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# ENVIRONMENTAL ASSESSMENT

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## MOORING CELL CONSTRUCTION AT MISSISSIPPI RIVER MILE 557.4 NEAR BELLEVUE, IOWA

MARCH 1988

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Rock Island District

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REPLY TO  
ATTENTION OF:

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

ENVIRONMENTAL ASSESSMENT  
MOORING CELL CONSTRUCTION  
AT  
MISSISSIPPI RIVER MILE 557.4  
NEAR BELLEVUE, IOWA

MARCH 1988

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# SUMMARY

It is proposed to build a towboat mooring cell about 0.7 mile upstream from Lock and Dam 12 on the Mississippi River at River Mile (R.M.) 557.4. A 30-foot-diameter cell will be constructed of steel sheet piling with sand fill and a concrete cap. Approximately 1,780 cubic yards of rock berm will be deposited on the river bottom around the cell to stabilize the structure.

Short-term adverse impacts due to construction and placement of the rock berm are expected to be offset by long-term benefits resulting from the introduction of a biologically productive rockpile at the construction site. No adverse impacts to endangered species or other environmental concerns are anticipated.

The study was initiated in the fall of 1985, and an environmental assessment was prepared and released for public review in March 1986. New information received during the review period concerning the possible presence of mussel beds and the endangered species Lampsilis higginsii caused the Fish and Wildlife Service (FWS) to request that the Rock Island District conduct a biological assessment in accordance with Section 7(c) of the Endangered Species Act of 1973. Results of the biological assessment and updated project design information are incorporated in this revised environmental assessment.

Key words: Environmental assessment, Rock Island District, Mississippi River, towboat mooring cell, rock berm, steel sheet piling, sand fill, concrete cap, rock pile, biological assessment, Endangered Species Act of 1973, Lampsilis higginsii, mussel beds, FWS, Rock Island District.

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ENVIRONMENTAL ASSESSMENT  
MOORING CELL CONSTRUCTION  
AT MISSISSIPPI RIVER MILE 557.4  
NEAR BELLEVUE, IOWA

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## ENVIRONMENTAL ASSESSMENT

### MOORING CELL CONSTRUCTION AT MISSISSIPPI RIVER MILE 557.4 NEAR BELLEVUE, IOWA

I. Purpose and Need for Action. The purpose of the project is to construct a towboat mooring cell on the Mississippi River upstream from Lock 12. It is estimated that about 50 percent of downbound tows wait for lockage for some period of time. Waiting vessels are requested to hold above the first green buoy upstream of the lock (approximate R.M. 557.4). In order to hold position upstream for more than a few minutes, tows must move out of the navigation channel and into the right channel border. Because this area is relatively deep, towboats must move in close to shore and ground their barges or maintain engine power to hold position. This increases the chance of a waiting tow breaking loose and colliding with the dam or another vessel.

A mooring cell will provide a stable tie-off location. The mooring cell will be part of the Nine-Foot Channel Project of the River and Harbor Act of July 3, 1930, Senate Document 126/71/2.

II. Project Description. A single towboat mooring cell will be constructed at Mississippi River mile 557.4 in the SW1/4 of sec. 7, T. 26 N., R. 5 E., Jackson County, Iowa. The structure will be located near the right (downstream) side of the main navigation channel about 0.7 mile upstream from Lock and Dam 12 (see plate 1).

The mooring cell will be 30 feet in diameter and will be constructed of steel sheet piling with sand fill and a concrete cap. The structure will be placed to provide 18 feet of water depth at the center of the cell prior to rock placement. Approximately 1,780 cubic yards of rock berm will be deposited around the cell to stabilize the structure.

III. Alternatives. Three alternatives were considered for this project, as described below:

A. No Federal Action. A mooring cell would not be constructed near Lock and Dam 12. No tie-off for towboats would be available. Waiting towboats would run close in to shore and ground their barges or would need to run engines to maintain position, burning fuel and increasing the potential for sediment resuspension and erosion by propwash.

B. Mooring Cell Near R.M. 557.65. The cell would be built as described in Section II but would be located approximately 0.95 mile upstream of Lock and Dam 12. This alternative would meet navigation and safety criteria, but was not selected because it was determined not to be the most practicable and least environmentally damaging alternative.

C. Mooring Cell Near R.M. 557.4. The cell would be built as described in Section II. No excavation will be required. This is the preferred alternative.

IV. Affected Environment. The mooring cell will be located near the western edge of the main navigation channel and will occupy about 0.25 acre (11,000 square feet) of the Mississippi River bottom. At this location, the water depth averages 18 feet and the substratum is composed of sand and gravel. The area is subject to current and wave action. In addition, this area is currently utilized by waiting tows and is therefore subject to a number of physical changes associated with tow movement. These changes include drawdown, increased wave energies, changes in water velocities, and increased turbulence. A survey conducted for the District by Stanley Consultants revealed two relatively dense concentrations of mussels in the area from R.M. 557.45 upstream to R.M. 558.0. A total of 22 species was collected, including one individual of the endangered species Lampsilis higginsii (Higgins' eye pearly mussel).

V. Environmental Consequences of the Preferred Action. Table EA-1 shows a summary of the effects of the proposed action on natural and cultural resources.

A. Social Impacts of the Preferred Action.

1. Noise. Construction of the mooring cell will result in increased noise in the project area. Construction noise may have minor impacts on residences and businesses located near the project site; however, these impacts will be temporary. Changes in noise levels following construction will not be significant.

2. Aesthetic Values. The appearance of the project area will receive minor alterations, most notably the addition of a 30-foot-diameter mooring cell protruding 12 feet above the flat pool elevation.

3. Displacement of People. No persons will be displaced by the project.

4. Desirable Community Growth. No impacts to the growth of the city of Bellevue, Iowa will result from placement of the mooring cell.

5. Community Cohesion. The project will not affect community cohesion.

6. Life, Health and Safety. The provision of a mooring cell will improve current conditions regarding life, health, and safety, as detailed in Section B(4), Public Services.

TABLE EA-1

Effects of the Recommended  
Plan on Natural and Cultural Resources

| <u>Types of Resources</u>                           | <u>Authorities</u>                                                                                                                                | <u>Measurement of Effects</u>                                  |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Air quality                                         | Clean Air Act, as amended (42 U.S.C. 1657h-7, et seq.)                                                                                            | No effect                                                      |
| Areas of particular concern within the coastal zone | Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451, et seq.)                                                                         | 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 effect                                                      |
| Fish and wildlife habitat                           | Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.)                                                                                       | 0.25 acre of river bottom area will be covered by mooring cell |
| Floodplains                                         | Executive Order 11988, Flood Plain Management                                                                                                     | No effect                                                      |
| Historic and cultural properties                    | National Historic Preservation Act of 1966, as amended (16 U.S.C. 470, et seq.)                                                                   | No effect                                                      |
| Prime and unique farmland                           | CEQ Memorandum of August 1, 1980; Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act | Not present in planning area                                   |
| Water quality                                       | Clean Water Act of 1977, as amended (33 U.S.C. 1251, et seq.)                                                                                     | Temporary resuspension during construction                     |
| Wetlands                                            | Executive Order 11990 Protection of Wetlands, Clean Water Act of 1977, as amended (42 U.S.C. 1857h-7, et seq.)                                    | No effect                                                      |
| Wild and scenic rivers                              | Wild and Scenic Rivers Act, as amended (16 U.S.C. 1271, et seq.)                                                                                  | Not present in planning area                                   |



B. Economic Impacts of the Preferred Action.

1. Local Property Values. Property values will not be affected by the project.

2. Local Tax Revenue. Tax revenues will not be affected by the project.

3. Public Facilities. The mooring cell will be a public facility. The construction will allow boats to tie up while waiting for lockage.

4. Public Services. As a public facility, the mooring cell will reduce fuel consumption by allowing boats to be tied to it and letting their engines idle rather than using engine power to hold in place. This will result in safer conditions for commercial and recreational traffic as well as for the lock and dam structure.

5. Desirable Regional Growth. The project will not have a significant effect on desirable regional growth.

6. Employment/Labor Force. The project will provide temporary employment for contract construction workers.

7. Business and Industrial Activity. The project will improve safety and will have a minor effect on the towing industry by reducing fuel cost and engine wear.

8. Farm Displacement. No farm lands are present in the project area.

9. NED Plan. The project will not have a significant effect on national economic development.

C. Environmental Impacts of the Preferred Plan.

1. Manmade Resources. The project will benefit the condition of manmade resources as it will result in safer operating conditions in the navigation channel upstream of Lock and Dam 12. The presence of a stable tie-off upstream of the lock and dam will greatly reduce the possibility of a waiting towboat breaking loose and colliding with the dam or with an outgoing tow. The mooring cell also should enable tows to maintain position without excessive use of engine power, thus reducing the potential for erosion by prop wash and reducing or eliminating the need for towboats to run up closer to the bank to maintain position upstream of the lock and dam.

2. Natural Resources. Approximately 0.25 acre of sand and gravel river bottom will be replaced by the mooring post and rock berm. The mooring cell will be located in the area currently used by waiting tows and will be placed away from the shoreline in relatively deep water (approximately 18 feet) near the navigation channel and downstream of the mussel bed identified during the survey. Towboat traffic in the area is not expected to increase as a result of this action. The project may result in some minor benefits to

natural resources, largely through reducing or eliminating the need for towboats to run engines continuously or move closer to the bank to maintain position upstream of the lock and dam. This will reduce the potential for sediment resuspension, fuel leakage, erosion by propwash, or damage to trees which might be used as tie-offs under current conditions.

Technical Report D of the Comprehensive Master Plan for the Management of the Upper Mississippi River System (1981) states that impacts associated with mooring cells have been determined to be very localized, and that these impacts could be both adverse and beneficial. Project construction could result in temporary adverse impacts to water quality and the local benthic community. Because of the small size of the construction site (approximately 0.25 acre) and its location outside areas of dense mussel concentrations, no significant adverse impacts to aquatic resources are anticipated. Placement of rock berm around the cell also could provide some minor benefits to aquatic resources by increasing substrate diversity at the site. Discussion of impacts to endangered species is contained in Section XI.

3. Air Quality. Air quality will temporarily degrade at the project site with the use of fossil fuel burning construction equipment. Wind action at Pool 12 should quickly dispel any exhaust fumes. Overall air quality may show slight improvement since exhaust output by waiting tows should be reduced.

4. Water Quality. A Section 404(b)(1) Evaluation was prepared to address the discharge of fill material into the Mississippi River and is attached as appendix A.

5. Water Conservation. The project will not affect water conservation.

VI. Environmental Impacts of the Nonpreferred Alternatives. The environmental impacts for the nonpreferred alternatives are noted below:

A. The No Federal Action alternative will adversely impact natural and manmade resources by the continuing existing conditions at the project site. Towboats waiting for lockage will be required to run engines continuously or to move in close to shore to hold position above the lock and dam, thereby increasing the potential for sediment resuspension and erosion by propwash. Effects of tow movement on aquatic resources would not be reduced.

B. Impacts of mooring cell construction at R.M. 557.65 would be similar to impacts of the preferred alternative, but the potential for reducing adverse effects of tow traffic was determined to be less at the upstream location; therefore, this alternative was not selected.

VII. Probable Adverse Environmental Effects Which Cannot Be Avoided. Covering about 0.25 acre of river bottom habitat by the mooring cell will be an unavoidable effect of the project. This effect is expected to be offset by the creation of habitat resulting from placement of the rock berm. A temporary increase in turbidity and suspended solids will have a negative impact upon aquatic organisms in the area.

VIII. Relationship Between Short-Term Use of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity. For the mooring cell, short-term and long-term uses are identical. The rock pile will add diversity to the aquatic habitat and could enhance long-term biological productivity in the project area.

IX. Any Irreversible or Irretrievable Commitments of Resources Which Would Be Involved if the Proposed Action Should Be Implemented. The 0.25-acre construction site, along with the time, labor, materials, and money expended on the project, should be considered irretrievable.

X. Relationship of the Proposed Project to Land-Use Plans. The mooring cell will be located in an open-water site; therefore, the proposed project should have no effect on land use in the area.

XI. Compliance with Environmental Quality Statutes. An environmental quality statutes compliance summary is listed in table EA-2.

A. Endangered Species. There are five federally-recognized endangered animal species listed for this area: the bald eagle (Haliaeetus leucocephalus), Arctic peregrine falcon (Falco peregrinus tundris), American peregrine falcon (Falco peregrinus anatum), Indiana bat (Myotis sodalis), and Higgins' eye pearly mussel (Lampsilis higginsii). One federally-recognized endangered plant species, the northern wild monkshood (Aconitum noveboracense), is listed for Jackson County, Iowa.

The bald eagle feeds in open tailwater areas of Mississippi River dams in the winter. The mooring cell will be about 0.7 mile upstream from the dam which should not disrupt eagle feeding habits. Also, construction is proposed to occur from July to November a time of the year when eagles will not likely be present at the site. The Arctic and American peregrine falcons have not been sighted in the area in recent times, so the project should not affect their condition. Suitable habitat for the Indiana bat (loose bark of trees) and the northern wild monkshood (north- or east-facing talus slopes) is not present in the project area. For these reasons, no impacts to these species are anticipated to result from this project.

A biological assessment was conducted to determine the effect of the proposed action on L. higginsii. The assessment included a review of literature and scientific data on current distribution, habitat needs, and other biological requirements; a survey to locate and delineate mussel beds and to verify the presence of the species in the area; and an analysis of alternative actions which could reduce or eliminate impacts to the species.

The effects of mooring cell construction on the Higgins' eye are not anticipated to be significant. The Higgins' eye is similar to other benthic organisms in that it can be affected by physical changes associated with tow movement. These changes include drawdown, increased wave energies,

TABLE EA-2

Relationship of Plans to Environmental Protection  
Statutes and Other Environmental Requirements

| <u>Federal Policies</u>                                                         | <u>Compliance</u> |
|---------------------------------------------------------------------------------|-------------------|
| 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 (Federal Water Pollution Control Act) 33 U.S.C. 1251, et seq.)  | Full compliance   |
| Coastal Zone Management Act, 16 U.S.C. 1451, et seq.                            | Not applicable    |
| Endangered Species Act, 16 U.S.C. 1531, et seq.                                 | Full compliance   |
| Estuary Protection Act, 16 U.S.C. 1221, et seq.                                 | Not applicable    |
| Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), et seq.              | Full compliance   |
| Fish and Wildlife Coordination Act, 16 U.S.C. 601, et seq.                      | Full compliance   |
| Land and Water Conservation Fund Act, 16 U.S.C. 460/-460/-11, et seq            | Full compliance   |
| Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.           | Not applicable    |
| 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   |
| Rivers and Harbors Act, 33 U.S.C. 403, et seq.                                  | Full compliance   |
| Watershed Protection and Flood Preservation Act, 16 U.S.C. 1001, et seq.        | Full compliance   |
| Wild and Scenic Rivers Act, 16 U.S.C. 1271, et seq.                             | Full compliance   |
| Flood Plain Management (Executive Order 11988)                                  | Full compliance   |
| Protection of Wetlands (Executive Order 11990)                                  | Full compliance   |
| Environmental Effects Abroad of Major Federal Actions (Executive Order 12114)   | Not applicable    |
| Analysis of Impacts Upon Prime and Unique Farmlands (CEQ Memorandum, 11 Aug 80) | Full compliance   |
| State of Iowa Land-Use Plans                                                    | Full compliance   |
| County Land-Use Plans                                                           | Full compliance   |
| Upper Mississippi Wildlife and Fish Refuge Land-Use Plans                       | Full compliance   |

## NOTES

- a. Full Compliance. Having met all requirements of the Statute for the current stage of planning (either preauthorization or postauthorization).
- b. Partial Compliance. Not having met some of the requirements that normally are met in the current stage of planning. Partial compliance entries should be explained in appropriate places in the report and referenced in the table.
- c. Noncompliance. Violation of a requirement of the statute. Noncompliance entries should be explained in appropriate places in the report and referenced in the table.
- d. Not applicable. No requirements for the statute required; compliance for the current stage of planning.

changes in water velocities, and increased turbulence, as well as the more direct impacts resulting from propeller jet scouring and barge scraping. On-site observation of tow movement in the area, examination of traffic reports for Lock 12, and results of the mussel survey indicate that these conditions are now present in the study area.

The presence of a mooring cell in the area where towboats currently wait for lockage would reduce the need for towboats to run close to shore or maintain engine power to hold position. Increases in water pressure and velocity or occurrences of sediment resuspension are not expected to exceed existing levels, and could, in fact, decrease either in frequency or intensity. While the impacts of tows approaching and leaving the mooring cells have not been quantified, current direction and outdraft conditions in this area should reduce the amount of power required to maneuver into and away from the cell. The determination of the biological assessment was that cell construction at R.M. 557.4 was the least environmentally damaging alternative and that this action would have no effect on the continued survival of the endangered species Lampsilis higginsii. The U.S. Fish and Wildlife Service (FWS) concurred with this determination in a letter dated February 17, 1988.

B. Archeological-Historical. The proposed project will have no effect upon known archeological or historical resources, since the mooring cell is located in the main channel of the Mississippi River. The project was recommended for approval by the Iowa State Historic Preservation Officer in a letter dated December 6, 1985.

C. Federal Water Project Recreation Act. Recreational areas will not be added as part of the project. However, a boat ramp is located near the mooring cell site and the cell has the potential for use by recreational as well as commercial traffic. While the presence of towboats moored near the boat ramp may have some adverse impact on recreational traffic, the mooring cell will be located where tows normally wait under present conditions, and should reduce the potential for erosion by propwash and other adverse impacts associated with tows maintaining engine power to hold position in the channel.

D. Fish and Wildlife Coordination Act. Coordination has been initiated with the U.S. FWS. Telephone conversations between Ms. Charlene Carmack of the District's environmental staff and Ms. Gail (Petersen) Carmody of the U.S. FWS on November 5, 1985, resulted in the agreement that, because of the small size of the project and the minimal site-specific impacts associated with its construction, no Coordination Act Report would be required. This position was restated in a letter to the District dated January 8, 1986.

New information received in March 1986 concerning the possible presence of mussel beds containing the endangered species Lampsilis higginsii in the project area caused the FWS to reconsider its position on the project. In a letter dated April 10, 1986, the FWS requested that the Rock Island District conduct a biological assessment in accordance with Section 7(c) of the Endangered Species Act. Diving surveys of the project area were delayed until the spring of 1987 due to adverse river and weather conditions during much of the previous year. Results of the survey and findings of the biological assessment are summarized in Sections IV and XI(A).

The purpose of constructing the mooring cell is to promote safer operation of the navigation system by providing a stable tie-off for towboats waiting to enter the lock and reducing the possibility of a tow breaking loose and colliding with the dam or with an upstream-bound towboat. The proposed mooring cell is located in an area where towboats normally wait under present conditions, and should reduce or eliminate the need for tows to maintain continuous engine power or run close to the bank to hold position. This, in turn, will benefit natural and manmade resources by reducing the potential for sediment resuspension, fuel leakage, erosion by propwash, or damage to trees which might be used as tie-offs under present conditions. Since towboats normally wait at this location, construction of the mooring cell will have no significant adverse effect on fish and wildlife resources.

E. Wild and Scenic Rivers Act. The Mississippi River is not a federally recognized wild or scenic river.

F. Executive Order 11988, Floodplain Management. The project should not have an effect upon flooding or floodplains.

G. Executive Order 11990, Protection of Wetlands. Wetlands are not present at the construction or disposal sites. According to the U.S. FWS's publication, Classification of Wetlands and Deepwater Habitats of the United States, 1979, the boundary between wetland and deepwater habitat in riverine systems lies at a depth of 2 m (6.6 feet) below low water. This is provided that no vegetation is growing past the boundary and the concerned area fits the deepwater definition. Adjacent wetlands will not be impacted by the project.

H. Clean Water Act. A Section 404(b)(1) Evaluation is attached as appendix A, and Section 401 certification has been requested from the Iowa Department of Water, Air, and Waste Management.

I. Clean Air Act. The project should not violate the provisions of the Clean Air Act.

X.I. Mitigation. No mitigation measures should be necessary. The proposed action is not expected to result in a detrimental change in existing conditions in the area, and has been determined to be the least environmentally damaging alternative.

XIII. Coordination and Correspondence. Coordination letters containing a description of the proposed mooring cell and dredged disposal site have been sent to the U.S. FWS, the U.S. Environmental Protection Agency, the Iowa Conservation Commission, the Iowa State Historic Preservation Officer, the Iowa Department of Natural Resources (IDNR), the Illinois Environmental Protection Agency, the Illinois Department of Conservation, and the Savanna Army Depot. Letters received by the District are contained in Appendix B - Relevant Correspondence.

Continued coordination has been maintained with the FWS and the IDNR during preparation of the biological assessment and environmental assessment.

Consultation required under the provisions of the Fish and Wildlife Coordination Act, the Endangered Species Act, and National Environmental Policy Act was conducted by means of letters, phone conversations, and meetings between District personnel and representatives of the FWS and IDNR. These consultations aided the District in selecting an alternative which would fulfill the intended purpose of the project while minimizing the potential for impacts to natural resources and endangered species.

FINDING OF NO SIGNIFICANT IMPACT

MOORING CELL CONSTRUCTION AT MISSISSIPPI RIVER  
MILE 557.4 NEAR BELLEVUE, IOWA

Having reviewed the information provided by this Environmental Assessment, pending data obtained from cooperating Federal, State, and local agencies and from the interested public, I find that construction of a towboat mooring cell at Mississippi River Mile 557.4 near Lock and Dam 12 will not significantly affect the quality of the environment. Therefore, it is my determination that an Environmental Impact Statement (EIS) is not required. This determination will be reevaluated if warranted by later developments.

Besides the "No Action" alternative, two alternatives were considered.

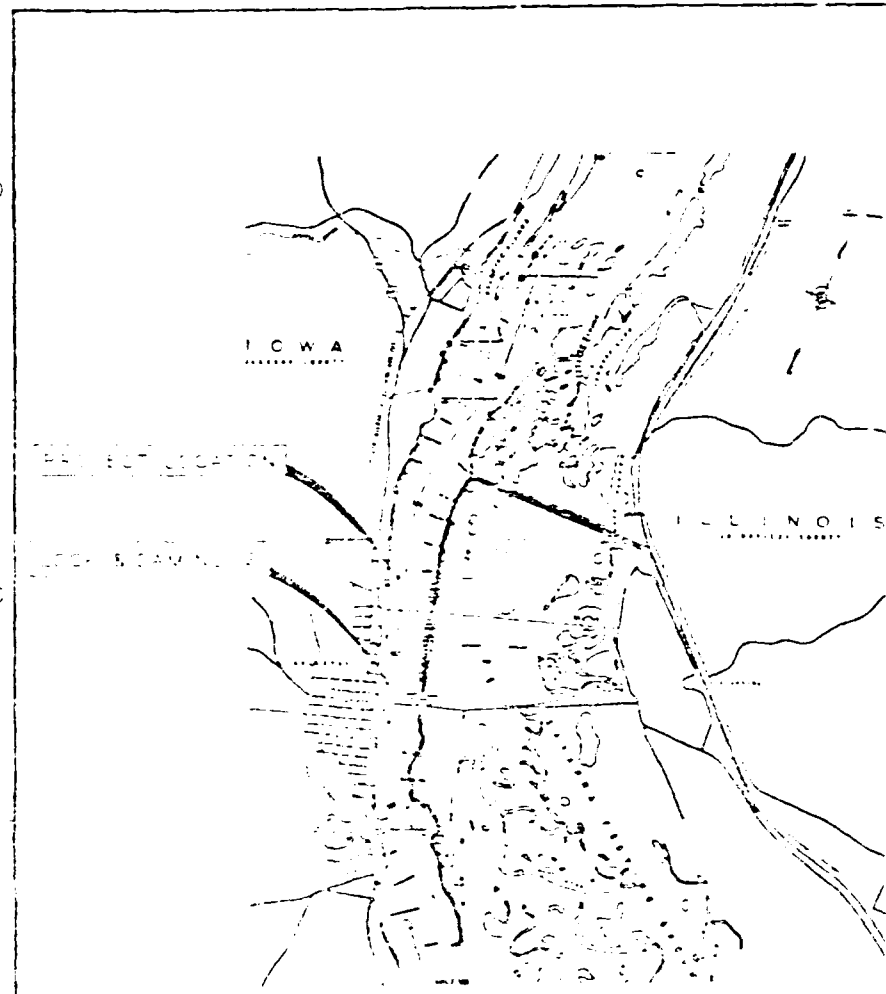
Factors that were considered in making a determination that an EIS was not required are as follows:

1. Any negative impacts which would occur have been minimized and/or are temporary in effect. Positive impacts are long-term in nature.
2. The proposed action will have no effect on the continued survival of the endangered species Lampsilis higginsi.
3. No significant environmental, social, economic or cultural impacts are anticipated as a result of constructing the mooring cell.

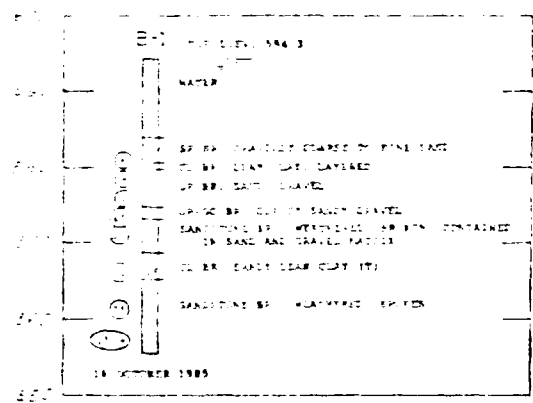
Date \_\_\_\_\_

Neil A. Smart  
Colonel, U.S. Army  
District Engineer



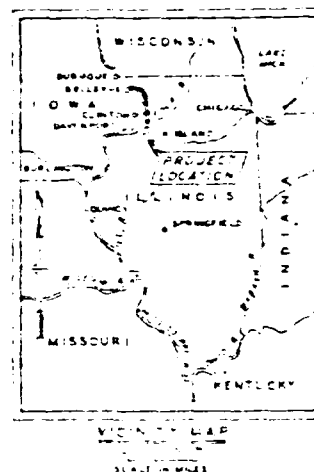


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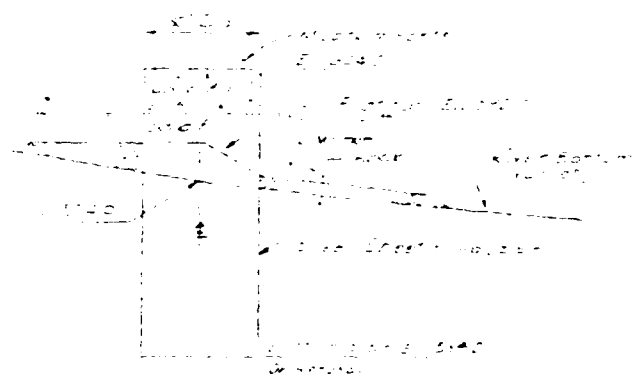


BORING LOG  
River Mile 5575  
Mooring Cell Pool No 12

SHEET NO. DRAWN  
BY  
CHECKED  
DATE



## PLAN



ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

1. AGENCY WILL NOT BE RESPONSIBLE FOR THE SECURITY OF THE SEAL  
2. THE SEAL IS TO BE KEPT IN THE OFFICIAL MAIL BAGS AND  
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STANDARD SPECIFICATIONS ARE INDICATED  
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CONSTRUCTION OF THE DRAWINGS IN THIS  
BOOK. AN APPENDIX TO EACH BOOK DIS-  
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Prepared by \_\_\_\_\_  
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1. NAME W. H. McCOULL  
 2. ADDRESS 1000 1/2 E. 12th St.  
 3. CITY Rock Island, Ill.  
 4. STATE Ill.  
 5. ZIP 61201  
 6. DATE 10/1/68  
 7. TIME 10:00 AM  
 8. REASON AS SHOWN  
 9. REMARKS 2. ADV. EPS. 1  
 10. APPROVED BY EDWARD W. MCCOULL  
 11. DATE 10/1/68  
 12. TIME 10:00 AM  
 13. REASON AS SHOWN  
 14. REMARKS 2. ADV. EPS. 1

PRELIMINARY  
SECTION 404(b)(1) EVALUATION

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REPLY TO  
ATTENTION OF

CENCR-PD-E

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

MOORING CELL CONSTRUCTION  
AT  
MISSISSIPPI RIVER MILE 557.4  
NEAR BELLEVUE, IOWA

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

MARCH 1988

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

MOORING CELL CONSTRUCTION  
AT  
MISSISSIPPI RIVER MILE 557.4  
NEAR BELLEVUE, IOWA

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List of Plates

| <u>No.</u> | <u>Title</u>            |
|------------|-------------------------|
| 1          | Navigation Mooring Cell |

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

MOORING CELL CONSTRUCTION  
AT  
MISSISSIPPI RIVER MILE 557.4  
NEAR BELLEVUE, IOWA

I. Project Description.

A. Location. The proposed mooring cell will be located at Mississippi River mile 557.4 in the SW1/4 sec. 7, T. 26 N., R. 5 E., Jackson County, Iowa. The site is near the main navigation channel approximately 0.7 mile upstream from Lock and Dam 12.

B. General Description. The proposed cell will be constructed of steel sheet piling with sand fill and a concrete cap. The substratum is primarily composed of sand and gravel with some sandy, silty clay. Approximately 1,780 cubic yards of rock will be placed around the cell to stabilize the structure and prevent scour.

C. Authority and Purpose. The purpose of the project is to provide, for navigation safety, a mooring point for towboats waiting to enter Lock 12 from the upstream side. The cell also will be available for use by recreational vessels. The project is authorized by the Nine-Foot Channel Project of the River and Harbor Act of July 3, 1930, Senate Bill 126/71/2.

D. General Description of Dredged or Fill Material. The rock berm will be composed of boulders or quarried rock with specific gravity greater than 2.6, in the following gradation mixture: 50% 300# - 700# (1.85 - 4.32 cubic feet); 35% 140# - 220# (0.86 - 1.36 cubic feet); and 15% 40# - 100# (0.25 - 0.62 cubic feet). The fill material for the cell will consist of 360 cubic yards of clean sand capped with 325 cubic yards of concrete.

E. Description of the Proposed Discharge Site. The discharge/mooring cell site is located about 0.7 mile upstream from Lock and Dam 12 along the main navigation channel (see plate 1). The cell will cover about 0.25 acre (11,000 square feet) of river bottom in an open water site. Habitat at the site is unvegetated sand and gravel in about 18 feet of water. The discharge will take place over an approximate 10-day period.

F. Description of the Disposal Method. The fill material will be placed at the construction site by mechanical means.

II. Factual Determinations.

A. Physical Substrate Determinations. The substratum at the construction site is mainly composed of sand and gravel, with a small amount of sandy, silty clay, and ranges from nearly horizontal to moderately sloping.

B. Water Circulation, Fluctuation, and Salinity Determinations.

Water chemistry, clarity, color, odor, taste, dissolved gas levels, nutrients, and eutrophication will not be affected by the project. Salinity determinations are not applicable to the area. Circulation, flow, velocity, stratification and hydrologic regime will not be affected. Normal water fluctuations will not be altered by the project. Current pattern will be slightly altered near the structure.

C. Suspended Particulate/Turbidity Determinations. There will be a minor temporary increase in suspended particles and turbidity during construction. However, strong current and wave action will quickly dilute the area to ambient levels. Light penetration and dissolved oxygen will not change. Toxic metals, organics, and pathogens should not be present in the fill material.

D. Contaminant Determination. Conversations between Mr. Ralph Turkle of the Iowa Department of Water, Air and Waste Management and Mr. Clinton A. Beckert, Chief of the District's Water Quality Section, were initiated in November 1985 to determine if sediment and/or water quality testing would be required. At that time it was determined that, based on current project specifications, the agency would not require testing; therefore, no test results are presented here.

E. Aquatic Ecosystem and Organism Determinations. The effect on plankton, benthos, nekton, and the aquatic food web will be minimal since the site occupies only a small fraction of Pool 12. Mudflats, coral reefs, and riffle and pool complexes are not present in the project vicinity. There are five federally recognized endangered animal species listed for this area: the bald eagle (Haliaeetus leucocephalus), Arctic peregrine falcon (Falco peregrinus tundris), American peregrine falcon (Falco peregrinus anatum), Indiana bat (Myotis sodalis), and Higgins' eye pearly mussel (Lampsilis higginsii).

The bald eagle feeds in open tailwater areas below Mississippi River dams during winter months. The mooring cell will be about 0.7 mile upstream from the dam in an area of existing towboat activity, and construction is expected to take place during summer and fall. This should not disrupt eagle feeding habits. The Arctic and American peregrine falcons have not been sighted in the area in recent times, so the project should not affect their condition. Suitable habitat for the Indiana bat (loose bark of trees) and the northern wild monkshood (talus slopes) is not present at the project site.

A biological assessment was conducted to determine the effect of this action on the Higgins' eye pearly mussel. Because of the relatively small size of the construction site and its location in an area of existing towboat activity but outside the limits of dense mussel concentration, no impacts to this species are anticipated. Further discussion of environmental effects is contained in the environmental assessment.

F. Proposed Disposal Site Determinations. No excavation will be required; therefore, no dredged disposal determination will be necessary. Parks, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves are not present in the construction area.

G. Determination of Cumulative Effects on the Aquatic Ecosystem. This is an initial action and cumulative effects are not foreseen.

H. Determination of Secondary Effects on the Aquatic Ecosystem. No adverse secondary effects have been recognized for this project.

III. Findings of Compliance for the Pool 12 Mooring Cell Project.

A. No significant adaptations of the guidelines were made relative to this evaluation.

B. Aside from No Federal Action, only two alternatives were considered. These alternatives involve construction at two different locations: R.M. 557.4 and R.M. 557.65. It was determined that construction at R.M. 557.4 would be the least environmentally damaging of the three alternatives.

C. Toxic effluent standards and Section 307 of the Clean Water Act will not be exceeded.

D. The United States Fish and Wildlife Service has determined that federally listed endangered species will not be impacted.

E. Municipal and private water supplies, fisheries, aquatic life, recreation, aesthetics, and economic values will not be significantly harmed.

F. Potential adverse impacts on the aquatic ecosystem will be minimized by using uncontaminated fill material.

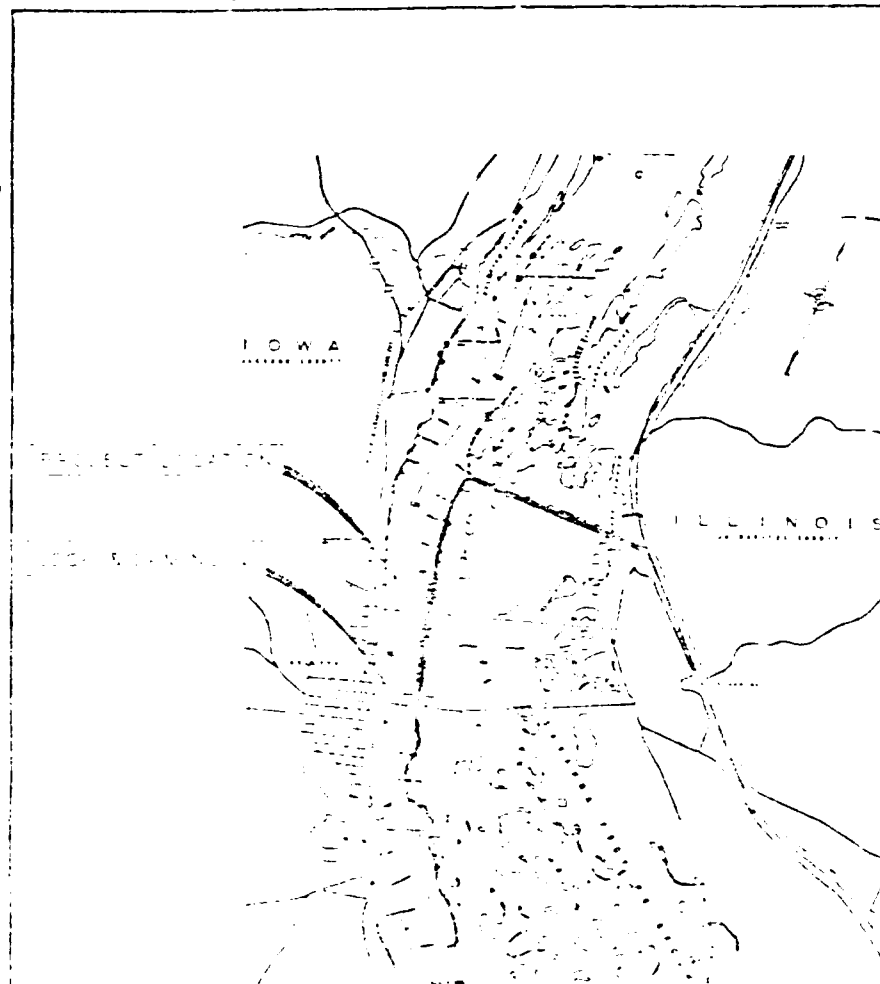
G. On the basis of the guidelines, the proposed disposal site for the discharge of dredged or fill materials is specified as complying with the requirements of these guidelines.

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Date

Neil A. Smart  
Colonel, U.S. Army  
District Engineer



[illegible]

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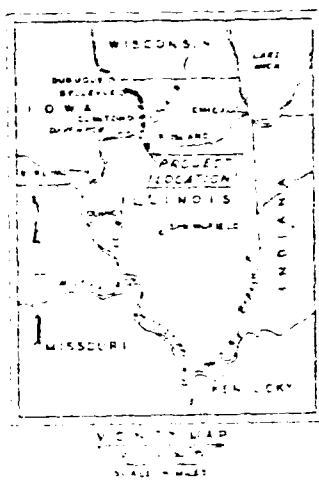
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**BY:** \_\_\_\_\_

**CHECKED BY:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_



**NATIONAL AHA**

1. The first step in the process of developing a business plan is to conduct a thorough market research. This involves identifying the target market, understanding their needs and preferences, and analyzing the competitive landscape. Market research can be conducted through various methods, including surveys, interviews, and focus groups.

2. Once the market research is complete, the next step is to develop a clear and concise business plan. This plan should outline the company's mission, vision, and goals, as well as the strategies and tactics for achieving them. It should also include a detailed financial plan, including a budget and a forecast of revenue and expenses.

3. The third step in the process is to secure financing. This involves identifying potential sources of capital, such as banks, venture capitalists, and angel investors, and presenting the business plan to them. It is important to have a solid understanding of the financial requirements of the business and to be able to articulate the value proposition to potential investors.

4. The final step in the process is to launch the business. This involves implementing the strategies and tactics outlined in the business plan, and monitoring the progress of the business. It is important to have a flexible and adaptable business plan that can be adjusted as the business evolves and market conditions change.

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RELEVANT CORRESPONDENCE

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IOWA STATE HISTORICAL DEPARTMENT  
OFFICE OF HISTORIC PRESERVATION

DAVID CROSSON, EXECUTIVE DIRECTOR

~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~  
STATE HISTORIC PRESERVATION OFFICER

March 27, 1986

Colonel William C. Burns  
District Engineer  
Rock Island District Corps of Engineers  
Clock Tower Building  
P. O. Box 2004  
Rock Island, IL 61204-2004

RE: DRAFT ENVIRONMENTAL ASSESSMENT. MOORING CELL CONSTRUCTION  
AT MISSISSIPPI RIVER MILE 557.5 NEAR BELLEVUE, IOWA

Dear Colonel Burns:

We have reviewed the draft environmental assessment for the above mentioned project and have no additional comments. We appreciate the opportunity to participate in the review process for the Bellevue project.

Sincerely,



Dr. Lowell J. Soike, Director  
Deputy State Historic Preservation Officer

LJS/ks



department of water, air and waste management

March 31, 1986

Colonel William C. Burns  
Rock Island District, Corps of Engineers  
Clock Tower Building  
P.O. Box 2004  
Rock Island, IL 61204-2004

RE: NCROD-S-070-0X6-1-138930  
COE Mooring Cell near Bellevue  
Section 7, T86N, R5E, Jackson County, Iowa

Dear Colonel Burns:

This Department has received the draft Environmental Assessment for Mooring Cell Construction at Mississippi River Mile 557.5 near Bellevue, Iowa, and the associated Section 404(b)(1) water quality evaluation. This Department had previously responded to the above-mentioned public notice with waiver of Section 401 water quality certification on 12-16-85. However, Departmental staff later verbally notified Corps of Engineers staff that this waiver was subject to evaluation of the final draft Environmental Assessment, which was not available at that time (though the Public Notice stated in paragraph 6 that R.I. District staff had prepared an Environmental Assessment, which did not identify any potentially significant adverse impacts created by the project).

Departmental staff have evaluated the final draft Environmental Assessment and 404(b)(1) evaluation, and concur with the finding of No Significant Impact. After consultation with U.S. Fish and Wildlife Service staff, we agree that construction of this mooring cell will not have an effect on towboat approach and locking times, and therefore will not effect the overall Mississippi navigation system capacity.

Consequently, this letter represents this Department's final and official response concerning this Mooring Cell project; our Section 401 waiver stands. Thank you for providing us with the opportunity to comment on the final draft Environmental Assessment.

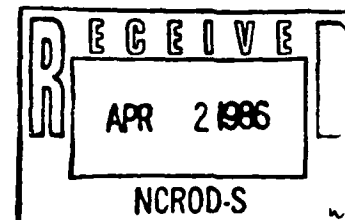
Sincerely,

PROGRAM DEVELOPMENT DIVISION

*Michael K. Anderson*

Michael K. Anderson  
Environmental Engineer  
Rules Development Branch

MKA:b1b/RDW087D04.01



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henry a wallace building • 900 east grand • des moines, iowa 50319 • 515/281-8690



## United States Department of the Interior

FISH AND WILDLIFE SERVICE

ROCK ISLAND FIELD OFFICE (ES)

1830 Second Avenue, Second Floor

Rock Island, Illinois 61201

IN REPLY REFER TO:

COM: (309) 793-5800

FTS: 386-5800

April 10, 1986

Colonel William C. Burns Jr.  
District Engineer  
U.S. Army Engineer District  
Rock Island  
Clock Tower Building, P.O. Box 2004  
Rock Island, Illinois 61204-2004

Dear Colonel Burns:

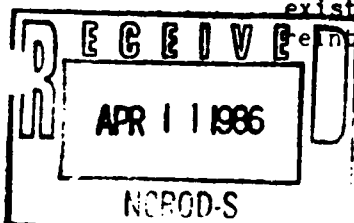
This is in reference to the draft Environmental Assessment and proposed Finding of No Significant Impact (FONSI) for the proposed mooring cell construction at Mississippi River mile 557.5 dated March 19, 1986.

We previously provided comments for the Public Notice on this project. Our letter dated January 8, 1986 concluded that the mooring cell would have minimal site specific impacts. However, new information has come to light that causes us to reconsider this position. Originally, we thought that the mussel bed in the vicinity was more than 1200 feet upstream of the proposed cell. Based on information from a commercial clammer that works the bed, we now believe that the downstream limits of the bed are at or near the location for the cell. In addition, we have had a report that a valve of the endangered Lampsilis higginsi found along the shoreline may have come from this bed.

The cell is proposed to be placed in an area that averages 12 feet in depth. At that depth, significant physical impacts will result due to tows movement in the vicinity, including substrate scouring, increased suspended sediments, altered velocities, and exposure of the littoral zone. Thus, benthic habitat could be substantially altered.

Since the endangered L. higginsi may be present in the vicinity of the cell and in the zone that may be impacted by operation of the cell (1200 feet upstream and downstream), we request that you conduct a biological assessment in accordance with Section 7(c) of the Endangered Species Act of 1973, as amended. When conducting a biological assessment, the following steps should be taken:

1. Conduct an on-site inspection of the area affected by the proposed activity or program, which may include a detailed survey of the area to determine if species are present and whether suitable habitat exists for either expanding the existing population or potential reproduction of populations.



B-3

2. Interview recognized experts on the species at issue, including those within the Fish and Wildlife Service, State conservation departments, universities and others who may have data not yet found in scientific literature.
3. Review literature and other scientific data to determine the species' distribution, habitat needs and other biological requirements.
4. Review and analyze the effects of the proposal on the species, in terms of individuals and populations, including consideration of the cumulative effects of the proposal on the species and its habitat.
5. Analyze alternative actions that may provide conservation measures.

We recommend that the first step in your biological assessment be delineation of the mussel bed. Second should be verification of the presence of the endangered mussel. If L. higginsii is not found, we will likely designate the mussel bed as Resource Category 2 in accordance with our mitigation policy. The goal for this category is no net loss of in-kind habitat value. We recommend in these cases that all impacts be avoided. In-kind compensation is not a practicable alternative.

We cannot concur with your environmental assessment at this time. Although our concerns regarding navigation capacity have been resolved (refer to my letter of April 7, 1986), we must continue to object to Public Notice NCROD-S-070-0X6-1-139930 until these site specific concerns are resolved. I would be happy to meet with you at your convenience. Please be advised that if you choose to proceed with this action, you, should under the new 1985 MOA, notify me before publishing a Notice of Intent to Issue (NII).

Sincerely,



Richard C. Nelson  
Field Supervisor

cc: ICC (Boland, Hayes)  
IL DOC (Bertrand, Lutz)  
EPA (Kring)  
COE/RID (Vanderhorn, Cockerill)



STATE OF ILLINOIS  
**OFFICE OF THE GOVERNOR**  
SPRINGFIELD 62706

JAMES R. THOMPSON  
Governor

SAI# 86-03-28-35

SUBJECT: Proposed mooring cell construction at Mississippi River mile 557.5  
near Bellevue, Iowa.

TO: District Engineer  
U.S. Army Engineer District, Rock Island  
ATTN: Planning Division  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

The Illinois State Clearinghouse has reviewed the reference subject pursuant to the National Environmental Policy Act of 1969. State agencies which are authorized to develop and enforce environmental standards have been given the opportunity to comment on this subject. At this time no comments have been received.

A handwritten signature in cursive script, appearing to read "Jon / Barbara".

Illinois State Clearinghouse

5-7-86





REPLY TO  
ATTENTION OF

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

July 10, 1987

Planning Division (11-2-240a)

Mr. Richard Nelson  
Field Supervisor  
U.S. Fish and Wildlife Service  
1830 Second Avenue, Second Floor  
Rock Island, Illinois 61201

Dear Mr. Nelson:

We are enclosing two copies of the final report entitled Mussel Survey, Pool 12, Mississippi River, prepared for the Rock Island District by Stanley Consultants, Inc. in July 1987.

We also are sending copies of this report to the Iowa Department of Natural Resources and the Illinois Department of Conservation.

Sincerely,

Signed By  
J. T. SCHNERPE

Dudley M. Hanson, P.E.  
Chief, Planning Division

Enclosures

Copies Furnished:

Mr. Larry J. Wilson  
Director  
Iowa Department of Natural Resources  
Wallace State Office Building  
Des Moines, Iowa 50319 w/enclosure (1 cy)

Mr. Tom Boland  
Bellevue Research Station  
Iowa Department of Natural Resources  
Route 3, Box 1  
Bellevue, Iowa 52031 w/enclosure (1 cy)

Mr. Mark Frech  
Director  
Illinois Department of Conservation  
Lincoln Tower Plaza  
524 South Second Street  
Springfield, Illinois 62706 w/enclosure (1 cy)

Mr. Dan Sallee  
Illinois Department of Conservation  
P.O. Box 147  
Aledo, Illinois 61231 w/enclosure (1 cy)



REPLY TO  
ATTENTION OF

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

July 31, 1987

Planning Division (11-2-240a)

Mr. Richard Nelson  
Field Supervisor  
U.S. Fish and Wildlife Service  
1830 Second Avenue, Second Floor  
Rock Island, Illinois 61201

Dear Mr. Nelson:

This letter contains information requested by your staff concerning project operation, impacts, and alternatives for construction of a mooring cell upstream of Lock and Dam No. 12 at Bellevue, Iowa. An analysis of effects to known natural, cultural, and socioeconomic resources was provided in the Environmental Assessment (EA) prepared for the project in March 1986. Additional information on the presence of mussel beds in the study area and the recovery of a living specimen of the endangered species Lampsilis higginsii was provided in the report entitled Mussel Survey, Pool 12, Mississippi River, prepared for the Rock Island District by Stanley Consultants, Inc. in July 1987.

The purpose of the project is to provide a stable tie-off for downbound towboats waiting to enter the lock. Estimates show that approximately 50 percent of downbound tows wait their turn at lockage for some duration. The preferred alternative identified in the EA would involve construction of a 30-foot-diameter sheet pile mooring cell on the Iowa side of the channel in the area where tows currently wait for lockage. Prior to 1981, the preferred waiting point was at approximate River Mile (RM) 557.1. Concerns by the city of Bellevue, State of Iowa, local citizens, and Corps personnel were that propwash from tows was accelerating erosion of the steep bank in the area and could ultimately result in adverse effects to riverfront property and to U.S. Highway 52. In response to these concerns, the Corps issued a Navigation Notice on October 7, 1981, requesting waiting tows to hold above the first green buoy upstream of the lock (approximate RM 557.5).

Use of the cell is expected to be by downbound tows only. Locating the cell on the east side of the navigation channel would subject tows to increased outdraft and would be unacceptable for navigation and safety reasons. It is anticipated that a stern tie-off would be used to reduce the power needed to maintain alignment while waiting, and to align for the lock when leaving the cell. The amount of prop power needed by tows using the mooring cell is expected to be less than what is currently used by tows to maintain a holding position without a stable tie-off.

The location originally proposed for the mooring cell (approximate RM 557.5) is in close proximity to a mussel bed identified during the diving survey conducted by Stanley Consultants in late April 1987. Sampling of the bed revealed densities of up to 248 living individuals per square meter. The valve of L. higginsii found during the survey came from this bed (approximate RM 557.55). A second concentration of mussels was identified upstream of RM 557.75. Estimated densities at this location were substantially less than those found in the lower area between RM 557.45 and 557.62. It is possible that the concentration found above RM 557.75 may represent the contemporary lower limit of the mussel bed identified in the Resources Inventory for the Mississippi River prepared by U.S. Fish and Wildlife Service for the Rock Island District. The July 1987 report indicated that while isolated pockets of relatively dense mussel concentrations may exist outside the limits of the beds shown, dives and brail runs between the two beds yielded very little.

The recovery plan prepared by the Higgins' Eye Mussel Recovery Team indicates that L. higginsii was historically widespread in the Upper Mississippi River and some of its major tributaries, but was never locally abundant. The plan also indicated that the decline of the species in recent times was likely the result of a combination of factors, including commercial harvesting, channel dredging, increased turbidity and subsequent sedimentation, and industrial and agricultural effluents. Under present conditions, mussels in the study area are subject to nearly all of these factors (channel dredging is an exception). Another factor which should be noted is that the lower mussel bed is located in the area utilized by waiting tows since 1981.

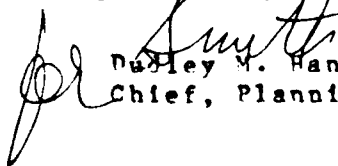
Information provided by the District's Operations Division indicates that placement of the cell a short distance upstream of the location originally proposed would be acceptable from a navigation and safety standpoint. Placing the cell at approximate RM 557.6 would tend to direct any propwash associated with tows approaching and leaving the cell toward the area of lowest mussel occurrence, as identified in the survey (see enclosed map). This could also result in some benefits to aquatic resources by directing tow traffic away from dense mussel concentrations.

Please provide your comments on the proposed change in project location within 15 days of receipt of this letter. If you have any questions or desire further information, please call Ms. Charlene Carmack at 309/788-6361, Ext. 570. Written responses may be sent to the following address:

District Engineer  
U.S. Army Engineer District, Rock Island  
ATTN: Planning Division  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

Sincerely,

ORIGINAL SIGNED BY

  
Dudley M. Hanson, P.E.  
Chief, Planning Division

Enclosure



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

REPLY TO  
ATTENTION OF

July 31, 1987

Planning Division (11-2-240a)

Mr. Tom Roland  
Iowa Department of  
Natural Resources  
Bellevue Research Station  
Route 3, Box 1  
Bellevue, Iowa 52031

Dear Mr. Roland:

This letter contains information requested by your staff concerning project operation, impacts, and alternatives for construction of a mooring cell upstream of Lock and Dam No. 12 at Bellevue, Iowa. An analysis of effects to known natural, cultural, and socioeconomic resources was provided in the Environmental Assessment (EA) prepared for the project in March 1986. Additional information on the presence of mussel beds in the study area and the recovery of a living specimen of the endangered species Lampsilis higginsii was provided in the report entitled Mussel Survey, Pool 12, Mississippi River, prepared for the Rock Island District by Stanley Consultants, Inc. in July 1987.

The purpose of the project is to provide a stable tie-off for downbound towboats waiting to enter the lock. Estimates show that approximately 50 percent of downbound tows wait their turn at lockage for some duration. The preferred alternative identified in the EA would involve construction of a 30-foot-diameter sheet pile mooring cell on the Iowa side of the channel in the area where tows currently wait for lockage. Prior to 1981, the preferred waiting point was at approximate River Mile (RM) 557.1. Concerns by the city of Bellevue, State of Iowa, local citizens, and Corps personnel were that propwash from tows was accelerating erosion of the steep bank in the area and could ultimately result in adverse effects to riverfront property and to U.S. Highway 52. In response to these concerns, the Corps issued a Navigation Notice on October 7, 1981, requesting waiting tows to hold above the first green buoy upstream of the lock (approximate RM 557.5).

Use of the cell is expected to be by downbound tows only. Locating the cell on the east side of the navigation channel would subject tows to increased outdraft and would be unacceptable for navigation and safety reasons. It is anticipated that a stern tie-off would be used to reduce the power needed to maintain alignment while waiting, and to align for the lock when leaving the cell. The amount of prop power needed by tows using the mooring cell is expected to be less than what is currently used by tows to maintain a holding position without a stable tie-off.

The location originally proposed for the mooring cell (approximate RM 557.5) is in close proximity to a mussel bed identified during the diving survey conducted by Stanley Consultants in late April 1987. Sampling of the bed revealed densities of up to 248 living individuals per square meter. The valve of L. higginsii found during the survey came from this bed (approximate RM 557.55). A second concentration of mussels was identified upstream of RM 557.75. Estimated densities at this location were substantially less than those found in the lower area between RM 557.45 and 557.62. It is possible that the concentration found above RM 557.75 may represent the contemporary lower limit of the mussel bed identified in the Resources Inventory for the Mississippi River prepared by U.S. Fish and Wildlife Service for the Rock Island District. The July 1987 report indicated that while isolated pockets of relatively dense mussel concentrations may exist outside the limits of the beds shown, dives and brail runs between the two beds yielded very little.

The recovery plan prepared by the Higgins' Eye Mussel Recovery Team indicates that L. higginsii was historically widespread in the Upper Mississippi River and some of its major tributaries, but was never locally abundant. The plan also indicated that the decline of the species in recent times was likely the result of a combination of factors, including commercial harvesting, channel dredging, increased turbidity and subsequent sedimentation, and industrial and agricultural effluents. Under present conditions, mussels in the study area are subject to nearly all of these factors (channel dredging is an exception). Another factor which should be noted is that the lower mussel bed is located in the area utilized by waiting tows since 1981.

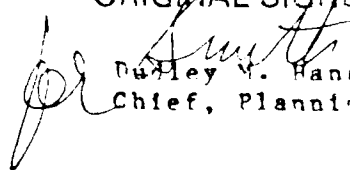
Information provided by the District's Operations Division indicates that placement of the cell a short distance upstream of the location originally proposed would be acceptable from a navigation and safety standpoint. Placing the cell at approximate RM 557.6 would tend to direct any propwash associated with tows approaching and leaving the cell toward the area of lowest mussel occurrence, as identified in the survey (see enclosed map). This could also result in some benefits to aquatic resources by directing tow traffic away from dense mussel concentrations.

Please provide your comments on the proposed change in project location within 15 days of receipt of this letter. If you have any questions or desire further information, please call Ms. Charlene Carnack at 309/788-6361, Ext. 570. Written responses may be sent to the following address:

District Engineer  
U.S. Army Engineer District, Rock Island  
ATTN: Planning Division  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

Sincerely,

ORIGINAL SIGNED BY

  
Dudley W. Hanson, P.E.  
Chief, Planning Division

Enclosure





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

JANUARY 20, 1988

REPLY TO  
ATTENTION OF

Planning Division

Mr. Richard Nelson  
Field Supervisor  
U.S. Fish and Wildlife Service  
1830 - Second Avenue, 2nd Floor  
Rock Island, Illinois 61201

Dear Mr. Nelson:

We are enclosing a copy of the Biological Assessment for mooring cell construction in Mississippi River Pool 12 near Bellevue, Iowa. Please review and provide us with a biological opinion on the effects of the project within 30 days of receipt of this letter in accordance with the requirements of 50 CFR 402 of the Endangered Species Act.

If you have any questions, please call Ms. Charlene Carmack at 309/738-6361, Ext. 570. Written responses may be sent to the following address:

District Engineer  
U.S. Army Engineer District, Rock Island  
ATTN: Planning Division  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

Sincerely,

ORIGINAL SIGNED BY

**CHARLES R. SMITH**  
Dwight H. Hanson, P.E.  
Chief, Planning Division

Enclosure

Copy Furnished:

Mr. Tom Boland  
Iowa Department of Natural Resources  
Bellevue Research Station  
Route 3, Box 1  
Bellevue, Iowa 52031



## United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

ROCK ISLAND FIELD OFFICE (ES)

1830 Second Avenue, Second Floor

Rock Island, Illinois 61201

COM: 309/793-5800

FTS: 386-5800

February 17, 1988

Colonel Neil A. Smart  
District Engineer  
U.S. Army Engineer District  
Rock Island  
Clock Tower Building, P.O. Box 2004  
Rock Island, Illinois 61204-2004

Dear Colonel Smart:

In response to your request of January 20, 1988, we have reviewed your Biological Assessment for construction of a mooring cell in Mississippi River Pool 12 near Bellevue, Iowa. We concur with your finding that the least environmentally damaging alternative as been selected. We also conclude that the proposed construction and use of the mooring cell should have no significant impact on Federally endangered Higgins' eye pearly mussels (*Lampsilis higginsii*).

Our mandates under the Endangered Species Act of 1973 require that we caveat our conclusions regarding Higgins' eye mussels with the statement that the life requisites for this species are not clearly understood at this time. The population in Pool 12 is an important one, as evidenced by the closed harvest in this pool by the State of Illinois. The State of Iowa is also concerned about the continued health of these beds. Therefore, it is conceivable that we would recommend reinitiation of consultation regarding these mussels, if the population declines in the future from indeterminate causes.

Sincerely,

  
Richard C. Nelson  
Field Supervisor

CC: IA DNR (Boland)  
IL DOC  
RO AE-OES

27 October 1987

CENCRPD-E

MEMORANDUM FOR RECORD

SUBJECT: Biological Assessment for Mooring Cell  
Construction, Mississippi River Pool 12

PURPOSE: Coordination with U.S. Fish and Wildlife Service (FWS) and Iowa Department of Natural Resources (DNR) regarding potential impacts of mooring cell construction to endangered species Lampsilis higginsii.

DISCUSSION

1. District staff members Mike Cockerill (PD-E), Charlene Carmack (PD-E) and Ray Horton (OD-M) met with Chuck Davis of the FWS Rock Island Field Office and Tom Boland, field biologist for the Iowa DNR, on 23 October to discuss project alternatives and endangered species coordination for mooring cell construction upstream of Lock and Dam 12.
2. Ray explained that OD-M had determined that the cell could not be located downstream of the original proposed site for navigation and safety reasons. He indicated that the cell could be located in deeper water near the navigation channel or moved a short distance upstream, to approximate RM 557.65, outside areas of high mussel concentration.
3. Chuck and Tom stated that they were concerned with impacts to the mussel bed from towboats using the mooring cell. Mike and I explained that waiting tows operate in the area of the mussel bed under current conditions. We emphasized that constructing the cell either at the original location or at RM 557.65 would not increase tow traffic in the area and could reduce impacts to the mussel bed by providing a stable tie-off away from shallow water near the shoreline and outside dense mussel concentrations. Ray indicated that tows using the cell should use less prop power than that normally required by tows waiting without a stable tie-off.
4. Mike and I informed Chuck and Tom that, based on the results of the survey and analysis of existing conditions in the area, we considered mooring cell construction at either location to be less environmentally damaging than no action, and that the project would have no effect on the continued survival of the species L. higginsii.
5. Tom and Chuck indicated that they were in basic agreement with this view but had reservations about

supporting proposed construction given the lack of information on the magnitude of impact to the mussel bed from current tow traffic. They stated that they would like to see a plan for monitoring the mussel bed before and after project construction. Mike and I stated that we understood their concerns, but explained that under Corps regulations, monitoring or other mitigation measures would not be considered appropriate for this action.

5. Chuck and Tom indicated that they would have fewer concerns about potential effects to the mussel bed if it were placed in deeper water (20 feet if possible) near the original proposed location (approximate RM 557.4). They explained that increased water depth would be expected to decrease the potential for impacts from wave and prop wash, and impacts resulting from resuspension of sediment could be less if the cell were located at the lower end of the bed.

6. Ray stated that OD-M would have no objections to placing the cell near the original proposed location and that it could be located in deeper water closer to the navigation channel. I informed Chuck and Tom that I would revise the Biological Assessment to identify this location as the preferred alternative and that I would send Chuck the completed document for review as soon as possible.

CHARLENE CARMACK  
Community Planner

CF:  
Dist File (PD)  
PD (Hanson)  
ED-DG  
OD-M  
PD-E

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MOORING CELL CONSTRUCTION  
MISSISSIPPI RIVER MILE 557.4  
NEAR BELLEVUE, IOWA

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