

Final
Environmental Assessment

Submitted by:
The City of Clinton
Clinton County, Iowa
Clinton City Marina Renovations
Mississippi River, Mile 519

Submitted to:
Region 3
Division of Federal Aid
United States Fish and Wildlife Service
Boating Infrastructure Grant Program

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Prepared by:
The Abonmarche Group, Benton Harbor, Michigan

1.0 Purpose and Need

1.1 Purpose

The City of Clinton, Clinton County, Iowa has over six miles of waterfront along the western shore of the Mississippi River. The recreational and economical benefits of the waterfront are not currently being developed in a manner conducive to increasing the quality of life for those in the community. Thus, this project proposes to improve the waterfront areas by renovating and expanding the existing City Marina located in Joyce's Slough (See Appendix A) to attract and accommodate both the transient and seasonal boaters by providing for their needs and demands, as identified and recommended by previous recreational and economic studies. Modern marina facilities will help promote tourism to the City and compliment the downtown economic development program by linking the waterfront with the downtown, thereby providing a convenient opportunity for boaters to visit the downtown area.

This Environmental Assessment (EA) assesses the environmental impact of the expansion of the existing City Marina for the transient slips and associated facilities portion of the Master Plan. These facilities are eligible for the Boating Infrastructure Grant (BIG) Program funding administered by the U.S. Fish and Wildlife Service (USFWS), thus subject to the NEPA process.

1.2 Need

The community of Clinton has a vision of a fully developed marina facility that will become an economic engine for the entire region. Although the current marina (see Appendix B) has served the City of Clinton in a limited way for many years, it does not meet the present needs or the desired goals and objectives of the community. It is substandard for what should exist in the

third largest urban market in Iowa on the Mississippi River and does not fulfill the promise and potential of a public riverfront that is located three miles from the widest part of the Mississippi River. Based upon a 2000 feasibility study, there is an urgent need for 150 slips including 50 transient slips within the Clinton market area.

The transient boater expects to find many things that are lacking at the current marina. This deficiency results in the boaters' reluctance to take advantage of the many recreational, cultural, and historical opportunities that exist in this region of the Upper Mississippi River. There is a need to provide boaters with standard amenities, which are currently lacking, such as:

- Adequate capacity for transient docking and tie-up (no slips are available)
- Gas dock facilities
- Sewage pump out facilities
- Navigational aids limited specifically to direct entry to transient, non-trailer-docked tie-up facilities
- A shower/bathhouse facility
- Adequate areas for boaters with mechanical problems
- Adequate facilities for launching and retrieval of larger boats
- Safe, high quality lighting, electrical and water hook-ups
- Adequate put in/take out facilities

Additionally, the marina service building is constructed within the floodplain below the levee that protects the City from floods, thus there is a need to comply with Executive Order 11988 and to have this building located outside of (or as much as possible of) the floodplain. (See Appendix B)

1.3 Decisions that Need to be Made

The USFWS's Regional Director must select one of the alternatives and decide whether the proposed action will result in a significant impact upon the human environment, necessitating an Environmental Impact Statement or if a Finding of No significant Impact is appropriate.

1.4 Background

A Vision Plan for the City's entire riverfront was developed and approved by the City Council in 1993. This plan developed an official framework for the future of Clinton's riverfront and offered implementation strategies to guide the City in making their vision a reality. In 1997, a Riverview Park Master Plan was developed by JJR, Incorporated with several meetings involving the general public. The plan also outlined the development of a "first class" Small Boat Harbor and a Transient Marina (as identified by slip size, services, security, amenities, etc.).

The plan recognizes that the existing marina provides an opportunity for redevelopment whereby facilities and amenities for both the transient and

seasonal boater could be added. Additionally, the Master Plan proposes a small boat harbor be developed within the basin that was constructed by the United States Army Corp of Engineers (USCOE) for this purpose. The small boat harbor was authorized in 1962 as a feature of the Upper Mississippi River Nine-foot Channel Project to accommodate recreational vessels and other small craft. The project consisted of construction of a breakwater between Joyce Island and Willow Island and the dredging of the protected area to a depth of five (5) feet. An agreement was executed in 1976 between the USCOE and the City of Clinton for the project's construction and construction of the basin was completed in 1979 (See Appendix B).

Recognizing that the community was in need of both downtown and waterfront revitalization, a "Downtown Economic Enhancement Strategy" was formulated in 1997 for Clinton that outlined development strategies for the Central Business District as well as a redesign of the waterfront. Parts of this plan that have been implemented to date include the construction of a roadway adjacent to the river levee and the rehabilitation and leasing of several large, vacant buildings in the downtown. Related to a marina development, the enhancement strategy specifically dictates that the downtown area must be made accessible to boaters and the existing marina facility must be upgraded to a "first class marina".

A feasibility study, completed in 2000 by Abonmarche Consultants, Inc. indicated the need for a larger and more accommodating marina. The study shows that there is a demand for over 500 slips in the Clinton market area, which includes Fulton, Illinois. The Fulton City Marina is located on the east side of the Mississippi River across from the Clinton City Marina at Mississippi mile 519.5. Like the Clinton City Marina, there are no transient slips available in the Fulton City Marina. The study recommends that Phase I of the City of Clinton Marina renovation and expansion include a minimum of 150 slips, with 50 of these slips reserved for transient boaters.

In 2001 the City of Clinton completed an extensive dredging project within the existing marina basin and Joyce's Slough (USCOE Permit # 361860-3 and IEPA # C-0245-99). Over fifty percent of the slips had been rendered useless due to heavy silt deposition. Approximately 81,000 cubic yards of sediment was removed from the slough. The dredging completed the first step in the process of developing the Clinton Marina into a "first class" destination for transient boaters and other tourists.

2.0 Alternatives, Including the Proposed Action

2.1 Alternatives not considered for Detailed Analysis

The City of Clinton has over six miles of frontage on the Mississippi River. However, the frontage available for the development of a marina within the City is limited due to the flood control levee, strong river current, and closeness of the navigation channel. As stated previously, the City's Master Plan proposes the renovation and expansion of the existing marina as a

necessary component of the revitalization of the Central Business District. It is also proposed as a vital part of the redevelopment of Riverview Park. Joyce's Island and Willow Island sufficiently shield the location from the strong river current and busy barge traffic on the main channel. In addition, the City's agreement with the USCOE for the development of a small boat harbor adjacent to the City Marina allows for future expansion of marina facilities in this area. Thus, due to the strong economic ties, past commitments, and natural protection afforded to this site, no other locations were considered.

2.2 Alternatives Carried Forward for Detailed Analysis

2.2.1 Alternative A (Proposed Action)

The proposed Action is to renovate and expand the existing City owned marina located within Joyce's Slough to provide "first class" facilities for transient boaters. The proposed Action would provide fifty (50) transient slips with the appropriate amenities and infrastructure to support them. (See Appendix C)

The renovations/expansion includes reconfiguration of the existing dock structures located on the west shoreline of Joyce's Slough to support seven (7) additional slips (83 total) to accommodate a varying mix of boat slip sizes including those appropriate for larger boats. In addition, forty-two (42) new slips will be constructed on the east side of Joyce's Slough off of Joyce's Island. This will increase the total number of slips to 125 at the expanded marina. Fifty (50) of these slips are to be reserved for transient use. The new docks and piers will be floating, allowing them to maintain a consistent freeboard level above the water. The floating piers will be approximately 10 foot wide and the attached docks will be approximately 5 foot wide and comply with ADA standards. To maintain horizontal position, the new docks and piers will be attached via a guide system to anchor piles. These piles will be taller than the OHWD of 591 MSL 1912, allowing the docks to move vertically during a flood event.

Utilities serving the new slips (water, electric, telephone, and cable television) will contain flexible connections at the gangway/dock interface. Therefore, vertical and horizontal movements between the gangway and the docks can be accommodated.

Access to the east slips will be via an ADA compliant boardwalk/gangplank ramp approximately 6 foot wide, and anchored to the top of the levee east of the USCOE Flood Control Gate Structure. This ramp will be hinged at the shoreline interface and allowed to slide at the pier, thus accommodating vertical movement of the pier. Access to the slips located along the west shore of Joyce's Slough will be by four approximately 6 foot wide ADA compliant floating gangways extending from the parking lot to the

main pier. These will be constructed similar in nature to the east boardwalk/gangplank ramp. Additionally a floating fuel dock with sewage pumpout facilities and an attendant's office are proposed.

The sewage pumpout facilities will consist of a pump located on the fuel/pumpout dock to pump the sewage from a boat through a pressurized pipe to a lift station located on shore by the marina service building. The lift station also serves the marina services building. The lift station contains a submersible pump in a watertight wet well to pump the sewage into the municipal system above the flood control levee. All piping will be pressure tested for leaks following installation and contain check valves at appropriate locations to prevent back-flow once pumping operations cease. Additionally, all piping and tanks will be properly ballasted to prevent buoyancy during flood events. The system will meet applicable local, state and federal requirements for such facilities.

Two fuel dispensers and an attendant shed will also be located on the fuel/pumpout dock. The dispensers will be installed within spill trays and will be equipped with automatic shut-off valves to prevent over-filling and spillage. The attendants shed will contain booms, absorbent pads and other containment and control materials in the event of a spill. Fuel storage will consist of a 2000 GA diesel tank and a 5000+ GA unleaded gasoline tank. Both tanks are to be located underground within the floodplain, and shall contain double wall tanks and piping with leak detection and monitoring equipment. Vent pipes will be above the high water datum of 591 MSL1912. All tanks and piping will be ballasted to prevent buoyancy during flood events. The fuel system will be designed to meet all applicable local, state, and federal regulations for such facilities.

The proposed fuel and pumpout facility will only be operated by marina personnel trained in the proper operating procedures of such facilities. In the event of a spill, a previously prepared spill contingency plan would be implemented to contain and cleanup the spill.

The west shore of Joyce Island will be reinforced with approximately 1,000 linear feet of stone riprap revetment (815 cubic yards) to prevent sloughing off and erosion of the bank due to prop wash, etc. An additional 400 linear feet (approximately 662 cubic yards) of stone riprap revetment is also proposed for placement along the south docks. The existing stone riprap revetment on the west shore of Joyce's Slough will also be reinforced with approximately 100 cubic yards of additional riprap.

The current boat launch is inadequate in size to handle larger boats that are expected to utilize the renovated marina. Thus, the boat launch will be replaced with an in/out well and a fifty-ton travel lift. The in/out well will be used for maintenance service on both transient

and seasonal boats, as well as, launching and retrieval of larger boats that cannot be accommodated by the municipal boat launch that is located north of the USCOE flood control gate structure in Joyce's Slough.

The current marina service building will be relocated westerly within the floodplain to within ten foot of the toe of the flood control levee. It will be designed to minimize flood damage and impact to the floodway. The bottom floor will contain the maintenance facility with an open bay design on a concrete slab. Large garage doors located on the north and south ends will allow water to flow through the building in the event of a flood event. The walls of the first story will be poured concrete or concrete block. The second floor elevation will be approximately equal to the top of the flood control levee (598 MSL1912), thus above the OHWD of 591 MSL 1912. Access to the building will be via ADA compliant boardwalk ramps from the parking lot and Riverview Drive located on top of the levee.

Traffic flow into and out of the expanded City Marina will be facilitated by the addition of a new exit to Riverview Drive located on the north end of the marina. The new exit will only allow one-way traffic flow through the marina.

The proposed renovations will require dredging of approximately 5,000 cubic yards of bottom sediment along the east side of the Slough. (See Appendix C, Dredging Detail) This material will be either mechanically or hydraulically dredged. Mechanical dredging will utilize a barge-mounted shovel, with the dredge material placed on the western shore in the parking lot for dewatering. Hydraulic dredging will utilize geo-synthetic bags placed in the parking lot for dewatering. After dewatering, the dredge material will be trucked to the previously permitted upland-dewatering site located directly under the Highway 136 bridge or another non-wetland upland location for use by the City of Clinton (Permit #361860-1). Approximately 40 foot wide by 1,000 foot long section of the east side of the slough will be dredged to 564 MSL 1912 to match the current depth obtained by the recent dredging project.

Construction permit applications have been submitted with the United States Army Corps of Engineers, and the Iowa Department of Natural Resources for the renovation and expansion of the Clinton City Marina. The USCOE issued a Public Notice for Permit application #CEMVR-OD-423820 on April 8, 2002.

In response to the Public Notice, the Iowa Department of Natural Resources has ruled "No land or water under the jurisdiction of the State of Iowa is involved in the project area; therefore, a construction permit pursuant to Chapter 461A of the Iowa Code will not be required for this project." Additionally on May 14, 2002, the Iowa Department

of Natural Resources has also issued a State 401 Water Quality Certification pursuant to Section 401 of the Clean Water Act. Please see Appendix D.

It should be noted that the renovation of the existing seasonal slips, parking facilities, and launch facility is being proposed as part of the overall Master Plan for the City Marina. However, this portion of the project is not subject to BIG Program funding. Only the transient slips and associated facilities are eligible for funding under the BIG Program thus subject to the NEPA process. All facilities will be designed to meet all applicable requirements of the Americans with Disabilities Act.

The following facilities/tasks represent the marina renovation and expansion project. Transient boater facilities represent 33 percent of the total marina renovation and expansion project.

- Demolition of buildings/ site preparation
- Dredging (one time only)
- Shoreline riprap protection
- Erosion control
- Pedestrian lighting
- Boat slips with electric, water, dock, anchoring system (50 total for Transient)
- Service Building (showers, laundry, lockers, boating supplies, office)
- Landscaping
- Floating Fuel Building
- Pump out Facilities
- Mobilization
- Upgrade existing walkway over lock gate

2.2.2 Alternative B (No Action)

The No Action Alternative is not to renovate, or expand the existing Clinton Marina. Thus, the Clinton Marina would remain in its' current condition. (See Appendix B.)

The No Action Alternative would hamper the economic growth of the City of Clinton as envisioned in the Master Plan. A vital economic link between the Central Business District and the waterfront would be broken if this alternative were selected. Boater will continue to be reluctant to take advantage of the many recreational, cultural, and historical opportunities that exist with this region of the Mississippi River. As stated previously, the existing marina does not provide the amenities necessary to attract the transient boater and other tourists. These include:

- Adequate capacity for transient docking and tie-up (no slips are available)
- Gas dock facilities

- Sewage pump out facilities
- Navigational aids limited specifically to direct entry to transient, non-trailer tie-up facilities
- A shower/bathhouse facility
- Adequate areas for boaters with mechanical problems
- Adequate launch and retrieval facilities for larger boats
- Safe, high quality lighting, electrical, and water hook-ups

2.2.3 Alternative C (Phase II Marina)

Alternative C proposes to fulfill the City of Clinton's commitment with the USCOE and meet the provisions of the Master Plan by developing a small boat harbor (Phase II Marina) within the existing basin constructed by the USCOE between Joyce's Island and Willow Island for this purpose. (See Appendix D.)

The proposed Phase II Marina will consist of approximately 280 slips of which 50 are reserved for transient use. The new slips will be ADA compliant floating pier/finger docks similar in nature to the floating pier/docks proposed in Alternative A. A stone riprap revetment of approximately 1600 linear feet (1303 cubic yards) will be constructed along the western shore of the basin along Joyce's Island to protect the shoreline from erosion.

A marina service building will be constructed on piles along the western slope of the flood control levee. The bottom floor would be equal to the top of the flood control levee at 598 MSL1912, thus above the OHWD. Access to the building will be via ADA complaint boardwalk from the top of the levee. A fuel dock with pumpout facilities and an attendant shed is also proposed. These facilities will be similar in nature as those outlined in Alternative A. Boat maintenance and launching/retrieval facilities will still be carried out at the current Clinton City Marina, which will not be renovated under this Alternative.

Presently this site is undeveloped and does not have the necessary infrastructure to support a marina. (See Appendix B, Existing Conditions.) Access to the site, would need to be established either by construction of a new bridge structure on the south side of the existing USCOE Flood Control Gate Structure, or a new bridge constructed across Joyce's Slough from the end of 12th Avenue to the top of the flood control levee. All utilities, electric, water, sewer, etc. would have to be extended to the site along the chosen access route. It is estimated that the cost to provide such infrastructure as between 2.6 million and 4.6 million dollars dependant upon the chosen route. This cost is above and beyond the cost to construct the marina facilities.

The basin is bordered on the east and west sides by forested wetlands, and with the exception of the flood control levee and breakwater, the

adjacent land is below flood plain. Construction of an access road and bridge, marina service building, and other marina support facilities are expected to result in adverse extensive impacts to the wetlands and floodplain, and will require mitigation as part of the regulatory approvals.

It should be noted that the development of the Phase II Marina is being proposed as part of the overall Master Plan for the City Marina. However, only the transient slips (50) and associated facilities are eligible for funding under the BIG Program, thus subject to the NEPA process. All facilities will be designed to meet all applicable requirements of the Americans with Disabilities Act.

The following facilities represent the transient portion of the total development of the Phase II Marina Alternative. Transient boater facilities represent approximately 20 percent of the total development of the Phase II Marina.

- Dredging (One time only)
- Shoreline riprap protection
- Erosion Control
- Pedestrian lighting
- Boat slips with electric, water, docks, anchoring system (50 slips total Transient)
- Service building (showers, laundry, lockers, boating supplies, office)
- Access road and bridge
- Utility infrastructure installation
- Landscaping
- Floating fuel building
- Pump out facilities
- Mobilization

2.3 Summary of Alternative Actions Table

Alternatives Actions Summary			
	Alternatives		
	A: Proposed	B. No Action	C: Phase II Marina
Number Transient Slips	50	0	50
Gas Dock	Yes	No	Yes
Pump out Facility	Yes	No	Yes
Shower/Bath House	Yes	No	Yes
Lighting	Yes	Minimal	Yes
Navigation Aids	Yes	No	Yes
Existing Infrastructure (road, electric, water, sewer, etc.)	Yes	Yes	No
Dredging Needed (One time only)	Yes	No	Yes
Estimated Construction Costs	\$3,400,000	\$0	\$7,200,000 to \$16,400,000

3.0 Affected Environment

3.1 Physical Characteristics

The proposed project area is located east of the flood control levee protecting the City of Clinton and south of the USACOE flood control gate in Joyce's Slough. The project site consists of the flood control levee, Flood control gate structure, the floodplain between the levee and Joyce's Slough, Joyce's Slough, the west shore of Joyce's Island, and the west shore of Joyce's Slough, encompassing approximately 12 acres. It also encompasses the existing Clinton Marina, which consists of 76 slips separated into two floating pier/finger docks systems (north and south docks), a marina service building, a boat ramp, and parking facilities.

The marina service building, parking facilities, and boat launch are located in the flood plain between the levee and Joyce's Slough. Vehicle access to the marina facilities is through a single entrance/exit road off of Riverview Drive that runs along the top of the flood control levee. See Appendix B. The western shore of Joyce's Slough is lined with stone riprap to prevent erosion, while only patches of vegetation can be found along the eastern shore (Joyce's Island) of the slough.

Joyce's Island is adjacent to the west bank of the Mississippi River. It is approximately one mile long extending from Sixth Avenue North to approximately Eighteenth Avenue North, and is approximately 172 acres in size. It is a river island that was formed by sedimentary deposits from the river.

The sole access to the Island is from a pedestrian path/recreational trail located along the top of the flood control levee that begins at the USACOE Flood Control Gate Structure across Joyce's Slough and runs north, bisecting the Island. With the exception of the levee, the island has a flat topography and is below floodplain. It is primarily a forested wetland. As state above, the proposed project will only impact the western shore of Joyce's Island, south of the flood control gate structure.

3.2 Biological Environment

3.2.1 Habitat/vegetation

The habitat/vegetation existing within the project area is minimal and has been influenced by development. Grass dominates the east side of the flood control levee, while the floodplain consists of grass and gravel/paved parking facilities and the marina services building. Riprap has been placed along the western shore of Joyce's Slough to prevent erosion. The side of the flood control levee as it connects to the flood control gate structure is riprap.

Overhanging deciduous vegetation can be found along the western shoreline of Joyce's Island providing habitat for shore birds and resting areas for migratory waterfowl. The shore of Joyce's Island is mostly void of vegetation. Joyce's Slough also provides slower moving, deep-water habitat for fish such as bass and blue gill to over winter.

3.2.2 Threatened, Endangered, and Candidate Species

Known threatened or endangered species that could be found in or near the project area include the Higgin's eye pearly mussel (*Lampsilis higginsii*) and the bald eagle (*Haliaeetus leucocephalus*).

The Higgin's eye pearly mussel is a fresh water mussel found in deep water with fast flowing currents. They are very susceptible to pollution and heavy siltation however. Both the State of Iowa and the Federal Fish and Wildlife Service list it as endangered.

While the bald eagle is currently listed on the threatened and endangered species list, it is being proposed for de-listing. A major bald eagle nesting area is located on the Mississippi River less than three miles north of the project area. The western shoreline of Joyce's Island may provide forage and resting habitat for the bald eagle.

The Federal Endangered Iowa pleistocene snail (*Discus macclintocki*) is also known to inhabit Clinton County. The Iowa pleistocene snail has very specific habitat requirements, however. It is found only in a microhabitat known as an algific talus slope. This cool, moist microenvironment is found around cave or fissure entrances where nearly permanent underground ice is created by circulating air and

percolating water. The underground ice cools the surface where the snail lives in deep, moist, deciduous leaf litter. The geological makeup of the project area does not meet the specific microenvironment necessary for the Iowa pleistocene snail.

3.2.3 Other Wildlife Species

The Mississippi River and Joyce's Slough yields a variety of fish including saugar, fresh water drum, walleye, yellow perch, white bass, and catfish among others. Some of these species utilize the existing riprap revetment along the western shore of Joyce's Slough for spawning areas. Fingerlings also use the riprap revetments for protective shelter.

Joyce's Slough provides deep water over winter habitat for fish such as blue gill and bass. It also provides foraging area in the spring and fall migration periods for migratory waterfowl such as the canvasback duck.

The overhanging vegetation along the western shore of Joyce's Island provides habitat for songbirds and raptures. The shoreline provides access to the water for small mammals and amphibians. It also provides resting areas for migratory waterfowl during migration periods.

The developed marina area of the floodplain allows limited habitat for wildlife.

3.3 Land Use

Current land use within the project area includes a public marina, recreation, flood protection and floodwater storage. Joyce's Slough includes a public marina for mooring of privately owned boats, while the floodplain area is used for parking and marina support facilities, and floodwater storage. A pedestrian path/recreational trail located on top of the flood control levee beginning at the flood control gate structure offers opportunities for walking, running, and biking. This path is also the only access to the slips proposed for the east side of Joyce's Slough. Joyce's Island is owned by the USCOE and is leased to the City of Clinton for a small boat harbor (Phase II Marina). The USCOE land and water use designation of the Island and Slough is Recreation/Intensive Use.

3.4 Cultural/Paleontological Resources

There are no known archaeological concerns within the Clinton Marina, Joyce's Slough or western shoreline of Joyce's Island. The existing development and the geological makeup of the project area are such that there is little likelihood that a historic property exists or may be affected by the proposed project.

3.5 Local Social-Economic Conditions

A new marina is part of a larger plan to make the waterfront, a natural asset of the City of Clinton, more attractive. An attractive waterfront encourages pride, additional investment and greater economic activity in the Central Business District. This will help to reverse demographic trends such as a declining and aging population that has affected the City of Clinton. It will also help offset lost tax revenue resulting from the State of Iowa phasing out the Machinery and Equipment Tax, which has resulted in the loss of between \$400,000 and \$500,000 to the City of Clinton since 1995.

A renovated and expanded marina will benefit the transient boater by providing an appropriate slip to tie up to during their visit and the necessary amenities such as gas facilities, pump out facilities, a shower/bathhouse facility, and adequate maintenance facilities to meet the boaters needs. The renovated and expanded marina will become a destination point for the transient boater.

4.0 Environmental Consequences

4.1 Impacts Common to All Alternatives

4.1.1 Cultural/Paleontological Impacts

No adverse effect on cultural resources would be anticipated from carrying out the proposed Action or any of the alternatives. The existing development and the geological makeup of the area are such that there is little likelihood that a historic property exists or may be affected by the proposed project.

In response to the Joint Public Notice issued April 8, 2002 by the USCOE, and the Iowa Department of Natural Resources for Permit Application CEMVR-OD-P-423820, City of Clinton, Iowa for the renovation and expansion of the City Marina, the "Office of the State Archaeologist of Iowa" conducted a site file search (#2002127) for this project and determined that no archaeological sites are located in the permit area. Further, the USCOE has also determined that "no historic properties are affected by this project for marina renovation and expansion with dredged material placement in a previously used placement area." The State Historic Preservation Officer provided concurrence to this ruling in a letter dated April 29, 2002. (See Appendix E)

4.1.2 Environmental Justice

Executive Order 1289, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 59 Federal Register 7629 (1994), directs federal agencies to incorporate environmental justice in their decision making process. Federal

agencies are directed to identify and address as appropriate, and disproportionately high and adverse environmental effects of their programs, policies, and activities on minority or low-income populations.

No environmental justice issues exist for any of the alternatives. The project area is currently the site of a marina and part of the City of Clinton Riverview Park. Except for the marina, it is unoccupied and unused for agricultural, industrial, or any other economic activity. None of the alternatives would create any environmental pollution. No minority or low-income populations would be displaced or negatively affected in any other way by the proposed action or any of the alternatives.

4.2 Alternative A (Proposed Action)

4.2.1 Habitat Impact

The increase in human activity resulting from placement of docks within the Slough along the western shoreline of Joyce's Island should have little impact on the use of the shoreline or Joyce's Slough by migratory waterfowl, as prime waterfowl usage occurs prior to and following prime boating season, during migration periods. An increase in human activity will likely result in the temporary displacement of migratory waterfowl that might be present to other, less disturbed areas of Joyce's Island during the boating season.

Placement of riprap along the western shore of Joyce's Island and the western shore of the slough at the South Docks will result in an increase in habitat for fingerlings. (See letter from Iowa Department Of Natural Resources, Appendix E) No adverse impact to the existing vegetation or habitat within the project area is anticipated.

The proposed dredging of the east side of Joyce's Slough will create additional deep-water habitat for bass and blue gill over wintering.

4.2.2 Biological Impact

The proposed stone riprap revetments will reduce bank erosion and decrease siltation into the river, while providing additional spawning areas and protection for fingerlings. No wetland or shoreline habitat is impacted with the proposed Alternative

The addition of a sewage pumpout facility will help to protect the water quality by providing an approved facility for the boater to empty their sewage tanks.

The proposed fueling facilities could result in fuel spillage into the water. The impact of such an event would be expected to be minimal

due to proper design, operational procedures and training, and availability of spill containment and cleanup equipment.

An expanded marina facility could result in an increase in litter and noise pollution in the area during boating season as a result of the increase usage of the facilities by transient boaters. The increase in human activity should have only a minimal impact on waterfowl, shorebirds and other wildlife however, due to the short duration of prime boating season.

4.2.3 Listed Species

The project site is not a favorable environment for the Higgon's eye pearly mussel due to the heavy sediment load of Joyce's Slough.

No adverse impact on bald eagle habitat would be anticipated from carrying out the proposed Action as wintering and breeding habitat of the bald eagle is not affected.

The geological makeup of the project area is such that it does not meet the specific microenvironment necessary for the Iowa pleistocene snail.

The Federal Aid Section 7 Elevation Process is in review. However, in response to the Joint Public Notice issued April 27, 1999 by the USCOE, Iowa Department of Natural Resources, and the Illinois Environmental Protection Agency for Permit Application No. CEMVR-RD-361860-1 by the City of Clinton Iowa for dredging within Joyce's Slough, the U.S. Fish and Wildlife Service ruled "NO OBJECTION" to impact on Threatened and Endangered Species. See Appendix E.

Additionally, as stated by the USCOE in the Joint Public Notice issued April 8, 2002 by the USCOE, and the Iowa Department of Natural Resources for Permit Application CEMVR-OD-P-423820, City of Clinton, Iowa for the renovation and expansion of the City Marina, "the proposed activity is not likely to adversely affect any listed species or critical habitat." (See Appendix E)

4.2.4 Floodplain Impact

The proposed development within the floodplain is designed to withstand a flood event with minimal impacts. As outlined in Chapter 2.2.1 Alternative A, the marina service building has been redesigned to minimize damage to the structure during a flood event while allowing floodwaters to flow through it. This also minimizes the impact to the floodwater storage capacity of the floodplain. The docks and piers are also designed to allow vertical movement to compensate for water level changes, while the fuel and pumpout facilities will be properly ballasted to prevent buoyancy during flood events.

4.2.5 Socio-economic Impact

A first class transient boating facility will have a positive economic impact on the City of Clinton from the revenue generated by the tourist and transient boater. A first class transient facility will serve as a designation point of tourist, bringing in an estimated \$3 million annually in direct and indirect economic activity to the City of Clinton.

4.2.6 Cumulative Impacts

The proposed Clinton marina facility, along with other BIG Program facilities that are currently being planned on the river (Fulton and Alton, IL) have the potential to increase recreational use of a unique resource. Indeed, the intended purpose of the BIG Program is to increase transient boating on major waterways. However, both commercial and recreational boating use of the Mississippi River is already high. The proposed additional transient boating facilities have the potential to add millions of dollars to local economies, but at the same time they can very possibly be increasing the overall awareness of the Mississippi River corridor and the many environmental, recreational, cultural and historical opportunities that it has to offer. An increase in these types of facilities will provide safe harbors, and enable transient boaters to legally dispose of refuse, and empty holding tanks.

Increased boater use of the Mississippi River could lead to better protection of the environment and natural resources of the Mississippi River corridor through cleanup activities supported by influential boaters and construction of marinas and facilities that meet all applicable local, state and federal laws for the protection of the environment. Modern facilities equipped with spill containment equipment could be expected to minimize any impact to water quality in the event of a spill. Additionally, the construction of other transient facilities will increase safety for the transient boater by offering harbors of refuge in the event of a storm, accident, or breakdown. They would also provide faster access to emergency assistance in the event of a spill or accident occurring on the river.

An increase in boating activity on the river also has the potential to disrupt foraging habits of migratory waterfowl. This should have minimal negative impact however, as prime waterfowl migrations occur prior to and following the prime boating season. Additionally any loss of waterfowl resting and foraging habitat should be minimal since the proposed site falls within existing developments. Migratory waterfowl are more attracted to the vast undeveloped, natural areas found in the Service's National Wildlife Refuges located throughout the Mississippi River corridor.

The proposed dredging will generate deep-water habitat for overwintering fish, while the new riprap revetments will provide additional protective cover for fish to spawn and forage. This is expected to increase the fish population in the area, which will provide additional food for waterfowl and wildlife and attract boaters to the area seeking recreational opportunities. The construction of other facilities along the Mississippi River could only increase the habitat available for fish, thereby increasing the overall population of fish,

Modern transient facilities that are designed to withstand flood events could be expected to decrease the overall cost of damages incurred by communities located along the Mississippi River during a flood event. Additionally modern designed facilities will reduce the amount of contamination and pollutants that could be released into the river environment during a flood event.

4.3 Alternative B (No Action)

4.3.1 Habitat Impacts

No loss or gain of habitat for fish to spawn or forage or migratory and shore birds would occur. Status quo would be maintained.

4.3.2 Biological Impacts

No positive or adverse biological impact is expected. Status quo would be maintained.

4.3.3 Listed Species

No adverse impact to threatened and endangered species is expected.

4.3.4 Floodplain Impact

No change in existing floodplain impacts will result with the No Action Alternative. The marina service building will continue to be subjected to damage during a flood event.

4.3.5 Socio-economic impacts

No action will result in the loss of approximately \$3 million annually in direct and indirect economic activity to the City of Clinton that would be generated from tourist trade expected from a renovated and expanded City Marina that caters to the transient boater.

4.3.6 Cumulative Impacts

Transient facilities on the Mississippi River within the Clinton area are currently inadequate or non-existent. Thus, the No Action Alternative will maintain the status quo of the Mississippi River corridor and continue limiting transient boater usage. Increasing the awareness and promotion of the environmental, cultural, recreational, and historical potential of the Mississippi River would continue to be hampered, as there would not be the necessary facilities to attract and support the transient boater.

The No Action Alternative, however, will continue to maintain the status quo habitat for fish and other wildlife.

Boater safety and environmental protection along the Mississippi River corridor will also continue to be compromised.

4.4 Alternative C (Phase II Marina)

4.4.1 Habitat Impacts

Development of the infrastructure to support the Phase II Marina will result in the loss of wetland habitat on Joyce's Island necessitating in the need for mitigation to meet regulatory approval. Additionally the construction of the floating gangplanks and pier/finger docks will result in loss of some overhanging deciduous vegetation along the eastern shore of Joyce's Island. This will reduce the habitat to shorebirds and other wildlife inhabiting the Island.

Placement of riprap along the eastern shore of Joyce's Island will also increase spawning habitat for fish and provide protection for fingerlings. Dredging of the basin for the Phase II Marina will provide additional deep-water habitat for over wintering fish.

4.4.2 Biological Impacts

Placement of riprap shore protection along the eastern shore of Joyce's Island will prevent sediment erosion into the basin and Mississippi River from prop wash.

The resulting increase in human activity and boat operations within the Phase II Marina facility likely will result in an increase in litter and noise pollution for the area. It may also have a limited adverse affect on shorebirds and other wildlife inhabiting the shoreline.

4.4.3 Listed Species

Dredging of the basin, to provide for safe navigational depth for Phase II Marina, is not expected to adversely impact the Higgon's eye pearly

mussel, as the mussel prefers faster moving current than found in the basin. The slower current of the basin is not conducive to the survival of the mussel due to the resulting sediment deposition.

The loss of wetland habitat and shoreline deciduous trees from the development of the Phase II Marina should have minimal adverse impact on forage and breeding area for the bald eagle.

No adverse impact on the Iowa pleistocene snail is expected, as the geological makeup of the project area is such that it does not meet the specific microenvironment necessary for the Iowa pleistocene snail.

4.4.4 Floodplain Impact

The proposed new development within the floodplain is designed to withstand a flood event with minimal impacts. As outlined in Chapter 2.2.3 Alternative C, the new marina service building has been redesigned to minimize damage to the structure during a flood event while allowing floodwaters to flow under and around it. This also minimizes the impact to the floodwater storage capacity of the floodplain. The docks, piers, and gangplanks are also designed to allow vertical movement to compensate for water level changes, while the fuel and pumpout facilities will be properly ballasted to prevent buoyancy during flood events.

The existing City Marina facilities will not be renovated, thus they will continue to be subject to damage during flood events.

4.4.5 Socio-economic Impact

The creation of the Phase II Marina will have a positive economic impact to the City of Clinton from the revenue generated by the tourist utilizing the marina as a point of designation. It is expected to provide approximately \$3 million annual in direct and indirect economic activity to the City of Clinton.

4.4.6 Cumulative Impacts

The cumulative impacts of Alternative C are similar in nature to Alternative A. The Phase II marina would offer modern facilities to attract the transient boater to the area, while likely improving the overall environmental protection and boater safety of the Mississippi river corridor.

However, as the existing Clinton City Marina would be maintained as is, it would continue to be subject to considerable damage during a flood event. The City of Clinton would continue to incur heavy economic loss in cleanup and repair of the facilities following flood

events. Additionally, maintenance and put in/take out facilities would continue to be substandard for a modern “first class” marina facility. This could hamper the efforts of attracting the transient boater to the new facility.

4.5 Summary of Environmental Consequences by Alternative

Environmental Consequences Summary			
	Alternatives		
	A: Proposed	B: No Action	C: Phase II Marina
Habitat	<ul style="list-style-type: none"> No adverse effect on habitat for shore birds, waterfowl, and other wildlife Increased fish spawning habitat and protection for fingerlings Increase in fish population of area 	<ul style="list-style-type: none"> No change in current status Will not improve fish habitat or population 	<ul style="list-style-type: none"> Loss of Wetland Habitat Limited impact on shore birds, waterfowl, and other wildlife Increased habitat for fish to spawn and protection for fingerlings Increase in fish population of area
Biological	<ul style="list-style-type: none"> Increased shore protection and habitat Increase in noise levels Increase in litter Increased protection for water quality 	No change in current status	<ul style="list-style-type: none"> Increased shore protection and habitat Increase in noise levels Increase in litter Flood plain and wetland impact requiring mitigation Increased water quality
Listed Species	No adverse effect	No adverse effect	No adverse effect
Floodplain Impact	<ul style="list-style-type: none"> Minimal negative impact to facilities within floodplain Minimal impact of flood storage capacity 	<ul style="list-style-type: none"> Maintain status quo Marina service building subject to damaged during flood events 	<ul style="list-style-type: none"> Minimal negative impact to new facilities within floodplain Maintain status quo impact on existing facilities in Joyce’ Slough

Environmental Consequences Summary			
	Alternatives		
	A: Proposed	B: No Action	C: Phase II Marina
Socio-economic Impact	Positive economic impact to City of Clinton	Negative economic impact to City of Clinton	Positive economic impact to City of Clinton
Cultural Resources	No adverse effect	No change in status	No adverse effect expected
Cumulative Impacts	<ul style="list-style-type: none"> Minimal adverse effect on migratory fowl, shorebirds and wildlife Increased protection of the environment Increased boater safety Increase in fish population of area Increase in awareness and use of the river Reduction in costs for cleanup and repair and facilities following flood events 	<ul style="list-style-type: none"> Maintains status quo of transient facilities within the Clinton area on the Mississippi River (none) Continued economic decline of City Maintain status quo of fish and wildlife habitat Continued compromise of boater safety and the environment 	<ul style="list-style-type: none"> Minimal adverse effect on migratory fowl, shorebirds, and wildlife Increased protection of the environment Increased boater safety Increase fish population of area Increase in awareness and use of the river Existing facilities subject to damage and cleanup/repair cost from flood events
Environmental Justice	N/A	N/A	N/A

5.0 List of Preparers

- Mark E. Walker, R.F., The Abonmarche Group, Benton Harbor, Michigan – Primary author
- Bradley R. Fausnacht, P.E., The Abonmarche Group, Benton Harbor, Michigan – Reviewer

6.0 Consultation and Coordination with the Public and Others

The following meetings have been held to date on the development of this project.

Marina Committee Meetings

- 06/19/01 10:00AM Clinton City Marina
- 06/19/01 1:30 PM Clinton City Hall
- 10/29/01 Clinton City Hall
- 11/13/01 Clinton City Hall
- 02/21/02 Clinton City Hall

City Council Meetings

- 06/19/01 2:00 PM Clinton City Hall

Public Hearing

- 06/19/01 7:00 PM Clinton City Hall

Regulatory Agency Meetings

- 06/20/01 10:00 AM USCOE Rock Island District Office
- 11/02/01 2:00 PM Clinton City Hall
- 05/14/02 10:00 AM Clinton City Hall

Once the USF&WS has accepted the Draft EA, a news release soliciting public comments on the draft will be prepared by the USF&WS and distributed statewide by the External Affairs Office. The EA and all Appendices will also be posted on the USF&WS website. The City of Clinton will also prepare a new release soliciting comments on the draft EA. After the required 30-day comment period, and assuming no additional revisions are necessary, the EA and supporting grant documents will then be considered eligible for approval.

7.0 Public Comment on Draft EA and Response

The USFWS issued a news release informing the public of how they could get a copy of the draft EA. The USFWS also posted a copy of the draft EA on their NEPA web site (<http://midwest.fws.gov/NEPA/index.html>) to allow for additional review. In addition, copies were placed at the Clinton Library. The thirty-day public comment period established in the news release was open in August and September 2002. No comments were received.

8.0 References Cited

- *Riverview Park Master Plan, City of Clinton, Iowa, JJR Incorporate, Madison, Wisconsin. 1997.*
- *Market Feasibility Study for Proposed Marina Clinton, Iowa, The Abonmarche Group, Benton Harbor, Michigan. 2001.*
- *Clinton, Iowa Transient Mariana Boating Infrastructure Grant Program Tier 1 Application, City of Clinton, Iowa c/o Clinton Area Chamber of Commerce. 2001.*

- *Application for Tier 2 of Boating Infrastructure Grant Program, City of Clinton, Iowa, City of Fulton, Illinois, Intergovernmental Marina Partnership Project. 2001.*
- *Water Resources Development in Iowa 1995, United States Corps of Engineers, North Central Division, Rock Island District. 1995.*
- *Agreement Between The United States of America and The City of Clinton, Iowa and The Clinton Board of Park Commissioners for Local Cooperation at Clinton, Iowa, December, 1976.*

Appendix A

Project Location Map

Appendix B

Existing Conditions

Appendix C
Project Master Plan

Appendix D
Alternate C, Phase II Marina

Appendix E

State and Federal Rulings