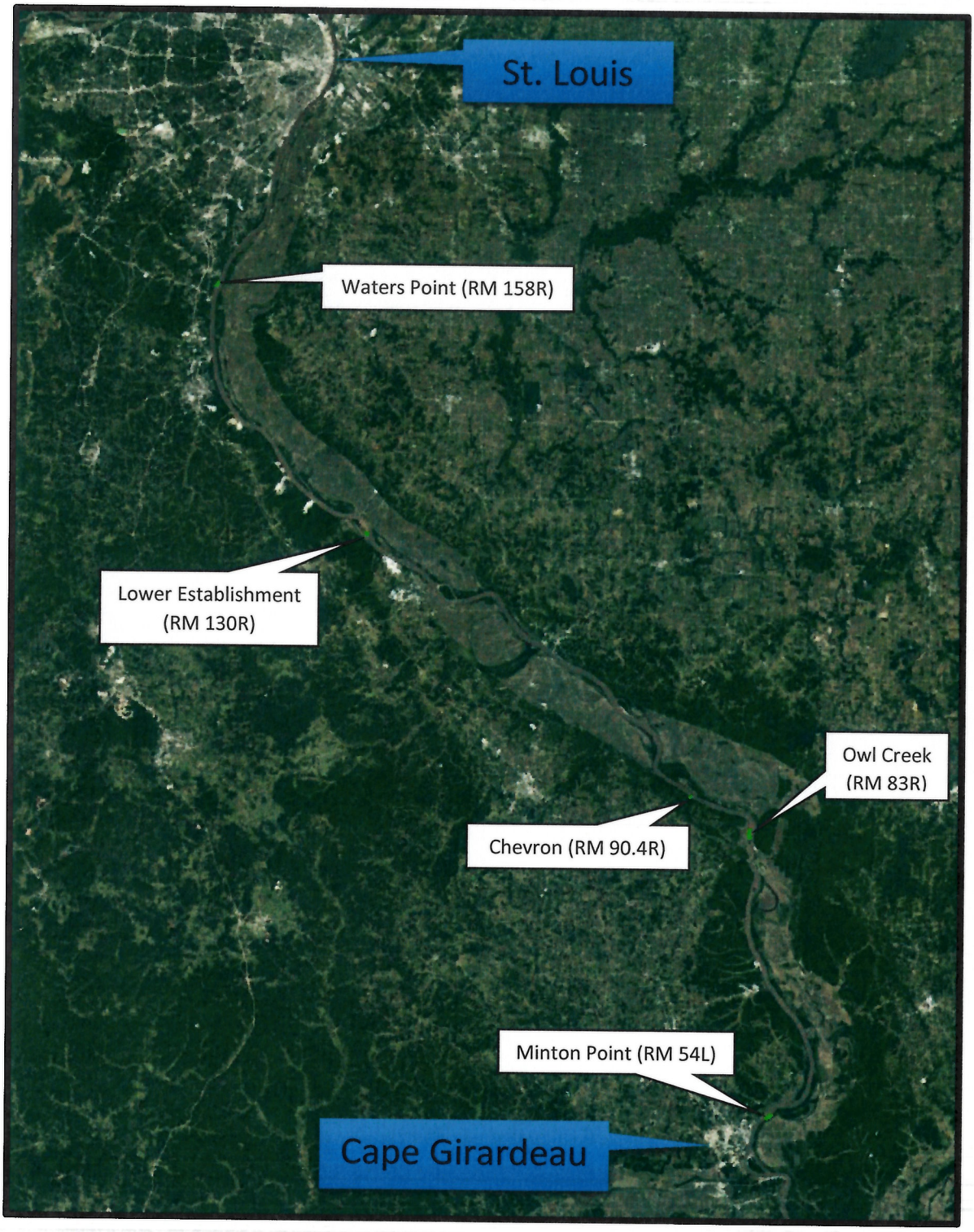


Figure 1. Location of proposed environmental dredging sites throughout the MMR, relative to the cities of St. Louis and Cape Girardeau, Missouri.

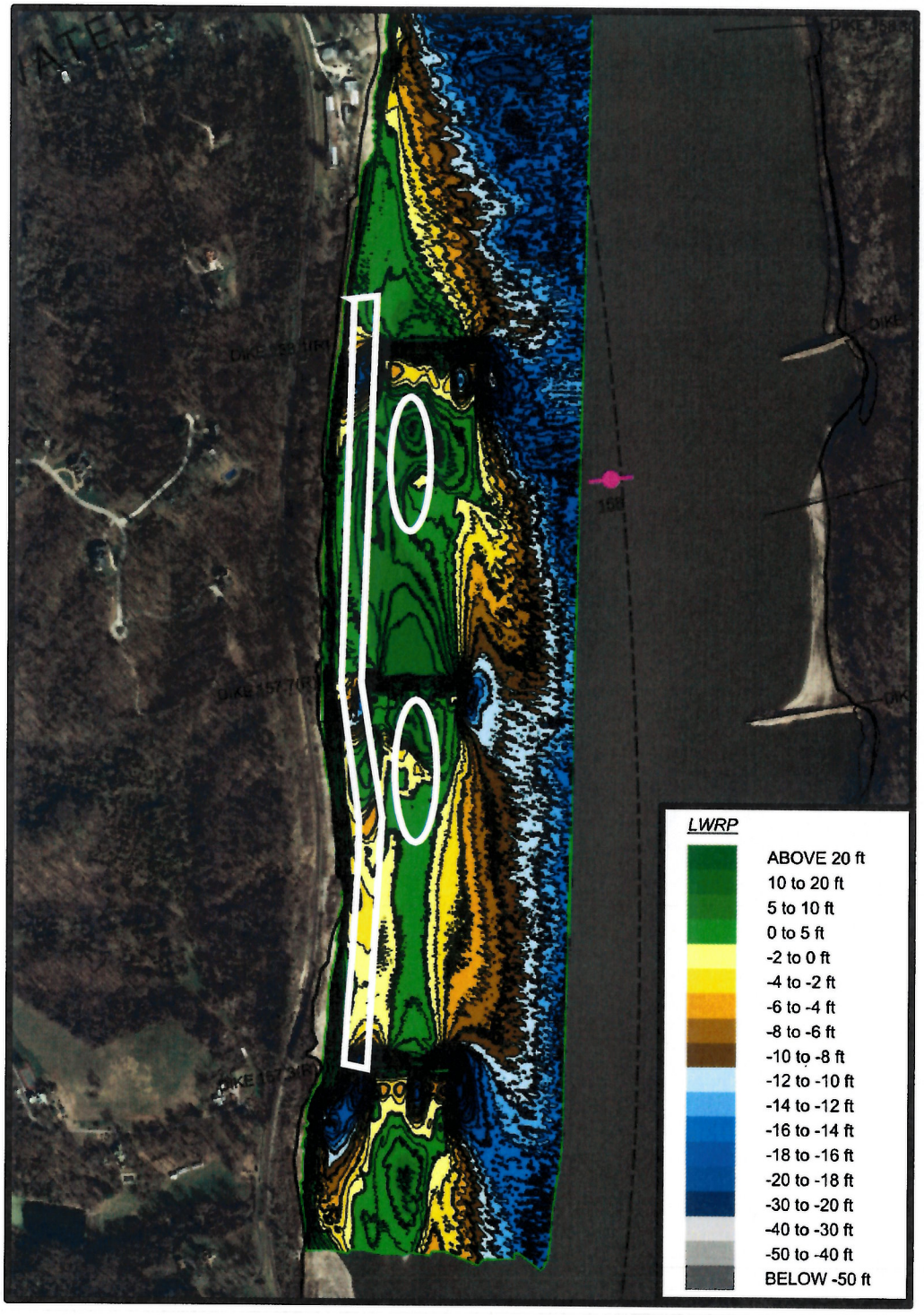


Figure 2. Waters Point bathymetric survey performed in July 2014, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circles).

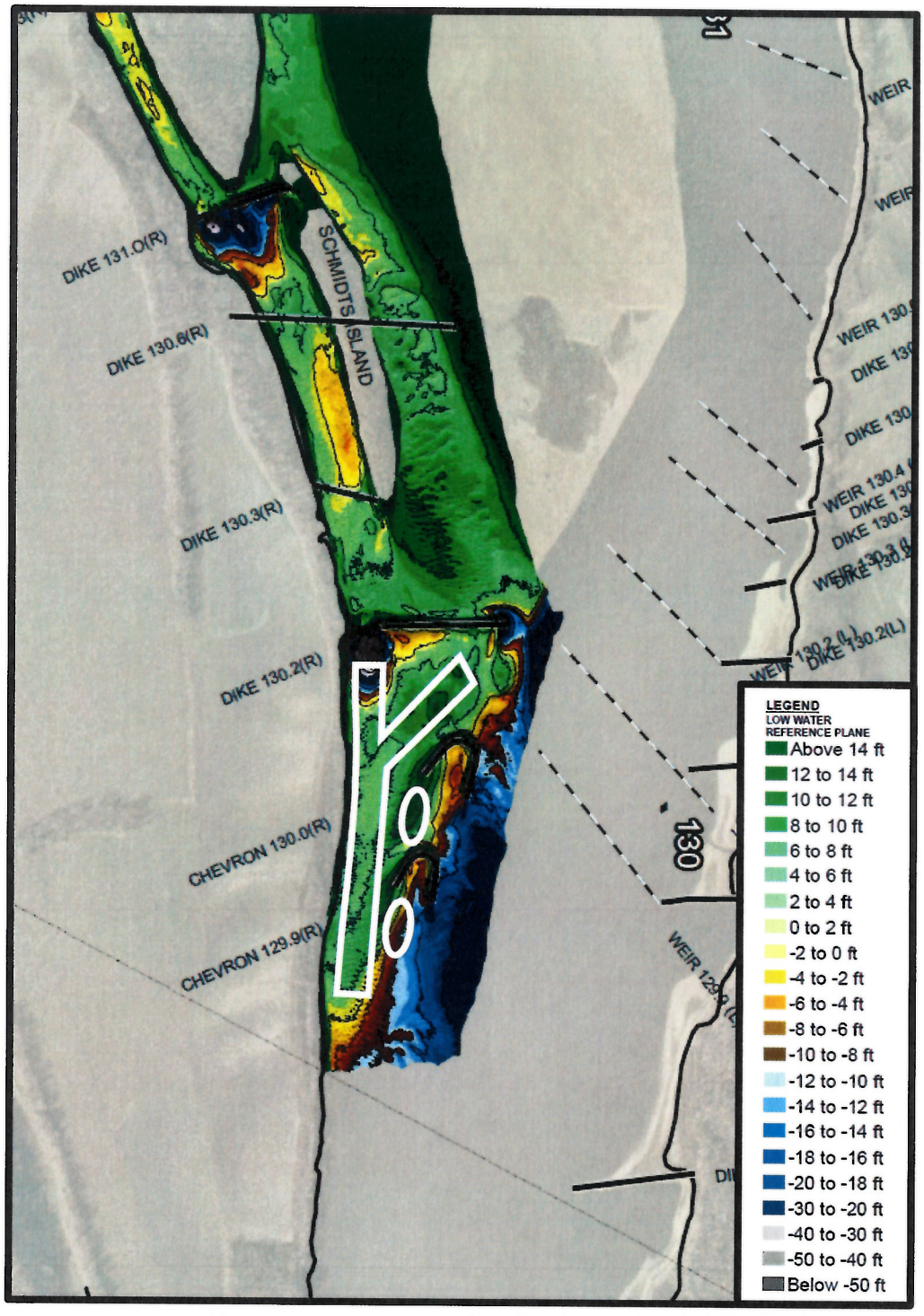


Figure 3. Lower Establishment work site bathymetric survey performed in July 2017, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circles).

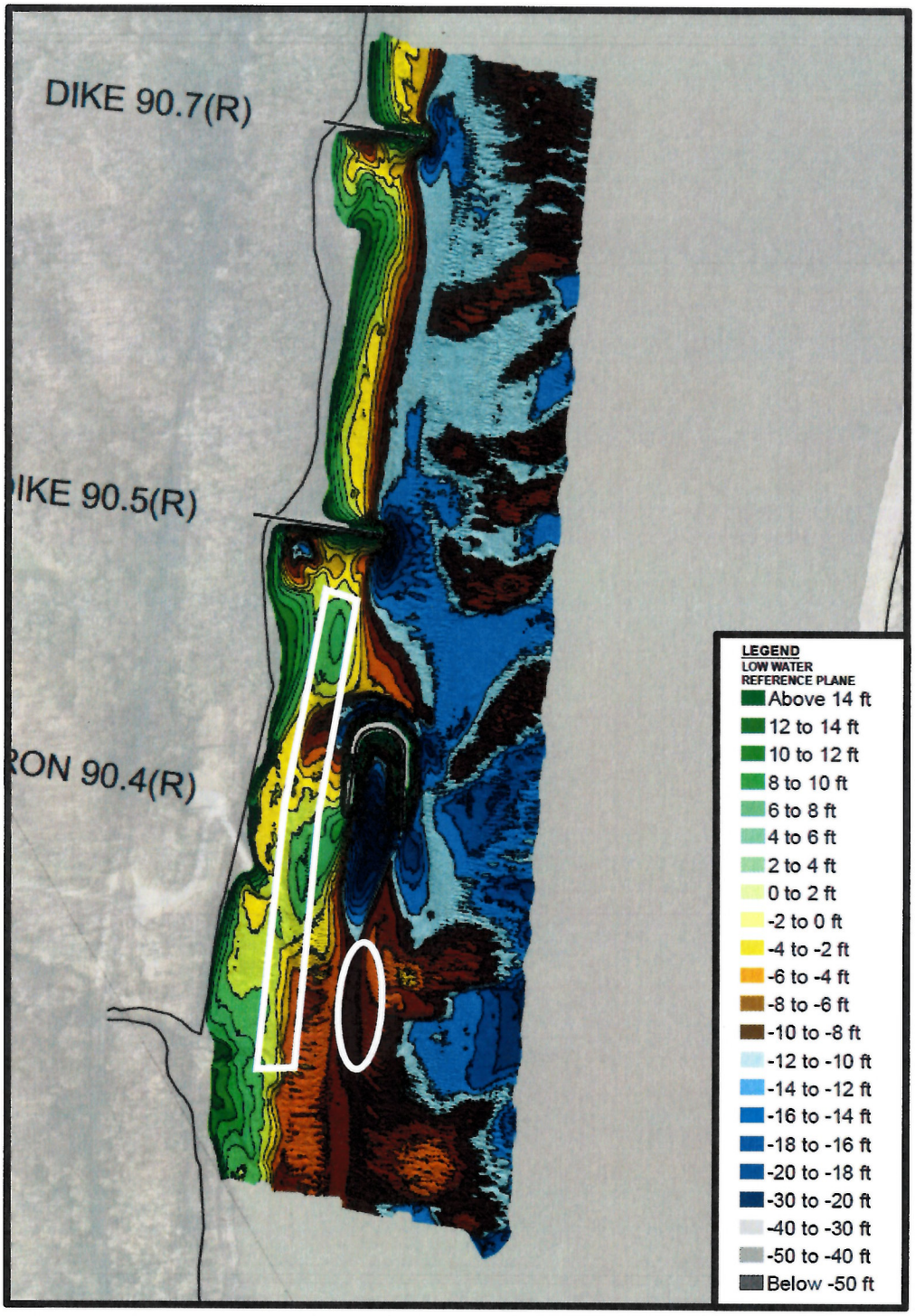


Figure 4. Chevron work site bathymetric survey performed in July 2016, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circle).

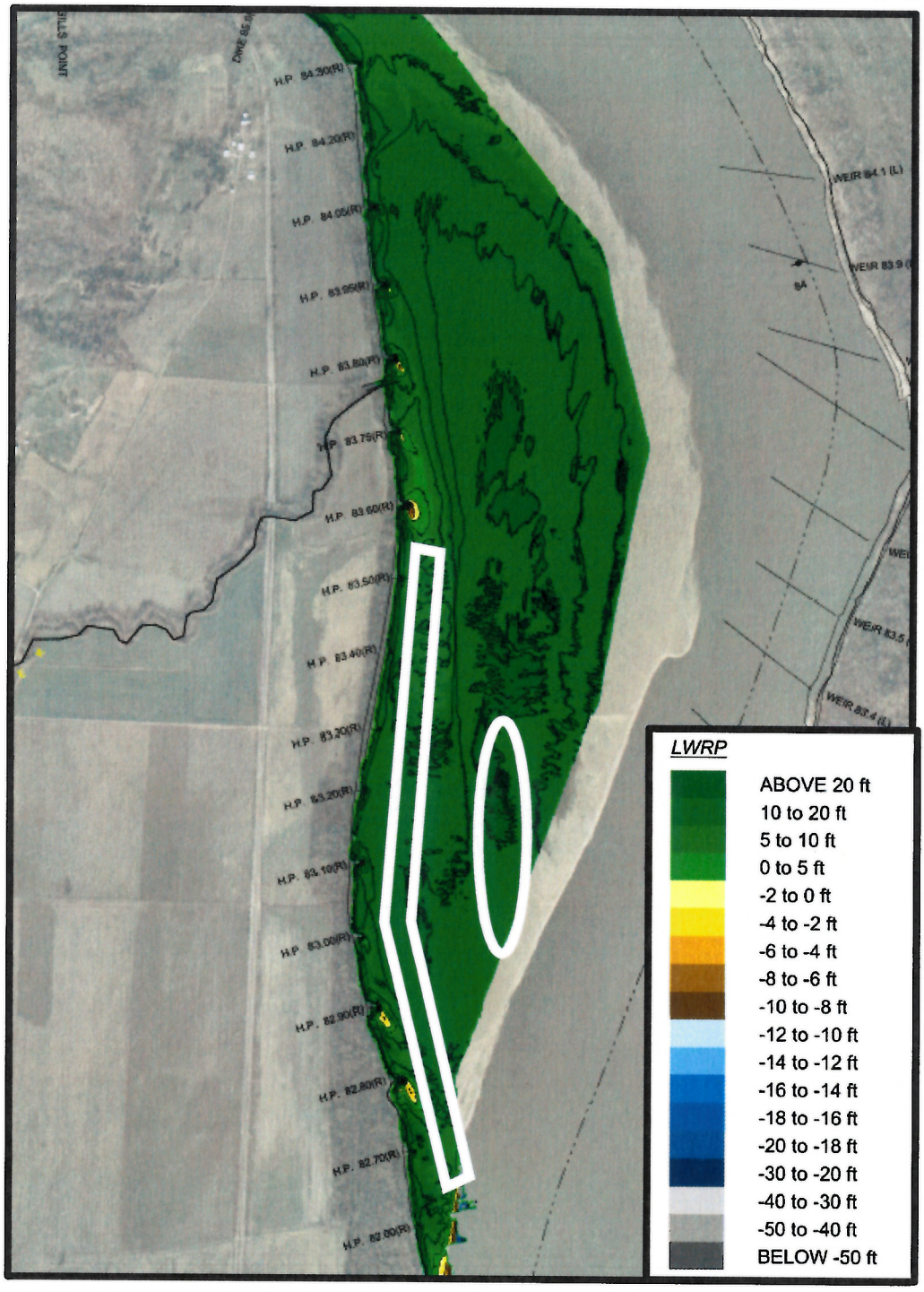


Figure 5. Owl Creek work site bathymetric survey performed in July 2014, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circle).

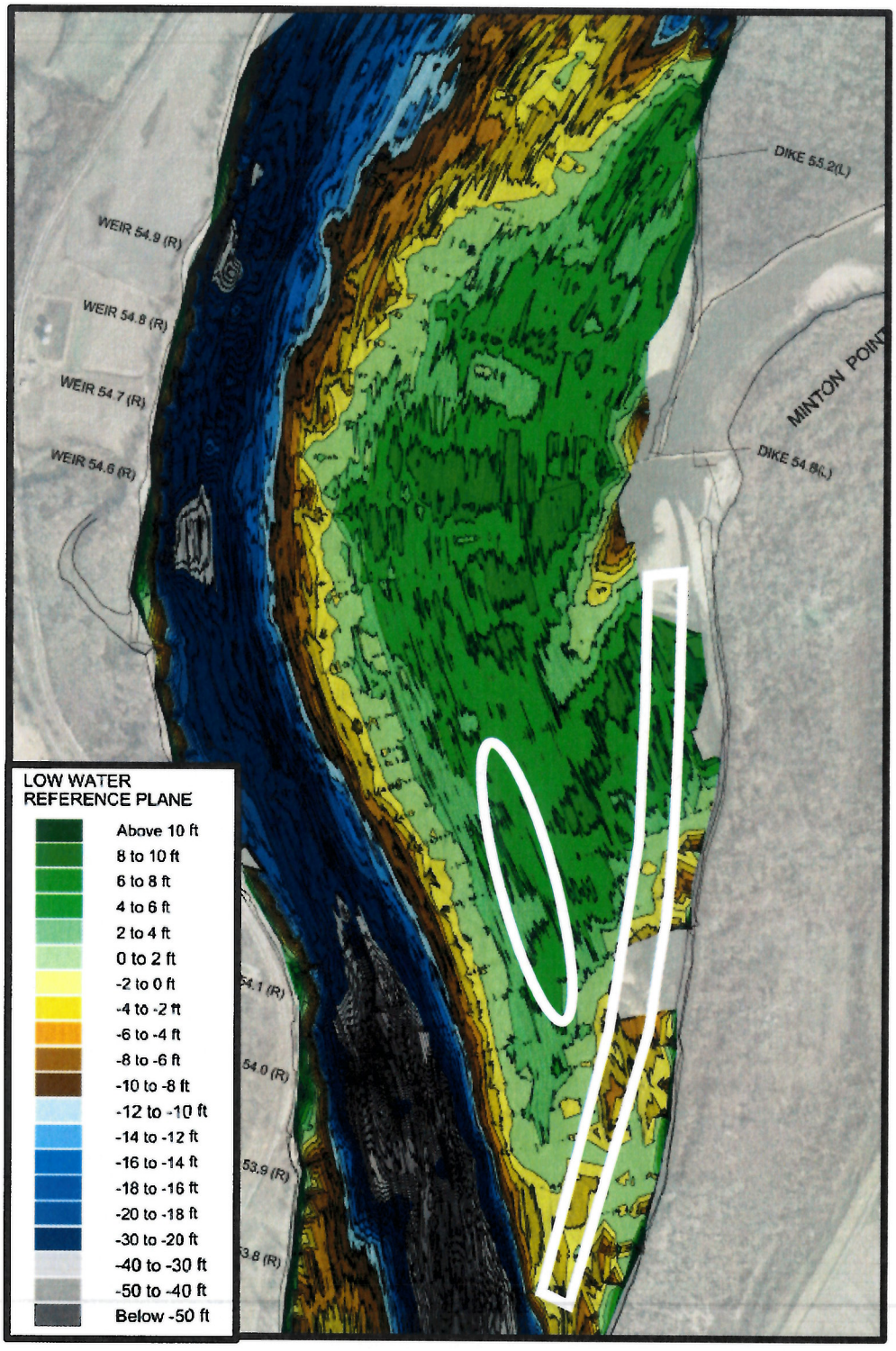


Figure 6. Minton Point work site bathymetric survey performed in May 2013, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circle).

Figure 7. Wreck at Waters Point, as photographed in 1988.

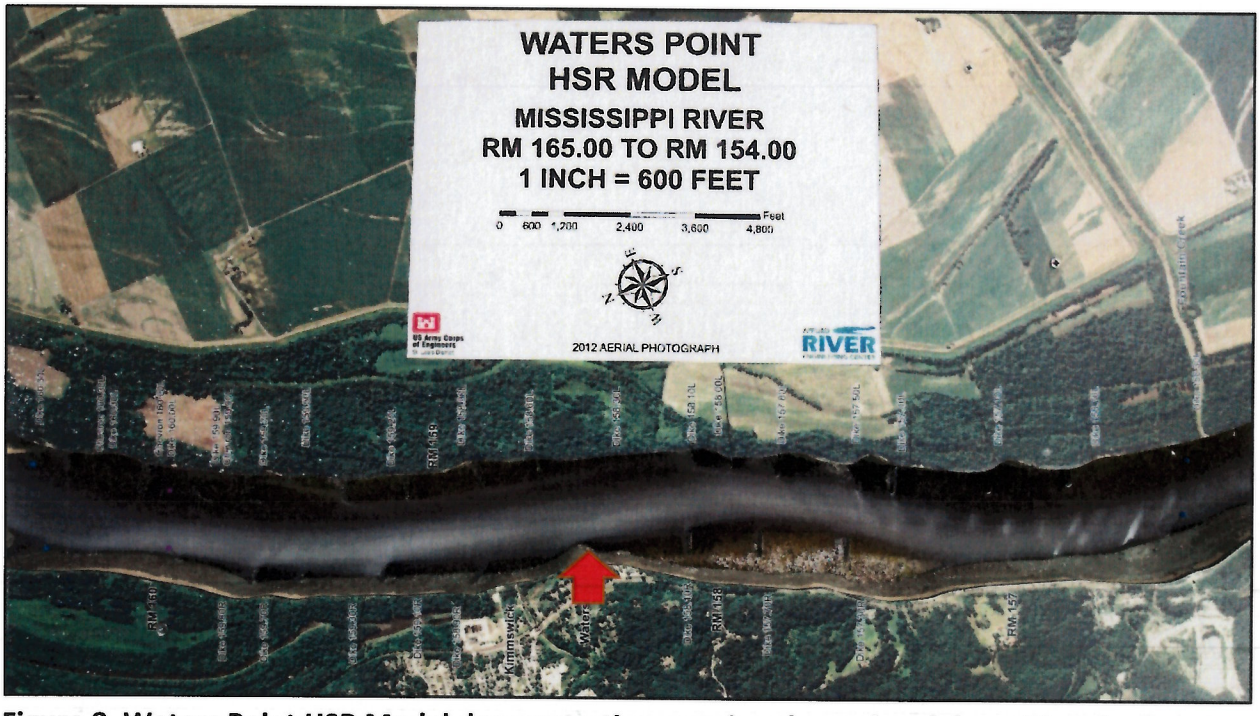


Figure 8. Waters Point HSR Model demonstrating crossing channel and depositional area below Waters Point rock outcrop (wreck location indicated by red arrow).

References Cited

Norris, F. T.

2003 Historical Shipwrecks on the Middle Mississippi and Lower Illinois Rivers. Curation and Archives Analysis Branch, U. S. Army Corps of Engineers, St. Louis District.

Illinois Department of
Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Bruce Rauner, Governor
Wayne A. Rosenthal, Director

Alexander County
McClure
Mississippi River mile 54 (left descending bank)
COESTL
Environmental dredging phase I / New sandbar habitat construction

PLEASE REFER TO: SHPO LOG #005112217

December 5, 2017

Michael K. Trimble, Ph.D., Chief
Department of the Army
St. Louis District, Corps of Engineers
Curation and Archives Analysis Branch (EC-Z)
1222 Spruce St.
St. Louis, MO 63103-2833

Dear Chief Trimble:

We have reviewed the documentation submitted for the referenced project(s) in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties are affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with section 106 of the National Historic Preservation Act of 1966, as amended. This clearance remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Skeletal Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance. If further assistance is needed contact Joe Phillippe of my office at 217/785-1279 or joe.phillippe@illinois.gov.

Sincerely,

Rachel Leibowitz, Ph.D.
Deputy State Historic
Preservation Officer

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

April 15, 2020

Engineering and Construction Division
Curation and Archives Analysis Branch (EC-Z)

Jeffrey D. Kruchten
Illinois State Historic Preservation Office
Illinois Dept. of Natural Resources
Attn: Review & Compliance/Old State Capital
One Natural Resources Way
Springfield, Illinois 62702

Subject: Environmental dredging phase I/ New sandbar habitat construction (LOG #005112217).

Dear Mr. Kruchten:

We are contacting you to continue consultation regarding the proposed new sandbar habitat construction project. The United States Army Corps of Engineers (USACE) first contacted your office regarding the proposed undertaking in a letter dated November 15, 2017 (included). Your office replied in a letter dated December 5, 2017 concurring with the USACE determination of no adverse effects on historic properties (included). The project was assigned the IHPA log #005112217.

The project was delayed and subsequently de-scaled. All the project objectives and methods remain the same, but rather than five locations originally proposed, only the Minton Point, Alexander County, Illinois, one will be utilized. The purpose of this letter is to reengage your office given the length of time since our original consultation. Due to the reasons outlined in our original consultation letter, it is still our option that the proposed undertaking will have no significant effects on historic properties.

If you have any questions or comments, please feel free to contact me at (314) 331-8855, or contact Mark Smith at (314) 331-8831 or Mark.A.Smith4@usace.army.mil.

Sincerely yours,

Jennifer Riordan
Chief, Curation and Archives Analysis Branch

From: Smith, Mark A CIV USARMY CEMVS (USA)
To: Steiger, Rachel L MVP
Subject: FW: Log 005112217 and OAZ
Date: Friday, April 17, 2020 6:42:46 AM

Rachel,

Regarding dredge EA, see below from IL SHPO. Disregard everything else after first paragraph, as it's concerning another project.

Mark

-----Original Message-----
From: Kruchten, Jeffery [mailto:Jeffery.Kruchten@illinois.gov]
Sent: Wednesday, April 15, 2020 11:34 AM
To: Smith, Mark A CIV USARMY CEMVS (USA) <Mark.A.Smith4@usace.army.mil>
Subject: [Non-DoD Source] Re: Log 005112217 and OAZ

Thanks, Mark.

SHPO still concurs with the determination from our prior consultation. We will issue an updated letter sometime in the near future. Please submit a hard copy, as well, when you are safely able to do so. in the meantime, this email can document our concurrence.

Yes I talked to Mat yesterday and sent him an unpublished report of recent work in the Fingerhut Tract of Cahokia. We know this area was fairly densely populated and there are associated mortuary facilities close by. Unfortunately, recent work has been unpublished and is only reported in technical reports submitted to Cahokia Mounds. Although it is within the bounds of Cahokia, the Fingerhut Tract is privately owned and there are no permitting requirements that would obligate them to report their findings to my office. John Kelly has been working to get me these reports recently, however, and I will pass them along as I receive them.

Yes the MOA is tied up here now. I will check on the status.

Take care!

Jeff Kruchten
Chief Archaeologist
Illinois State Historic Preservation Office
Attn: Review and Compliance
1 Old State Capitol Plaza
Springfield, Illinois 62701
Phone: (217) 785-1279

From: Smith, Mark A CIV USARMY CEMVS (USA) <Mark.A.Smith4@usace.army.mil>
Sent: Wednesday, April 15, 2020 10:39 AM
To: Kruchten, Jeffery <Jeffery.Kruchten@illinois.gov>
Subject: [External] Log 005112217 and OAZ

Hi Jeff,

I've attached another project update letter. It's similar to the one I sent last week; it was a project that was delayed

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

January 19, 2018

Engineering and Construction Division
Curation and Archives Analysis Branch (EC-Z)

Mr. Leonard Longhorn
Tribal Historic Preservation Officer
Absentee-Shawnee Tribe
2025 S. Gordon Cooper Drive
Shawnee, OK 74810-9381

Subject: Environmental Dredging Phase 1

Dear Mr. Longhorn:

The United States Army Corps of Engineers (Corps), St. Louis District, is presently planning the creation of sandbar habitat in the Mississippi River using dredge material. The work comprises the Environmental Dredging Phase 1 Project. We are contacting your tribe to initiate consultation under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and it's implementing regulation 36 CFR 800.

Background

Beginning in 1824, the Congress of the United States authorized the Secretary of the Army, by and through the Corps, to make improvements to the Mississippi River and some of its major tributaries for the purpose of obtaining and maintaining an inland navigation channel for waterway commercial transportation throughout the United States. Ultimately for the Mississippi River, Congress authorized obtaining and maintaining at least a nine foot deep navigation channel from the Gulf of Mexico to Minneapolis, Minnesota, through multiple projects by various methods and management.

Congress authorized the ultimate plan for how the navigation channel should be obtained and maintained for a majority of the Middle Mississippi River (from the confluence of the Ohio River to the confluence of the Missouri River) in the Rivers and Harbors Act of 1910 and eventually established the current navigation channel dimensions of nine feet deep and not less than 300 feet wide, with additional width in the bends as required, in the Rivers and Harbors Act of 1927.

In performing this navigation responsibility, the Corps is committed to complying with the Endangered Species Act (ESA). In executing responsibilities under the ESA, the Corps recognizes that there is to be deference to the U.S. Fish and Wildlife Service (Service). It is incumbent upon the Service to provide biological advice and guidance that allows the Corps to achieve compliance with the ESA within the Corps' statutory authorities and appropriations.

Through implementation of the proposed federal action described herein, St. Louis District will remain in compliance with the ESA for the Regulating Works Project.

Through a voluntary formal consultation process between the Corps and the Service, a Biological Opinion for the Operation and Maintenance of the 9-foot Navigation Channel on the Upper Mississippi River System (UMRS) was submitted to the Corps from the Service on May 15, 2000. After continued discussions, the Corps submitted a letter to the Service on August 11, 2000. This letter described how the Corps proposed to proceed with the future operation and maintenance of the 9-foot channel navigation projects for the UMRS in light of its ESA obligations and the information provided to the Corps in the Service's Biological Opinion.

The Service's Biological Opinion provided a number of requirements under a "Reasonable and Prudent Alternative" to avoid the likelihood of jeopardizing the continued existence of the federally endangered pallid sturgeon. One such requirement was to implement aquatic habitat restoration measures in the Middle Mississippi River (MMR) that are expected to benefit the pallid sturgeon, such as using dredge disposal material to restore habitat. Further, the Service's Biological Opinion provided "Reasonable and Prudent Measures" to minimize the incidental take of the federally endangered interior least tern, such as using dredge disposal material in the MMR to restore sandbar habitat.

Project

The proposed Federal action is implementation of an environmental dredging pilot project that would occur at five locations in the MMR (Figure 1). The goals of the proposed project are to restore habitat for two federally endangered species: the pallid sturgeon and the interior least tern, and to garner information on the efficacy of the flex-pipe, in hopes of refining the District's approach to aquatic habitat restoration in the MMR. The proposed project consists of performing off-channel dredging in order to enhance lateral connectivity of aquatic habitat while simultaneously using the dredge disposal material to build ephemeral sandbar habitat in the MMR. Specifically, sediment would be dredged from targeted areas outside the navigation channel using a hydraulic dustpan dredge and the dredge disposal material would be concentrated on existing high elevation areas via flexible-floating dredge pipe (flex-pipe). Performing this action at the five proposed sites would increase the lateral connectivity of aquatic habitat, create exposed sandbar habitat, and enhance the overall bathymetric diversity throughout the MMR.

The five locations chosen for the preferred alternative are listed below (Table 1, Figures 2-6):

Table 1. Project Locations

Project Area	River Mile	County	State
Waters Point	158R (Right descending bank)	Jefferson	Missouri
Lower Establishment	130R (Right descending bank)	Ste. Genevieve	Missouri
Chevron RM90	90.4R (Right descending bank)	Perry	Missouri
Owl Creek	83R (Right descending bank)	Perry	Missouri
Minton Point	54L (Left descending bank)	Alexander	Illinois

Potential Effects on Cultural Resources

All the project work will be undertaken via the river, without recourse to land access; therefore, any effects are limited to submerged cultural resources. Primary among these are historic period shipwrecks. Given the continual river flow and associated sedimentary erosion, deposition, and reworking, it is highly unlikely that any ephemeral cultural material remains on the river bed.

Possible Shipwrecks

During the summer of 1988 when the Mississippi River was at a particularly low level, the St. Louis District conducted an aerial survey of exposed wrecks between Saverton, Missouri, and the mouth of the Ohio River (Norris 2003). The nearest observed wreck to each of the project areas is listed in Table 2.

Table 2. Nearest known wrecks to project areas.

Project Area	Distance
Waters Point	0.2 miles
Lower Establishment	4.5 miles
Chevron RM90	8.5 miles
Owl Creek	2.3 miles
Minton Point	1.3 miles

The nearest wreck to any project area is located approximately 900 feet upstream of the Waters Point site on the landward side of Hoppies Marina in Jefferson County, Missouri. Last recorded by the Corps in 1988, it is unknown how much of the wreck is still extant (Figure 7). Corps hydraulic engineers believe there will be no impacts to the wreck from the proposed project. Not only is it upstream of the project area, but the rock outcropping at Waters Point causes a channel crossing from the right descending bank to the left descending bankline, in turn causing the area downstream of the point to historically be a depositional area. Figure 8 shows the Corps' hydrologic model demonstrating this dynamic.

The river bed in the project areas is surveyed every few years, with the latest processed surveys having been completed between 2013 and 2017. No topographic anomalies suggesting wrecks are visible on the resulting bathymetric maps of the project areas (Figures 2-6). Prior to project commencement additional surveys are planned, which will similarly be examined for anomalies.

Summation

Given the features' construction method (with no land impact), the previous disturbance of the riverbed, and the lack of any survey evidence for extant wrecks that would be impacted, it is our opinion that the proposed undertaking will have no significant effect on cultural resources. Our office received concurrence regarding this action from the Illinois State Historic Preservation Office (Log # 005112217) and the Missouri State Historic Preservation Office (Log # 005-MLT-18).

If you have any questions or comments, please feel free to contact me at telephone number 314-331-8466, or Chris Koenig (Archaeologist and Tribal Liaison) at telephone number (314) 331-8151, or e-mail at chris.j.koenig@usace.army.mil.

Sincerely,

Michael K. Trimble, Ph.D.
Chief, Curation and Archives Analysis Branch

Enclosures

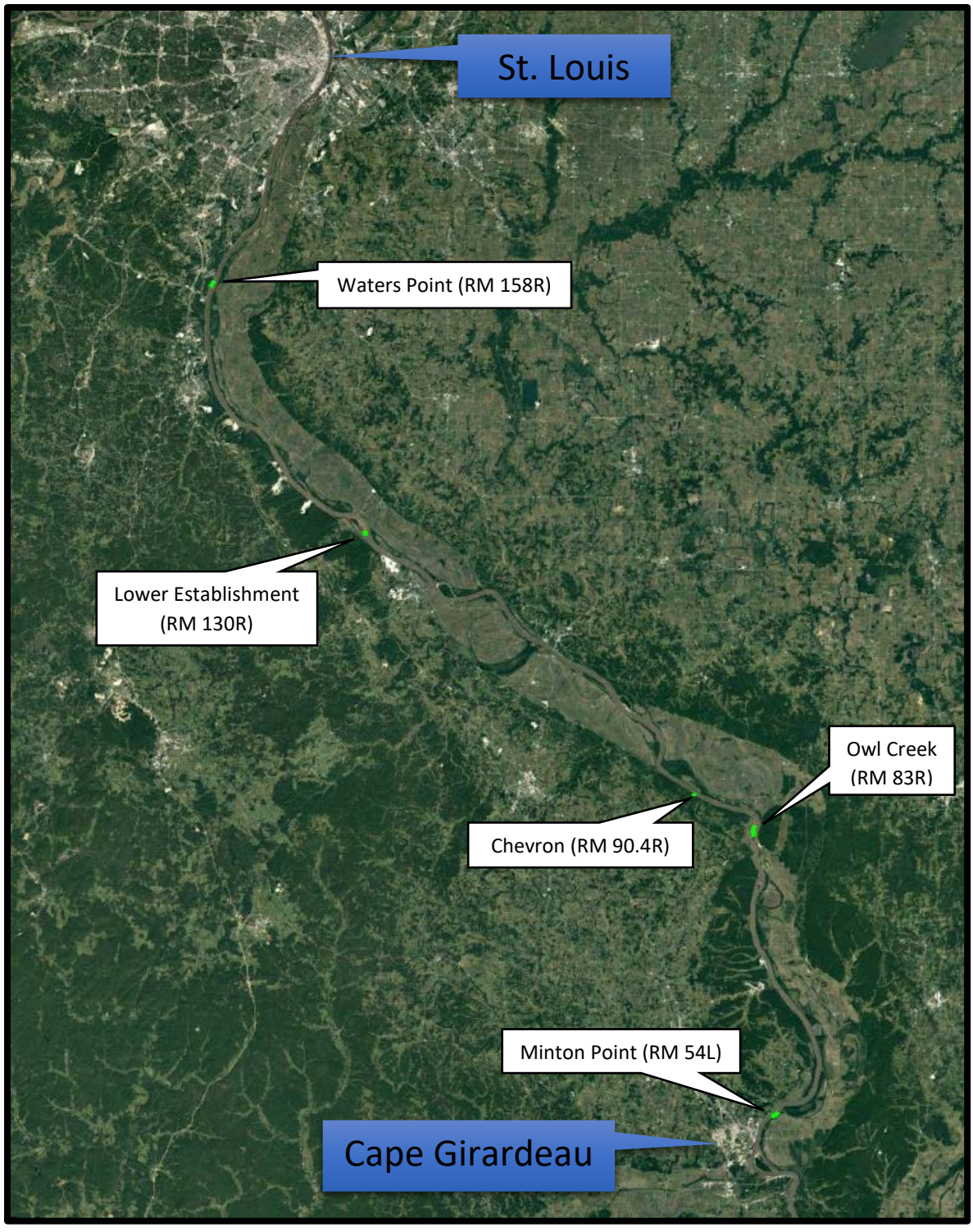


Figure 1. Location of proposed environmental dredging sites throughout the MMR, relative to the cities of St. Louis and Cape Girardeau, Missouri.

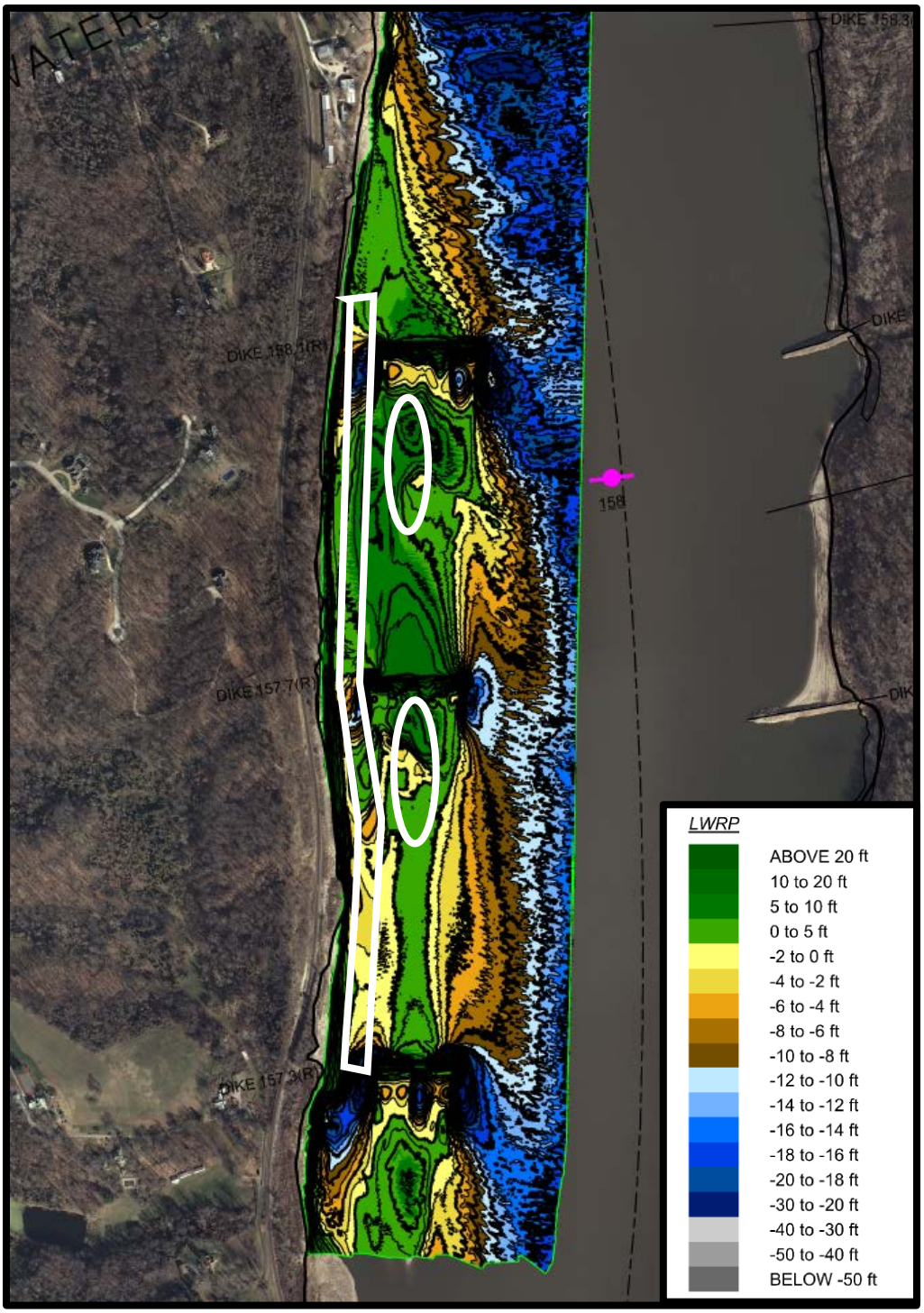


Figure 2. Waters Point bathymetric survey performed in July 2014, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circles).

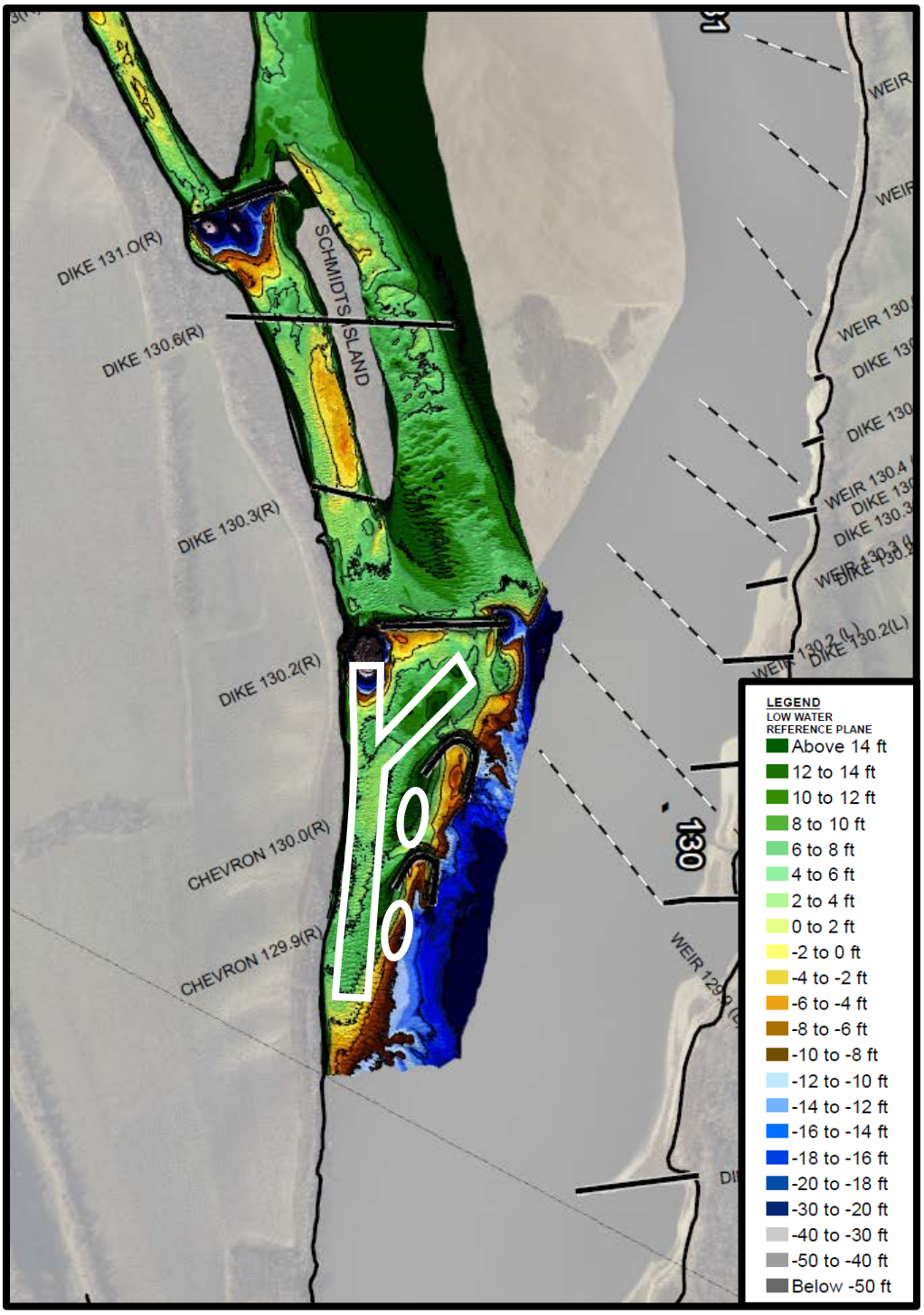


Figure 3. Lower Establishment work site bathymetric survey performed in July 2017, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circles).

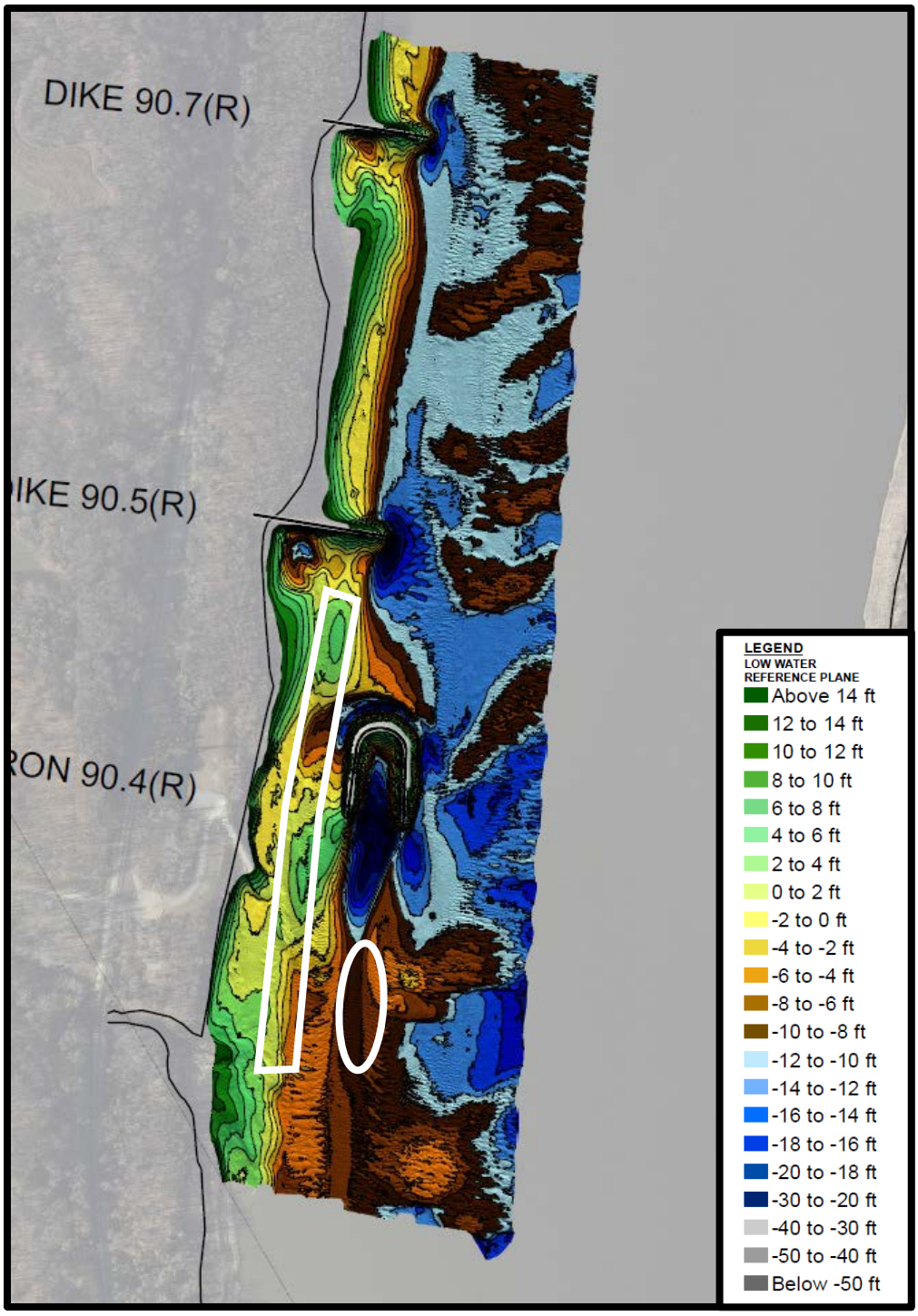


Figure 4. Chevron work site bathymetric survey performed in July 2016, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circle).

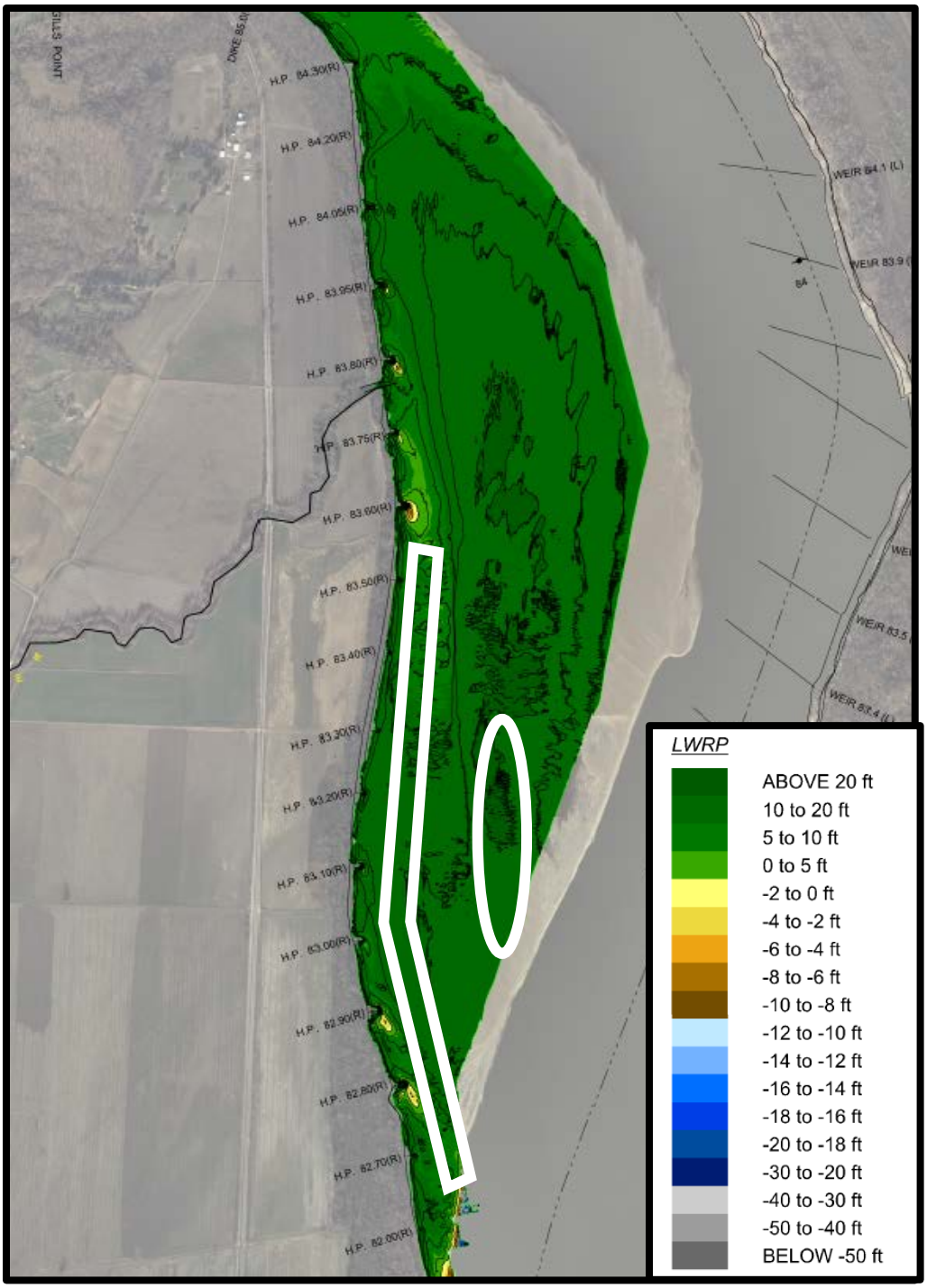


Figure 5. Owl Creek work site bathymetric survey performed in July 2014, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circle).

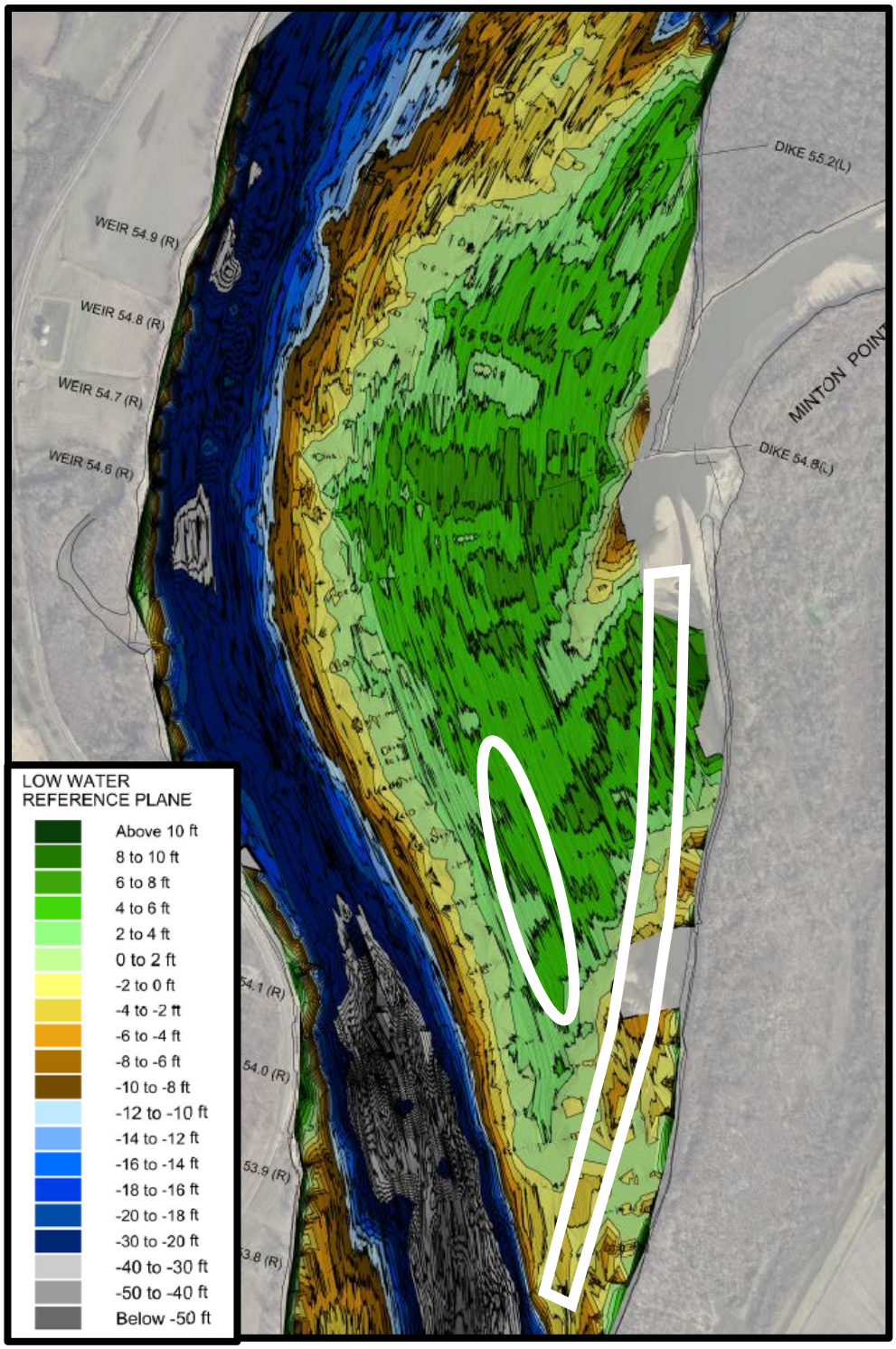


Figure 6. Minton Point work site bathymetric survey performed in May 2013, with the proposed dredge cut (white box) and location of dredge disposal and sandbar creation (white circle).

Figure 7. Wreck at Waters Point, as photographed in 1988.

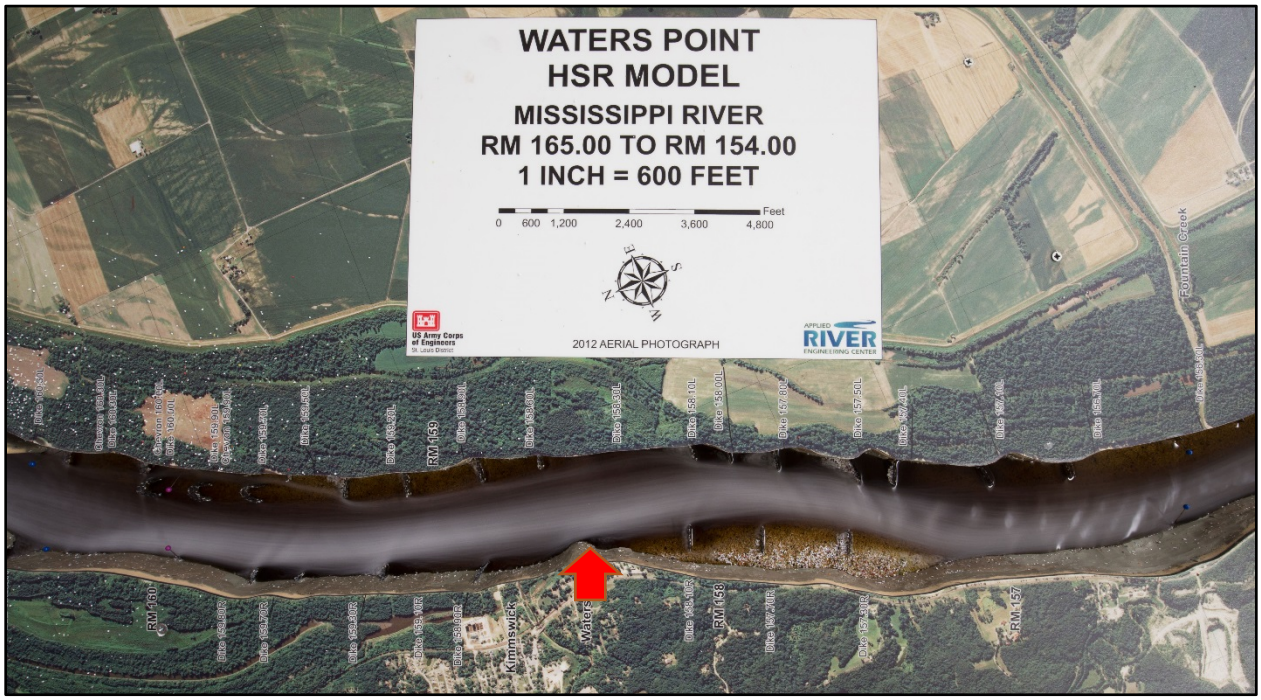


Figure 8. Waters Point HSR Model demonstrating crossing channel and depositional area below Waters Point rock outcrop (wreck location indicated by red arrow).

References Cited

Norris, F. T.

2003 Historical Shipwrecks on the Middle Mississippi and Lower Illinois Rivers. Curation and Archives Analysis Branch, U. S. Army Corps of Engineers, St. Louis District.

Tribal Leaders

Title	Name (First, Middle, Last)	Tribe
Governor	Edwina Butler-Wolfe	Absentee-Shawnee Tribe
Chief	Glenna J. Wallace	Eastern Shawnee Tribe of Oklahoma
Chairman	Ron Sparkman	Shawnee Tribe
Chief	Joe Bunch	United Keetoowah Band of Cherokee of Oklahoma
President	Clifford Peacock	Delaware Nation of Oklahoma
Chief	Chester Brooks	Delaware Tribe of Indians
Chairman	John Barret	Citizen Potawatomi Nation
Chairman	Harold Frank	Forest County Potawatomi
Chairman	D.K. Sprague	Match-e-be-nash-she-wish Potawatomi
Chairman	Kenneth Meshigaud	Hannahville Indian Community
Chairman	Jaime Stuck	Nottawaseppi Band of Huron Potawatomi
Chairman	John P. Warren	Pokagon Band of Potawatomi
Chairwoman	Liana Onnen	Prairie Band Potawatomi Nation
President	Wilford Cleveland	Ho-Chunk Nation of Wisconsin
Chairman	Frank White	Winnebago Tribe of Nebraska
Chairman	Tim Rhodd	Iowa Tribe of Kansas and Nebraska
Chairman	Bobby Walkup	Iowa Tribe of Oklahoma
Chairman	David Pacheoco	Kickapoo Tribe of Oklahoma
Chairman	Lester Randall	Kickapoo Tribe of Indians of Kansas
Principal Chief	Kay Rhoads	Sac & Fox Nation of Oklahoma
Chairman	Edmore Green	Sac & Fox Nation of Missouri in Kansas and Nebraska
Chairman	Tony Wanatee	Sac & Fox Tribe of the Mississippi in Iowa
Chief	Douglas Lankford	Miami Tribe of Oklahoma
Principal Chief	Geoffrey Standing Bear	The Osage Nation
Chief	John Froman	Peoria Tribe of Indians of Oklahoma
Chairman	John Berrey	The Quapaw Tribe of Indians

Tribal Representatives

Name (First, Middle, Last)	Position	Tribe
Leonard Longhorn	Tribal Historic Preservation Officer	Absentee-Shawnee Tribe
Brett Barnes	Historic Preservation Office	Eastern Shawnee Tribe of Oklahoma
Nicky Smith	Historic Preservation Office	Shawnee Tribe
Eric Oosahwee-Voss	Tribal Historic Preservation Officer	United Keetoowah Band of Cherokee of Oklahoma
Kim Penrod	Director Cultural and Historic Preservation Departmen	Delaware Nation of Oklahoma
Bryce Obermeyer	Tribal Historic Preservation Officer	Delware Tribe of Indians
Kelli Mosteller	Tribal Historic Preservation Officer	Citizen Potawatomi Nation
Melissa Cook	Tribal Historic Preservation Officer	Forest County Potawatomi
Sydney Martin	Historic Preservation Office	Match-e-be-nash-she-wish Potawatomi
Earl Meshigaud	Historic Preservation Office	Hannahville Indian Community
Fred Jacko, Jr.	Cultural and Historic Preservation Office	Nottawaseppi Band of Huron Potawatomi
Jason Scott Wesaw	Tribal Historic Preservation Officer	Pokagon Band of Potawatomi
Warren Wahweotten	Tribal Council Member	Prairie Band Potawatomi Nation
William Quackenbush	Tribal Historic Preservation Officer	Ho-Chunk Nation of Wisconsin
Henry Payer	Tribal Historic Preservation Officer	Winnebago Tribe of Nebraska
Lance Foster	Tribal Historic Preservation Officer	Iowa Tribe of Kansas and Nebraska
Robert Field	Historic Preservation Office	Iowa Tribe of Oklahoma
Kent Collier	Historic Preservation Office	Kickapoo Tribe of Oklahoma
Fred Thomas	Vice Chair	Kickapoo Tribe of Indians of Kansas
Sandra Massey	NAGPRA/Historic Preservation Office	Sac & Fox Nation of Oklahoma
Gary Bahr	NAGPRA/Historic Preservation Office	Sac & Fox Nation of Missouri in Kansas and Nebraska
Johnathan Buffalo	Historic Preservation Office	Sac & Fox Tribe of the Mississippi in Iowa
Diane Hunter	Tribal Historic Preservation Officer	Miami Tribe of Oklahoma
Andrea Hunter	Historic Preservation Office	The Osage Nation
Logan Pappenfort	Historic Preservation Office	Peoria Tribe of Indians of Oklahoma
Everett Bandy	Tribal Historic Preservation Officer	The Quapaw Tribe of Indians

Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com

February 5, 2018

Chris Koenig
District Archaeologist and Tribal Liaison
Department of the Army
St. Louis District Corps of Engineers
1222 Spruce Street
St. Louis, MO 63101-2833

Re: Environmental Dredging Phase 1 – Comments of the Miami Tribe of Oklahoma

Dear Mr. Koenig:

Aya, kikwehsitoole – I show you respect. My name is Diane Hunter, and I am the Tribal Historic Preservation Officer for the Federally Recognized Miami Tribe of Oklahoma. In this capacity, I am the Miami Tribe's point of contact for all Section 106 issues.

The Miami Tribe offers no objection to the above-mentioned project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, as this site is within the aboriginal homelands of the Miami Tribe, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at dhunter@miamination.com to initiate consultation.

The Miami Tribe accepts the invitation to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer I am the point of contact for consultation.

Respectfully,

Diane Hunter

Diane Hunter
Tribal Historic Preservation Officer

Absentee Shawnee Tribe of Oklahoma
Cultural/Tribal Historic Preservation Department
2025 S. Gordon Cooper Dr.
Shawnee, Oklahoma 74801
Phone: (405) 275-4030 ext 6340

1/31/18

RE: ENVIRONMENTAL DREDGING PHASE I ON THE MISSISSIPPI RIVER

To Whom It May Concern:

This response is regarding the request from your office for a review of the project listed above. We have reviewed the information provided in your letter of January 19, 2018. We find after review of this information that we concur with your findings of no adverse effects. We have no objection to the dredging project on the Mississippi River in Missouri and Illinois, and we defer comment to your office as well as to the State Historic Preservation Office and/or the State Archaeologist.

We remain interested in further communications regarding this project due to the location. The Shawnee people have a documented historical presence in Missouri and Illinois. While there are no documented village sites within the project site or within a close proximity outside the project site, there still remains the potential of finding unknown sites in and surrounding the project location.

It is further advised that if the area of potential effect changes or in the event of an inadvertent discovery of human remains or other cultural resources that we receive notification within 48 hours. As well, any advertent discovery of human remains or other cultural resources should remain in situ until consultation with interested tribes and agencies is undertaken.

Thank you for your time and patience in communications regarding section 106 and NAGPRA issues. We appreciate your continued efforts in such matters. Please do not hesitate to contact me at the information below if you have any questions or concerns.

Best Regards,

Erin Thompson
Tribal Historic Preservation Officer
Absentee Shawnee Tribe of Oklahoma
2025 Gordon Cooper Drive
Shawnee, OK 74801
(P) 405.275.4030 Ext. 6340
ethompson@astribe.com

From: Koenig, Christopher J Jr CIV (US)
To: Smith, Mark A CIV USARMY CEMVS (US)
Subject: FW: RE: Environmental Dredging Phase I / Multiple counties Missouri/Illinois
Date: Thursday, February 08, 2018 10:41:55 AM

For your files...

Chris Koenig, M.A., RPA
Archaeologist and Tribal Liaison
USACE St. Louis District
MCX-CMAC-EC-Z
1222 Spruce Street
St. Louis, MO 63103
Office: 314-331-8151
Work Cell: 314-356-0483
Chris.J.Koenig@usace.army.mil

-----Original Message-----
From: Kimberly Penrod [mailto:kpenrod@delawarenation.com]
Sent: Thursday, February 08, 2018 8:25 AM
To: Koenig, Christopher J Jr CIV (US) <Christopher.J.Koenig@usace.army.mil>
Subject: [Non-DoD Source] RE: Environmental Dredging Phase I / Multiple counties Missouri/Illinois

Chris,

The protection of our tribal cultural resources and tribal trust resources will take all of us working together.

We look forward to working with you and your agency.

With the information you have submitted we can concur at present with this proposed plan.

As with any new project, we never know what may come to light until work begins.

The Delaware Nation asks that you keep us up to date on the progress of this project and

if any discoveries arise please contact us immediately.

Our department is trying to go as paper free as possible. If it is at all feasible for your office to send email correspondence we would greatly appreciate.

If you need anything additional from me please do not hesitate to contact me.

Respectfully,

Kim Penrod

Delaware Nation

Director, Cultural Resources/106

Archives, Library and Museum

31064 State Highway 281

PO Box 825

Anadarko, OK 73005

(405)-247-2448 Ext. 1403 Office

(405)-924-9485 Cell

kpenrod@delawarenation.com <mailto:kpenrod@delawarenation.com>

From: Koenig, Christopher J Jr CIV (US)
To: Smith, Mark A CIV USARMY CEMVS (US)
Subject: FW: [Non-DoD Source] Environmental Dredging Phase 1
Date: Thursday, February 01, 2018 9:37:55 AM

Mark,

For your files…

Chris Koenig, M.A., RPA

Archaeologist and Tribal Liaison

USACE St. Louis District

MCX-CMAC-EC-Z

1222 Spruce Street

St. Louis, MO 63103

Office: 314-331-8151

Work Cell: 314-356-0483

Chris.J.Koenig@usace.army.mil

From: tonya@shawnee-tribe.com [mailto:tonya@shawnee-tribe.com]
Sent: Tuesday, January 30, 2018 9:44 AM
To: Koenig, Christopher J Jr CIV (US) <Christopher.J.Koenig@usace.army.mil>
Subject: [Non-DoD Source] Environmental Dredging Phase 1

This letter is in response to the above referenced project.

The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project.

We have no issues or concerns at this time, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume immediate consultation under such a circumstance.

If you have any questions, you may contact me via email at tonya@shawnee-tribe.com <mailto:tonya@shawnee-tribe.com>

Thank you for giving us the opportunity to comment on this project.

Sincerely,

Tonya Tipton THPO

Shawnee Tribe

Appendix C. Distribution List

Draft Environmental Assessment
With Finding of No Significant Impact
Environmental Dredging
Minton Point, Alexander County, Illinois
Distribution List

The Quapaw Tribe of Indians
Mr. Everett Bandy
Tribal Historic Preservation Officer
P.O. Box 765
Quapaw, OK 74363

Kickapoo Tribe of Oklahoma
Mr. Kent Collier
Tribal Preservation Office
P.O. Box 70
McCloud, OK 74851

Sac and Fox Nation, Oklahoma
Mr. Chris Boyd
NAGPRA/Historic Preservation Office
920883 S. Highway 99, Bldg. A
Stroud, OK 74079

Iowa Tribe of Kansas and Nebraska
Mr. Lance Foster
Tribal Historic Preservation Officer
3345B Thrasher Rd #8
White Cloud, KS 66094

State Historic Preservation Office
ATTN: Review & Compliance
1 Old State Capitol Plaza
Springfield, IL 62071

The Osage Nation
Dr. Andrea Hunter
Historic Preservation Office
627 Grandview Ave
Pawhuska, OK 74056

Forest County Potawatomi Community
Mr. Michael LaRonge
Trival Historic Preservation Officer
Cultural Center, Library & Museum
8130 Mishkoswen Drive
P.O. Box 340
Crandon, WI 54520

Joseph Standing Bear Schranz
Midwest Soaring
133 W 13th St.
Lockport, IL 60441

Sac and Fox Nation of Missouri in Kansas and Nebraska
Lisa Montgomery
Environmental Protection Agency Director
305 N. Main Street
Reserve, KS 66434

Match-e-be-nash-she-wish Band of Potawatomi Indians of Michigan
Mr. Lakota Pochedley
Historic Preservation Office
2872 Mission Drive
Shelbyville, MI 49344

IDNR
Office of Water Resources
One Natural Resources Way
Springfield, IL 62702-1271

MVS External Agency Stakeholder

Environmental Protection Agency, Region 5
- Melgin, Wendy

Environmental Protection Agency, Region 7
- Westlake, Kenneth

Illinois State Employees
- Carney, Doug
- Grider, Nathan
- Mauer, Paul
- Rawe, Adam

Minnesota
- Amato, Joel

Missouri Dept. of Conservation
- Boaz, Tracy
- Brown, Doyle
- Leary, Alan
- Sternburg, Janet
- Todd, Brian
- Campbell-Allison, Jennifer
- Vitello, Matt

Missouri Dept. of Natural Resources - Policy Unit
- Beres, Audrey

Missouri Dept. of Natural Resources, Water Protection Program
- Bax, Stacia

Missouri Dept. of Natural Resources - State Historic Preservation Office
- Rubingh, Amy

National Oceanic and Atmospheric Administration
- Buan, Steve

National Park Service
- Lange, James

U.S. Fish and Wildlife Service, Missouri Office
- Marquardt, Shauna
- Ledwin, Jane
- Herrington, Karen

U.S. Coast Guard
- Morgan, Justin
- SUMR Waterways

U.S. Fish and Wildlife Service, Illinois Office
- Mangan, Matthew
- McPeek, Kraig

U.S. Department of Agriculture-NRCS, MO Office
- Lugo-Camacho, Jorge

MVS External Educational Stakeholder

Washington University
- Goode, Peter
- Hubertz, Elizabeth
- Lipeles, Maxie
- Mannion, Clare
- Miller, Kenneth

MVS External Environmental Stakeholder

Ducks Unlimited
- Held, Eric
- Hillburn, Craig

Great Rivers Habitat Alliance
- Stokes, David

Great Rivers Law
- Morrison, Bruce
- Skrukrud, Cindy

Missouri Coalition for the Environment
- Fung, Jenny

MVS External Government Stakeholder

Academy Coordinator for Congresswoman Ann Wagner
- Winship, Jaci

City of Portage des Sioux

Field Representative Manager for Congressman Sam Graves
- Josh Hurlbert

Jefferson County, Missouri
- Luchan, Janice

Staff Member with Senator Roy Blunt's Office
- Lavalle, Tricia

MVS External Industry Stakeholder

American Waterways Operators (AWO)
- Muench, Lynn
- Werner, Paul

Tow Inc.

Alter Logistics
- G, Jeff

Apex Oil Company
- Caito, J
- Hanneman, M

Archer Daniels Midland (ADM)
- Burlingame, Chuck
- Heroff, Bernard
- Porter, Jason

Atlantic-Meeco Inc.
- Fabrizio, Christi

Canal Barge Company
- Popplewell, Micket
- Tyson, J

Chain of Rocks WTP
- Baldera, Patrick

Consolidated Grain & Barge Co. (CGB)
Jamison, Larry
Cultural Resource Analysts, Inc.
Niquette, Charles
Docks
Economy Boat Store
Zupan, T
Ecosystem Investment Partners
Urban, David
Ecosystems Insurance Associates
Spoth, Robert
Ergon Inc.
Cruse, Lester
Florida Marine
Marine, Louis
Gary Elmestad & Associates
Elmestad, Gary
Hanke Terminal Inc.
HMT Bell South
Hoppies Marine
Illinois Marine Towing
Barnes, Ryan
Ingram Barge Company
Dotts, Glenn
Henleben, Ed
Johnson, Frank
Kristen, John
International Dock Products
Teah, Phillip
J.F. Brennan Company Inc.
Pehler, Kent
JBS USA
JBS Chief
Kirby Corporation
Ebey, Mike
Koch Industries
Muir, T
Layne
Hunt, Henry
Luhr Bros., Inc.
S, Glenn
Missouri Corn Grower's Assoc.
Reitz & Jens
SCI Engineering
Harding, Scott
SEACOR Marine LLC
Coder, Justin
Slay Industries Inc.
Slay, Glen
Southeast Missouri Port Authority
Southern Illinois Transfer
Terra Technologies
Staten, Shane
Treated Wood Council
Miller, Jeff
Tri City Port District
Shahlman, Bill
Wilmsmeyer, Dennis
York Bridge Co.
Southwestern Power Adminstration (SWPA)
Corker, Ashley
BellSouth Telecommunications

MVS External Media Stakeholder

Banner Press
Chicago Commods
Republic Monitor Perry County, MO
Cox, Robert
Waterways Journal
Shoulberg, J

MVS External Tribe Stakeholder

Absentee-Shawnee Tribe
Devon Frazier
Caddo Nation
Historic Preservation Office
Chairman of Caddo Nation
Francis, Tamara
Citizen Potawatomi Nation
Kelli Mosteller
Delaware Nation of Oklahoma
Sonnie Allen
Delaware Tribe of Indians
Dr. Brice Obermeyer
Dr. Larry Heady
Eastern Shawnee Tribe of Oklahoma
Brett Barnes
Forest County Potawatomi
Melissa Cook
Hannahville Indian Community
Earl Meshigaud
Ho-Chunk Nation of Wisconsin
William Quackenbush
Iowa Tribe of Kansas and Nebraska
Lance Foster
Iowa Tribe of Oklahoma
Dr. Robert Fields
Kickapoo Tribe of Indians of Kansas
Fred Thomas
Kickapoo Tribe of Oklahoma
Kent Collier
Miami Tribe of Oklahoma

Diane Hunter
Nottawaseppi Band of Huron Potawatomi
Fred Jacko, JR
Peoria Tribe of Indians of Oklahoma
Logan Pappenfort
Pokagon Band of Potawatomi
Matthew Bussler
Prairie Band Potawatomi Nation
Warren Wahweotten
Sac & Fox Nation of Missouri in Kansas and Nebraska
Chairperson Tiauna Carnes
Sac & Fox Nation of Oklahoma
Principal Chief Kay Rhoads
Sac & Fox Tribe of the Mississippi in Iowa
Buffalo, Jonathon
Shawnee Tribe
Tonya Tipton
SOARRING Foundation
Joseph Standing Bear Schranz
The Osage Nation
Chief John Red
Dr. Andrea Hunter
The Quapaw Tribe of Indians
Everett Bandy
United Keetoowah Band of Cherokee of Oklahoma
Sheila Bird
Winnebago Tribe of Nebraska
Randy Tebeo

Other External Stakeholders