ILLINOIS WATERWAY
DREDGED MATERIAL MANAGEMENT PLAN
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

SITE PLAN FOR
RIVER MILES 240.3-242.7
STARVED ROCK POOL
ILLINOIS RIVER

FINAL

MAY 2020

US Army Corps
of Engineers®
Rock Island District

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EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers, Rock Island District (District), is currently proposing the long-term placement of dredged material for the Dredged Material Management Plan (DMMP) and integrated Environmental Assessment (EA) for the Bull's Island and Milliken Creek Dredge Cuts (Reach). This Reach extends along the Illinois Waterway within the navigation channel between river miles 240.3 and 242.7, near Ottawa in LaSalle County, Illinois (Figure ES-1).

In September 1999, the District completed the *Dredged Material Management Plan for Bull's Island Dredge Cut, Illinois Waterway River Miles 240.3- 241.6*. Material dredged from the Illinois River has nearly filled the existing Bull's Island placement sites on the right descending bank (Figure ES-1). The average annual dredging quantity over the past 20 years for the Reach is approximately 14,600 cubic yards per year. The existing upland site is nearing capacity and will not accommodate the estimated dredging needs in a 20-year plan (292,000 cubic yards). This DMMP report evaluates additional suitable placement alternatives for both mechanical and hydraulic dredging methods at the Reach.

The No Action Alternative and multiple sites were evaluated using numerous factors including cost effectiveness, environmental acceptability and operational feasibility. Only one alternative met these criteria, and therefore was selected as the Recommended Plan. This Plan consists of expanding the existing placement site outside of the Federal Emergency Management Agency established floodway and includes both hydraulic and mechanical dredging and placement options. The total cost estimate, rounded to the nearest thousand, is approximately $1,568,000. The estimate includes construction, maintenance, and acquisition costs.

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3- 242.7

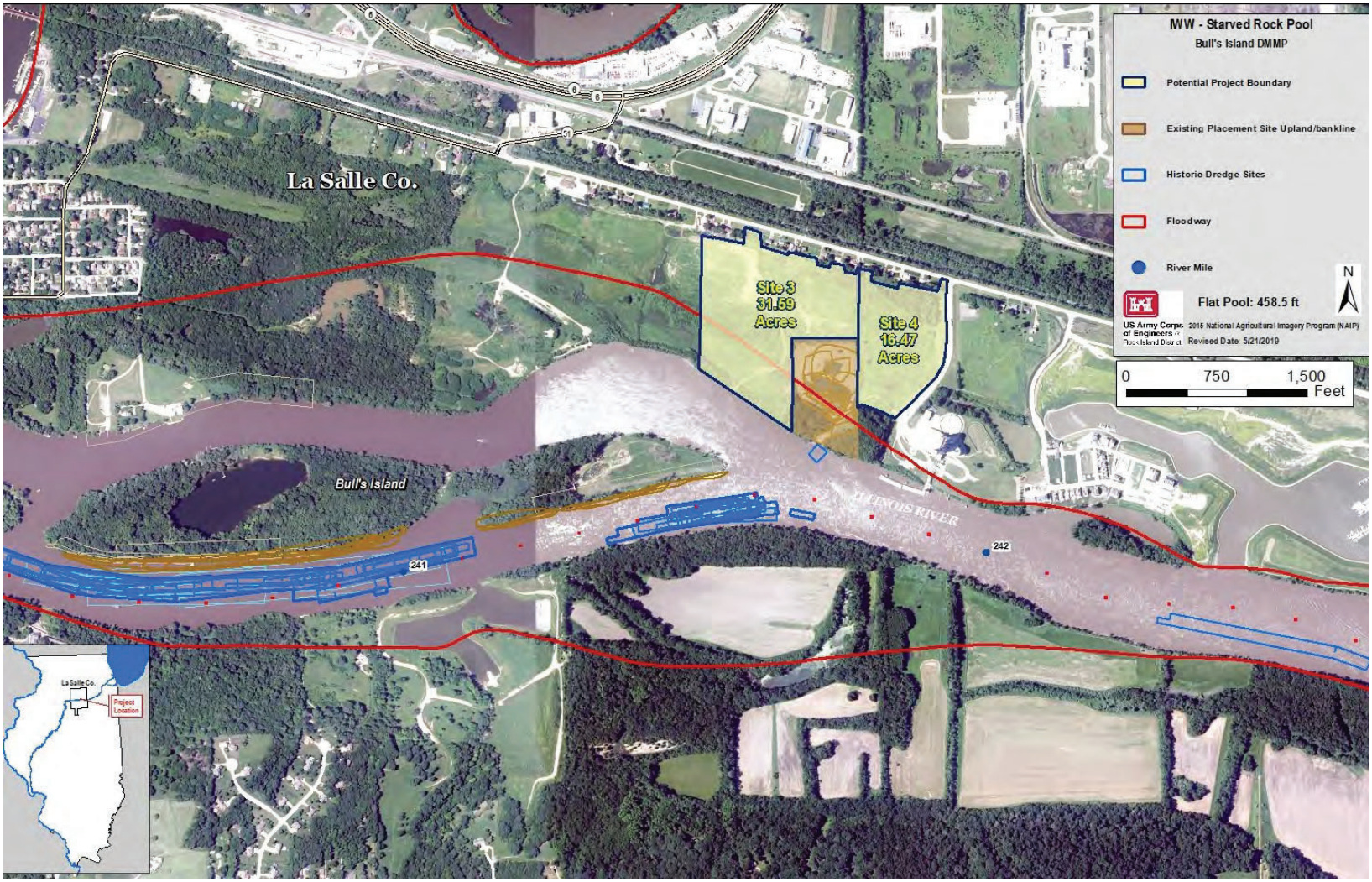

Figure ES-1: Project Location

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* Denotes sections required for Environmental Assessment/National Environmental Policy Act Compliance

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1 PROJECT DESCRIPTION

1.1. Purpose. The purpose of this Dredged Material Management Plan (DMMP) is to find suitable long-term placement sites to maintain the 9-foot navigation channel on the Illinois Waterway (IWW) as described in the *Long-Term Management Strategy for Dredged Material Placement, Illinois Waterway River Miles 80.0-327.0, Main Report* (June, 1995). The Recommended Plan (RP) has been determined to be environmentally acceptable and operationally feasible for future dredged material placement.

1.2. Location. The Bull's Island and Milliken Creek Dredge Cuts (Reach) is located in Starved Rock Pool on the IWW between river miles (RM) 240.3 and 242.7 (Figure ES-1). The existing upland dredged material placement site is located near RM 241.7. Historic bankline placement sites are located approximately between RM 240.4 and 241.6 (Figure ES-1). For planning purposes, this study area includes 1) the DMMP Reach river miles defined by the dredging area and 2) potential placement sites proximate to the dredging area evaluated to support the projected dredging activities.

1.3. Scope of Study. This report uses the Corps' six-step planning process (Planning Guidance Notebook, ER 1105-2-100):

1. Identify Problems and Opportunities
2. Inventory and Forecast Conditions
3. Formulate Alternative Plans
4. Evaluate Alternative Plans
5. Compare Alternative Plans
6. Select a Plan

1.4. Authorization. The Rivers and Harbors Acts of July 3, 1930, February 1932, and August 30, 1935; and a Resolution of the House Committee on Flood Control of September 18, 1944, authorized the 9-foot navigation channel and subsequent channel maintenance dredging for the IWW.

Under the authority delegated by the Secretary of the Army and in accordance with Section 404 of the Clean Water Act of 1977, as amended, the Corps regulates the discharge of dredged or fill material into waters of the United States. In addition, the Corps is guided by the dredging regulations published in the Code of Federal Regulations (CFR), 33 CFR Parts 335-338. This CFR included language that encouraged the Corps to pursue a long-term management strategy for dredged material placement. The regulation states, "District Engineers should identify and develop dredged material management strategies that satisfy the long term (greater than 10 years) needs for Corps projects."

The Corps' Engineer Regulation (ER) 1105-2-100, *Guidance for Conducting Civil Works Planning Studies* provides guidance for the conduct of Civil Works Planning Studies. Plans are to be developed to meet dredging needs for a minimum of 20 years.

1.5. Historic Channel Maintenance Dredging. The dredge cuts in the Reach have been dredged 44 times since 1969. Dredging quantities per event have ranged from a minimum of 325 cubic yards (CY) in 1973 to a maximum of 40,230 CY in 2009.

1.6. Assessment of Dredged Material. Samples collected in 2009 from dredge cut locations were classified in accordance with the Unified Soil Classification System. The historic results dating back to 1984 have been between 0.0 to 17.9% fines passing the #200 sieve size, with an average of 0.7% fines. Samples ranged from gravelly coarse to fine grained sand with trace gravel. The dredge cuts usually produce material that varies from medium to fine sand, with some gravel and organic material.

1.7. Future Dredging Requirements. Based on historical data, it is estimated that over the 20-year life of this Project, dredging would be required approximately every year. The estimated annual quantity is 14,600 CY. The existing upland placement site is nearing capacity and will not accommodate the estimated dredging needs in a 20-year plan (292,000 CY). Tables 1 and 2 summarize historic dredging of the Bull's Island Reach from 1969 through 2018. Historically, dredged materials have been both hydraulically and mechanically excavated from the dredge cuts and placed at upland placement sites or historic bankline locations.

Future projections for channel maintenance dredging are determined through application of the Rock Island District's (District) knowledge and expertise based on historic dredging and current conditions. These projections are simply an estimate of future dredging needs (Table 3). Because of the dynamic nature of the river, actual dredging needs could be different from the projections.

Table 1. Bull's Island and Milliken Creek Dredge Cuts - Historic Dredging Summary

	Historic Back to 1969	Past 40 Years	Past 20 Years
Year Range	1969-2018	1979-2018	1999-2018
Total CY	488,957	474,982	292,470
Number of Events	44	39	24
Average CY/Event	11,113	12,179	12,186
Average CY/Year	9,779	11,875	14,624

Table 2. Bull's Island and Milliken Creek Dredge Cuts - Historical Dredging 1969 to 2018

Dredge Cut	Year Dredged	Dredging Amount (yd3)		Dredging Site	Placement Site	Placement Type
Bulls Island					* historic data prior to 1969 is located elsewhere (Contact OD-T)	
240.5-241.5	1969	3,250		240.6		
	1970	1,150		240.6		
	1971	6,750		240.6		
	1974	2,500		240.3	240.6 (Bulls Island)	Bankline
	1979	3,600		240.5		
	1979	13,000		240.5	231.5 (Starved Rock Storage Yard)	Upland
	1979	8,000		240.5	231.5 (Starved Rock Storage Yard)	Upland
	1979	7,705		240.6		
	1980	16,240		240.6		
	1980	10,000		240.5	231.5 (Starved Rock Storage Yard)	Upland
	1986	13,114		240.6-241.0		
	1987	14,852		240.0-241.6	240.3-241.5R, excl. 240.9-241.1	Bankline
	1991	8,644		240.6-241.0	240.4-240.7R	Bankline
	1992	32,332		240.3-241.6	240.4-241.3R, excl. 241.0-241.1, 241.6-241.9L	Bankline
	1993	4,132		240.5-240.7	Mertel Sand & Gravel (3132), 240.4-240.7R (1000)	Beneficial/Bankline
	1995	15,558		240.4-241.0	240.5-240.7R, 241.2-241.3R	Bankline
	1996	4,985		240.5-240.7	240.7-240.9R	Bankline
	1997	10,130		240.5-240.7R	240.85-241.25R	Bankline
	1998	20,020		240.4-241.6	240.2-240.5R, 241.6-241.7L	Bankline
	1999	11,812		240.0-241.1	241.45-241.3R, 240.6-240.9R	Bankline
	2001	17,457		240.3-244.1	240.5-241.3R	Bankline
	2001	5,155		241.5-241.7	241.7R (new DMMP site #7)	Upland
	2002	7,722		240.5-241.6	241.7R	Upland
	2003	15,830		240.4-240.9	240.5-240.9R	Bankline
	2003	501		241.5-241.7	241.7R	Upland
	2004	3,302		241.5-241.7	241.7R	Upland
	2005	29,049		240.5-241.1	240.5-241.4R	Bankline
	2005	9,555		240.8-241.1	241.7R	Upland
	2005	3,338		240.8-241.1	241.7R	Upland
	2006	5,628		241.4-241.7L	241.7R	Upland
	2007	8,768		240.4-241.7	241.7R	Upland
	2008	38,341		240.4-241.8	240.5-240.7, 241.2 - 241.4R, 241.5 - 241.8L (5,445 cyds)	Bankline
	2008	5,283		241.5 - 241.7	241.7R	Upland
	2009	40,230		240.4 - 241.1	241.6R and 241.5 - 241.5	Upland/Bankline
	2009	12,755		241.2 - 241.5L	241.5R	Upland
	2011	5,632		241.5 - 241.7	241.7R Mech	Upland
	2011	20,643		240.4 - 241.4	241.7R Mech	Upland
	2012	2,266		241.4 - 241.6L	241.7R Mech	Upland
	2013	3,203		241.5 - 241.6L	241.7R Mech	Upland
	2015	18,122		240.4-241.1R	241.7R Mech	Upland
	2015	6,011		241.4 - 241.7R	241.7R Mech	Upland
	2018	10,313		241.3 - 241.6L	241.7R Mech	Upland
		477,073	42	Events Average:	11,359	

Dredge Cut	Year Dredged	Dredging Amount (yd3)		Dredging Site	Placement Site	Placement Type
Milliken Creek	1973	325		242.5	243.3 - 247.7R	Bankline
242.3-242.7	2010	11,559		243.2-243.9L	241.7R	Upland
		11,884	2	Events Average:	5,942	

Table 3. Bull's Island and Milliken Creek Dredge Cuts - Dredging Projections for the Next 20 Years

Volume Per Year (CY)	14,600
Total Volume for 20-yr Plan Life (CY)	292,000

1.8. Projections of Future Conditions Without Management Plan. Throughout the Reach, industrial, commercial, and residential development have limited potential placement sites along the IWW. The location of the City of Ottawa at RM 239 allows for recreational opportunities in its marinas and parks. Additionally, industry and agricultural fields dominate the area.

The Rock Island District has been working to implement a long-term management strategy to best manage dredged materials for Corps projects. This strategy is an evolving process. The history of the long-term management strategy in the District goes back to the early efforts of the multi- agency group the Great River Environmental Action Team (GREAT). The GREAT produced a series of studies in the 1970s, with a specific set being created for three Corps Districts. GREAT I Studies were created for the St Paul District, GREAT II were created for the Rock Island District, and GREAT III for St. Louis District. The GREAT II Main Report was published in 1980. GREAT II is the set of studies prepared for the Rock Island District. At the same time the GREAT Studies were being prepared, Corps Headquarters was working to update regulations to incorporate the long-term management strategy. GREAT II also formalized all of the River Planning Teams that exist still today, one of which is the On-Site Inspection Team (OSIT). The OSIT assists the District in making dredged material placement recommendations. GREAT II was prepared for the Mississippi River but its recommendations were applied to the IWW when the District took over Operations and Maintenance responsibilities from the Chicago District also around 1980.

GREAT II recommended considerations for changes in dredge material placement. One concern was that long-term bankline placement allows for material to be reintroduced to the waterway during high water events. GREAT II recommendations included creating long-term sites and reducing impacts to the floodplain, with the goal to place more material out of the river system.

Data from the *404 Studies – Summary Assessment of Dredged Material Placement along the Upper Mississippi River and Illinois Waterway, Final Report*, dated March 2009 (Rock Island District), suggested continued periodic use of the Upper Mississippi River and the IWW historic dredged material placement sites would not cause significant adverse impacts to any of the resources categories for this report, directly, indirectly, or cumulatively.

Currently, historic bankline placement sites and the existing upland site are the only placement sites available when dredging at the Bull's Island and Milliken Creek Dredge Cuts. The historic bankline placement sites within the Bull's Island dredging reaches and other locations on the IWW are periodically used with OSIT approval. The District anticipates these bankline sites would continue to be used periodically. The existing upland site was filled in 2018. This DMMP will provide additional capacity for long-term placement, both mechanical and hydraulic, along with bankline placement with OSIT approval.

1.9. Problems and Opportunities

1.9.1. Problems

- Sedimentation causes shoaling within the 9-foot navigation channel resulting in chronic dredging of the Bull's Island Dredge Cut. Removal of significant amounts of sediment is necessary to maintain ongoing navigation.
- Adequate placement capacity is currently not available for anticipated future dredging needs in the Bull's Island Reach.
- The lengthy distance of the existing U.S. Government fee title access to the existing site reduces productivity and increases operating costs.
- Continued use of existing placement options, at the volume and frequency used in the past, could result in unacceptable environmental impacts.

1.9.2. Opportunities

- Evaluate and recommend long-term placement site alternatives for this dredge cut that reduce natural resource impacts.
- Consider any beneficial use opportunities, both environmental, and commercial.
- Shorter access distance from the Bull's Island Dredge Cut to the placement site(s) may increase dredging productivity and decrease down time.
- Evaluate and recommend cost-effective alternatives, potentially reducing navigation Operations and Maintenance (O&M) costs.

1.10. Beneficial Use. Dredged material is a manageable resource suitable for beneficial uses including habitat restoration, soil manufacturing, construction, and environmental remediation. Water Resource Development Act authorizations require a non-Federal sponsor to cost-share DMMP costs when completing beneficial use projects under the Continuing Authorities Program.

Title 33 of the CFR part 335.7 defines the Federal Standard as "the dredged material placement alternative or alternatives identified by the Corps which represent the least costly alternatives consistent with sound engineering practices and meeting environmental standards established by the 404(b)(1) evaluation process or ocean dumping criteria". Given the prohibitive transportation costs for dredged material, the potential for beneficial use projects is dictated by those options in proximity to the placement area.

The District has discussed beneficial use options for Bull's Island dredged material with Archer Daniels Midland (ADM), the City of Ottawa, the U.S. Environmental Protection Agency (USEPA), and several regional potential users. Efforts are continually ongoing to allow the public opportunities to utilize the sand and extend the use of the existing site. Currently, public usage is limited due to the existing site not having a public road for access to dredged material. Therefore, this report will

evaluate public access to the existing site in order to improve beneficial use and extend the life of the existing placement site. As beneficial use develops, care will be taken to ensure any use of material would be above the existing grade to avoid any potential concerns related to reclamation of the former mining operation.

1.11. Objectives and Constraints. The following objectives and constraints assist the District in identifying the Federal Standard:

1.11.1. Objectives

- Maintain the 9-foot navigation channel in such a manner as to avoid the potential loss of life or personal injury, or property damage that may result from inadequate maintenance of the channel and subsequent channel closures and groundings.

- Reduce O&M costs where possible (include hydraulic dredging and focus placement sites in proximity to cuts). When a placement site requires additional time and resources (e.g., using mechanical means to widely expand the area from an existing pile of material), the increased O&M costs reduces the ability to meet other O&M needs elsewhere in the District's area of responsibility.

- Identify, evaluate, and recommend long-term placement alternatives that meet the Federal Standard.

- Acquiring land access to maximize beneficial use of dredged material and to allow for necessary operations and maintenance.

- Investigate other structural measures such as closing dams or wing dams which may reduce dredging needs though the Bull's Island Reach.

- Provide valuable information for future decisions and allow for adaptive management of dredged material in this Reach.

- Strive to find suitable placement site options providing dredged material placement capacity for at least 20 years of maintenance dredging, to include both hydraulic and mechanical placement options. This equates to an estimated 20 acres for this particular Reach's capacity needs.

- Enable rapid response dredging and material removal while minimizing impacts to Starved Rock Pool and IWW activities and navigation traffic.

1.11.2. Constraints

- Any site must minimally be accessible from the river by way of either hydraulic or mechanical dredging methods.

- Any hydraulic or mechanical placement site must have sound engineering design and be physically capable of supporting dredged material placement along with the practices associated with the dredging method.

- Hydraulic dredging placement options should be within the physical limits of typical hydraulic dredges. The current hydraulic dredging contract requires a the contractor to be able to pump up to 10,000 feet of distance from dredge cut, up to 1,000 feet inland from the dredge cut, and +/- 45 feet in height change from the dredge cut.

- Physical limitations of placement sites, and in some areas the IWW, reduce the size of hydraulic dredges that can be used. The District has maintained a hydraulic dredging contract on the IWW for many years for a 14- or 16-inch hydraulic dredge. Larger dredges have greater horsepower and can typically have higher production rates. However, larger dredges overwhelm placement sites with the amount of water they transport through the dredge lines, resulting in increased environmental impacts. Smaller dredges have less horsepower and have typically lower production rates.

- Constraints with placing in regulated floodway and floodplains, as well as in prime farmland areas

1.12. Strategies. The overall DMMP would identify, evaluate and acquire placement sites that meet the District's needs for a minimum of 20 years and ideally for 40 years or longer, using the three-phase interagency DMMP process as follows:

Phase 1: Preliminary assessment and site/alternative identification and screening

Phase 2: Alternative evaluation, including environmental assessment, and engineering and cost considerations

Phase 3: Acquisition of placement sites (as needed) and implementation of the RP.

This report represents completion of Phase 1 and Phase 2 of the process for the Bull's Island Reach DMMP. Upon review, final approval, and availability of funding, the District will begin Phase 3.

2 AFFECTED ENVIRONMENT

The District performed a preliminary search of existing databases, maps and other sources to identify any known issues or concerns including:

- environmental acceptability (wetlands, threatened or endangered species, water quality, aquatic and terrestrial resources);

- floodway conveyance, flood height, and flood storage impacts;

- prime and unique farmland;

- existing land use (land use plans, local zoning ordinances, private, commercial, municipal, county or state development);

- socio-economic impacts;
- real estate issues (cost, property liens, landowner willingness, multiple landowners, permits/leases/purchase);
- cultural resources, traditional properties, and sacred sites;
- hazardous, toxic, or radioactive waste (HTRW);
- recreation potential;
- commercial navigation (channel maintenance, fleeting areas);
- beneficial use potential; and
- features consistent with best planning and engineering practice.

2.1. Cultural Resources. The Corps 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), and as accorded by the District's DMMP. The Corps queried the most updated Illinois Geographic Information Systems site file database and reviewed the reports 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) and *The Historic Properties Management Plan for the Illinois Waterway System, Rock Island District, Corps of Engineers, Volumes I and II*, dated February 1999 (Contract Number DACW25-93-D-0014, Order No. 0021) for historic properties potentially affected by the Project. Final copies of these aforementioned reports are in the District's permanent files and those of the Illinois Department of Natural Resources' (IL DNR) Illinois State Historic Preservation Office (SHPO).

During the initial scoping, eight proposed dredged material placement sites were thoroughly researched for previously reported or recorded historic properties, as well as for the potential to contain undocumented historic properties. This evaluation included geomorphological buried landform analysis, previous archeological reports, and consultation with tribes and other parties. No architectural sites were noted, although all the proposed dredged material placement sites have the potential to contain archeological sites. Nearly 20 archeological sites are located within 1 mile of the Bull's Island Reach dredge cuts, an indication of the high potential for prehistoric occupations within the Illinois River Valley. At least one proposed dredged material placement site may contain prehistoric burials and sacred sites (as designated by federally-recognized Native American tribes). The research indicated that proposed dredged material placement sites adjacent to the existing site had the least potential for containing archeological and sacred sites. This is because these proposed sites were partially subjected to archeological and geomorphological surveys, were documented as being industrially mined/reclaimed, and were researched as having no to low potential for containing undocumented historic properties.

The District Archeologist reviewed the online topographical maps in topoView's Historical Topographic Mapping Collection (https://ngmdb.usgs.gov/topoview/viewer/) to include an analysis of

the United State Geological Survey (USGS) topographical maps for Ottawa, Illinois to include: 1:62500 (1892, 1915, 1946, and 1958), 1:250000 (1961 and 1970) 1:100000 (1991), and 1:24000 (1994). The maps indicate that no structure or other cultural resources are located in the Project area, other than a large clay mining pit/quarry identified on the 1994 topographical map. The proposed dredged material placement Project area is documented in the *Landform Sediment Assemblage (LSA) Units in the Illinois River Valley and the Lower Des Plaines River Valley, Volume I*, dated May 2000, and Volume II, dated June 2000 (Contract No. DACW25-93-D-0014, Delivery Order No. 0025), as undifferentiated floodplain and alluvial fan deposits with moderate potential for surface or near-surface archeological deposits and with low potential for deeply buried archeological deposits.

This review indicated low potential for archeological properties at the preferred dredged material placement Sites 3 and 4 since the majority of the area has been mined and reclaimed between 1991 and 1993 under an IL DNR application. The Corps proposed to conduct a Phase I intensive archeological survey only in those areas previously unsurveyed and undisturbed in the northeastern corner of the proposed site and along the bankline floodplain of the Project. The Corps provided this determination to the SHPO by letter dated May 10, 2018 (Appendix B). A letter dated June 21, 2018, from the SHPO stated no objection to the proposed Project, and indicated no historic properties would be affected (Appendix B). Likewise, the Miami Tribe of Oklahoma responded by letter dated June 8, 2018 that they had no objections to the Project and accepted the invitation to serve as a consulting party for future phases of this undertaking (Appendix B).

2.2. Natural Resources. Study area natural resources include the lands, water, fauna, and flora of the Illinois River and its floodplain in LaSalle County, Illinois. The ecological significance of the IWW is well documented (https://www.umesc.usgs.gov/documents/reports/1999/status_and_trends/99t001_ch14lr.pdf). This waterway supports approximately 285 migratory bird species, and over 150 fish species. Dredged material placement can impact adjacent shallow aquatic, shoreline, grassland, and bottomland forest habitats.

2.2.1. Soils. A soil mapping tool is available through the U.S. Department of Agriculture, Natural Resources Conservation Service, soil survey website. Areas south of the IWW have a substantial amount of Prime and Unique Farmland designated soils.

2.2.2. Land Cover/Land Use. Study area survey information is available from the most recent Upper Mississippi River Restoration Land Cover Land Use survey in 2010. This survey is updated every decade, and provides higher resolution than the national land cover survey completed in 2016. Primary classifications for the study area are as follows: wet forest, wet meadow, agriculture, and wet shrub. Since aerial photography and coarse plant community information are solely used to classify habitat types, a wet forest, wet shrub, or wet meadow classification should not be confused with protected wetlands. After conducting site visits to verify these classifications, the existing habitat located throughout the study area was observed to range from undeveloped and forested to degraded due to former mining.

2.2.3. Waters/Wetlands. The Illinois Environmental Protection Agency (IL EPA) listed the Upper Illinois River as impaired under Section 303(d) of the Federal Clean Water Act. Causes of impairment include mercury (fish consumption), polychlorinated biphenyls (fish consumption), and

fecal coliform (primary contact recreation). There are no Total Maximum Daily Load (TMDL) established for this watershed. The IL EPA has scheduled this watershed for TMDL development Federal Fiscal Year (FFY) 2021 and implementation FFY 2023. Once developed the District will comply with the TMDLs as necessary (IL EPA).

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory website, six wetlands are present in the study area. This includes four Freshwater Ponds encompassing 12 acres, a 2.5-acre Freshwater Emergent Wetland, and a 2-acre Freshwater Forested Shrub Wetland (Figure 1)

2.2.4. Biota. The USFWS' Information for Planning and Conservation (IPaC) website identifies federally-listed species potentially occurring in LaSalle County (Appendix B). Site visits occurred with USFWS personnel in both 2017 and 2018. The USFWS responded to two scoping letters available in Appendix B. Table 4 describes the listed species and their habitats.

Table 4. Generated List of Federally-listed Species from IPaC in May 2018
(Source: https://ecos.fws.gov/ipac/)

Species	Scientific Name	Status	Preferred Habitat
Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (winter hibernacula); small stream corridors with well-developed riparian woods; upland forests (foraging).
Northern long-eared bat	*Myotis septentrionalis*	Threatened	Spends the winters hibernating in caves or mines with constant temperatures. They roost in cavities or crevices of both live and dead trees
Decurrent false aster	*Boltonia decurrens*	Threatened	Found in moist, sandy floodplains and prairie wetlands along the IWW. Flood tolerant and can benefit from disturbance.
Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Shade intolerant species found in variable habitats from mesic prairies to wetlands.
Leafy prairie-clover	*Dealea folios*	Endangered	Shade intolerant species occurring in limestone cedar glades, limestone barrens, and wet-mesic dolomite prairie.

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3-242.7

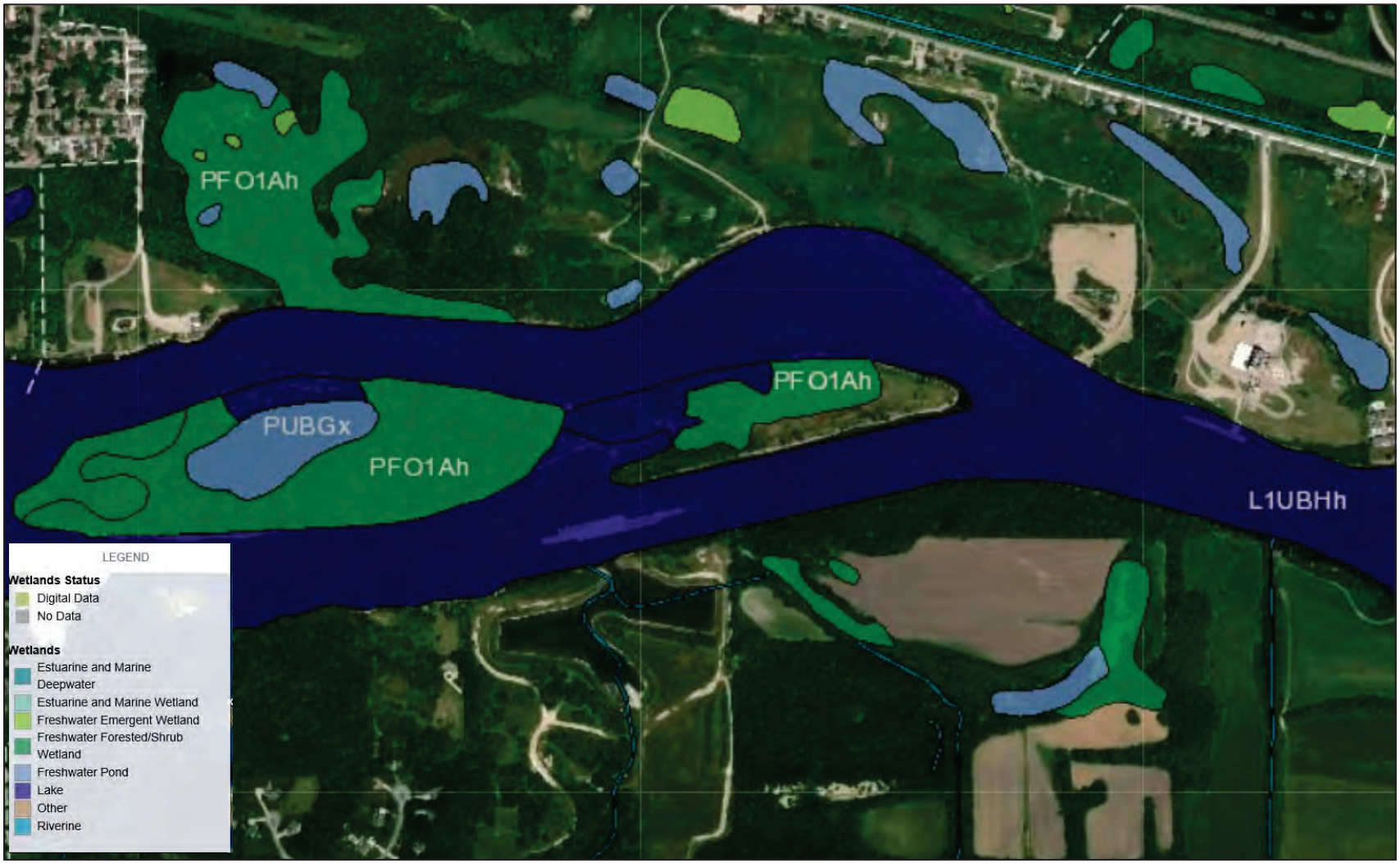

Figure 1. USFWS National Wetland Inventory Wetlands in the Study Area

2.3. Social and Economic Resources. The decennial U.S. Census completed in 2000 and the five-year average (2011-2016) estimates from the American Community Survey (ACS) data were queried to obtain relevant socioeconomic data for this analysis. The ACS data is tabulated by the U.S. Census Bureau (USCB) and was procured using American Fact Finder website extraction tool. Socioeconomic data is presented for Ottawa, IL, which is the location of the proposed dredge material placement sites. In some cases, County and State data is provided for comparative purposes.

2.3.1. Population 2000-2016. According to U.S. Census data, the total population in Ottawa, IL, in 2016 was 18,707, remaining fairly stable over the last 7 years. Population of LaSalle County, IL, was 111,935 in 2016, down about 2,000 residents since 2010.

2.3.2. Housing Units. The 2016 U.S. Census' ACS housing unit estimate for Ottawa was 8,678, nearly the same as identified in the 2010 Census. Nearly 89% are occupied housing units while about 11 percent of housing units were vacant. The number of occupied housing units in 2016 was a bit lower than in 2010 and vacant units were therefore higher. The homeowner vacancy rate fell from nearly 3 percent to 1.8 percent. The rental vacancy rate was much higher, with just under 9 percent of rental housing units vacant in 2016. In both 2010 and 2016, nearly 70 percent of housing units were one-unit, detached housing units.

2.3.3. Race/Ethnic Diversity. A vast majority of the population in Ottawa is identified as being of one race, White. The largest three races by proportion are White (91%), Black or African American (4.0%), and those identifying as two or more races, (2.4%).

2.3.4. Income. Median incomes have remained stable over the last 6 years, with half of the households in Ottawa City having incomes above $45,500 and half below that amount. Just under 20 percent of households have incomes between $50,000 and $74,999.

2.3.5. Employment. In 2016, about 64 percent of the population 16 years and over were in the labor force of which 84 percent were employed. Fewer people were in the labor force in 2016 compared to 2010. Unemployment in 2016 was 10.9 percent, down from 12.5 percent in 2010.

2.3.6. Education Level. Nearly 90 percent of residents over 18 years old have a high school degree, and about 49 percent of residents between 18 and 24 have some post-secondary education. Among residents typically old enough to attain advanced degrees (over 25 years old), just under 30 percent have an Associate's, Bachelor's or Graduate/Professional degree.

2.3.7. Minority and Low-Income Populations (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.

As with socioeconomic data, the five-year average (2011-2016) American Community Survey (ACS) data was queried to obtain relevant information associated with environmental justice. In order to identify whether a potential alternative may disproportionately affect minorities or impoverished citizens, an analysis was conducted utilizing census data obtained from ACS. Detailed Block Group

data was compiled using ACS 2011-2016 data. The following information was collected for Ottawa and the specific census block group in the study area.

Race and ethnic populations in each census block of the study area were characterized using the following racial categories: Hispanic White (for which demographic data is reported as one category by the USCB, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Persons of Hispanic Origin, and Other. These categories are consistent with the affected populations requiring study under Executive Order (EO) 12898.

As defined by the USCB, the minority population includes all non-Whites and White-Hispanic persons. According to Council of Environmental Quality (CEQ) guidelines, "Minority populations should be identified where either 1) the minority population of the affected area exceeds 50 percent or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

The percentage of persons living below the poverty level, as defined in the 2011-2016 ACS, was one of the indicators used to determine the low-income population in a given census block or tract. Low-income population is defined as a Census Block Group with 20 percent or more of its residents below the poverty threshold.

2.3.8. Human-Constructed Resources. Due to the agricultural and industrial character of this area, the infrastructure of the 9-Foot Channel Navigation System is the primary human-constructed resource within this area.

2.4. Physical Environment

2.4.1. Air Quality. The USEPA *Green Book Nonattainment Areas for Criteria Pollutants* (Green Book) lists all areas within the United States currently designated as nonattainment areas by county or metropolitan area with respect to one or more air pollutants. LaSalle County, IL, is not currently listed.

2.4.2. Noise. The study area is adjacent to an existing DMMP site and an ADM grain facility where heavy machinery use is commonplace. Planting a 100-foot buffer strip between the homes and the proposed Project site before dredge material placement will help maintain noise levels at a low to moderate level. District staff will select trees and shrubs for planting based on site suitability with the goal of mitigating induced noise impacts.

2.4.3. Local Geology. The site geology mirrors much of the surrounding Illinois River Valley. Quaternary Age Cahokia Alluvium comprised of silty sandy soil and other alluvial deposits form the site surface, ranging from one to two feet in thickness. Underlying the alluvial materials is bedrock, comprised of the Pennsylvanian Age Carbondale Formation. The uppermost layer of the Carbondale Formation is the Francis Creek Shale, ranging from 14 to 16 thick. Immediately below the Francis Creek Shale is the Colchester #2 Coal, averaging 2 feet in thickness. Underlying the Colchester Coal is an 8-foot layer of gray clay, a brown sandstone layer 1 to 4 feet in thickness, and then a light gray clay ranging from 5 to 9 feet thick. Below the Pennsylvanian bedrock lies Ordovician Age St. Peter Sandstone, with a thickness of greater than 140 feet in this locality.

2.4.4. Hazardous, Toxic, and Radioactive Waste (HTRW). A Phase I HTRW Environmental Site Assessment (ESA) was performed for the Project area (Appendix C). The information was obtained through site reconnaissance, informal interviews, and a review of maps and aerial photographs, District records and Federal and state environmental databases. These screening methods have been selected based on the particular nature of the proposed Project site and the characteristics of the dredged material. The Phase I ESA indicated one Recognized Environmental Condition (REC). The REC was based on part of the proposed Project site that is a former coal mining area Figure 2. These mines have been reclaimed according to state and Federal regulations, therefore, no HTRW issues or conditions are present. No further HTRW investigations are warranted, in compliance with ER 1165-2-132.

2.4.5. Surface Mine Reclamation. The former surface mines were reclaimed by the State of Illinois Department of Mines and Minerals, a section of the Illinois Department of Natural Resources. Reclamation activities occurred between March 1991 and November 1993. The reclamation work included neutralizing all acid water impoundments, grading the site to promote positive drainage, and establishing vegetation throughout the affected areas to reduce erosion. Specifically over 20,000 tons of agricultural ground limestone, at a rate of 200 tons/acre, were incorporated into any areas where grading of mine stockpiles and impoundments occurred. In addition, fertilizers, seeding and mulch was incorporated with the limestone amendment.

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3-242.7

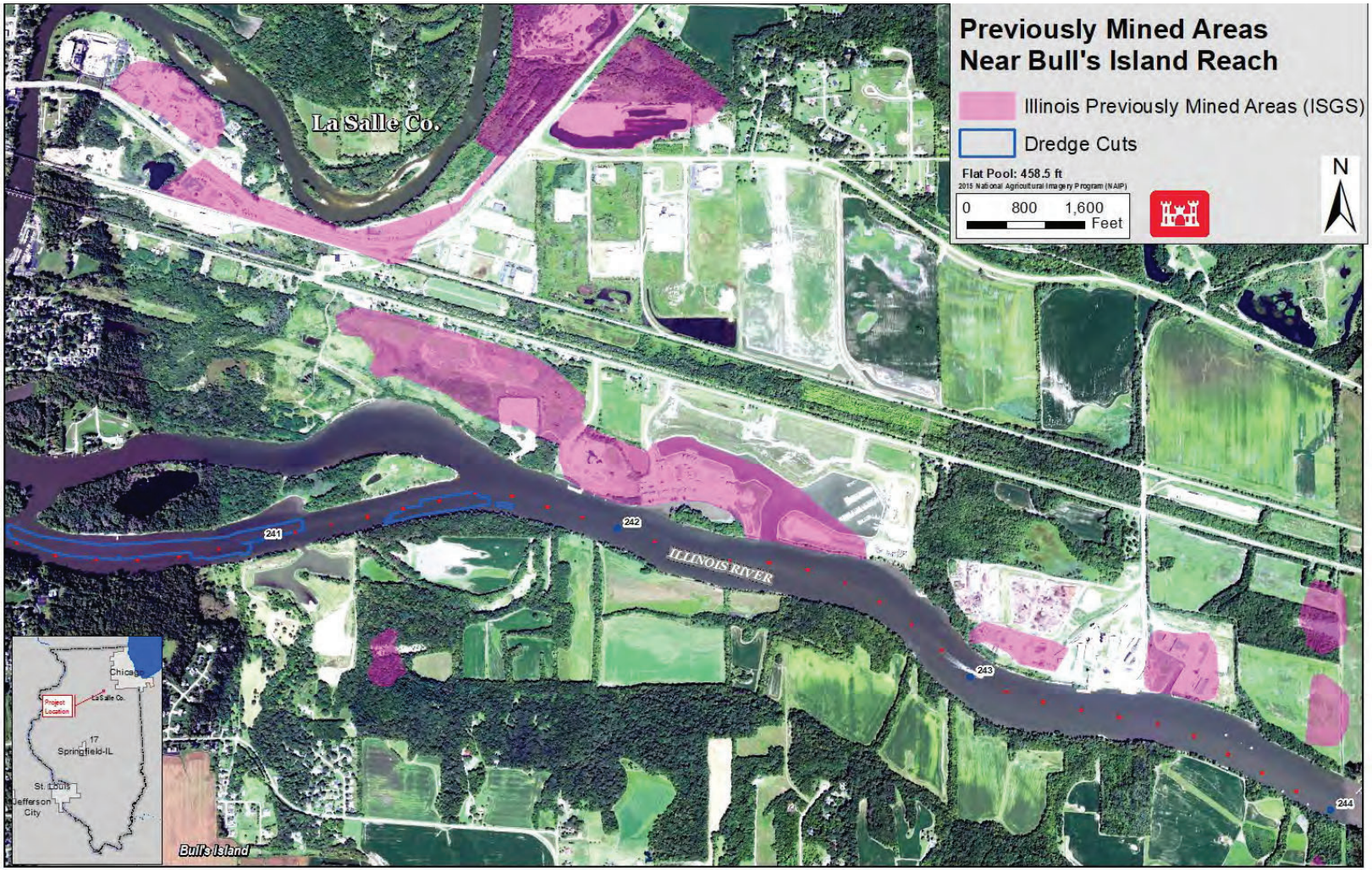

Figure 2. Previously Mined Areas

3. ALTERNATIVE PLANS

3.1. Alternative Planning Process. The first step in the alternative planning process is to identify sites for screening. The Project Delivery Team (PDT) selected sites located within the Reach that could potentially be an option for long-term placement. Sites in proximity to the dredge cuts were scoped at a scale feasible for efficient dredging, environmental acceptability, and cost. As previously mentioned in Section 1.7, the estimated future dredging needs is approximately 292,000 CY. These sites are evaluated for considerations concerning capacity, natural resources, cultural resources, hydraulic impacts, operability and socio-economic impacts.

3.2. Site Identification and Screening Process. Based on the DMMP Quality Control Plan and Project Management Plan, as applicable, potential dredged material placement sites are identified and screened in an initial phase of the alternative development process. During a preliminary screening, sites were either kept, added, or eliminated for further consideration. The criteria used during this screening is based on the Federal Standard of operationally feasible with least cost and environmentally acceptable, which is described below in more detail.

3.2.1. Channel maintenance personnel from the District's Operations Division evaluated each potential site to ensure operational feasibility. Factors that impact a site's operational feasibility include, but are not limited to, unsuitable site access for equipment to deliver/unload dredged material; site dimensions that are not large enough for material containment and/or drainage capabilities; and locations too far from the dredge cut to allow for manageable hydraulic and/or mechanical dredging operations.

- Sites close to the river kept and/or added due to proximity to the dredge cuts and ease of operation.
- Sites with distances greater than traditional hydraulic dredging equipment for the IWW can reach from the cuts were eliminated from further consideration due to operation feasibility. A 10,000-foot distance from the dredge cuts was used for this evaluation criteria. Distance was calculated for sites within reach of traditional hydraulic dredging equipment by averaging five potential hydraulic dredge pipe path configurations.
- Sites lacking the ability to support hydraulic placement, alone, or in conjunction with other sites were eliminated for further consideration.
- Sites with limited or no mechanical dredging equipment accessibility were eliminated for further consideration due to operation feasibility.
- Sites where significant dredging would be required for equipment access were eliminated for further consideration.
- Sites where significant land based operations would be needed to move material overland to the final placement site were eliminated for further consideration. Considerations include long pushing or hauling distances and challenging topography

changes. Sites with significantly higher mechanical dredging plant transport distances were not recommend as stand-alone sites for meeting the minimum 20-year plan.

- Sites with no land-based access were not recommended. Lacking land-based access reduces the ability of the District to perform needed operations and maintenance. The lack of land-based access also significantly reduces the opportunities for beneficial use of dredged material. Reduced beneficial use opportunities is a contributor to the District's need to acquire more placement sites.

3.2.2. The PDT distributed a scoping letter dated June 30, 2017, to local state and Federal natural resource and regulatory agencies, as well as members of the general public (Appendix H, *Distribution List*). An open house was held on November 13, 2017, to further communicate the need for additional placement, to offer an overview of Corps planning policies and procedures and to gather public input on site information.

3.2.3. An IL OSIT meeting was held on July 10, 2017. Members of this multi-agency review team discussed potential environmental, cultural and other impacts of each site. Preference was given to site(s) having the least adverse impacts to natural and cultural resources and/or impacting the smallest area that also were cost efficient.

- All island sites were eliminated due to impacts to aquatic resources.
- Sites with potential impacts to floodplain forests and placement in Federal Emergency Management Agency floodway were eliminated.

Consideration of these factors resulted in eight sites for further evaluation (Figure 3).

3.3. Description of Potential Sites for Further Study. The initial screening process eliminated multiple sites from further evaluation, as described in Section 3.2. The next step is to formulate and evaluate combinations of placement sites, which make up the alternatives considered. Further evaluation of construction costs, environmental impacts, and public input resulted in additional sites being eliminated and/or reconfigured to allow for at least 20 years of maintenance mechanical and hydraulic dredging. All sites, except Site 2 and 4, have the capacity of acreage to hold 20 years of dredged material. Therefore, Sites 2 and 4 are used as supplemental sites only and not as stand-alone sites. An additional public use option was added to allow the opportunity for beneficial use and potentially greatly reduce the need for potential placement sites (Figure 4).

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3-242.7

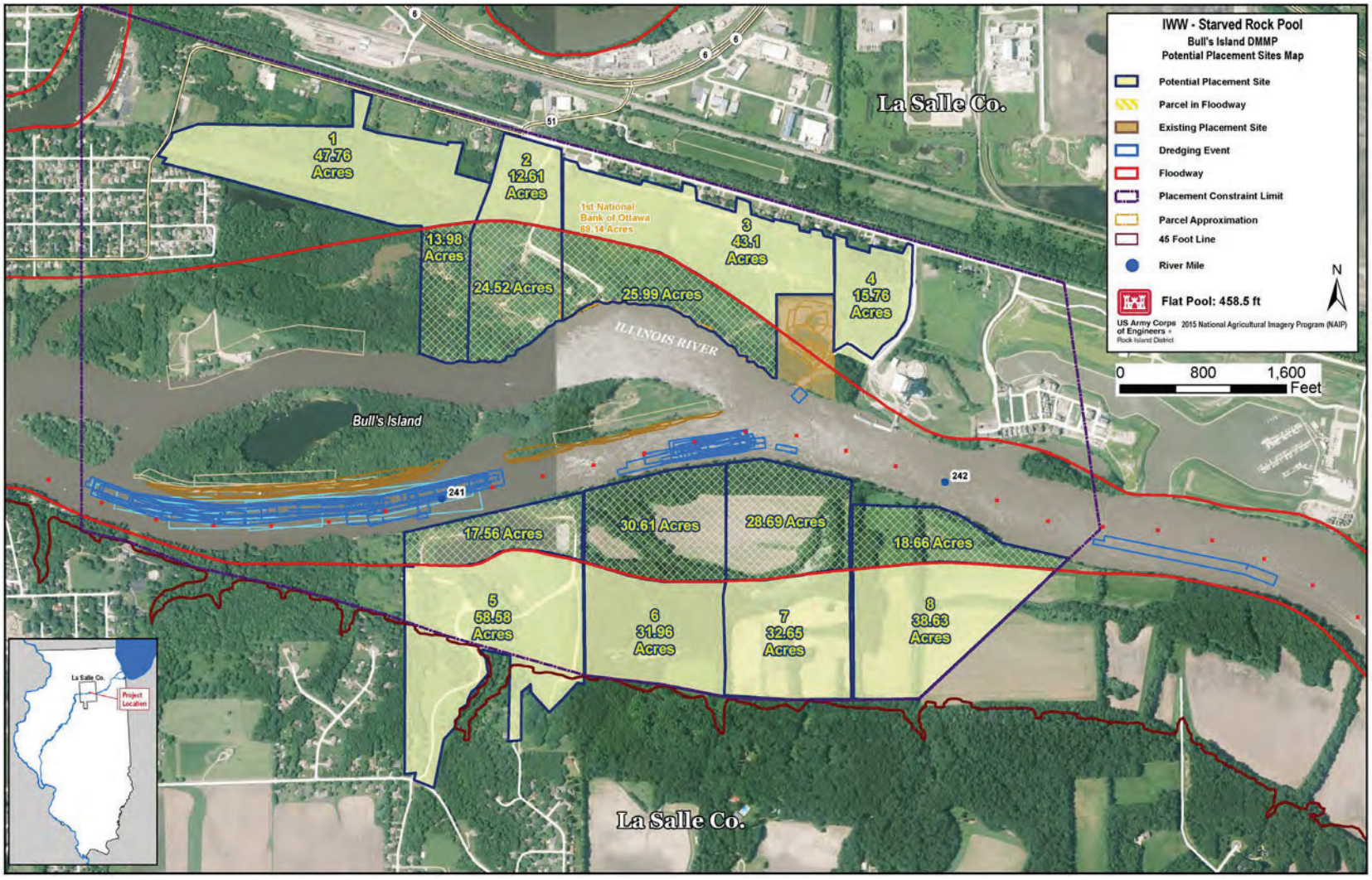

Figure 3. Sites 1-8. Potential Sites for Further Study

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3-242.7

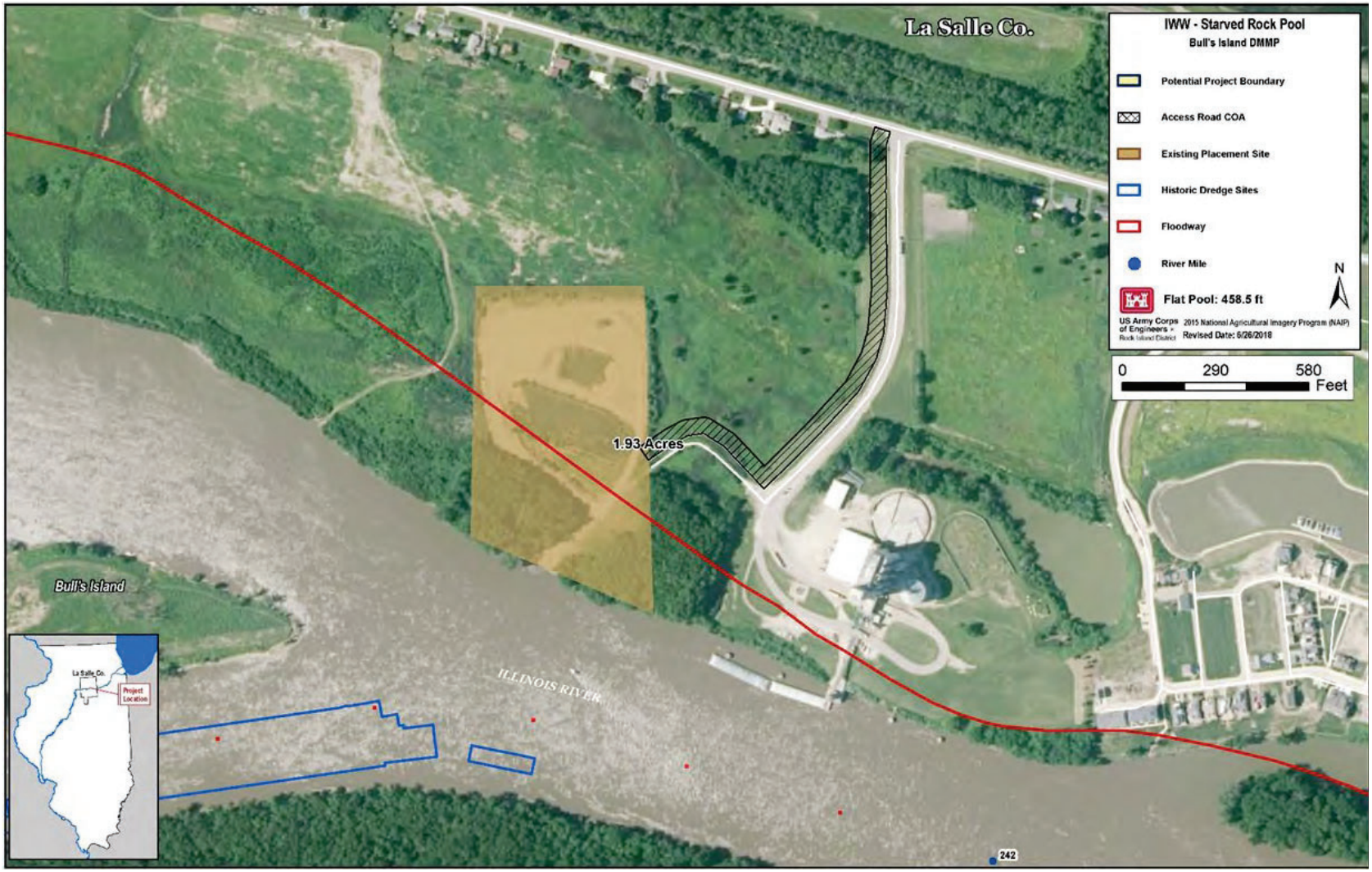

Figure 4. Public Use Only Option

The eight sites, along with the public use only option, were evaluated in more detail with regards to operation feasibility, costs, environmental impacts, and public input, which resulted in the following (See Table 5 for comparison):

- **Site 1 eliminated** as operational costs are high due to increased distance from dredge cuts and challenging placement operations, as well as increased environmental impacts. Specifically, river access to Site 1 would require significant dredging due to shallow depths located north of Bull's Island. Initial dredging amount for the access channel are estimated to be 40,000 CY, with additional re-dredging required periodically to maintain access. Mechanical placement at the final placement site would require significant land based operations to move the material out of the floodway. Under several hydraulic dredge pipe configurations, significant pipe lengths, up to 11,380 feet, may be required along with elevation increases up to 40 feet. These operational factors cause this placement option to cost more than any of the other placement sites that were considered. Additionally, the relatively undeveloped condition of the site would impact local natural resources.

- **Site 2 eliminated** as operational costs are high due to increased distance from dredge cuts and challenging placement operations. Specifically, river access to Site 2 would require significant dredging due to shallow depths located north of Bull's Island. Initial dredging amount for the access channel are estimated to be 40,000 CY, with additional re-dredging required periodically to maintain access. Mechanical placement at the final placement site would require significant land based operations to move the material out of the floodway. Under several hydraulic dredge pipe configurations, significant pipe lengths, up to 9,700 feet, may be required along with elevation increases up to 45 feet. These operational factors cause this placement option to be the third highest cost of all sites considered.

- **Sites 3 and 4 kept for further consideration** due to the lower cost and feasibility of operation. These sites are considered an expansion of the exiting site. No appreciable access dredging is required to reach the placement site for mechanical dredging operations. The hydraulic dredge pipe configurations are more predictable and only vary based on the potential location of the dredged cut as the access point to the Sites 3 and 4 is already established. The maximum hydraulic pipe length is 9,300 feet. Elevation increases do exist on the sites, including elevations increases up to 45 feet, but are within typical equipment capabilities. Land based operations would be required to push or haul material to the final placement location.

- **Site 5 eliminated** due to increased environmental impacts. In water placement options within this site would likely be the easiest and cheapest operational site; however, relatively steep to very steep slopes exist much beyond the in-water placement area, making placement on other areas within the site operationally challenging. Additionally, the relatively undeveloped condition of the site would impact local natural resources and documentation indicates that significant historic properties would potentially be affected.

- **Sites 6-8 eliminated** as operational costs are high due to increased distance from dredge cuts, as well as increased environmental impacts. Any mechanical dredging operations would require significant land based work to get it to the final placement location and remove material from the floodway. Elevation changes would make placement very challenging in

some areas and potentially not feasible in others. Elevation increases for Sites 6 and 7 are up to 110 feet and Site 8 is up to 50 feet. Site 8 also includes hydraulic pipe lengths up to 11,600 feet. Due to these operational factors, these are the second, forth, and fifth most expensive options. Additionally, the relatively undeveloped condition of the site would impact local natural resources and documentation indicates that significant historic properties would potentially be affected.

- Public use only option was eliminated as the market for material is unknown and a long-term placement is required.

Table 5. Site Evaluation for Further Consideration

Site	**Completeness** (Adequate Capacity)	**Effectiveness/Efficiency** (Allows Hydraulic Dredging)	**Acceptability** (Natural and Cultural Resources)
1	+	-	-
2	+ (only as supplement)	-	+
3	+	+	+
4	+ (only as supplement)	++	+
5	+	++	-
6	+	-	-
7	+	-	-
8	+	-	-

3.4. Alternative Plan Formulation

3.4.1. Formulation of Alternative Plans. In order to meet the objective of a minimum of 20 years of placement under the Federal Standard criteria, **three alternatives** were formulated, as described in detail below.

3.4.1.1. Alternative A – No Action. In compliance with the National Environmental Policy Act (NEPA), the No Action Alternative is to be considered along with the alternatives developed and documented in this report. The No Action Alternative is understood to be defined as "no change" or "business as usual". Dredging would continue as has been done in the past without a new plan. Complying with the Federal mandate to maintain commercial navigation, the District would continue to place material on historic bankline locations and in the remaining space in existing placement sites. As detailed in the "Programmatic Environmental Assessment," bankline sites are considered "full" and only available for use with the concurrence of the IL OSIT. The No Action Alternative will be considered as Alternative A.

3.4.1.2. Alternative B. Alternative B would place dredged material in Site 3 only, utilizing the maximum area (Figure 5). There are existing sewer lines placed previously by a private entity for the purpose of future development. Design would be required to avoid these lines and placement would not be within established floodway; therefore, total acreage does not represent total area for placement.

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3-242.7

General Description:	Undeveloped/Non-Forested
River Mile:	241.3 RDB
Ownership:	Private, bank-owned
Present Land Use:	Undeveloped/Reclaimed Coal Surface Mine
Placement Area:	Total acres for Site 3 are 69.14. (Approximately 34 acres would be available for placement after subtracting areas in the floodway, the 100-foot residential buffer and avoiding the existing sewer line.)
Estimated Capacity:	770,000 CY at 10 feet
Placement Method:	Hydraulic/Mechanical

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3-242.7

Figure 5. Alternative B, Maximized Use of Site 3

3.4.1.3. Alternative C. Alternative C would place dredged material in Sites 3 and 4 only (Figure 6). In an effort to minimize impacts to City of Ottawa's plans for future development nearby, Site 3 was reduced in size with addition of Site 4 to supplement capacity. There are existing sewer lines placed previously by a private entity for the purpose of future development. Design would be required to avoid these lines and placement would not be within established floodway; therefore, total acreage does not represent total area for placement. A permanent road easement has been identified along a portion of an existing private road located east of Site 4 to allow for access.

General Description:	Undeveloped/Non-Forested
River Mile:	241.3 and 241.8 RDB
Ownership:	Private
Present Land Use:	Undeveloped/Reclaimed Coal Surface Mine
Placement Area:	Total acres for reduced Site 3 & Site 4 are 48.06 plus an additional .99-acre road easement. (Approximately 31 acres would be available for placement after subtracting areas in the floodway, the 100-foot residential buffer and avoiding the existing sewer line.)
Estimated Capacity:	530,000 CY at 10 feet
Placement Method:	Hydraulic/Mechanical

Ottawa, IL
Starved Rock Pool
Illinois River Miles 240.3-242.7

Figure 6. Alternative C, Reduced Site 3 and Site 4 as Supplement

3.5. Evaluation of Alternative Plans/Recommended Plan. Both Alternatives B and C meet the Federal Standard criteria. In an effort to minimize and avoid impacts to the City's future development and reduce impacts to the local residents, Alternative C was selected as the RP (Table 6). Real estate costs differed by approximately $200,000 based on initial cost estimates; however, when the areas were totaled that occupy the existing sewer line alignment, lands within the floodway, and allowing for a residential buffer of 100 feet, the actual placement areas are close in size acres for both alternatives. Alternative C only has 18.21 non-placement acres as compared to 35.02 non-placement acres for Alternative B. Additionally, preliminary operation costs demonstrate that Alternative B would be $1-2 million higher over 20 years than Alternative C due to the challenges associated with mechanical dredging. Establishing access for mechanical dredging on the far western edge of Site 3 would require additional access dredging due to shallow depths. Therefore, the access for mechanical dredging would be the existing access at the existing site. This would require additional land base work to get material to the far western edge of Site 3, increasing time and costs to O&M. Since Alternative C keeps in closer proximity than Alternative B to the existing site, it was selected as the RP. A conservation measure utilizing the existing path for dredge pipes will minimize tree clearing and prevent impacts to Federal Trust bat species.

Table 6. Comparison of Alternatives

Alternative	**Completeness** (Adequate Capacity)	**Efficiency** (Real Estate and Construction Dredging)	**Effectiveness** (Allows Hydraulic Dredging)	**Acceptability** (Public Involvement)
B	+	$1.1 million	+	-
C	+	$1.3 million [1]	+	+

[1] After the RP was selected, a gross appraisal was prepared and updated on April 28, 2020, as initial real estate cost estimates exceeded 30 percent of total Project costs. The total cost estimate, rounded to the nearest thousand, is approximately $1,568,000, including construction, maintenance, and acquisition costs.

Following full consideration of all DMMP planning, policies, and procedures, any or all of this area may be considered as proposed for dredged material placement. A planning level "present worth cost analysis" was prepared for this DMMP, which included lands and damages, dredging, planning engineering, design and construction management.

4. ENVIRONMENTAL CONSEQUENCES

The No Action Alternative would not result in land acquisition. In order to comply with the Federal mandate of maintaining the commercial navigation, the District would continue to place material at historic bankline locations with concurrence of the OSIT under the No Action Alternative scenario. However, the No Action Alternative of using bankline placement is unlikely to provide the capacity to maintain the navigation channel long-term given the substantial and recurring dredging need in this reach. The RP is projected to provide capacity for 530,000 CY of dredged material. Alternatively, the No Action Alternative of continued bankline placement would have more detrimental environmental consequences than the RP through negatively impacting riparian and littoral habitats used by numerous aquatic species.

4.1. Effects of the Recommended Plan. Impacts of the RP on natural resources, cultural resources, and other aspects and features of the human environment are summarized in this section. The preliminary screening of potential placement sites, and the subsequent formulation of alternative combinations of feasible placement sites, was conducted with the intent to minimize or reduce adverse effects, and to avoid potentially significant impacts where feasible.

No significant adverse impacts are anticipated to result from implementation of the RP. The No Action Alternative is unlikely to provide the capacity needed to maintain the navigation channel in this reach over the long term. Additionally, the RP of using a partially disturbed site would likely result in reduced environmental impacts when compared to the no action alternative of bankline placement over the life of the Project.

4.1.1. Social and Economic Resources. The Illinois River is a vital component of the national transportation infrastructure and has provided stimulus for the growth of river communities and the entire Midwest region. Maintenance of the navigation channel would indirectly help provide for continued growth opportunities in local communities and the region. Channel maintenance for commercial, recreational, and environmental interests would positively impact public facilities and services. The purpose of the Project is to maintain the commercial navigation channel in such a manner as to avoid potential personal injury or property damage that may result from inadequate maintenance of the channel and subsequent groundings.

No significant impacts on employment or labor force would be expected to occur in the Project vicinity. Long-term impacts to business or industrial activity are not expected to result from construction of the RP. Business or industrial relocations would not be required. There would be no adverse impacts to the growth of the community or region as a direct result of Alternative C, the RP.

Potential impacts to the local residential community located north of the RP was realized early on during the planning process. A 100-foot buffer planted with trees was added between the placement area and the residents offset these impacts. Placement will begin from the existing site, starting from the river and extending north over time. This will allow the trees in the buffer time to grow, becoming a visual obstruction and minimizing the aesthetic impact. Within the buffer zone, tree growth would be encouraged. As standard practice for operation and maintenance of dredged material placement sites, routine mowing and spraying would occur on the constructed containment berms and any placed dredged materials to limit growth of undesirable vegetation.

Comparatively, the No Action Alternative would not result in land acquisition but would require continued bankline placement at historic locations as determined by the OSIT to maintain the Federal commercial navigation mandate. However, the No Action Alternative of bankline placement is unlikely to provide the capacity necessary to maintain the navigation channel long-term given the substantial and recurring dredging need in this reach. The RP is projected to provide capacity for 530,000 CY of dredged material.

4.1.2. Cultural Resources. By letter dated May 10, 2018, the District coordinated the DMMP Area of Potential Effect with the IL DNR SHPO, documenting and describing the existing conditions and potential for historic properties described and delineated in Section 2.1 of this report. The District recommended a Phase I archeological survey on those land parcels left undisturbed by previous mining activities. By letter dated June 21, 2018 (IL DNR Log #001051418), the Illinois SHPO stated

that no historic Properties would be affected by the dredged material placement (Appendix B). By letter dated June 8, 2018, the Miami Tribe of Oklahoma Tribal Historic Preservation Officer desires to be a consulting party and to receive archeological reports, since the Project is within the traditional homelands of the Miami Tribe (Appendix B).

The Corps commissioned a geomorphological assessment and Phase I intensive archeological survey of undisturbed portions of the APE, which amounted to approximately 12.2 acres. Wapsi Valley Archaeology, Inc. performed the work under terms of Contract W912EK-17-D-0001, Delivery Order No W912EK18F0122. The investigation failed to identify any cultural resources and recommended Project clearance. The Corps provided this report and recommendation with a determination of no historic properties affected. The SHPO concurred with this determination by letter dated February 25, 2019 (Appendix B).

The Corps shall follow notification procedures outlined in the DMMP PA in the event of unanticipated discoveries during Project execution.

This DMMP report will contain a copy of the DMMP PA for the protection of known and unknown historic properties throughout the Project planning, assessment, and implementation. Site location information is protected under Section 304 of the NHPA and any request for site location information must be addressed to the IL DNR SHPO, Springfield, Illinois.

4.1.3. Natural Resources. Bull's Island itself is one of relatively few islands remaining in the IWW. The Project's proximity to a significant tributary, the Fox River, is worth noting. However, the proposed placement site was disturbed previously, and anticipated ecological impacts to this area are minimal.

Biota. Five species potentially present in LaSalle County, Illinois, are federally listed (Table 7). Leafy prairie-clover is generally found in undisturbed wet prairies and sedge meadow habitats. Decurrent false aster prefers moist, sandy floodplains, and prairie wetlands along the Illinois River. Eastern prairie fringed orchid is found in wet prairies and sedge meadow habitats. No suitable habitat is present within the proposed Project area for leafy prairie-clover, decurrent false aster, or eastern prairie fringed orchid; therefore, this Project will have *No Effect* on these species.

Table 7. Determination of Effects for Federally-listed Species

Species	Scientific Name	Status	Determination of Impacts To Effect
Indiana bat	*Myotis sodalist*	Endangered	No Effect
Northern long-eared bat	*Myotis septentrionalis*	Threatened	No Effect
Decurrent false aster	*Boltonia decurrens*	Threatened	No Effect
Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	No Effect
Leafy prairie-clover	*Dealea folios*	Endangered	No Effect

Regarding bats, tree removal will be limited to the woody brush located in the northeast corner of Site 4, and southwest corner of Site 3. These 0.84 and 3.4 acre parcels are not considered bat habitat. No trees will be removed from the forested Federal Emergency Management Agency floodway denoted, or the forested area south of Site 4 (Figure 6). A dredge pipe will be placed connecting the Illinois

River to Sites 3 or 4, but existing paths will be used and mature trees will not be removed [see Conservation Measure in the Finding of No Significant Impact (FONSI)]. Since no mature trees will be removed, this Project has been determined to have *No Effect* on northern long-eared or Indiana bat species because suitable habitat will not be impacted. As such, USFWS has concurred with this determination (Appendix B).

During a June 2018 site visit, an active bald eagle nest was observed near the existing DMMP site. In years when eagles are nesting at this site, the USACE will avoid conducting dredged material placement operations during Feb 1 through May 15. Disturbance can increase fledging eagle mortality and nest failure, and this period of typically cold Illinois weather coincides with a critical fledging eagle developmental period when they are unable to effectively thermoregulate.

The USACE will maintain a reduced eagle nest buffer of 100 yards to minimize the risk of nest failure. Disturbance near the existing eagle nest site would be minimized in frequency, magnitude, and time through these conservation measures:

- Staging all Project preparation outside the nest buffer including site prep, mobilization and demobilization, and cleanup,
- Limiting all activities within the nest buffer to a single time event, and
- Minimizing the personnel and equipment within the nest vicinity.

If emergency dredging is required to maintain the navigation channel during Feb 1 through May 15, bankline placement will be completed directly south of Bull's Island pending OSIT approval (See MOU dated October 4, 2018 in Appendix B).

An access road that would provide ingress/egress within the placement site and be connected to the permanent road easement is proposed as part of the RP. This will provide public access for public use within the placement areas (See Section 5.3.5).

4.1.4. Physical Environment

Noise. Heavy machinery would temporarily increase noise levels in the immediate Project area during construction activity and material placement operations. Planting a 100-foot forested buffer strip between the homes and the proposed Project site will help maintain noise levels at a low to moderate level. Therefore, no permanent changes in ambient noise levels would be expected to result from dredging or dredge material placement activities.

Soils. There are approximately 3.5 acres of Prime and Unique Farmland identified in the proposed Project area. The U.S. Department of Agriculture, Natural Resources Conservation Service, LaSalle County Soil and Water Conservation District completed a Land Evaluation and Site Assessment which resulted in 37.3 as the final score (Appendix D). This score is low enough to be considered as having little value for agriculture.

Local Geology. Construction, operations and maintenance of the DMMP site will have no impact to the subsurface or geologic characteristics of the Project Area. All aforementioned

activities will take place on the Project Area surface, and no subsurface trenching, excavation or other intrusion is planned.

HTRW. No HTRW issues are present in the Project Area. The recommended plan would not generate or facilitate any HTRW issues. Site control measures will be implemented for construction, operations and maintenance activities so as to maintain the surface of the reclaimed mine area. These site control measures ensure that, on the low chance that sufficient iron sulfide bearing materials are present in the subsurface, these materials would not be accidently exposed, and then create a possible favorable environment for creation of a minimal amount of acid mine drainage. If surface intrusion occurs, a protocol will be in place that outlines the type of materials to backfill with, the equipment needed and locations of storage, and where to obtain backfill materials.

Reclaimed Surface Mine. Construction, operations and maintenance of the DMMP site would not have any impact to the reclaimed surface mine area. The recommend plan only allows for the aforementioned activities to take place on the surface of the Project Area, and therefore the subsurface (where the reclaimed mine materials are present), would not be disturbed. Site control measures will be implemented for construction, operations and maintenance activities so as to maintain the surface of the reclaimed mine area.

4.1.5. Relationship Between Short-Term Use and Long-Term Productivity. The Upper Mississippi River is a vital component of the national transportation infrastructure. It will continue to serve long-term recreation, commercial, and environmental interests with timely and appropriate maintenance. Dredging requirements would be reevaluated periodically during the 20-year Project life.

4.1.6. Any Irreversible or Irretrievable Commitments of Resources if Project Is Implemented. Fuel consumed, labor expended, and commitment of construction materials and equipment are considered irretrievable. The loss of floodplain forest and wetland function at Site 1 would be considered irretrievable and irreversible. No other aspects of the proposed action are considered irreversible.

4.2. Effects of the Non-preferred Alternatives. Environmental impacts would increase if the non-preferred alternative was selected due to impacts to aquatic habitats. The No Action Alternative would result in increased environmental impacts when compared to the RP as bankline placement puts dredged material directly on riparian and littoral habitats potentially used by aquatic species. Additionally, the No Action Alternative is unlikely to provide the capacity needed to maintain the navigation channel in this reach over the long term. Maintenance of the navigation channel indirectly provides economic growth opportunities in the local communities and the region and establishing a new placement location provides a more sustainable sediment management option than continued bankline placement to avoid potential emergency closures. No direct impacts on local business, industrial activity, employment or labor force would be expected to occur in the Project vicinity from the non-preferred alternative. No business or industrial relocations would be required for the RP to proceed.

Alternative B (Maximized Site 3) would place dredged material throughout the entire Site 3, which is being considered for future development by the City of Ottawa. Alternative B has a significantly larger footprint than Alternative C, and this footprint abuts some residential area. Besides potentially

impacting a prospective future residential area, Alternative B may increase disturbances to an existing neighborhood to the northwest. Otherwise, Alternative B impacts to other socio-economic resources would minimal.

4.3. Cumulative Impacts. Cumulative effects occur when a relationship exists between a proposed action and other actions which have occurred, are occurring, or are expected to occur in a similar location. The proposed action is a component of the much larger set of plans and actions undertaken as maintenance of the 9-foot navigation channel on the IWW. Cumulative impacts are assessed at systemic, District, river, and Project levels. Systematic modifications have occurred as a result of adding navigation features; these efforts have induced changes to floodplain geomorphology, stream hydraulics, and pool-specific water levels.

At the systemic, or IWW scale, the no-project or baseline condition was derived from the United States Geological Survey report, *Ecological Status and Trends of the Upper Mississippi River System 1998*, which suggests the river is already degraded and needs continuing attention if the current ecological benefits are to be maintained and degraded conditions restored. The 2007 Illinois River Basin Restoration Comprehensive Plan highlighted opportunities for systemic-scale restoration. The PDT made extensive efforts to coordinate the use of dredged material, but unfortunately, the Federal standard greatly limits the available options. The following cumulative effects information is supplemental to the quantified cumulative effects of activities related to the 9-foot navigation project presented in the *Upper Mississippi River and Illinois Waterway Cumulative Effects Study*, dated April 2000 (WEST Consultants, Inc. Contract No. DACW25-97-R-0012).

In February 2003, the District published the *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* (PEA, USACE 2003). That PEA identified six "site-types" as containing potential environmentally-acceptable placement areas. For example, Sites 3 and 4 are located on reclaimed mined sites considered environmentally acceptable for placement. This same PEA also comprehensively addressed cumulative floodplain impacts associated with the placement of dredged material resulting from channel maintenance activities. It discussed historical dredging and placement impacts; projections for potential future dredging; and placement, including incremental impacts resulting from placement actions associated with the six programmatic placement site-types.

The operation, maintenance, and navigation use of the IWW is expected to continue into the future. The District has attempted to minimize the individual and cumulative impacts of dredged material placement by selecting sites which been screened through the IL OSIT process to avoid environmentally sensitive areas. The proposed Project is an expansion of an existing placement site, and much of the expanded area has been disturbed previously. The RP will not have a significant impact when added collectively to the other past, present and reasonably foreseeable actions.

The RP is in proximity to the dredge cuts, and river access for hydraulic dredging has already been established at the existing placement site. As such, mature trees potentially used as bat habitat would not need to be removed from the regulatory floodway to create access in the RP. Additionally, dredging would not be required to prepare access to the placement site compared to Alternative B. The RP would create a dredged material placement site with an anticipated 530,000 CY of dredge material capacity outside of the regulatory floodway. Compared to other evaluated sites, the RP (Sites 3 and 4)

represents a cost competitive placement option. Beneficial use potential is high given the general accessibility of the area and proximity to N. 2753 Rd.

No significant adverse impacts are anticipated to result from implementation of the RP. The No Action Alternative is unlikely to provide the capacity needed to maintain the navigation channel in this reach over the long term. Additionally, the RP of using a partially disturbed site would likely result in reduced environmental impacts when compared to the no action alternative of bankline placement over the life of the Project. Continued bankline placement would have more detrimental environmental consequences through directly placing on riparian and littoral habitats used by aquatic species.

5. DESCRIPTION OF THE RECOMMENDED PLAN

Alternative C is the RP and consists of approximately 49.05 total acres with approximately 31 acres being available for material placement. This area is close to the dredge cuts and represents one of the most cost efficient operational sites. Future hydraulic dredging would utilize existing river access areas without removal of mature trees potentially used as bat habitat (see Conservation Measure in the FONSI). This site was previously disturbed and has minimal impacts to natural or cultural resources. Additionally, this area has relatively high potential for beneficial use.

The site includes a 100-foot residential buffer and a 50-foot sewer line buffer to allow for ease of access for City staff (Figure 7). Following full consideration of all DMMP planning, policies, and procedures, any or all of this 30.84-acre area may be considered as proposed for dredged material placement. With all known easements and buffers included into the site layout, the dredged material would need to be placed to a height of approximately 16 feet above existing ground to hold all 20 years of dredging without any beneficial use. A planning level "present worth cost analysis" was prepared for the Bull's Island Reach DMMP, which included lands and damages, dredging, planning engineering, design and construction management (Appendix H, *Cost Engineering)*.

5.1. Design Implementation. The period of analysis for this study is Federal fiscal years (FY) 2019-2039. If the report is completed in FY 19, with preliminary engineering and design in FY 20, acquisition of any land could occur in FY 20, and implementation of dredged material placement could occur during the FY 2021 dredging season. Design consideration assessed the location of the historic dredge cut in the Bull's Island Reach DMMP and the capability of reaching adjacent placement sites for the dredged material. Historical dredge cut information was checked to determine the range of potential placement sites within the reach. Each potential placement site of the RP was designed to provide adequate capacity and flexibility to handle the uncertainty of actual dredging requirements.

Sites 3 and 4 include a previously mined area which has been reclaimed according to state and Federal regulations. To protect the reclaimed area, restrictions on construction and operations of the placement sites in order not to disturb the neutralized surface must be followed.

The following recommendations on construction and operations of the placement sites in order not to disturb the neutralized area must be followed. The recommendations will be continued through as design criteria for the site plan and operations and maintenance manual prepared by Engineering and provided to Operations. Site control measures include:

- No excavation below the existing surface elevation will occur on-site in the previously mined area.
- Berms for containing the dredged material will be constructed utilizing material from a commercial source or excavated from a borrow location outside the previously mined area.
- A gate will limit access to the site.
- District staff will oversee removal of the dredged material by members of the public.
- Signage will direct members of the public interested in utilizing the material to contact District Operations staff to coordinate material removal.

If surface intrusion occurs, a protocol will be in place that outlines the type of materials to backfill with, the equipment needed and locations of storage. Several ag lime suppliers have been identified in LaSalle County. A detailed protocol will be developed with a reclaimed surface mine expert and included in the Operations and Maintenance Manual.

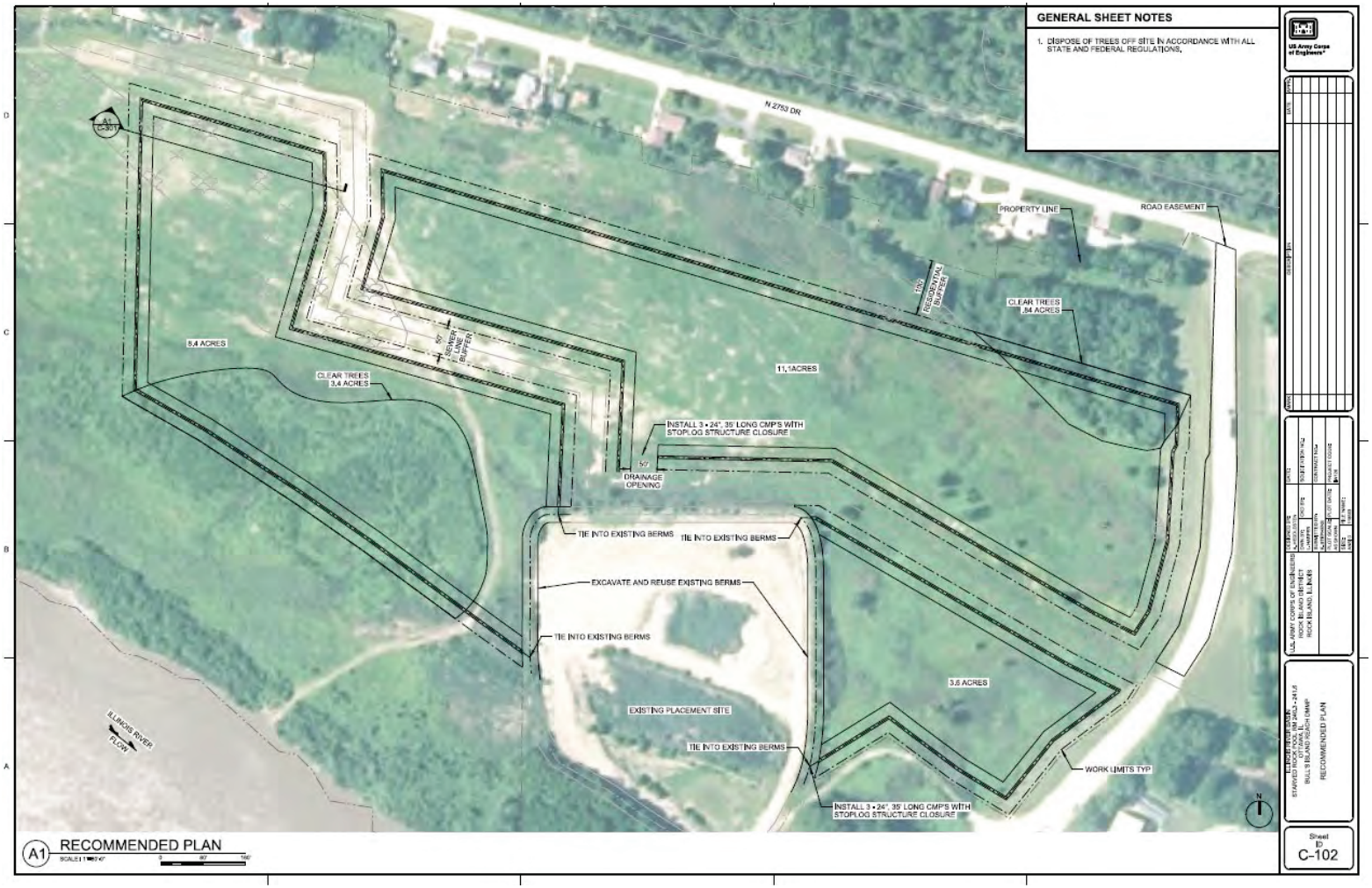

Figure 7. Design Map for the Recommended Plan (C-102 from Appendix E)

5.2. Hydrology and Hydraulics. The proposed placement sites are considered upland and would not have any flood height or conveyance impacts.

5.3. Construction and Implementation

5.3.1. Site Access and Staging. The placement site would be accessed by the river during dredging operations. No tree clearing will occur in the floodway. Woody shrub clearing will be limited to within the proposed placement sites and individual plants would be cut off at ground level and moved to the side. These plants will not be removed from the site, and no removal of mature trees suitable as bat habitat are anticipated. All access areas would be restored to their original grade after dredging operations have been concluded. Berms are to be constructed of material excavated from the site or from a commercial source as shown on Sheets C-102 and C-301. The areas to be excavated on site are outside of the footprint of the reclaimed abandoned mine.

5.3.2. Dredged Material Placement. Dredged material placement for the RP may occur by both hydraulic and mechanical methods. See Appendix E, *Civil Engineering*, for construction drawings.

5.3.3. Return Water from Hydraulic Dredging. Construction is generally laid out in the plans provided in Appendix E. The contractor should ensure that all materials are excavated from the area defined as the borrow area and that any materials stripped from the site remain on the site. Existing dredged material must be spread across the site before hydraulic dredging is allowed to ensure that erosion does not occur into soil. It is estimated that the existing material, once spread, will have an average depth of 3 to 5 feet across the site. As dredging operations begin, the work crew should monitor discharge water to ensure that no erosion is occurring along the return water flow path. If erosion is observed, stop logs should be installed on the outlet structures to reduce the flow or riprap should be added to the channel to eliminate the scouring. The proposed Project would implement berms within the placement sites to direct the flow of the return water. Once dredging operations are completed, ditches and swales would be cleared of any accumulated dredge material and the sediments returned to the placement site. Any pipeline used for return water would be removed at the completion of dredging operations for each event. Once placed, dredged material may be shaped by a dozer to reach the desired elevation and shape. Dredged material will be tested for grain size, and no further testing will be completed if excess fines are not present. Should excess fines are identified, this material will be tested for contaminants and elutriated.

5.3.4. Post-Placement Considerations. All placement site shaping and grading would be performed after each dredging event to ensure proper drainage and slope stability. Fencing, signs, and gates may be added to the Project to ensure the beneficial use of the site is utilized in accordance with all State and Federal laws and regulations. An access road for beneficial use and site access is proposed along the eastern edge of the site. It will be designed to hold two-lane traffic and be constructed of an appropriately sized rock. There is also an access route for the dredge pipe at the south of the site that should be maintained throughout the duration of the Project. All access areas would be restored to their former grade and design. As-built drawings would be created as specified in the plans and specifications.

5.3.5. Operations and Maintenance Considerations. There are a few items of this Project that will require ongoing maintenance. First, the berms that are constructed will need to be mowed and sprayed on a regular basis to limit growth of trees which would affect the usefulness of the berms. Basic maintenance of this nature should also be applied to the dredge pipe access route as well as along the roadway. Second, the control structure will need maintenance over the 20 years. It is assumed that items will be properly disposed of and new ones installed as needed. Any potential future fencing, gates, or signage will also need to be reviewed and maintained in a similar manner. Third, the residential tree buffer may need maintenance to ensure that trees survive and that the buffer is working as intended. Finally, the access road may need gravel added to it on occasion to ensure the site remains accessible. The access road is proposed along the eastern edge of the site and would allow ingress and egress to the site from the proposed road easement.

5.3.6. Permits

5.3.6.1. Clean Water Act Section 404 and 401. The USFWS National Wetlands Inventory website identified two wetlands in the proposed Project area. However, a June 21, 2018, site visit with Rock Island District Regulatory Personnel determined hydric soils and plants are not present at the suspected wetland locations. This determination is available in Appendix F, and compliance for 404(b)(1) and 401 will be covered under Nationwide Permit 16 and Nationwide Permit 33. The District will test for grain size, and if the appropriate grain-size specifications are met no further testing would occur. Should there be excess fines, the fines will be evaluated for contaminants and elutriated.

5.3.6.2. Floodway Permit. The proposed placement sites are outside of floodway and are protected from a 1% chance exceedance (100-year) flood event. As such, no impacts to the floodway are anticipated and no floodway permit is required.

5.3.6.3. National Pollutant Discharge Elimination System (NPDES) Permit. The construction contractor will be responsible for acquiring a NPDES permit. This will be applied for approximately 90 days prior to construction.

5.4. Operation, Maintenance, Repair, Rehabilitation, and Replacement

5.4.1. Operation. In general, operation requirements will be limited to routine annual inspections to ensure performance as designed.

5.4.2. Maintenance. The Project will have low annual maintenance requirements, which will be further detailed in the Project's O&M Manual to be published after construction is finished.

5.4.3. Repair, Rehabilitation and Replacement Considerations. Repair, rehabilitation and replacement considerations may be considered periodically during the life of this Project.

5.5. Schedule for Design and Construction (Table 8, subject to change)

Table 8. Schedule of Design for Construction

Task	Duration
35% Design including Geotechnical Borings & Survey	90 days
65% Design	60 days
100% Design	60 days
Routing to Contracting	30 days
Contract Solicitation & Award	45 days

5.6. Real Estate Considerations. The Bull's Island DMMP recommended site is located on the right descending bank of the Illinois River at RM 241.7 in LaSalle County, Illinois. The recommended site is adjacent to a present dredged material placement site, owned by the United States and managed by the Corps of Engineers that is nearing capacity.

The Project's recommended site consists of purchasing 49.05 acres of land from two private owners. The tracts consist of two contiguous fields, one of 31.59 acres, one of 16.47 acres, and a .99 acre road easement for access. The cost estimate for these tracts is approximately $1,200,000. It is important to note, real estate cost estimates were initially prepared for comparing alternatives but exceeded more than thirty percent of total Project costs. After the RP was selected, a gross appraisal was prepared and updated April 28, 2020, in accordance with ER 405-1-04, 29 Jan. 2016.

6. COMPLIANCE WITH APPLICABLE FEDERAL LAWS

6.1. Applicable Laws (Table 9)

6.1.1. Endangered Species Act. The District has determined the proposed action is not likely to adversely affect any federally listed endangered or threatened species or their habitats. This determination has been coordinated with the USFWS Rock Island Ecological Services Field Office during informal consultation and is in full compliance.

6.1.2. Archaeological and Historic Preservation Act. This Act requires that Federal agencies provide for "...the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of...any alteration of the terrain caused as a result of any Federal construction project of federally licensed activity or program." The District commissioned a Phase I archeological survey on 12.2 acres of land to be used for dredged material placement that have the potential for containing historic properties. No cultural resources were recorded by the investigation and a District determination of no historic properties affected received SHPO concurrence by letter dated February 25, 2019 (Appendix B).

6.1.3. National Historic Preservation Act of 1966, as amended [This Act became law on October 15, 1966 (Public Law 89-665; 16 U.S.C. 470 et seq.)]. By letter dated October 7, 1999, the District contacted the Illinois, Iowa, Missouri, Minnesota, and Wisconsin SHPOs and approximately 70 Tribes concerning the Mississippi River and IWW dredging programs. The Tribes (including Tribal Historic Preservation Officers and often, tribal council members) and SHPOs were asked to

review an attached tribal distribution list for corrections and/or additions and provide comment on the DMMP program. The Tribes were notified that the District, the Advisory Council on Historic Preservation (Council), and the appropriate SHPOs have signed a PA regarding implementation of the long-term management strategy for dredged material placement for the DMMP for IWW RMs 80.0 to 327.0 and Mississippi River RM 300.0 to 614.0 (Appendix A). Comment was received and addressed, and all tribes were included on the lists generated by the District for the DMMP. Since 1999, this Distribution List has been updated to include changing addresses, and other interested tribes, consulting parties, and landowners. In addition, a report documenting compliance with the PA is produced once every 2 years.

The Corps commissioned a geomorphological assessment and phase I intensive archeological survey of undisturbed portions of the APE which amounted to approximately 12.2 acres. Wapsi Valley Archaeology, Inc. performed the work under terms of Contract W912EK-17-D-0001, Delivery Order No W912EK18F0122. The investigation failed to identify any cultural resources and recommended Project clearance. The Corps provided this report and recommendation with a determination of no historic properties affected. The SHPO concurred with this determination by letter dated February 25, 2019 (Appendix B).

Although the PA assures that the District will comply with the NHPA and that no significant historic properties will be affected by the historic dredge cut and proposed dredged material placement and land acquisition, if any undocumented historic properties are identified or encountered during the undertaking, the District will discontinue all dredge and dredged placement activities and resume coordination with the IL DNR to identify the significance of the historic property and determine potential effects under Stipulation VI of the PA.

6.1.4. Clean Air Act. The proposed action is expected to be in compliance with the Act. Mobile source emissions will be temporary and limited to the construction period, and are expected to be *de minimis* for criteria air pollutants. Based on these findings, the proposed Project demonstrates conformity.

6.1.5. Clean Water Act. The wetland determination provided in Appendix G provides Section 404(b)(1) compliance as no waters of the U.S. are present within the Project area. A State Section 401 water quality certification is covered under Nationwide permits 16 and 33 (See Appendix F).

6.1.6. EO 11988, *Floodplain Management*. No change in existing levels of flood risk will occur as a result of dredged material placement. This action will not adversely impact floodplains or floodplain values.

6.1.7. Hazardous, Toxic and Radioactive Waste. A Phase I HTRW ESA, in compliance with ER 1165-32-165, was performed for the Project area (Appendix C). This proposed action is in compliance with the Comprehensive Environmental Response, Compensation and Liability Act, as no known HTRW occurs on site.

6.1.8. Federal Water Project Recreation Act. No increases or decreases in current public recreational opportunities would be realized if this Project is implemented. The proposed action is in full compliance.

6.1.9. Fish and Wildlife Coordination Act. Project plans have been coordinated with the USFWS. Coordination responses can be found in Appendix B including the concurrence letter dated April 5, 2019. The proposed action is in full compliance.

6.1.10. Bald and Golden Eagle Protection Act/Migratory Bird Treaty Act. Dredging and placement activities are expected to be limited to periods when little or no ice cover is present on the river. During these times, eagles and other migratory birds will be relatively dispersed and unlikely to be concentrated in stopover or winter roost areas where they could be disturbed or their feeding disrupted by dredging or placement activities. Nesting areas will also be avoided until eaglets are able to thermoregulate. For these reasons, no adverse impacts to bald eagles or other migratory birds are anticipated. The proposed action is in full compliance (MOU dated October 4, 2018 in Appendix B).

6.1.11. Farmland Protection Policy Act of 1981. The proposed action would result in the conversion of 3.5 acres of prime farmland to nonagricultural uses. In accordance with the provisions of this law, alternative sites were considered that would have fewer impacts on prime farmland, but these were either found to be not feasible, would not meet the capacity requirements for long-term use and flexibility, or would have greater adverse effects on other natural resources. The proposed action is in full compliance.

6.1.12. National Environmental Policy Act of 1969, as amended. The compilation of this EA and the signing of the Finding of No Significant Impact by the District Engineer would fulfill NEPA compliance.

6.1.13. EO 11990, Protection of Wetlands. The June 21, 2018, wetland determination revealed no jurisdictional wetlands of the U.S. present within the Project area. If any wetlands were present at one time, the previous degradation of the site has already impacted those areas.

6.1.14. EO 13112, Invasive Species. On February 3, 1999, President Clinton issued EO 13112 to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts invasive species cause by establishing the National Invasive Species Council. The proposed action is consistent with EO 13112 as it will use relevant programs and authorities to prevent the introduction of invasive species and not authorize, fund, or carry out actions likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere.

6.1.15. EO 12898, Environmental Justice. Executive Order 12898 of 1994 and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, and Pacific Islander.

A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations as of 2014 cover those whose income is $24,230 for a family of four and are identified using the Census Bureau's statistical poverty threshold. The Census Bureau defines a "poverty area" as a Census tract with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with

40 percent or more below the poverty level. This is updated annually at http://aspe.hhs.gov/poverty/14poverty.cfm. No low-income populations are present in the Project study area. The proposed action will not result in any change in land use or other impacts that would disproportionately affect low-income populations, and is therefore considered to be in compliance with this EO.

A potential disproportionate impact may occur when the percent minority (50 percent) and/or percent low-income (20 percent) population in an Environmental Justice study area are greater than those in the reference community. No low-income populations are present in the Project study area. The proposed action will not result in any change in land use or other impacts that would disproportionately affect low-income populations, and is therefore considered to be in compliance with this EO.

6.1.16. EO 13653, Preparing the U.S. for the Impacts of Climate Change. Executive Order 13653 requires Federal agencies to undertake actions enhancing climate preparedness and resilience, including the identification and assessment of climate change related impacts on and risks to the agency's ability to accomplish its missions, operations, and programs. Potential climate change impacts to the Nine-foot Channel project would be associated with changes in long-term river level variations. Water levels in the Illinois River basin vary in annual cycles, with highs in the summer and lows in the winter. However, over longer periods annual averages can vary significantly. Water level is influenced by many factors, including precipitation, water temperature, runoff, drought, ice cover, evaporation rates, consumption, and diversion. The period used to calculate historical dredging averages and predict dredging quantities includes both extreme high water levels and extreme low levels. Therefore, this average is expected to be a reasonable estimate for dredging quantities over the period of analysis, even with the occurrence of extreme conditions. Extreme lows in future years could lead to a lowered pool elevation, reducing available draft in the channel. However, the critical shoal in this channel is in the area located at the existing dredge cut. Additional dredging to allow for continued use of a 9-foot draft would therefore focus on this limited area and increased dredging quantities would be small with respect to the total projected dredging volume. The District has considered and evaluated the risk associated with climate change on the effectiveness of the proposed action and is therefore in compliance with this EO.

6.1.17. Environmental Operating Principles (EOP) (2012). Throughout the study, the team incorporated the seven Corps EOPs by:

- fostering sustainability;
- considering the environmental consequences of the alternatives;
- creating mutually supporting economic and environmentally sustainable solutions;
- continuing to meet our corporate responsibility and accounting for activities which may impact human and natural environments;
- employing a risk management and systems approach to the environment;
- using scientific, economic, and social knowledge to understand the environmental context and effects of the District’s actions in a collaborative manner; and
- employing an open, transparent process that respects views of individuals and groups interested in the District’s activities.

Table 9. Compliance with Environmental Protection Statutes and Other Requirements[1]

Federal Environmental Protection Statutes and Requirements	Applicability/ Compliance[1]
Analysis of Impacts on Prime and Unique Farmland (CEQ Memorandum, 11 Aug 80)	Full Compliance
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, Sections 404 and 401	Full Compliance
Coastal Zone Management Act of 1972, as amended	Not Applicable
Corps of Engineers Planning Guidance Handbook (ER 1105-2-100)	Full Compliance
Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq.	Full Compliance
Environmental Effects Abroad of Major Federal Actions (E.O. 12114)	Not Applicable
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not Applicable
Executive Order 11988, *Floodplain Management*	Full Compliance
Executive Order 11990, *Protection of Wetlands*	Full Compliance
Executive Order 12898, *Environmental Justice*	Full Compliance
Executive Order 13112, *Invasive Species*	Full Compliance
Farmland Protection Policy Act. 7 U.S.C. 4201, et seq.	Full Compliance
Federal Water Protection 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
Green House Gases, CEQ Memorandum 18, Feb 2010	Full Compliance
Land and Water Conservation Fund Act, 16 U.S.C. 460/-460/-11, et seq.	Not Applicable
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.	Not Applicable
National Economic Development (NED) Plan	Full Compliance
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full Compliance
NHPA, 16 U.S.C. 470a, et seq.	Full Compliance
Noise Control Act of 1972 (P.L. 92-574)	Full Compliance
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	Full Compliance
Water Resources Development Act	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

[1] Full Compliance = having met all requirements of the statute for the current stage of planning; Not Applicable = no requirements for the statute required.

6.2. Results of Coordination with Local, State, and Federal Agencies

6.2.1. Coordination. Coordination letters from Federal and state agencies are included in Appendix B. These letters help document the review process in identifying and evaluating the extent of significant environmental resources, historical properties, and other economic or social resources to

[1] The team has addressed any potential mitigation for this Project. The June 21, 2018, wetland delineation determined no wetlands are present in the Project Area. No other habitat types could potentially require mitigation for this Project. The USFWS provided concurrence regarding determinations for the Endangered Species Act and Bald Eagle and Golden Eagle Protection Act on April 5th, 2019 (Appendix B)."

discuss potential future conditions. All resource agency comments have been closed out from the coordination process documented in Appendix B. A letter dated April 5, 2019, from the USFWS provides concurrence and is provided in Appendix B.

6.2.2. Illinois On-Site Inspection Team (IL OSIT). The IL OSIT is a coordinating team that consists of state and Federal natural resource and regulatory agency representatives, as well as the District. The purpose of the IL OSIT is to discuss and recommend alternatives for dredged material placement. The IL OSIT is involved with plan formulation and continued monitoring and implementation of this DMMP. Any deviations from this plan will be coordinated through the IL OSIT chairperson.

6.2.3. River Resources Coordination Team (RRCT). The RRCT is an interagency coordination committee that makes recommendations to the District Engineer for the DMMP site plans. This team approves the DMMP reports as part of the planning process.

6.2.4. Periodic Review. The DMMP documentation is subject to periodic review and subsequent modification. A periodic reevaluation of the individual management plans may be required due to changes in regulation, significant changes to the navigation channel, economic or environmental conditions, or changes in dredge plant availability or capability. Reevaluation would be required when the preferred dredged material placement alternative approaches the end of its useful capacity. A reevaluation may be initiated by the District, the IL OSIT, or other participating Federal or state agencies. The District would review justification for the reevaluation to determine if reevaluation is warranted. Modification would be subject to the same review and approval process as the DMMP.

6.3. Public Views and Comments. Throughout a feasibility study, the Corps strives to coordinate and involve groups who may be interested in a study; this coordination is an attempt to ensure all parties have the opportunity to be part of the planning process. Ideally, this procedure opens and maintains communication with stakeholders to provide full consideration of views and information during the planning process (ER 1105-2-100, Appendix B, *Public Involvement, Collaboration and Coordination*). Numerous communication efforts were made by the PDT during this Project. These include a November 2017 open house and two phone discussions with the City of Ottawa. Additionally, three scoping letters were sent to stakeholders during the planning process.

After receiving a scoping letter, Gobbler's Knob Land Holding Company contracted The Cantlin Law Firm to argue for their property rights. This site was ranked via the Matrix lower due to concerns regarding landowner issues, operations access, and beneficial use access. However, Gobbler's Knob Land Holding Company owns property in proximity to the dredge cut. This area might become an option if the landowner becomes interested in selling, specifically if changes occur in local economic conditions.

An additional meeting with the City of Ottawa was conducted on October 15, 2018. Attendees included the Mayor of Ottawa (Bob Eschbach), a representative from The Wetlands Initiative, and Heritage Harbor.

7. CONCLUSION AND RECOMMENDATION

The Bull's Island DMMP addresses estimated dredged material placement needs for at least the next 20 years. Dredging is required to provide a safe and adequate channel for river navigation. Potential placement sites were thoroughly investigated and evaluated through the DMMP process. Three alternatives, including the No Action Alternative, were considered to meet an approximate dredging capacity of 292,000 CY. Alternative C, *Sites 3 and 4*, was selected as the RP for this DMMP. The RP provides the greatest flexibility in placement locations without increasing placement costs and safeguards against the possibility of increased dredging volumes over the 20-year life of the DMMP.

ILLINOIS WATERWAY
DREDGED MATERIAL MANAGEMENT PLAN
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

SITE PLAN FOR
RIVER MILES 240.3- 242.7
STARVED ROCK POOL
ILLINOIS RIVER

FINDING OF NO SIGNIFICANT IMPACT

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. The final Integrated Feasibility Report and Environmental Assessment (IFR/EA) dated May 2020, for the *Illinois Waterway Dredged Material Management Plan with Integrated Environmental Assessment* addresses dredge material management opportunities and feasibility in the Site Plan for river miles 240.3-242.7 Starved Rock Pool, Illinois River.

The Final IFR/EA, incorporated herein by reference, evaluated various alternatives that would provide dredge material management in the study area. The Recommended Plan is the National Economic Development (NED) Plan and includes:

- This Project will establish a suitable long-term placement site to maintain the 9-foot navigation channel on the Illinois Waterway. The Recommended Plan is environmentally acceptable and operationally feasible and will result in the purchase of 49.05 acres. Of these, 30.84 acres will be used for placement via hydraulic dredging to a height of 16 feet to allow for an estimated 20 years of dredge placement.

In addition to a "no action" plan, two alternatives were evaluated. Alternative C was selected as the Recommended Plan to minimize and avoid impacts to the City's future development and reduce impacts to the local residents (Sections 3.4-3.5). Alternative C has 31 acres available for placement compared to 34 acres for Alternative B. The no action alternative may not comply with the Federal mandate to maintain commercial navigation as historic placement sites are considered "FULL".

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

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant Effects	Insignificant Effects as a Result of Mitigation	Resource Unaffected by Action
Aesthetics	☒	☐	☐
Air Quality	☐	☒	☒
Aquatic Resources/Wetlands	☒	☐	☐
Invasive Species	☐	☐	☒
Fish And Wildlife Habitat	☐	☐	☒
Threatened/Endangered Species/Critical Habitat	☐	☐	☒
Historic Properties	☐	☐	☒
Other Cultural Resources	☐	☐	☒
Floodplains	☐	☐	☒
Hazardous, Toxic & Radioactive Waste	☐	☐	☒
Hydrology	☐	☐	☒
Land Use	☒	☐	☐
Navigation	☐	☐	☒
Noise Levels	☒	☐	☐
Public Infrastructure	☐	☐	☒
Socio-Economics	☐	☐	☒
Environmental Justice	☐	☐	☒
Soils	☒	☐	☐
Tribal Trust Resources	☐	☐	☒
Water Quality	☒	☐	☐
Climate Change	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the Recommended Plan. Best management practices as detailed in the IFR/EA will be implemented, if appropriate, to minimize impacts.

No compensatory mitigation is required as part of the Recommended Plan.

Public review of the draft IFR/EA and FONSI was completed in April 2019.

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the Recommended Plan will have no effect on federally-listed species or their designated critical habitat.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that the Recommended Plan has no effect on historic properties.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the Recommended Plan 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 G of the IFR/EA.

A water quality certification pursuant to section 401 of the Clean Water Act was obtained from the Illinois EPA. All conditions of the water quality certification shall be implemented in order to minimize adverse impacts to water quality.

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

Technical, environmental, and cost effectiveness 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. 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 Recommended Plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

30 June 2020

Date

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Steven M. Sattinger, P.E.
Colonel, US Army
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