

**CHANNEL MAINTENANCE DREDGING
DUCK CREEK CUT, MISSISSIPPI RIVER, POOL 13,
RIVER MILE 554.3
DEADMAN'S LIGHT CUT, MISSISSIPPI RIVER, POOL 12,
RIVER MILE 568.5**

ENVIRONMENTAL ASSESSMENT

September 2021



**US Army Corps
of Engineers®**
Rock Island District

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SUMMARY

This document reviews the likely environmental impact from the Channel Maintenance Dredging Duck Creek Dredge Cut, Pool 13, RM 554.3 , and Deadman's Light Dredge Cut, Pool 12, River Mile 568.5 Project (Project); therefore, the public is entitled to take part in its review. If you have concerns about the environmental impact of this Project, we encourage your input in this decision-making process.

The U.S. Army Corps of Engineers, Rock Island District (District), must consider channel maintenance dredging the Duck Creek Reach, Pool 13, and Deadman's Light Reach, Pool 12, Upper Mississippi River, and placing the dredged material at several locations along either the Illinois shoreline, Iowa shoreline, or in upland sites.

When the District commits Federal funds for a Federal action (dredging the navigation channel), the District must inform public officials and citizens before these decisions are made and actions are taken.

This Environmental Assessment documents the District's decision making and their consideration of the environment. This document is compliant with the National Environmental Policy Act (Code of Federal Regulations, Title 40 §§1500-1508).

If you have any questions, concerns, or comments, contact the Regional Planning and Environmental Division – North at: (309) 794-5256, or by email at: CEMVR_Planning@usace.army.mil by **September 2021**. Comments may also be sent to:

District Engineer
US Army Corps of Engineers, Rock Island District
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- Appendix B Clean Water Act Section 404(b)1 Evaluation
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DRAFT

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I. PURPOSE AND NEED FOR FEDERAL ACTION

A. System Background: During the 2020 navigation season, the U.S. Army Corps of Engineers (Corps), Rock Island District, (District) identified approximately 15,000 cubic yards (CY) of river sediment in Pool 13 at RM 554.1 – 555.0 (Duck Creek), as well as approximately 39,000 CY of sediment blocking the navigation channel in the Mississippi River 9-Foot Navigation Channel in Pool 12, at river miles (RM) 568.5 – 568.8 (Deadman’s Light). The District’s concern is the sediment will block commercial shipping at these locations, causing navigation delays for barges travelling upstream and downstream. The District Commander issued an emergency dredging declaration on August 3, 2020 (Appendix A, *Pertinent Coordination*), to remove sediment, thereby returning the navigation channel to standard operating conditions. Ultimately, these areas were not dredged in 2020 due to late-season scouring, but will likely need to be dredged soon based on recent surveys (See figures in Appendix B, *Clean Water Act Section 404(b)1 Evaluation*).

The District has not dredged the Duck Creek Dredge Reach since 1962 and has not dredged the Deadman’s Light Dredge Reach since 1969. Current dredging needs are within the previously dredged footprints, but these areas are not recurrent dredging areas, a chronic dredge cut designation outlined in the Great River Environmental Action Team (GREAT) II Report (see Section F, *Authority*). Due to the lack of dredging requirements, the District has not completed a dredged material management plan for this area. This environmental assessment (EA) assesses the potential impacts of dredging these previous dredge cuts and placement of dredged material. Under the present conditions, the threat of closing the navigation channel and/or vessel groundings exists. An immediate closing requires costly emergency dredging. If approved dredged material placement sites are full, the District would have to select an emergency placement site with little environmental analysis. This process is outlined in the GREAT II Channel Maintenance Handbook and emergency dredging actions are coordinated through the On Site Inspection Team¹ (OSIT). The District and river resource agencies prefer placement sites outside of the floodplain, as upland sites typically have less natural resource impact, although they may have other impacts, such as loss of farmland and/or impacts to wetlands.

B. Purpose of and Need for Action. The Project’s purpose is to restore the navigation channel to its operating standards. Restoring the channel would allow commercial navigation to continue with a reliable and safe navigation channel depth and width.

¹ The OSIT Team is a multi-agency group that assists the District by making dredged material placement recommendations. The OSIT is comprised of Federal and state natural resource agencies. States represented include Wisconsin, Iowa, Illinois, and Missouri. The OSIT was a product of the GREAT II study (1980).

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The District would remove the material using mechanical or hydraulic dredging methods. The District would prefer to use mechanical dredging based on this project's priority and the uncertain availability of a hydraulic dredge. Restoring the channel also requires locations to place the dredged material. The District must coordinate dredged material placement sites with Federal, state, and local partners; private stakeholders; and tribes since these reaches have not recently required maintenance dredging. Additional coordination would also be required for placement greater than the ordinary high water mark (OHWM).

The District identified multiple bankline and upland sites along the shorelines and on islands within the Project area. The OSIT is supportive of in-water bankline placement options.

C. Decision. The District must determine the most efficient and environmentally acceptable way to remove the sediment blocking the navigation channel. The District must also determine the least cost, environmentally acceptable location to place the dredged material.

D. Risks. There is currently an elevated risk of channel closure in the Duck Creek and Deadman's Light Reaches if the District does not perform a dredging action.

- Without dredging, this area would result in delays to navigation.
- Current river level forecasts show the area may begin to impact navigation in 2021.

E. Location. The Project has two sites on Upper Mississippi River (UMR), one in Pool 12 and one in Pool 13 (Figure EA-1). The first site, known as the Duck Creek Reach, is located at RM 554.1 – 555.0 in Pool 13, near Bellevue, Iowa, (Figure EA-2). The second site, Deadman's Light Reach, is located between river miles (RMs) 568.5 – 568.8 in Pool 12 (Figure EA-3). The navigation channel centerline is the border between Dubuque and Jackson Counties, Iowa, and Jo Daviess County, Illinois. The District investigated placement sites in both states.

F. Authority. The Rivers and Harbors Act of 1878 original authorized the Corps to work on the Mississippi River. The Rivers and Harbors Act of 1927; as modified by the Rivers and Harbors Acts of 1930, 1932, and 1935; 1950, and a Resolution of the House Committee on Flood Control of September 19, 1944, was the formal authorization for the Corps to perform operation and maintenance activities on the UMR. These Acts and Resolution authorized the construction, operation, and maintenance of the 9-Foot Navigation Channel on the Mississippi River between the mouth of the Missouri River and St. Paul, Minnesota.

In addition, pursuant to Section 1103(i) of the Water Resources Development Act of 1986 [33 U.S.C. § 652(i)], Congress authorized the Corps to dispose of dredged material from the system pursuant to the recommendations of the Great River Environmental Action Team (GREAT) II study, specifically the GREAT II's 1980 Mississippi River Main Report. The proposed Project is authorized by the referenced legislation, and its purpose is compatible with the annual Operations and Maintenance appropriation.

- (1) The River and Harbors Act of 3 July 1930, authorized the Mississippi River 9-Foot Channel Project and states in part: *Mississippi River between mouth of Illinois River and*

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Minneapolis, MN: The existing project is hereby modified so as to provide a channel depth of nine feet at low water with widths suitable for long-haul common-carrier service.

(2) 33 USC 591, authorized condemnation, purchase, or donation of land or right-of-way for the improvement of rivers.

(3) Section 1103 of the Water Resources Development Act of 1986, 33 USC 652(i)(1), authorized the purchase of the subject tracts in fee or easement. It further states “...*the Secretary shall, as he determines feasible, dispose of dredged material from the system pursuant to the recommendations of the GREAT I, GREAT II, and GRRM studies.*”

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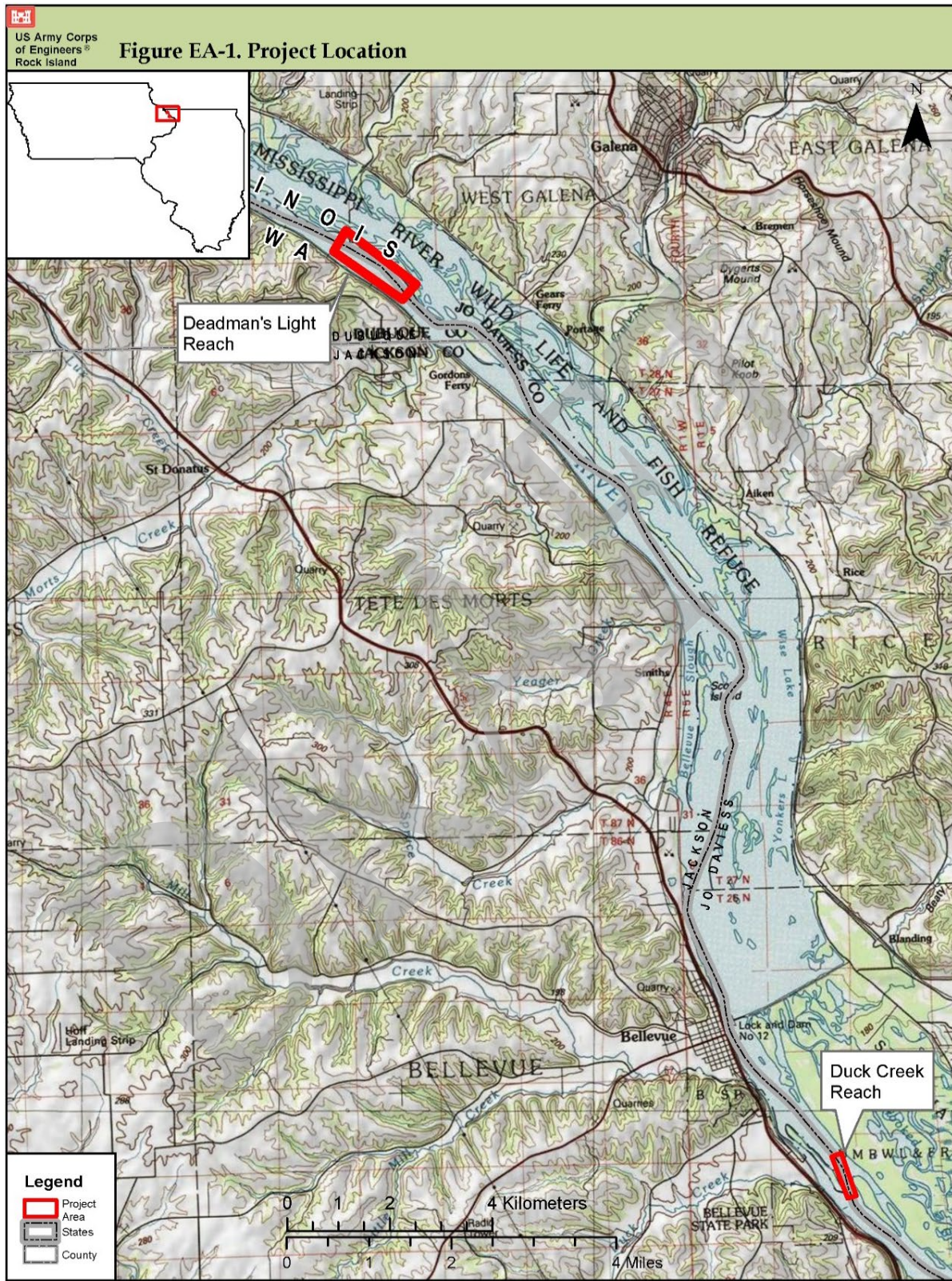


Figure EA 1. Project Location

G. Related National Environmental Policy Act (NEPA) Documentation. There are no other NEPA documents from previous site-specific dredging actions in the Project location.

The District completed the environmental impact statement titled, *Final Environmental Impact Statement, Continued Operation and Maintenance Nine-Foot Navigation Channel, Upper Mississippi River -Pools 11 through 22*, July 1974. This document addressed the past environmental impacts resulting from the continued operation and maintenance of the existing nine-foot channel navigation system on the UMR within the Rock Island District.

In 2003, the District completed the report titled, *Summary of Cumulative Dredging, Dredged Material Placement Actions, and Programmatic Environmental Assessment for Future Dredged Material Placement Associated With Channel Maintenance Activities Mississippi River, River Miles 300-614 and Illinois Waterway, River Miles 80-286*, U.S. Army Corps of Engineers Rock Island District Final February 2003 (Main Report). This document has two primary purposes. The first is to better facilitate District's compliance with the NEPA by providing a general overview of the environmental impacts associated with future dredged material placement sites generally considered to be the most environmentally acceptable. The second purpose of this Programmatic EA is to comprehensively address cumulative floodplain impacts associated with the placement of dredged material resulting from channel maintenance dredging activities. This document is intended to supplement, not replace, the standard dredged material placement planning process.

H. Environmental Compliance. The District is responsible for conducting all necessary environmental coordination, obtaining the necessary permits, and documenting its decision-making process in this EA. Appendix A, *Pertinent Coordination*, contains copies of all relevant compliance coordination documents. This EA discusses the District's compliance with all applicable environmental regulations, as documented in Section III, *Environmental Consequences*, and summarized in Table EA-10.

Through the NEPA process, the District assured:

- the Project's environmental compliance conditions are met;
- the proposed Project is not injurious to the public interest;
- there are no extraordinary circumstances; and,
- the channel maintenance dredging and dredged material placement would not result in more than minor impacts to the environment.

II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section describes Project constraints, alternatives considered, including the No Action Alternative, and briefly describes any environmental consequences associated with each alternative.

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The District developed Project alternatives based on distance from the dredge cut and feasibility of placing at the locations.

The OSIT and the District met on site on July 2, 2020, to evaluate natural resources impacts from potential placement options in both reaches; the OSIT recommended bankline placement for dredged material. The OSIT also performed pollywog surveys (i.e., a survey technique where one is partially submerged and scours the river-bottom with their hands to locate mussels embedded in the substrate) at all sites in each reach to identify potential bankline placement sites with limited mussel resources to avoid impacts to mussels and associated habitat. Bankline placement may also erode and reenter the navigation channel, perpetuating the need for dredging.

Figures EA-2 and EA-3 show the placement site alternatives the District and the OSIT identified early in the Project's planning process. The District developed an alternative matrix to identify reasonable alternatives and those placement sites eliminated from further consideration (Table EA-1).

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Figure EA-2. Duck Creek Proposed Dredged Material Placement Site Alternatives

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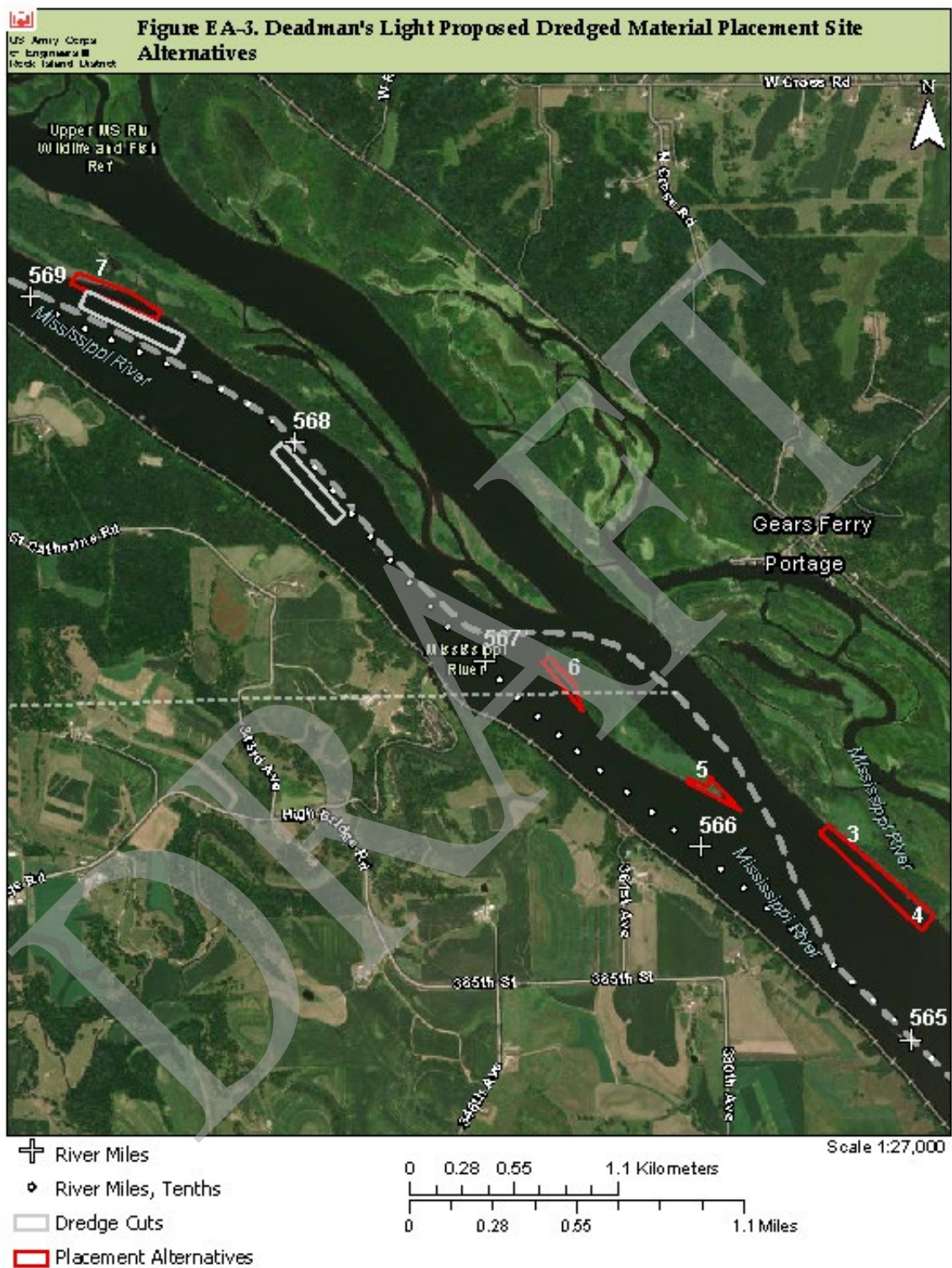


Figure EA-3. Deadman’s Light Proposed Dredged Material Placement Site Alternatives

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Table EA-1. Alternative Matrix ^{1, 2, 3}

Pool 13 Alternative Criteria	Pleasant Creek	1	2
Land Management	Corps Fee Title	Island formed by accretion—ownership defaults to State of Iowa	USFWS fee title
Cultural	Two previous surveys have been conducted. Potential for significant site. This alternative was eliminated from further considerations due to other reasons.	No previous surveys at this location.	No previous surveys at this location.
Environmental Resources	Possible environmental resources. This alternative was eliminated from further consideration prior to the site visit. No mussel evaluation conducted.	Few mussels located. Very little live vegetation on the island.	Too deep to fully evaluate for mussel resources.
Carried Forward for Additional Study?	No. Eliminated prior to site visit. Concerns about material migrating and ruining the boat ramp. This could impact recreation.	Yes. Carried forward.	No. Area is too deep to fully evaluate. Unclear if there is enough room here.

¹ Red: Alternative not carried forward

² Green: Alternative carried forward

³ Blue: Alternative Criteria considered

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Table EA-1. Alternative Matrix ^{1,2,3} (continued)

Pool 12 Alternative	3	4	5	6	7
Land Management	Corps Fee Title	Corps Fee Title	Corps Fee Title	Corps Fee Title	Corps Fee Title
Cultural	No previous surveys at this location.	No previous surveys at this location.	No previous surveys at this location. Potential areas of importance located across the river.	No previous surveys at this location. Potential areas of importance located across the river. Would require coordination.	No previous surveys at this location.
Environmental Resources	Mussel bed issues. Pollywog found a high density and species richness of mussels.	Immediately downstream of Site 3. Fewer mussels found in this area, but immediately adjacent to high density bed at	Wetland concerns.	Very few mussels located.	Very few mussels located, especially downstream of rock structures. This site has never been used for placement. One recent dead shell Higgins eye
Carried Forward for Additional Study?	No. Too many concerns about mussels.	No. Too many concerns about mussels.	No. Too deep to fully evaluate bankline placement. Wetland concerns along the shore.	Yes. Carried Forward.	Yes. Carried Forward.

¹ Red: Alternative not carried forward

² Green: Alternative carried forward

³ Blue: Alternative Criteria considered

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A. Alternatives Considered But Not Carried Forward For Further Consideration. Table EA-2 explains the reasons the District eliminated several alternatives from further consideration.

Table EA-2. Alternatives Eliminated From Further Consideration

Alternative	Location	Reach	Issues Preventing Use
Pleasant Creek Recreation Area	Pool 13 Iowa Shoreline	Duck Creek	The OSIT was concerned with natural resource and recreation impacts at and adjacent to the placement sites. Due to the proximity to this recreation area, the boat ramp in the area may become silted in if material moves.
Site 2	Pool 13 Illinois Shoreline	Duck Creek	While near the dredge cut, Site 2 is located immediately upstream of a side channel with closing dam structure and would erode quickly, returning the dredged material back into the navigation channel and perpetuate future dredging.
Sites 3-4	Pool 12 Illinois Shoreline	Deadman's Light	These sites are near a mussel bed at RM 565.5-565.6 (392 individuals found, 9 species). The dredged material placement may impact this important mussel bed.
Site 5	Pool 12 Island Shoreline, Iowa, Right Descending Bank (RDB)	Deadman's Light	The RDB of this island tip contained desirable wetland vegetation that would not be suitable for placing material. The Left Descending Bank (LDB) of the island tip had a steep drop-off from the bankline that would not be suitable for material placement.

B. Alternatives Carried Forward. The District carried forward three placement site alternatives, one for the Duck Creek Reach and two for the Deadman's Light Reach, meeting the Project needs. The District also considered the No Action Alternative.

Alternative 1. No Action. Under the No Action Alternative, the District would not dredge the navigation channel in the Deadman's Light Reach or Duck Creek Reach. Due to the shoaling taking place in the navigation channel, commercial navigation through these areas would halt. While the No Action Alternative is not viable due to the authorized requirement to maintain the navigation channel, the District used this alternative as a baseline condition to compare all the other alternatives.

Alternative 2. Site 1, Duck Creek, RM 554.3, Historic Island Bankline. Under this alternative, the District would place up to 15,000 CY of dredged material from the Duck Creek Reach, likely using mechanical dredging in this location along the bankline and downstream tip of an island along the right descending channel-border bankline (RM 554.3). Material would be placed at the lower tip of the Iowa island, as well as immediately downstream of the island as it transitions to a sand bar. (Figure EA-4). This area was last used as historic dredge placement in 1962. This island originally formed due to accretion. **This is the District and the OSITs' preferred placement site for the Duck Creek Reach and the only alternative to move forward for this reach for further evaluation.**

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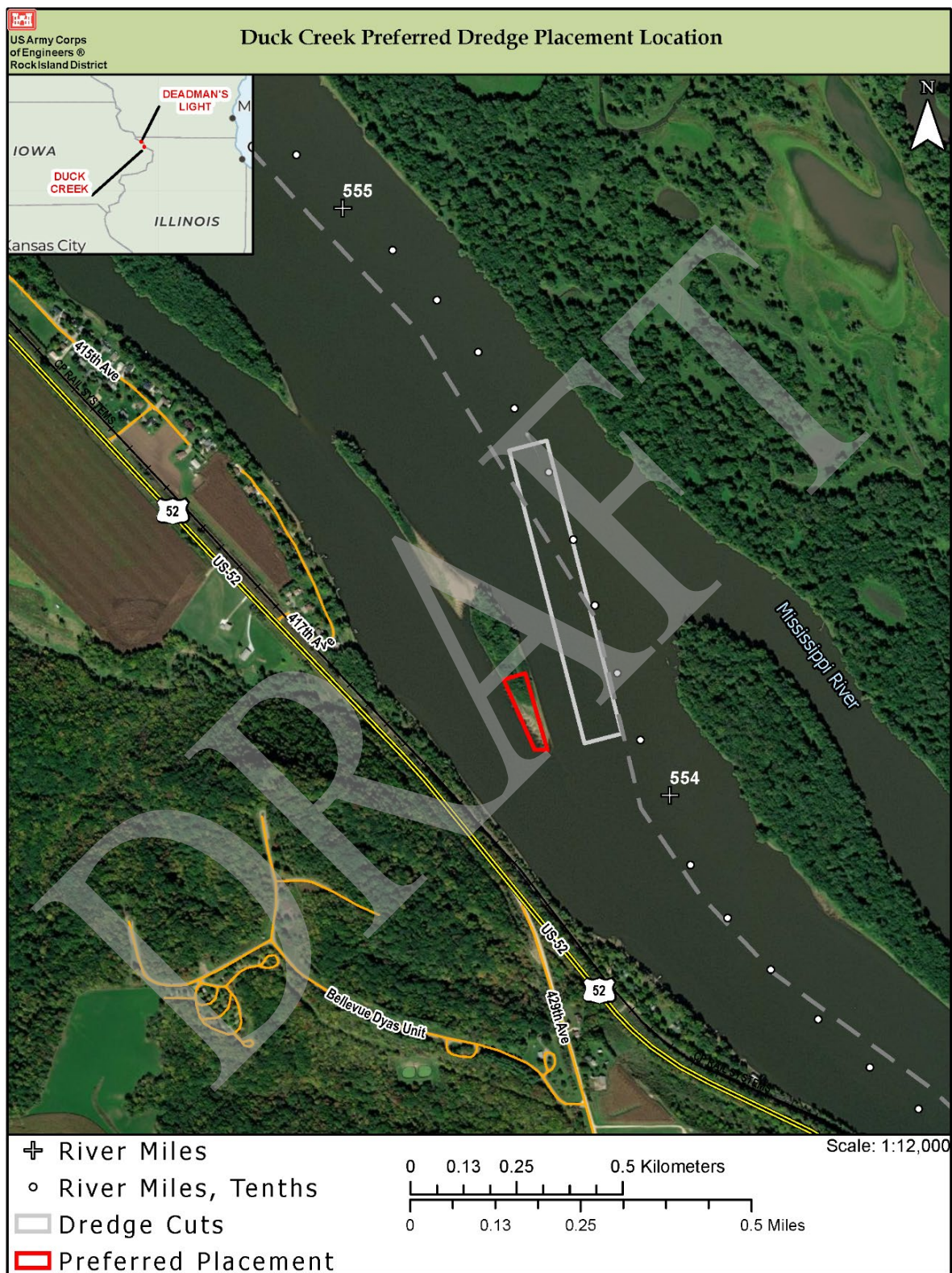


Figure EA-4. Duck Creek Preferred Placement Location

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This site is primarily comprised of fine grain organic rich sediment and silt over sand along the banklines, and immediately downstream, of the island. The OSIT identified limited mussel resources at this site and little suitable habitat. Thirty live mussels made up of five common species were identified (Table EA-3).

The OSIT identified forestry resources on this island, including black willow growth, which the foresters identified as an opportunity to apply techniques to help restore willow naturally following placement. The downstream portion of the island, where placement would occur, contained limited growth, mostly of young willows. This island has shown accretion on the downstream end in recent years, and the OSIT believes placement of dredged material would have potential to provide additional acreage and habitat benefits for aquatic and floodplain resources.

Table EA-3. Mussel Survey Species Collected – Site 1

Species	Scientific Name	Totals
Three ridge	<i>Amblema plecata</i>	5
Fragile papershell	<i>Leptodea fragilis</i>	2
Plain pocketbook	<i>Lampsilis cardium</i>	18
Wabash pigtoe	<i>Fusconaia flava</i>	3
Lilliput	<i>Toxolasma parvus</i>	2

Alternative 3. Site 6 Deadman's Slough, RM 567 Historic Island Bankline. Under this alternative, the District would place up to 39,000 CY of dredged material using mechanical or hydraulic dredging up to the OHWM along the Iowa island bankline (Figure EA-5). This site was last used for historic dredge material placement in 1969. The OSIT identified mussel species at this site as common and scarce; only 6 live mussels representing four species were collected (Table EA-4). **Due to its previous use and limited mussel resources, this is the District and the OSIT preferred placement site for the Deadman's Light Reach** (Appendix A, *Pertinent Coordination*).

Table EA-4. Mussel Survey Species Collected – Site 6

Species	Scientific Name	Totals
Threeridge	<i>Amblema plecata</i>	2
Fragile papershell	<i>Leptodea fragilis</i>	1
Wabash pigtoe	<i>Fusconaia flava</i>	1
Threehorn	<i>Obliquaria reflexa</i>	2

*1 dead Ebonyshell (*Reginaia eburnus*)

Alternative 4. Site 7, Deadman's Light, RM 569, Island 235 Placement. Under this alternative, the District would place up to 39,000 cubic yards of dredged material using hydraulic or mechanical dredging in this location along the channel-border side of Island 235 in Illinois (Figure EA-5). Vegetation on site is dominated by invasive reed canary grass. The OSIT collected 42 live mussels from 5 species. Four additional species were collected as dead shell only, including one complete Federally-endangered Higgins eye pearlymussel (Table EA-5).

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This site has never been used historically for bankline placement of dredged material but could be used as a secondary placement option for the Deadman's Light Reach. The OSIT recommended dredged material be contained on the bankline bench and reed canary grass to avoid encroachment into the water. If this site were chosen for placement, the OSIT recommended further coordination to avoid and minimize potential impacts to mussel resources (Appendix A, *Pertinent Coordination*).

Table EA-5. Mussel Survey Species Collected – Site 7

Species	Scientific Name	Totals
Pink heelsplitter	<i>Potamilus alatus</i>	2
Pimpleback	<i>Cyclonaias</i>	1
Plain pocketbook	<i>Lampsilis cardium</i>	1
Threeridge	<i>Amblema plecata</i>	1
Threehorn	<i>Obliquaria reflexa</i>	37

*1 dead Higgins eye pearlymussel (*Lampsilis higginsii*)

For all alternatives, the District would utilize mechanical or hydraulic dredging (depending on quantities and availability of hydraulic dredge) to maintain the 9-foot Navigation Channel. Mechanical dredging is typically performed by using floating deck-mounted machinery, like cranes with clam buckets or large backhoes, to remove material from the river and move and place the material in the designated placement location. Hydraulic dredging is typically performed by a cutterhead dredge, which discharges material to a selected placement site via a floating pipeline. The dredged material samples from both Duck Creek and Deadman's Light dredge cuts consisted predominantly of medium to fine grain sand. For this Project, approximately 15,000 CY of material would be placed on one or more selected bank placement sites in the Duck Creek Reach and approximately 39,000 CY of material would be placed on one or more selected bankline placement sites in Deadman's Light Reach. Dredged material placement for both reaches would be up to but not exceeding the OHWM. The material would be graded after placement, side slopes would fall at approximately a 3H:1V slope. All discharges into waters of the US require section 404 compliance per 33 CFR Part 335, 336, 337. The District will release a public notice for the 404(b)(1) concurrently with the release for public review of the EA.

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Figure EA-5. Deadman's Light Preferred Placement Location

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section focuses on resources potentially affected by any of the alternatives. This section also describes the alternatives' potential impacts to these resources.

Conditions existing at the time of the study are collectively called the "existing conditions." The existing condition helps form the baseline for determining the Future Without Project conditions. Existing conditions are synonymous with the "No Action Alternative" as required under the NEPA. The No Action Alternative is the most likely condition expected to occur in the future in the absence of the proposed action or any action alternatives.

This section also discusses each alternative's possible environmental impacts to the existing and future conditions described in the No Action Alternative. Future conditions are sometimes difficult to predict. For general Corps planning, future conditions are estimated for the typical economic life of a project, or 50 years unless a longer period is justified. For this Project, the District kept the future conditions analysis to 50 years.

A. Aesthetics. Aesthetics and visual resources are institutionally important because of the laws and policies affecting visual resources, most notably NEPA and the Corps' Engineering Regulation (ER) 1105-2-100, *Planning Guidance Notebook*. Visual resources are technically important because of the high value placed on the preservation of unique geological, botanical, and cultural features. Aesthetic resources are important to the human environment because the public supports and values the preservation of natural vistas.

The Project is in the Mississippi River and its floodplain. The river has islands and mature forests and abundant wildlife near the Project locations. For the past century, commercial navigation has become a dominant feature within the ecosystem, with barges and other navigation and shipping elements along the river. These elements contribute to the Project area's aesthetic character.

Other aesthetic resources in the Project area include the USFWS Upper Mississippi River (UMR) National Wildlife and Fish Refuge (NWFR), Pleasant Creek HREP, and the nearby Lock and Dam 12.

Alternative 1. No Action. Aesthetics and visual resources would continue to evolve from existing conditions because of both land use trends and natural processes over the course of time. The Mississippi River would continue to change but the pleasing landscape would remain ephemeral, and visual resources would continue to be rich with biodiversity.

Alternative 2. Site 1. The District would place dredged material at Site 1 up to the OHWM to avoid floodplain impacts. This means the dredged material mound would be low and not visually obtrusive. This alternative would not significantly impact aesthetics.

Alternative 3. Site 6. The District would place dredged material at Site 6 up to the OHWM to avoid floodplain impacts. This means the dredged material mound would be low and not

visually obtrusive. Additionally, this area is sparsely populated and located along an island bankline. This alternative would not significantly impact aesthetics.

Alternative 4. Site 7. The District would place dredged material at Site 7 along the bankline and reed canary grass patches. Portions of the dredged material mound would be low and not visually obtrusive, while other portions would be on existing sand or invasive plant species. This area is sparsely populated and located along an island bankline. This alternative would not significantly impact aesthetics.

B. Air Quality. The District considered and eliminated air quality from further evaluation. The proposed Project's alternatives would have negligible effects to air quality, either short term or long term. Any impacts from diesel or gas exhaust would be below any ambient air quality standards in the Project area. The District shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property during the proposed Project (567 Iowa Administrative Code 23.3(2)(c)).

C. Aquatic Resources/Wetlands. The Mississippi River is the primary aquatic resource in the Project area. The area also contains wetlands on many of the Mississippi River islands.

The river's bankline is adjacent to bottomland hardwood (forested) and scrub shrub wetlands on islands and shorelines. The forested wetlands are primarily comprised of large mature cottonwood, sycamore, and silver maple trees. A small stand of black willow trees is located at Site 1 in the Duck Creek Reach. The scrub shrub wetlands are located on the islands, bordering the forested wetlands. These areas are comprised of common vegetation such as grasses, pole size trees, and nettles. Potential impacts to aquatic /wetland resources of each alternative are as follows:

Alternative 1. No Action. Future without Project conditions should remain stable. The bottomland forest and shrub scrub wetlands are flood tolerant and remain a quality, mature forest.

Alternative 2. Site 1. Bankline placement would encroach from the river up to the shoreline. The shoreline is generally void of vegetation, transitioning to a small island of young black willows. Corps' foresters identified this as an opportunity to apply techniques to help restore black willow following placement. No dredged material would be placed past the existing tree line on the shore. This island has shown accretion on the downstream end in recent years, and the OSIT believes placement of dredged material would have potential to provide additional acreage and habitat benefits for aquatic and floodplain resources. No wetland mitigation would be required if Site 1 was used.

Alternative 3. Site 6. Bankline placement would encroach on aquatic habitat from the river up to the shoreline. This site is sparse in river aquatic resources. Placement would not extend higher than the OHWM, therefore, not impacting island vegetation or wetlands.

Alternative 4. Site 7. Placement would occur on the bankline bench lacking vegetation to avoid encroachment into aquatic resources. Placement could also extend island-ward on top of reed canary grass patches. No wetlands or desirable vegetation would be impacted.

D. Invasive Species. There are invasive plants, fish, and animals in the Project area. Disturbances may introduce or promote the spread of invasive species, e.g., navigation can promote zebra mussels and flooding can promote reed canary grass, and . Currently there are certain understory invasive species in small populations such as reed canary grass, honeysuckle, and wild garlic.

Alternative 1. No Action. As a result of the No Action alternative, the character of riparian habitats may change, and invasive species may move into the area with changing climate. The range and distribution of fish and other aquatic species would likely change, and an increase in invasive species would also likely occur.

Future without conditions should generally decline with the pressures of existing invasive species populations and any as-yet unknown introduced invasive species.

Alternative 2. Site 1. If Site 1 is used, the spread of invasive species is not likely to occur. Plant growth is expected to be limited to the black willow already existing on the island.

Alternative 3. Site 6. Placement below the OHWM would not likely result in the spread of invasive species since this area would not provide suitable habitat.

Alternative 4. Site 7. Since the proposed Project is not located in wetlands or would disturb wetlands, it would not introduce or promote the spread of any aquatic invasive plant species. Placement on top of reed canary grass patches could slow the growth of this invasive plant.

E. Fish and Wildlife Habitat. Typical riverine wildlife, riverine and backwater aquatic communities are common throughout the Project area, including various species of mammals, reptiles, amphibians, mollusks, and insects. Pools 12 and 13 are also a major stop over for the avian community, as waterfowl and other neotropical migrants use the Mississippi River during their life cycles. Nesting occurs along the wooded areas on either side of the river and its islands.

Despite the human disturbances such as navigation traffic, recreation, noise, and lights, the river corridor has suitable habitat for those species accustomed to an active setting, e.g., bald eagles frequently use the river corridor for foraging during the winter.

Alternative 1. No Action. The Future Without Project conditions for aquatic and wildlife animals should not change significantly. Larger mammals (i.e., bears, cougars) may frequent the area more often than today as these species' populations are increasing in Iowa and Illinois.

Alternative 2, 3, 4. Local wildlife may be temporarily disrupted. Once the Project is completed, mammals, reptiles, amphibians, mollusks, insects, and birds, would resume their daily routines. Dredged material placement may have the potential to provide additional acreage and

habitat benefits for fish and wildlife resources. If Site 7 (Alternative 4) were used as a secondary placement site, the OSIT recommends material should be constrained to the bankline bench and reed canary grass patches. There would be no significant impacts to wildlife if the District used any of the proposed placement sites.

F. Migratory Birds. Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The District accessed the USFWS' Birds of Conservation Concern 2021 List to identify migratory birds of concern in the Project area. The overall goal of the Birds of Conservation Concern List is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the USFWS's highest conservation priorities. The USFWS identified four birds of conservation concern that occur within the Project area (Table EA-6). It is not representative of all birds that may occur in the Project area, only a subset of birds of priority concern.

Table EA-6. Bird Species of Conservation Concern

Species	Scientific Name	Probable Project Area Use
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Nesting, foraging for fish
Lesser Yellowlegs	<i>Tringa flavipes</i>	Migration
Red-headed	<i>Melanerpes</i>	Nesting
Semipalmated	<i>Calidris pusilla</i>	Migration

Alternative 1. No Action. Without the Project, migratory birds would continue to occupy the Project area. One study by a joint team of conservation biologists described a steady decline of nearly three billion North American birds since 1970, primarily a result of human activities. In short, North America lost more than one quarter of its avifauna within a human lifetime (Audubon, <https://www.audubon.org/news/audubon-declares-bird-emergency-demands-immediate-action-after-scientists-reveal>).

Alternative 2. Site 1. If the District places sand on the shoreline at this site, foraging areas for shorebirds may be covered up. However, the edge of the sand would also create new foraging areas suitable for wading and shorebirds to forage and rest.

Alternative 3. Site 6. If the District places sand on the shoreline at this site, foraging areas for shorebirds may be covered up. However, the edge of the sand would also create new foraging areas suitable for wading and shorebirds to forage and rest.

Alternative 4. Site 7. Site 7 is currently dominated by reed canary grass vegetation, which is not considered quality migratory bird habitat. If the District places sand along the bankline bench and reed canary grass patches at this site, this may create new foraging areas suitable for wading and shorebirds to forage and rest.

G. Threatened/Endangered Species/Critical Habitat. The District accessed the USFWS', IPaC website (<https://ecos.fws.gov/ipac/>) on February 25, 2021 (Appendix A, *Pertinent Coordination*), to obtain a list of the federally-listed threatened and endangered species potentially found in the Project area (Table EA-7).

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Table EA-7. Federally listed Species

Common Name	Classification	Habitat
Indiana bat <i>Myotis sodalis</i>	Endangered	Caves, mines (hibernacula); small stream corridors with well-developed riparian woods; upland forests (foraging)
Northern long-eared bat <i>Myotis septentrionalis</i>	Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during late spring and summer.
Higgins Eye (Pearlymussel) <i>Lampsilis higginsii</i>	Endangered	Larger rivers where it is usually found in deep water with moderate currents buried in sand and gravel river bottoms.
Sheepnose Mussel <i>Plethobasus cyphus</i>	Endangered	Larger rivers and streams where they are usually found in shallow areas with moderate to swift currents that flow over coarse sand and gravel. However, they have also been found in areas of mud, cobble and boulders, and in large rivers they may be found in deep runs.
Spectaclecase <i>Cumberlandia monodonta</i>	Endangered	Large rivers where they live in areas sheltered from the main force of the river current. This species often clusters in firm mud and in sheltered areas, such as beneath rock slabs, between boulders and even under tree roots.
Iowa Pleistocene snail <i>Discus macclintocki</i>	Endangered	Leaf litter of special cool and moist hillsides or algific talus slopes.
Eastern prairie fringed orchid <i>Platanthera leucophaea</i>	Threatened	Grows in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs.
Northern Wild Monkshood <i>Aconitum noveboracense</i>	Threatened	Shaded to partially shaded cliffs, algific talus slopes, or on cool, streamside sites.
Prairie bush clover <i>Lespedeza leptostachya</i>	Threatened	Dry to mesic prairies with gravelly soil
Western prairie fringed orchid	Threatened	Wet prairies and sedge meadows

Source: <https://ecos.fws.gov/ipac/> dated February 25, 2021

In its July 2, 2020, notes (Appendix A, *Pertinent Coordination*), the OSIT did not identify significant mussel beds, nor were any live federal- or state-listed mussel species recovered near the proposed placement sites (Refer to *Section II.B* of this EA for specific details regarding mussels collected at each proposed placement site). Table EA-8 lists the Iowa and Illinois vicinity listed mussel species (Iowa Natural Areas Inventory webpage accessed February 25, 2021.

(<https://programs.iowadnr.gov/naturalareasinventory/pages/RepDistinctSpeciesByCounty.aspx?CountyID=56>; Illinois Endangered Species Protection Board, 2020)

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Table EA-8. Iowa and Illinois State-listed Mussel Species

Species	State	Listing Designation
Butterfly <i>Ellipsaria lineolata</i>	Iowa and Illinois	Threatened
Creek Heelsplitter <i>Lasmigona compressa</i>	Iowa	Threatened
Creeper <i>Strophitus undulatus</i>	Iowa	Threatened
Cylindrical papershell <i>Anodontoides ferussacianus</i>	Iowa	Threatened
Ebonyshell <i>Reginaia ebenus</i>	Illinois	Endangered
Elephant-ear <i>Elliptio crassidens</i>	Illinois	Endangered
Ellipse <i>Venustaconcha</i>	Iowa	Threatened
Fanshell <i>Cyprogenia stegaria</i>	Illinois	Endangered
Fat pocketbook <i>Potamilus capax</i>	Illinois	Endangered
Higgins Eye (Pearlymussel) <i>Lampsilis higginsii</i>	Iowa and Illinois	Endangered
Monkeyface <i>Ovadrula metanevra</i>	Illinois	Threatened
Ohio pigtoe <i>Pleurobema cordatum</i>	Illinois	Endangered
Pistolgrip <i>Tritogonia verrucosa</i>	Iowa	Endangered
Purple Lilliput <i>Toxolasma lividum</i>	Illinois	Endangered
Purple wartyback <i>Cyclonaias tuberculata</i>	Iowa and Illinois	Threatened
Round pigtoe <i>Pleurobema sintoxia</i>	Iowa	Threatened
Salamander Mussel <i>Simpsonaias ambigua</i>	Illinois	Endangered
Slippershell mussel <i>Alasmidonta viridis</i>	Iowa	Endangered
Spectaclecase <i>Cumberlandia monodonta</i>	Iowa and Illinois	Endangered
Spike <i>Eurynia dilatate</i>	Illinois	Endangered
Yellow sandshell <i>Lampsilis teres</i>	Iowa	Endangered

Alternative 1. No Action. Threatened and endangered (state- and federally-listed) species would continue to inhabit the Project area if no action is taken. Some of the species' status may change with future conservation measures, while other species may be added to the current list.

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Local to global causes may impact these and other species' habitat (quality and quantity), migration patterns, food base, etc.

Alternatives 2, 3, 4. Table EA-9 provides the District's Endangered Species Act, Section 7 determinations, and reasons for each of the action alternatives. For the OSIT-preferred placement sites (Alternatives 2 and 3), the District determined No Effect to federally-listed threatened and endangered species. The OSIT recommended if Site 7 (Alternative 4) were used as a secondary placement site, material should be constrained to the bankline bench and reed canary grass patches to avoid water encroachment. The District will also coordinate barge and equipment access points, access dredging that may be necessary to reach the site, and other in-water disturbances with the OSIT to avoid and minimize potential impacts to mussel resources. The District would coordinate its Not Likely to Adversely Affect determination for mussel species for Site 7, if used, with the USFWS. The District anticipates the USFWS will concur with its determination in the event Site 7 (Alternative 4) were used. Section 7 compliance would conclude before the District Engineer signs the Finding of No Significant Impact (FONSI).

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Table EA-9. The District's Endangered Species Act, Section 7 Determinations and Reasons

Alternative	Species	Determination	Determination Reason
Alternative 2. Site 1 *OSIT Preferred	Northern long-eared bat	No Effect	No tree removal
	Higgins Eye (Pearlymussel)	No Effect	No suitable habitat in the Project area
	Sheepnose Mussel	No Effect	No suitable habitat in the Project area
	Spectaclecase	No Effect	No suitable habitat in the Project area
	Iowa Pleistocene snail	No Effect	No suitable habitat in the Project area
	Eastern prairie fringed orchid	No Effect	No suitable habitat in the Project area
	Northern Wild Monkshood	No Effect	No suitable habitat in the Project area
	Prairie bush clover	No Effect	No suitable habitat in the Project area
	Western prairie fringed orchid	No Effect	No suitable habitat in the Project area
Alternative 3. Site 6 *OSIT Preferred	Northern long-eared bat	No Effect	No tree removal
	Higgins Eye (Pearlymussel)	No Effect	No suitable habitat in the Project area
	Sheepnose Mussel	No Effect	No suitable habitat in the Project area
	Spectaclecase	No Effect	No suitable habitat in the Project area
	Iowa Pleistocene snail	No Effect	No suitable habitat in the Project area
	Eastern prairie fringed orchid	No Effect	No suitable habitat in the Project area
	Northern Wild Monkshood	No Effect	No suitable habitat in the Project area
	Prairie bush clover	No Effect	No suitable habitat in the Project area
	Western prairie fringed orchid	No Effect	No suitable habitat in the Project area
Alternative 4. Site 7	Indiana bat	No Effect	No tree removal
	Northern long-eared bat	No Effect	No tree removal
	Higgins Eye (Pearlymussel)	Not Likely to Adversely Affect	Placement will be constrained to avoid effects to mussel species
	Sheepnose Mussel	Not Likely to Adversely Affect	Placement will be constrained to avoid effects to mussel species
	Spectaclecase	Not Likely to Adversely Affect	Placement will be constrained to avoid effects to mussel species
	Iowa Pleistocene snail	No Effect	No suitable habitat in the Project area
	Eastern prairie fringed orchid	No Effect	No suitable habitat in the Project area
	Northern Wild Monkshood	No Effect	No suitable habitat in the Project area
	Prairie bush clover	No Effect	No suitable habitat in the Project area
	Western prairie fringed orchid	No Effect	No suitable habitat in the Project area

H. Tribal Trust Resources

Alternative 1 No Action. There are no tribal trust resources within the study area.

Alternatives 2, 3, 4. There are no tribal trust resources within any of the proposed alternative locations.

I. Historic Properties

Alternative 1 No Action. This alternative has no potential to cause effect on historic properties.

Alternatives 2, 3, 4. The Project proposes dredging and dredge material placement to avoid closure of the 9-Foot Navigation Channel within the Mississippi River. The dredging and dredge material placement activities are proposed within areas historically used for this same purpose. The dredged material will be placed along the bankline for both locations (Site 1; Site 6) described in Alternatives 2 and 3, below the typical high-water mark. If Alternative 4 placement location is used (Site 7), material will be placed on the current shoreline. The Landform Sediment Assemblage has identified all placement locations as consisting of recent post-settlement alluvium, which would have no potential to contain historic properties. No historic properties (including submerged resources) are located within the area of potential affect (APE). All potential placement alternative locations have low potential for intact historic properties due to recent age of sediment deposits (Refer to Appendix A, *Pertinent Coordination*).

The District has determined that the Project will have no effect on historic properties within the APE, in accordance with 36 CFR 800.4(d)(1). A letter initiating consultation, identifying the APE, detailing the proposed Project, with the District's determination of No Historic Properties Affected was sent to consulting parties on September 28, 2020 (Appendix A: *Pertinent Coordination*). The Illinois State Historic Preservation Office (SHPO), concurred with this determination on October 2, 2020 (Log No. 003092920). The Iowa SHPO also offered concurrence with the District's determination via letter on October 7, 2020 (R&C 201000012). The Winnebago Tribe of Nebraska, the Miami Tribe of Oklahoma, and the Forest County Potawatomi Community also responded (Appendix A: *Pertinent Coordination*).

In the unlikely event that activities associated with the proposed Project expose or impact potential historic properties or human remains, all construction activities and earthmoving actions in the immediate vicinity of the remains would be held in abeyance until the potential significance of the remains could be determined in consultation with the appropriate consulting parties.

J. Floodplains. The Mississippi River's floodplain was generally broad prior to urban and agriculture levees construction. However, the floodplain in Pools 12 and 13 are not dominated by urban influence or high agricultural levees; therefore, the floodplain for the Project area was considered to bluff to bluff.

Alternative 1. No Action. The Mississippi River's restricted floodplain should not change from its present condition. This alternative would not impact the floodplain.

Alternatives 2, 3, 4. This placement site is within the UMR floodplain. Placement at these locations would occur on the bankline, either at or below the OHWM with sides having a 3:1 slope. The District completed floodplain analysis prior to placement of dredged material to ensure the proposed action conforms to ER 1165-2-26, *Implementation of Executive Order 11988 on Flood Plain Management*. There would be negligible rise in water surface elevations after dredging and placement of material for proposed placement sites in both reaches. For more information related to the modeling effort, refer to Appendix A, *Pertinent Coordination*.

K. Hazardous, Toxic and Radioactive Waste. The Study Area of Interest (Project Area) is located in Jackson and Dubuque Counties, Iowa, and Jo Daviess County, Illinois. The Study Area encompasses the Mississippi River navigation channel, Iowa and Illinois shorelines. Per the Corps' ER 1165-2-132, *Hazardous, Toxic, and Radioactive Waste*, includes any material listed as a "hazardous substance" under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq (CERCLA). [See 42 U.S.C. 9601(14).]

Hazardous substances regulated under CERCLA include "hazardous wastes" under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C. 6921 et seq; "hazardous substances" identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321, "toxic pollutants" designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317, "hazardous air pollutants" designated under Section 112 of the Clean Air Act, 42 U.S.C. 7412; and "imminently hazardous chemical substances or mixtures" on which the U. S. Environmental Protection Agency (USEPA) has taken action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. Dredged material and sediments beneath waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the USEPA or a state for a response action (either a removal action or a remedial action) under CERCLA, or if they are a part of a National Priority List site under CERCLA.

The District conducted grain size analyses from several core samples collected within the Project area in July 2020, described in *Appendix B, Clean Water Act Section 404(b)1 Evaluation*. Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. The Duck Creek Reach samples were homogenous medium- to fine-grain sand. All Deadman's Light Reach samples were homogenous fine-grain sand and samples from both reaches did not exhibit any characteristic HTRW concerns. Based on these results, no further testing is warranted for these sites.

Alternative 1. No Action. The Project area should remain free of HTRW issues in the future. Based on currently enforced HTRW regulations, managed agriculture and industrial waste streams are economically prudent.

Alternatives 2, 3, 4. This Project is not expected to impact any known HTRW locations. All alternatives are required to follow local, state and Federal laws regarding material storage and use, waste generation and disposal, and spill prevention and reporting. This includes any dredged material handling. The District would ensure through regulated activities or best management practices, there would be no significant HTRW impacts resulting from the proposed actions.

L. Hydrology. River hydrology refers to the flow of water in river channels, to the characteristics of the catchment and the channel network which influence runoff processes, and to the interrelationships between river flows and channel form. Over the time scales relevant to these analyses (100-102 years) the catchment and the channel network can be considered as independent variables, except as they may be changed artificially, while channel form is dependent on interactions between characteristics of the flow, the materials forming the bed and banks and the sediment load being transported by the river.

Alternative 1. No Action. The current Mississippi River hydrology would not change as a result of the No Action Alternative. Hydrology may change over time as a result of natural processes, climate change, and other anthropogenic impacts, etc.

Alternatives 2, 3, 4. Proposed placement of dredged material would be at or under the OHWM and will not impact flood heights. There would be negligible rise in water surface elevations after dredging and placement of material for proposed placement sites in both reaches. For more information related to hydraulic modeling, refer to Appendix A, *Pertinent Coordination*.

M. Land Use/Land Cover. Land within the Project area is within the historic floodplain of the UMR. Extensive human activity has manipulated vegetation and land use. The District utilized the National Land Cover Database (NLCD) 2011 to generate land use coverage for this area. The dominant cover class types were forested, pasture/hay, cultivated crops, and open water within the vicinity of the Project area. The Project area also occurs within the USFWS NWFR, which encompasses Federal lands spanning a length over 250 river miles from Wabasha, Minnesota, to near Rock Island, Illinois. The two main land use plans that guide administration and management within the Project area are the Corps' Mississippi River Master Plan for Resource Management of Pools 11-22 (1972; 1989) and the USFWS UMR NWFR Master Plan (1987).

Alternative 1. No Action. Land use should remain stable for years to come. The Mississippi River and adjacent rural land uses should not dramatically change over the next 50 years.

Alternatives 2, 3, 4. For all proposed alternative locations, placing dredged material up to the OHWM along the Mississippi River shoreline would not change land use. None of the action alternatives would displace population nor would it alter the character of existing residential areas. This Project would not impact population trends as the presence or absence of dredged material placement site is unlikely to induce significant alterations in the population growth or distribution given the myriad of factors that influence development in this region. Similarly, this

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Project is unlikely to induce significant alterations in the pattern and type of land use or affect any current planning efforts that also occur in the Project area.

N. Navigation. The existing conditions in these reaches are not adequate for a safe and effective navigation channel. The District has kept a channel open for navigation despite the lack of adequate placement sites. Closures and a reduction in channel width both have costs to the navigation industry. The 33 CFR § 335-338 provides the overall direction for the Corps to place dredged material from maintenance dredging of navigation projects. The District is required to undertake operations and maintenance activities where appropriate and environmentally acceptable. All practicable and reasonable alternatives are fully considered on an equal basis. This includes the discharge of dredged or fill material into waters of the U.S. in the least costly manner, at the least costly and most practicable location, and consistent with engineering and environmental requirements. This constitutes the “Preferred Alternative” for the navigation purpose.

Alternative 1. No Action. If the District does not perform the identified dredging, the navigation channel would close and river traffic would halt in these reaches. Since congressional authorization mandates the District to maintain the navigation channel, maintenance would eventually resume without the channel maintenance action.

Alternatives 2, 3, 4. All the action alternatives would provide adequate dredged material storage for the proposed dredging action and provide benefits to navigation by keeping the channel open in both reaches.

O. Noise Levels. The Project area is in a rural/river dominant location where noise levels are generally low. Lack of nearby large urban areas or human sensitive receptors contributes to minimal noise impacts.

Alternative 1. No Action. Noise Levels should remain at the current level for the next 50 years.

Alternatives 2, 3, 4. All the action alternatives would have the same level of dredging sounds over the same amount of time. For each alternative, placement of dredged material using mechanical or hydraulic dredging will occur. Noises generated by dredging activities are similar to those generated by routine commercial navigation traffic. Dredging activity noises are characterized by a low engine hum. Some sound can be generated by the dredged material moving through the dredge pipes if a hydraulic dredging method were employed. The nearest town for all alternatives is Bellevue, Iowa, which is approximately 2 river miles upstream of Alternative 2, Site 1, and noise impacts would not be significant.

P. Public Infrastructure. The Project area has limited public infrastructure. The Mississippi River's navigation channel and supporting elements such as wing dams, closing dams, and locks and dams help maintain the channel's depth. Small towns and the adjacent counties have roads, schools, police stations, etc.

Alternative 1. No Action. The Future Without Project conditions would reflect the current level of public infrastructure.

Alternatives 2, 3, 4. All the action alternatives would continue to keep the navigation channel safe and operable. None of these action alternatives would impact any other public infrastructure in the Project area.

Q. Socioeconomic Resources. The Project area is located entirely within the Mississippi River and is surrounded primarily by agricultural lands, undeveloped forested areas, and very few residential populations. Bellevue, Iowa, is the nearest town located approximately 2 river miles upstream of the Duck Creek Reach. Dubuque, Iowa, is the nearest city located approximately 10 river miles upstream of the Deadman's Light Reach. Existing socio-economic information for Iowa and Illinois counties near the Project area is as follows (U.S. Census, 2010):

Dubuque County, Iowa. With an average population density of 154 people per each of its 608 square miles (2010), Dubuque County, Iowa, experienced a 3.9% increase in total population from 93,653 to 97,311 people during the years 2010 to 2019 (2019 estimated). The median household income is estimated at \$63,031, with 10.7% of persons living below the poverty level (2015-2019). Income per capita is \$32,905 (2019). Of persons over 25 years of age, 92.7% have a high school education or higher and 30.8% have a Bachelor's degree or higher (2015-2019).

Jackson County, Iowa. With an average population density of 31 people per each of its 636 square miles (2010), Jackson County, Iowa, experienced a 2.1% decrease in total population from 19,848 to 19,439 people during the years 2010 to 2019 (2019 estimated). The median household income is estimated at \$55,967, with 12.3% of persons living below the poverty level (2015-2019). Income per capita is \$29,660 (2019). Of persons over 25 years of age, 92.6% have a high school education or higher and 19.2% have a Bachelor's degree or higher (2015-2019).

Jo Daviess County, Illinois. With an average population density of 38 people per each of its 601 square miles (2010), Jo Daviess County, Illinois, experienced a 6.4% decrease in total population from 22,678 to 21,235 people during the years 2010 to 2019 (2019 estimated). The median household income is estimated at \$57,946, with 9.3% of persons living below the poverty level (2015-2019). Income per capita is \$34,437 (2019). Of persons over 25 years of age, 92.3% have a high school education or higher and 25.0% have a Bachelor's degree or higher (2015-2019).

Alternative 1. No Action. The Project area's community may change in the future. It is difficult to determine the future demographics at this time.

Alternatives 2, 3, 4. Section 122 of Public Law 91-611 identified 17 potential areas of impact required to be considered as part of an impact analysis of proposed Projects. Similar trends would be seen for the No Action Alternative relative to the proposed action alternatives for each of the following areas.

1. Community and Regional Growth. Due to the rural character of the area and a lack of a residential community, no impacts to community cohesion are anticipated as a result of the Project.

2. Community Cohesion. The nearby parks and surrounding neighborhoods have a rich community connection and identity. The housing areas are close to schools, and other small-town amenities. There are opportunities for boating, wildlife observation, photography, and activities, such as museums, picnicking, and biking. There would be no adverse impacts to community cohesion from the proposed Project. No public opposition has been expressed nor is any expected.

3. Property Values and Tax Revenues. Placement of dredged material will occur at or below the OHWM, which falls under navigational servitude. Therefore, each alternative should not affect tax revenues.

4. Public Facilities and Services. Overall, the proposed Project would positively enhance public facilities and services by having reliable navigation infrastructure. Project objectives are to provide quality facilities the public can depend on. The Project would provide reliability and capacity needed for future growth.

5. Life, Health, and Safety. The District's goal for this Project is to adequately maintain the navigation channel thereby avoiding barge congestion, groundings, and possible accidents. This would maintain the channel so it is safe, reliable, and operational.

6. Employment and Labor Force. There would be no long-term significant impacts to employment or labor force in the surrounding counties resulting from channel maintenance.

7. Business and Industrial Growth. The proposed alternatives should not change in business and industrial activity. No business relocations are required.

8. Farm Displacement. No farm or farmsteads would be affected by the Project.

9. Recreation. The Project alternatives would not impact recreation.

R. Environmental Justice. At a national level, environmental justice concerns have primarily focused on populations considered to be minority and/or low-income. However, since environmental justice is defined as the fair treatment and meaningful involvement of all people, the final decision should be whether the affected area is likely to, or is already, impacted by greater adverse effects than a demographically similar reference community.

Alternative 1. No Action. Future Without Project conditions should remain the same as current conditions. There are no anticipated impacts to environmental justice under this alternative.

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Alternatives 2, 3, 4. This Project would not displace or negatively impact the community regardless of minority and/or low-income, race, or religion. Improvements in the navigation channel would not impact citizens in nearby areas of Iowa or Illinois.

S. Soils. Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland. There are no prime and unique farmland resources within the Project area, as proposed placement sites are located entirely within the Mississippi River.

Alternative 1. No Action. There are currently no prime or unique soils in the Project area, which is unlikely to change under the No Action alternative.

Alternatives 2, 3, 4. There would be no impacts to prime or unique soils for any of the action alternatives, as proposed placement sites are limited entirely within the Mississippi River.

T. Water Quality. The Iowa DNR and the Illinois EPA manage water quality through the implementation of the states' Water Quality Standards. Lakes and stretches of streams and rivers each have specific designations, based on what they are used for—recreation, such as swimming or fishing; drinking water; or maintaining a healthy population of fish and other aquatic life. If the water quality in the stream or lake does not allow it to meet its designated use, it does not meet Iowa's water quality standards and is considered "impaired."

Under Section 303(d) of the, states are required from "time to time" to submit a list of waters for which effluent limits will not be sufficient to meet all state water quality standards. The USEPA has defined "time to time" to mean April 1 of even numbered years. The failure to meet water quality standards might be due to an individual pollutant, multiple pollutants, "pollution", or an unknown cause of impairment. The 303(d) listing process includes waters impaired by point sources and non-point sources of pollutants. States must also establish a priority ranking for the listed waters, taking into account the severity of pollution and uses. The USEPA regulations that govern 303(d) listing can be found in the Code of Federal Regulations (CFR), Title 40, §§130.7.

Alternative 1. No Action. Future Without Project conditions should remain the same as the existing conditions. Additional urbanization may add additional water quality stressors, yet current and future water conservation, regulations, and urban planning may abate or offset those water quality impacts.

Alternative 2, 3, 4. The proposed Project and other alternatives may have short term, minor impacts to water quality directly downstream of the work zone. Disturbed sedimentation should settle out in a short distance. Clean dredged material should not introduce additional fine or clay into the water column. The Project would not exceed any water quality standards.

If the District uses mechanical dredging, some dredged material is lost at the dredge cut when the bucket is lifted out of the water. The USEPA and Corps' *Evaluating Environmental Effects of*

Dredged Material Management Alternatives-A Technical Framework, May 2004, states any discharge from mechanical dredging has been determined to be minimal. Utilizing mechanical dredging reduces impacts to the local water column and its associated aquatic communities. Any plume from mechanical dredging would be small in nature, settle out quickly from the water column, and be relatively inert material. If hydraulic dredging is utilized, water circulation and fluctuation may be temporarily altered in the immediate vicinity of the discharge pipe, but these would be negligible and insignificant.

U. State Parks, Conservation Areas, and Other Areas of Recreational, Ecological, Scenic, or Aesthetic Importance. The Duck Creek Dredge Cut is located near Bellevue State Park, Duck Creek County Park, and Pleasant Creek Recreation Area. It is also located adjacent to the USFWS UMR NWFR. The Deadman's Light Dredge Cut and proposed placement locations are also located adjacent to or within the UMR NWFR.

Alternative 1. No Action. Resources in the Project area should remain the same as the existing conditions.

Alternatives 2, 3, 4. Since the proposed dredged placement activity would be limited to a 2-3 week period, there would be insignificant short-term noise impacts to state parks, conservation areas or other areas of recreational, ecological, scenic or other areas of aesthetic importance.

V. Climate Change. Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007), directs Federal agencies to conduct their environmental, transportation and energy-related activities in an environmentally, economically and fiscally sound and sustainable manner. The District strives to protect, sustain, and improve the natural and man-made environment of the Nation, and is committed to compliance with applicable environmental and energy statutes, regulations, and EOs. Sustainability is an overarching concept encompasses energy, climate change, and the environment to ensure Federal activities do not negatively impact resources for future generations. Proposed alternative plans must provide for sustainable solutions addressing both short- and long-term environmental as well as social and economic considerations.

Many scientists believe greenhouse gases (GHGs) are components of the atmosphere trapping heat relatively near the surface of the earth and contribute to the greenhouse effect (or heat-trapping) and climate change. Most GHGs occur naturally in the atmosphere from natural processes and events, but increases in their concentration result from human activities such as burning fossil fuels. Several studies conclude global temperatures are expected to continue to rise as human activities continue to add carbon dioxide (CO₂), methane, nitrous oxides, and other GHGs to the atmosphere. Whether rainfall increases or decreases remains difficult to project for specific regions.

In 2010, the Council on Environmental Quality (CEQ) released draft guidance on when and how Federal agencies should consider GHG emissions and climate change in NEPA analyses. This draft guidance includes a presumptive effects threshold of 27,563 tons of CO₂ equivalent

emissions from a Federal action annually (CEQ, 2010). In 2017, CEQ withdrew its August 5, 2016, *Final Guidance for Federal Departments & Agencies on GHG Emissions and Effects of Climate Change in NEPA Reviews*.

Climate change impacts within the Project area would likely involve increased temperatures (Figure EA- 6) and increased precipitation leading to further altered (flashier) hydrologic conditions (Figure EA-7). Any changes in hydrologic conditions occurring within the basin would likely result from less frequent but more intense warm-weather precipitation events, moderately to severely reduced summer flow conditions and degraded water quality, less winter ice cover and more cold-weather erosion events. The character of riparian habitats may also change, and invasive species may move into the area with changing climate (Pryor et al., 2014). Extreme rainfall events and flooding have increased during the last century and these trends are expected to continue, causing erosion, declining water quality, and negative impacts on transportation, agriculture, human health, and infrastructure. The range and distribution of fish and other aquatic species will likely change, and an increase in invasive species would also likely occur (Pryor et al., 2014).

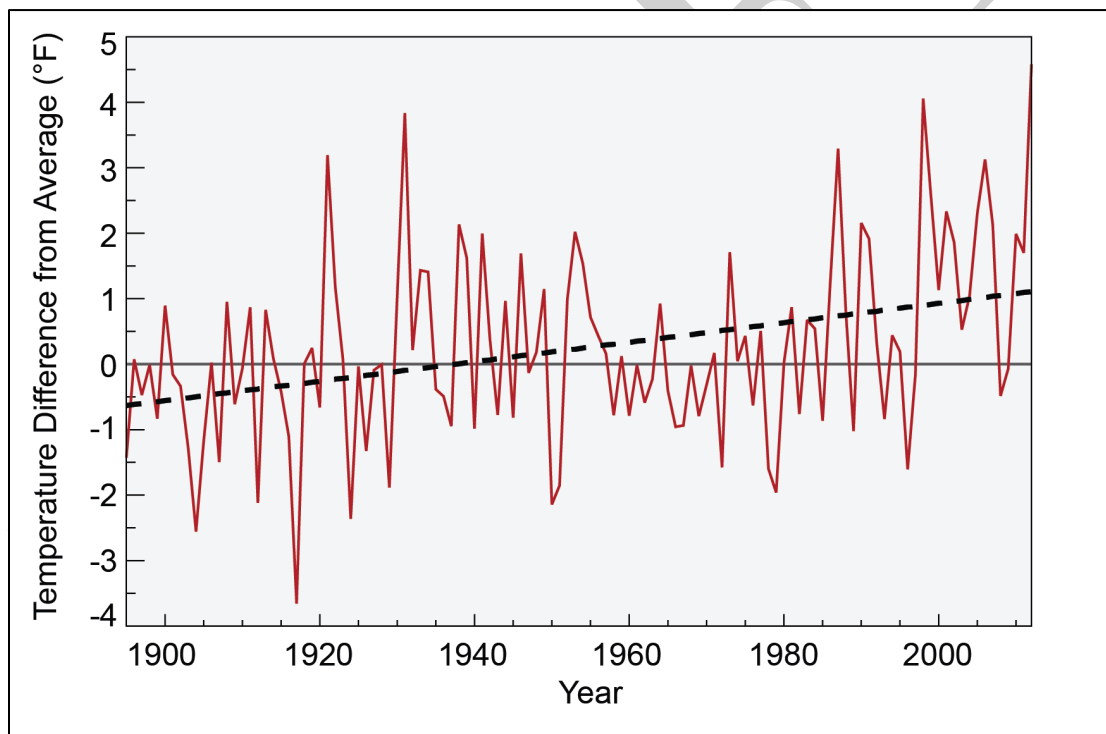


Figure EA-6. Temperatures Rising in the Midwest
Annual average temperatures (red line) across the Midwest show a trend towards increasing temperature. The trend (heavy black line) calculated over the period 1895-2012 is equal to an increase of 1.5°F. (Source: updated from Kunkel et al. 2013).

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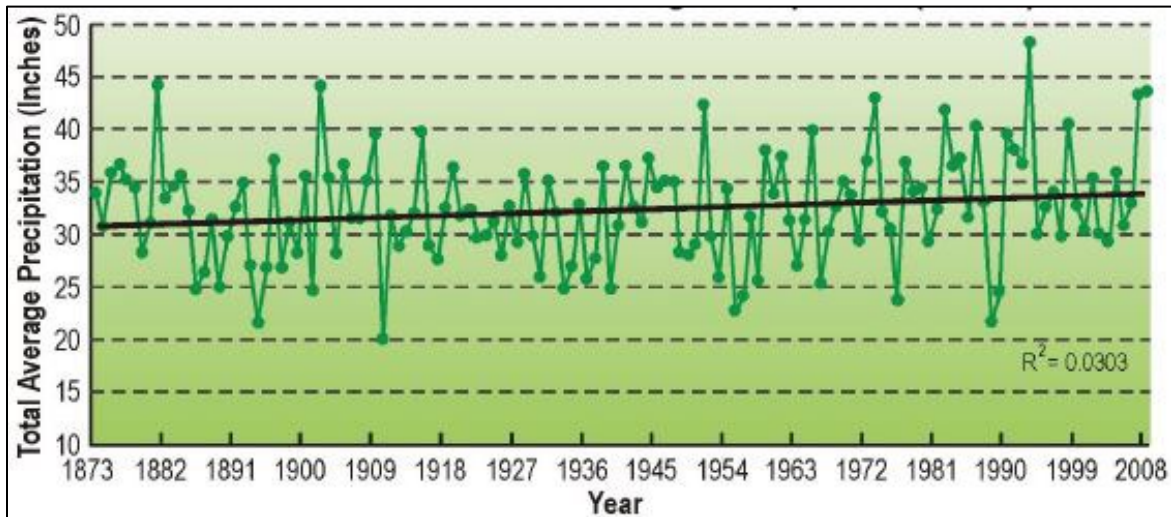


Figure EA-7. Iowa Annual State-wide Precipitation in Inches from 1873-2008

Note the State has had an 8% increase in annual precipitation over this 136-year period (Iowa Climatology Bureau, 2010. (<http://www.iowadnr.gov/Conservation/Climate-Change>))

In the next few decades, it is expected longer growing seasons and rising CO₂ levels would increase yields of some crops, though such benefits will be progressively offset by extreme weather events. Though adaptation options can reduce some of the detrimental effects, in the long-term, the combined stresses associated with climate change are expected to decrease agricultural productivity (Pryor et al., 2014).

The climate change assessment tools utilized in the study are consistent with USACE Engineering and Construction Bulletin (ECB) 2016-25, *Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Designs, and Projects*, to provide an indication of the potential for non-stationarity and impact to flood risk. Additional discussion on this topic is found in Appendix G, *Climate Change Impact Assessment*.

Alternative 1. No Action. District projects, programs, missions, and operations have generally proven to be robust enough to accommodate the range of natural climate variability over their operating life spans. However, recent scientific evidence shows in some places and for some impacts relevant to District operations, climate change is shifting the climatological baseline about which natural climate variability occurs, and may be changing the range of variability as well. This is relevant to the District because the assumptions of stationary climatic baselines and fixed range of natural variability, as captured in the historic hydrologic record may no longer be appropriate for long-term projections of flood risk.

The District considered climate change impacts on the hydrology of the channel maintenance dredging at the Duck Creek and Deadman's Light Reaches in accordance with ECB 2016-25, as well as USACE Engineering Technical Letter 1100-2-3, *Guidance for Detection of Nonstationarities in Annual Maximum Discharges*.

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The flow records within the Mississippi River Basin indicate one nonstationary change point from six analyzed gages. This same gage shows a statistically significant increasing trend in annual maximum flood peaks from 1915-2014, while the other five analyzed gages show no statistically significant trends or indeterminate trends. The literature agrees that projected temperatures and precipitation will increase, while there is little consensus on projected streamflow.

According to the Vulnerability Assessment, the Mississippi River basin is more vulnerable to climate change impacts on flood risk management than neighboring watersheds in the District and all watersheds in the continental United States. This indicates that there is more uncertainty regarding flood risk management in the Mississippi River watershed because of future climate change.

Available literature and Corps Climate Assessment tools do not reach a consensus on observed and projected streamflow throughout the Mississippi River Basin due to long-term persistent climate trends or anthropogenic climate change. There is some agreement that streamflow variability will increase, and extreme events will occur more frequently.

Alternatives 2, 3, 4. None of the action alternatives would contribute significant impacts based on climate change or contribute to regional climate change impacts.

W. Aircraft-Wildlife Strikes. There are a variety of land uses (e.g., storm water management facilities, wastewater treatment systems, landfills, golf courses, parks, agricultural or aquacultural facilities, and landscapes) attracting hazardous wildlife and are, therefore, normally incompatible with airports. Accordingly, new, federally-funded airport construction or airport expansion projects near habitats or other land uses that may attract hazardous wildlife must conform to the siting criteria established in the FAA Advisory Circular 150/5200-33, Section 1-3. Other Federal agencies likewise are required to take airport operations and wildlife strikes into consideration in their project planning.

The Deadman's Light Dredge Cut is located approximately 1.6 miles from the Coursens Landing Airport and 5.5 miles from the Heller Airport. The Duck Creek Dredge Cut and proposed placement are located approximately 4.7 miles from Merkle Engineers Airport and 9.5 miles from Hoff Airport. The distance and size of the Project should not increase the presence of wildlife (avian or terrestrial) hazard to these airports.

X. Irreversible and Irretrievable Commitment of Resources. Fuels, materials, and various forms of energy would be utilized during the dredging activities.

Y. Probable Adverse Effects Which Cannot Be Avoided. The loss of some benthic organisms currently inhabiting the Project area is an unavoidable adverse effect of the proposed action. Following dredging activities, benthic organisms should rapidly recolonize the navigation channel area.

Z. Relationship Between Short-Term Use and Long-Term Productivity. Dredging activities would temporarily disrupt wildlife and human use of the Project area. Negative long-

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term impacts are expected to be minimal on all ecosystems associated with this Project. Benefits from the Project would be derived by maintaining the navigation channel to reduce shipping delays on the entire river system.

AA. Compliance With Environmental Quality Statutes. See Table EA-10.

Table EA-10: Compliance with Environmental Protection Statutes and Other Environmental Requirements

Federal Policies	Status Compliance ¹
Archaeological and Historic Preservation Act, 16 U.S.C. 469, et seq.	Full compliance
Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.	Full compliance
Clean Water Act, 33 U.S.C. 1857h-7, et seq.	Pending
Coastal Zone Management Act of 1972, as amended	Not applicable
Endangered Species Act, 16 U.S.C. 1531, et seq.	Full compliance
Environmental Effects Abroad of Major Federal Actions (E.O. 12114)	Not applicable
Environmental Justice, Executive Order 12898	Full compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not applicable
Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), et seq.	Full compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 601, et seq.	Full compliance
Noise Control Act of 1972 (P.L. 92-574)	Full compliance
Land and Water Conservation Fund Act, 16 U.S.C. 460/-460/-11, et seq.	Not applicable
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Pending
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.	Not applicable
National Historic Preservation Act, 54 U.S.C. 306108	Full compliance
River and Harbors Act, 33 U.S.C. 403, et seq.	Full compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Not applicable
Wild and Scenic Rivers Act, 16 U.S.C. 1271, et seq.	Not applicable
Flood Plain Management (Executive Order 11988)	Full Compliance
Protection of Wetlands (Executive Order 11990)	Full compliance
Farmland Protection Act	Full compliance
Analysis of Impacts on Prime and Unique Farmland (CEQ Memorandum, 11 Aug 80)	Full compliance
Corps of Engineers Planning Guidance Handbook (ER 1105-2-100)	Full compliance
Executive Order 13112, Invasive Species	Full compliance
Land Use Planning, 40 CFR 1506.2(d)	Full compliance

This Project does not authorize or carry out any actions that are likely to promote invasive species proliferation. Any subsequent occurrence of any invasive species in the Project area should not solely be the result of the implementation of this Project. This Project is in full compliance.

¹ Full compliance - Having met all requirements of the statute for the current stage of planning.

Not applicable - No requirements for the statute required.

IV. AGENCY COORDINATION AND PUBLIC COMMENTS

A. Public Involvement. Prior to the public comment period, the District has not conducted public involvement to date. All correspondence to date is in Appendix A, *Pertinent Correspondence*.

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Due to the nature of this Project, the District will post this EA on its Civil Works website for a 30-day public comment period. The website address is:

<http://www.mvr.usace.army.mil/About/Offices/Programs-and-Project-Management/Civil-Works-Public-Notices/>. If the District has a dire need to dredge during the review period, the District will inform those on the distribution list of the impending channel maintenance dredging and follow-up afterwards with a full review of the Project results.

B. Coordination and Documentation with Other Agencies and Special Interest Groups.

The District coordinated with the OSIT during an on-site inspection of the proposed placement sites in the Project area on July 2, 2020. The purpose was to seek the following agencies' alternative technical concerns, and knowledge of local natural resources:

U.S. Fish and Wildlife Service
Iowa DNR
Iowa DNR Conservation and Recreation Division
Iowa DNR Water Resources Section
Illinois Department of Natural Resources

In a letter dated September 28, 2020 (Appendix A, *Pertinent Coordination*), the District sent the following tribes and state historic preservation offices a letter stating the proposed Project would not have impacts to tribal trust resources or historic properties:

Citizen Potawatomi Nation
Forest County Potawatomi Community
Ho-Chunk Nation
Iowa Tribe of Kansas and Nebraska
Iowa Tribe of Oklahoma
Kickapoo Tribe in Kansas
Kickapoo Tribe of Oklahoma
Menominee Indian Tribe of Wisconsin
Historic Preservation Department Meskwaki Nation
Miami Tribe of Oklahoma
Omaha Tribe of Nebraska
Osage Nation
Otoe-Missouria Tribe
Peoria Tribe of Indians of Oklahoma
Ponca Nation
Ponca Tribe of Nebraska
Prairie Band Potawatomi Nation
Prairie Island Indian Community
Sac and Fox Nation of Missouri in Kansas and Nebraska
Historic Preservation Department Sac and Fox Nation of Oklahoma
Upper Sioux Community, Minnesota
Winnebago Tribe of Nebraska
Iowa State Historic Preservation Office
Illinois State Historic Preservation

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Comments regarding to the District's September 28, 2020, letter are summarized as follows (Appendix A, *Pertinent Correspondence*):

1. In an email dated October 1, 2020, Mr. Eben Crawford, Winnebago Tribe of Nebraska, Tribal Historic Preservation Officer, stated no objections. According to the email, *"This proposed Project will not affect any known sites affiliated with the Winnebago Tribe of Nebraska however dredging does occur on or near the historic homelands of the Tribe, please notify us immediately should any inadvertent discoveries occur."*

District Response: The District appreciates the Winnebago Tribe of Nebraska's review of the proposed Project.

2. In an email dated October 2, 2020, (referencing SHPO Log No. 003092920) Mr. Robert F. Appleman, Deputy Illinois State Historic Preservation Office, stated *"based upon the information provided, no historic properties are affected."*

District Response: The District appreciates the Illinois State Historic Preservation Office's review of the proposed Project.

3. On October 7, 2020, (referencing R&C No. 201000012) Mr. Daniel Higginbottom, Archeologist, Iowa State Historic Preservation Office, returned the original District coordination letter with a Concur stamp noting their concurrence for this project.

District Response: The District appreciates the Iowa State Historic Preservation Office review of the proposed Project.

4. In a letter dated October 29, 2020, Ms. Diane Hunter, Miami Tribe of Oklahoma, Tribal Historic Preservation Officer, stated that since the proposed placement locations have not been used in over 50 years, they may not have been properly surveyed and requested a copy of any archeological survey of these locations. Ms. Hunter also requests further immediate consultation if any human remains, Native American cultural items associated with the Native American Graves Protection and Repatriation Act, or archeological materials are encountered during this project.

District Response: The District appreciates the Miami Tribe of Oklahoma's review of the proposed Project will take their recommendation under consideration when making the final determination on which course of action it will take regarding the project. In the unlikely event that earthmoving activities associated with the proposed repairs did expose or impact potentially significant archeological/historic deposits or human remains, all construction activities and earthmoving actions in the immediate vicinity of the remains would be held in abeyance until the potential significance of the remains could be determined under proper consultation with all consulting parties.

5. In an email dated November 1, 2020, Mr. Michael LaRonge, Forest County Potawatomi Community, Tribal Historic Preservation Officer, stated, *"Based on the information provided*

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it does not appear that this project will impact any historic properties of concern for the Tribe.” Mr. LaRonge concurred with the District’s no historic properties affected determination, with two conditions. The first condition stated the Tribe could reconsider their determination based upon SHPO comments. The second condition listed in the letter states, “in the event that human remains or archaeological materials are exposed as a result of project activities in the alluvium work must halt and the Tribe must be included in any consultation regarding treatment and disposition of the find prior to further disturbance.”

District Response: The District appreciates the Forest County Potawatomi Community’s review of the proposed Project. In the unlikely event that earthmoving activities associated with the proposed repairs did expose or impact potentially significant archeological/historic deposits or human remains, all construction activities and earthmoving actions in the immediate vicinity of the remains would be held in abeyance until the potential significance of the remains could be determined under proper consultation with all consulting parties.

The public has the opportunity to comment during the 30-day review period beginning in September 2021. This District is not holding a public meeting for this action.

Appendix E, *Distribution List*, lists the agencies, groups, libraries, media outlets, and individuals receiving copies of this EA. They may write or email any substantive comments concerning the addition or deletion of alternatives, or the analysis of new resource issues to the District within the 30-day comment period. The District will evaluate all the comments received and dutifully integrate them in the decision-making process. If additional analysis is warranted, the District will conduct sufficient study to determine the significance of any action they propose.

V. SUMMARY OF REASONS FOR CONCLUDING NO SIGNIFICANT IMPACT

This EA addresses estimated channel maintenance dredged material placement needs for the Duck Creek and Deadman’s Light Reaches of Pools 12 and 13, Mississippi River. Dredging is required to provide a safe and adequate channel for river navigation. Potential placement sites were thoroughly investigated by the OSIT and evaluated by the District through the NEPA process. Four alternatives, including the No Action Alternative, were considered to meet a dredging capacity of approximately 54,000 CY between the two reaches. The District’s Preferred Alternative for the Duck Creek Reach, Alternative 2, *Site 1*, is the OSIT’s preferred historic placement site. The District’s Preferred Alternative for the Deadman’s Light Reach, Alternative 3, *Site 6*, is also the OSIT’s preferred historic placement site. The Preferred Alternatives provide the most environmentally acceptable placement locations without increasing placement costs.

VI. REFERENCES

- Illinois Department of Natural Resources. 2020. 2020 List of Endangered and Threatened Species in Illinois. Online at <https://www2.illinois.gov/dnr/ESPB/Pages/default.aspx>
- Iowa Department of Natural Resources. 2020. Iowa Threatened and Endangered Species List. Online at <https://www.iowadnr.gov/conservation/iowas-wildlife/threatened-and-endangered>
- Kunkel, K.E., T.R. Karl, D.R. Easterling, K. Redmond, J. Young, X. Yin, and P. Hennon. 2013. Probable maximum precipitation and climate change. *Geophysical Research Letters* 40(7).
- US Environmental Protection Agency. 2021. Nonattainment Areas for Criteria Pollutants (Green Book). Retrieved February 12, 2021, from <https://www.epa.gov/green-book>
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- U.S. Army Corps of Engineers. 1972. Revision of Master Plan for Resource Management, Pools 11-22, Nine-Foot Channel Navigation Project. US Army Corps of Engineers, Rock Island District
1974. Final Environmental Impact Statement Continued Operation and Maintenance Nine-Foot Navigation Channel Upper Mississippi River – Pools 11 Through 22, U.S. Army Corps of Engineers, Rock Island District.
1989. Environmental Assessment Land Use Allocation Plan and Shoreline Management Mississippi River, Pools 11-22. US Army Corps of Engineers, Rock Island District.
- US Fish and Wildlife Service. 1987. Upper Mississippi River National Wildlife and Fish Refuge Environmental Impact Statement, Refuge Master Plan. Regional Direct Fort Snelling, Twin Cities, MN

DRAFT FINDING OF NO SIGNIFICANT IMPACT

CHANNEL MAINTENANCE DREDGING DUCK CREEK CUT, MISSISSIPPI RIVER, POOL 13, RIVER MILE 554.3 DEADMAN'S LIGHT CUT, MISSISSIPPI RIVER, POOL 12, RIVER MILE 568.5

ENVIRONMENTAL ASSESSMENT

The U.S. Army Corps of Engineers, **ROCK ISLAND** District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. This Environmental Assessment (EA) dated **TBD**, for the **CHANNEL MAINTENANCE DREDGING PROJECT** addresses **CHANNEL MAINTENANCE** activities in the **DUCK CREEK CUT, UPPER MISSISSIPPI RIVER (UMR) RIVER MILE (RM) 554.3 AND DEADMAN'S LIGHT CUT UMR RM 568.5**. The final recommendation is **DATED TBD**.

The Draft EA, incorporated herein by reference, evaluated various alternatives that would **1) IMPROVE COMMERCIAL NAVIGATION OF THE 9-FOOT NAVIGATION CHANNEL AND 2) AVOID POTENTIAL EFFECTS TO NATURAL RESOURCES** in the study area. The District determined the Preferred Alternative meets the objectives of providing safe and reliable navigation channel operation and local channel maintenance needs. The other alternatives did not meet the channel maintenance requirements. In coordination with the OSIT, the Preferred Alternative includes:

- **PLACEMENT OF APPROXIMATELY 15,000 CUBIC YARDS (CY) OF DREDGED MATERIAL UP TO THE ORDINARY HIGH WATER MARK (OWHM) ALONG THE IOWA BANKLINE (SITE 1; RM 554.3)**
- **PLACEMENT OF APPROXIMATELY 39,000 CY OF DREDGED MATERIAL UP TO THE OWHM ALONG THE IOWA BANKLINE (SITE 6; RM 567)**

In addition to a “no action” plan, 1 alternative was evaluated. The additional alternative for included **PLACEMENT OF APPROXIMATELY 39,000 CY OF DREDGED MATERIAL UP TO THE OWHM ALONG THE ILLINOIS BANKLINE (SITE 7; RM 569). THIS SECONDARY PLACEMENT SITE IN THE DEADMAN'S LIGHT REACH WAS NEITHER THE DISTRICT NOR OSIT-PREFERRED ALTERNATIVE, AS IT REQUIRES ADDITIONAL COORDINATION TO AVOID AND MINIMIZE POTENTIAL IMPACTS TO MUSSEL RESOURCES.**

SUMMARY OF POTENTIAL EFFECTS:

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the Preferred Alternative are listed in Table 1.

Table 1: Summary of Potential Effects of the Preferred Alternative

	Insignificant Effects	Insignificant Effects as a Result of Mitigation	Resource Unaffected By Action	Positive Effects
Aesthetics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Aquatic Resources/Wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Invasive Species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish And Wildlife Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threatened/Endangered Species/ Critical Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tribal Trust Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Historic Properties	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Floodplains	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazardous, Toxic and Radioactive Waste	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hydrology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Navigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Noise Levels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Socio-Economics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Environmental Justice	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Parks, Conservation Areas, and Other Areas of Recreational, Ecological, Scenic, or Aesthetic Importance.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climate Change	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the Preferred Alternative. Best management practices (BMPs) as detailed in Section 4.0 of the EA will be implemented, if appropriate, to minimize impacts.

No compensatory mitigation is required as part of the Preferred Alternative.

Public review of the draft EA and FONSI will be completed **IN SEPTEMBER 2021**. All comments submitted during the public review period will be responded to or incorporated in the Final EA and FONSI.

ENDANGERED SPECIES ACT:

Pursuant to Endangered Species Act of 1973, as amended, Section 7 consultation requirements have been met for the Preferred Alternative. The District determined the Preferred Alternative (Site 1, Duck Creek Reach and Site 6 Deadman's Light Reach) will have No Effect on the

following federally-listed species or their designated critical habitat that occur in the Project area: Northern long-eared bat, Higgins Eye (Pearlymussel), Sheepnose Mussel, Spectaclecase, Iowa Pleistocene snail, Eastern prairie fringed orchid, Northern Wild Monkshood, Prairie bush clover, and the Western prairie fringed orchid.

NATIONAL HISTORIC PRESERVATION ACT:

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the District determined the Preferred Alternative will have no effect on historic properties.

CLEAN WATER ACT SECTION 404(B)(1):

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the Preferred Alternative has been found to be compliant with section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in **APPENDIX B, CLEAN WATER ACT SECTION 404 (b)(1) EVALUATION** of the EA. The District will be releasing a joint public notice for Section 404 and 401 compliance.

401 WQC: PENDING

Water quality certification pursuant to section 401 of the Clean Water Act will be pursued with the State of Iowa. In a letter dated MONTH, DAY, YEAR, the **STATE OF IOWA** stated that the Preferred Alternative appears to meet the requirements of the water quality certification, pending confirmation based on information to be developed during the pre-construction engineering and design phase. All conditions of the water quality certification will be implemented in order to minimize adverse impacts to water quality.

OTHER SIGNIFICANT ENVIRONMENTAL COMPLIANCE:

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed.

FINDING

The District's technical environmental criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives.

The District determined the Preferred Alternative meets the objectives of reducing future demand for dredging and improving the efficiency of navigation channel maintenance in the Project area. The other alternatives do not meet the District's objectives or would require additional coordination to avoid unacceptable environmental impacts.

Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the Preferred Alternative would not cause significant adverse effects on the quality of the human environment; therefore,

preparation of an Environmental Impact Statement is not required. The District would re-evaluate this determination if warranted by later developments.

Date

JESSE T. CURRY
COLONEL, US ARMY
Commander & District Commander

DRAFT

**CHANNEL MAINTENANCE DREDGING
DUCK CREEK CUT, MISSISSIPPI RIVER, POOL 13,
RIVER MILE 554.3
DEADMAN'S LIGHT CUT, MISSISSIPPI RIVER, POOL 12,
RIVER MILE 568.5**

ENVIRONMENTAL ASSESSMENT

**APPENDIX A
PERTINENT COORDINATION**

DRAFT

OSIT Site Visit
Pool 12 (Deadman's Light Reach) and 13 Site (Duck Creek Reach)
July 2, 2020

Attendees: Matt Afflerbaugh (USACE), Bethany Hoster (USACE), Ben Vandermyde (USACE), Rebekah Anderson (IL DNR), Kirk Hansen (IA DNR), Molly (Volunteer), Nate Williams (USFWS), Ed Britton (USFWS), Sara Schmuecker (USFWS)

Pool 13 – Duck Creek Reach

Approximately 14,500 cy (8 June 2020 survey) of material has been identified to be removed from the Duck Creek dredge cut (RM 554.3) within Pool 13. This cut was last dredged in 1962, with 11 events occurring between 1940-1962. Material from these events was placed along the left and right descending banklines between approximate RM 554.3-554.7L and RM 554.2-555.4R. Due to the extended time since last dredged, the OSIT conducted this site visit to evaluate historic bankline placement sites within the vicinity of the cut. Refer to Figure 1 and the Pool 13 discussion, below.

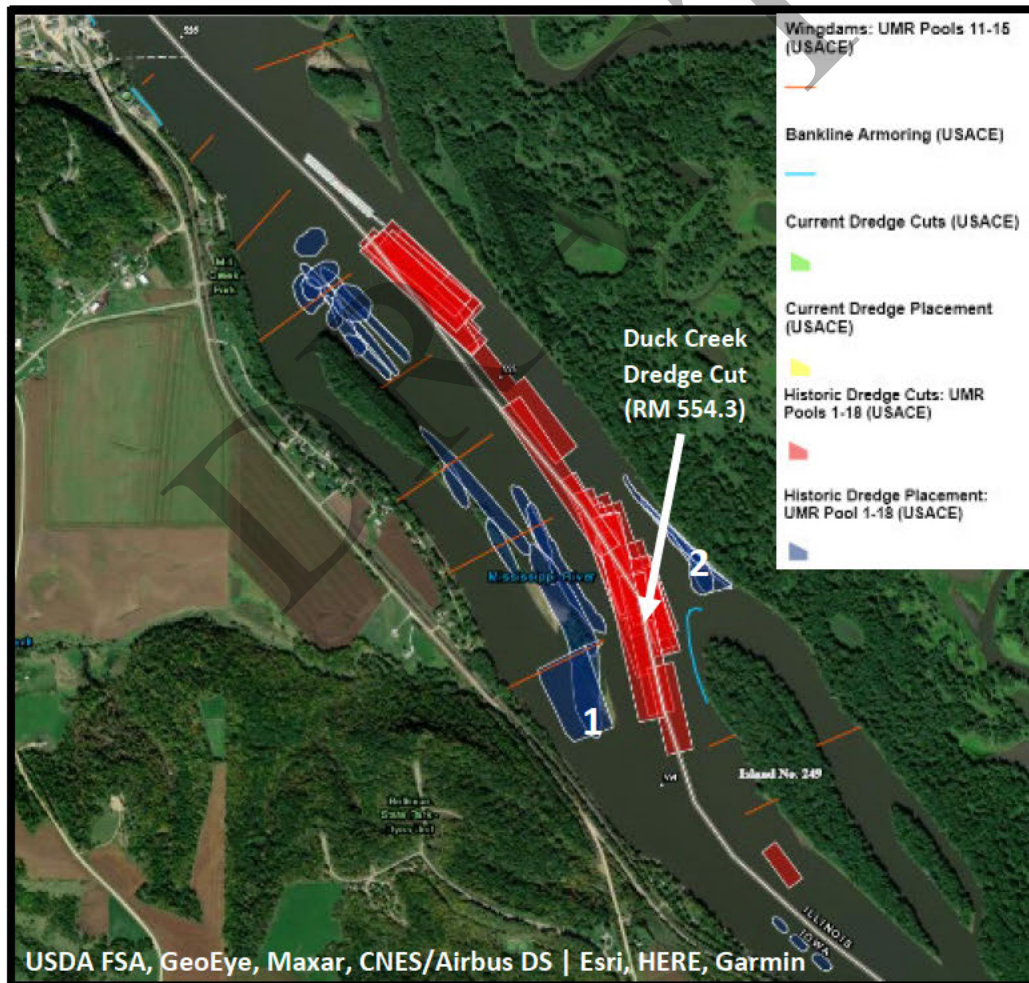


Figure 1: Pool 13 Duck Creek Reach. The approximate locations of the Duck Creek dredge cut and two historic bankline placement sites assessed by the OSIT (Sites 1 and 2) are shown.

- **Site 1 (RM 554.3 R) – OSIT PREFERRED SITE**

- Site 1 is a historic bankline placement site located below the downstream-most wingdam on an island along the right descending channel-border bankline. The site was comprised primarily of muck and silt over sand along the right and left descending banklines of the island and immediately downstream of the island, transitioning to a sand bar further downstream.
- Mussel resources at this site were identified to be common and scarce with little potentially suitable habitat. The OSIT collected a total of 30 mussels (5 species). Species collected include plain pocketbook (n=18, *Lampsilis cardium*), Wabash pigtoe (n=3, *Fusconaia flava*), threeridge (n=5, *Amblema plicata*), fragile papershell (n=2, *Leptodea fragilis*), and lilliput (n=2, *Toxolasma parvus*).
- Significant forestry resources were observed on of the island, including black willow. Early successional young willows comprised the downstream portion of the island.
- The island has been observed to be accreting downstream in recent years, with dredged material placement having the potential to provide additional acreage and habitat benefits for aquatic and floodplain resources.

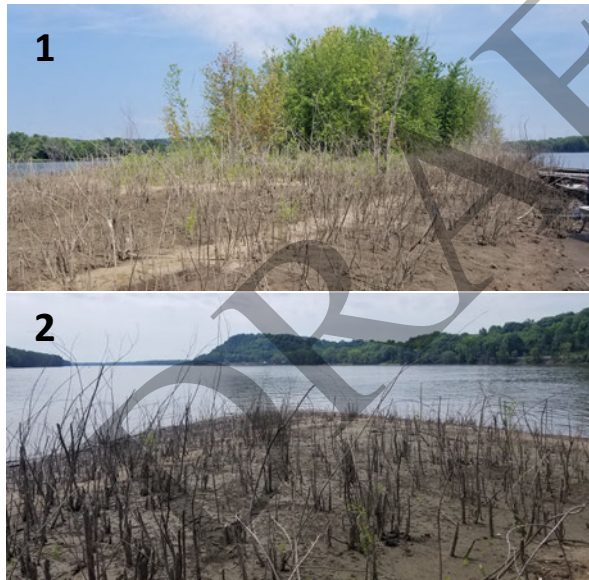


Photo 1: Site 1 looking upstream toward the island interior.

Photo 2: Site 1 looking downstream

Photo 3: Mussels collected at Site 1.

- **Site 2 (RM 554.5 L)**

- Site 2 is a historic bankline placement site located along the left descending bankline. This site was observed to have a narrow bankline with a steep drop-off to approximately 18-ft depth.
- A limited mussel search was conducted along the bankline. No mussels were found.
- This site is located immediately upstream of a side channel with closing dam structure, near Island 249. The OSIT anticipates material is unlikely to stay in place at this site and placement would have the potential to impact aquatic habitat and resources within the downstream side channel.



Photo 4: Site 2 looking across the channel towards the left descending bankline.

Pool 12 – Deadman’s Light Reach

Approximately 38,600 cy (9 June 2020 survey) of material has been identified to be removed from the Deadman’s Light dredge cut (RM 568.5) within Pool 12. This cut was last dredged in 1958 and 1969 with bankline placement between RM568.5-568.9R. Due to the extended time since last dredged, the OSIT conducted this site visit to evaluate historic and new bankline placement sites within the vicinity of the cut. Refer to Figure 2 and the Pool 12 discussion, below.

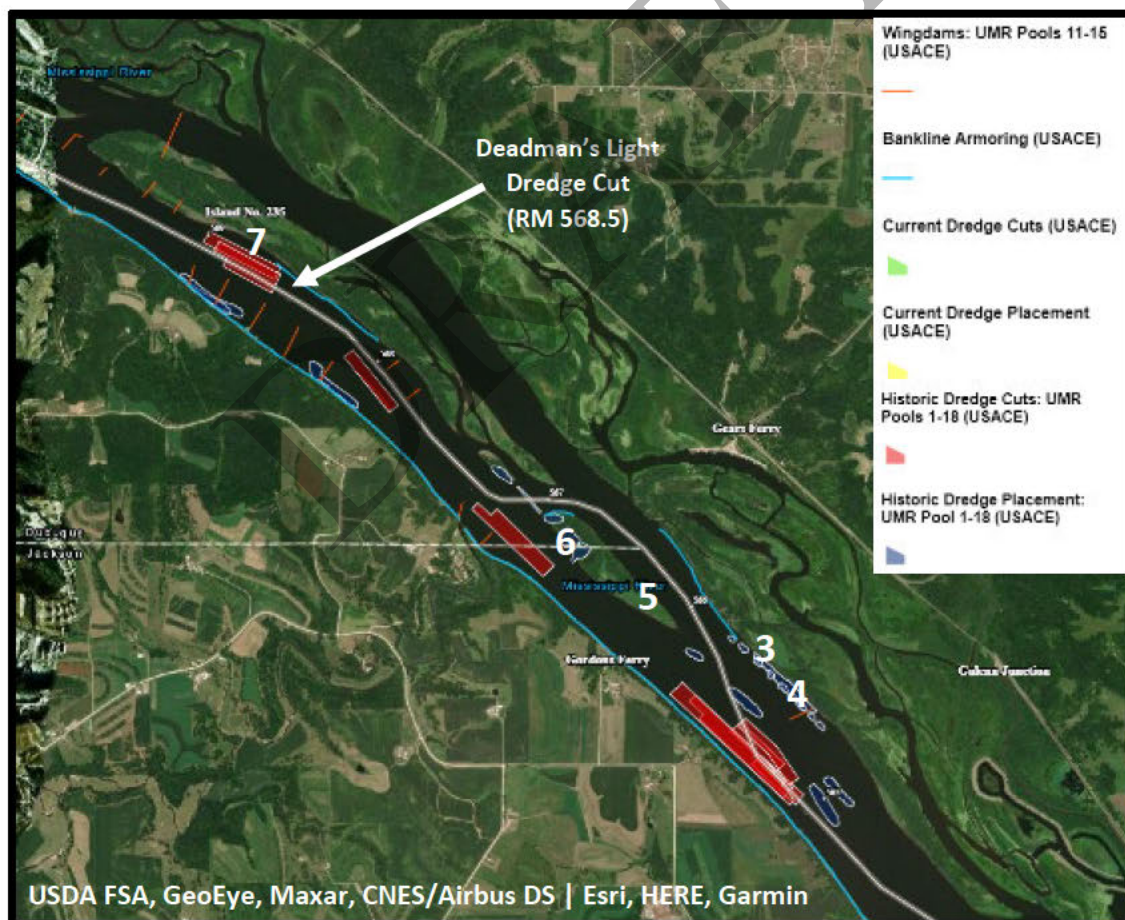


Figure 2: Pool 12 Deadman’s Light Reach. The approximate locations of the Deadman’s Light dredge cut and five historic and new bankline placement sites assessed by the OSIT (Sites 3 - 7) are shown.

- **Site 3 (RM 565.6 L) and Site 4 (RM 565.5 L)**
 - Sites 3 and 4 are the upstream and downstream portions of a historic bankline placement site along the left descending bankline, respectively. This stretch of bankline has been observed to be eroding in recent years, resulting in a loss of trees and protection of the backwater area.
 - An abundant mussel resource was identified along the bankline, with mussels primarily concentrated at the toe of the drop-off.
 - Site 3: A total of 392 mussels of 9 species were collected. Plain pocketbook (n=16, *Lampsilis cardium*), threeridge (n=62, *Amblema plicata*), threehorn wartyback (n=201, *Obliquaria reflexa*), fragile papershell (n=3, *Leptodea fragilis*), Wabash pigtoe (n=101, *Fusconaia flava*), pimpleback (n=4, *Quadrula pustulosa*), pink heelsplitter (n=2, *Potamilus alatus*), giant floater (n=1, *Pyganodon grandis*), Lilliput (n=2, *Toxolasma parvus*),
 - Site 4: A total of 44 mussels of 8 species were collected. Fawnsfoot (n=2, *Truncilla donaciformis*), rock pocketbook (n=1, *Arcidens confragosus*), threehorn wartyback (n=17, *Obliquaria reflexa*), plain pocketbook (n=2, *Lampsilis cardium*), threeridge (n=4, *Amblema plicata*), pink heelsplitter (n=1, *Potamilus alatus*), Wabash pigtoe (n=16, *Fusconaia flava*), and giant floater (n=1, *Pyganodon grandis*). In addition 6 species were collected as dead shell only, including pistolgrip (*Trigonia verrucosa*), ebonyshell (*Fusconaia ebena*), black sandshell (*Ligum recta*), mapleleaf (*Quadrula quadrula*), hickorynut (*Obovaria livaria*), and pimpleback (*Quadrula pustulosa*).
 - The upland portion of these sites is primarily comprised of reed canary grass. If these sites are used, the OSIT recommends material be contained on the reed canary grass patches, avoiding encroachment into the water. The OSIT discussed potential challenges/restrictions as a result of flood height requirements, navigation servitude, and other challenges.



Photo 5: Sites 3 and 4 bankline.

Photo 6: Fawnsfoot found at Site 4.

Photo 7: Giant floaters found at Sites 3 and 4.



- **Site 5 (RM 566 R)**

- The OSIT assessed Site 5 for the potential to place material on island areas occupied by reed canary grass patches. This site has not historically been used for material placement. The right descending bankline of the island contained desirable wetland vegetation, including edges smartweed, and rushes. The left descending bankline of the island contained some reed canary grass, but the bankline had a steep drop-off, with 14-16 ft depth adjacent to the bankline. The OSIT determined that Site 5 was not suitable for material placement.
- Due to the quality wet and vegetation and steep eroding bankline, this site was not assessed for mussel resources.



Photo 8: View of Site 5, looking toward the main channel at the island's right descending bankline.

- **Site 6 (RM 567 R) - OSIT PREFERRED SITE**

- Site 6 is located along the upstream end of the Site 5 island, and has historically been used for bankline placement.
- Mussel resources at this site were identified to be common and scarce. The OSIT collected a total of 6 mussels (4 species).
Threeridge (n=2, *Amblema plicata*), threehorn wartyback (n=2, *Obliquaria reflexa*), Wabash pigtoe (n=1, *Fusconaia flava*), and fragile papershell (n=1, *Leptodea fragilis*). One additional species was collected as dead shell only, ebonyshell (*Fusconaia ebena*).

- **Site 7 (RM 569 L)**

- Site 7 is located along the channel-border side of Island 235, and has not historically been used for bankline placement. Vegetation on the site is dominated by reed canary grass.
- The OSIT collected a total of 42 mussels (5 species) along the bankline.
Pink heelsplitter (n=2, *Potamilus alatus*), pimpleback (n=1, *Quadrula pustulosa*), plain pocketbook (n=1, *Lampsilis cardium*), threeridge (n=1, *Amblema plicata*), and threehorn wartyback (n=37, *Obliquaria reflexa*).
Four additional species were collected as dead shell only: Higgins eye pearlymussel (1 complete individual + one additional valve, *Lampsilis higginsii*), rock pocketbook (*Arcidens confragosus*), giant floater (*Pyganodon grandis*), and hickorynut (*Obovaria olivaria*).
- Site 7 could be considered as a secondary placement option for this reach; however, the OSIT recommends material be contained on the bankline “bench” and reed canary grass patches, avoiding encroachment into the water, similar to Site 3. Should Site 7 be used, the OSIT recommends coordination of barge/equipment access points, access dredging that may be necessary to reach the site, and other in-water disturbances, in order to avoid and minimize potential impacts to mussel resources.



Photo 9: View of Site 5, looking toward the main channel at the island's right descending bankline.



Photo 10: Complete Higgins eye specimen collected at Site 7.

MISSISSIPPI RIVER DREDGING
POOLS 11-22
1940-2004

Dredge Cut	Year Dredged	Dredging Amount (yd3)	Dredging Site	Placement Site	Placement Type
583-583.1	2015	1,112	583.0-583.1	548.8R (Maquoketa River Site)	Inland/Beneficial
Lock 11 Lower		1,112	1 Event Average:	1,112	
581.3-581.6	1962	64,033	581.3-581.6	581.4-581.6L	
Dubuque		64,033	1 Event Average:	64,033	

579.2-580.1	1941	142,797	579.2-579.9	579.4-579.6L, 579.7-579.9L	
Catfish Creek	1942	55,837	579.6-580.0	579.3L, 579.9L	
	1943	151,119	579.3-580.1	580.1-580.2R, 579.5-579.7L	
	1944	34,632	579.7-579.9	579.9L, 579.8L	
	1945	52,644	579.3-579.9	579.4L, 579.5L	
	1946	26,000	579.7-579.9	579.5L, 579.7L	
	1948	48,888	579.3-579.8	579.3-579.6L	
	1956	25,666	579.7-579.8	579.7-579.9L	
	1965	28,500	579.6-579.8	579.6L, 579.8L	
		549,123	9 Events Average:	61,014	

574.3-574.8	1942	38,421	574.3-574.8	574.5-574.6R, 574.7-574.8R	
Catfish Crossing		38,421	1 Event Average:	38,421	

572.6-572.9	1968	43,415	572.6-572.9	572.7-573.0R	
Nine Mile Island		43,415	1 Event Average:	43,415	

568.5-568.8	1958	61,700	568.5-568.8	568.5-568.8R	
Deadman's	1969	66,807	568.5-568.8	568.6-568.9R	
Light		128,507	2 Events Average:	64,254	

566.8-568.0	1940	193,791	566.8-567.2	566.7-567.3L	
Deadman's	1960	45,435	567.7-568.0	567.8-568.2R	
Light Lower		239,226	2 Events Average:	119,613	

565.1-565.8	1940	161,593	565.1-565.8	565.4-565.8L, 565.9L	
Gordon's Ferry	1954	70,656	565.2-565.8	565.3-565.9L	
	1972	39,817	565.3-565.5	565.5-565.7L	
	1979	22,534	565.2-565.4	564.9-565.1L	
	1981	25,328	565.3-565.6	564.9-565.1Thalweg	
		319,928	5 Events Average:	63,986	

561.8-562.5	1940	67,000	562.0-562.5	562.2L, 562.4L, 562.6L	
Island 241	1946	58,137	561.9-562.3	562.0-562.3R	
Light	1984	66,051	561.8-562.3	561.9-562.1L	
	1990	87,582	561.7-562.3	561.9-562.3L	
	1995	39,718	561.7-562.2	561.0-561.5T	
	1999	26,400	561.65-562.2	561.9-562.3L	
	2002	19,229	561.7-562.1	561.3-562.2L	
	2012	44,941	561.7-562.2	561.8-562.3L	
	2015	48,041	561.8-562.0	561.8-562.3L	
	2018	61,403	561.7-562.2	561.8-562.3L	
	2019	58,500	561.8-562.2	561.2T, 562.1-562.3L	
	2019	17,487	561.8-562.1	561.0-561.5	
		518,504	12 Events Average:	43,209	
				Thalweg	
				Beach	
				Beach	
				Beach	
				Beach	
				Thalweg, Bankline	
				Thalweg	

560.4-561.1	1940	50,198	560.4-560.7	560.5-560.8L	
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**MISSISSIPPI RIVER DREDGING
POOLS 11-22
1940-2004**

POOL 12

Bellevue Slough	1940	44,830	560.9-561.1	560.9-561.1R, 561.2R
	1958	25,647	560.5-560.8	560.6-560.8L, 560.8L
	2014	52,391	560.6-561.0	560.7-561.2F
		173,056	4 Events	Average: 43,264

POOL 12 TOTALS

Events: 38
Yardage: 2,075,325
Average: 54,614

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POOLS 11-22

1940-2004

Dredge Cut	Year Dredged	Dredging Amount (yd3)	Dredging Site	Placement Site	Placement Type
555.0-555.4 Lock #12 Lower	1945	43,097	555.0-555.3	555.1-555.4R	
	1946	39,689	555.0-555.3	555.1-555.4R	
	1950	16,600	555.1-555.4	555.2-555.4R	
	1956	34,410	555.1-555.4	555.2-555.3R	
	2015	4,272	555.1-555.5	548.8R (Maquoketa River Site)	Inland/Beneficial
		128,068	5 Events	Average: 25,614	
554.1-555.0 Duck Creek	1940	36,407	554.4-554.7	554.4-554.7L	
	1942	45,086	554.3-554.6	554.4-554.7L	
	1943	143,349	554.4-555.4	554.6-554.7R, 554.8-554.9R, 555.1-555.4R	
	1945	73,261	554.3-554.6	554.3-554.6L (original maps show this was a bk placement)	
	1946	29,700	554.3-554.5	554.4-554.6L	
	1948	44,374	554.3-554.6	554.4-554.6L	
	1950	22,052	554.3-555.6	554.4-554.5L	
	1953	34,444	554.2-554.5	554.6R, 554.8R	
	1956	11,943	554.1-554.3	554.2-554.4R	
	1960	94,807	554.3-554.3	554.2-554.9R	
	1962	61,446	554.6-554.9	554.7-555.0R	
		596,759	11 Events	Average: 54,251	
552.7-553.8 Pleasant Creek	1962	30,388	552.7-552.9	552.9R, 552.9-553.0R	
	1973	48,073	552.7-553.0	552.7-552.8R, 552.9-553.1R	Inland/open
	1983	20,186	553.7-553.8	553.5-553.7 (halfweg)	
		98,649	3 Events	Average: 32,883	
549.9-550.8 Sand Prairie	1941	63,534	550.4-550.7	550.6-550.7L, 550.8-550.9L	
	1955	112,707	549.9-550.4	550.0-550.4R	
	1958	45,460	549.9-550.2	550.0-550.2R	open water
	1970	65,462	550.3-550.7	550.5-550.6R, 550.7-550.8R	
	1970	20,000	549.9-550.0	549.9-550.1R	
	1972	72,102	549.9-550.8	549.8-550.0R, 550.4-550.5L, 550.6-550.9L	
	1976	16,497	550.5-550.8	550.8-551.0L	
		396,262	7 Events	Average: 56,609	
547.0-548.6 Maquoketa River	1950	45,917	547.7-548.1	547.8-548.0L, 548.1-548.2L	
	1951	88,041	547.3-548.2	547.7-548.1L	
	1952	108,394	547.1-547.9	547.3R, 547.6R, 547.8R, 547.9R	
	1959	68,789	548.2-548.6	548.3-548.6L	
	1960	70,509	548.2-548.5	548.1-548.6L	
	1962	172,689	547.7-548.4	547.6-548.4R	
	1963	113,362	547.7-548.2	547.7-547.8L, 547.9-548.0L, 547.9-548.3R	
	1965	138,309	547.2-547.9	547.4-547.6L, 547.6-548.1R	
	1966	61,643	547.3-547.7	547.4-547.5L, 547.7-547.8L	
	1967	77,848	547.2-547.6	547.3-547.7R, 547.4-547.6L, 547.7-547.8L	
	1969	72,527	547.1-547.5	547.4-547.7R, 547.3L, 547.4-547.5L	
	1970	123,404	547.1-547.9	547.2-547.4L, 547.5-547.6L, 547.7-547.8R	
	1975	12,037	547.9-548.2	547.9-548.0R	Inland
	1980	73,300	547.2-547.6	(no drawing found)	
	1987	70,927	547.0-547.5	546.8-547.3R	
	2001	27,437	546.9-547.2	547.0 - 547.3R (repair Green Island levee)	Upland
	2012	16,726	547.4-547.7	548.8R mech DMMP site	Inland

MISSISSIPPI RIVER DREDGING
POOLS 11-22
1940-2004

Dredge Cut	Year Dredged	Dredging Amount (yd3)	Dredging Site	Placement Site	Placement Type
	2012	25,101	547.3-547.9	548.8R hydraulic DMMAP site	inland
	2015	14,515	547.0-548.6	548.8R	inland
		1,381,565	19 Events	Average: 72,714	
546.1-547.0 Apple River Island	1946	32,052	546.1-546.4	546.1-546.3R	
	1974	24,443	546.8-547.0	546.7R	
		56,495	2 Events	Average: 28,248	
544.1-545.9 Island 257	1956	119,600	544.6-545.3	544.7-545.3R	
	1970	53,991	545.4-545.9	545.6-545.7R, 545.9-546.0R	
	1973	47,947	544.1-544.4	544.3-544.6L	
	2012	6,176	543.5-543.7	539.4L mech (18384 Sab Lwr + 6176 Arnolds = 24,560)	Beach
		227,714	4 Events	Average: 56,929	
540.5-541.0 Lainsville Lower	1958	89,360	540.5-541.0	540.7-540.9R, 541.0-541.1L	
	1970	34,770	540.5-540.8	540.5-540.6R	
		124,130	2 Events	Average: 62,065	
538.8-539.6 Savanna Bay	1958	75,939	538.9-539.3	539.0-539.2R, 539.4-539.5L	
	1970	33,548	538.8-539.2	539.0-539.2R	
	1977	24,016	538.8-539.2	539.3-539.5L	
	1983	16,155	539.0-539.3	539.7-539.8Thalweg	Thalweg
	1986	68,271	538.8-539.4	538.4-538.5Thalweg, 539.3-539.4L	Thalweg, Beach
Approx. 80,000 cy placed on beach since 1977	1989	173,697	538.5-539.2	538.4-538.5 Thalweg (138,864), 539.4L (113,833)	Thalweg, Beach
	1995	56,028	538.9-539.3	538.2-538.5T	Thalweg
	1999	88,557	538.5-539.3	538.0-538.6T	Thalweg
	2007	25,414	538.8-539.2	538.1-538.5T	Thalweg
	2009	32,835	538.7-539.2	537.9-538.7T	Thalweg
	2013	85,279	538.5-539.4	538.0-538.6T	Thalweg
		679,233	11 Events	Average: 61,748	
532.5-533.9 Sabula Lower	1961	56,231	533.6-533.9	533.6-533.8L	
	1967	122,309	532.0-533.4	532.9-533.5L	
	1972	96,134	532.5-533.4	532.4-532.5R (28,000), 533.3-533.5L (68,000)	
	1973	118,500	533.0-533.9	533.2-533.4L, 533.5L, 533.6-533.9L	
	1977	24,039	533.5-533.9	532.8-533.1L, 533.5L	
	1991	153,867	533.0	534.0L, 533.2L	levee repair, stat
	1999	9,273	533.7-533.9	534.4R, Sabula Lower Campground (raise) Mech	Inland
	2001	4,542	533.0-533.3	538.5T (Savanna thalweg) - mechanical	Thalweg
	2002	21,817	533.1-534.1	539.4L (2,400)beach; 538.5Thalweg (19,417); - mechanical	Beach, Thalweg
	2003	13,179	533.6-534.0	538.3T - mechanical	Thalweg
	2004	13,575	533.4-533.9	538.3T - mechanical	Thalweg
	2005	67,041	532.0-533.8	531.7-531.9T	Thalweg
	2007	57,194	532.8-533.5	531.7-532.0T	Thalweg
	2009	7,704	533.0-533.2	531.7-532.0T mech	Thalweg
	2009	60,028	532.1-532.4	531.7-531.9T	Thalweg
	2011	26,694	533.0-533.2	531.7-531.9T Mech	Thalweg
	2012	18,384	532.8-533.2	539.4L mech (18384 Sab Lwr + 6176 Arnolds = 24,560)	Beach
		870,610	17 Events	Average: 51,212	
531.0-531.3	1971	47,489	531.0-531.3	531.2-531.4L	

MISSISSIPPI RIVER DREDGING
POOLS 11-22
1940-2004

Dredge Cut	Year Dredged	Dredging Amount (yd3)	Dredging Site	Placement Site	Placement Type
Dark Slough	1973	49,677	531.0-531.3	531.1L, 531.2-531.4L	
	2012	39,090	530.9-531.6	531.7 - 532.0T mech	Thalweg
	2012	56,229	529.8-530.6	531.3 - 531.5L	Bankline
	2013	18,337	531.0-531.4	531.2 - 531.7L mech	Bankline
	2014	22,663	531.1-531.5	531.8-531.7L mech	Bankline
		256,418	6 Events	Average: 36,631	
528.7-529.9 Elk River 528.7-530.6	1940	334,995	528.7-529.9	528.6-529.2L, 529.3L, 529.5L, 529.6-529.7L	
	1954	74,429	528.7-529.1	528.8L, 528.9-529.1L	
	2006	24,970	527.1-527.4	526.0-526.2L (new island) Open water 1st event then Inland	Open Water
	2013	17,860	528.7-529.0	531.3-531.5L	Bankline
	2016	15,943	529.9-530.6	531.3 - 531.7L	Bankline
	2017	28,481	529.7-530.1	531.1-531.7L	Bankline
	2018	22,931	530.0-530.3	532.0L	Thalweg
	2019	14,671	529.9-530.3	532.3T	Thalweg
	2019	20,471	529.9-530.4	531.3-531.7L	Bankline
	2019	9,478	529.1-529.3	527.9R (Cormorant Islands)	Bankline/Open Water
		564,223	10 Events	Average: 56,422	
525.1-525.6 Pomme De Terre	1961	104,755	525.1-525.6	525.1-525.8L	
	1972	60,429	525.2-525.6	525.1-525.4L	
		165,184	2 Events	Average: 82,592	
(1) Lock #13 Upper	2017	4,730	522.5-522.6	548.8R Maquoketa River DMMP	Inland
		4,730	1 Events	Average: 4,730	

POOL 13 TOTALS

Events: 100
Yardage: 5,482,489
Average: 56,521

2020 Dredging Jobs - UMR																							
29-Jun-2020																							
	Pool	Mech	Dredge	GOETZ	Riv Mile	Name	Survey Date	Total Quantity	Min Dredging Required To Pass Traffic	Current Stage	7-day Stage	7-day Change	Est. Restriction Date	Depth at Minimum Pool Elev.	Current Actual Depth	7-Day Forecast Depth	OD-M Days	Mech	ec h Co	Goetz Days Hyd	# Co st	Notes	
Complete	33		MVR		588.9	Hurricane	25-Jun	14,000	14,000	3.0	3.3	0.3		11.0	14.0	14.3	9.3		##	\$0	Dredging Complete		
	34		MVR		510	Marlee-Decker	25-Jun	20,000	20,000	3.7	2.9	-0.8	18-Aug-20	11.0	14.7	13.9	13.3		##	\$0	Dredging Complete		
Pilot Channel Established	11		MVR		596.3	Finley's	25-Jun	30,000	30,000	2.5	2.8	0.3		11.0	13.5	13.8	20.0		##	\$0	200' Pilot Channel Established		
	13		MVR		530	Smith Bay	8-Apr	63,000	40,000	1.7	1.5	-0.2	23-Oct-20	11.0	12.7	12.5	42.0		##	\$0	200' Pilot Channel Established		
Dredging Jobs	11		MVP	7	596.3	Finley's	26-Jun	43,000	43,000	2.5	2.8	0.3		7.0	9.5	9.8			\$0	6.8	##	200' Pilot Channel established - see above Hyd Goetz after pilot channel w/strike crew	43K
	12	7	MVR		588.5	Deadman's	9-Jun	38,600	38,600	2.4	2.2	-0.2	15-Aug-20	7.8	10.2	10.0	25.7		##	\$0		##	AIS ATONS Broadcasting - Spotty Shoaling.
	13	12	MVR		554.3	Duck Creek	8-Jun	14,500	14,500	7.1	6.1	-0.9	6-Aug-20	7.0	14.1	13.1	9.7		##	\$0		##	Cross channel Shoal
	13	13	MVR		529.2	Elk River	8-Apr	39,500	39,500	1.5	1.3	-0.2	11-Jun-20	7.0	8.9	8.9	26.3		##	\$0		##	370' available but on tight turn.
	14		MVR		503.6	Stemboat	4-Jun	30,000	30,000	4.0	3.0	-1.0	17-Jul-20	7.6	11.6	10.6	20.0		##	\$0		##	AIS ATONS Broadcasting on 6-19. Narrow - shoal on RDB.
	16	5			482.8	Lock 15 Lower	2-Jun	24,400	24,400	8.5	6.0	-2.5	16-Jul-20	6.7	15.2	12.7	16.3		##	4.7	##	##	Shoal crosses lock approach
	16		MVP	1	481.7	Crescent to Centennial	2-Jun	102,000	72,000	8.1	5.7	-2.4	16-Jul-20	6.8	14.9	12.5			\$0	13.3	##	##	Currently Dredging.
	16	8	MVR		472.1	Buffalo	15-Jun	20,000	20,000	5.0	3.6	-1.4	16-Jul-20	7.6	12.6	11.2	13.3		##	\$0		##	Shoal encroaching from both sides. 200' width.
	16	4	MVR		469.3	Montpellier	15-Jun	16,500	16,500	4.1	2.9	-1.1	15-Jul-20	7.6	11.7	10.5	11.0		##	\$0		##	Spotty Shoaling.
	17	3	MVR		456.6	Lock 16 Lower	11-Jun	26,000	26,000	8.5	5.5	-3.0	11-Jul-20	6.0	14.5	11.5	17.3		##	\$0		##	Cross Channel Shoal
	17	1	MVR		447.7	Bass Island	11-Jun	34,000	34,000	6.8	3.6	-3.1	8-Jul-20	6.7	13.5	10.3	22.7		##	\$0		##	Currently Dredging. (150' Pilot channel established)
	17	2	MVR		446.3	Barkis Island	11-Jun	52,000	52,000	6.5	3.4	-3.2	9-Jul-20	7.0	13.5	10.4			\$0	7.8	##	##	Shoal on RDB. AIS ATONS Broadcasting on 6-19
	18	6	MVR		427	Keithsburg	4-May	25,000	25,000	8.8	6.0	-2.8	17-Jul-20	7.8	16.6	13.8	16.7		##	\$0		##	Spotty Cross Channel Shoaling
	18		MVP	2	424.5	Cherokee	15-Jun	37,000	37,000	7.6	5.1	-2.6	15-Jul-20	7.3	14.9	12.4			\$0	6.1	##	##	Cross Channel Shoaling
	18	14	MVR		422.5	Johnson Island	6-May	24,500	24,500	6.7	4.3	-2.4	13-Jul-20	7.4	14.1	11.7	16.3		##	\$0		##	Narrowing. Shoaling on RDB.
	19		MVP	3	405.9	Baby Rush	24-Jun	35,000	35,000	9.3	6.2	-3.1	14-Jul-20	6.4	15.7	12.6			\$0	5.9	##	##	Cross channel shoals
	19	9	MVR		397	Burlington Island Light (Kemp's)	4-Jun	20,000	20,000	7.2	4.8	-2.4	12-Jul-20	6.4	13.6	11.2	13.3		##	\$0		##	AIS ATONS Broadcasting
	19		MVP	6	389.7	Green Bay Landing	17-Jun	158,000	158,000	5.6	3.7	-1.9	11-Jul-20	6.8	12.4	10.5			\$0	19.6	##	##	Shoal extending from RDB
	20		MVP	4	344	Lock 20 Upper	24-Jun	71,500	71,500	5.8	4.2	-2.6	30-Jun-20	2.7	9.5	4.3			\$0	9.9	##	##	AIS ATONS Broadcasting. Shoal encroaching into Upper Lock Approach
	21		MVP	5	339	Howards	23-Jun	56,000	56,000	10.6	8.3	-2.4	23-Jul-20	6.5	17.1	14.8			\$0	8.2	##	##	Cross Channel Shoal
	21	11	MVR		336	LaGrange	23-Jun	6,800	6,800	9.8	7.5	-2.3	24-Jul-20	7.6	17.4	15.1	4.5		##	\$0		##	Spotty shoals
	21	10	MVR		331.6	Hogback	23-Jun	17,000	17,000	7.1	4.7	-2.3	17-Jul-20	8.2	15.3	12.9	11.3		##	\$0		##	Spotty shoals
	22	15	MVR		323.9	Orton Island	22-Jun	20,000	20,000	12.2	9.8	-2.4	27-Jul-20	6.5	18.7	16.3	13.3		##	\$0		##	Spotty shoals
	24		MVS	1	300.6	Lock 22 Lower	17-Jun	66,000	66,000	11.1	10.6	-0.5	25-Aug-20	2.0	13.1	12.6	44.0		##	##	##	##	Dredge Potter



DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING - P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

CEMVR-PD

3 August 2020

MEMORANDUM FOR RECORD

SUBJECT: Environmental Compliance for 2020 Emergency Dredging

1. The purpose of this memorandum is to document the need to perform critical dredging at 3 dredge cuts on the Upper Mississippi River prior to completing all environmental documentation. Dredging is required in order to maintain the Upper Mississippi River 9-Foot Navigation Channel Project

2. **BACKGROUND:** USACE procedures associated with implementing emergency actions prior to completion of environmental coordination are addressed in 33 Code of Federal Regulations (CFR) § 337.7 (discharge of dredged or fill material in waters of the U.S.) and 33 CFR § 230.8 (National Environmental Policy Act).

3. **JUSTIFICATION:** A high water event on the Mississippi River has caused significant shoaling within the 9-Foot Navigation Channel in the District's AOR. Water levels are falling, and actual depths within the District are at or below nine feet. Water levels are projected to continue to fall over the next several weeks and shoaling continues at these sites. The District has identified 25 remaining dredging locations. The number of dredging locations and cumulative volume of material is significantly greater than historical amounts. Of those 25 locations, all but three have adequate existing placement sites. The remaining three dredging locations have existing placement sites that have either been fully utilized by other area dredging or are inadequate for other reasons to support the necessary dredging required. With water levels continuing to fall, the District anticipates these areas are likely to result in channel closure without channel maintenance dredging.

4. Following is a description of the three dredge cuts which need new placement sites to perform the necessary dredging at to maintain the 9-Foot Navigation Channel Project. The District has initiated environmental coordination with Federal and State agencies but has not completed all environmental compliance requirements for these sites. The District intends to satisfy as many requirements before dredging as possible, but channel conditions may require some requirements be met after-the-fact.

a. **LOCK 22 LOWER DREDGE CUT, POOL 24, RIVER MILE 300.6:** The District has identified approximately 66,100 cubic yards to be removed at the Lock and Dam 22 Lower in Pool 24. The shoal has developed downstream of the lock approach. As water levels continue to recede, it will make the approach challenging, if not impassable. This cut has averaged about 8,300 cubic yards per job over the past 20 years. No dredging has been required at this location since 2014. The On-Site Inspection Team (OSIT) had a phone-call on 10 July 2020 to discuss the use of historic placement sites adjacent to

CEMVR-PD

SUBJECT: Environmental Compliance for 2020 Emergency Dredging

the cut, one each along the Illinois and Missouri banklines. The OSIT consists of federal and state agencies members that have regulatory or management responsibilities within the action area. The OSIT identified significant mussel resources at both of these sites that do not allow for further use of these placement sites. Coordination with the OSIT is ongoing to identify an acceptable placement site.

b. DEADMAN'S LIGHT DREDGE CUT, POOL 12 RIVER MILE 568.4 and 567.8: The District has identified 38,600 cubic yards to be removed at the Deadman's Light Dredge Cut in Pool 12. No dredging has been required at this location since 1969. The OSIT provided a recommended placement location, although this placement site does not have current environmental clearances.

c. DUCK CREEK DREDGE CUT, POOL 13 RIVER MILE 554.4: The District has identified 12,600 cubic yards to be removed at Duck Creek Dredge Cut in Pool 13. No dredging has been required at this location since 1962. The OSIT provided a recommended placement location, although this placement site does not have current environmental clearances.

5. DETERMINATION: Based on the information detailed above, I have determined the Rock Island District Dredging Emergency Response on the Mississippi River identified in this Memorandum to be an emergency situation pursuant to 33 CFR 337.7 and 33 CFR 230.8 as immediate work necessary to prevent and reduce the imminent risk. The District intends to satisfy as many necessary environmental compliance requirements as possible prior to dredging. The District will prepare any remaining required environmental coordination after the emergency dredging action has been completed. This Memorandum shall be kept in project files.

SATTINGER.ST
EVEN.MICHAEL
L.1164506939

STEVEN M. SATTINGER
COL, EN
Commanding

CF:

CEMVR-DE
CEMVR-DD
CEMVR-DP
CEMVR-XO
CEMVR-EC
CEMVR-OD
CEMVR-RE
CEMVR-OC



DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, U.S. ARMY CORPS OF ENGINEERS
CLOCK TOWER BUILDING - PO BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

September 28, 2020

Regional Planning and Environmental
Division North (RPEDN)

SUBJECT: Coordination regarding emergency dredging and dredge material placement in Jackson and Dubuque Counties, Iowa, and Jo Daviess County, Illinois, in Pools 12 and 13 (Upper Mississippi River Mile 567 & 554).

SEE DISTRIBUTION LIST

The U.S. Army Corps of Engineers, Rock Island District (District) has declared an emergency and is formally implementing emergency actions prior to completion of environmental coordination as authorized in 33 CFR 337.7 (discharge of dredged or fill material in waters of the U.S.) and 33 CFR 230.8 (National Environmental Policy Act) (Enclosure 1). The undertaking concerns the emergency dredging and dredge material placement at two locations in the Upper Mississippi River (Pools 12 and 13), in Jackson and Dubuque Counties Iowa, and Jo Daviess County, Illinois (Enclosure 2). Emergency dredging is necessary to prevent and reduce the imminent risk of navigation channel closure on Mississippi River in accordance with 33 CFR 337.7 and 33 CFR 230.

An extended high water event on the Mississippi River caused significant shoaling within the 9-Foot Navigation Channel between Upper Mississippi River Miles 555-554 in Pool 13 and 568-569 in Pool 12. Dredging is required to maintain the Upper Mississippi River 9-Foot Navigation Channel Project. The District identified 38,600 cubic yards within the Deadman's Light dredge cut in Pool 12 and 14, 00 cubic yards within the Duck Creek dredge cut in Pool 13 to be removed (Enclosures 2 and 3). Seven locations for dredge material placement were considered and visited by the On-Site Investigation Team (OSIT) on July 2, 2020 (Enclosure 3). Two preferred and one alternative sites were identified for dredge material placement (Enclosures 2 and 3). These locations have been previously utilized for dredge placement. The dredged material will be placed along the bankline at both locations, below the typical high water mark.

Federal Undertaking

Pursuant to the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations, 36 CFR Part 800, the District has determined that work in Pools 12 and 13 have potential to cause effects to a historic property [36 CFR 800.3(a)(1)] and as a consequence will require a determination of effect within the Area of Potential Effect (APE).

Area of Potential Effect

The Area of Potential Effect (APE) consists of four locations, two dredge locations, two dredge material placement locations and one alternate dredge material placement location (Enclosures 2 and 3). Table 1 provides location information for each part of the APE. The APE encompasses approximately 34 acres within the Mississippi River between river miles 555-554 in Pool 13 and 569-568 in Pool 12 (Table 1). The dredge and dredge material placement locations are approximate and are based upon the dredge cut survey and the dredge's level of accuracy during Project activities.

The Deadman's Light dredge cut (Pool 12) was last dredged in 1958 and 1969 with bankline placement between Upper Mississippi River (UMR) Mile 568.5R (right descending bank). Placement Site 6 (Enclosures 2 and 3) is the OSIT preferred location and has been used historically for bankline placement. The dredging and dredge material placement locations have been used historically by the District (Enclosure 3); however, these locations have not been utilized in over 50 years. The alternative placement location Site 7 has not been utilized for placement before (Enclosures 2 and 3). If this location is used, dredge material would be placed on the bankline and would avoid encroachment into the water.

Duck Creek dredge cut (Pool 13) has not been dredged since 1962, but had 11 dredge events between 1940 and 1962. Dredge material placement has historically occurred along the left and right descending banklines between UMR Miles 555.3-554.7L and 554.2-555.4R (Enclosure 3). Placement Site 1 (Enclosures 2 and 3) is the OSIT preferred location and has been used historically for bankline placement, but has not been utilized in over 50 years.

Consulting Parties

The District finds the organizations identified on the Distribution List (Enclosure 4) are entitled to be consulting parties, as set out in 36 CFR 800.2, and invites them by copy of this letter to participate in the Section 106 process. The District invites the consulting parties to:

- identify any other consulting parties as per 36 CFR 800.3(f);
- comment as per 36 CFR 800.2(d)(3) on the District's plan to involve the public by utilizing the District's normal procedures for public involvement under the National Environmental Policy Act (NEPA); and,
- comment on or contribute to identification efforts including definition of the APE, all as per 36 CFR 800.4(a-b).

Historic Properties Identification

The District conducted an archival search for historic properties following the Policy and Procedures for the Conduct of Underwater Historic Resource Surveys for Maintenance Dredging and Corps Activities (DGL-89-01, March 1989). The District queried the most updated Illinois

and Iowa Geographic Information Systems site file database and reviewed the report entitled *An Investigation of the Submerged Historic Properties in the Upper Mississippi River and Illinois Waterway*, dated October 1997 (Contract Number DACW25-93-D-0-012, Order No. 27). No submerged historic properties were identified in any of the dredge cut or dredge material placement locations for this Project.

Both the Duck Creek and Deadman's Light dredge material placement locations are identified as post-settlement alluvium and modern channel (PSA) according to the Landform Sediment Assemblage (Bettis, et al. 1995). This report was fully coordinated with the appropriate State Historic Preservation Offices (Iowa reference R&C #93050061; Illinois reference IHPA Log #930511007WRG). No previous archeological survey has been performed at either location. No historic properties have been identified within the APE.

Determination of Effect

The project involves dredging and dredge material placement to avoid closure of the 9-Foot Navigation Channel within the Mississippi River. The dredging and dredge material placement activities are proposed within areas historically used for this same purpose. The dredged material will be placed along the bankline at both locations, below the typical high water mark. If the alternate placement location is used, material will be placed on the current shoreline. The Landform Sediment Assemblage has identified all placement locations as consisting of recent post-settlement alluvium, which would have no potential to contain historic properties. No historic properties (including submerged resources) are located within the APE. The proposed activities will have no effect on historic properties. The District has determined that the Project will have no effect on historic properties within the APE, in accordance with 36 CFR 800.4(d)(1).

Request for Comment from Consulting Parties

The District is seeking information from all consulting parties regarding their concerns with issues relating to the potential effects of this undertaking on historic properties and, particularly, the tribes' concerns with identifying properties that may be of religious and cultural significance to them and may be eligible for the NRHP [36 CFR 800.4(a)(3-4)]. Concerns about confidentiality [36 CFR 800.11(c)] regarding locations of properties can be addressed under Section 304 of the NHPA which provides withholding from public disclosure the location of properties under several circumstances, including in cases where it would cause a significant invasion of privacy, impede the use of a traditional religious site by practitioners, endanger the site, etc.

The Corps is providing this notice pursuant to 36CFR800.12(b)2 and requests your e-mail response within 30 business days of the receipt of this letter. The Distribution List (Enclosure 4) reflects the parties that received this mailing.

If you have any questions regarding this matter, please call Ms. Christine Nycz of our Environmental Compliance Section, telephone [REDACTED].

Sincerely,

CRESWELL.JOD [REDACTED]

I.K.1231223858 [REDACTED]

Jodi K. Creswell

Chief, Environmental Planning Branch RPEDN

ENCLOSURES (4)

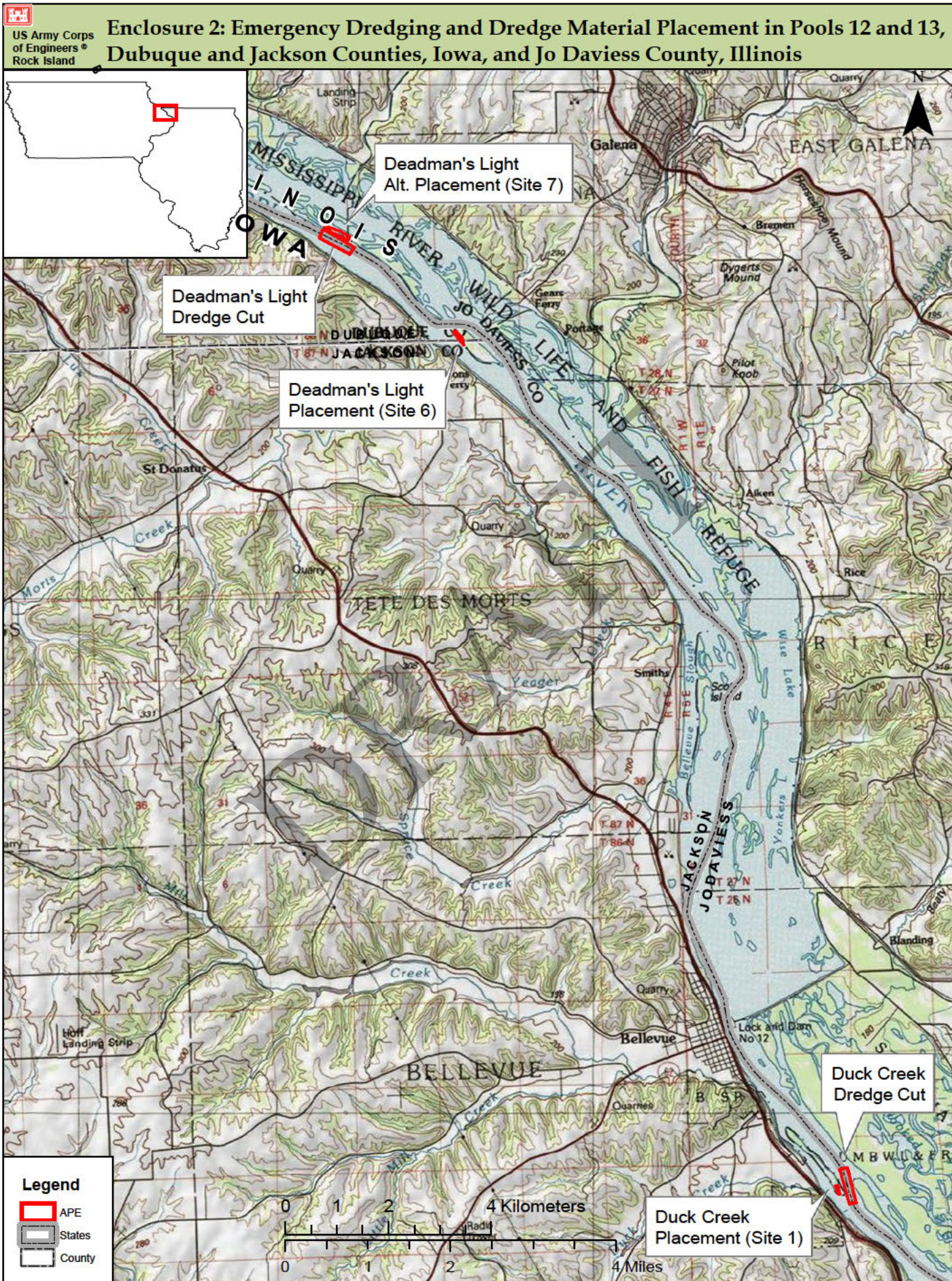
References

Benn, David W., Robert C. Vogel, E.A. Bettis III, and J.D. Anderson

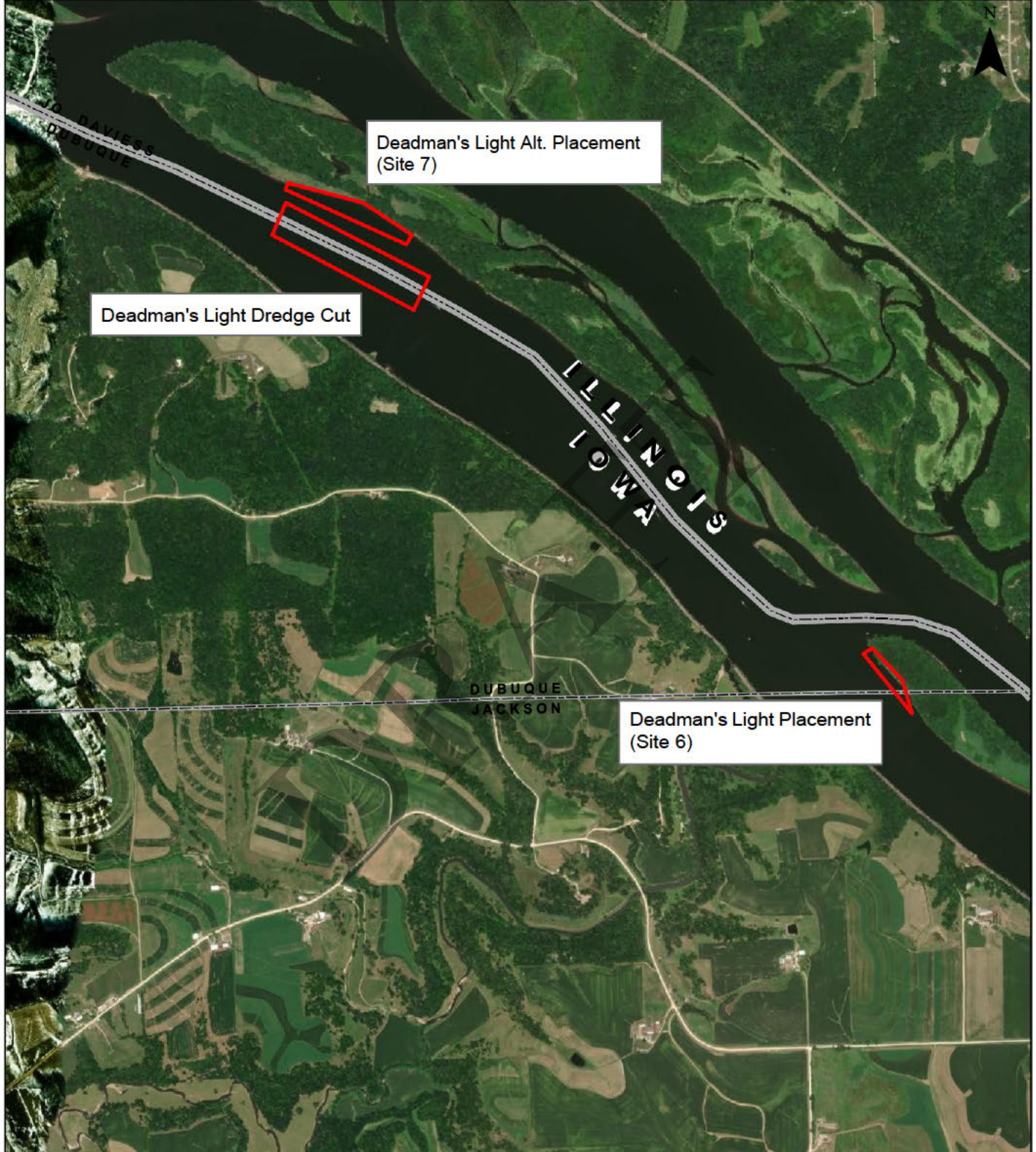
1995 The Historic Properties Management Plan for the Mississippi River, Pools 11 through 22, Rock Island District, Corps of Engineers, prepared under Corps Contract Number DACW25-92-D-0008, Work Order No. 5. Submitted by Bear Creek Archeology, Inc., Cresco, Iowa (BCA #271).

Table 1. Location of Area of Potential Effect

Location	State	County	PLSS	Pool	~Acres
Deadman's Light dredge cut	IL	Jo Daviess	T28N R1W, Sec 28; T28N R1W, Sec 29	12	7
Deadman's Light dredge cut	IA	Dubuque	T88N R4E, Sec 28	12	3
Deadman's Light placement	IL	Jo Daviess	T28N, R1W, Sec 29	12	4
Deadman's Light placement	IA	Dubuque	T88N R4E, Sec 34	12	2.5
Deadman's Light placement	IA	Jackson	T87N R4E, Sec 3	12	0.5
Duck Creek dredge cut	IL	Jo Daviess	T26N R1E, Sec 21	13	4
Duck Creek dredge cut	IA	Jackson	T86N R5E, Sec 29	13	10
Duck Creek placement	IA	Jackson	T86N R5E, Sec 29	13	3

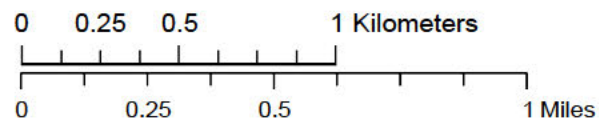


Enclosure 2: Emergency Dredging and Dredge Material Placement in Pools 12 and 13, Dubuque and Jackson Counties, Iowa, and Jo Daviess County, Illinois



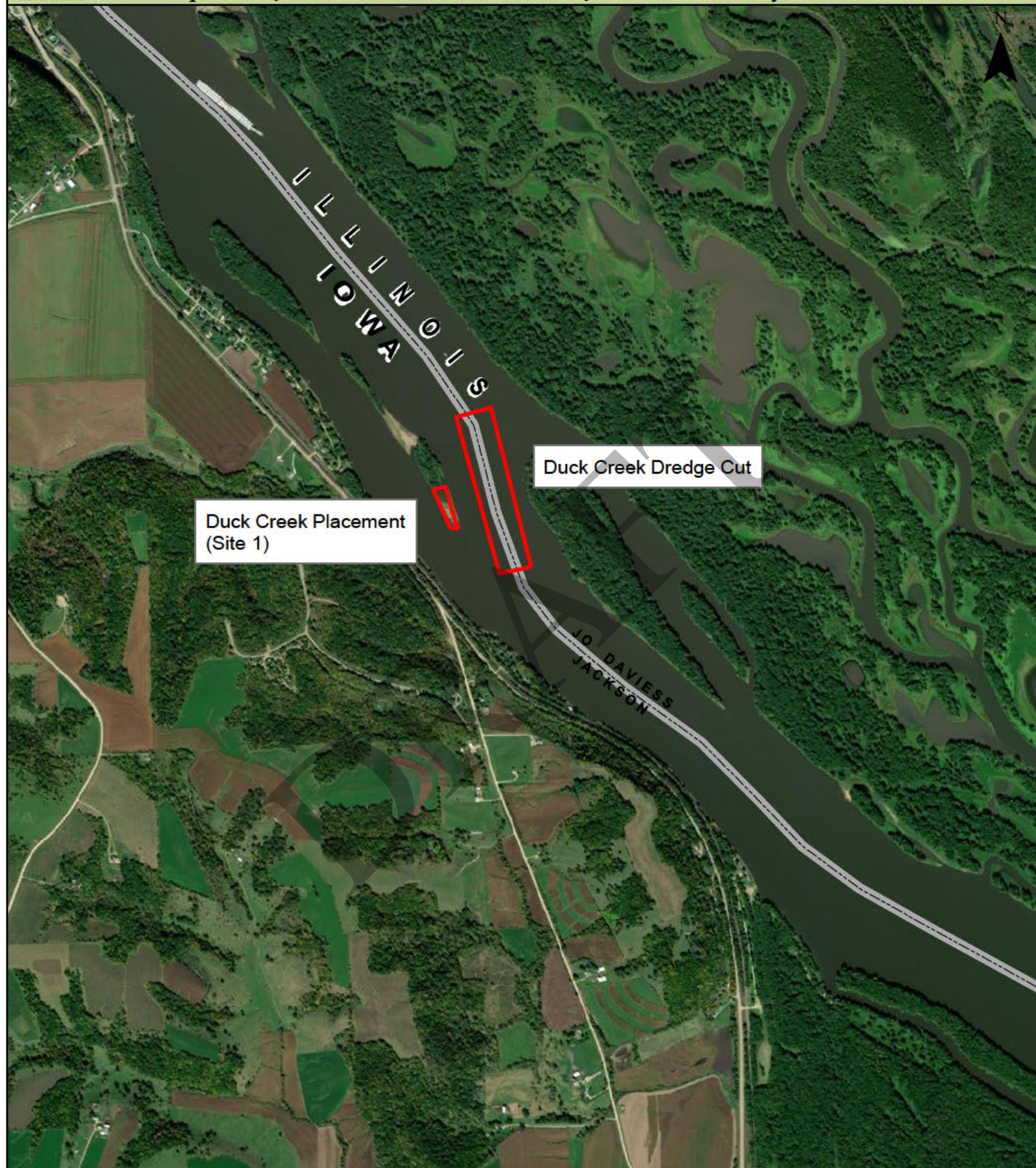
Legend

- APE
- States
- County



Scale 1:24,000
September 24, 2020
C. Nycz

Enclosure 2: Emergency Dredging and Dredge Material Placement in Pools 12 and 13, Dubuque and Jackson Counties, Iowa, and Jo Daviess County, Illinois



Legend

- APE
- States
- County



Scale 1:24,000
September 24, 2020
C. Nycz

From: [Ben Crawford](#)
To: [REDACTED]
Subject: [Non-DoD Source] RE: USACE Emergency Dredging in Mississippi River, Pools 12 and 13 (Jo Daviess County, IL; Jackson and Dubuque Counties, IA)
Date: Thursday, October 1, 2020 9:54:42 AM

Good morning,

This proposed project will not affect any known sites affiliated with the Winnebago Tribe of Nebraska however dredging does occur on or near the historical homelands of the Tribe, please notify us immediately should any inadvertent discoveries occur.

Thank you,

Eben Crawford

-----Original Message-----

From: Nycz, Christine A CIV USARMY CEMVP (USA) [REDACTED]
Sent: Tuesday, September 29, 2020 3:50 PM
To: Nycz, Christine A CIV USARMY CEMVP (USA) [REDACTED]
Subject: USACE Emergency Dredging in Mississippi River, Pools 12 and 13 (Jo Daviess County, IL; Jackson and Dubuque Counties, IA)

Hello-

Please see attached for a coordination letter regarding Emergency Dredging and Dredge Material Placement in the Mississippi River, Pools 12 and 13 in Jo Daviess County, Illinois and in Jackson and Dubuque Counties, Iowa. A hard copy can be mailed to you upon request.

Thank you,
Chris Nycz

Christine Nycz
Archeologist
US Army Corps of Engineers
Clock Tower Building - PO Box 2004
Rock Island, IL 61204-2004

[REDACTED]



Illinois Department of Natural Resources

www.dnr.illinois.gov

JB Pritzker, Governor
Colleen Callahan, Director

Mailing address: State Historic Preservation Office, 1 Old State Capitol Plaza, Springfield, IL 62701

JoDaviess County
Galena
Pool 12 & 13, Mississippi River miles 555-554 & 568-569
COERI
Emergency dredging & dredge placement

PLEASE REFER TO: SHPO LOG #003092920

October 2, 2020

Christine Nycz
Department of the Army
Corps of Engineers, Rock Island District
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004

Dear Ms. Nycz:

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 Jeff Kruchten, Chief Archaeologist at [REDACTED]

Sincerely,

Robert F. Appleman
Deputy State Historic
Preservation Officer



DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, U.S. ARMY CORPS OF ENGINEERS
CLOCK TOWER BUILDING - PO BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

20000012

September 28, 2020

Regional Planning and Environmental
Division North (RPEDN)

SUBJECT: Coordination regarding emergency dredging and dredge material placement in Jackson and Dubuque Counties, Iowa, and Jo Daviess County, Illinois, in Pools 12 and 13 (Upper Mississippi River Mile 567 & 554).

SEE DISTRIBUTION LIST

The U.S. Army Corps of Engineers, Rock Island District (District) has declared an emergency and is formally implementing emergency actions prior to completion of environmental coordination as authorized in 33 CFR 337.7 (discharge of dredged or fill material in waters of the U.S.) and 33 CFR 230.8 (National Environmental Policy Act) (Enclosure 1). The undertaking concerns the emergency dredging and dredge material placement at two locations in the Upper Mississippi River (Pools 12 and 13), in Jackson and Dubuque Counties Iowa, and Jo Daviess County, Illinois (Enclosure 2). Emergency dredging is necessary to prevent and reduce the imminent risk of navigation channel closure on Mississippi River in accordance with 33 CFR 337.7 and 33 CFR 230.

An extended high water event on the Mississippi River caused significant shoaling within the 9-Foot Navigation Channel between Upper Mississippi River Miles 555-554 in Pool 13 and 568-569 in Pool 12. Dredging is required to maintain the Upper Mississippi River 9-Foot Navigation Channel Project. The District identified 38,600 cubic yards within the Deadman's Light dredge cut in Pool 12 and 14,500 cubic yards within the Duck Creek dredge cut in Pool 13 to be removed (Enclosures 2 and 3). Seven locations for dredge material placement were considered and visited by the On-Site Investigation Team (OSIT) on July 2, 2020 (Enclosure 3). Two preferred and one alternative sites were identified for dredge material placement (Enclosures 2 and 3). These locations have been previously utilized for dredge placement. The dredged material will be placed along the bankline at both locations, below the typical high water mark.

Federal Undertaking

Pursuant to the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations, 36 CFR Part 800, the District has determined that work in Pools 12 and 13 have potential to cause effects to a historic property [36 CFR 800.3(a)(1)] and as a consequence will require a determination of effect within the Area of Potential Effect (APE).

Area of Potential Effect

The Area of Potential Effect (APE) consists of four locations, two dredge locations, two dredge material placement locations and one alternate dredge material placement location (Enclosures 2 and 3). Table 1 provides location information for each part of the APE. The APE encompasses approximately 34 acres within the Mississippi River between river miles 555-554 in Pool 13 and 569-568 in Pool 12 (Table 1). The dredge and dredge material placement locations are approximate and are based upon the dredge cut survey and the dredge's level of accuracy during Project activities.

The Deadman's Light dredge cut (Pool 12) was last dredged in 1958 and 1969 with bankline placement between Upper Mississippi River (UMR) Mile 568.5R (right descending bank). Placement Site 6 (Enclosures 2 and 3) is the OSIT preferred location and has been used historically for bankline placement. The dredging and dredge material placement locations have been used historically by the District (Enclosure 3); however, these locations have not been utilized in over 50 years. The alternative placement location (Site 7) has not been utilized for placement before (Enclosures 2 and 3). If this location is used, dredge material would be placed on the bankline and would avoid encroachment into the water.

Duck Creek dredge cut (Pool 13) has not been dredged since 1962, but had 11 dredge events between 1940 and 1962. Dredge material placement has historically occurred along the left and right descending banklines between UMR Miles 554.3-554.7L and 554.2-555.4R (Enclosure 3). Placement Site 1 (Enclosures 2 and 3) is the OSIT preferred location and has been used historically for bankline placement, but has not been utilized in over 50 years.

Consulting Parties

The District finds the organizations identified on the Distribution List (Enclosure 4) are entitled to be consulting parties, as set out in 36 CFR 800.2, and invites them by copy of this letter to participate in the Section 106 process. The District invites the consulting parties to:

- identify any other consulting parties as per 36 CFR 800.3(f);
- comment as per 36 CFR 800.2(d)(3) on the District' plan to involve the public by utilizing the District' normal procedures for public involvement under the National Environmental Policy Act (NEPA); and,
- comment on or contribute to identification efforts including definition of the APE, all as per 36 CFR 800.4(a-b).

Historic Properties Identification

The District conducted an archival search for historic properties following the Policy and Procedures for the Conduct of Underwater Historic Resource Surveys for Maintenance Dredging and Corps Activities (DGL-89-01, March 1989). The District queried the most updated Illinois

and Iowa Geographic Information Systems site file database and reviewed the report entitled *An Investigation of the Submerged Historic Properties in the Upper Mississippi River and Illinois Waterway*, dated October 1997 (Contract Number DACW25-93-D-0-012, Order No. 27). No submerged historic properties were identified in any of the dredge cut or dredge material placement locations for this Project.

Both the Duck Creek and Deadman's Light dredge material placement locations are identified as post-settlement alluvium and modern channel (PSA) according to the Landform Sediment Assemblage (Bettis, etal. 1995). This report was fully coordinated with the appropriate State Historic Preservation Offices (Iowa reference R&C #93050061; Illinois reference IHPA Log #930511007WRG). No previous archeological survey has been performed at either location. No historic properties have been identified within the APE.

Determination of Effect

The project involves dredging and dredge material placement to avoid closure of the 9-Foot Navigation Channel within the Mississippi River. The dredging and dredge material placement activities are proposed within areas historically used for this same purpose. The dredged material will be placed along the bankline at both locations, below the typical high water mark. If the alternate placement location is used, material will be placed on the current shoreline. The Landform Sediment Assemblage has identified all placement locations as consisting of recent post-settlement alluvium, which would have no potential to contain historic properties. No historic properties (including submerged resources) are located within the APE. The proposed activities will have no effect on historic properties. The District has determined that the Project will have no effect on historic properties within the APE, in accordance with 36 CFR 800.4(d)(1).

Request for Comment from Consulting Parties

The District is seeking information from all consulting parties regarding their concerns with issues relating to the potential effects of this undertaking on historic properties and, particularly, the tribes' concerns with identifying properties that may be of religious and cultural significance to them and may be eligible for the NRHP [36 CFR 800.4(a)(3-4)]. Concerns about confidentiality [36 CFR 800.11(c)] regarding locations of properties can be addressed under Section 304 of the NHPA which provides withholding from public disclosure the location of properties under several circumstances, including in cases where it would cause a significant invasion of privacy, impede the use of a traditional religious site by practitioners, endanger the site, etc.

The Corps is providing this notice pursuant to 36CFR800.12(b)2 and requests your e-mail response within 30 business days of the receipt of this letter. The Distribution List (Enclosure 4) reflects the parties that received this mailing.

NAME

DATE

If you have any questions regarding this matter, please call Ms. Christine Nycz of our Environmental Compliance Section, telephone (309) 794-5396, or e-mail christine.a.nycz@usace.army.mil.

Sincerely,

CRESWELL.JOD

I.K.1231223858

Jodi K. Creswell

Chief, Environmental Planning Branch RPEDN

ENCLOSURES (4)

References

Benn, David W., Robert C. Vogel, E.A. Bettis III, and J.D. Anderson

1995 The Historic Properties Management Plan for the Mississippi River, Pools 11 through 22, Rock Island District, Corps of Engineers, prepared under Corps Contract Number DACW25-92-D-0008, Work Order No. 5. Submitted by Bear Creek Archeology, Inc., Cresco, Iowa (BCA #271).

Table 1. Location of Area of Potential Effect

Location	State	County	PLSS	Pool	~Acres
Deadman's Light dredge cut	IL	Jo Daviess	T28N R1W, Sec 28; T28N R1W, Sec 29	12	7
Deadman's Light dredge cut	IA	Dubuque	T88N R4E, Sec 28	12	3
Deadman's Light placement	IL	Jo Daviess	T28N, R1W, Sec 29	12	4
Deadman's Light placement	IA	Dubuque	T88N R4E, Sec 34	12	2.5
Deadman's Light placement	IA	Jackson	T87N R4E, Sec 3	12	0.5
Duck Creek dredge cut	IL	Jo Daviess	T26N R1E, Sec 21	13	4
Duck Creek dredge cut	IA	Jackson	T86N R5E, Sec 29	13	10
Duck Creek placement	IA	Jackson	T86N R5E, Sec 29	13	3

CONCUR

NAME [Signature]

DATE 10/7/2020



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



Via email: [REDACTED]

October 29, 2020

Ms. Christine Nycz
Environmental Compliance Section
U.S. Army Corps of Engineers, Rock Island District
Clock Tower Building – Po Box 2004
Rock Island, Illinois 61204-2004

Re: Emergency Dredging and Dredge Material Placement in the Mississippi River, Pools 12 and 13 – Comments of the Miami Tribe of Oklahoma

Dear Ms. Nycz:

Aya, kikwehsitoole – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding Emergency Dredging and Dredge Material Placement in the Mississippi River, Pools 12 and 13.

The Deadman's Light Dredge Cut and Placement sites are next to numerous mound sites along the Mississippi River in Jo Daviess County, Illinois. Also, as the Placement Sites 6 and 1 have not been used in over 50 years and may not have been properly surveyed at the time they were used, and as Placement Site 7 has not been surveyed, if an archaeological survey is conducted at any of these sites, please send the report to me at [REDACTED]

Given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Iowa and Illinois, 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 [REDACTED] 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

From: [Michael LaRonge](#)
To: [Nycz, Christine A CIV USARMY CEMVP \(USA\)](#)
Subject: [Non-DoD Source] RE: USACE Emergency Dredging in Mississippi River, Pools 12 and 13 (Jo Daviess County, IL; Jackson and Dubuque Counties, IA)
Date: Sunday, November 1, 2020 2:10:55 PM

Re: USACE Rock-Island District - Emergency Dredging in Mississippi River, Pools 12 and 13, Jo Daviess County, Illinois.

Dear Ms. Nycz,

Pursuant to consultation under Section 106 of the National Historic Preservation Act (1966 as amended) the Forest County Potawatomi Community, a Federally Recognized Native American Tribe, reserves the right to comment on Federal undertakings, as defined under the act.

This response is regarding the project mention above. Based on the information provided it does not appear that this project will impact any historic properties of concern for the Tribe. FCPC THPO is pleased to offer a finding of no historic properties affected, with two conditions. First, should the SHPO comments differ the Tribe reserves the right to reconsider based on the new information provided. Second, in the event that human remains or archaeological materials are exposed as a result of project activities in the alluvium work must halt and the Tribe must be included in any consultation regarding treatment and disposition of the find prior to further disturbance.

Your interest in protecting cultural and historic properties is appreciated. If you have any questions or concerns, please contact me at the email or number listed below.

Respectfully,

Michael LaRonge
Tribal Historic Preservation Officer
Cultural Preservation Division
Forest County Potawatomi Community
8130 Mish ko Swen Drive
P.O. Box 340
Crandon, Wisconsin 5452

-----Original Message-----


From: Nycz, Christine A CIV USARMY CEMVP (USA) [REDACTED]
Sent: Tuesday, September 29, 2020 3:50 PM
To: Nycz, Christine A CIV USARMY CEMVP (USA) [REDACTED]
Subject: USACE Emergency Dredging in Mississippi River, Pools 12 and 13 (Jo Daviess County, IL; Jackson and Dubuque Counties, IA)

Hello-

Please see attached for a coordination letter regarding Emergency Dredging and Dredge Material Placement in the Mississippi River, Pools 12 and 13 in Jo Daviess County, Illinois and in Jackson and Dubuque Counties, Iowa. A hard copy can be mailed to you upon request.

Thank you,
Chris Nycz

Christine Nycz
Archeologist
US Army Corps of Engineers
Clock Tower Building - PO Box 2004
Rock Island, IL 61204-2004



DRAFT



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:

February 25, 2021

Consultation Code: 03E18000-2020-SLI-2331

Event Code: 03E18000-2021-E-02058

Project Name: Deadman's Light and Duck Creek Dredge Cuts- Emergency Dredging

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federal 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 (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 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 at - <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, 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 at <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
- Wetlands

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:

Illinois-Iowa Ecological Services Field Office

Illinois & Iowa Ecological Services Field Office

1511 47th Ave

Moline, IL 61265-7022

(309) 757-5800

DRAFT

Project Summary

Consultation Code: 03E18000-2020-SLI-2331

Event Code: 03E18000-2021-E-02058

Project Name: Deadman's Light and Duck Creek Dredge Cuts- Emergency Dredging

Project Type: DREDGE / EXCAVATION

Project Description: Emergency dredging is required to prevent a channel closure.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.401298033000046,-90.50898831711794,14z>



Counties: Illinois and Iowa

Endangered Species Act Species

There is a total of 10 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 Fisheries¹, 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.

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
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearl mussel) <i>Lampsilis higginsii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel <i>Plethobasus cyphus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered
Spectaclecase (mussel) <i>Cumberlandia monodonta</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7867	Endangered

Snails

NAME	STATUS
Iowa Pleistocene Snail <i>Discus macclintocki</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/534	Endangered

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Northern Wild Monkshood <i>Aconitum noveboracense</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1450	Threatened
Prairie Bush-clover <i>Lespedeza leptostachya</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened
Western Prairie Fringed Orchid <i>Platanthera praeclara</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITH IN 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.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE AND FISH REFUGE https://www.fws.gov/refuges/profiles/index.cfm?id=32574	17,160.025

DRAFT

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- [PEM1F](#)
- [PEM1C](#)

FRESHWATER FORESTED/SHRUB WETLAND

- [PFO1Ch](#)
- [PFO1C](#)

LAKE

- [L1UBHh](#)

RIVERINE

- [R2UBH](#)

DRAFT

SUBJECT: Floodplain Impact Analysis for Project Duck Creek Dredging

1. Policy References.

- a. Executive Order 11988
- b. ER 1165-2-26

2. Purpose

This memo documents the assessment of floodplain impacts associated with ER 1165-2-26 Section 9. In addition, this memo provides an opinion on whether a proposed action conforms with State of local floodplain protection standards, in accordance with ER 1165-2-26 Section 13d(3). More extensive documentation may be required by ER 1165-2-26 and contained within decision documents, implementation documents, NEPA documents, and possibly other references.

2. Project overview

- a. The U.S. Army Corps of Engineers, Rock Island District (District), must consider emergency dredging the Duck Creek Reach, Pool 13, RM 54.3 Project (Project) Upper Mississippi River, and placing the dredged material at one upstream site. During the 2020 navigation season, the District identified thousands of cubic yards of material in Pool 13 blocking the Mississippi River 9-Foot Navigation Channel. The District's concern is the sediment will block commercial shipping at these locations, causing navigational delays for barges travelling upstream and downstream. This document discusses the hydraulic impacts of the dredged material placement back in the channel.
- b. This analysis uses the Corps of Engineers' Hydrologic Engineering Center River Analysis System (HEC-RAS) v6.0 software to compute the water surface elevation differences between current conditions (No Action) and project conditions of the placement material. The 2004 effective floodway HEC-RAS modeling for Mississippi River Navigation Pool 13 (RM 556.7-RM 522.6) served as the starting point for this modeling effort. Along with the effective cross sections, additional cross sections to represent placement site geometry were cut from more recent CWMS terrain.

3. Criteria and Comments regarding floodplain impacts:

- a. The existing and project condition model geometries in Pool 13 include three additional cross-section cut lines between river miles 554.50 to 554.00 to provide necessary detail to capture the addition of placement site 1. The three cross-sections modeled the placement site: one at the upstream end of the site, one at the center of the site, and one on the downstream end of the site. The resulting cross-section layout within the project reach is shown in Figure 1, with

effective model cross-sections shown in green and additional cross-sections shown in pink. The boundaries of the placement site are shown in yellow. Manning's n values were assigned using the same values as the original effective cross sections immediately surrounding the sites.



Figure 1. Added Cross Sections in Pool 13 at Site 1

b. The existing geometry additional cross sections were cut from terrain obtained the from 2018 Mississippi River CWMS HEC-RAS modeling. The project geometry includes the project alterations incorporated into a modified version of the CWMS terrain. Here, the placement site was built to the Ordinary High Water Mark over the area of the site and sloping sides with H:V ratio of 3:1. Elevations associated with each Project Alteration are listed in Table 1. Figures 2 shows the current and modified terrains.

Table 1. Modeled structure elevations for different project alterations.

Project Alteration	Structure Elevation (ft NAVD88)
Pool 13 NAVD88_Current Condition	None – CWMS Terrain
Pool 13 NAVD88_Site 1_Modifications	Site 1 – 588.322 ft with 3:1 Slope

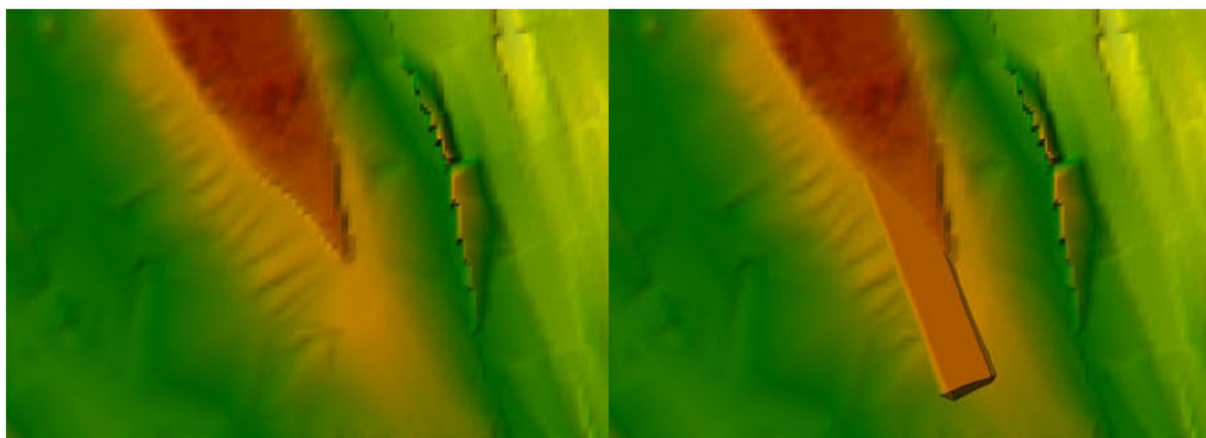


Figure 2. Site 1 current terrain on the left and modified terrain on the right.

c. For the Project alteration, a steady flow simulation was run for multiple flow events. For the 100-year event, site 1 caused no increase in water surface elevation at any cross section. The largest change in WSE was for two upstream cross sections 569.4 for multiple events and was a rise of 0.01 ft. Table 2 includes WSE values and changes for all the additional cross sections and all flow events.

Table 2. Water surface elevation values and differences for all additional cross sections for various events.

	Site 1				
XS (RM)	555.20	554.50	554.20	554.18	554.16
10 year					
Current	597.84	597.80	597.77	597.76	597.75
Project	597.84	597.80	597.77	597.76	795.75
Difference	0.00	0.00	0.00	0.00	0.00
25 year					
Current	599.72	599.68	599.66	599.65	599.64
Project	599.72	599.69	599.66	599.65	599.64
Difference	0.00	0.01	0.00	0.00	0.00
50 year					
Current	600.71	600.68	600.65	600.64	600.64
Project	600.71	600.68	600.65	600.64	600.64
Difference	0.00	0.00	0.00	0.00	0.00
100 year					
Current	601.78	601.75	601.73	601.72	601.72
Project	601.79	601.76	601.73	601.72	601.72
Difference	0.01	0.01	0.00	0.00	0.00
500 year					
Current	603.53	603.50	603.48	603.47	603.46
Project	603.54	603.51	603.48	603.47	603.46
Difference	0.01	0.01	0.00	0.00	0.00

d. The total volume of the filled dredge site is ~4,800 CY for Site one. This dredge area does not provide enough space for the estimated 15,000 CY of material needed to be removed from the navigation channel. However, this issue can be solved by putting material from Pool 13 to Pool 12 where the second half of this project is taking place. With ample space for dredged material and negligible rise in 100-year water surface elevations, there are no objections from a hydraulics perspective to proceed with the maintenance dredging.

Submitted by,
/s/
Lindsay Matthews
Civil/Hydraulic Engineer
CEMVR-EC-HH

DRAFT

SUBJECT: Floodplain Impact Analysis for Project Deadman's Creek Dredging

1. Policy References.

- a. Executive Order 11988
- b. ER 1165-2-26

2. Purpose

This memo documents the assessment of floodplain impacts associated with ER 1165-2-26 Section 9. In addition, this memo provides an opinion on whether a proposed action conforms with State of local floodplain protection standards, in accordance with ER 1165-2-26 Section 13d(3). More extensive documentation may be required by ER 1165-2-26 and contained within decision documents, implementation documents, NEPA documents, and possibly other references.

2. Project overview

- a. The U.S. Army Corps of Engineers, Rock Island District (District), must consider emergency dredging the Deadman's Light Reach, Pool 12 River Mile 568.5 Project (Project) Upper Mississippi River, and placing the dredged material at several locations in upstream sites. During the 2020 navigation season, the District identified thousands of cubic yards of material in Pool 12 blocking the Mississippi River 9-foot Navigation Channel. The District's concern is the sediment will block commercial shipping at these locations, causing navigation delays for barges travelling upstream and downstream. This document discusses the hydraulic impacts of the dredged material placement back in the channel.
- b. This analysis uses the Corps of Engineers' Hydrologic Engineering Center River Analysis System (HEC-RAS) v6.0 software to compute the water surface elevation differences between current conditions (No Action) and project conditions of the placement material. The 2004 effective floodway HEC-RAS modeling for Mississippi River Navigation Pool 12 (RM 582.8-RM 556.8) served as the starting point for this modeling effort. Along with the effective cross sections, additional cross sections to represent placement site geometry were cut from more recent CWMS terrain.

3. Criteria and Comments regarding floodplain impacts:

- a. The existing and project condition model geometries in Pool 12 include six additional cross-section cut lines between river miles 569.40 to 566.00 to provide necessary detail to capture the addition of placement sites 6 and 7. Three cross-sections modeled each placement site: one immediately upstream of the site, one at the upstream end of the site, and one on the downstream end of the site. The resulting cross-section layout within the project reach is shown

in Figure 1, with effective model cross-sections shown in green and additional cross-sections shown in pink. The boundaries of the placement sites are shown in yellow. Manning's n values were assigned using the same values as the original effective cross sections immediately surrounding the sites.

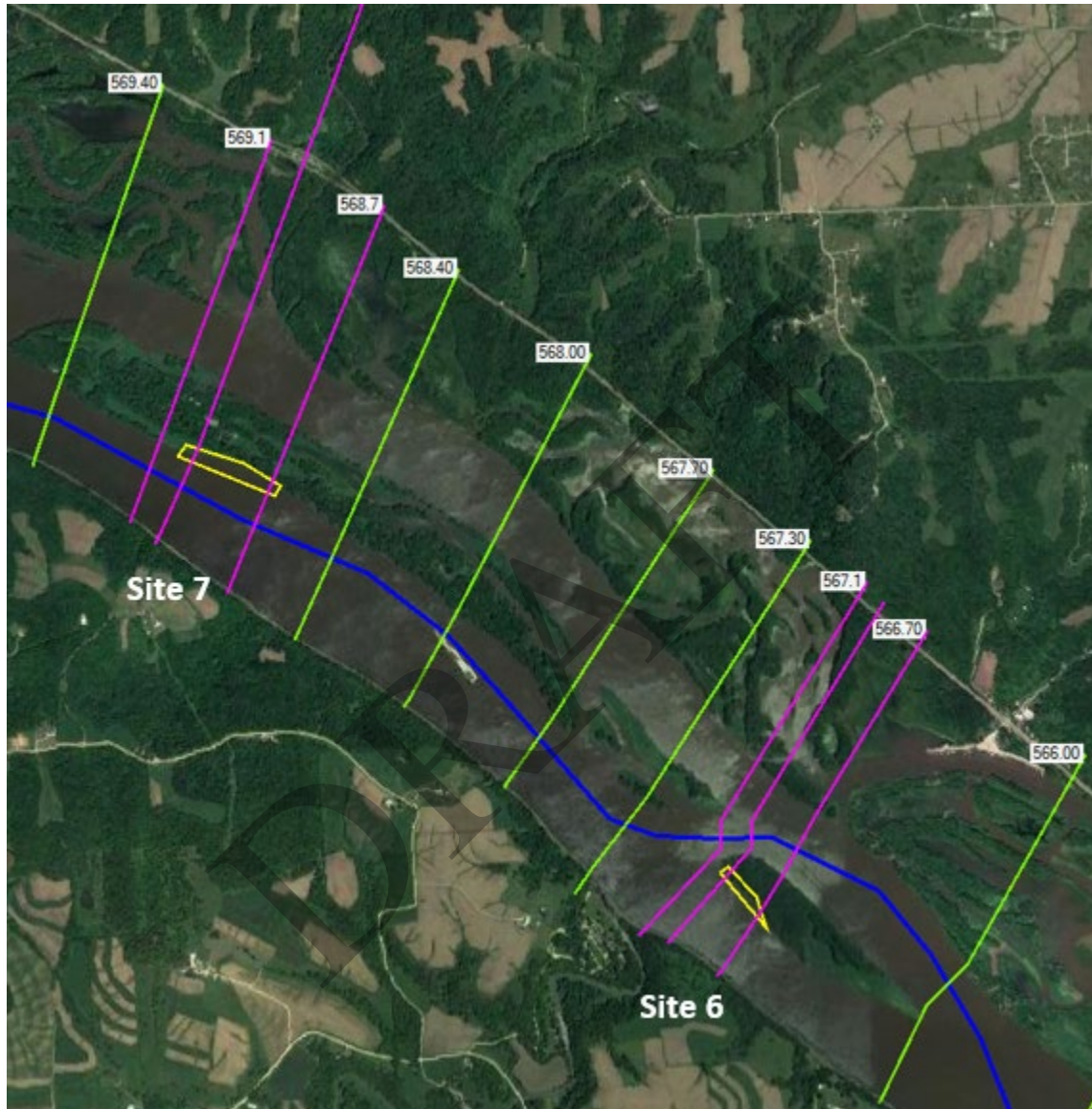


Figure 1. Added Cross Sections in Pool 12 at Sites 6 and 7

b. The existing geometry additional cross sections were cut from the terrain obtained from the 2018 Mississippi River CWMS HEC-RAS modeling. The project geometry includes the project alterations incorporated into a modified version of the CWMS terrain. Here, the placement sites were built to the Ordinary High Water Mark over the area of the site and sloping sides with H:V ratio of 3:1. Elevations associated with each Project Alteration are listed in Table 1. Figures 2 and 3 show the current and modified terrains.

Table 1. Modeled structure elevations for different project alterations.

Project Alteration	Structure Elevation (ft NAVD88)
Pool 12 NAVD88_Existing Condition	None – CWMS Terrain None – CWMS Terrain
Pool 12 NAVD88_Sites 6 and 7_Modifications	Site 6 – 593.306 ft with 3:1 Slope Site 7 – 593.603 ft with 3:1 Slope

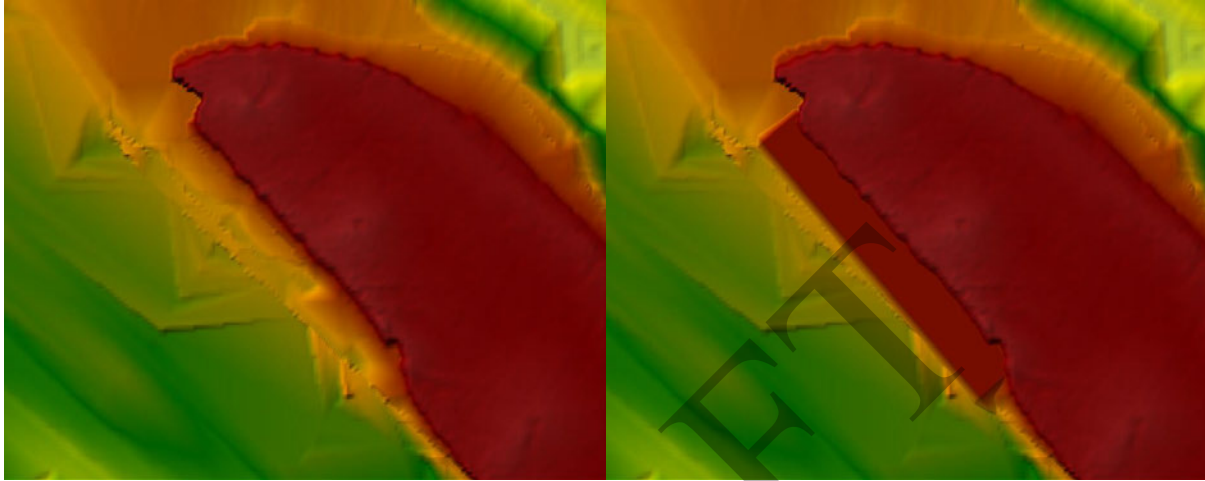


Figure 2. Site 6 current terrain on the left and modified terrain on the right.

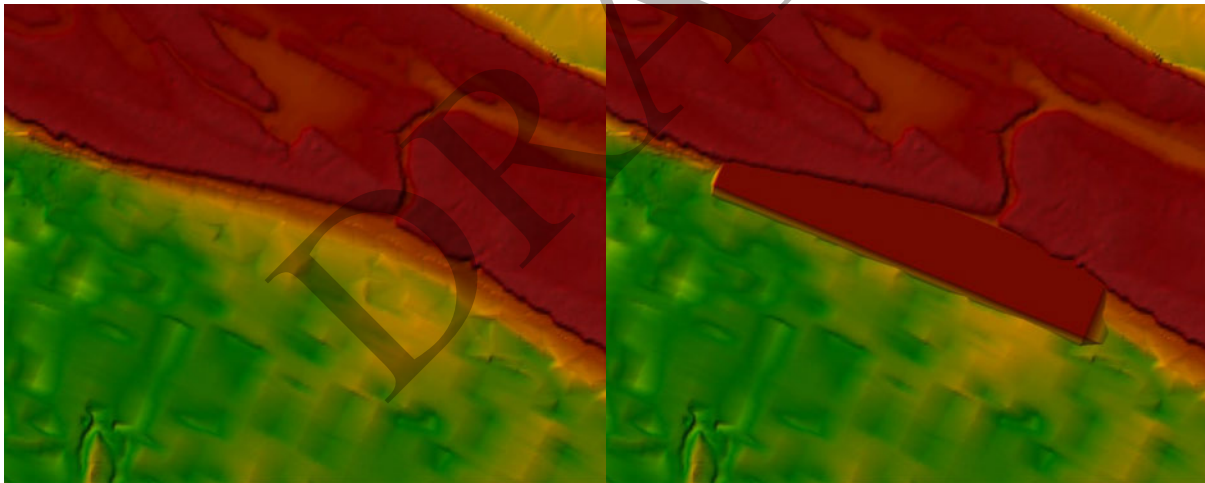


Figure 3. Site 7 current terrain on the left and modified terrain on the right.

c. Steady flow simulations were run for multiple flow events for the existing and project geometries. For the 100-year event, the largest difference in profiles took place at Site 7 with a rise of about 0.02 ft. The largest change in WSE was for cross section 569.4 for the 10 year event was a rise of 0.03 ft. Table 2 includes WSE values and changes for all the additional cross sections and all flow events.

Table 2. Water surface elevation values and differences for all additional cross sections for various events.

			Site 7					Site 6		
XS (RM)	570.0	569.4	569.1	569.0	568.7	567.7	567.3	567.1	567.0	566.7
10 year										
Current	602.75	602.52	602.39	602.38	602.23	601.82	601.70	601.56	601.48	601.45
Project	602.77	602.55	602.41	602.40	602.24	601.83	601.70	601.57	601.49	601.56
Difference	0.02	0.03	0.02	0.02	0.01	0.01	0.00	0.01	0.01	0.01
25 year										
Current	604.57	604.35	604.21	604.21	604.06	603.66	603.53	603.40	603.32	603.29
Project	604.59	604.37	604.23	604.23	604.07	603.66	603.54	603.41	603.33	603.30
Difference	0.02	0.02	0.02	0.02	0.01	0.00	0.01	0.01	0.01	0.01
50 year										
Current	605.74	605.52	605.39	605.38	605.24	604.83	604.71	604.58	604.51	604.47
Project	605.76	605.54	605.41	605.40	605.25	604.84	604.72	604.58	604.51	604.48
Difference	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01
100 year										
Current	606.92	606.70	606.57	606.56	606.42	606.02	605.90	605.76	605.70	605.66
Project	606.93	606.72	606.58	606.58	606.43	606.03	605.90	605.77	605.70	605.67
Difference	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.01	0.00	0.01
500 year										
Current	608.95	608.72	608.57	608.57	608.42	607.99	607.87	607.73	607.65	607.62
Project	608.96	608.73	608.59	608.59	608.43	608.00	607.87	607.73	607.66	607.62
Difference	0.01	0.01	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.00

d. The total volumes of the filled dredge sites are ~22,800 CY, and ~93,000 CY for sites six and seven respectively. These dredge areas provide plenty of space for the estimated 39,000 CY of material needed to be removed from the navigation channel. This also leaves sufficient room for fill that will not fit Site 1 in Pool 13 to be placed here in Pool 12. With ample space for dredged material and negligible rise in 100-year water surface elevations, there are no objections from a hydraulics perspective to proceed with the maintenance dredging.

Submitted by,
/s/
Lindsay Matthews
Civil/Hydraulic Engineer
CEMVR-EC-HH

**CHANNEL MAINTENANCE DREDGING
DUCK CREEK CUT, MISSISSIPPI RIVER, POOL 13,
RIVER MILE 554.3
DEADMAN'S LIGHT CUT, MISSISSIPPI RIVER, POOL 12,
RIVER MILE 568.5**

ENVIRONMENTAL ASSESSMENT

APPENDIX B

CLEAN WATER ACT SECTION 404(b)1 EVALUATION

**CHANNEL MAINTENANCE DREDGING
DUCK CREEK CUT, MISSISSIPPI RIVER, POOL 13,
RIVER MILE 554.3
DEADMAN'S LIGHT CUT, MISSISSIPPI RIVER, POOL 12,
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CLEAN WATER ACT SECTION 404(b)1 EVALUATION

PREFACE

The Administrator of the Environmental Protection Agency in conjunction with the Secretary of Army acting through the Chief of Engineers under Clean Water Act, Section 404(b)(1) (33 U.S.C. 1344) developed the guidelines applicable to the specification of disposal sites for discharges of dredged or fill material into waters of the United States. The guideline's purpose is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through control of discharges or fill material.

When the U.S. Army Corps of Engineers, Rock Island District (District), plans and proposes to perform any specific civil works action involving discharges of dredged or fill material, they first evaluate the action using specific criteria specified in Clean Water Act, 40 CFR Part 230, Subpart B Section 404(b)(1). This appendix presents the District's Clean Water Act Section 404(b)(1) Evaluation (Evaluation) for placing dredged material on an island in the Mississippi River (primarily jurisdictional wetlands) for the purpose of maintaining the river's nine-foot navigation channel.

As part of this analysis, the District considered the nature and degree of effect the proposed discharge would have, individually and cumulatively, in terms of potential changes to the parameters discussed below. The District considered the proposed method, volume, location, and rate of discharge, as well as the individual and combined effects of current patterns, water circulation and fluctuations, wind and wave action, and other physical factors as part of this evaluation.

During the Project's planning phase, the planning team calculated reasonable quantities of dredged material for placement and other quantities such as capping material needed to complete the Project. If the quantities significantly change, the team will update this Evaluation. Any potential impacts described herein, are also approximate, but based on field visits, engineering need, and a conservative approach to the final footprint and amount of dredged material placement.

**CHANNEL MAINTENANCE DREDGING
DUCK CREEK CUT, MISSISSIPPI RIVER, POOL 13,
RIVER MILE 554.3
DEADMAN’S LIGHT CUT, MISSISSIPPI RIVER, POOL 12,
RIVER MILE 568.5**

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I. PROJECT DESCRIPTION

A. Location. This document specifically addresses proposed dredging and dredged material placement for the Deadman's Light Dredge Cut, Pool 12 Mississippi River between river miles (RM) 568.5 -568.8 and the Duck Creek Dredge Cut, Pool 13 Mississippi River between RM 554.1 -555.0. For management purposes, this Project area includes dredging areas and potential placement sites for each dredge cut to support the projected dredging activities.

The Project lies in Dubuque and Jackson Counties, Iowa, and Jo Daviess County, Illinois. The nearest town is Bellevue, Iowa (Figure EA-B-1).

B. System Background: During the 2020 navigation season, the District identified approximately 15,000 cubic yards (CY) of material in Pool 13, between RM 554.1 to 555.0 (Duck Creek) and approximately 39,000 CY of material blocking the navigation channel in the Mississippi River 9-Foot Navigation Channel in Pool 12, between river miles (RM) 568.5 to 568.8 (Deadman's Light). The District's concern is when the river's flood elevations return to normal river levels, the sediment will block commercial shipping at this location. This would cause navigation delays for barges travelling upstream and downstream. The District Commander issued an emergency dredging declaration on August 3, 2020 (Appendix A, *Pertinent Coordination*), to remove the sediment, thereby returning the navigation channel to standard operating conditions.

Due to extended flooding throughout 2019 and into 2020, the District's ability to address all areas during the 2020 navigation season is unknown. Sites are dredged in order of severity and availability of a mechanical or hydraulic dredge.

The District has not dredged the Deadman's Light Cut since 1969 with placement on the right descending bankline between RM 568.5 – 568.9. The District has not dredged the Duck Creek Cut since 1962 with placement on the left descending bankline between RM 554.3-554.7 and the right descending bankline between RM 554.3- 555.4. This area is not a recurrent dredging area, a chronic dredge cut designation outlined in the Great River Environmental Action Team (GREAT) II Report, completed in 1980. Prolonged high water in 2019 through 2020 shifted the river bottom significantly in previously stable river reaches. Due to the lack of dredging requirements, the District has not completed a Dredged Material Management Plan for this area. This Evaluation assesses the potential impacts of dredging this new shoaling and placement of dredged material. For more information related to hydraulic modeling, refer to Appendix A, *Pertinent Coordination*.

C. General Description. The Project's purpose is to restore the navigation channel back to standard operating standards. Restoring the channel would allow commercial navigation to continue with a reliable and safe navigation channel depth and width. The District would restore channel depths in these areas as soon as practicable.

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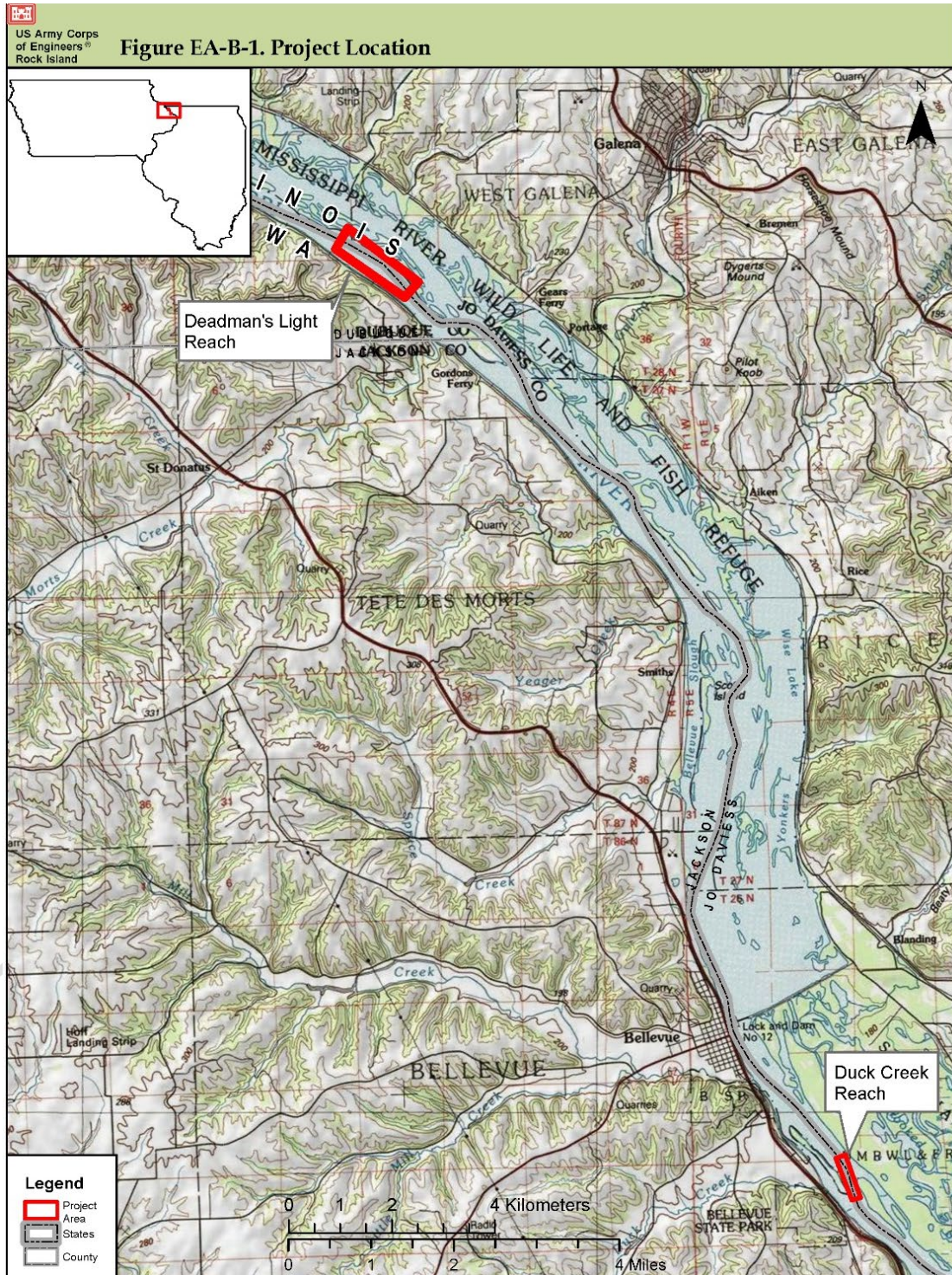


Figure EA-B-1. Project Location

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The District would remove the material using mechanical or hydraulic dredging. Restoring the channel also requires locations to place the dredged material. The District has not recently dredged either the Duck Creek or Deadman's Light dredge cuts; therefore, the District must coordinate the placement sites its Federal, state, local partners, tribes, and other stakeholders, as well as any underlying fee owner(s).

The District discussed upland placement on several nearby Mississippi River islands with the On-Site Inspection Team (OSIT). However, upland placement in these locations may require additional floodplain modelling, permits, and real estate acquisition. The OSIT also identified multiple potential bankline placement locations along either the Iowa or Illinois shoreline for each dredge cut in both the Duck Creek reach (Figure EA-B-2) and Deadman's Light reach (Figure EA-B-3).

D. Authority and Purpose. The Rivers and Harbors Act of 1878 original authorized the Corps of Engineers to work on the Mississippi River. The Rivers and Harbors Act of 1927; as modified by the Rivers and Harbors Acts of 1930, 1932, and 1935; 1950, and a Resolution of the House Committee on Flood Control of September 19, 1944, was the formal authorization for the Corps to perform operation and maintenance activities on the UMR. These Acts and Resolution authorized the construction, operation, and maintenance of the 9-Foot Navigation Channel on the Mississippi River between the mouth of the Missouri River and St. Paul, Minnesota.

In addition, pursuant to Section 1103(I) of the Water Resources Development Act of 1986 (33 U.S.C. § 652(i)), Congress authorized the Corps to dispose of dredged material from the system pursuant to the recommendations of the Great River Environmental Action Team (GREAT) II study, which were implemented, in part, in the GREAT II's Mississippi River Main Report. The proposed Project is authorized by the referenced legislation and its purpose is compatible with the annual Operations and Maintenance appropriation.

(1) The River and Harbors Act of 3 July 1930, authorized the Mississippi River 9-Foot Channel Project and states in part, *"...Mississippi River between mouth of Illinois River and Minneapolis, MN: The existing project is hereby modified so as to provide a channel depth of nine feet at low water with widths suitable for long-haul common-carrier service."*

All discharges into waters of the US require section 404 compliance per 33 CFR Part 335, 336, 337. The District will release a public notice for the 404(b)(1) concurrently with the release for public review of the EA. This Evaluation complies with the Clean Water Act, Section 404 pertaining to guidelines for placement of dredged or fill material into waters of the United States. This Evaluation, in conjunction with the EA, will assist the District in analyzing alternatives for the proposed Project. Further, this Evaluation will provide information and data to the state water quality certifying agency demonstrating compliance with state water quality standards. This will aid in the decision-making process concerning Iowa's Clean Water Act, Section 401 water quality certification, as the preferred alternative occurs in Iowa waters.

E. General Description of Fill Material. The District made projections for channel maintenance dredging using its knowledge and expertise based on several channel condition surveys (Figures EA-B-4 and EA-B-5). These projections are simply an estimate of channel maintenance dredging needs. Because of the dynamic nature of the river, actual dredging needs could be different from the projections.

In 2020, the District collected dredged material samples from the dredge cut locations and classified them in accordance with the Unified Soil Classification System. Samples from Deadman's Light cuts are classified as medium to fine sands. Samples from Duck Creek cut are also classified as medium to fine sands. Detailed results of the grain size analyses can be found in Tables EA-B-1 and EA-B-2. Recent surveys estimate approximately 15,000 CY at the Duck Creek cut and approximately 39,000 CY at the Deadman's Light cuts needing to be dredged.

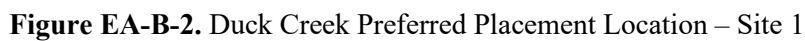
1. Description of the Proposed Placement Sites.

a. Duck Creek, Site 1, RM 554.3 Historic Island Bankline. Site 1 is a Mississippi River island, developed by accretion. Material will be placed on the downstream extent of this island, below the OHWM (Figure EA-B-2). The District previously used this location for bankline placement in the 1950s and 1960s. This site is primarily comprised of muck and silt over sand along the bank lines, and immediately downstream, of the island. The OSIT identified limited mussel resources at this site and little suitable habitat. A total of 30 mussels made up of 5 common species were found near this site.

The OSIT identified significant forestry resources on this island, including black willow growth, which the foresters identified as an opportunity to apply techniques to help restore willow naturally following placement. The downstream portion of the island, where placement would occur, contained limited growth, mostly of young willows. This island has shown accretion on the downstream end in recent years, and the OSIT believes placement of dredged material would have potential to provide additional acreage and habitat benefits for aquatic and floodplain resources. Site 1 was determined to be the preferred placement location for the Duck Creek Dredge cut due to the limited impacts to natural resources at this location.

b. Deadman's Light, Site 6, RM 567 Historic Island Bankline. Site 6 is located along the right descending bankline of a Mississippi River island at RM 567 (Figure EA-B-3). This site was previously used for historic dredge material placement in 1940. The OSIT identified mussel species at this site as common and scarce. Six mussels representing four species were collected. This island contains forested resources, but placement would be limited to the bankline below the OHWM. This site was chosen as the OSIT preferred placement location for the Deadman's Light cuts due to limited anticipated impacts to natural resources.

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Figure EA-B-3. Deadman's Light Preferred Placement Location – Site 6

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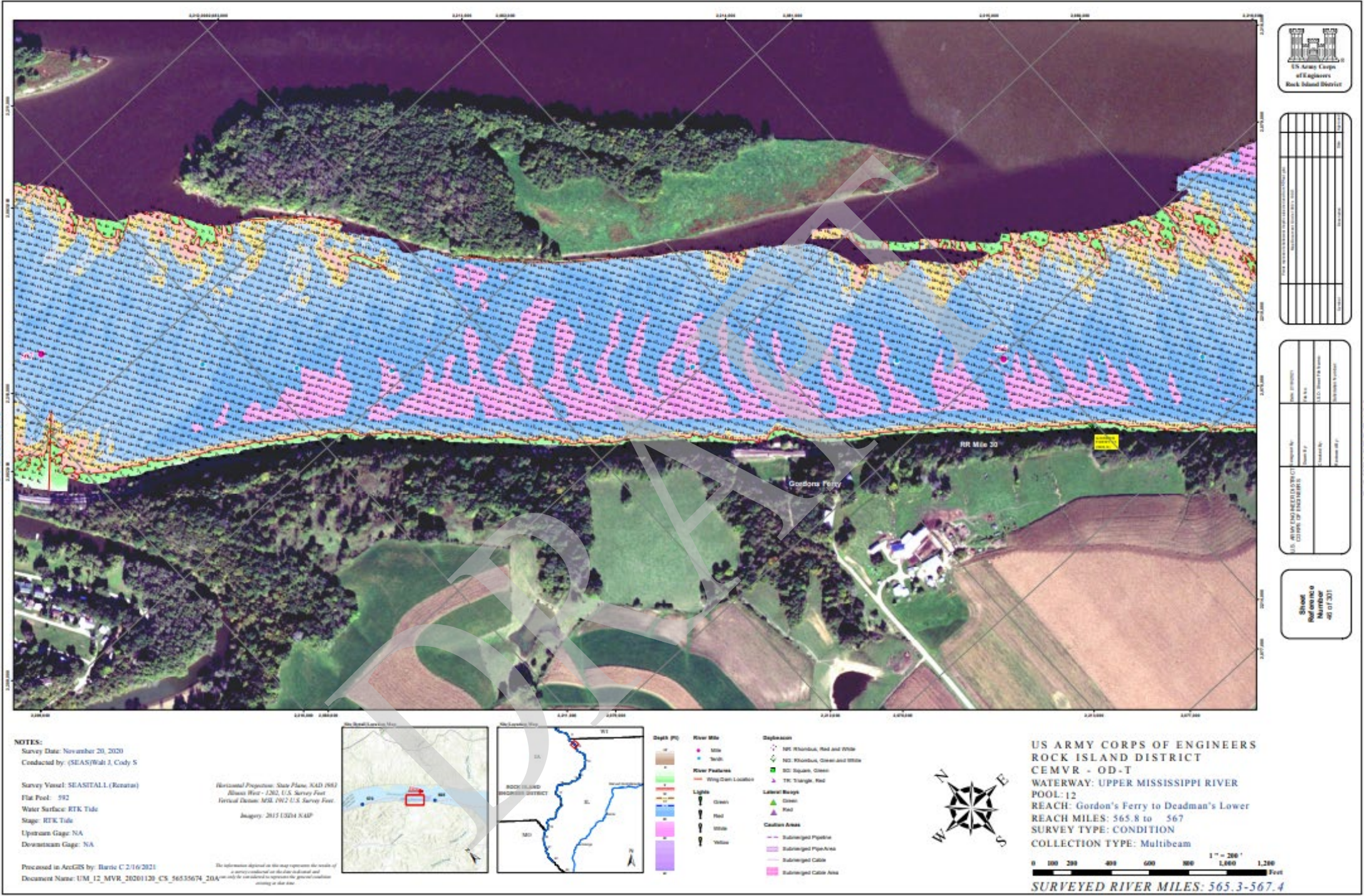


Figure EA-B-5. Deadman's Light Site 6 Channel Survey

2. Description of Placement Method

Mechanical Dredging. The District would excavate dredged material using a mechanical dredge to move material from the navigation channel to the placement site. Mechanical dredgers use floating deck-mounted machinery like cranes with clam buckets or large backhoes to remove material from the river and move and place the material in the designated placement location (Photograph EA-B-1).



Photograph EA-B-1: Mechanical Dredging

Hydraulic Dredging. Hydraulic dredging utilizes a cutterhead in combination with a centrifugal pump to entrain dredged solid materials in high velocity water. Dredged material is then pumped in slurry via floating discharge lines and onto the deposition area through movable shore pipe (Photograph EA-B-2). Bulldozers, backhoes, and pipe handlers position shore pipe to deposit the dredged material where desired (Photograph EA-B-2). Booster pumps are sometimes required when insufficient horsepower exists to move material the desired distance. The booster pump may be placed in the line to maintain flow of material through the pipe.

As the hydraulically dredged material is placed, the sediment in the dredge water would fall out fairly quickly. The “clean” dredge water would be allowed to reenter to avoid water quality impacts, especially suspended sediment. Careful return water management would also reduce adverse erosion at the proposed placement sites.

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Restoring the channel also requires locations to place the dredged material and manage the water used to slurry the material to its placement site(s) used in hydraulic dredging. the hydraulic dredge limitations (distance of hydraulic pipe, approximately two miles from the dredge cut). Any placement location beyond the dredge's 2-mile supply of pipes and booster pumps, is considered costly and time prohibitive.



Photograph EA-B-2: Hydraulic Dredge Placement
(Photograph from Resource Management Group, Inc.)

II. FACTUAL DETERMINATIONS

This Evaluation outlines the potential short-term or long-term effects of dredge material placement (i.e., sand placement in wetlands within the Mississippi River Valley) on the physical, chemical, and biological components of the aquatic environment. This section also addresses the actions the District proposes to avoid or minimize any impacts of material placement at the Project site.

A. Physical Substrate Determinations

1. Particle Size, Shape, and Degree of Compaction. The particle size, shape, and degree of compaction at the placement sites would be minimal based on grain size and sediment analysis of the dredge cuts (Section D, *General Description of Fill Material*).

2. Dredged Sites. At the dredging locations, the riverbed is composed primarily of shifting sand creating sand waves across the river floor. In July 2020, the District collected grain size and sediment analysis data from the Duck Creek dredge cut (Table EA-B-1). The District collected

grain size and sediment analysis data from the main channel in the Deadman's Light dredge cuts in May 2020 (Table EA-B-2).

3. Substrate Elevation and Bottom Contours Including Outside the Disposal Areas

- **Substrate Elevation and Slope.** The Project would alter the river bottom in the navigation channel, but the river always changes based on velocity, volume of water, and bedload. Substrate may accrete or degrade depending on the river's discharge stage and other fluvial processes. Material would be placed at or below the OHWM along the bankline for both locations (Site 1 and Site 6). While some accretion may occur overtime, material is primarily expected to remain in place in both locations, particularly in Site 1 due to existing presence of willow trees to help stabilize substrate.
- **Dredged/Fill Material Movement.** Dredged material placed at Site 1 and Site 6 is not anticipated to move greatly, although some accretion may occur overtime due to erosion or other natural processes. Dredged material placed at Site 1 may become stabilized overtime as willow spreads down the island and colonizes this new area. No second handling of the dredged material is anticipated after placement is completed.
- **Duration and Physical Extent of Substrate Changes.** The District expects neither Deadman's Light nor Duck Creek will require periodic dredging. The 2019 and 2020 high water events filled the navigation channel in places where dredging has not recently been an issue. The last historic placement at Site 1 occurred in the 1950s-1960s and at Site 6 in 1940.
- **Loss of Environmental Values.** The District expects a short-term loss of any benthic organisms due to dredging activities. However, since the benthic community is sparse in the navigation channel, this impact is not significant. The District expects the dredge cut would quickly recolonize.
- **Nature and Degree of Effect, Individually and Cumulatively.** The District determined there are no additional beneficial or negative effects contributing to this Project's physical substrate impacts.

4. Actions to Minimize Impacts. The District selected Site 1 and Site 6 based on its low potential for environmental impacts. Site 1 is the most environmentally acceptable placement site for the Duck Creek cut, and Site 6 is the most environmentally acceptable placement site for the Deadman's Light cuts. For additional environmental impact analysis, please see the accompanying environmental assessment.

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Table EA-B-1: Mississippi River Dredging Duck Creek Cut Sediment Samples

MISSISSIPPI RIVER DREDGING Duck Creek							
GRAIN SIZE ANALYSIS OF SEDIMENT SAMPLES							
SAMPLES COLLECTED: 17-Jul-20							
Percent Finer by Weight							
SAMPLE NUMBERS:	MS-554.35R						
	1 1/2"	100.0%					
S	3/4"	100.0%					
I	3/8"	100.0%					
E	#4	100.0%					
V	#10	99.6%					
E	#16	97.3%					
	#30	81.7%					
S	#40	53.7%					
I	#50	20.0%					
Z	#70	2.8%					
E	#100	0.3%					
S	#200	0.0%					
CLASSIFICATION:	SP, MEDIUM TO FINE SAND						

Notes:

1. Visual classification of soil is in accordance with "The Unified Soils Classification System (USCS)".
2. Laboratory testing was performed in accordance with EM 1110-2-1906, dated 30 Nov 70, revised 1 May 80 and 20 Aug 86. All samples were oven dried at 110 degrees centigrade. Sample designated (dup) is a duplicate sample.

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Table EA-B-2: Mississippi River Dredging Deadman's Light Cuts Sediment Samples

**MISSISSIPPI RIVER DREDGING
DEADMAN'S LOWER
GRAIN SIZE ANALYSIS OF SEDIMENT SAMPLES**

SAMPLES COLLECTED: 28-May-20

Percent Finer by Weight

SAMPLE NUMBERS:		MS 567.8R	MS 567.9R
	1 1/2"		
S	3/4"		100.0%
I	3/8"		99.9%
E	#4	100.0%	99.9%
V	#10	99.7%	99.8%
E	#16	98.4%	99.3%
	#30	70.0%	76.3%
S	#40	21.6%	26.1%
I	#50	2.1%	3.9%
Z	#70	0.1%	0.1%
E	#100	0.0%	0.0%
S	#200	0.0%	0.0%
CLASSIFICATION:		SP, MEDIUM TO FINE SAND	SP, MEDIUM TO FINE SAND

Notes:

- Visual classification of soil is in accordance with "The Unified Soils Classification System (USCS)".
- Laboratory testing was performed in accordance with EM 1110-2-1906, dated 30 Nov 70, revised 1 May 80 and 20 Aug 86. All samples were oven dried at 110 degrees centigrade. Sample designated (dup) is a duplicate sample.

**MISSISSIPPI RIVER DREDGING
DEADMAN'S UPPER
GRAIN SIZE ANALYSIS OF SEDIMENT SAMPLES**

SAMPLES COLLECTED: 28-May-20

Percent Finer by Weight

SAMPLE NUMBERS:		MS 568.5L
	1 1/2"	
S	3/4"	
I	3/8"	100.0%
E	#4	99.7%
V	#10	99.6%
E	#16	99.4%
	#30	95.3%
S	#40	71.7%
I	#50	11.7%
Z	#70	0.7%
E	#100	0.0%
S	#200	0.0%
CLASSIFICATION:		SP, MEDIUM TO FINE SAND

Notes:

- Visual classification of soil is in accordance with "The Unified Soils Classification System (USCS)".
- Laboratory testing was performed in accordance with EM 1110-2-1906, dated 30 Nov 70, revised 1 May 80 and 20 Aug 86. All samples were oven dried at 110 degrees centigrade. Sample designated (dup) is a duplicate sample.

B. Water Circulation, Fluctuation, and Salinity Determinations

Typically, analysis of sand sediments, such as those found in the immediate Project area, reveals negligible evidence of pollutants due to the limited surface area of sand-sized particles and the lack of strong chemical bonding of contaminants to sand grains. Any contaminants in sandy materials would be those typically contained or transported by normal fluvial processes and therefore are common constituents of the Mississippi River system. Any dredging activity that may disturb the existing substrate therefore would not alter water chemistry in the water column.

- **Significant Changes in the Hydrologic Regime.** The proposed dredging and dredged material placement would not significantly affect currents and flows.
- **Alterations of Bottom Contours.** If the District carries out the dredging actions, the river bottom within the dredge cut footprints would change from a dune effect of shifting sand to semi trapezoidal deeper area.
- **Normal Water Level Fluctuation.** The proposed Project would not have any impact to normal seasonal river stages.
- **Water Chemistry.** The proposed Project would not have any impact to water chemistry.
- **Salinity.** The proposed Project would not have any impact to salinity.
- **Clarity.** The proposed Project would not have any impact to clarity or turbidity.
- **Color.** The proposed Project would not have any impact to color.
- **Odor.** The proposed Project would not have any impact to odor.
- **Taste.** The proposed Project would not have any impact to taste.
- **Dissolved Gas Levels.** The proposed Project would not have any impact to dissolved gas levels.
- **Temperature.** The proposed Project would not have any impact to water temperature.
- **Nutrients.** The proposed Project would not have any impact to current river level nutrients.
- **Eutrophication.** The proposed Project would not have any impact to eutrophication.
- **Loss of Environmental Values.** The District expects a short-term loss of any benthic organisms due to dredging activities. However, since the benthic community is sparse in the navigation channel, this impact is not significant.

- **Nature and Degree of Effect, Individually, and Cumulatively.** The District determined there are no additional beneficial or negative effects contributing to this Project's water circulation, fluctuation, and salinity impacts.
- **Actions Taken to Minimize Impacts.** The District would keep dredging quantities to the minimum to maintain safe navigation.

C. Suspended Particulate/Turbidity Determinations

- **Grain Size of the Material Proposed for Discharge.** Tables EA-B-1 and EA-B-2 show the grain size for the sandy dredged material.
- **Shape, Size, and Duration of Discharge and Resulting Plume in the Water Column.** Dredging duration may vary from one dredging event to another. The District estimates each location would take several days to several weeks to clear the navigation channel.

The dredging process would not create a noticeable plume of suspended particles.

The United States Environmental Protection Agency (USEPA) and Corps' *Evaluating Environmental Effects of Dredged Material Management Alternatives-A Technical Framework*, (May 2004), states, any discharge from mechanical dredging has been determined to be minimal. Utilizing mechanical dredging reduces impacts to the local water column and its associated aquatic communities. Placement on an existing island reduces impacts to the aquatic community. In designing the bathtub and approach channel, care was taken to avoid and minimize impacts to mussels in the area. Any plume from mechanical dredging would be small in nature, settle out quickly from the water column, and be relatively inert material.

- **Violations of Applicable Water Quality Standards.** The District does not anticipate this Project violating any applicable Iowa or Illinois water quality standards. The District would obtain the permits, certification, and/or waiver of certification under the Clean Water Act, Section 401 before dredging begins.
- **Loss of Environmental Values.** The District does not expect the dredging activities to result in a loss of environmental value to the water column.
- **Nature and Degree of Effect, Individually, and Cumulatively.** The District determined there are no additional beneficial or negative effects contributing to this Project's amount of suspended particulate and turbidity impacts in the Mississippi River.
- **Actions Taken to Minimize Impacts.** The District selected Site 1 and Site 6 (Alternatives 2 and 3) based on the low potential for environmental impacts. No wetlands or Waters of the U.S. would be impacted (EA, Section C, *Aquatic Resources/Wetlands*). Site 1 and Site 6 are the most environmentally acceptable placement sites for the

associated dredge cuts and therefore comprise the District's and OSIT's Preferred Alternative.

The District would accomplish dredging during normal water conditions. This would keep the amount of suspended material to a minimum. Dredging quantities would be kept to the minimum amount necessary to maintain the navigation channel.

D. Contaminant Determinations

Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. Dredged material may be excluded from further testing if there is a reasonable assurance it is not a carrier of contaminants. Section II. A, of this appendix, *Physical Substrate Determinations*, shows existing information for this Project provides a sufficient basis for making a factual determination concerning impacts to waters of the United States. The dredged material meets the exclusion from testing/evaluation criteria as explained in the Clean Water Act, Section 404(b)(1) Guidelines and the Inland Testing Manual. It is therefore reasonable to assume no further testing is required.

E. Aquatic Ecosystem and Organism Determinations

The following discussion centers on how potential changes to the physical environment may affect the aquatic ecosystem and organisms living there and the rate of recolonization.

- **Substrate Characteristics and Elevation.** The proposed Project would alter the riverbed in the main channel but shifting sand dunes deeper in the water column should resume quickly.
- **Water or Substrate Chemistry.** The District does not anticipate a change in water or substrate chemistry and their interaction on the aquatic ecosystem.
- **Nutrients.** The District does not anticipate a change in nutrients either in quantity, quality, or distribution across the various river habitats and their bearing on the aquatic ecosystem.
- **Currents.** The District does not anticipate a change in river currents.
- **Circulation.** The District does not expect any changes in the river's circulation patterns at the dredge cuts.
- **Fluctuation.** The District does not anticipate a change in river fluctuation and its bearing on the aquatic ecosystem.
- **Salinity.** The District does not anticipate a change in salinity and its influence on the aquatic ecosystem.

- **Loss of Environmental Values.** The District does not expect a loss of environmental value to the water chemistry or flow patterns due to dredging activities and the final Project.
- **Nature and Degree of Effect, Individually, and Cumulatively.** The District determined there are no additional beneficial or negative effects contributing to the Project area aquatic ecosystem and organisms.
- **Actions Taken to Minimize Impacts.** The District selected Sites 1 and 6 based on the low potential for environmental impacts. Sites 1 and 6 are the most environmentally acceptable placement sites for each respective dredge cut. For additional environmental impact analysis, please see the accompanying environmental assessment.

F. Proposed Placement Site Determinations

This section does not address any impact analysis; it only addresses the boundaries and parameters of the mixing zone.

- **Mixing Zone Determinations.** A mixing zone is an area in which the water quality is allowed to be degraded. The idea is to allow for a zone of dilution before compliance with relevant water quality standards is met. If hydraulic dredging were used, the large volumetric capacity of the main channel border would provide a more than adequate mixing zone for any contaminated sediments or return water that may be present. Most contaminants have affinities for finer sediments than are found at either the dredge cut or the placement locations.
- **Current Velocity, Direction, and Variability at the Disposal Sites.** The Project should not change the current velocity, direction, and variability at the disposal sites since there would be no placement in the main channel border or backwater sloughs.
- **Degree of Turbulence.** The Project should not increase turbulence at the bankline disposal sites.
- **Stratification Attributable to Causes Such as Obstructions, Salinity or Density Profiles at the Disposal Sites.** The typical mixing zone of the Mississippi River main channel border includes the entire water column, from surface to river bottom. The proposed Project would not alter the stratification or the mixing zone in the Project areas.
- **Discharge Vessel Speed and Direction.** For mechanical dredging, the work barges would be stationary. The work crew would use a fixed crane to dredge and place material. Skid steers and bulldozers would shape the placement site to final grade. The hydraulic dredge is stationary as well.
- **Rate of Discharge.** The rate of discharge for mechanical dredging is de minimus. If hydraulic dredging is used at any of the proposed disposal sites, the rate of discharge for

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the Project based on the Dredge Goetz discharge rate would be approximately 7 days (i.e., up to 54,000 CY Material / 1000 CY Material per hour / 8 hour per day = 6.75 days of dredging).

- **Ambient Concentration of Constituents of Interest.** The dredged material would be clean, uniform material. Its density size and placement sites would not allow it to migrate far from the disposal site.
- **Number of Discharge Actions Per Unit of Time.** The District anticipates only one channel maintenance dredging event each at the Deadman's Light and Duck Creek dredge cuts.
- **Other Factors of the Disposal Sites That Affect the Rates and Patterns of Mixing.** There are no other factors beyond what is described above.
- **Determination of Compliance with Applicable Water Quality Standards.** Due to the nature of the fill material, all discharges are anticipated to be in compliance with Iowa water quality standards for both dredge cuts and placement sites. The District would obtain Section 401 Water Quality certification, in compliance with the Clean Water Act, and all permits required by Federal law prior to Project implementation.

G. Determination of Cumulative Effects on the Aquatic Ecosystem

The proposed action is for the maintenance of the existing navigation channel. The impacts of the Nine-foot Channel navigation system are already in place. Past, present, and future operation and maintenance of the system is the primary cumulative impact. These impacts are anticipated to be short-term in nature. The total number of operation and maintenance actions along the Mississippi River and its tributaries is unknown currently. Cumulative impacts resulting from dredging and placement of material on the bankline of Site #1 in the Duck Creek Reach and Site #6 in the Deadman's Light Reach are not anticipated to be significant. The dredging and placement of material should not decrease the post-flood productivity of the UMR aquatic and floodplain ecosystem. Selection and use of the placement areas also will not contribute to cumulative impacts. Existing (historic) placement sites have been used in the past, in part to attempt to avoid sensitive areas and resources. All new feasible placement sites have been coordinated with the resource agencies in an attempt to avoid contributing to cumulative impacts. The District's analysis concluded there would be no significant negative cumulative impacts associated with this Project.

H. Determination of Secondary Effects on the Aquatic Ecosystem (40 CFR § 230 Subpart D – Potential Impacts on Biological Characteristics of the Aquatic Ecosystem and Subpart E – Potential Impacts on Special Aquatic Sites)

While the District anticipates several insignificant secondary effects on the aquatic ecosystem, the proposed Project may contribute to a channelizing effect to this reach of the river. The

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District recognizes navigation channel maintenance projects may cause a departure from natural river ecosystems. The District's goal is to minimize impacts to the environment when addressing channel maintenance duties. If environmental conditions change and unidentified impacts occur, the District will reevaluate this evaluation and coordinate the findings with, Federal, State, or local agencies, as well as input from the general public.

This section documents additional information and data the District consider in Section II, *Factual Determinations* and in Section III, *Findings of Compliance*.

- **Threatened and Endangered Species.** There are several Federal and State listed species listed for the Jackson and Dubuque Counties, Iowa and Jo Daviess County, Illinois. The District considered the following potential Project impacts and the possible loss of threatened and endangered species values:
 - Covering or otherwise directly killing species
 - The impairment or destruction of habitat to which these species are limited.
 - Disturbing or altering an animal's breeding, nesting, foraging, or other normal activities.

Given these possible impacts, as well as the other potential Project impacts, the District does not anticipate any significant impacts or effects to threatened and endangered species. For more information on those measures, see the accompanying environmental assessment.

- **Fish.** Fish species normally present in the dredging area might temporarily avoid the Project area until the dredging/placement event is complete.
- **Crustaceans.** The District and OSIT did not assess Site 1 or Site 6 for presence of crustaceans. However, freshwater, or fairy shrimp and crayfish would be the primary types of crustaceans affected by this Project. Any impacts to these species are anticipated to be short-term.
- **Mollusks.** The District and OSIT conducted a pollywog mussel survey near the shoreline in the vicinity of Sites 1 and 6. The survey was conducted to validate the environmental unacceptability of these two sites. The survey at Site 1 yielded five native freshwater mussel species, but no federal or state listed species. A total of 30 mussels were collected. The species richness (n=5) and the quantity of mussels indicate limited mussel resources at this location (See the accompanying EA for additional details). The survey at Site 6 yielded six total mussels from four species. One additional species was collected as dead shell only. The low species richness and quantity of mussels indicate limited mussel resources at this location.
- **Other Aquatic Organisms**
 - **Effects on Biota, Including Primary Producers (i.e., Zooplankton and Phytoplankton).** Any impacts to suspension/filter feeders, and sight feeders, are anticipated to be short-term.

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- **Effects on Plankton, Nekton, and Benthos.** Because the likelihood of contamination by pollutants is generally low for projects involving dredging, the District anticipates the impacts to the aquatic ecosystem as negligible. Effects on plankton would be minimal.

The dredge cut would remove naturally occurring sand in the river's main channel, but these areas are highly fluid from shifting sand and dredging. Because of the shifting sand, benthic organisms are very sparse in the main channel. The benthos would not be affected by terrestrial dredged material placement.

The benthic community in the main channel border is adaptive to sediment fluctuations and any loss of material from the bankline placement sites will not significantly increase the normal bedload downstream.

Effects on nekton would be limited to displacement and temporary disruption of foraging patterns. Because the proposed activities are generally held to low-flow (hence, non-spawning seasons), impacts to spawning species should be negligible.

- **Effects on Aquatic Food Web.** The District does not anticipate any negative affect to the food web.
- **Other Wildlife.** Other wildlife normally present would temporarily avoid the Project areas during the dredging activities. The proposed action would not negatively affect the food web or critical habitat requirements of other wildlife. The Project may provide additional foraging, resting, and nesting sites for migratory birds and turtles.
- **Special Aquatic Sites**
 - **Sanctuaries and Refuges.** The Project would not affect any sanctuary or refuges.
 - **Wetlands.** The Project would not impact any wetlands.
 - **Mudflats.** The proposed actions would not affect any mudflats.
 - **Vegetated Shallows.** The proposed actions would affect existing vegetative shallows.
 - **Coral Reefs.** The proposed actions would not affect any coral reefs.
 - **Riffle and Pool Complexes.** The proposed actions would not affect any riffle and pool complexes.
- **Human Use Characteristics**
 - **Municipal and Private Water Supplies.** The proposed actions would not affect any municipal and private water supplies.

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- **Recreational and Commercial Fisheries.** The proposed action would not affect any recreational and commercial fisheries.
- **Water-related Recreation.** The proposed actions would not affect any water-related recreation.
- **Aesthetics.** The dredging operations are temporary in nature and would not impair aesthetics from the shoreline or by boat for a very long time. Sites 1 and 6 would temporarily impact aesthetic resources. The District anticipates Site 1 to quickly vegetate and both Sites 1 and 6 to blend into the surrounding viewshed. Finally, dredged material placement site are part of the fabric in the UMR and are not unexpected from boaters of other river users.
- **Parks, National Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves.** The proposed actions would not affect any parks, national historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

REFERENCE

USEPA/USACE. 2004. *Evaluating Environmental Effects of Dredged Material Management Alternatives - A Technical Framework*, EPA842-B-92-008, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, Washington, D.C.

**CHANNEL MAINTENANCE DREDGING
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RIVER MILE 554.3
DEADMAN’S LIGHT CUT, MISSISSIPPI RIVER, POOL 12,
RIVER MILE 568.5**

ENVIRONMENTAL ASSESSMENT

APPENDIX B

CLEAN WATER ACT SECTION 404(b)1 EVALUATION

**FINDINGS OF COMPLIANCE OR NONCOMPLIANCE WITH
THE RESTRICTIONS ON DISCHARGE**

1. The District made no significant adaptations of the 404(b)(1) Guidelines relative to this evaluation.

2. Evaluation of Practicable Alternatives. (See the EA, Section 2.0.)

Alternative 1. No Action. Under the No Action Alternative, the District would not dredge the navigation channel in the Deadman’s Light Reach or Duck Creek Reach. Due to the shoaling taking place in the navigation channel, commercial navigation through these two locations would halt. While the No Action Alternative is not viable due to the authorized requirement to maintain the navigation channel, the District used this alternative as a baseline condition to compare all the other alternatives.

Alternative 2. Site 1. Under this alternative, the District would place up to 15,000 CY of dredged material using mechanical or hydraulic dredging up to the OHWM along the right descending Iowa bankline at River Mile 554.3. Due to its previous use and limited mussel resources, this is the preferred placement site for the Duck Creek Reach.

Alternative 3. Site 6. Under this alternative, the District would place up to 39,000 CY of dredged material using mechanical or hydraulic dredging up to the OHWM along the right descending Iowa bankline at RM 567. Due to its previous use and limited mussel resources, this is the preferred placement site for Deadman’s Light.

Alternative 4. Site 7. Under this alternative, the District would place up to 39,000 CY of dredged material using mechanical or hydraulic dredging up to the OHWM along the channel-border side of Island 235 in Illinois at RM 569. Due to mussel resources and access dredging requirements, this site is not the preferred alternative, but could be used as a secondary placement option in the future. If this site were used, additional coordination is required.

The District would remove the material in the navigation channel using mechanical or hydraulic dredging. Restoring the channel also requires locations to place the dredged material. Dredged material would be placed at bankline locations below the OHWM for navigation servitude.

The District conducted mussel pollywog surveys near the shoreline at all proposed placement sites as water levels permitted. Surveys at Sites 1 and 6 confirmed limited mussel resources at both locations and the acceptability of placing at these sites. These are the OSIT-approved placement sites and the District's Preferred Alternative. Site 7 was considered as a secondary placement site, but further coordination would be required for mussel resources at this location. (See the accompanying EA for additional details).

3. This Project complies with 40 CFR § 230.11 Guidelines and project conditions to minimize pollution or adverse effects to the affected aquatic ecosystems. The District considered all the resources identified in 40 CFR § 230 Subparts A, B, C, D, E, F, G, and H in this Evaluation.

4. The District will obtain Certification under Section 401 of the Clean Water Act from the State of Iowa prior to signing the FONSI to ensure all conditions are implemented to minimize adverse impacts to water quality.

5. This Project would not introduce significant quantities of toxic substances into nearby waters or result in appreciable increases in existing levels of toxic materials.

6. No significant impact to state- or federally-listed threatened or endangered species is anticipated from this Project at either location.

7. The Project would not affect any municipal or private water or degrade any waters of the United States.

8. The Project would not affect marine sanctuaries.

9. The materials used for any dredging activities would be chemically and physically stable and noncontaminating.

10. The District, the states, Federal agencies, and the public have not identified other timely, practical alternatives. The proposed action is in compliance with the Clean Water Act, Section 404(b)(1), as amended. The proposed actions would not significantly impact water quality and would improve the integrity of an authorized navigation system.

Date

Jesse T. Curry
Colonel, US Army
Commander & District Engineer

**CHANNEL MAINTENANCE DREDGING
DUCK CREEK CUT, MISSISSIPPI RIVER, POOL 13,
RIVER MILE 554.3
DEADMAN'S LIGHT CUT, MISSISSIPPI RIVER, POOL 12,
RIVER MILE 568.5**

ENVIRONMENTAL ASSESSMENT

**APPENDIX C
DISTRIBUTION LIST**

*Channel Maintenance Dredging
Duck Creek Cut, Mississippi River, Pool 13, River Mile 554.3
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Distribution List*

Note: The District sent a Press Release to media outlets throughout the Project Area.

LEGISLATIVE

Federal

Charles Grassley	US Senator for Iowa
Joni Ernst	US Senator for Iowa
Ashley Hinson	US Representative, Iowa 1 st District
Richard Durbin	US Senator for Illinois
Tammy Duckworth	US Senator for Illinois
Cheri Bustos	US Representative, Illinois 17 th District

Iowa

Kim Reynolds	Governor of the State of Iowa
Carrie Koelker	Senator Iowa Senate District 29
Pam Jochum	Senator Iowa Senate District 50
Shannon Lundgren	Representative District 57
Steven P. Bradley	Representative District 58

Illinois

J.B. Pritzker	Governor of the State of Illinois
Brian Stewart	Senator District 45
Andrew S. Chesney	Representative District 89

SHPO/TRIBES

Kelli Mosteller	THPO, Citizen Potawatomi Nation
Michael LaRonge	THPO, Forest County Potawatomi Community
Bill Quackenbush	THPO, Ho-Chunk Nation
Lance Foster	THPO, Iowa Tribe of Kansas and Nebraska
Eagle McClellan	Cultural Preservation Director, Iowa Tribe of Oklahoma
Crystal Douglas	THPO, Kaw Nation
Lester Randall	Chairperson, Kickapoo Tribe in Kansas
Kent Collier	NAGPRA Coordinator, Kickapoo Tribe of Oklahoma
David J. Grignon	THPO, Menominee Indian Tribe of Wisconsin
Johnathan Buffalo	Director, Historic Preservation Department, Sac and Fox Tribe of the Mississippi in Iowa
Diane Hunter	THPO, Miami Tribe of Oklahoma
Thomas Parker	THPO, Omaha Tribe of Nebraska
Colleen Bell	Archeologist, Osage Nation
Jess Hendrix	Archeologist, Osage Nation
Courtney Neff	Historic Preservation, Osage Nation
Elsie Whitehorn	THPO, Otoe-Missouri Tribe
Logan Pappenfort	THPO, Peoria Tribe of Indians of Oklahoma
Liana Hesler	THPO, Ponca Tribe of Oklahoma
Nick Mauro	THPO, Ponca Tribe of Nebraska
Hattie Mitchell	NAGPRA Representative, Prairie Band Potawatomi Nation

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Noah White	THPO, Prairie Island Indian Community
Tiauna Carnes	Chairperson, Sac and Fox Nation of Missouri in Kansas and Nebraska
Chris Boyd	NAGPRA Coordinator, Sac and Fox Nation of Oklahoma
Sunshine Thomas-Bear	THPO, Winnebago Tribe of Nebraska
Samantha Odegard	THPO, Upper Sioux Community in Minnesota
Jeffery Kruchten	Archeologist, Illinois State Historic Preservation Office
Heather Gibb	Interim Deputy State Historic Preservation Officer, Iowa SHPO

FEDERAL AGENCIES

Kathy Kowal	NEPA Implementation Section, US EPA Region 5
Joe Summerlin	US EPA, Region 7
Brandon Jones	District Manager, USFWS UMR National Wildlife and Fish Refuge
Ed Britton	USFWS UMR National Wildlife and Fish Refuge
Nathan Williams	USFWS UMR National Wildlife and Fish Refuge
Kraig McPeck	Project Director, Illinois Iowa Field Office, USFWS
Sara Schmuecker	Illinois Iowa Field Office, USFWS; OSIT Co-Chair
Tyler Porter	Illinois Iowa Field Office, USFWS
Ben Vandermyde	USACE, Mississippi Project Office, Forester
Supervisor	Marine Safety Detachment Quad Cities, U.S. Coast Guard

STATE AGENCIES

Iowa

Ms. Kayla Lyon	Director, Iowa Department of Natural Resources
Kirk Hanson	Iowa Department of Natural Resources
Scott Gritters	Iowa Department of Natural Resources
Chris Schwake	401 Certification Coordinator, Iowa Department of Natural Resources

Illinois

Colleen Callahan	Director, Illinois Department of Natural Resources
Nerissa McClelland	Illinois Department of Natural Resources
Matt O'Hara	Illinois Department of Natural Resources
Bradley Hayes	Illinois Department of Natural Resources
Thaddeus Faught	Illinois Department of Natural Resources
Rebekah Anderson	Illinois Department of Natural Resources
William Milner	Illinois Department of Natural Resources
Darren Gove	Facility Evaluation Unit, Illinois EPA

COUNTIES AND CITIES

Dubuque County, Iowa

Ann McDonough	Dubuque County Board of Supervisors
Brian Preston	Dubuque County Conservation Board, Executive Director

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Jackson County, Iowa

Nathan Jones
Larry McDevitt

Executive Director, Jackson County Conservation Board
Jackson County Conservation Board

Jo Daviess County, IL

Steve Barg

Executive Director, Jo Daviess County Conservation Foundation Board

Bellevue, Iowa

Roger Michels

Mayor, City of Bellevue

DRAFT