

ENVIRONMENTAL ASSESSMENT
SANGAMON EXPERIMENTAL SEDIMENT TRAP
LA GRANGE POOL
ILLINOIS WATERWAY RIVER MILE 88.9L

BACKGROUND INFORMATION.

The U.S. Army Corps of Engineers, Rock Island District (District) is directed by Congress to maintain a 9-Foot Navigation Channel on the Upper Mississippi River and the Illinois Waterway. The bottom sediments of the Illinois Waterway are in a dynamic state, moving and rearranging as a result of natural fluvial processes. These sediments occasionally threaten navigation by causing the channel to become narrow and/or shallow at localized sites. Maintenance involves dredging of accumulated sediment to restore the channel to proper navigation dimensions.

The District's dredging program involves the planning, design, construction, operation, and maintenance of waterway projects to meet navigation needs. The District's responsibility includes developing and maintaining the Nation's waterways and harbors to meet emergency, national defense, and national interest requirements. Channel maintenance dredging is prioritized and scheduled based on soundings and hydrographic surveys performed throughout the navigation season and in response to emergency channel closures created by barge groundings.

One of the District's chronic dredge cuts is located at Illinois Waterway RM (River Miles) 86.2 to 89.5 near Beardstown, Illinois, and is called the Beardstown dredge cut. This dredge cut is actually made up of two smaller dredge cuts—the Grape Island dredge cut at RM 86.2 to 87.5 and the Beardstown cut at RM 87.5 to 89.5. These will collectively be referred to as the Beardstown dredge cut in this EA (Environmental Assessment).

The District plans to construct an experimental sediment trap at the mouth of the Sangamon River in Beardstown. This experimental sediment trap would evaluate the effectiveness of a sediment trap in that location to enable better scheduling of dredging the Beardstown dredge cut and potentially to reduce the number of potential or imminent closures within the navigation channel. These benefits may occur because some sediment may be captured within the confines of the sediment trap before it can continue downstream to be deposited within the chronic dredge cut. If the District determines that the experimental sediment trap would have benefits to the maintenance of the navigation channel, it may evaluate the potential for maintaining a permanent sediment trap in that location or another location within the Sangamon River. A permanent sediment trap would be evaluated under a future EA.

The Corps of Engineers completed the Mouth of the Sangamon River Diversion Project in 1949, which provided 6.7 miles of new Sangamon River channel, 200 feet wide, in order to re-route the Sangamon River. This project was authorized by the Flood Control Act of 1936. Since then, much of Muscooten Bay, north of Beardstown, has filled in with sediment. Prior to construction

of the Mouth of the Sangamon River Diversion Project, Muscooten Bay had a large, open water area. The Sangamon River has a high sediment load, and much of this has filled in most of Muscooten Bay since 1949. The January 1983 Section 107 Detailed Project Report with Environmental Assessment for the Beardstown Community Boat Harbor stated that over 90% of the volume of Muscooten Bay had filled with sediment since the re-routing of the Sangamon River. Forested islands are now located between the Beardstown harbor and the Illinois River. These islands are made up of sediment carried down the re-routed Sangamon River. Access through these islands is needed to carry the dredged material from the sediment trap to the placement site within the Beardstown harbor.

I. AUTHORITY AND PURPOSE.

The River and Harbor Act of 1927, as modified by the River and Harbor Acts of 1930 and 1935, gave the formal authorization for the U.S. Army Corps of Engineers to perform operation and maintenance activities on the Illinois Waterway. This EA was prepared to address impacts associated with the construction of a proposed experimental sediment trap at the mouth of the Sangamon River in Beardstown, Illinois, in compliance with the NEPA (National Environmental Policy Act) of 1969. A CWA (Clean Water Act) Section 404(b)(1) Evaluation (EA Appendix B) has been prepared, and a CWA Section 401 water quality certification would be obtained from the State of Illinois prior to implementation of this project. A floodplain construction permit also would be obtained from the State of Illinois prior to implementation.

The purpose of the experimental sediment trap project is to determine the rate at which the sediment trap fills and the grain size of the sediment that fills the trap in order to evaluate the potential for this type of sediment trap project to reduce future downstream maintenance dredging by capturing the sediment at a defined location. A future long-term sediment trap project in this location or elsewhere within the Sangamon River may not reduce the total amount of dredging needed to maintain the 9-foot navigation channel, but it may concentrate the sediments in a defined location and make it easier to schedule the maintenance dredging. This experimental project is proposed to be constructed one time. If a future permanent sediment trap were planned, a separate NEPA evaluation would be prepared.

II. PROJECT LOCATION AND DESCRIPTION.

The study area lies in the La Grange Pool, near the City of Beardstown, Cass County, Illinois, at RM 88.9L (left descending bank), with the experimental sediment trap to be located at the mouth of the Sangamon River. The sediment trap is proposed to be approximately 5.1 acres in size, with a depth of approximately 3 feet. According to boring logs taken by the District on April 2, 2002, in the area of the proposed sediment trap, the top 3 feet of sediment is composed of fine sand, underlain by fat clay. The District plans to limit the depth of the sediment trap to the depth of the fine sands.

Approximately 24,200 cubic yards of sediment are proposed to be hydraulically dredged from the sediment trap in one dredging event. The sediment trap is expected to take approximately 5

weeks to dredge. If water quality becomes a concern at the outlet of the drop structure, the dredging would be slowed to allow for additional settling time within the placement site. A hydraulic dredge consists of a floating plant having a rotating cutterhead that is lowered to the bottom of the river and digs into the sediment. A large pump producing a suction on one side and pressure on the other entrains a mixture of sediment and water to the surface and transports it via a pipeline to the placement site. The slurry that is formed during the dredging process consists of approximately 10%-20% solid material and 80%-90% river water. Thus, for every unit volume of bottom material moved, 5 to 10 units volume of slurry are created.

The hydraulic dredging would be performed by an 8-inch cutterhead dredge. The size of the dredge is determined by the inside diameter of the discharge side of the pump or the discharge pipe, whichever is smaller. Other dredges of different sizes may also be utilized. Dredging of the sediment trap would commence at the western edge of the site, near the Illinois Waterway navigation channel, and move to the east, toward Beardstown harbor.

The placement site is located along the left descending bank of the Illinois Waterway at approximate RM 89.0L. The approximately 300-foot by 600-foot placement site is currently owned by the City of Beardstown and the Beardstown Sanitary and Levee District as an open water area within the Beardstown harbor. A permanent containment berm would be constructed to hold the dredged material as it dewater. The berm would be 12 feet in height, with 3:1 slopes on the riverside and 4:1 slopes on the containment side, and a 10-foot minimum top width. Sandy material used to construct the containment berm would be trucked to the placement site from the Beardstown Dredge Cut DMMP (Dredged Material Management Plan) Placement Site 1 at RM 87.7L. The placement site would be bordered by the containment berm to the northwest, the existing levee to the southwest and southeast, and the marina peninsula to the northeast. The City of Beardstown currently has plans to dredge the harbor to enable boat usage of a new marina in that area. The City may place some of their dredged material at the District's placement site. Once the placement site has been filled to capacity and has sufficiently dewatered, the City of Beardstown currently plans to create a parking lot at the placement site. Once this is done, there will be no additional capacity in the placement site for dredged material. If the currently proposed experimental sediment trap is shown to provide benefits to the maintenance of the 9-foot navigation channel, a new placement site would need to be identified in order to dredge the sediment trap on a more permanent basis. That action would be evaluated under the NEPA.

A pilot channel is proposed to be constructed through the shallow water area at the mouth of the Sangamon River and through an existing island in order to allow workboat and hydraulic pipeline access to the proposed placement site within the Beardstown harbor. This channel must be constructed prior to the dredging of the sediment trap so that the access to the placement site is assured during low-water conditions. Approximately 7,000 cubic yards of material is expected to be mechanically dredged to construct the pilot channel, which will be approximately 40 feet wide, 6 feet deep, and 850 feet long. The hydraulic dredging equipment needs approximately 2 to 3 feet of water depth within the pilot channel for pipeline and workboat access during dredging. The pilot channel is proposed to be dredged to a 6-foot depth in order to allow for sedimentation within the pilot channel between the time that it is mechanically dredged and the need for the pilot channel during later hydraulic dredging. The remaining area between the pilot

channel and the placement site is currently deep enough to allow for access of the pipeline and workboat access. The pilot channel would be constructed during high water so that the boats used for mechanical dredging can reach the placement site within the Beardstown harbor. During low water, the shallow depths of the Beardstown harbor would prohibit boat access by the mechanical dredge and associated workboats. The appropriate high water conditions (5 feet above flat pool for at least 2 weeks) have an approximately 50% chance of occurring in the spring of 2004. If appropriate high water conditions do not occur in 2004, the pilot channel would be constructed during the next year that has the appropriate high water conditions. The excavated material would be placed behind the containment berm, which would be constructed prior to the mechanical dredging event. After the pilot channel has been excavated and the water levels go down, the sediment trap would be hydraulically dredged and the material piped to the Beardstown harbor placement site. The sediment trap would be excavated when funding and logistics allow.

In order to determine the rate at which the sediment trap fills, hydrographic surveys would be performed within one week of dredging the sediment trap, at high water and low water each year, and immediately after each high water event, until the trap is determined to have filled to pre-construction depth.

In an effort to understand the hydraulic conditions and sources of sediment that contribute to filling the proposed sediment trap, post-construction monitoring activities would include periodic collection and analysis of sediment samples from the proposed project site. Sediment cores would be taken annually from 4 to 6 representative locations within the sediment trap following significant discharge events. Representatives of the District's Water Quality Section would determine the exact sampling locations and timing. All samples would be visually inspected and analyzed for grain size. Sampling would continue until it is determined that the sediment trap is no longer functional. Results of this monitoring would indicate the physical nature of material deposited and may assist in determining the primary source of the sediment and the flow conditions that lead to sedimentation in this river reach.

The Beardstown dredge cut consists primarily of sandy material. If the material being deposited in the sediment trap is fine-grained material, it is not likely that the maintenance of a permanent sediment trap in that location would decrease future dredging downstream. On the other hand, if the material being deposited in the sediment trap is sandy material, it is possible that the material, if not caught by the sediment trap, would have moved downstream and dropped out at the chronic Beardstown dredge cut. In that case, a sediment trap at the mouth of the Sangamon River would be seen as a beneficial feature in order to contain the sediment in a predictable non-channel location. Normally, the dredge crew must take soundings along the dredge cut in order to determine the location where the most sedimentation has occurred in any given year so that a dredging plan can be developed. With the material contained in a predictable location, that surveying could be reduced. This would also reduce the chance for shoaling and the associated chance of imminent closures of the navigation channel. The one-time sediment trap proposed in this EA would not reduce long-term potential for imminent closures of the channel, but the information gained from this experimental sediment trap would aid the District in determining the value of a more permanent sediment trap in the vicinity of this experiment.

The Sangamon River watershed is approximately 5,418 square miles and has a high total sediment yield with a 20-year average of approximately 1,738,200 tons per year of sediment transport into the Illinois River, according to a study completed in March 2003 by the Illinois State Water Survey. Not all of that sediment goes into the main channel. Some of the sediment is deposited each year during high water events through the overflowing of small levees along the river or is deposited within Muscooten Bay. Since Muscooten Bay has substantially filled during the past half century, much sediment is currently transported directly from the Sangamon River into the Illinois River. The Beardstown dredge cut was dredged twice (1947 and 1949) before 1987 in order to maintain the 9-Foot Navigation Channel. The Sangamon River has since established a main channel through Muscooten Bay to the Illinois River at Beardstown, thus transporting sediment directly into the river. Since 1987, the dredge cut has been excavated 16 times for a total of 407,874 cubic yards with an average of approximately 25,492 cubic yards per event. The dredging event quantities range from 1,570 to 66,963 cubic yards per event. The dredge cut is located between approximate RM 86.2 and 89.5 (plate EA-1).

The District has constructed one other sediment trap in the past, at the confluence of the Mackinaw River and the Illinois River. That sediment trap was an over-excavated area constructed within the 9-Foot Navigation Channel where the sediments from the Mackinaw River dropped out when they reached the Illinois River. That sediment trap was re-dredged periodically from the mid-1980's to the early 1990's, to a maximum depth of 16 feet or the depth of hardpan. During post-construction surveys, it was usually found to have filled within a year of excavation due to the large amount of sediment entering the Illinois River from the Mackinaw River. According to the Illinois State Water Survey 2003 study, which computed the average annual sediment yield of tributaries to the Illinois River from 1981-2000, the Mackinaw River carries an average of 647,700 tons of sediment to the Illinois River per year. The Sangamon River carries an average of 1,738,200 tons of sediment to the Illinois River per year. Since the Sangamon delivers much more sediment to the Illinois River than does the Mackinaw River, this experimental sediment trap is expected to fill fairly quickly. The Mackinaw River, however, is known to carry mainly sandy materials, while one of the purposes of the Sangamon River experimental sediment trap is to determine the grain size of the sediment in the bedload of the Sangamon River. The bedload of the Sangamon River is what would be captured during the sediment trap experiment, and it is not known if this bedload is composed of silty or sandy material. If it is sandy, then a permanent sediment trap at the Sangamon River may be useful in the future for the District. If it is silty, then the District can deduce that the Sangamon River sediments are not the primary reason for the downstream Beardstown chronic dredge cut.

Grain size, bulk sediment, elutriate, and ambient water analyses were performed on samples from the proposed sediment trap and access channel locations. A 10-foot-long tube was used to acquire an 8-foot-long bed sample at the location of the proposed sediment trap (sample BST-1). A hand auger was used to gather an 8-foot-long sample at the location of the proposed access channel (sample BST-2). Grain size analyses were performed on the samples in accordance with U.S. Army Corps of Engineers Engineering Manual 1110-2-1906. The chemical analysis for the samples was performed in accordance with USEPA (U.S. Environmental Protection Agency) methods. The results of the grain size analyses are shown in Table EA-1. The upper 3 feet of sample BST-1 (BST-1 Upper) was visually classified as fine sand, while the lower 5 feet (BST-1 Lower) was visually classified as primarily fat clay. The upper 2.5 feet of sample BST-2 (BST-2

Upper) was visually classified as clayey sand, as was the lower 5.5 feet of sample BST-2 (BST-2 Lower), although the lower stratum contained a higher percentage of coarse material.

Contaminants are more likely to be associated with silt/clay size particles rather than sand. Therefore, the stratum from each sample that contained the highest percentage of silt/clay was selected for chemical analysis. The following chemical analyses were performed on the two samples: arsenic, chromium, copper, lead, mercury, zinc, and PCBs. Table EA-2 contains the chemical analysis results. Since Illinois does not have sediment standards for dredged material, concentrations were compared with State of Washington Sediment Quality Standards (SQS), USEPA ceiling concentrations for sludge application on land and/or the Lowest Apparent Effects Threshold (LAET) concentrations. Concentrations of all metals were below the three sets of standards/criteria to which they were compared. Both PCB concentrations were less than the detection limit of 0.1 mg/kg.

An elutriate test was performed on samples collected from sample BST-1 (Lower) and sample BST-2 (Upper). The ambient water ammonia nitrogen concentration was less than the detection limit of 0.05 mg/l. Water temperature and pH at the time of sample collection were 7.5 degrees Celsius and 7.7, respectively. The elutriate ammonia nitrogen concentrations for samples BST-1 (Lower) and BST-2 (Upper) were 19 mg/l and 9.8 mg/l, respectively. The elutriate ammonia nitrogen values were typical of the concentrations commonly found in fine-grained Illinois River sediments.

Table EA-1. Grain size analysis of Illinois River sediment samples for the Sangamon sediment trap.

Percent Finer by Weight

Samples collected 3-Apr-02					
Sample Numbers:	BST-1 Upper	BST-1 Lower	Bst-2 Upper	BST-2 Upper (DUP)	BST-2 Lower
1 1/2"	100.0%	100.0%	100.0%	100.0%	100.0%
3/4"	100.0%	100.0%	100.0%	100.0%	100.0%
3/8"	100.0%	100.0%	100.0%	100.0%	100.0%
#4	99.9%	99.0%	100.0%	99.7%	100.0%
#10	99.7%	99.0%	100.0%	99.7%	99.7%
#16	99.2%	98.9%	99.9%	99.7%	99.3%
#30	97.7%	98.1%	99.4%	99.1%	98.4%
#40	94.0%	97.8%	96.7%	96.4%	95.3%
#50	64.5%	97.4%	84.9%	86.5%	81.0%
#70	18.1%	97.0%	71.7%	74.8%	55.7%
#100	4.0%	96.4%	64.1%	68.1%	37.4%
#230	0.6%	93.3%	37.3%	40.9%	25.5%
CLASSIFI-CATION:	SP, FINE SAND	CH, FAT CLAY W/ORGANIC & SHELL	SC, CLAYEY SAND	SC, CLAYEY SAND	SC, CLAYEY SAND

Notes:

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

Table EA-2. Chemical analysis results in mg/kg dry weight from bed sediment samples collected for the Sangamon sediment trap.

Samples collected 3-Apr-02					
Analyte:	BST-1 Lower	BST-2 (Upper)	Washington SQS	USEPA	LAET
Arsenic	<5	<5	57	75	57
Chromium	22.5	8.9	260	-	260
Copper	21.3	9.3	390	4,300	390
Lead	24.0	10.2	450	840	450
Mercury	<0.1	<0.1	0.41	57	0.41
Zinc	84.4	34.9	410	7,500	410
PCBs	<0.1	<0.1	-	-	0.130

III. ALTERNATIVES.

The District considered the following alternatives to determine which one best meets the project’s goals, while considering environmental, social, and economic factors. The District’s preferred alternative is Alternative B.

A. No Project. The No Project alternative would involve no dredging of an experimental sediment trap. As an experiment, this project is not required to fulfill the mission of the District. The No Project alternative would not threaten usage of the Illinois River for commercial or recreational navigation. The sediment trap is only proposed to be fully dredged one time and then allowed to fill. If the sediment trap were not constructed, the material that would have filled the trap would continue to move downstream. The Beardstown dredge cut is periodically dredged downstream of the proposed sediment location, and the material dredged from that dredge cut is placed in approved DMMP placement sites. A 905(b) Reconnaissance study is currently being performed by the District to evaluate the sedimentation problem associated with the mouth of the Sangamon and its impacts to the City of Beardstown. The reconnaissance study is intended to provide a more comprehensive evaluation of the nature of the sedimentation problem than will this short-term experiment.

This alternative avoids the environmental impacts associated with the dredging of fine-grained sediment and the impacts to riverine wetlands.

B. Dredge Sediment Trap and Utilize Harbor Placement Site Using a Pilot Channel. This is the District’s preferred alternative. It involves the dredging of an experimental sediment trap and a pilot channel to utilize a proposed placement site within the Beardstown harbor. The purpose and need for the sediment trap itself was discussed in Section I, Authority and Purpose, on page EA-2. Since this experimental sediment trap is

proposed in order to determine the value of a sediment trap in that location on the river, no alternate locations for the sediment trap were evaluated. This alternative, as well as Alternatives C, D, and E, addresses alternative placement sites for the dredged material.

The City of Beardstown owns approximately one-half of the harbor placement site that the District proposes to utilize for the dredged material to be removed from the proposed sediment trap. The Beardstown Sanitary and Levee District owns the other half of the placement site. The City received a permanent and perpetual easement from the Sanitary and Levee District allowing them to use the land and to place dredged material in the site. The City has agreed to allow the District to place dredged material from the experimental sediment trap and pilot channel into the harbor placement site. There are two islands located between the proposed sediment trap and the harbor placement site. These islands qualify as wetlands regulated by Section 404 of the Clean Water Act in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual. They are primarily forested with cottonwood, silver maple, and willow trees, shrubs, and saplings. A small boat channel was constructed through one of the islands at some time between 1995 and the present. The channel allowed boats to go back and forth from the Illinois River to the Beardstown harbor. That channel has since mostly filled in with sediment deposited at the mouth of the Sangamon River, and boat access is currently only available between the Illinois River and the Beardstown harbor during high water. The access channel has since revegetated with wetland species, primarily herbaceous. Willow shrubs and saplings are rapidly colonizing the previously excavated small boat channel area.

The District proposes to re-excavate the previously excavated small boat channel in order to create the pilot channel needed to allow for workboat and pipeline access between the sediment trap and the placement site. This is needed to get equipment and personnel to all points along the hydraulic pipeline during excavation of the sediment trap in case of needed repairs. The pilot channel would be mechanically excavated and the excavated sediments would be placed behind the containment berm at the placement site within the Beardstown harbor. The pilot channel would be excavated during high water conditions to allow boat access into the harbor to place the mechanically excavated material. Approximately 0.4 acre of riverine wetland would be impacted in order to create the channel. This would be expected to fill back in over time and become vegetated with wetland species if the channel were again abandoned. The City of Beardstown, however, currently plans to re-open a marina within the harbor and utilize the pilot channel to allow boats to access the Illinois River from the marina. This means that the reasonably foreseeable future condition of the pilot channel is that it will remain as an open water channel. The District's proposal to fill a portion of the harbor is consistent with the proposed marina plans, since the placement site would become an upland area for parking, and the remaining open water harbor area would remain available for boat slips.

The District intends to provide compensatory mitigation for the 0.4 acre of wetland impacts associated with the construction of the pilot channel. This mitigation proposal is described in detail in Appendix D of this EA. Three mitigation alternatives were considered to compensate for the wetland impacts. The first alternative, shown as Site 1 on plate EA-1, involved the permanent protection of approximately 2 acres of wetlands

within the City of Beardstown that were threatened with development. This alternative is no longer feasible due to unavailability of the site. The second alternative, shown as Site 2 on plate EA-1, involves the enhancement of approximately 1.7 acres of wetland by excavating the existing reed canary grass-dominated wetland approximately 2 feet in order to remove the top layer of silt and the reed canary grass rhizomes. Reed canary grass is an invasive species that provides minimal wildlife habitat. The top layer of silt over the original sandy substrate at the site was brought there through construction impacts from the adjacent roadway and medical complex. A culvert would be installed below the roadway that separates the mitigation site from the existing larger wetland complex to the west of the site. This would bring a surface water connection from the wetland complex into the mitigation site, along with seeds from the wetland plants in the larger wetland complex. The mitigation site is expected to revegetate with cattails, which dominate the larger wetland complex. The third alternative, shown as Site 3 on plate EA-1, involves the construction of a series of frog ponds to provide habitat for the State-threatened Illinois chorus frog and other wetland-dependent species. The frog ponds would be constructed on land adjacent to the Beardstown DMMP Placement Site 1, where the District constructed frog ponds in 2002 and 2003. Approximately 0.8 acre of wetlands would be created through the construction of the frog ponds. A decision on which compensatory mitigation site to utilize will be made after review of all public comments on this EA.

C. Dredge Sediment Trap and Utilize Harbor Placement Site Using Overland Pipe Access. This alternative involves the construction of the sediment trap and use of the harbor placement site as described in Alternative B, above. However, this alternative would involve bringing the hydraulic pipeline up and over the existing islands rather than excavating a pilot channel in order to bring the pipeline to the placement site. This would eliminate the need for permanent wetland impacts associated with this project. This alternative would limit the access of personnel and equipment to the full pipeline for potential maintenance during hydraulic dredging of the sediment trap. The pipeline would travel from the sediment trap, over the islands, and back into the water to reach the harbor placement site. If a repair were needed in the pipeline, it would be difficult for personnel and equipment to access the portions of the pipeline from the islands to the placement site. Small boats could access the open water between the islands and the harbor, but necessary equipment may not be able to access that area, and any access to the pipeline on top of the islands would be difficult due to the lack of boat access adjacent to the pipeline on the islands.

D. Dredge Sediment Trap and Utilize DMMP Placement Site 1. This alternative involves the construction of the sediment trap, but utilizes the approved Beardstown DMMP Placement Site 1, located approximately 1 river mile downstream of the proposed sediment trap. This is the placement site currently used to hold dredged material from the Beardstown dredge cut. Site 1 is contained by a small levee and had a capacity of 411,000 cubic yards at the time of the preparation of the District's 2001 DMMP for the Beardstown dredge cut. Site 1 is estimated to be used to place dredged material from 9 dredging events during the 20-year life of the DMMP, and each event is estimated to average 35,000 cubic yards. Therefore, the total amount of material estimated to be placed at Site 1 during the 20-year life of the DMMP is approximately 315,000 cubic

yards. That leaves approximately 96,000 cubic yards of capacity remaining. This 96,000 cubic yards of excess capacity has the potential to contain the 24,200 cubic yards of sand estimated to be hydraulically dredged from the experimental sediment trap. The use of Site 1 would limit the capacity of the site for unforeseen future dredging events that may exceed the estimate included in the DMMP.

If Site 1 were utilized as the placement site for the sediment trap excavation, the hydraulic pipeline would need to be in place directly in front of the entire city limits of Beardstown, therefore closing off any commercial or recreational navigation from the Illinois River to the city during the dredging operation.

The benefits of utilizing Site 1 are the lack of a need for wetland impacts and associated compensatory mitigation.

E. Dredge Sediment Trap and Utilize DMMP Placement Site 3. This alternative would involve constructing the sediment trap and placing the dredged material on Site 3 of the Beardstown DMMP. Site 3 is a historic bankline placement site, located at RM 88.6R approximately one-half mile downstream of the proposed sediment trap, on the other side of the river. Site 3 has limited capacity, and this is being reserved for potential future dredging events at the upper end of the Beardstown dredge cut, which might be too far upstream to utilize DMMP Placement Sites 1 and 5.

F. Dredge Sediment Trap, Utilize Harbor Placement Site, and Dredge Pilot Channel in Any High or Low Water Conditions. This alternative would allow dredging of the pilot channel regardless of the water depths within the Beardstown harbor area. The preferred alternative only allows the dredging of the pilot channel to occur during high water conditions to allow for boat access from the pilot channel to the Beardstown harbor placement site. During low water, the sedimentation within the harbor area may prevent workboat access into the placement site. This alternative would allow open water placement of the material excavated from the pilot channel. The material would be stockpiled within the location of the experimental sediment trap. This alternative was evaluated and determined to have unacceptable water quality impacts because the material would likely move downstream soon after placement. This alternative would likely not meet applicable state water quality standards, as is required by the Clean Water Act, so it has been dropped from further consideration.

G. Dredge Sediment Trap in High Water and Utilize Harbor Placement Site. This alternative would involve dredging the sediment trap in high water conditions so that the pilot channel dredging is unnecessary in order to access the placement site within the Beardstown harbor. The pilot channel is only needed during low water conditions, since that is when boats cannot access the harbor through the existing small boat channel in that location. During high water, the workboats and pipeline could be brought through the existing small boat channel and into the placement site without the need to impact wetlands by dredging the pilot channel. The experimental nature of this project allows for some flexibility in timing of the dredging, since it could wait to be done in a year that has

the appropriate high water conditions for a long enough period of time to accomplish the dredging.

The major concern with this alternative is safety of personnel and equipment. The Sangamon River is a major tributary to the Illinois River, and the high water conditions needed for this alternative would also involve higher flows and greater potential for debris deflection or removal. The dredging equipment would include floating pipeline, anchor barges, tender boats, and other floating plant items. Working with this equipment during high flow conditions would be impractical and unsafe.

IV. AFFECTED ENVIRONMENT.

The environment affected by the scope of this EA consists of approximately 5.1 acres of the Illinois River at the mouth of the Sangamon River for the proposed sediment trap, approximately 0.4 acre of scrub-shrub, emergent, and forested wetlands and mudflats for the proposed pilot channel, approximately 3 acres of open water in the Beardstown harbor for the placement site, approximately 1 acre of levee and peninsula slope at the Beardstown harbor placement site, either 1.7 acres of emergent wetland for compensatory mitigation Site 2 or approximately 2 acres of upland to be excavated at mitigation Site 3, and a portion of the beneficial use sand at Beardstown DMMP Site 1.

V. ENVIRONMENTAL IMPACTS OF THE PREFERRED ALTERNATIVE.

Effects of the preferred alternative on natural resources and historic properties are summarized in Table EA-3.

Table EA-3. Effects of the preferred action on natural resources and historic properties, as well as the associated regulatory authorities.

Types of Resources	Regulatory Authorities	Measurement of Effects
Air quality	Clean Air Act, as amended (42 U.S.C. 165h-7, et seq.)	No significant effect
Areas of particular concern within the coastal zone	Coastal Zone Management Act of 1972, as amended	Not present in planning area
Endangered and threatened species critical habitat	Endangered Species Act of 1973, as amended (16 U.S.C. 1531, et seq.)	No significant impacts anticipated
Fish and wildlife	Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.)	No significant effect
Floodplains	Executive Order 11988, Flood Plain Management	No significant effect
Historic and cultural properties	National Historic Preservation Act of 1966 as amended (16 U.S.C. 470, et seq.)	No significant effect
Prime and unique farmland	CEQ Memorandum of Aug. 11, 1980; Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act	No significant effect
Water quality	Clean Water Act of 1977, as amended (33 U.S.C. 1251, et seq.)	No significant effect
Wetlands	Executive Order 11990, Protection of Wetlands, Clean Water Act of 1977, as amended (43 U.S.C. 1857h-7, et seq.)	0.4 acre of wetlands to be impacted will be mitigated
Wild and scenic rivers	Wild and Scenic Rivers Act, as amended (16 U.S.C. 1271, et seq.)	Not present in planning area

A. Historic Properties. 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). The Corps queried the most updated Illinois Geographic Information Systems (GIS) site file database. The proposed pilot channel includes portions of a landform comprised of sediments deposited during the formation of broad catastrophic flood paleochannels and is attributed with moderate potential for surface or near surface archeological deposits, with low potential for deeply buried archeological deposits. Based upon the archival research, no historic properties were previously documented within the

proposed dredging area, dredged material placement site within the Beardstown harbor placement site, or the wetland mitigation alternatives.

The proposed dredging area was documented on the 1902-1904 J. W. Woerman Sheet No. 20, Map of the Illinois and Des Plains Rivers, as open water. The experimental sediment trap is located at the mouth of the Sangamon River, and the pilot channel is a historic dredge cut. The proposed pilot channel is documented in the *Landform Sediment Assemblage (LSA) Units in the Illinois River Valley and the Lower Des Plains River Valley*, Volume I, dated May 2000, and Volume II, dated June 2000 (Contract No. DACW25-93-D-0014, Delivery Order No. 0025), as a Type E floodplain deposit (pages 30, 31). The pilot channel includes a landform sediment assemblage identified as a swale floodplain deposit (report page 30) Type B. On page 31 the report states: "There is no potential for cultural deposits within the swale fills of this landform..." The Beardstown DMMP Site 1 within the Boulevard Drainage and Levee District is an historic placement of 12 acres, previously coordinated with the IHPA (Illinois Historic Preservation Agency) as containing no historic properties (EA Appendix A, IHPA LOG #960620008PCS and IHPA LOG #960205001PCS). These recent disturbances by natural sedimentation and human-made construction result in the Corps' finding of No Historic Properties Affected, as defined in 36 CFR Part 800.3(a)(1) for the Sangamon sediment trap project, pilot channel, and dredged material placement sites within the Beardstown harbor and the Boulevard Drainage and Levee District Beardstown dredge cut DMMP Site 1.

The Corps notified the IHPA of the proposed sediment trap, Beardstown harbor placement site, and wetland mitigation Site 1 by letter dated June 18, 2003 (EA Appendix A), and documented a finding of No Historic Properties Affected. No responses or comments were received from the IHPA. During planning, the wetland mitigation Sites 1, 2, and 3 were included as alternatives. The Corps queried the most updated Illinois GIS (Geographic Information Systems) site file database and no historic properties are located within these wetland mitigation alternatives. The sites have not been subjected to any previous archeological investigations. Historic Properties 11CS794 and 11CS795 were previously recorded in the Illinois State Site Files database and are located adjacent to wetland mitigation Site 3. The wetland mitigation Sites 1, 2, and 3 have the potential to contain significant historic properties and the Corps proposes a Phase I archeological survey. Hand methods of deep testing will occur where deemed necessary, when the final wetland mitigation site is determined and the real estate rights of entry are executed. The Corps is coordinating with the IHPA and consulting parties concerning the wetland mitigation alternatives.

B. Created Resources. The areas created by humans that are to be affected by this project include the proposed placement site at the Beardstown harbor, the proposed borrow site at the Beardstown DMMP Site 1, and the proposed compensatory mitigation Site 2. The other areas to be impacted by this project are discussed in the Natural Resources section below. The proposed dredged material placement site is located in an open water area of the Beardstown harbor. That area was historically land adjacent to the Beardstown harbor. It was excavated at some time in the past and the excavated material was deposited to the east of the excavated area in order to create the peninsula that currently exists within

the harbor. Approximately 3 acres of that originally excavated open water area is now proposed to be filled with material from the proposed experimental sediment trap.

A Phase I ESA (Environmental Site Assessment) was conducted for the Sangamon River Sediment Trap Marina Placement Site. The purpose of an ESA is to identify the potential for HTRW (Hazardous, Toxic, and Radioactive Waste) on a project site, minimize Federal liability for real estate acquisitions, and protect worker safety. The information for the report was obtained through site reconnaissance, informal interviews, a review of historic topographic maps and aerial photographs, Corps of Engineers records, historic insurance information, and a search of Federal, State, and proprietary environmental databases.

Several sites were identified in an environmental database review, including a former manufactured gas plant, leaking underground storage tanks (LUST), an underground storage tank (UST), and a state hazardous waste site. A remedial investigation report performed for the manufactured gas plant provided maps showing that the extent of contamination did not enter the boundaries of the marina placement site. Conversations with the IL EPA (Illinois Environmental Protection Agency) determined that there were no environmental concerns associated with the LUST sites, the UST, and the state hazardous waste site. There is a minimal risk of contamination associated with coal storage piles located at a sawmill, an icehouse, and a brick manufacturing plant that were discovered in a search of historical fire insurance maps from the early 1900's. There is a minimal risk of contamination associated with a gasoline storage tank adjacent to the placement site that was observed during site reconnaissance.

In summary, this assessment identified no recognized environmental concerns associated with the Sangamon River Sediment Trap Marina Placement Site. Therefore, no further HTRW assessment is recommended. However, if any evidence of recognized environmental conditions is discovered during construction activities, operations should cease until an assessment is performed. Additionally, if the scope of work for the project significantly changes, it is recommended that further HTRW assessments be conducted.

The proposed borrow site for the containment berm at Beardstown DMMP Site 1 was created with dredged material from the Beardstown dredge cut and is primarily made of sand. It is approximately 12 acres in size, and approximately 7,000 cubic yards of sand is expected to be removed from the borrow site.

The proposed compensatory mitigation Site 2 is an existing wetland, although it is dominated by the invasive species, reed canary grass. It was likely disturbed by siltation during construction of the adjacent roadways and medical complex, and was also then separated from the adjacent wetlands that eventually connect to a pump station that moves water into the Illinois River on the west side of Beardstown. Approximately 1.7 acres in area, the entire isolated reed canary grass wetland, would be excavated to a depth of approximately 2 feet in order to remove reed canary grass rhizomes and silt that has collected within the site from construction impacts.

C. Natural Resources. The portion of the river proposed to be dredged in order to create the sediment trap is located at the mouth of the Sangamon River, which carries a high sediment load. During the past 50 years, many new islands have been formed at the mouth of the Sangamon River, and existing islands have been dramatically increased in size as a result of the high sediment load of the Sangamon River that drops much sediment as it hits the Illinois River. There is a very low likelihood of a valuable river bottom community at the location of the sediment trap, since it is gradually filling in with sediment over time.

The proposed pilot channel is currently an emergent, scrub-shrub, and forested wetland and rapidly forming mudflat that is utilized by amphibians and wading birds. Prior to the previous excavation of a small boat channel in that location some time after 1995, the area was likely very similar to the adjacent forested islands dominated by cottonwood, willow, and silver maple trees. The new pilot channel is expected to be utilized by recreational boaters to access the Beardstown harbor after it is constructed to provide access for the hydraulic dredge pipes to reach the placement site. The pilot channel will likely fill in over time with the sediments moving down the Sangamon River unless it is maintained in the future, so recreational use of the channel is dependent upon periodic dredging of the channel to maintain access.

The proposed compensatory mitigation Site 3 is an existing upland within a permanent conservation easement through the Federal Wetland Reserve Program and the State of Illinois CREP (Conservation Reserve Enhancement Program). Approximately 0.8 acre of wetlands would be created through the excavation of approximately 1.5 to 2 acres of land with 4:1 side slopes.

Threatened and Endangered Species. Early coordination with State and Federal resource agencies revealed no objections or concerns over potential impacts to any State or Federal threatened or endangered species. Two federally listed endangered or threatened species are known from the project area:

Indiana Bat (*Myotis sodalis*) - Federally Endangered

The Indiana bat is listed to be present throughout the state of Illinois. Indiana bats are not believed to occur within the project site. Indiana bat females move north in the spring to establish small maternity colonies within wooded riparian areas, floodplain forests, and upland woodlots and return to a winter shelter in the late summer/early fall. While this bat may forage along the forested fringes and within nearby forested areas, this project will not affect foraging behavior or critical refugia (caves and roost trees).

Bald Eagle (*Haliaeetus leucocephalus*) - Federally Threatened

The bald eagle is listed as wintering and breeding in this section of the Illinois Waterway. During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluents of power plants and municipal and industrial discharges, or in power plant cooling ponds. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements. They perch

in large shoreline trees to rest or feed on fish. This project does not involve significant clearing of mature trees and would not affect this species.

Cumulative Impacts. The permanent impacts expected as a result of this project are the placement of dredged material into the placement site, the excavation of the wetland at the location of the pilot channel, and the excavation of a wetland area at the mitigation site. The placement site is filling in over time through sediment entering the Beardstown harbor from the drainage and levee district pump stations and from the Sangamon River. This project will place more sediment in the harbor. The City has plans to create marina facilities within the harbor and has plans to dredge out portions of the harbor to allow for additional boat access. The material from the City's dredging operations will likely be placed on the harbor peninsula, and some of it may be placed on the same placement site to be utilized by the District for the experimental sediment trap project. If periodic dredging is needed in the future by the City to maintain appropriate water depths within the harbor, the cumulative effects of placement of material by the District and the City within the placement site may use much of the available area for dredged material placement within the harbor and may require the City to place the material in less desirable locations, such as adjacent wetlands or other portions of the harbor.

The proposed pilot channel would be expected to fill in over time if it were not maintained. The reasonably foreseeable future condition, however, is that it would be maintained since the City is planning to construct a marina facility within the harbor and boats utilizing the marina will need a channel in which to access the river. The material excavated from the pilot channel over time for maintenance purposes will also require a placement site. There are very limited placement opportunities near the pilot channel, as wetlands dominate the adjacent areas. The placement of dredged material within wetlands may be proposed in the future in order to facilitate the periodic dredging of the pilot channel. Muscooten Bay, which is where the harbor is located, has mostly filled in over the past 50 years from siltation from the Sangamon River. This is expected to continue, decreasing open water areas throughout Muscooten Bay and creating mudflats, emergent, scrub-shrub, and forested wetland islands.

The proposed wetland mitigation is an effort to decrease the cumulative effects of years of development within and adjacent to the City of Beardstown. Prior to the construction of a system of drainage and levee districts, the City of Beardstown was surrounded by backwater lakes, streams, and wetlands. Most of those areas are currently farmed or developed. Both mitigation alternatives would restore wetland habitat to the area surrounding the developed portions of the City of Beardstown.

No cumulative impacts are expected from construction of the sediment trap or utilization of the borrow site since the impacts to those areas will quickly be returned to their current condition through sedimentation and material placement.

VI. ENVIRONMENTAL IMPACTS OF NONPREFERRED ALTERNATIVES.

A. No Project. If the no project alternative were chosen, the pilot channel area would likely continue to fill in with sediment and would eventually revert to a forested wetland unless the City of Beardstown excavates a small boat channel for their marina access to the Illinois River in the future. Sediment from the Sangamon River would continue to either deposit into Muscooten Bay or move downstream with the suspended sediment load of the Illinois River.

B. Dredge Sediment Trap and Utilize Harbor Placement Site Using a Pilot Channel. This is the preferred alternative.

C. Dredge Sediment Trap and Utilize Harbor Placement Site Using Overland Pipe Access. This alternative would require bulldozers to come through the vegetated island to create an area for the pipeline. This would likely involve the cutting down of some small trees and shrubs. Those would be temporary impacts, however, as the vegetation would rapidly re-grow in any disturbed areas.

D. Dredge Sediment Trap and Utilize DMMP Placement Site 1. Implementation of this alternative would require the placement of dredged material into the Beardstown DMMP Site 1. Site 1 is proposed to be filled with dredged material over time as part of the DMMP for the Beardstown dredge cut, so no permanent environmental impacts solely related from use of the site by this project would be expected.

E. Dredge Sediment Trap and Utilize DMMP Placement Site 3. Implementation of this bankline placement alternative would result in the movement of dredged material from the sediment trap to an unconfined bankline placement site, where much of the sediment would likely migrate downstream during the next high water event, perhaps to the downstream Beardstown chronic dredge cut.

F. Dredge Sediment Trap, Utilize Harbor Placement Site, and Dredge Pilot Channel in Any High or Low Water Conditions. Implementation of this alternative would potentially involve the violation of State water quality standards through the unconfined open water placement of material dredged from the pilot channel.

G. Dredge Sediment Trap in High Water and Utilize Harbor Placement Site. This alternative would allow workboat and pipeline access to the placement site without the need for dredging a pilot channel through existing wetlands. It would eliminate wetland impacts, although the open water impacts associated with utilizing the harbor placement site would remain.

VII. PROBABLE ADVERSE ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED.

Approximately 0.4 acre of wetland and mudflat habitat would be impacted to create a pilot channel to bring the hydraulic pipeline from the sediment trap to the placement site within the Beardstown harbor. The hydraulic dredge equipment needs a minimum of 2 to 3 feet of water depth. During ordinary high water or lower water levels, the existing pilot channel does not provide that depth. The pilot channel is proposed to be excavated to a 6-foot depth in order to compensate for any filling of the pilot channel between the mechanical excavation of the pilot channel in spring high water and the hydraulic dredge of the sediment trap at ordinary high water or low water in the fall. The hydraulic dredging equipment does not need a 40-foot pilot channel width, but the mechanical dredging equipment does, since the mechanical dredging barge is 35 feet wide. In addition, sloughing may occur within the pilot channel, thus decreasing the channel width by the time the sediment trap is dredged in the fall. The 0.4-acre wetland impact is proposed to be mitigated in accordance with the mitigation plan outlined in EA Appendix D.

Approximately 3 acres of open water are proposed to be filled within the Beardstown harbor in order to place dredged material from the sediment trap. That open water area has silted in over time and is currently only a few feet deep. The habitat value of that open water area is very low. There is no vegetation located within the open water area. The existing bankline of the Beardstown harbor placement site has approximately five large cottonwood trees that may be cut down to prepare the placement site. Muscooten Bay, which is where the Beardstown harbor is located, contains many large trees, so the loss of the five cottonwood trees is not seen as an unacceptable environmental impact.

VIII. COMPLIANCE WITH ENVIRONMENTAL QUALITY STATUTES.

A summation of compliance with environmental statutes and regulations can be found in Table EA-4.

Table EA-4. Applicability and compliance with environmental protection statutes and other environmental requirements affecting the proposed project.

Federal Environmental Protection Statutes and Requirements	Applicability/ 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
Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq.	Full compliance
Environmental Effects Abroad of Major Federal Actions (Executive Order 12114)	Not applicable
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not applicable
Farmland Protection Policy Act. 7 U.S.C. 4201, et seq.	Full compliance
Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), et seq.	Full compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	Full compliance
Flood Plain Management (Executive Order 11988)	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
National Historic Preservation Act, 16 U.S.C. 470a, et seq.	Full compliance
Protection of Wetlands (Executive Order 11990)	Full compliance
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	Full compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Not applicable
Wild and Scenic Rivers Act, 16 U.S.C. 1271, et seq.	Full compliance
◆ Full compliance. Having met all requirements of the statute for the current stage of planning (either preauthorization or postauthorization).	
◆ Not applicable. No requirements for the statute required; compliance for the current stage of planning.	

A. Archaeological and Historic Preservation Act. The project is in compliance with this Act.

B. Clean Air Act, as amended. No aspect of the proposed project, neither short-term nor long-term, has been identified that would result in violations to air quality

standards. The environment would not be exposed to contaminants/pollutants in such quantities and of such duration as may be or tend to be injurious to human, plant, or animal life, or property, or which unreasonably interferes with the comfortable enjoyment of life, or property, or the conduct of business.

C. Clean Water Act (Sections 401 and 404), as amended. A Section 404(b)(1) Evaluation was prepared and is attached to this EA as Appendix B. Certification under Section 401 of this Act from the State of Illinois would be obtained before project construction. Due to the unavoidable impacts to approximately 0.4 acre of wetlands at the pilot channel, compensatory mitigation will be provided. See EA Appendix D for the compensatory mitigation plan.

D. Endangered Species Act of 1973, as amended. As previously discussed, the proposed project would not impact any species listed or proposed for listing under the Federal Endangered Species Act. Project plans have been coordinated with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources. The District's coordination letter and resource agency responses appear in EA Appendix A.

E. Farmland Protection Policy Act of 1981. No farmland is proposed to be impacted as a result of this project.

F. Federal Water Project Recreational Act. This Act requires that recreation opportunities be considered during the investigation and planning of any Federal navigation or other water resource project. The Act does not apply to local small boat harbors. Small recreational boats may be able to utilize the pilot channel after construction, which will enhance recreational activities at the Beardstown small boat harbor.

G. Fish and Wildlife Coordination Act. Project plans have been coordinated with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources. The District's coordination letter and resource agency responses appear in EA Appendix A.

H. Flood Plain Management (Executive Order 11988). Implementation of the preferred alternative would involve the filling of a floodplain area within the Beardstown harbor that would potentially be used as part of the development of a marina within the harbor. This Executive Order requires Federal agencies to evaluate and consider alternatives to avoid adverse effects and incompatible development in the floodplain. A marina is a compatible development of the floodplain since it is a water-related activity and no structures would be placed within the marina that would need to be protected in case of a flood. The District would obtain and adhere to all stipulations of the Floodplain permit from the State of Illinois prior to implementation of this proposed project.

I. National Environmental Policy Act of 1969, as amended. The compilation of this EA and the signing of the Finding of No Significant Impact fulfills NEPA compliance.

J. National Historic Preservation Act of 1966, as amended (NHPA).

Promulgated under Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR Part 800: “Protection of Historic Properties,” the Corps is required to consult with interested parties and assess the effects from the project on significant historic properties. By Corps letter dated June 18, 2003 (EA Appendix A) to the IHPA (Illinois Historic Preservation Agency), Springfield, Illinois, and by copy to 10 consulting parties, which included Native American Indian tribal members or representatives, comments on the project were requested, as promulgated by the National Historic Preservation Act. The Corps requested comment or concurrence with our determination that No Historic Properties Affected by the dredging, dredged material placement, 2-acre conservation easement for wetland preservation (mitigation Site 1), or any ancillary actions associated with the implementation of the Sangamon sediment trap project within 30 days, or the Corps assumed that the IHPA reviewed this information on the Sangamon sediment trap dredge cut and dredged material placement, and concurred without comment. No IHPA comments were received.

In support of land acquisition, leases, easements, and other real estate issues resulting from the Corps dredging program, and to conduct investigation promulgated under the National Historic Preservation Act, as amended and its implementing regulations 36 CFR Part 800: “Protection of Historic Properties,” a PA (Programmatic Agreement) was executed for the short-term dredged material placement projects entitled: *Programmatic Agreement Among the Rock Island District of the U.S. Army Corps of Engineers, the Advisory Council on Historic Preservation, and the Illinois State Historic Preservation Officer, the Iowa State Historic Preservation Officer, the Missouri State Historic Preservation Officer and the Wisconsin State Historic Preservation Regarding Implementation of the Short-Term Dredged Material Placement* (EA Appendix C). Short-term dredged material placement requires that the Corps complete EAs. Rights-of-entry are necessary to conduct archeological and architectural surveys, search for significant historic properties, acquire curatorial rights and agreements, and conduct other investigations. Landowner rights are important issues and considerations in the short-term dredged material placement program.

By letter dated October 7, 1999, the Corps contacted the Illinois, Iowa, Missouri, Minnesota, and Wisconsin SHPOs (State Historic Preservation Officers) and approximately 70 Tribes concerning the Corps’ short-term dredging program and the executed PA. The Tribes were notified that the Corps, the Council, and the appropriate SHPOs have signed a PA regarding implementation of the short-term dredged material placement for the Illinois Waterway River Miles 80.0 to 327.0. The Corps received comment from the Menominee Indian Tribe of Wisconsin at Keshena, Wisconsin; the Citizen Potawatomi Nation at Shawnee, Oklahoma; and the Delaware Tribe of Western Oklahoma at Anadarko, Oklahoma. The Corps met the immediate requests of these Tribes and included them on the lists generated by the Corps for the dredging program.

Allowing for tribal review and comment contributes to fulfilling obligations as set forth in the National Historic Preservation Act (PL 89-665), as amended; the National Environmental Policy Act of 1969 (PL 91-190); Executive Order (EO) 11593 for the “Protection and Enhancement of the Cultural Environment” (Federal Register, May 13,

1971); the Archaeological and Historical Preservation Act of 1974 (PL 93-291); the Advisory Council on Historic Preservation “Regulations for the Protection of Historic and Cultural Properties” (36 CFR, Part 800); and the applicable National Park Service and Corps regulations.

Since the Corps does not have rights-of-entry for wetland mitigation Sites 1, 2, and 3, the aforementioned PA is an appropriate vehicle for addressing historic property concerns in Illinois. The PA affords protection to undocumented historic properties, as well as those significant elements of the National Register of Historic Places eligible Illinois Waterway Navigation Channel, from Mile 80.2 to 327.0 and Beardstown Dredge Cut and Sediment Trap project.

The Corps PA assures that the Corps will comply with the National Historic Preservation Act and that no significant historic properties will be affected by the historic dredge cut, proposed dredged material placement, harbor access, and wetland mitigation. However, if any undocumented historic properties are identified or encountered during the undertaking, the Corps will discontinue all dredging and dredged material placements and resume coordination with the Illinois Historic Preservation Agency to identify the significance of the historic property and determine potential effects under Section 106 of the National Historic Preservation Act of 1966 and 36 CFR Part 800.

If human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered or collected, the Corps will comply with all provisions outlined in the appropriate state acts, statutes, guidance, provisions, etc., and any decisions regarding the treatment of human remains will be made recognizing the rights of lineal descendants, Tribes, and other Native American Indians and under consultation with the SHPO/THPO(s) and the other consulting parties, designated Tribal Coordinator, and/or other appropriate legal authority for future and expedient disposition or curation. When finds of human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered or collected from Federal lands or federally recognized tribal lands, the Corps will coordinate with the appropriate federally recognized Native American Tribes, pursuant to the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001 *et seq.*) and its implementing regulations (43 CFR Part 10).

K. Protection of Wetlands (Executive Order 11990). This Executive Order states that each Federal agency shall avoid undertaking new construction located in wetlands unless there is no practicable alternative to such construction, and the proposed action includes all practicable measures to minimize harm to wetlands. As previously discussed, approximately 0.4 acre of wetlands would be impacted as a result of this project. This sediment trap is experimental and is not necessary for the maintenance of the 9-Foot Navigation Channel on the Illinois Waterway. The experiment, however, may aid in determining the usefulness of a sediment trap at the mouth of the Sangamon River and, other than the no action alternative, no practicable alternatives to the impact of wetlands have been identified.

L. River and Harbor Act. The proposed plan would not place any permanent obstruction across navigable water nor would it place obstructions to navigation outside established Federal lines, other than during the hydraulic dredging of the sediment trap, when the pipeline may limit usage of the Beardstown harbor by recreational boats for the few weeks that it would take to dredge the sediment trap.

M. Wild and Scenic Rivers Act of 1968, as amended. This section of the Illinois River is not listed in the NRI (National Rivers Inventory). The NRI is used to identify rivers that may be designated by Congress to be component rivers in the National Wild and Scenic Rivers Systems.

IX. RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY.

The proposed project is an experimental sediment trap that would be fully constructed one time only. This is planned as a short-term project to provide data that would help to determine if a permanent sediment trap constructed at or near the mouth of the Sangamon River would contain sediments within a designated location prior to their movement downstream and deposition within the Beardstown dredge cut. If the sediment trap fills in with sandy material, like the material being dredged periodically at the Beardstown dredge cut, the District may investigate the feasibility of a permanent sediment trap, which would have long-term benefits. If a permanent sediment trap is created, it would first be evaluated in a future EA to comply with the National Environmental Policy Act.

X. ANY IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES IF PROJECT IS IMPLEMENTED.

Approximately 24,200 cubic yards of sediment is proposed to be hydraulically dredged to create the sediment trap. The cost of this proposed project is estimated to be approximately \$700,000. That represents an irreversible commitment of funds once the project is constructed.

The placement of sediment within the Beardstown harbor placement site is proposed to eventually be paved over during construction of the marina, to be built by the City of Beardstown. Once that is done, the placement of that material could be considered irreversible, in that the sediment could not be easily removed from the placement site.

The compensatory mitigation site is proposed to be preserved in a conservation easement to be registered with the county in order to ensure that it not be filled for a future development project. This conservation easement will disallow development at the site “in perpetuity,” thus being an irreversible commitment of land.

The fuel consumed, manpower expended, and the commitment of construction materials and equipment are also considered to be irretrievable.

XI. SOCIAL AND ECONOMIC EFFECTS OF PROPOSED ACTION.

A. Community and Regional Growth. The proposed action for dredging an experimental sediment trap and a pilot channel would not impact the growth of the community or the region.

B. Community Cohesion. The City of Beardstown supports the proposed project as it would have direct positive impacts on their community. No public opposition has been expressed, nor is any expected.

C. Displacement of People. No displacement of people would occur as a result of this project.

D. Property Values and Tax Revenues. The proposed placement site for this project is on land currently owned by the City and the Beardstown Sanitary and Levee District; thus, there would be no change in property values. Any potential long-term impacts from increases in local tax revenues would be related to business and industrial growth.

E. Public Facilities and Services. The project would have positive impacts on public facilities and services. Following project completion, the City of Beardstown plans to re-open a marina within the harbor and utilize the pilot channel to allow boats to access the Illinois River from the marina.

F. Life, Health, and Safety. The project poses no threat to the life, health, or safety of persons in the vicinity. An HTRW (hazardous, toxic, and radioactive waste) compliance assessment was conducted. No obvious indications of potential contamination sources or any risk of HTRW contamination within the project area were identified.

Before mechanical dredging of the access channel begins, a sand berm would be built near the entrance to the harbor. Hauling of material for the sand berm from DMMP Site 1 to the harbor would increase truck traffic through the adjacent residential or commercial areas by approximately 64 vehicles per day. The trucks would travel approximately 4 miles along existing city streets, adding significantly to the volume of traffic already present. Completion time for this part of the project is estimated at approximately 10 working days. Consideration would be given to the travel route to avoid residential areas as much as possible, to avoid disruptions to existing traffic flow, and to minimize inconvenience for residents and emergency vehicles.

G. Business and Industrial Growth. The proposed project would place the material dredged from the sediment trap in a placement area in the southeast end of the Beardstown harbor. The City intends to use the material to create a parking lot and boat ramps to support a proposed redevelopment plan for the riverfront area in this location. The project could indirectly provide positive impacts to business and industrial growth if

the development of the placement site serves as the catalyst for improving the riverfront amenities. No existing business or industrial relocations would be required.

H. Employment and Labor Force. There would be limited short-term impacts on employment in the project vicinity during project construction. No long-term impacts are anticipated.

I. Farm Displacement. No farms would be displaced as a result of the project.

J. Noise Levels. Heavy machinery would generate an increase in noise levels during project construction and temporarily disturb residents and recreationists in the area; however, no permanent impacts are evident.

K. Aesthetics. Creating a sediment trap to reduce downstream dredging events would not adversely impact the aesthetic resources of the area. The dredged material would be placed at the southeast end of the Beardstown harbor and would be shaped and leveled for a future parking lot and boat ramps. A permanent containment berm would be constructed to hold the dredged material as it dewateres. The berm would average 12 feet in height across the entire containment area. Once the containment area is filled, the site would be leveled to support any future development plans.

XII. RELATIONSHIP TO LAND-USE PLANS.

The proposed placement site within the Beardstown harbor is part of a larger plan for the City of Beardstown's proposed new marina facility. The placement site may eventually be paved and utilized for parking for the marina.

Material from the borrow site at Site 1 of the Beardstown DMMP is proposed to be used to create the containment berm at the harbor placement site. This borrow site is intended for beneficial use for projects such as this, so use of that borrow material is compatible with the land-use plans for that site.

The proposed alternative compensatory mitigation Site 2 is currently owned by a development company and is located between a medical complex and a roadway. If it were not used for compensatory mitigation, it is possible that the site would be developed at some point in the future. The proposed alternative compensatory mitigation Site 3 is currently in a permanent CREP easement, although the land could be removed from that easement at any time. The Illinois Department of Transportation has plans to re-route Highway 67 around Beardstown and after that road construction, mitigation Site 3 would be adjacent to one of the main feeder roads into the City of Beardstown. Since that land is currently an upland, it may be developed at some point after the road construction project. If it were used for mitigation, it would be placed in a conservation easement in perpetuity, so it would be protected from further development.

The sediment trap itself is located at the confluence of the Sangamon River and the Illinois River and no land-use plans apply to that location.

XIII. CONCLUSIONS.

The Beardstown dredge cut is one of the dredge cuts periodically dredged by the District in order to maintain the 9-Foot Navigation Channel in the Illinois Waterway. The Sangamon River empties into the Illinois Waterway approximately a mile upstream of the chronic dredge cut. Over the past 50 years, the sediment load within the Sangamon River has mostly filled in Muscooten Bay, north of the City of Beardstown. The proposed experimental sediment trap would determine if the sediments entering the sediment trap are primarily sand or silt. Sandy sediments would indicate that there is potential for the sediment trap to capture sediments that would otherwise migrate to the chronic downstream dredge cut. Silty sediments would indicate that maintenance of a sediment trap in that location would not capture sediments that would otherwise be deposited within the dredge cut, since silt typically does not drop out in the navigation channel. This is proposed as a one-time experiment and is not currently proposed to be repeated as part of the current project proposal and EA no matter the outcome of the one-time experiment.

The preferred alternative of dredging the sediment trap and placing the material in the Beardstown harbor placement site would involve impacts to approximately 0.4 acre of wetlands to create a pilot channel to allow workboats and pipeline to move the hydraulically dredged sediment from the sediment trap to the placement site. Compensatory mitigation is proposed in order to minimize harm to the environment through construction of this project.

XIV. COORDINATION.

The coordination letters from the Rock Island District for this project can be found in EA Appendix A followed by any responses received. Coordination was initiated early and continued throughout the planning process. The following agencies and individuals have been contacted:

- Beardstown Sanitary District
- City of Beardstown
- Illinois Department of Natural Resources
- Illinois Environmental Protection Agency
- Illinois Department of Agriculture
- Cass County Health Department
- Illinois State Historic Preservation Officer
(Illinois Historic Preservation Agency)
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency, Region V

A listing of those who were provided with a copy of this EA is located in EA Appendix E.

The Illinois Department of Natural Resources, Office of Realty and Environmental Planning, responded by letter dated July 3, 2003, to a coordination letter dated June 3, 2003, stating that the Illinois Natural Heritage Database contains no records of threatened/endangered species or natural areas in close proximity to any of the identified work sites. It also stated that abundant mussel populations or other sensitive aquatic resources are unlikely to be present at the proposed sediment trap location. The letter requested a response as to whether or not reviewing agencies would be given the opportunity to recommend alternate mitigation sites. **Response:** During a phone conversation dated July 14, 2003, from Ms. Gail Clingerman, project biologist, to Mr. Robert Schanzle, Permit Program Manager, Office of Realty and Environmental Planning, Illinois Department of Natural Resources, Ms. Clingerman stated that the District would welcome any reviewing agency recommendations for alternate mitigation sites.

The U.S. Fish and Wildlife Service responded by letter dated July 22, 2003, to a coordination letter dated June 3, 2003, stating that two federally threatened and endangered species, the bald eagle and the Indiana bat, occur in the project region, and stated that if the project includes Indiana bat habitat as described in the letter, it may be necessary to conduct a survey to determine whether the bat is present. The letter also provided the name of a contact person for review of the mitigation plan and/or the environmental assessment. **Response:** No bald eagle or Indiana bat habitat is proposed to be impacted as a result of this project.

The Illinois Department of Agriculture (IDA) responded by fax dated September 25, 2003, to a mitigation alternatives coordination letter dated September 10, 2003, stating that the IDA does not object to the use of the District's preferred mitigation alternative (Site 2). **Response:** The initial coordination letter stated that Site 2 was the District's preferred mitigation alternative. After receiving comments from the natural resource agencies, the District now does not have a preferred mitigation alternative and will more fully evaluate the most appropriate mitigation alternative after receipt of public comments.

The Illinois Department of Natural Resources, Office of Realty and Environmental Planning, responded by letter dated October 1, 2003, to a mitigation coordination letter dated September 10, 2003, stating that mitigation Site 2 is unacceptable and the Department recommends mitigation Site 3 at a 2:1 mitigation ratio. **Response:** The District will fully consider all agency and other public recommendations prior to making a decision on compensatory mitigation.

The United States Environmental Protection Agency responded by letter dated October 3, 2003, to a mitigation coordination letter dated September 10, 2003, stating that mitigation Site 3 is preferred over mitigation Site 2 due to benefits for the State-threatened Illinois chorus frog at Site 3. **Response:** The District will fully consider all agency and other public recommendations prior to making a decision on compensatory mitigation.

The U.S. Fish and Wildlife Service responded by letter dated October 8, 2003, to a mitigation coordination letter dated September 10, 2003, stating that Site 2 is unacceptable since it offers very little opportunity to provide function and quality of wetland mitigation. Site 3 is preferred since it would benefit the State-threatened Illinois chorus frog. In addition, the letter stated that wetland impacts be mitigated at a 2:1 ratio, so a minimum of 0.8 acre of wetland mitigation would need to be constructed at Site 3. **Response:** The District will fully consider all agency and other public recommendations prior to making a decision on compensatory mitigation.