

Paducah Waterfront Development Project (Phase I)
KYTC Six Year Plan Project No. 01-122

ENVIRONMENTAL ASSESSMENT

Submitted pursuant to 42 U.S.C. 4332 (2) (c) by the
U.S. Department of Transportation
Federal Highway Administration



and

Kentucky Transportation Cabinet

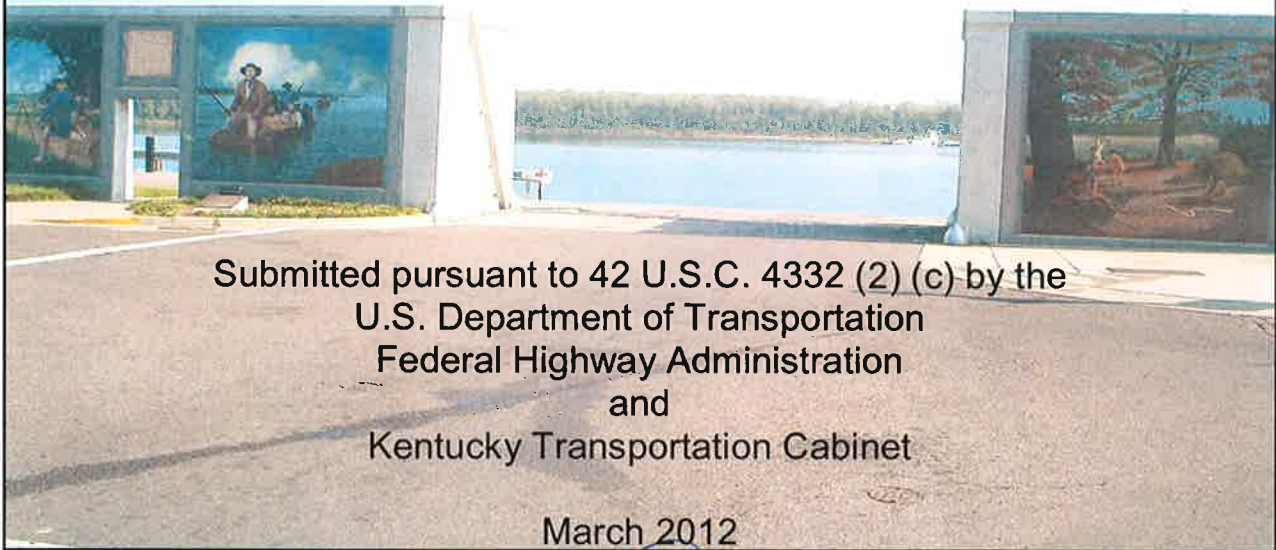


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The following individuals may be contacted for additional information concerning the projects:

Mr. Anthony Goodman
Environmental Specialist
Kentucky FHWA
John C. Watts Federal Building
330 West Broadway
Frankfort, KY 40601
(502) 223-6742

Mr. David Waldner, PE
Director
Division of Environmental Analysis
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622
(502) 564-7250



Environmental Commitments



ENVIRONMENTAL COMMITMENTS

The proposed boat launch and marina/transient dock facilities will require commitments to minimize any potential impacts that may occur to the human and natural environments. The following is a list of the environmental commitments required for the construction of the two projects:

1. According to the U.S. Fish & Wildlife Service (USFWS), an endangered *Myotis sodalis* (Indiana bat) record has been documented within five miles of the proposed boat launch project site. Based on this information, the Service believes that (1) forested areas in the vicinity of or on the project area may provide potentially suitable summer roosting and foraging habitat, and (2) caves, rock shelters, and abandoned underground mines in the vicinity of or on the project area may provide potentially suitable winter hibernation habitat for the endangered species. The removal of trees onsite will be coordinated with the USFWS through execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. Redwing Ecological Services, Inc. indicated that there are no caves, rock shelters, or abandoned underground mines that could provide suitable winter hibernation habitat.
2. According to the U.S. Fish & Wildlife Service (USFWS), the proposed boat launch and marina/transient dock projects are in close proximity to several federally protected mussel records known to occur within the Ohio River. A mussel survey was conducted by Redwing Ecological Services, Inc. (Redwing) with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the boat launch and marina/transient dock areas on August 5-8, 2008. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat Pocketbook), at both the boat launch and marina/transient dock locations. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels, specifically the Fat Pocketbook mussel, was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the marina/transient dock project is likely to adversely affect three federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). Formal consultation on the matter was initiated by the Federal Highway Administration (FHWA) to the USFWS on February 12, 2010. As a result, a Biological Opinion (BO) was issued on July 6, 2010 by the USFWS for impacts to the three species. A revised mussel BO was issued by the USFWS on December 21, 2010 in order to clearly reference the interrelated federal actions considered and make related clarifications. The BO concluded that the boat launch and marina/transient dock projects are not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat. However, in order to be exempt from Section 9 of the Endangered Species Act of 1973 (the Act) for "take" of a species, FHWA must comply with non-discretionary terms and conditions which implement reasonable and prudent measures and outline reporting/monitoring requirements. Since the completion of the initial Biological Assessment (BA) and Biological Opinion (BO) for impacts to federally protected mussel species in December 2008 and December 2010, respectively, (1) the reach for the marina/transient dock has been categorized as an Outstanding State Resource Water (OSRW) due to the presence of federally-protected mussels by the Kentucky Division of Water (November 2010), (2) the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the Endangered Species Act of 1973 (the Act) (January 2011), and (3) the marina/transient dock project area has been shifted 500 linear feet downstream

(northwest) from its original position. The additional species proposed for listing are *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose) as endangered and *Quadrula cylindrica* (Rabbitsfoot) as either threatened or endangered. As a result of this proposal, the Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the boat launch and marina/transient dock projects. The conference was requested to take into account the effects of the two projects on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the projects will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase. The marina/transient dock project area has been shifted 500 linear feet downstream (northwest) of its original position in order to minimize potential impacts to freshwater mussels. This shift is a result of the findings based on additional mussel surveys in October 2010 and October 2011 after the marina/transient dock reach was categorized as an Outstanding State Resource Water (OSRW). The additional mussel surveys indicated varying mussel bed densities along the Ohio River shoreline. The proposed marina/transient dock project has been shifted downstream to a less-dense mussel assemblage area. A new Biological Assessment (BA) was completed for the boat launch and new marina/transient dock project site by Redwing on January 3, 2012. FHWA submitted their request for formal consultation to USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch and new marina/transient dock project areas. Reasonable and prudent measures; terms & conditions; implementation and monitoring; and/or discretionary conservation measures will be attached to the Biological Opinion (BO). Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

3. According to the Kentucky State Nature Preserves Commission (KSNPC), *Myotis austroriparius* (Southeastern myotis, federal species of management concern, KSNPC endangered) and *Myotis sodalis* (Indiana myotis, federally listed endangered, KSNPC endangered) are known to occur in the bottomland hardwood forest adjacent to the boat launch project area and near the marina/transient dock site. In order to avoid impacts to potentially suitable summer roosting and foraging habitat of these species, the removal of trees onsite will be coordinated with the USFWS through execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction.
4. According to the Kentucky State Nature Preserves Commission (KSNPC), many of the fishes and mussels listed are believed to be extirpated or are known only from historic records; however, some are still extant in the area. These species are sensitive to increased turbidity, sediment, and other adverse influences on water quality. KSNPC data are not sufficient to guarantee absence of endangered, threatened or sensitive species from the sites of proposed construction disturbance. Mussel surveys were conducted by Redwing Ecological Services, Inc., (Redwing) with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for both the boat launch and marina/transient dock facility areas in August 2008, and in conjunction with Ecological Specialists, Inc. in October 2010 and October 2011. A new Biological Assessment (BA) was completed by Redwing on January 3, 2012. FHWA requested formal consultation with USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch and new marina/transient dock project areas. Reasonable and prudent measures; terms & conditions; implementation and monitoring; and/or discretionary conservation measures will be attached to the Biological Opinion (BO). Consultation on

the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

5. According to the Kentucky State Nature Preserves Commission (KSNPC), *Tyto alba* (Barn owl, KSNPC special concern) can be found in hollow trees, old buildings, barns, silos, and other abandoned structures. If Barn owl habitat will be disturbed, the KSNPC will be consulted prior to commencement.
6. The proposed boat launch project will result in impacts to 9.7 acres of jurisdictional wetlands, including 0.5 acres of the Ohio River, 8.3 acres of farmed wetland, 0.7 acres of wooded wetland, and 0.2 acres of open field wetland. Mitigation for these impacts will include: (1) preservation of approximately 34.4 acres of existing forested wetlands, (2) preservation of approximately 3.4 acres of upland forest, (3) restoration of approximately 7.3 acres of forested wetlands, and (4) restoration of approximately 765 linear feet of riparian buffer along the Ohio River.
7. Redwing Ecological Services, Inc. (Redwing) applied for and received the following permits for the proposed boat launch: Section 401 Water Quality Certification #2008-0029-1 (Kentucky Department for Environmental Protection, Division of Water), Stream Construction Permit #16689 (Kentucky Department for Environmental Protection, Division of Water), and Section 404 Permit #LRL-2007-811-GJD (U.S. Corps of Engineers). Redwing will submit applications to the U.S. Army Corps of Engineers and the Kentucky Department for Environmental Protection, Division of Water, for a Section 401 Water Quality Certification, Stream Construction Permit, Section 10 Navigable Waters Permit, and a Section 404 Permit for the proposed marina/transient dock. Individual Section 402 (KPDES Stormwater) Permits will also be obtained for both projects. Any required permits will be obtained before construction commences.
8. To minimize possible noise impacts, construction activities, to the extent possible, will be confined to normal working hours, and noise controlled equipment will be utilized.
9. To minimize possible impacts to water quality, the contractor/contractors will be required to implement erosion prevention and sediment control best management practices, reflecting policies contained in 40 CFR Part 122 and promulgated by the Kentucky Department of Environmental Protection, Division of Water.
10. The projects will be constructed utilizing reasonable precautions to prevent particulate matter from becoming airborne as directed under Kentucky Division for Air Quality Regulation 401 KAR 63:010 *Fugitive Emissions*. Such reasonable precautions will include but not be limited to (1) use, where possible, of water or chemicals for control of dust during demolition and/or construction operations, (2) the covering of open bodied trucks operating outside the work area transporting materials likely to become airborne, and (3) the prompt removal of earth or other material from a paved street which earth or other material has been transported by trucking or earth moving equipment or erosion by water.
11. The projects will be constructed without open burning as directed under Kentucky Division for Air Quality Regulation 401 KAR 63:005 *Open Burning*, except for the purposes listed in Section 4, Allowable Open Burning and Section 5, Restrictions to Open Burning, of the regulation.
12. There are no relocations or displacements of residences or businesses expected as a result of the proposed boat launch and marina/transient dock projects. No neighborhood

or community impacts are expected that would sever groups or access to and from communities. The projects are not expected to cause advantages/disadvantages to one or more communities over other communities. Since the boat launch and marina/transient dock will be city/county-owned, the facilities will be available to all. No commitments are made toward socioeconomic issues.

13. The boat launch and marina/transient dock facilities will not have a negative impact on future farming (agricultural) opportunities in McCracken County; therefore, no commitments are made regarding preservation of farmlands.
14. The marina/transient dock will have three individual sets of four pipe piles that will support the “floating” gangway deck system. The top of the pipe piles will be at an approximate elevation of 353 feet above MSL and positioned 390, 470, and 560 linear feet on the river side of the floodwall. The elevation at the top of the floodwall in this area is approximately 349 feet above MSL; therefore, the tops of the pipe piles will be above the floodwall. Vertical axis wind turbines will be placed at the top of each of the twelve pipe piles with top turbine elevations of 362 feet above MSL. The vertical axis wind turbines are proposed as an environmentally-friendly electricity generator to power a portion of the lighting of the marina/transient dock facility. According to literature, the turbines are relatively “soundless” (53 dB @ 10-12 feet) and have non-reflecting surfaces to eliminate shadow strobing effects. The use of the pipe pile support structures and any associated visual impacts will be coordinated with the Kentucky Heritage Council/State Historic Preservation Office (the Council). Consultation on the matter will be completed prior to the completion of a Finding of No Significant Impact (FONSI).

ENVIRONMENTAL STATEMENT

Environmental commitments have been made that will eliminate significant environmental impacts associated with the proposed boat launch and marina/transient dock projects. Therefore, if the environmental commitments detailed above are complied with, the 6th Street & Burnett Street Boat Launch and the Marina/Transient Dock will not significantly affect any social, ecological, or cultural resources as defined under the National Environmental Policy Act (NEPA) of 1969.

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Introduction & Purpose & Need



I. INTRODUCTION

The City of Paducah, Kentucky (the City) proposes to construct a boat launch facility and a marina/transient dock as part of their waterfront development effort. The City has completed a master plan for the development and revitalization of the Paducah riverfront which includes an analysis of existing conditions, and recommendations to enhance the cultural, historical, recreational, tourism and economic development plan. The projects, as proposed, would result in certain modifications to the human and natural environment. The significance of the environmental impacts as a result of the proposed actions are unknown; therefore, the projects meet the criteria under 23 CFR 771.115(c) for conducting an Environmental Assessment.



II. PURPOSE & NEED

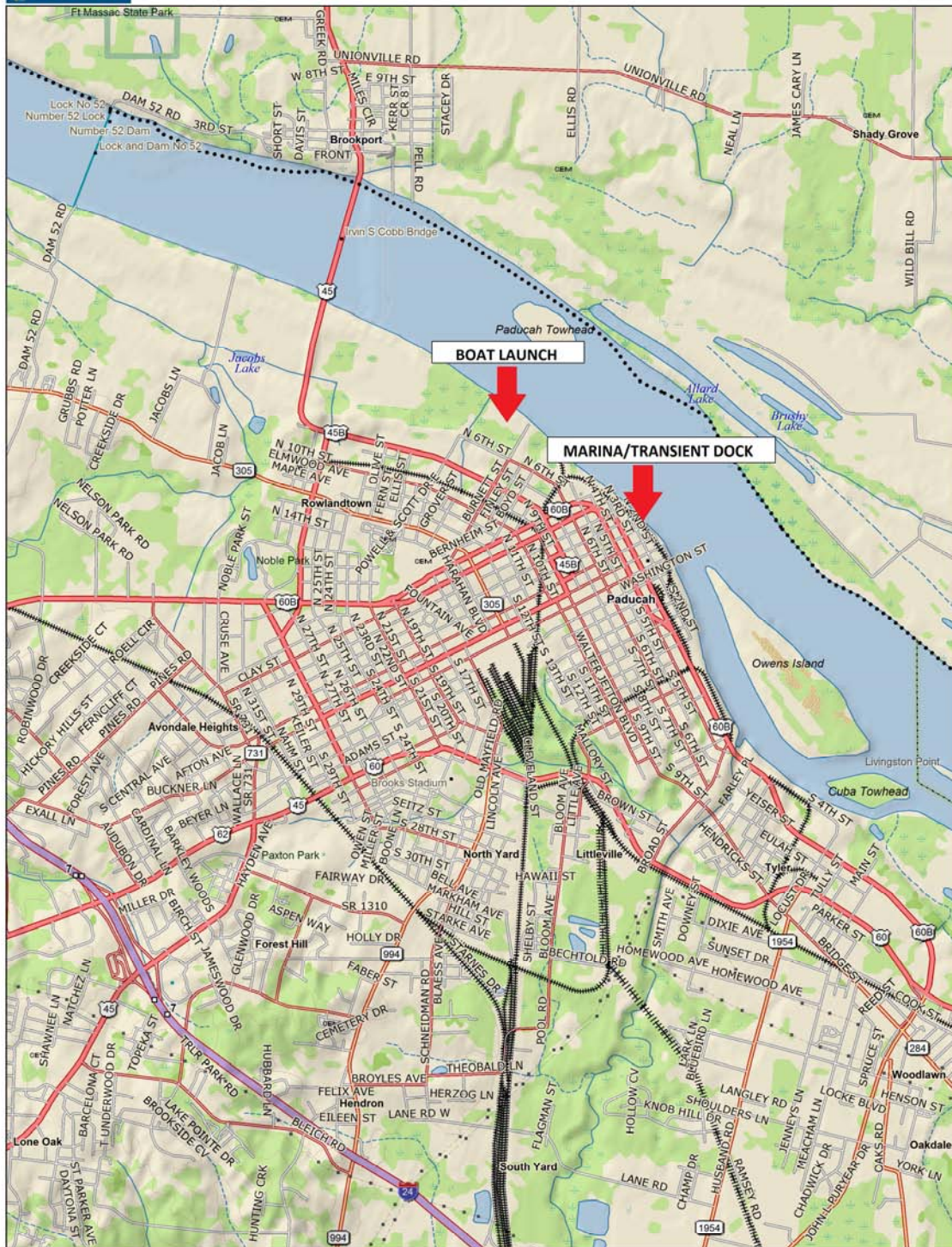
The City of Paducah, Kentucky is proposing (1) the construction of a boat launch facility on city-owned property which will encompass the corridor along Burnett Street from 8th Street to the Ohio River and approximately 500 feet along 6th Street on each side of Burnett Street. The site comprises approximately 30 acres± near mile marker 936 along the Ohio River, and (2) the construction of a marina/transient dock facility on city/county-owned property within an area that will extend from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet while extending approximately 550 linear feet at its maximum (transient dock portion) into the Ohio River. The site comprises approximately 42 acres± of riverbank, including the existing Schultz Park, and water surface near mile marker 935. The limits affecting land for the marina/transient dock vary north of the existing floodwall then diverge to the river at the northeastern end of Park Avenue. The project areas are indicated on the location map shown as Figure 1. The proposed boat launch project involves construction within an area comprised of upland woods, one agricultural field, a narrow wooded strip of Ohio River bank, and an open field. The proposed marina/transient dock facility project involves construction within the undeveloped riverbank and Schultz Park as well as surface waters of the Ohio River.

Project Purpose & Need

The purpose of the boat launch project is to relocate the existing boat ramp facility located at the northeastern end of Broadway Street while at the same time allowing for the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point along the Ohio River. The relocation of the boat launch facility will reduce congestion and vehicle parking



associated with recreational fishing activities such as launching and the parking of fishing boats. The purpose of the marina/transient dock is to provide accommodations for transient boaters and local recreational boat owners. The need for the marina/transient dock is to provide loading/unloading facilities for transient boats and to provide a marina with associated facilities that will allow transient and local recreational boaters to dock in a protected marina near downtown Paducah allowing boaters to refuel, dine, purchase supplies, etc. Currently, recreational boaters are required to dock on the riverbank near downtown Paducah. The closest on-water refueling/marina facilities for recreational boaters are located 33 miles upstream at Golconda, IL (Mile Marker 902). The proposed boat launch and marina/transient dock sites have been selected to minimize cost and environmental impact, while maintaining close proximity to downtown Paducah.



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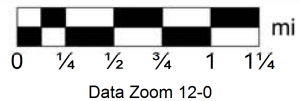
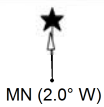


Figure 1

Existing Facilities

The City of Paducah, Kentucky is proposing two projects under this assessment. The projects include: (1) the construction of a boat launch facility on city-owned property which will encompass

the corridor along Burnett Street from 8th Street to the Ohio River and



approximately 500 feet along 6th Street on each side of Burnett Street. The site comprises approximately 30 acres± near mile marker 936 along the Ohio River, and (2) the construction of a marina/transient dock facility on city/county-owned property within an area that will extend from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet

while extending approximately 550 linear feet at its maximum (transient dock portion) into the Ohio River. The site comprises approximately 42 acres± of riverbank, including the existing Schultz Park, and water surface near mile marker 935. The limits affecting land for the marina/transient dock vary north of the existing floodwall then diverge to



the river at the northeastern end of Park Avenue. The proposed boat launch project involves construction within an area comprised of upland woods, one agricultural field, a narrow wooded strip of Ohio River bank, and an open field. The proposed marina/transient dock facility project involves construction within the undeveloped riverbank consisting of riprap and limited vegetation, the existing Schultz Park, and surface waters of the Ohio River.

Proposed Facilities

The City of Paducah (the City) proposes to relocate the boat launch facility on the undeveloped, city-owned property described above with the facility being comprised of: (1)

a boat ramp located on the bank of the Ohio River in the north-central portion of the site having five lanes and open 24 hours a day, (2) a paved parking area adjacent to the boat ramp with 100 parking spaces and adequate room for vehicle ingress/egress, and (3) an access road to the site as an extension of Burnett Street constructed in the location of an existing dirt/gravel road along the eastern boundary of the site. The City proposes to construct a marina/transient dock facility with the marina portion of the facility comprised of:

(1) a floating dock system, (2) a projected 150 slips to be installed in phases with a portion to be reserved for transient boaters, (3) a fuel dock with gasoline and diesel fuel, (4) two aboveground fuel storage tanks and an enclosure located at the foot of the floodwall, (5) a marina administration building with showers and stores, (6)



utilities including fuel, potable water, electricity, and sanitary pump out, and (7) a gangway entrance shared with the transient boat dock with a secure entrance. The transient dock portion of the facility will be comprised of: (1) a floating dock system also designed as a wave attenuator, (2) dockage for transient vessels on both sides of the dock, (3) one gangway system made up of a combination of gangway sections, (4) a walking path and public access along the gangway and dock, (5) fishing opportunities without fish cleaning amenities, (6) fixed ladders, (7) potable water and electrical pedestals, and (8) lighting and handrail with benches along the center of the dock. As part of the marina/transient dock project, the existing Schultz Park will be enhanced and will include: a gangway/ramp system to the marina/transient dock, an overlook, bio-engineered slope protection, an interpretive levee trail, terraced lawn/seating, rock outcropping leading to water, terraced gardens, a grand lawn/sculpture park, a pedestrian link to downtown Paducah, and the utilization of existing structures/interpretive landmarks. The proposed project positions in association with downtown Paducah are depicted in Figure 2.



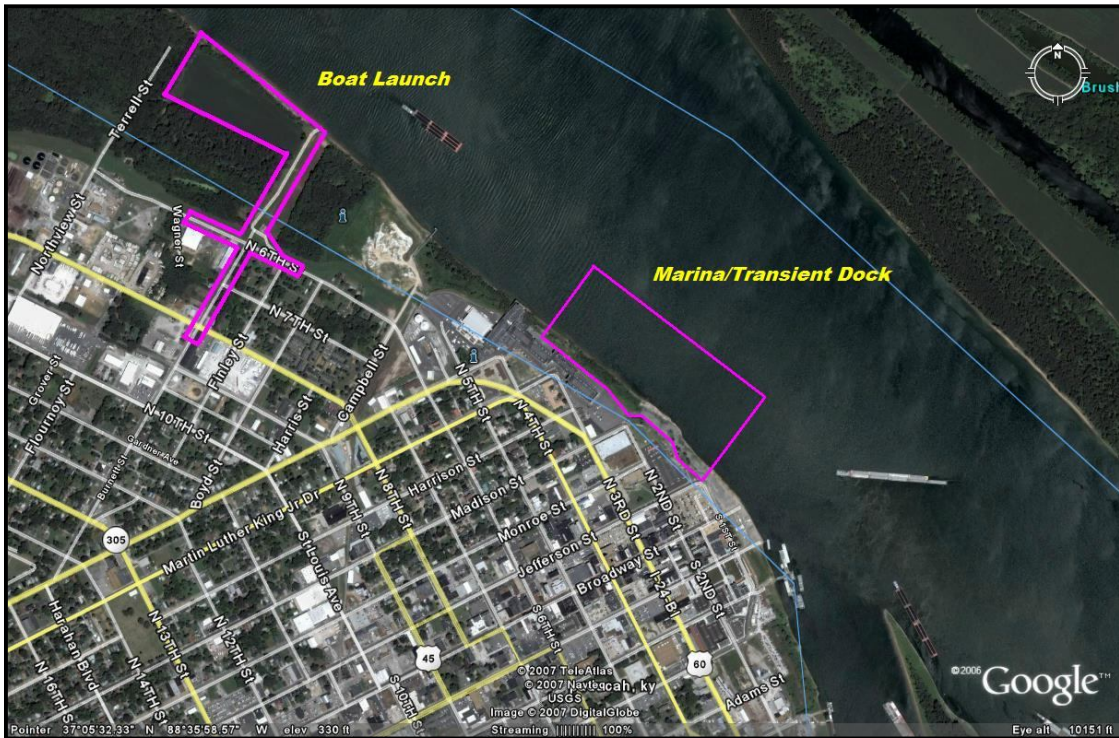
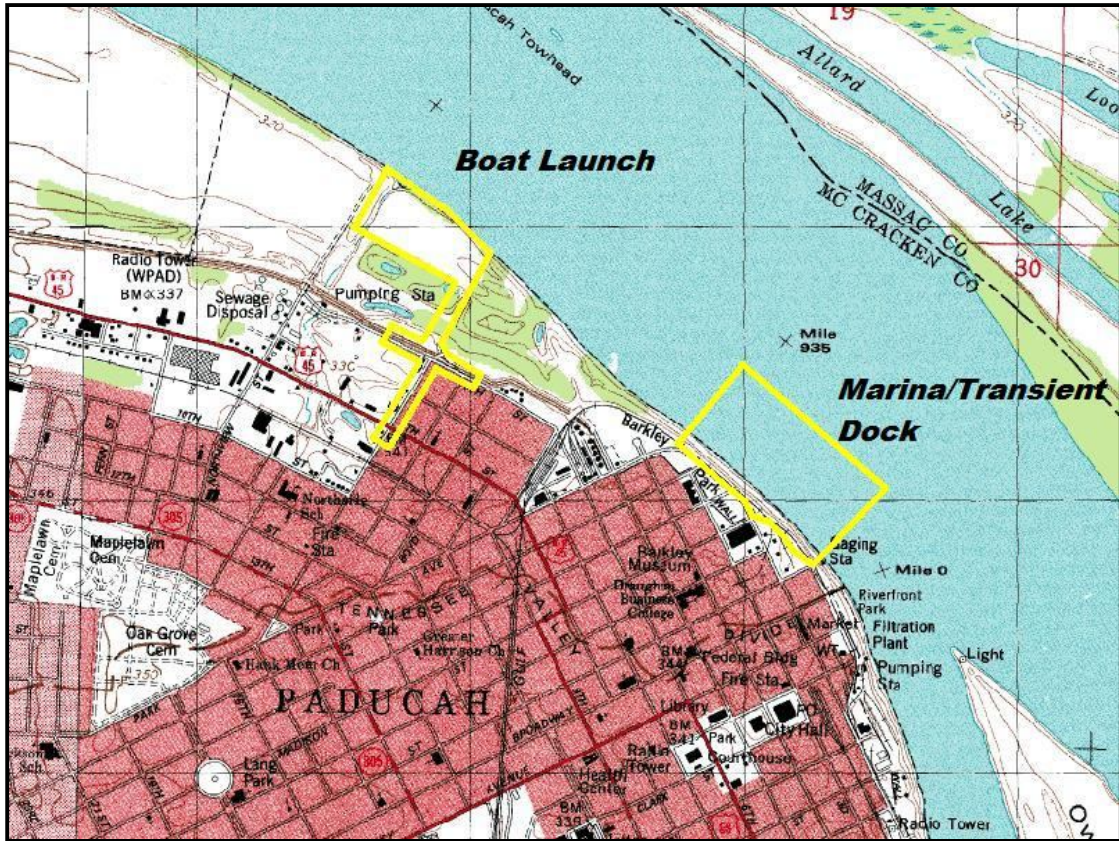


Figure 2

Alternatives

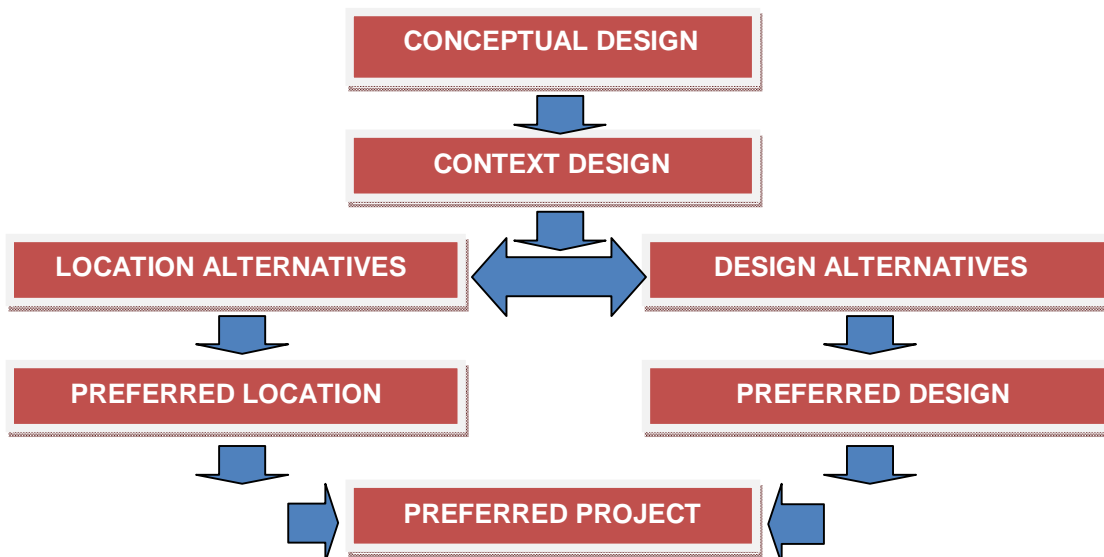


III. ALTERNATIVES

The City of Paducah, Kentucky has evaluated alternatives for the proposed boat launch facility and the marina/transient dock through the consideration of alternative site locations as well as alternative project designs in the process of developing the currently proposed “build” alternatives.

Paducah, as a city founded at the confluence of the Ohio and Tennessee Rivers, has maintained strong ties with each river throughout its history. However, Paducah has not fully capitalized on its recreational, cultural, and historical ties with the river and the economic opportunities that these present. This is in large part due to a lack of public waterfront access and facilities. In 1992, the city instituted a downtown redevelopment plan to combat the blight that was taking root along its riverfront and downtown areas. Today, the city enjoys a national reputation for its accomplishments in downtown renewal. Despite this accomplishment, Paducah still lacks a major public link with its riverfront. To address these concerns, the city has proactively taken measures to create a riverfront redevelopment plan that will provide for a long term physical renovation of the riverfront. The enhancement of Paducah’s riverfront will attract new tourism, recreation, and economic development opportunities for the city. Most importantly, the riverfront’s transformation will reconnect people with the river.

The Ohio River has had a profound influence on the city. The Flood of 1937 engulfed downtown Paducah and spread more than two miles inland. The flood wall presently standing was constructed in response to the disaster with the wall’s height having been driven by the height of the 1937 flood. However, the wall has also had the effect of cutting off the river from the day-to-day activities of the city. The wall in Paducah also limits visual access resulting in the neglect of the riverfront. Many factors contribute to the decline of city riverfronts including major shifts in transportation from river boats to railroads and automobiles. The riverfront was left to marginal uses and least expensive efforts to make it attractive as a park and as a landing for occasional cruise vessels. With better flood control continuing to be instituted in the Tennessee Valley, and with the growing success in downtown revitalization, Paducah seeks to reclaim the riverfront. The city commissioned the creation of a riverfront plan in order to capture the growing opportunities that it offers. As a result of this effort, the boat launch and marina/transient dock projects were conceived. The process for the preferred project decision making is detailed below.



LOCATION

Alternatives Considered But Eliminated

Boat Launch

Alternatives for the location of the proposed boat launch were considered and eliminated utilizing a hierarchy of constraints based on the philosophy behind the riverfront redevelopment plan. The hierarchy used for locating suitable properties consisted of (1) distance from downtown Paducah, (2) available city/county owned properties, (3) level of existing development on the properties in question, and (4) level of probable impact to cultural, social, and environmental resources. The purpose of the boat launch project is to relocate the existing boat ramp facility located at the northeastern end of Broadway Street while at the same time allowing for the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point along the Ohio River. This relocation of the boat launch facility will reduce congestion and vehicle parking associated with recreational fishing activities such as launching and the parking of fishing boats.

Location alternative #1 for the boat launch was located on undeveloped property, along the Ohio River immediately southeast of and contiguous to the Midwest Gas Terminal Barge Access property off of the North 6th Street/Campbell Street intersection. The property is owned by the Paducah/McCracken Visitors Bureau and is zoned *General Business Zone (B-3)*. It was determined that this location did not provide adequate room for ingress, egress, parking, and ramping of boats nor was the site on appropriately-zoned city-owned property; therefore, other locations were sought for the boat launch facility. Location alternative #2 for the boat launch is located on undeveloped property, approximately 0.6 miles downstream of location alternative #1 along the river, on city-owned property, and downstream of the Paducah City Water intakes. This location has a current land use zoning group of *Conservancy Zone (C-1)* which is considered public open space. This location was found to be adequate in size to provide necessary ingress, egress, parking, ramping of boats, fishing tournaments, year-round boating needs, and could be developed further to include picnicking and camping. However, due to a 102" combined sewer outfall for the wastewater treatment plant and the associated drainage ditch along the western boundary directing flows to the river, the boat launch was repositioned approximately 400 linear feet southeastward (upstream) within the same parcel and its ingress/egress changed from the southwestern portion of the property to the southeastern portion of the property. This re-positioning is considered as location alternative #3. Location alternative #3 is considered the "consensus location" for the proposed facility.

Marina/Transient Dock

Alternatives for the location of the proposed marina/transient dock facility were also considered and eliminated utilizing a hierarchy of constraints based on the philosophy behind the riverfront redevelopment plan. The hierarchy used for locating suitable properties consisted of (1) distance from downtown Paducah, (2) available city/county owned properties, (3) level of existing development on the properties in question, and (4) level of probable impact to cultural, social, and environmental resources. The purpose of the marina/transient dock is to provide accommodations for transient boaters and local recreational boat owners. The need for the marina/transient dock is to provide loading/unloading facilities for transient boats and to provide a marina with associated facilities that will allow transient and local recreational boaters to dock in a protected marina near downtown Paducah allowing boaters to refuel, dine, purchase

supplies, etc. Currently, recreational boaters are required to dock on the riverbank near downtown Paducah. The closest on-water refueling/marina facilities for recreational boaters are located 33 miles upstream at Golconda, IL (Mile Marker 902).

Location alternative #1 for the marina/transient dock facility was comprised of separate locations for a marina and floating dock. The marina was proposed to be located along the Ohio River on Executive Inn (presently removed) property owned by the Paducah/McCracken Visitors Bureau. The current land use zoning group for this location is *General Business Zone (B-3)*. The floating dock was proposed on the Ohio River at the end of Broadway Street on city-owned property. The current land use zoning group for this location is *Conservancy Zone (C-1)*. The marina and floating dock were separated by approximately 3,500 feet in location alternative #1. After consideration, location alternative #1 was not chosen because it does not meet the purpose and need since the marina is approximately 0.7 miles from the downtown area and the breakwater to protect the marina is not feasible to construct due to the depth of the river and the distance from the existing river bank.

Location alternative #2 for the marina/transient dock facility was comprised of separate locations for a marina and large dock (cruise dock). The marina was proposed to be located on both city-owned and Crouse Corporation property north of the Carson Four Rivers Center at the confluence of the Ohio and Tennessee rivers. This location has current land use zoning groups of *Conservancy Zone (C-1)* and *Heavy Industrial Zone (M-2)*. The large dock (cruise dock) was proposed to be located on city-owned property at the end of Broadway Street approximately 900 feet downstream of the marina. This property is currently zoned *Conservancy Zone (C-1)*. After consideration, location alternative #2 was not chosen for the following reasons:

- The facility position decreases the available navigation channel of the river.
- The facility position increases the potential for interference with existing and future planned river operations.
- The marina is not positioned entirely on city-owned property.

Location alternative #3 for the marina/transient dock facility was comprised of a combination of an excursion dock and a protected marina/transient dock facility. This facility was to be located along the Ohio River between Martin Luther King, Jr. Drive (extended) and Jefferson Street on city-owned property. The property is currently zoned *Conservancy Zone (C-1)*. According to the U.S. Fish & Wildlife Service (USFWS), the marina/transient dock project is in close proximity to several federally protected mussel records known to occur within the Ohio River. A mussel survey was conducted for the marina/transient dock area from August 5-8, 2008 and after review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species at the marina/transient dock location. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels was completed and submitted to USFWS for concurrence. The results of the BA indicated that the proposed marina/transient dock location is likely to adversely affect three federally protected mussel species. Formal consultation on the matter was initiated by the Federal Highway Administration (FHWA) to the USFWS and as a result, a Biological Opinion (BO) was issued by the USFWS for impacts to the three species. The BO concluded that the marina/transient dock project is not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat. However, after consideration of the potential impacts to freshwater mussels, location alternative #3 was not chosen and an alternative location was sought.

Similar to location alternative #3, location alternative #4 for the marina/transient dock facility is comprised of a combination of an excursion dock and a protected marina/transient dock. Location alternative #4 is positioned 500 linear feet downstream (northwest) of location alternative #3 on city/county-owned property. This shift is a result of additional mussel surveys conducted in October 2010 and October 2011 which revealed varying mussel bed densities along the Ohio River shoreline. The surveys found the presence of an abundant and diverse mussel bed upstream and riverward of location alternative #3. Downstream of location alternative #3, the reach was characteristically siltier with a mussel assemblage that was less dense and less species-rich. Based on this information, the proposed marina/transient dock project was shifted downstream to the less-dense mussel bed area. Location alternative #4 is considered the “consensus location” for the proposed facility based on the review of location alternatives #1 and #2 and the potential freshwater mussel impacts of location alternative #3. The “consensus” marina/transient dock facility location has been selected to minimize cost and environmental impact, while maintaining close proximity to downtown Paducah.

No Build Alternative

Boat Launch

The “no-build” alternative for the boat launch project was considered as a baseline for comparison but because of the need to reduce congestion and vehicle parking associated with recreational fishing activities at the northeastern end of Broadway Street, this alternative is not considered acceptable. In addition, the “no-build” alternative for the boat launch will not allow the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point. Not building the boat launch project will inhibit new tourism, recreation, and economic development opportunities for the city.

Marina/Transient Dock

The “no-build” alternative for the marina/transient dock project was considered as a baseline for comparison, but because of the need to (1) provide loading/unloading facilities for transient boats, and (2) provide a marina with associated facilities that will allow transient and local recreational boaters to dock in a protected marina near downtown, this alternative is not considered acceptable. The “no-build” alternative for the marina/transient dock will not allow the city to fully capitalize on its recreational, cultural, and historical ties with the river, and the economic opportunities that these present. Not building the marina/transient dock facility will inhibit new tourism, recreation, and economic development opportunities for the city.

Preferred Location Alternative

Boat Launch

Location alternative #3 is considered the “consensus” location (preferred location alternative) for the proposed facility. Location alternative #3 for the boat launch facility is located along the river approximately 400 linear feet upstream of location alternative #2, on the same undeveloped city-owned property but still downstream of the Paducah City Water intakes. The boat launch was shifted in this manner to utilize the existing entrance to the subject property via the Burnett Street/North 6th Street intersection and to lessen the impact on the combined sewer drainage ditch. This location maintains a land use zoning group of *Conservancy Zone (C-1)* which is considered public open space. This location was chosen as the preferred location

alternative through the synthesis of community, stakeholder, river industry, and city input. The proposed boat launch site has been selected to satisfy the purpose and need for the facility which is to reduce congestion and vehicle parking at the northeastern end of Broadway Street associated with recreational fishing activities such as launching and trailering of boats, and allow for the transition of the downtown riverfront area back to its historic use. The location alternatives for the boat launch are detailed in Figure 3.



Figure 3

Marina/Transient Dock

Location alternative #4 is considered the “consensus” location (preferred location alternative) for the proposed facility based on the review of location alternatives #1, #2 and #3. Location alternative #4 for the marina/transient dock facility is on city/county-owned property a distance of 500 linear feet downstream (northwest) of location alternative #3 to lessen the potential impacts to freshwater mussels. The “consensus” marina/transient dock facility location has been selected to minimize cost and environmental impact, while maintaining close proximity to downtown Paducah. The location alternatives for the marina/transient dock facility are detailed in Figure 4.

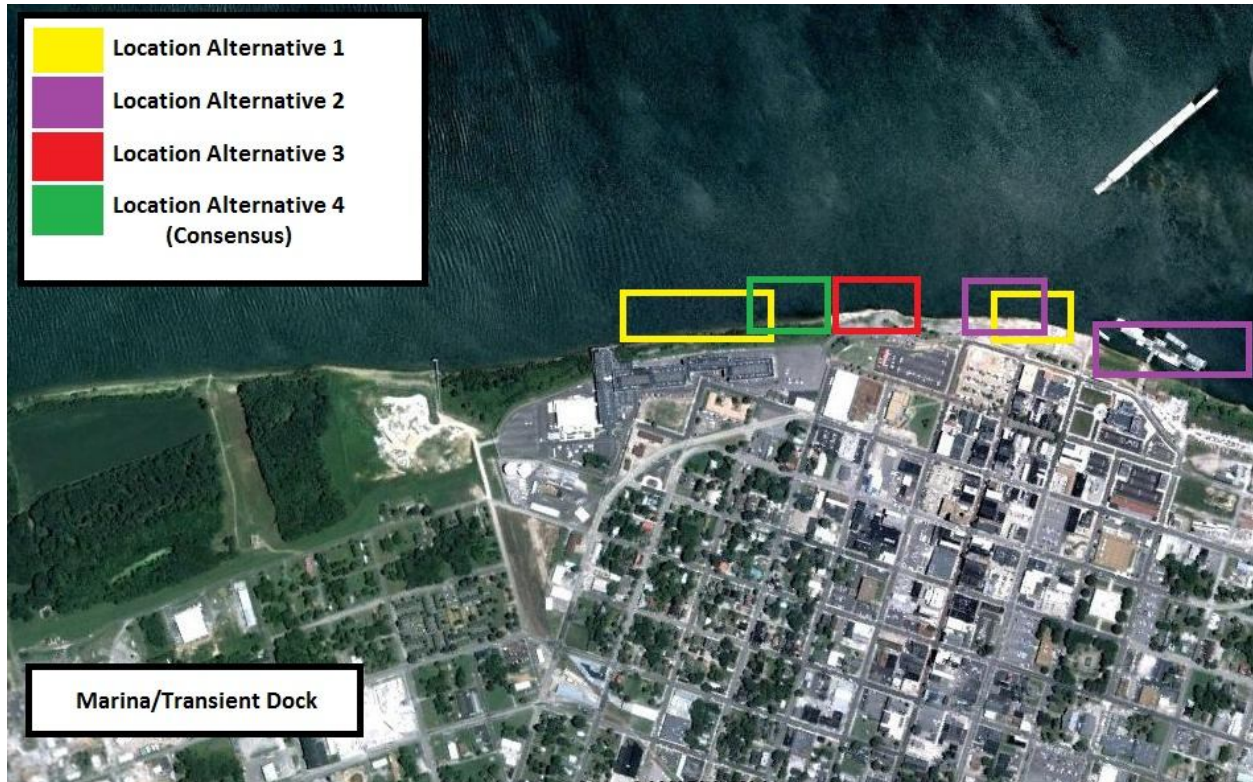


Figure 4

DESIGN

Alternatives Considered But Eliminated

Boat Launch

Two design alternatives were evaluated for the boat launch facility. Both alternatives would relocate the existing boat ramp facility located at the northeastern end of Broadway Street allowing for the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point along the Ohio River. This relocation of the boat launch facility would reduce congestion and vehicle parking associated with recreational fishing activities such as launching and the parking of fishing boats.

Boat Launch Design Alternatives

- *Alternative #1*
- *Alternative #2 (Consensus)*

The design alternatives would both provide ingress/egress at the Burnett Street/North 6th Street intersection, parking, and a boat launch area on the bank of the Ohio River. Design alternative #1 includes: (1) one boat ramp located on the bank of the Ohio River in the north-central portion of the site having five lanes and open 24 hours a day, (2) one paved parking and trailering area adjacent to the boat ramp providing 100 parking spaces and adequate maneuvering area, and (3) an access road to the site as an extension of Burnett Street and constructed in the location of an existing gravel/dirt access road along the eastern boundary of the site. The need for future parking expansion requires a second alternative to this design. Design alternative #2 is the “consensus” design and is identical to alternative #1 with the exception of an additional 4.3 acres for parking.

Marina/Transient Dock

The design for the marina/transient dock facility commenced with the approved *Riverfront Redevelopment Plan*, continued through context design, and culminated with a “consensus” design alternative after the consideration of a number of design alternatives. The context design and consensus design alternative were documented and further refined in the *Transient Dock and Schultz Park Memorandum of Understanding (MOU)* in December 2007. In addition to addressing the fundamental purpose and need for the project, the *Riverfront Redevelopment Plan* and the *MOU* both address the goal to enhance existing amenities in order to “recapture” the riverfront. This includes creating an interface and area of public gathering for not only transient boaters, but also for local public use and enjoyment. To that end, the *MOU* outlined a number of basic context elements that were established to be fundamental to the success and goals of the project. The salient context elements presented in the *MOU* can be summarized as follows:

- Locate the marina and dock facilities strategically to avoid impacts to river traffic.
- Construct the transient dock parallel with the river’s direction of flow to limit current forces and to serve as a wave attenuator for the marina.
- Provide a debris deflector upstream of the marina to protect against floating debris, ice and break-away barges from both the Ohio and Tennessee Rivers for all river stages

- Accommodate river stage fluctuations from elevation 299 to 341.8 (100-yr WSE).
- Enhance existing amenities at Schultz Park.
- Utilize the existing opening at Monroe Street as the pedestrian access point through the floodwall to connect the riverfront to the downtown area.
- Maximize public accessibility to the river up to elevation 322.
- Preserve and enhance existing viewsheds.
- Utilize the existing floodwall in its existing condition without modification.
- Maintain vehicular access through Schultz Park.
- Provide a marina with boat slips that includes:
 - Fuel, electricity, potable water and sanitary pump out facilities.
 - Store and administration building

The development of alternatives documented in the *Transient Dock and Schultz Park Memorandum of Understanding (MOU)* focused primarily on three separate concepts that are variations of placing fill in the river to provide protection for the marina and to enhance Schultz Park. Each concept is similar in design and varies slightly based on size and amenities. The *MOU* does not include the documentation of two other marina/transient dock design alternatives that were evaluated and eliminated early in the design development process, namely, sheet pile retaining walls and floating barrier. The *Riverfront Redevelopment Plan* and the *Transient Dock and Schultz Park Memorandum of Understanding (MOU)* are included in this document as Appendix N and Appendix O, respectively.

A brief summary of mass fill (alternative #1), sheet pile retaining walls (alternative #2), and the floating barrier (alternative #3) is provided below.

Marina/Transient Dock Design Alternatives

- ***Mass Fill (Alternative #1)***
 - ***Design Concept #1***
 - ***Design Concept #2***
 - ***Design Concept #3 (Consensus)***
- ***Sheet Pile Retaining Walls (Alternative #2)***
- ***Floating Barrier (Alternative #3)***

Design Alternative #1- Mass Fill

Three concepts were evaluated for design alternative #1 (mass fill) for the marina/transient dock facility. Each of the concepts would serve the purpose and need by: (1) providing loading/unloading facilities for transient boats, and (2) providing a marina with associated facilities that will allow transient and local recreational boaters to dock in a protected marina near downtown. Each of the concepts would enhance Schultz Park and would have landform and shore protection, roadways and paths, an overlook, a gangway/ramp system, a transient dock, a marina, and park amenities in common. The three concepts each consist of the construction of a landform expansion of Schultz Park through the placement of clean fill material within the Ohio River to form a peninsula and construction of a floating dock and marina on the downstream side of the peninsula. Fill material is placed by truck or barge on an approximate 3H:1V slope to create the peninsula to an elevation 338 (near the 100-yr river elevation). This landform provides passive protection of the marina and transient dock from floating debris, ice and barge impact for all river stages. Access to the floating dock is provided

by elevated walkway/gangways. The land-based improvements of Schultz Park include reconstruction of parking, slope protection walkways and enhanced vegetation. The amount of fill material used to create the landform has been limited to construct a suitable deflector for debris. The three concepts are variations of placing fill in the river to provide protection for the marina and to enhance Schultz Park. Each concept is similar in design and varies slightly based on size and amenities. Concept #1 includes an observation tower, bioengineered slope protection, a park overlook, a lawn & sculpture park, pedestrian link to downtown via Monroe Street, an interpretive levee trail, the marina, and the transient dock. Concept #2 includes the amenities provided in Concept #1 with the addition of terraced seating and terraced lawn & gardens. Concept #3 includes the amenities provided in Concept #2 with the addition of a marina/transient dock building, steps leading down to the Ohio River, a connection to the existing amenities to the immediate east, and the adaptive use of existing structures and interpretive landmarks. Concept #3 does not include an observation tower. Each of the three design concepts will require that fill be placed in the Ohio River in order to provide landform and shore protection. Concept #3 requires the most fill impact to the Ohio River while Concept #1 requires the least. Table 1 summarizes the amenities and features of the three concepts as well as the preferred concept (Consensus). The Consensus is a combination of specific amenities/features taken from the three mass fill alternative concepts and requires the same amount of fill as Concept #3. The anticipated capital construction cost for the Consensus is \$ 13.0M.

TABLE 1- MASS FILL DESIGN CONCEPTS

Amenities and/or Features	Concepts			
	Concept #1	Concept #2	Concept #3	Consensus
Observation Tower	X	X	----	----
Bioengineered Slope Protection	X	X	X	X
Park Overlook	X	X	X	X
Lawn/Sculpture Park	X	X	X	X
Interpretive Levee Trail	X	X	X	X
Marina	X	X	X	X
Transient Dock	X	X	X	X
Promenade/Pedestrian Link to Downtown	X	X	X	X
Terraced Seating		X	X	X
Terraced Lawn & Garden		X	X	X
Marina/Transient Dock Building			X	X
Steps to the Ohio River			X	----
Connectivity to Existing Amenities			X	X
Adaptive Use of Existing Landmarks			X	X
Rock Outcropping to the River				X
Vertical axis wind turbines				X
Estimated Fill (cubic yards)	160,000	220,000	265,000	265,000
Estimated Construction Cost	\$ 11.1M	\$ 12.2M	\$ 12.7M	\$ 13.0M

Design Alternative #2- Sheet Pile Retaining Wall

Design alternative #2 is similar to design alternative #1 (mass fill) except that the mass fill material is placed within a vertical sheet pile wall up to an elevation of approximately 302 feet above MSL. This alternative also provides protection for the marina against floating debris. Access to the floating dock is provided by elevated walkway/gangways; however, the river's edge will not be accessible. The land-based improvements to Schultz Park include reconstruction of parking and enhanced vegetation.

This alternative addresses the purpose and need by: (1) providing loading/unloading facilities for transient boats, and (2) providing a marina with associated facilities that will allow transient and local recreational boaters to dock in a protected marina near downtown. However, with this alternative, access to the river for non-boaters is limited and there is minimum enhancement to the useable area in Schultz Park. Based on preliminary soil boring data, it was anticipated that sheet piling lengths on the order of 60 feet would be required as well as the potential for pre-drilling and significant tie-backs and dewatering. When compared with alternative #1 (\$ 11-13M), the anticipated capital construction cost for such sheet piling (\$ 17.4M) is much greater and the life expectancy is much less than with mass fill. Contrary to design alternative #1, this alternative would isolate pedestrians from interacting with the river at the river's edge due to the necessary hand-railing protections required to provide adequate safety. In addition, this alternative will not provide the amenities as will alternative #1 (mass fill). For these reasons, design alternative #2 was eliminated.

Design Alternative #3- Floating Barrier

Design alternative #3 consists of a floating barrier structure that would provide debris/barge protection for the marina, wave attenuation, and access to the dock/marina. This alternative represents the Consensus Plan presented in the approved *Riverfront Redevelopment Plan* of March 2007. This floating barrier consists of a series of precast concrete barges linked together to form one continuous, articulated floating dock string. This articulated dock string is attached to multiple piers constructed at intervals along the dock to provide anchorage. Access to the dock would be provided through an elevated walkway/gangway from the existing Schultz Park riverbank. With this alternative, the only fill material placed in the river is associated with construction of the anchor piers for the floating dock and the anchorage for the marina. The land-based improvements of Schultz Park would include reconstruction of parking, slope protection, walkways and enhanced vegetation.

Design alternative #3 addresses the purpose and need by: (1) providing loading/unloading facilities for transient boats, and (2) providing a marina with associated facilities that will allow transient and local recreational boaters to dock in a protected marina near downtown. Although design alternative #3 minimizes the amount of fill material placed in the river when compared with design alternates #1 and #2, the alternative poses significant challenges associated with the design and construction of a suitable structure that can accommodate the river current, debris load, ice load and significant range of river fluctuations (elevation 299 to 338 feet above MSL). Because the barrier would be subject to very significant lateral loading, it is estimated that the piers would be constructed of concrete caissons on the order of 8' to 10' diameter, and/or sheet pile cells on the order of 20' diameter, each with significant foundations. It has been estimated that each pier would likely extend approximately 60 feet above normal pool elevation directly in front of Schultz Park, thus significantly obstructing the viewshed from the park and surrounding areas. The floating barrier would be anchored using a guide rail system to each cell and would rise and fall with the river elevation.

This guide rail system poses a significant maintenance obligation, and in the event of a failure or binding, portions of the dock would become submerged. This would result in an unacceptable risk to public safety as well as damage to the floating infrastructure. Furthermore, the floating barrier would be susceptible to major structural damage and potential loss of life in the event of impact from a break-away barge. When compared with alternative #1 (\$ 11-13M), the anticipated capital construction cost for the floating barrier (\$ 15.7M) is greater. In addition, this alternative will not provide the amenities as will alternative #1 (mass fill). For these reasons, design alternative #3 was eliminated.

No Build Alternative

Boat Launch

The “no-build” alternative for the boat launch project was considered as a baseline for comparison but because of the need to reduce congestion and vehicle parking associated with recreational fishing activities at the northeastern end of Broadway Street, this alternative is not considered acceptable. In addition, the “no-build” alternative for the boat launch will not allow the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point. Not building the boat launch project will inhibit new tourism, recreation, and economic development opportunities for the city.

Marina/Transient Dock

The “no-build” alternative for the marina/transient dock project was considered as a baseline for comparison, but because of the need to (1) provide loading/unloading facilities for transient boats, and (2) provide a marina with associated facilities that will allow transient and local recreational boaters to dock in a protected marina near downtown, this alternative is not considered acceptable. The “no-build” alternative for the marina/transient dock will not allow the city to fully capitalize on its recreational, cultural, and historical ties with the river, and the economic opportunities that these present. Not building the marina/transient dock facility will inhibit new tourism, recreation, and economic development opportunities for the city.

Preferred Design Alternative

Boat Launch

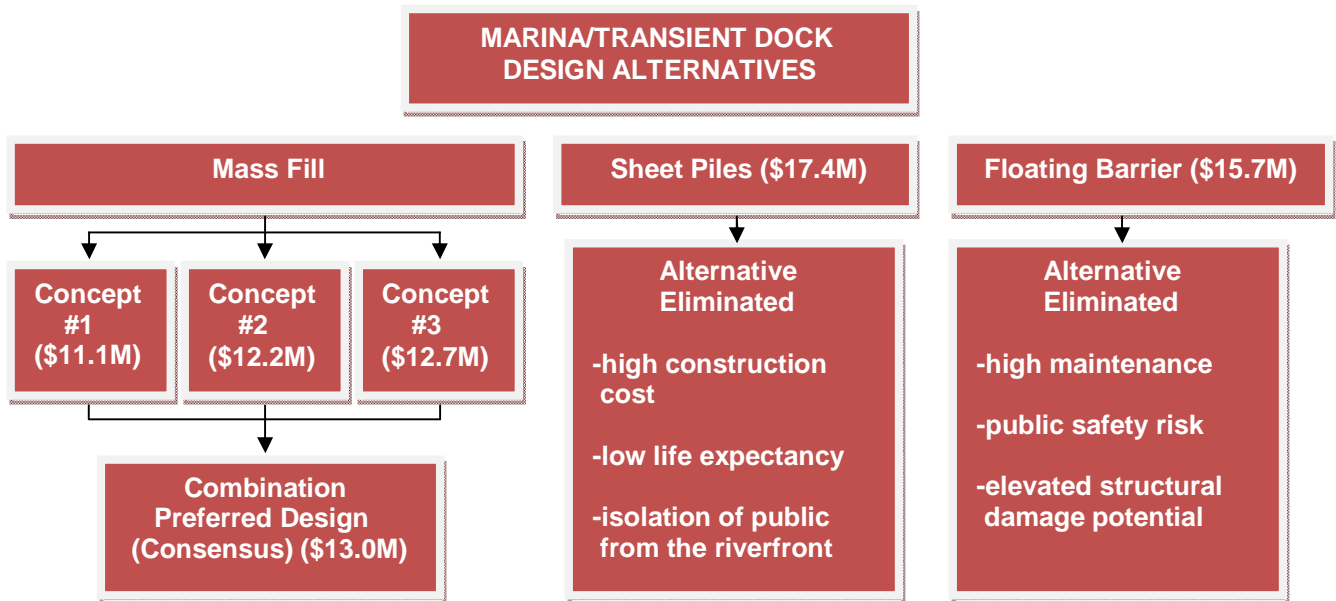
Design alternative #2 includes the amenities provided in alternative #1 with the addition of 4.3 acres of future parking area. The required elevation of the boat ramp was minimized in alternative #2, resulting in a reduction in the construction footprint and associated impacts of 0.7 acres of the Ohio River to 0.5 acres. The preferred design alternative is a result of the evaluation of the two design alternatives described above. The basic premise of this decision is the opportunity to relocate the existing boat launch away from the northeastern end of Broadway Street so that this area can be converted back to its original use as a riverboat landing and community focal point along the Ohio River. This relocation of the boat launch facility would reduce congestion and vehicle parking associated with recreational fishing activities such as launching and the parking of fishing boats. Design alternative #2 was chosen as the preferred alternative based on the potential for future parking needs (an additional 4.3 acres) as well as the reduction of the construction footprint and associated impacts of the Ohio River from 0.7 acres to 0.5 acres. Design alternative #2 will provide (1) one boat ramp located on the bank of the Ohio River in the north-central portion of the site having five lanes and open

24 hours a day, (2) one paved parking and trailering area adjacent to the boat ramp providing 100 parking places and adequate maneuvering area, and (3) an access road to the site as an extension of Burnett Street and constructed in the location of an existing gravel/dirt access road along the eastern boundary of the site. Paducah Power System will supply lighting in the boat launch area after construction of the project. The lighting system will be overhead electric with standard, basic fixtures. There are no other city-owned properties along the riverfront that will accommodate the development of the boat launch facility. Design alternative #2 is included as Figure 5.

Marina/Transient Dock

The preferred design alternative (consensus) is based on design alternative #1 (mass fill). It has been determined that the mass fill alternative is the best approach to provide long-term stability and protection of the City's infrastructure (marina and dock assets), address the purpose and need for the project, and enhance the Schultz Park and the riverfront interface with the public. In the consensus design alternative (Mass Fill- Concept #3), the size of the mass fill is expanded slightly in order to increase the usable area of Schultz Park for additional amenities including a pedestrian promenade and terraced seating at the river's edge. The preferred design alternative will enhance Schultz Park and include landform and shore protection, roadways and paths, an overlook, a gangway/ramp system, a transient dock, a marina, and park amenities. Specifically, the preferred design includes: bioengineered slope protection, a river overlook, lawn & sculpture park, pedestrian link to downtown via Monroe Street, terraced seating, terraced lawn & gardens, an interpretive levee trail, a marina/transient dock building, rock outcropping leading down to the Ohio River, the adaptive use of existing structures and interpretive landmarks, a connection to the existing amenities to the immediate east, the marina, and the transient dock. The marina/transient dock will have three individual sets of four pipe piles that will support the "floating" gangway deck system. The most elevated portion of this support system will be vertical axis wind turbines at the top of each of the pipe piles. The vertical axis wind turbines are proposed as an environmentally-friendly electricity generator to power a portion of the lighting of the marina/transient dock facility. Lighting within the marina/transient dock facility will consist of pole-mounted pedestrian lights, pathway lighting along the transient dock, mounted gangway lights, and submersible inset lights for the stairways.

A summary of the marina/transient dock alternatives analysis is detailed below. The preferred design alternative layout (Mass Fill- Consensus) is included as Figure 6.



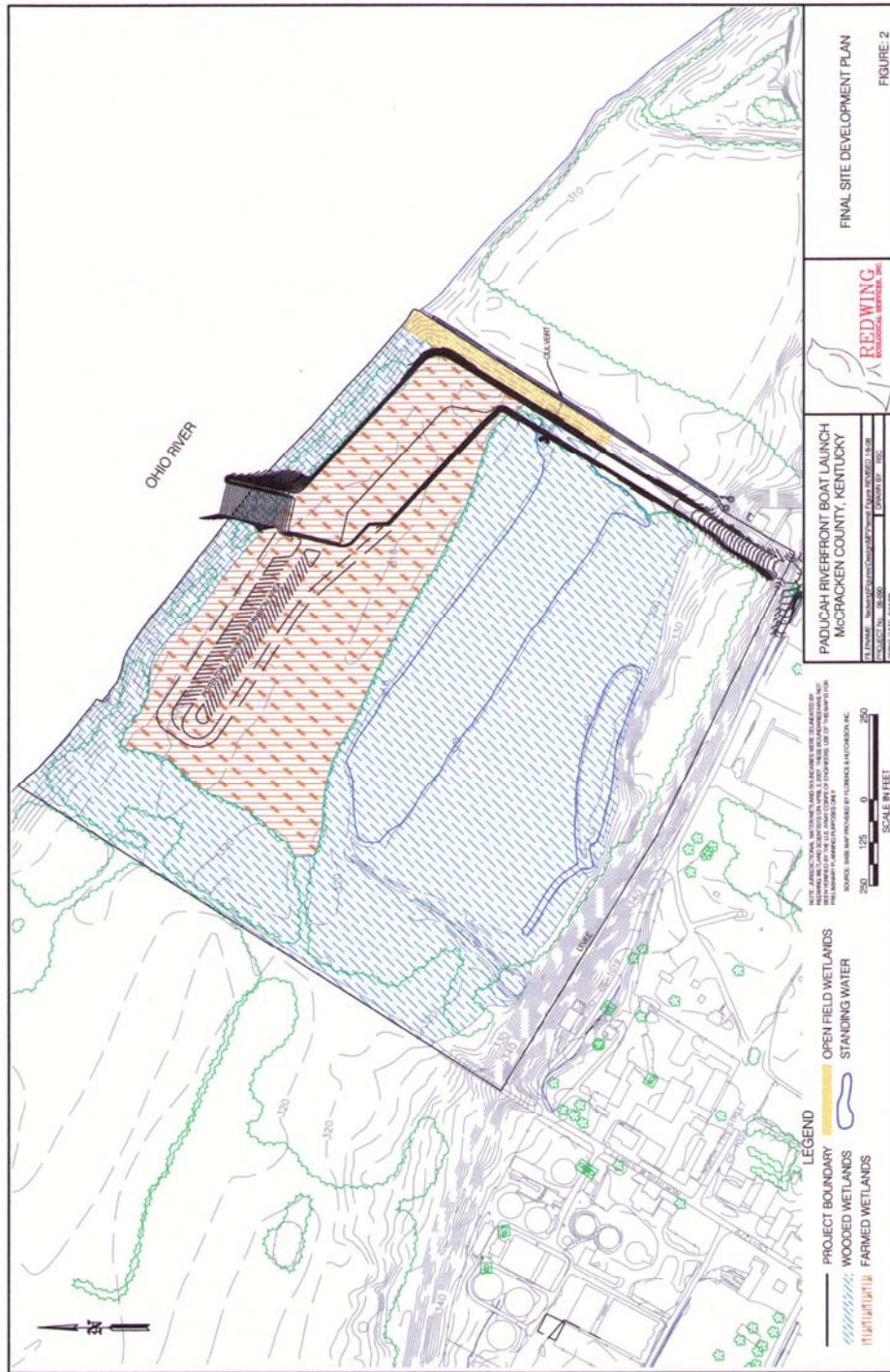


Figure 5

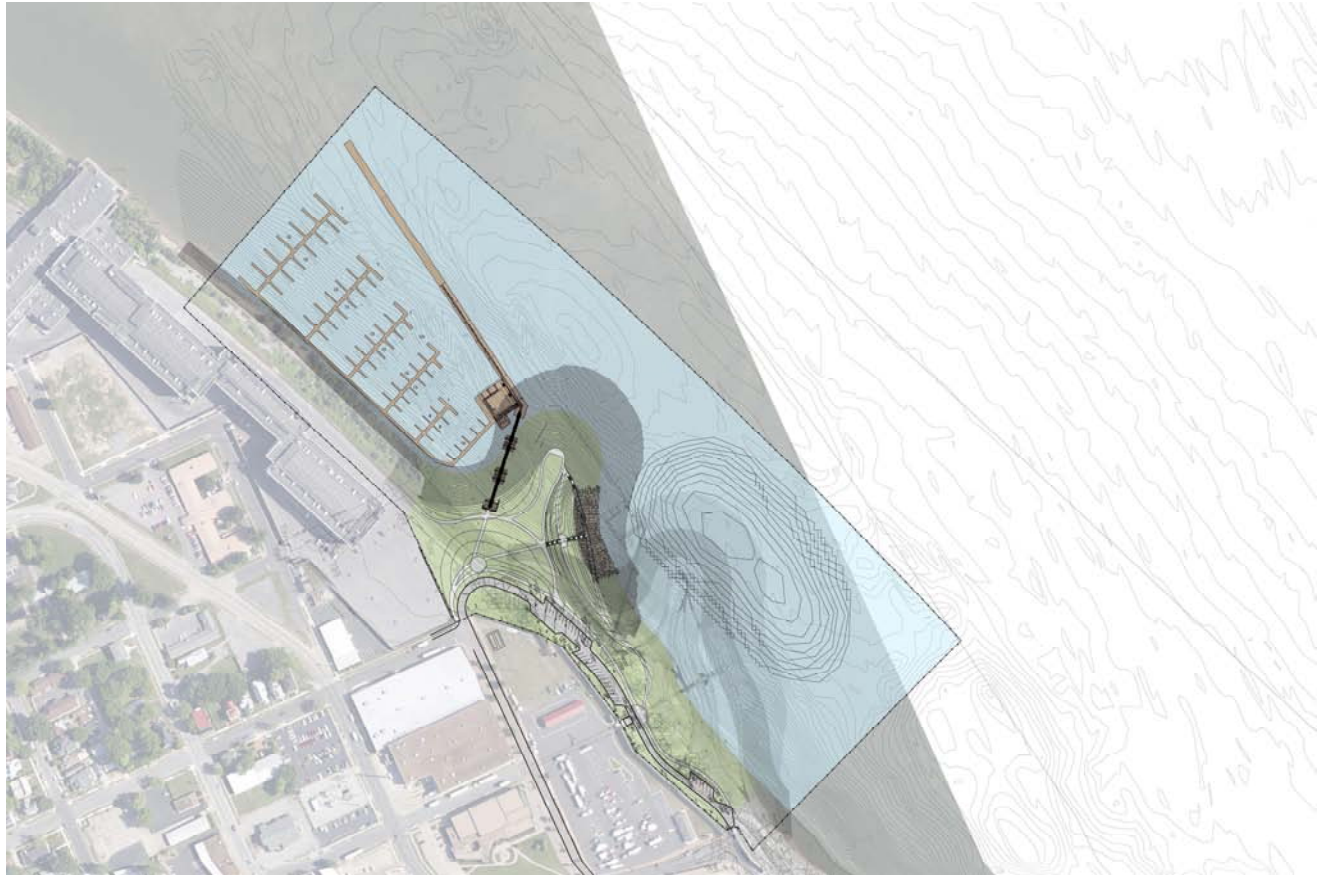


Figure 6

Environmental Impacts



IV. ENVIRONMENTAL IMPACTS

This section includes a discussion on the probable social, economic, archaeological, historic, and ecological impacts of the preferred alternatives under consideration and describes the measures proposed to mitigate any adverse impacts. The following table summarizes the impacts associated with the preferred alternative for each of the two projects:

TABLE 2- ENVIRONMENTAL IMPACTS SUMMARY

Impact Category	Impacts	
	Boat Launch	Marina/Transient Dock
Air Quality	None*	None*
Noise	None#	None#
Water Quality & Streams	0.5 acres^ (Mitigated)	6.2 acres^
Floodplains	Yes	Yes
Wetlands	9.2 acres (Mitigated)	None
Wild & Scenic Rivers	None	None
Federal Threatened/Endangered Species	Mitigated**	Mitigated**
State Threatened/Endangered Species	Mitigated**	Mitigated**
Historic Structures or Districts	None%	None%
Archaeological Sites	None%	None%
Surface Water/Land Use	Ohio River	Ohio River
Community Impacts	None	None
Displacements & Relocations	None	None
Farmland	Minimal	None
Environmental Justice	None	None
Pedestrian & Bicycle Facilities	None	None
UST/Hazardous Materials	None	None
Visual Impacts@	None	Minimal
Construction Activities	Minimal	Minimal
Section 4(f) and/or 6(f)	None	Schultz Park
Section 9 Bridge Permit	None	None
Federal Permits	Sections 404 & 10	Sections 404 & 10
State Permits	Sections 401, 402, and Floodplain	Sections 401, 402, and Floodplain

* Project areas are in attainment for criteria pollutants. Emissions from combustion engines are considered trivial activities and are not regulated. Commitments have been made for construction activities to reduce emissions.

Construction activities are exempted between 7 A.M. and 6 P.M. on weekdays.

^ Consists of 0.5 acres of the Ohio River at the boat launch and 1.60 acres of fill along the riverbank, 4.56 acres of fill in the riverbed, and 0.07 acres for mooring anchors at the marina/transient dock. Due to the relatively limited nature of the marina/transient dock impacts in relation to the overall Ohio River system, no mitigation is required for the project for impacts to water resources.

** Commitments have been made to reduce impacts to Indiana bat summer habitat. Mussel surveys have been conducted at both project sites. Biological Assessment (BA) documents that estimate impacts to mussels have been

submitted to USFWS. A Biological Opinion (BO) will be completed by USFWS. Consultation on this matter will be completed prior to the approval of a Finding of No Significant Impact (FONSI).

% Architectural & archaeological surveys have been conducted with no impacts recorded.

@ Structural pipe piles supporting the floating gangway system of the marina/transient dock extend above the elevation of the flood wall. Consultation with SHPO on visual impacts will be completed prior to the completion of the FONSI.

The following paragraphs provide an overview of the environmental findings:

Air Quality

Current Conditions & Attainment Status

The Kentucky State Ambient Air Quality Standards for six criteria pollutants as listed in 401 KAR 53:010, *Ambient Air Quality Standards* are the same as the National Ambient Air Quality Standards (NAAQS). The six criteria pollutants are: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM_{2.5} and PM₁₀), and sulfur dioxide (SO₂). In addition, the state has adopted standards for hydrogen sulfide (H₂S), gaseous fluorides (expressed as HF), total fluorides, and odors. The proposed boat launch and marina/transient dock sites are located in the Paducah-Cairo Interstate Air Quality Control Region, which covers the westernmost parts of Kentucky. McCracken County currently is designated as being in attainment for all criteria pollutants (40 CFR 81.318). When the U.S. Environmental Protection Agency classifies an area as in attainment it means that the air quality in that area meets the NAAQS. The proposed projects will be consistent with the Kentucky State Implementation Plan regarding the attainment of the NAAQS.

Air Quality Conformity Statement

The proposed boat launch and marina/transient dock sites are located in the Paducah-Cairo Interstate Air Quality Control Region, which covers the westernmost parts of Kentucky. McCracken County is currently in attainment for all transportation-related pollutants as well as all criteria pollutants (40 CFR 81.318). The two projects are listed on Page 72 of the FY 2011-FY 2014 Statewide Transportation Improvement Program (STIP) as the Paducah Waterfront Development Project (2006KYD).

Regional Compliance with National Ambient Air Quality Standards (NAAQS)

The Kentucky State Ambient Air Quality Standards for six criteria pollutants as listed in 401 KAR 53:010, *Ambient Air Quality Standards* are the same as the National Ambient Air Quality Standards. The proposed boat launch and marina/transient dock sites are located in the Paducah-Cairo Interstate Air Quality Control Region, which covers the westernmost parts of Kentucky. McCracken County currently is designated as being in attainment for all criteria pollutants (40 CFR 81.318).

Mobile Source Air Toxics (MSATs) Impact

The Paducah Riverfront Development Project involves the construction of a boat launch facility, associated parking, and a marina/transient dock. The location of the boat launch will encompass the corridor along Burnett Street from 8th Street to the Ohio River and approximately 500 feet along 6th Street on each side of Burnett Street. The location of the marina/transient will

encompass an area which will extend from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet while extending approximately 550 linear feet at its maximum (transient dock portion) into the Ohio River. There are no traffic forecasts for the Paducah Riverfront Development Project, as it does not directly impact traffic volume. The project would therefore be considered Exempt for MSAT effects as defined by the February 3, 2006 FHWA Interim Guidance on Air Toxics Analysis in NEPA documents.

Cumulative & Indirect Impacts

The purpose of the proposed boat launch project is to relocate the existing boat ramp facility located at the northeastern end of Broadway Street while at the same time allowing for the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point along the Ohio River. An increase in fugitive emissions is not expected since it is a “relocated” facility. The purpose of the marina/transient dock is to provide accommodations for transient boaters and local recreational boat owners. Transient and local boat owners will add fugitive emissions to the area at an unknown rate and/or concentration but it is not expected to threaten the attainment status of the area. Construction for both the proposed boat launch and marina/transient dock will be conducted with environmental commitments as detailed below. No cumulative and/or indirect impacts to air quality are expected as a result of the proposed boat launch and marina/transient dock facilities.

Mitigation, Minimization, and/or Avoidance Options

Environmental commitments have been made associated with the boat launch and marina/transient dock projects. Commitments in the area of air quality are as follows: (1) The projects will be constructed utilizing reasonable precautions to prevent particulate matter from becoming airborne as directed under Kentucky Division for Air Quality Regulation *401 KAR 63:010 Fugitive Emissions*. Such reasonable precautions will include but not be limited to (a) use, where possible, of water or chemicals for control of dust during demolition and/or construction operations, (b) the covering of open bodied trucks operating outside the work areas transporting materials likely to become airborne, and (c) the prompt removal of earth or other material from a paved street which earth or other material has been transported by trucking or earth moving equipment or erosion by water, and (2) The projects will be constructed without open burning as directed under Kentucky Division for Air Quality Regulation *401 KAR 63:005 Open Burning*, except for the purposes listed in Section 4, Allowable Open Burning and Section 5, Restrictions to Open Burning, of the regulation.

Noise

Current Conditions & Ambient Noise Levels

In the past, the U.S. Environmental Protection Agency (EPA) coordinated all federal noise control activities through its Office of Noise Abatement Control. In 1981, EPA concluded that noise issues were best handled at the State or local government level and as a result, transferred the primary responsibility of regulating noise to state and local governments. However, the Noise Control Act of 1972 and the Quiet Communities Act of 1978 were not rescinded by Congress and remain in effect today. In 1974, the Kentucky Legislature adopted the Kentucky State Noise Control Act (KRS 224.30-100 to 224.30-190) (the Act) which declared that “it is the policy of the state to promote an environment for all people free from noise that jeopardizes their health or welfare or degrades the quality of life”. The Act also allowed local governments to develop, adopt, and maintain a comprehensive program of noise regulation and enforce ordinances necessary to implement noise control plans at the local level. The City of Paducah adopted a noise control ordinance in 1994 (Ord. No. 94-2-5079). The noise control ordinance exempts construction operations from 7:00 a.m. to 6:00 p.m. on weekdays for which building permits have been issued or construction operations not requiring permits due to ownership of the project by an agency of government; providing all equipment is operated in accordance with all standard equipment, manufacturers’ mufflers, and noise reducing equipment in use and in properly operating condition.














Section 42-104 of the City Noise Ordinance (Ord. No. 94-2-5079) describes prohibited noises from premises and motor vehicles as well as other noise disturbances. For noises emanating from premises, it is unlawful for any person to emit a continuous noise which leaves the premise on which it originates, crosses a property line, and enters onto any other premise in excess of the following sound pressure levels:

Residential (R-1, R-2, R-3, R-4, H-2)	65 dB (A) for 7 A.M.-9 P.M. 65 dB (A) for 9 P.M.-7 A.M.
Commercial (A-1, B-1, B-2-T, B-2, B-3, H-1, HBD, POP, MU)	75 dB (A) for 7 A.M.-9 P.M. 65 dB (A) for 9 P.M.-7 A.M.
Manufacturing (M-1, M-2, M-3, C-1)	80 dB (A) for 7 A.M.-9 P.M. 75 dB (A) for 9 P.M.-7 A.M.

Sensitive Noise Receptors

The closest general noise receptors to the proposed boat launch facility are the *Conservancy Zone (C-1)*, *Light Industry (M-1)*, and *High Density Residential (R-4)*. The closest general noise receptors to the proposed marina/transient dock are *Downtown Business (B-2)*, *General Business (B-3)*, and *Conservancy Zone (C-1)*. Table 3 lists noise receptor distances. The Paducah Zoning Map is included as Figure 7.

TABLE 3- NOISE RECEPTOR DISTANCES (ft.)

City Zoning	Project		
	Zone Map Area	Boat Launch	Marina/Transient
Civic Center (A-1)		-----	2400
Convenience & Service (B-1)		-----	800
Downtown Business (B-2)		-----	450
Downtown Business Townlift (B-2-T)		-----	1500
General Business (B-3)		2400	In or adjacent to
Conservancy Zone (C-1)		In or adjacent to	In or adjacent to
Historical Commercial (H-1)		-----	1650
Historical Neighborhood (H-2)		2200	650
Light Industry (M-1)		In or adjacent to	1700
Heavy Industrial (M-2)		2800	2500
High Density Industrial (M-3)		3500	6200
Medium Density Residential (R-3)		3000	3400
High Density Residential (R-4)		1400	600

Specifically, within these zones there are “sensitive” noise receptors. Sensitive noise receptors are, in general, those areas of human habitation or substantial use where the intrusion of noise has the potential to adversely impact the occupancy, use, or enjoyment of the environment. These receptors typically include parks, churches, schools, hospitals, nursing homes, libraries, campgrounds, and residences.

There are over eighteen parks within the Paducah City Parks System. The nearest park to the boat launch site is Voor Park located 0.8 miles to the southwest. The closest park to the marina/transient dock facility is Schultz Park which will be directly affected by the proposed marina/transient dock facility since the project has been designed to redevelop and enhance the riverbank including the existing park. Riverfront Plaza and Wilson Stage will be indirectly affected by the proposed marina/transient dock facility since the project will visually change the riverfront amenities in the vicinity of the plaza and stage.

There are over ninety churches in the City of Paducah. These churches serve a variety of faiths and/or denominations including but not limited to: Apostolic, Bahai, Baptist, Buddhism, Catholic, Church of Christ, Church of God, Jehovah’s Witness, Jewish, Methodist, Nazarene,

Pentecostal, Presbyterian, and Seventh Day Adventist. The closest church to the boat launch site is Bethel Baptist Church located 0.4 miles to the south. The closest church to the marina/transient dock facility is St. Francis De Sales Church located 0.4 miles to the south.

There are a number of public and private schools in the City of Paducah. Of the seventeen public schools in Paducah, eleven serve elementary students, five serve middle school students, and five serve high school students. Of the six private schools in Paducah, five serve elementary students, three serve middle school students, and two serve high school students. The closest school to the boat launch site is McNabb Elementary located 1.5 miles to the southwest. The closest school to the marina/transient dock facility is McNabb Elementary located 1.7 miles to the southwest.

There are two hospital facilities in Paducah, Kentucky. Lourdes Hospital is located immediately off of I-24 approximately 4.0 miles southwest of the proposed boat launch and marina/transient dock sites. The closest hospital to the boat launch site and the marina/transient dock facility is Western Baptist Hospital. Western Baptist is located 2.0 miles south-southwest of the boat launch site and 2.0 miles southwest of the marina/transient dock facility.

Paducah is served by a number of nursing homes/assisted living centers. The closest facility of this type to both the boat launch site and the marina/transient dock facility is the Paducah Centre for Health & Rehabilitation. This facility is located 0.7 miles southeast of the boat launch site and 0.1 miles south of the marina/transient dock facility.

McCracken County Public Library is located at 555 Washington Street in Paducah, Kentucky. This is the closest library to both the boat launch site and the marina/transient dock facility. The library is located 1.2 miles southeast of the boat launch site and 0.4 miles south of the marina/transient dock facility.

The closest campground to both the boat launch site and the marina/transient dock facility is the Fern Lake Campground. The campground is located 4.8 miles west of the boat launch site and 5.4 miles west of the marina/transient dock facility.

There are a number of residences in the vicinity of downtown Paducah. The closest residence to the boat launch site is at 1019 North 6th Street. This residence is located 0.3 miles south of the boat launch site. The closest residence to the marina/transient dock facility is at 303 Madison Street. This residence is located 0.1 miles south of the marina/transient dock facility.

Existing & Predicted Noise Levels with Noise Abatement Criteria (NAC)

A 1995 study conducted by Noise Unlimited, Inc., for the New Jersey State Police, measured sound levels utilizing SAE J1970 for various types of boats as follows: classic inboard (72 dB A), single outboard engine (81 dB A), twin outboard engine (82 dB A), personal watercraft #1, 750 cm³ engine (81 dB A), personal watercraft #2, 900 cm³ engine (76 dB A), inboard/outboard with exhaust below water line (85 dB A), inboard/outboard with exhaust above water line (90 dB A), racing boat #1, 283 ci engine exhaust below water line (105 dB A), and racing boat #2, 305 ci engine (109 dB A). On average, boats that would typically utilize the boat ramp and marina/transient dock facilities will have a sound level of 84 dB(A) (classic inboard, personal watercrafts, and racing boats were excluded from this calculation). Distance, existing vegetation, and the flood wall will act to attenuate noise levels emanating from the boat launch and marina/transient dock projects. As a general rule, noise decreases by approximately 3 dB(A) with every doubling of the distance from the source. An attenuation of 5 dB(A) was used

for the vegetation located at the boat launch site. The flood wall attenuates noise levels at a rate of 5 dB(A) to line of sight then 1.5 dB(A) for every additional three feet of wall. Existing barriers such as elevated terrain or buildings would minimize noise impacts beyond these barriers.

Table 4 estimates outdoor noise levels at the closest sensitive noise receptors for both the boat launch site and the marina/transient dock facility. The attenuation contributed by distance, vegetation, and the flood wall will reduce the outdoor noise perceived at the sensitive receptors closest to the boat launch to a low of 45 dB(A) at Fern Lake Campground and a high of 58 dB(A) at the residence at 1019 N. 6th Street. The attenuation contributed by distance and the flood wall will reduce the outdoor noise perceived at the sensitive receptors closest to the marina/transient dock facility to a low of 49 dB(A) at Fern Lake Campground and a high of 66 dB(A) at the Paducah Centre for Health & Rehabilitation and the residence at 303 Madison Street, exclusive of Schultz Park which is part of the marina/transient dock project. These outdoor noise level estimates are well below the City Ordinance maximum noise level of 80 dB(A) for the period 7 A.M.-9 P.M. and 75 dB(A) for the period 9 P.M.-7 A.M. emanating from a “manufacturing” (Conservancy Zone,C-1) designation. The attenuations are subtracted from the average outdoor noise level of 84 dB(A) measured 50 linear feet from boating vessels that would typically utilize each proposed facility. The estimates do not reflect additional attenuating factors between the proposed facilities and the nearest sensitive receptors; therefore, it can be expected that the actual outdoor noise levels measured in the field will be even further reduced than those calculated.

TABLE 4- SENSITIVE RECEPTOR OUTDOOR NOISE LEVEL ESTIMATES

Closest Sensitive Noise Receptor (ft & direction)	Outdoor Noise Levels dB(A) after Attenuation			
	Distance	Vegetation	Flood Wall	Estimate
<i>Boat Launch</i>				
McNabb Elementary (8,070 to SW)	62	57	50	≤ 50
Bethel Baptist Church (2,360 to S)	68	63	55	≤ 55
Voor Park (4,490 to SW)	65	60	52	≤ 52
Fern Lake Campground (25,470 to W)	57	52	45	≤ 45
McCracken Co. Public Library (6,250 to SE)	63	58	51	≤ 51
Western Baptist Hospital (10,790 to S-SW)	61	56	49	≤ 49
Paducah Centre for Health & Rehab (3,500 to SE)	66	61	53	≤ 53
Residence at 1019 N. 6 th Street (1,366 to S)	70	65	58	≤ 58
<i>Marina/Transient Dock</i>				
McNabb Elementary (9,130 to SW)	62	-----	54	≤ 54
St. Francis De Sales Church (2,380 to S)	67	-----	60	≤ 60
Schultz Park (0)	84	-----	84	≤ 84
Fern Lake Campground (28,340 to W)	57	-----	49	≤ 49
McCracken Co. Public Library (2,340 to S)	68	-----	60	≤ 60
Western Baptist Hospital (10,880 to SW)	61	-----	54	≤ 54
Paducah Centre for Health & Rehab (640 to S)	73	-----	66	≤ 66
Residence at 303 Madison Street (632 to S)	73	-----	66	≤ 66

Paducah, KY Zone Map

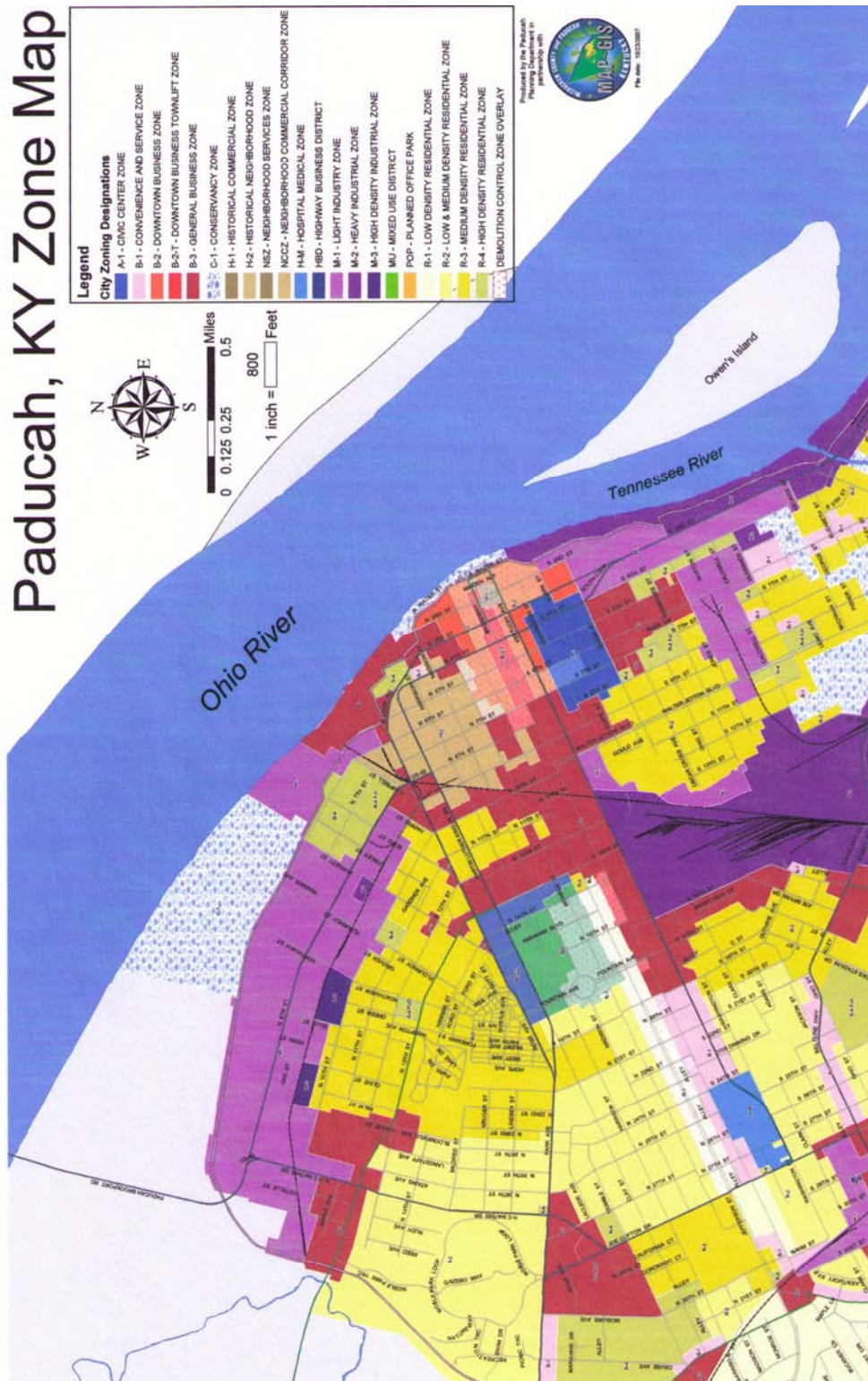


Figure 7

Noise Abatement Criteria are noise levels of highway construction activities that are required to be met for certain types of land uses (receptors) and are detailed in 23 CFR 772.19 Construction Noise. Since the proposed boat launch and marina/transient dock facilities are not highway projects, 23 CFR 772.19 does not apply.

Noise Impacts

Noise impacts associated with the proposed boat launch and marina/transient dock will occur during construction of the facilities; however, construction is conditionally exempt from the City Noise Ordinance. The marina/transient dock will have three individual sets of four pipe piles that will support the “floating” gangway deck system. The most elevated portion of this support system will be vertical axis wind turbines at the top of each of the pipe piles. The vertical axis wind turbines are proposed as an environmentally-friendly electricity generator to power a portion of the lighting of the marina/transient dock facility. The three sets of pipe piles will be approximately 390, 470, and 560 linear feet on the river side of the floodwall. According to literature, the turbines have a working noise level of 53 dB at 10-12 feet. This noise level will be attenuated further due to the distance from the downtown area and will be well below the criteria in the local noise ordinance. It is concluded that the use of the boat launch and marina/transient dock facilities will create certain noise levels that have been estimated to be attenuated well below criteria required in the local noise ordinance.

Reasonable & Feasible Noise Abatement Measures

It appears that no additional noise abatement measures are warranted for the proposed boat launch and marina/transient dock facilities. Any final decision on abatement measures will be made after the public involvement process.

Implementation of Abatement Measures

It appears that no additional noise abatement measures are warranted for the proposed boat launch and marina/transient dock facilities. Any final decision on implementation of abatement measures will be made after the public involvement process.

Contractor Requirements to Restrict/Reduce Noise during Construction Activity

Environmental commitments have been made associated with the construction of the boat launch and marina/transient dock projects. To minimize possible noise impacts, construction activities, to the extent possible, will be confined to normal working hours and noise controlled equipment will be utilized.

Cumulative & Indirect Impacts

Due to the fact that the proposed boat launch facility is a relocation project, an overall increase in noise is not expected as a result of the relocation of the recreational fishing activities from the northeastern end of Broadway Street to the proposed location on the Ohio River north of Burnett Street. The proposed marina/transient dock facility will be located between the floodwall and the downtown area; therefore, any noise attributed to increased river traffic in the vicinity of the marina/transient dock will be minimized. Transient and local boat owners will increase noise to the area at an unknown level but it is not expected to threaten the City of

Paducah noise control ordinance (Ord. No. 94-2-5079). According to literature, the vertical axis wind turbines proposed for the marina/transient dock have a working noise level of 53 dB at 10-12 feet. This noise level will be attenuated further due to the distance from the downtown area and will be well below the criteria in the local noise ordinance. No cumulative and/or indirect impacts to noise levels are expected as a result of the proposed boat launch and marina/transient dock facilities.

Sensitive Noise Receptors & Monitoring Location

No noise monitoring was performed at the nearest sensitive noise receptors to the boat launch and marina/transient dock projects. Estimated noise levels were calculated based on literature for the attenuating affects linked to distance from the emanating source, vegetation between the emanating source and the receptor, and existing flood walls acting as noise barriers. The estimates do not reflect additional attenuating factors between the proposed facilities and the nearest sensitive receptors; therefore, it can be expected that the actual outdoor noise levels measured in the field will be reduced further than those calculated.

Water Quality & Stream Impacts

Baseline Conditions of Water Quality, Streams, Aquatic & Riparian Systems

Redwing Ecological Services, Inc. (Redwing) conducted a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the boat launch site on April 2-3, 2007 as part of a joint application for state and federal environmental permitting. The boat launch site consists predominantly of jurisdictional wetlands, which include wooded wetland habitat over the central portion of the site, farmed wetland in an active agricultural field area along the Ohio River in the northern portion of the site, and open field wetland along the eastern boundary of the site. The 16 acres of farmed wetland are considered low quality and offer minimal wetland functions, particularly in terms of wildlife/aquatic habitat, water quality, and outdoor education/recreation. The 37 acres of wooded wetlands are of moderate to high quality, providing important wetland functions and values in terms of floodwater attenuation, water quality, wildlife habitat, aquatic habitat, and potential outdoor recreation and education. Habitat diversity of the wooded wetlands is enhanced by two depressions. An approximately one-acre depression is located in the south-central portion of the site. A seven-acre depression is located in the central portion of the site on the northern edge of the wooded wetlands. Neither of these depressions is associated with flows from blue-line streams but receive runoff from adjacent slopes, wet weather conveyances (ditches), and/or flooding from the Ohio River. Based on available gauge data, all portions of the boat launch site below an elevation of 322 feet MSL are considered to exhibit wetland hydrology. This includes the entire site with the exception of a narrow strip of land along the existing earthen flood wall to the south. The wooded wetland area contains man-made features associated with a pump station located immediately across the levee from the western portion of the site. A pond and



ditch have been constructed at the base of the earthen flood wall in the southwest portion of the site to help control discharge from the pump station. Discharge flows are pumped into the pond, from where they flow approximately 200 feet along a constructed ditch to a culvert, which appears to conduct flows to the Ohio River. The blue-line stream feature shown on the USGS topographic map no longer exists and it is assumed that it was created to manage pump station discharges in the past.

Redwing conducted a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the marina/transient dock site on May 14, 2008 as part of a joint application for state and federal environmental permitting. The marina/transient dock site consists of undeveloped riverbank with riprap and limited vegetation, the existing Schultz Park, and surface waters of the Ohio River. There are no wetlands or streams within the bounds of the project site with the exception of the river in which the project extends approximately 550 linear feet at its maximum (transient dock portion).

Studies Conducted

Redwing Ecological Services, Inc. (Redwing) submitted a Joint Application for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed boat launch project to the U.S. Army Corps of Engineers (USCOE) and the Kentucky Department for Environmental Protection, Division of Water (Kentucky Division of Water) on May 30, 2007. An Addendum was submitted in February 2008. A Section 9 Bridge Permit is not required for the boat launch project. Section 9 of the Rivers and Harbors Act of 1899 authorizes the U.S. Coast Guard to review projects that may impact “navigable capacity” through the construction of bridges, dams, dikes, or causeways over or in navigable waters. Section 10 of the Rivers and Harbors Act of 1899 authorizes the U.S. Corps of Engineers to review projects that may impact “navigable capacity” through the construction of wharfs, piers, dolphins, booms, weirs, breakwaters, bulkheads, jetties, as well as any other physical alteration/modification to navigable waters. A Section 10 Permit is required for the boat launch project since the structure and support system extends into “navigable waters”. An Individual Section 402 (KPDES Stormwater) Permit will also be obtained for the project. In development of the supporting documents for the permit application, Redwing conducted a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the boat launch site on April 2-3, 2007.

Redwing will submit applications to the USCOE and the Kentucky Division of Water, for a Section 401 Water Quality Certification, Stream Construction Permit, Section 10 Navigable Waters Permit, and a Section 404 Permit for the proposed marina/transient dock. An Individual Section 402 (KPDES Stormwater) Permit will also be obtained for the project. These permits will be obtained before construction commences on the marina/transient dock. A Section 9 Bridge Permit issued by the U.S. Coast Guard is not required for the marina/transient dock project since no bridge, dam, dike, or causeway is being constructed and a 300-foot buffer between the project and the sail line shown on Ohio River Navigation Chart 11 will be maintained. Ohio River Navigation Chart 11 is detailed as Figure 8. In development of the supporting documents for the permit application, Redwing conducted a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the marina/transient dock site on May 14, 2008.

According to the U.S. Fish & Wildlife Service (USFWS), the proposed boat launch and marina/transient dock projects are in close proximity to several federally protected mussel

records known to occur within the Ohio River. Mussel surveys were conducted by Redwing with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the boat launch and marina/transient dock areas in August 2008 and in conjunction with Ecological Specialists, Inc. in October 2010 and October 2011. Potential impacts to freshwater mussels based on the mussel surveys are discussed in the next section.

Potential Impacts

According to the jurisdictional waters/wetlands survey conducted by Redwing Ecological Services, Inc. (Redwing) on April 2-3, 2007, the proposed boat launch development will result in unavoidable impacts to 9.7 acres of jurisdictional waters of the U.S., including: 0.5 acres of the Ohio River, 8.3 acres of farmed wetlands, 0.7 acres of wooded wetlands, and 0.2 acres of open field wetlands. The development has minimized and avoided water/wetland impacts by focusing impacts on the low quality farmed wetlands and limiting impacts to the higher quality wooded wetlands. Less than 2% of wooded wetlands on site are proposed for impact. There are no blue-line streams within the project site with the exception of the Ohio River. The City of Paducah (the City) received a Stream Construction Permit (Permit #16689) and a Section 401 Water Quality Certification (Permit #2008-0029-1) from the Division of Water within the Kentucky Department for Environmental Protection (Kentucky Division of Water) on September 7, 2007, and April 8, 2008, respectively. These permits were renewed by letter from the regulators on November 29, 2011 and December 8, 2011, respectively. The City received a Section 10/Section 404 Permit (Permit #LRL-2007-811-GJD) from the U.S. Corps of Engineers (USCOE) on May 23, 2008. An Individual Section 402 (KPDES Stormwater) Permit will also be obtained for the project. An Engineering "No Impact" Certification which certifies that the boat launch facility will not impact the 100-year flood elevations, floodway elevations, and floodway widths on the Ohio River was acquired by the City on May 30, 2007.

According to the jurisdictional waters/wetlands survey conducted for the marina/transient dock by Redwing on May 14, 2008 the proposed development will result in unavoidable impacts to jurisdictional/navigable waters of the U.S. along 2,200 feet of the Ohio River. Impacts include 1.60 acres of fill along the riverbank, 4.56 acres of fill in the riverbed, and 0.07 acres of impact for the mooring anchors for expansion of Schultz Park, providing public access to the river, and anchoring of floating docks. Redwing will submit applications to the USCOE and the Kentucky Division of Water, for a Section 401 Water Quality Certification, Stream Construction Permit, Section 10 Navigable Waters Permit, and a Section 404 Permit for the proposed marina/transient dock. An Individual Section 402 (KPDES Stormwater) Permit will also be obtained for the project. These permits will be obtained before construction commences on the marina/transient dock and will be included in the Finding of No Significant Impact (FONSI) document submitted to the Federal Highway Administration (FHWA) for approval. It is anticipated that no mitigation will be required for water resource impacts due to the limited nature of the impacts in relation to the overall Ohio River system. An Engineering "No Impact" Certification which certifies that the marina/transient dock will not impact the 100-year flood elevations, floodway elevations, and floodway widths on the Ohio River will also be obtained prior to the FONSI submission.

According to the U.S. Fish & Wildlife Service (USFWS), the proposed boat launch and marina/transient dock projects are in close proximity to several federally protected mussel records known to occur within the Ohio River. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat

Pocketbook), at both the boat launch and marina/transient dock locations. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels, specifically the Fat Pocketbook mussel, was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the proposed boat launch project is likely to adversely affect three federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). Formal consultation on the matter was initiated by the Federal Highway Administration (FHWA) to the USFWS on February 12, 2010. As a result, a Biological Opinion (BO) was issued on July 6, 2010 and revised on December 21, 2010 by the USFWS for impacts to the three species. The BO concluded that the boat launch and marina/transient dock projects are not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat. However, in order to be exempt from Section 9 of the Endangered Species Act of 1973 (the Act) for “take” of a listed species, FHWA must comply with non-discretionary terms and conditions which implement reasonable and prudent measures and outline reporting/monitoring requirements.

Since the completion of the initial Biological Assessment (BA) and Biological Opinion (BO) for impacts to federally protected mussel species in December 2008 and July 2010, respectively, (1) the reach for the marina/transient dock has been categorized as an Outstanding State Resource Water (OSRW) due to the presence of federally-protected mussels by the Kentucky Division of Water (November 2010), (2) the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the Endangered Species Act of 1973 (the Act) (January 2011), and (3) the marina/transient dock project area has been shifted 500 linear feet downstream (northwest) from its original position.

The additional species proposed for listing are *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphyus* (Sheepnose) as endangered and *Quadrula cylindrica* (Rabbitsfoot) as either threatened or endangered. As a result of this proposal, the Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the boat launch and marina/transient dock projects. The conference was requested to take into account the effects of the two projects on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphyus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the projects will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase.

The marina/transient dock project area has been shifted 500 linear feet downstream (northwest) of its original position in order to minimize potential impacts to freshwater mussels. This shift is a result of the findings based on additional mussel surveys in October 2010 and October 2011 after the marina/transient dock reach was categorized as an Outstanding State Resource Water (OSRW). The additional mussel surveys indicated varying mussel bed densities along the Ohio River shoreline. The proposed marina/transient dock project has been shifted downstream to a less-dense mussel assemblage area. A new Biological Assessment (BA) was completed for the boat launch and new marina/transient dock project site by Redwing on January 3, 2012. FHWA submitted their request for formal consultation to USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch and new marina/transient dock project areas. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

Consultation with DOW, USACE & other agencies

Redwing Ecological Services, Inc. (Redwing) submitted a Joint Application for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed boat launch project to the U.S. Army Corps of Engineers (USCOE) and the Kentucky Department for Environmental Protection, Division of Water (Kentucky Division of Water) on May 30, 2007. An Addendum was submitted in February 2008. The applicable permits have been obtained from each of the regulatory agencies with the exception of an Individual Section 402 (KPDES Stormwater) Permit which will also be obtained for the project. Redwing will submit applications to the USCOE and the Kentucky Division of Water, for a Section 401 Water Quality Certification, Stream Construction Permit, Section 10 Navigable Waters Permit, and a Section 404 Permit for the proposed marina/transient dock. An Individual Section 402 (KPDES Stormwater) Permit will also be obtained for the project. These permits will be obtained before construction commences on the marina/transient dock and will be included in the Finding of No Significant Impact (FONSI) document submitted to the Federal Highway Administration (FHWA) for approval.

As required under the Environmental Assessment (EA) for the projects, letters of intent requesting comments and describing the project backgrounds, purpose and needs, and funding mechanisms were sent to the following agencies: U.S. Army Corps of Engineers; Kentucky Department for Environmental Protection-Water Resources Branch, Division of Air Quality, Hazardous Waste Branch, Underground Storage Tank Branch; Kentucky Division of Emergency Management; U.S. Fish & Wildlife Service; Kentucky Department of Fish & Wildlife; U.S. Department of Agriculture; Kentucky State Nature Preserves Commission; Kentucky Heritage Council; Tennessee Valley Authority, U.S. Coast Guard, Federal Highway Administration, and the Kentucky Transportation Cabinet.

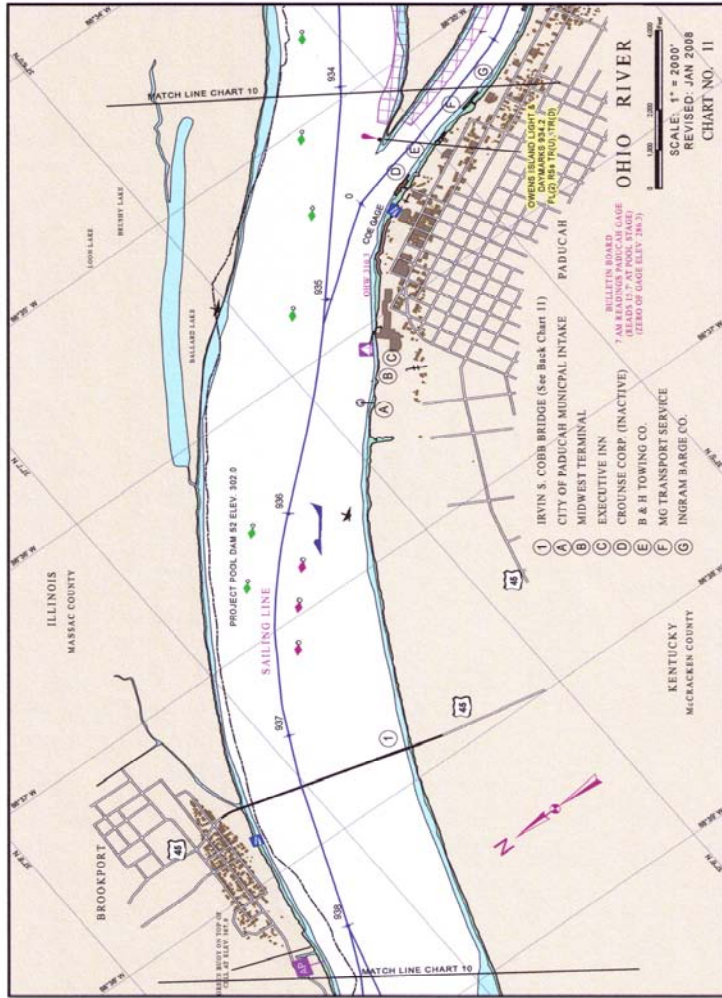


Figure 8

Identify Public Water Sources, Wells & Groundwater Runoff

Paducah Water Works manages drinking water source intakes, treatment, and distribution. Two drinking water systems serve the Paducah area and are known as the Paducah system and the Reidland/Marshall County system.

The majority of the population is supplied water by the Paducah system through a surface water source, the Tennessee and Ohio Rivers. The intake area for this system is located in the northeastern corner (immediately upstream) of the proposed boat launch development at the Ohio River with the intake screen positioned 15 feet below the surface at normal pool stage (302 feet). The proposed marina/transient dock facility is located approximately 0.9 miles southeast (upstream) of the Paducah system intake. The 12 MGD treatment plant is located at 1800 N. 8th Street approximately 0.8 miles southwest of the boat launch site and approximately 1.6 miles west-northwest of the marina/transient dock site. The customers of the Reidland/Marshall County system are supplied water through a groundwater source consisting of seven wells. The 2 MGD Reidland treatment plant is located approximately 7 miles southeast of the proposed boat launch site and approximately 6 miles southeast of the proposed marina/transient dock site. Neither the boat launch or marina/transient dock poses a threat to the Reidland/Marshall County groundwater source.



During construction of the boat launch facility, erosion and sediment-laden storm water runoff may occur at a greater degree than presently occurring on existing terrain. Contractors will be required to design, install, and maintain best management practices (BMP) to prevent erosion and to control sediment-laden storm water runoff from leaving the construction site. As in all construction sites, efforts to control these phenomena are not 100% efficient and therefore, it is expected that temporary erosion impacts to the Ohio River will occur. The project is not expected to have any long-term impacts on the water quality of the Ohio River or the water treatment process for the Paducah system since the intake is positioned upstream of the site.

Efforts to Avoid/Minimize Impacts and Mitigation

The boat launch site has been designed to reduce environmental impacts by utilizing an existing roadway corridor and existing agricultural field for the entrance roadway and parking area. Other designs for this site would result in significantly greater impacts to higher quality wooded wetlands. Although the proposed alternative site design results in the impacts to approximately 9.7 acres of wetlands, only about 0.7 acres of wooded wetlands will be impacted. These impacts are limited to fringe areas and will not fragment the existing forest. No viable alternative boat launch site exists within the immediate vicinity of downtown Paducah. The selected site minimizes ecological impacts while still meeting the river access needs of the community. A mitigation plan was developed by Redwing Ecological Services, Inc. (Redwing) for the boat launch project to provide compensation for unavoidable impacts to approximately

9.7 acres of waters/wetlands by construction. The impacts and committed mitigation for the boat launch project is as follows with measurements in acres unless stated:

Feature	Size	Impacted	Mitigation Ratio	Mitigation Required	Type	Size	Ratio	Credit
Wooded	37.0	0.7	3:1	2.1	Preservation	34.4	10:1	3.4
Wooded	37.0	0.7	3:1	2.1	Restoration	7.3	1:1	7.3
Farmed	16.0	8.3	1:1	8.3	-----	-----	-----	-----
Open Field	1.0	0.2	2:1	0.4	-----	-----	-----	-----
Up. Forest	-----	0.0	-----	-----	Preservation	3.4	10:1	0.3
Ohio River	-----	0.5 (250')	2:1	1.0 (500')	Restoration	765'	1:1	765'
TOTAL	54.0	9.7 (250')		10.8 (500')		45.1		11.0*

* Includes 765' of riparian buffer restoration

These mitigation requirements will be met with on-site wetland preservation and restoration. The 11.0 acres of proposed mitigation more than compensates for impacts to wetlands (10.8 acres of required mitigation) by the proposed boat launch facility. The major components of the mitigation plan include wetland preservation, wetland restoration, and upland buffer preservation. Approximately 34.4 acres of existing high quality forested wetland will be permanently preserved under a conservation easement/deed restriction within a designated conservation area. Approximately 7.3 acres of existing farmed wetland will be restored to forested wetland through planting of native wetland tree species. Approximately 3.4 acres of existing forested upland buffer will be permanently preserved under a conservation easement/deed restriction. Approximately 765 linear feet of wooded riparian buffer will be restored along the Ohio River through planting of native trees.

The proposed marina/transient dock site represents the least environmentally damaging alternative for meeting the river access needs of the community. The proposed development will result in unavoidable impacts to jurisdictional/navigable waters of the U.S. along 2,200 feet of the Ohio River. Impacts include 1.60 acres along the riverbank, 4.56 acres of fill in the riverbed, and 0.07 acres of impact for the mooring anchors for expansion of Schultz Park, providing public access to the river, and anchoring of floating docks. It is anticipated that no mitigation will be required for water resource impacts due to the limited nature of the impacts in relation to the overall Ohio River system.

During construction of the boat launch and marina/transient dock facilities, erosion and sediment-laden storm water runoff may occur at a greater degree than presently occurring on existing terrain. Contractors will be required to design, install, and maintain best management practices (BMP) to prevent erosion and to control sediment-laden storm water runoff from leaving the construction sites. As in all construction sites, efforts to control these phenomena are not 100% efficient and therefore, it is expected that temporary erosion impacts will occur. The proposed projects are not expected to have any long-term impacts on the water quality of jurisdictional waters/wetlands or the Ohio River.

Required Permits

Redwing Ecological Services, Inc. (Redwing) submitted a Joint Application for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed boat launch project to the U.S. Army Corps of Engineers (USCOE) and the Kentucky Department for Environmental Protection, Division of Water (Kentucky Division of Water) on May 30, 2007. An Addendum was submitted in February 2008. A Section 9 Bridge Permit is not required for the boat launch project since there will be no construction of bridges, dams, dikes, or causeways over or in navigable waters. The Kentucky Division of Water issued Water Quality Certification #2008-0029-1 for the boat

launch project on April 8, 2008. Pursuant to Section 401 of the Clean Water Act, the Commonwealth of Kentucky certified it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 5, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the Clean Water Act, would not be violated by the boat launch project provided that the USCOE authorizes the activity under 33 CFR part 330, and certain conditions attached to the certification are met. This permit was renewed by the regulator on December 8, 2011. The USCOE authorized the activity under Section 10/Section 404 on May 23, 2008 (Permit #LRL-2007-811-GJD). The Kentucky Division of Water also issued a Stream Construction Permit # 16689 for Construction in or along a Stream on September 7, 2007. In accordance with KRS 151.250 and KRS 151.260, the Kentucky Division of Water approved the boat launch project application for the construction in the left descending floodplain of the Ohio River at about stream mile 45.6 (935.8 miles below Pittsburgh). This permit was renewed by the regulator on November 29, 2011. Redwing will submit applications for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed marina/transient dock project to the USCOE and the Kentucky Division of Water. A Section 9 Bridge Permit issued by the U.S. Coast Guard is not required for the marina/transient dock project since no bridge, dam, dike, or causeway is being constructed and a 300-foot buffer between the project and the sail line will be maintained. Permits obtained will be included in the Finding of No Significant Impact (FONSI) document before being submitted to the Federal Highway Administration (FHWA) for approval.

In addition to the above requirements, permits must be obtained from state and local authorities in order to discharge storm water associated with the construction of the proposed boat launch and marina/transient dock facilities. Under Section 402 of the Clean Water Act, the Kentucky Department for Environmental Protection issues Permit # KYR10, which is the General Kentucky Pollutant Discharge Elimination System (KPDES) Permit for Storm Water Point Source Discharges associated with Construction Activities, as promulgated under 401 KAR 5:055, Section 1, and KRS 224.16-050. The subject projects will require Individual 402 Permits due to the Ohio River being designated as an Outstanding State Resource Water (OSRW) as a result of the presence of federally-protected freshwater mussels. The City of Paducah requires application for an Erosion Prevention & Sediment Control (EPSC) Permit under the authority of the U.S. Environmental Protection Agency Phase II of the National Pollutant Discharge Elimination System (NPDES) Stormwater Program as well as State of Kentucky regulations.

Cumulative & Indirect Impacts

The proposed boat launch site will have impacts to jurisdictional wetlands; however, compensatory mitigation has been designed through preservation and restoration of the wooded, farmed, and open field wetlands found within the project site. The proposed marina/transient dock will result in unavoidable impacts to jurisdictional/navigable waters of the U.S. along 2,200 feet of the Ohio River. Specifically, impacts include 1.60 acres of fill along the riverbank, 4.56 acres of fill in the riverbed, and 0.07 acres of impact for the mooring anchors. It is anticipated that no mitigation will be required for the marina/transient dock project due to the limited nature of the water resource impacts in relation to the overall Ohio River system. No cumulative or indirect negative impacts are expected for either the boat launch or marina/transient dock site.

Exhibit Blue-line Streams

The boat launch project site has 16 acres of farmed wetland which are considered low quality and offer minimal wetland functions, particularly in terms of wildlife/aquatic habitat, water quality, and outdoor education/recreation. The site also has 37 acres of wooded wetlands. This acreage is of moderate to high quality, providing important wetland functions and values in terms of floodwater attenuation, water quality, wildlife habitat, aquatic habitat, and potential outdoor recreation and education. Habitat diversity of the wooded wetlands is enhanced by two depressions. An approximately one-acre depression is located in the south-central portion of the site. A seven-acre depression is located in the central portion of the site on the northern edge of the wooded wetlands. Neither of these depressions is associated with flows from blue-line streams but receive runoff from adjacent slopes, wet weather conveyances (ditches), and/or flooding from the Ohio River. The wooded wetland area contains man-made features associated with a pump station located immediately across the levee from the western portion of the site. A pond and ditch have been constructed at the base of the earthen flood wall in the southwest portion of the site to help control discharge from the pump station. Discharge flows are pumped into the pond, from where they flow approximately 200 feet along a constructed ditch to a culvert, which appears to conduct flows to the Ohio River. The blue-line stream feature shown on the USGS topographic map no longer exists and it is assumed that it was created to manage pump station discharges in the past. The marina/transient dock site consists of undeveloped riverbank consisting of riprap and limited vegetation, Schultz Park, and surface waters of the Ohio River. There are no wetlands or streams within the bounds of the project site with the exception of the river. There are no named streams within either of the project sites according to USGS topographic mapping, National Wetland Inventory, soils maps, and ecological study. The development of the proposed boat launch facility and marina/transient dock will not involve impacts to waters of the State/U.S. exclusive of the jurisdictional wetlands delineated in the ecological study and the Ohio River. A topographic map is included as Figure 9.

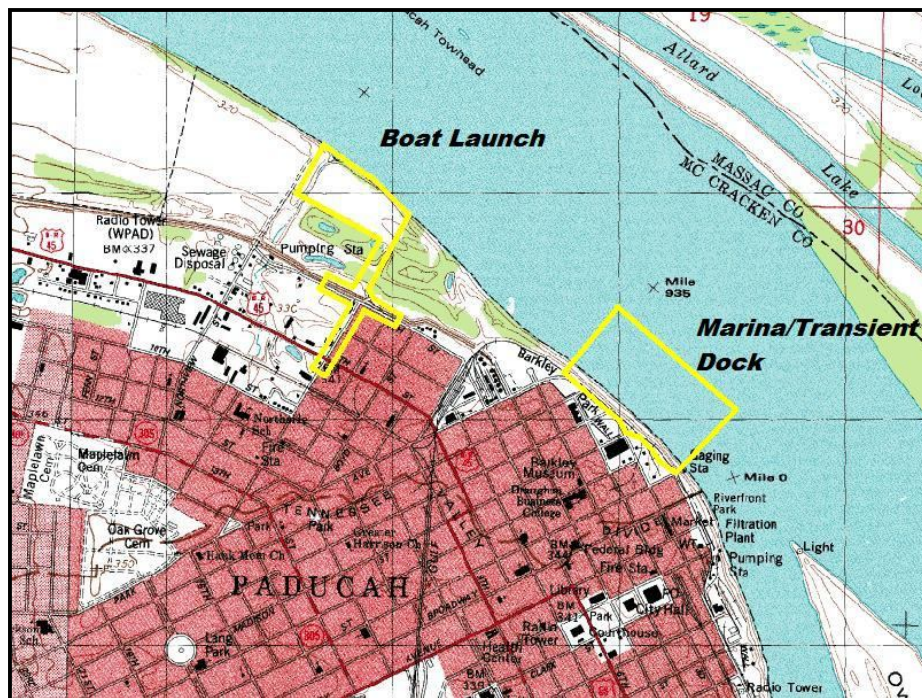


Figure 9

Floodplains

Identify 100-Year Floodplains using National Flood Insurance Program Maps

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps (FIRM) delineating both the special hazard areas and the risk premium zones applicable to a community. Specifically, the FIRM is used to (1) administer floodplain management regulations and to mitigate flood damage, (2) locate properties and buildings in flood insurance risk areas and mapped flood hazards, and (3) determine whether flood insurance is required when making loans or providing grants following a disaster for the purchase or construction of a building. Based on FIRM Community Panel Number 210152 0003E, October 8,



1982, the proposed boat launch and marina/transient dock projects would involve construction within the 100-year flood limits of the Ohio River floodplain. The projects are within Zone A14, Areas of 100-yr flood where base flood elevations and flood hazard factors have been determined. Flood Insurance Rate Maps for the proposed boat launch and marina/transient dock projects are included as Figures 10 and 11. Figure 12 details the mapping key used.

Identify Encroachments onto Floodplains

Both the boat launch and marina/transient dock projects are to provide public access to the riverfront property in or near downtown Paducah as part of the overall redevelopment efforts. These projects will encroach onto the associated floodplain of the Ohio River by the nature of their individual purposes and needs.

Efforts to Avoid and Minimize Encroachment

Efforts have been made to avoid and/or minimize encroachment impacts to the floodplain. The boat ramp located on the bank of the Ohio River in the north-central portion of the site will have an access road to the site as an extension of Burnett Street constructed in the location of an existing dirt/gravel road along the eastern boundary of the site; therefore, no new road alignment/footprint will be necessary. The marina portion of the marina/transient dock facility will be a floating dock system with the transient dock portion also being a floating dock system but also acting as a wave attenuator. Both projects will be inherent encroachments onto the floodplain.

Coordination with FEMA, DOW & other agencies

Coordination has occurred with the Kentucky Department for Environmental Protection-Division of Water, U.S. Army Corps of Engineers, and the Kentucky Division of Emergency Management as required under the National Environmental Policy Act (NEPA) of 1969.

Required Permits

Redwing Ecological Services, Inc. (Redwing) submitted a Joint Application for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed boat launch project to the U.S. Army Corps of Engineers (USCOE) and the Kentucky Department for Environmental Protection, Division of Water (Kentucky Division of Water) on May 30, 2007 as well as an Addendum in February 2008. All applicable permits have been obtained with the exception of the Section 402 (KPDES Stormwater) Permit which will also be obtained prior to construction. The subject project will require an Individual 402 Permit due to the Ohio River being designated as an Outstanding State Resource Water (OSRW) as a result of the presence of federally-protected freshwater mussels. Redwing will submit applications for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed marina/transient dock project to the USCOE and the Kentucky Division of Water. Permits obtained for the marina/transient dock facility will be included in the Finding of No Significant Impact (FONSI) document when submitted for approval by the Federal Highway Administration (FHWA). A Section 9 Bridge Permit issued by the U.S. Coast Guard is not required for either project since no construction of bridges, causeways, dams, or dikes are proposed. A Section 402 (KPDES Stormwater) Permit will also be obtained for the marina/transient dock project. The subject project will require an Individual 402 Permit due to the Ohio River being designated as an Outstanding State Resource Water (OSRW) as a result of the presence of federally-protected freshwater mussels.

Floodplain management on the state level is the responsibility of the Division of Water within the Kentucky Department for Environmental Protection. Chapter 151 of the Kentucky Revised Statutes (KRS) is the state statute that addresses the development of floodplain area. The most pertinent section of KRS 151 is KRS 151.250, which establishes the requirements for obtaining a floodplain development permit. Based on KRS 151, the Kentucky Division of Water has been designated as the state coordinating agency for the National Flood Insurance Program (NFIP). The Floodplain Management Section of the Water Resources Branch within the Kentucky Division of Water has the primary responsibility for the approval or denial of proposed construction and other activities in the 100-year floodplain of all streams in the commonwealth. In addition, activities which result in physical disturbances to wetlands or streams may also require a Water Quality Certification Permit or Permit to Construct Across or Along a Stream. The Kentucky Division of Water issued a Stream Construction Permit # 16689 for Construction in or along a Stream on September 7, 2007 for the boat launch project. In accordance with KRS 151.250 and KRS 151.260, the Cabinet approved the boat launch project application for the construction in the left descending floodplain of the Ohio River at about stream mile 45.6 (935.8 miles below Pittsburgh). The permit was renewed on November 29, 2011.

Floodplain management on the federal level is the responsibility of the U.S. Army Corps of Engineers (USCOE). As promulgated under 33 CFR 320.4-General policies for evaluating permit applications, cumulative impacts of construction within floodplains may result in "significant degradation of floodplain values and functions and in increased potential for harm upstream and downstream activities." In accordance with the regulations, the USCOE must ensure that the impacts of potential flooding on human health, safety, and welfare are minimized, the risks of flood losses are minimized, and whenever practicable, the natural and beneficial values served by floodplains are restored and preserved. The USCOE is directed to avoid authorizing floodplain developments whenever practicable alternatives exist outside the

floodplain. If there are no such practicable alternatives, the USCOE will consider alternatives within the floodplain that will lessen any significant adverse impacts to the floodplain.

The Kentucky Division of Emergency Management (KDEM) defers to the USCOE for construction in floodplain issues. KDEM's purpose is to protect through an all hazards approach to mitigation, preparedness, response, and recovery from disasters and emergencies which a local emergency response agency determines is beyond its capabilities. The Federal Emergency Management Agency (FEMA) purpose is similar to the State of Kentucky only on a federal scale. FEMA encourages communities to establish floodplain management programs that exceed the minimum requirements adopted by the National Flood Insurance Program (NFIP). The community's agreement to adopt and enforce floodplain management ordinances, particularly with respect to new construction is an important element in making flood insurance available to home and business owners. FEMA has defined flood zones according to varying levels of flood risk. Both the proposed boat launch and marina/transient dock are within the A14 flood zone. This area is defined by FEMA as "areas with 1% annual chance of flooding."

Section 60.3 (d) (3) of the NFIP regulations states that a community shall "prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base (100-year) flood discharge." Florence & Hutcheson, Inc. certifies that technical data supports that the proposed boat launch will not impact the 100-year flood elevations, floodway elevations, and floodway widths on the Ohio River at published sections in the Flood Insurance Study for McCracken County, Kentucky dated 1979 and will not impact the 100-year flood elevations, floodway elevations, and floodway widths at unpublished cross-sections in the vicinity of the proposed development.

Cumulative & Indirect Impacts

The proposed boat launch and marina/transient dock projects have been developed in accordance with Executive Order 11988 (Floodplain Management) and 23 CFR 650A (Location and Hydraulic Design of Encroachments on Flood Plains). Though both projects are within the 100-year floodplain, the projects are not expected to be a "significant encroachment" as defined in 23 CFR 650A nor are they expected to have an appreciable environmental impact on the base floodplain. The level of risk analogous with the probable areas of flooding and its consequences attributed to these encroachments is not expected to be any greater than that associated with the present conditions of each project area. The projects are not expected to have any increased cumulative or indirect impact potential for property loss and hazard to life.

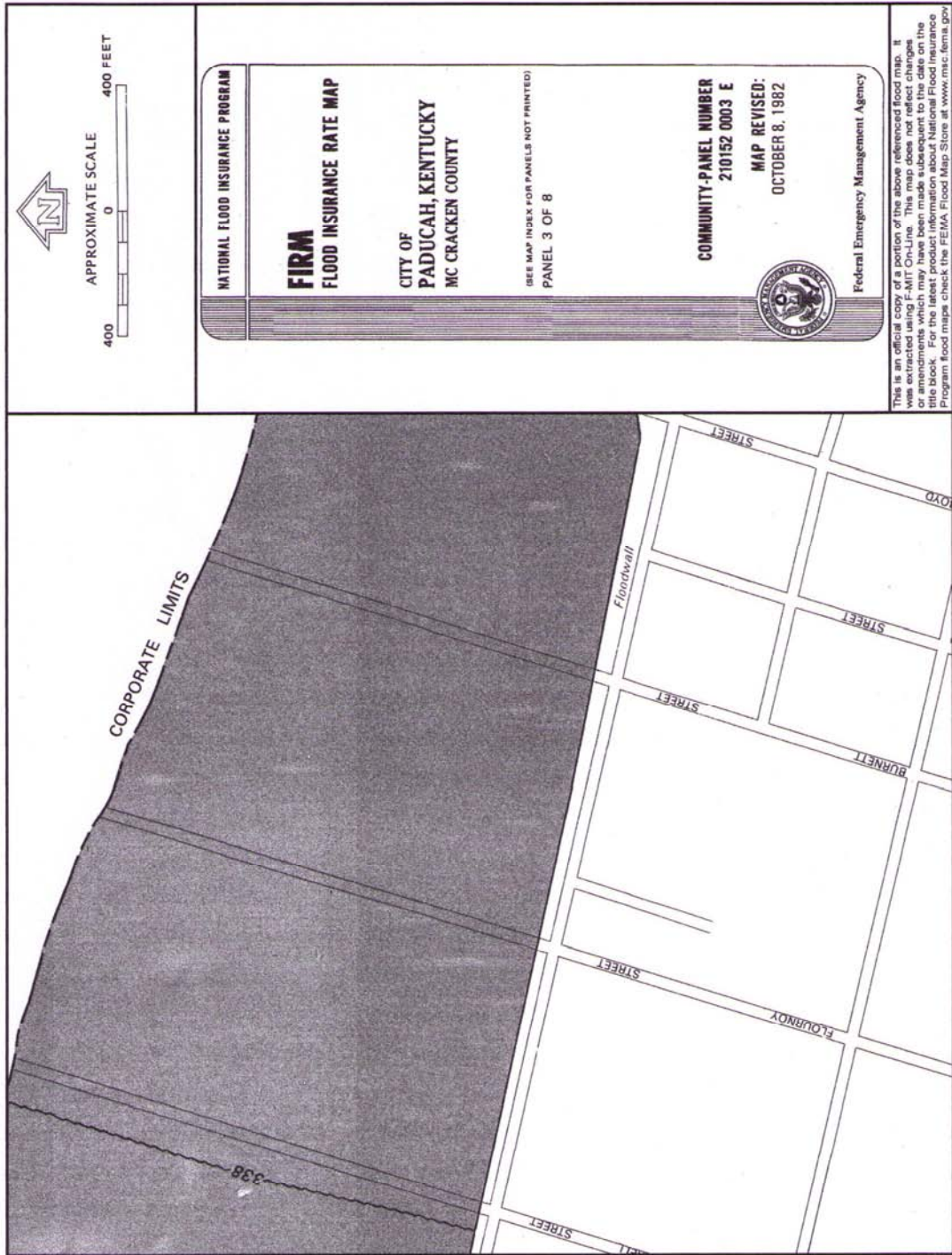


Figure 10

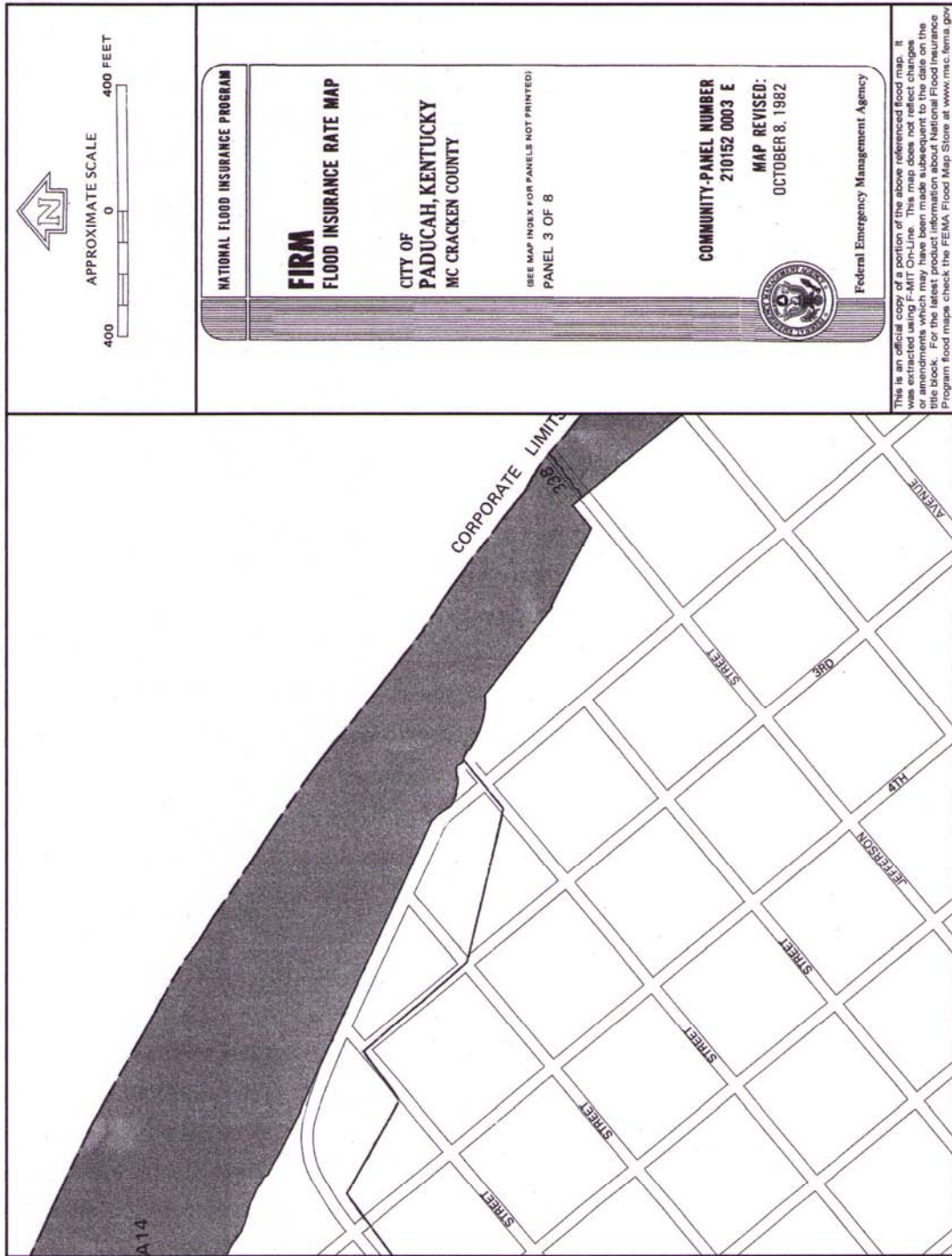


Figure 11

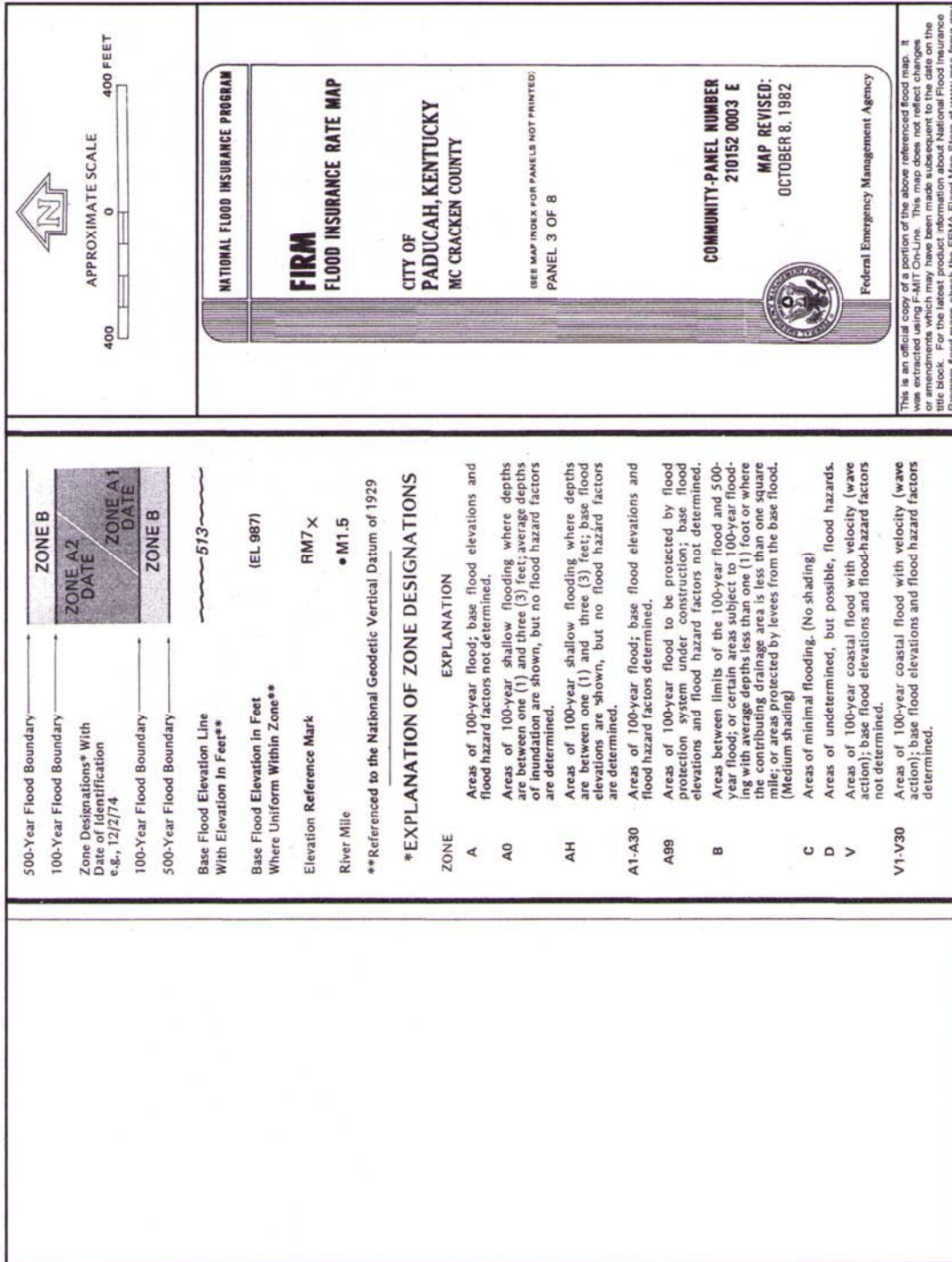


Figure 12

Wetlands

Baseline Conditions of Jurisdictional Wetlands & Waters of the U.S.

Wetland habitats are defined as those areas that are inundated by water with sufficient frequency and duration to support vegetation that is tolerant of saturated soil conditions. The U.S. Army Corps of Engineers utilizes specific hydrologic, soil, and vegetation criteria in establishing the boundary of wetlands under their jurisdiction.

Redwing Ecological Services, Inc. (Redwing) conducted a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the boat launch site on April 2-3, 2007 as part of a joint application for state and federal environmental permitting. The boat launch site consists predominantly of jurisdictional wetlands, which include wooded

wetland habitat over the central portion of the site, farmed wetland in an active agricultural field area along the Ohio River in the northern portion of the site, and open field wetland along the eastern boundary of the site. The 16 acres of farmed wetland are considered low quality and offer minimal wetland functions, particularly in terms of wildlife/aquatic habitat, water quality, and outdoor education/recreation. The 37 acres of wooded wetlands are of moderate to high quality, providing important wetland functions and values in terms of floodwater attenuation, water quality, wildlife habitat, aquatic habitat, and potential outdoor



Wooded Wetlands

recreation and education. Habitat diversity of the wooded wetlands is enhanced by two depressions. An approximately one-acre depression is located in the south-central portion of the site. A seven-acre depression is located in the central portion of the site on the northern edge of the wooded wetlands. Neither of these depressions is associated with flows from blue-line streams but receive runoff from adjacent slopes, wet weather conveyances (ditches), and/or flooding from the Ohio River. Based on available gauge data, all portions of the boat launch site below an elevation of 322 feet are considered to exhibit wetland hydrology. This includes the entire site with the exception of a narrow strip of land along the existing earthen flood wall to the south. The wooded wetland area contains man-made features associated with a pump station located immediately across the levee from the western portion of the site. A pond and ditch have been constructed at the base of the earthen flood wall in the southwest portion of the site to help control discharge from the pump station. Discharge flows are pumped into the pond, from where they flow approximately 200 feet along a constructed ditch to a culvert, which appears to conduct flows to the Ohio River. The blue-line stream feature shown on the USGS topographic map no longer exists and it is assumed that it was created to manage pump station discharges in the past. Redwing conducted a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the marina/transient dock site on May 14, 2008 as part of a joint application for state and federal environmental permitting. The marina/transient dock site consists of undeveloped riverbank with riprap, Schultz Park, limited vegetation, and surface waters of the Ohio River. There are no wetlands or streams within the

bounds of the project site with the exception of the river in which the project area extends approximately 550 linear feet at its maximum (transient dock portion).

Studies Conducted

Redwing Ecological Services, Inc. (Redwing) submitted a Joint Application for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed boat launch project to the U.S. Army Corps of Engineers (USCOE) and the Kentucky Department for Environmental Protection, Division of Water (Kentucky Division of Water) on May 30, 2007. An Addendum to the Joint Application was submitted in February 2008. All of the applicable permits have been obtained with the exception of the Individual Section 402 (KPDES Stormwater) Permit which will also be obtained prior to construction. In development of the supporting documents for the permit application, Redwing conducted a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the boat launch site on April 2-3, 2007. A Section 9 Bridge Permit issued by the U.S. Coast Guard is not required for the boat launch project.

Redwing will submit applications for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed marina/transient dock project to the USCOE and the Kentucky Division of Water. An Individual Section 402 (KPDES Stormwater) Permit will also be obtained for the marina/transient dock project. In development of the supporting documents for the permit application, Redwing completed a jurisdictional waters/wetlands survey as well as a terrestrial threatened/endangered species survey for the marina/transient dock site on May 14, 2008. No wetlands were found at the site. Permits obtained from the USCOE and Kentucky Division of Water will be included in the Finding of No Significant Impact (FONSI) document submitted to the Federal Highway Administration (FHWA) for approval. A Section 9 Bridge Permit issued by the U.S. Coast Guard is not required for the marina/transient dock project.

National Wetland Inventory (NWI) Mapping

The National Wetland Inventory (NWI) published by the Division of Habitat and Resource Conservation of the U.S. Fish & Wildlife Service was reviewed for the two proposed projects. The proposed boat launch site has a distinct wetland designation located in the southern centroid of the property surrounded by a designated wetland that makes up the southern half and northwest sections of the property. The designation in the southern centroid is palustrine (nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens), emergent, persistent, and semipermanently flooded (PEM1F). The surrounding and northwestern designation is palustrine, forested, broad-leaved deciduous, and seasonally flooded (PFO1C). According to the jurisdictional waters/wetlands survey conducted by Redwing Ecological Services, Inc. (Redwing) on April 2-3, 2007, the proposed boat launch development consists predominantly of jurisdictional wetlands, which include wooded wetland habitat over the central portion of the site, farmed wetland in an active agricultural field area along the Ohio River in the northern portion of the site, and open field wetland along the eastern boundary of the site. Habitat diversity of the wooded wetlands is enhanced by two depressions. An approximate one-acre depression is located in the south-central portion of the site. A seven-acre depression is located in the central portion of the site on the northern edge of the wooded wetlands. Neither of these depressions is associated with flows from blue-line streams but receive runoff from adjacent slopes, wet weather conveyances (ditches), and/or flooding from the Ohio River. Based on available gauge data, all portions of the boat launch site below an

elevation of 322 feet are considered to exhibit wetland hydrology. This includes the entire site with the exception of a narrow strip of land along the existing earthen flood wall to the south. According to the jurisdictional waters/wetlands survey conducted by Redwing on May 14, 2008, the proposed marina/transient dock site consists predominantly of riverbank and open water (Ohio River). There is no wetland designation within the bounds of the proposed marina/transient dock facility with the exception of the Ohio River. The Ohio River is designated lacustrine (topographic depression or dammed river channel), limnetic (deepwater habitat), unconsolidated bottom, and permanently flooded (L1UBHH). The findings as a result of the jurisdictional waters/wetlands surveys for the two projects conducted by Redwing are consistent with the NWI data. The NWI Map is included as Figure 13.

Potential Wetland Impacts

According to the jurisdictional waters/wetlands survey conducted by Redwing Ecological Services, Inc. (Redwing) on April 2-3, 2007, the proposed boat launch development will result in unavoidable impacts to 9.7 acres of jurisdictional waters of the U.S., including: 0.5 acres of the Ohio River, 8.3 acres of farmed wetlands, 0.7 acres of wooded wetlands, and 0.2 acres of open field wetlands. The development has minimized and avoided water/wetland impacts by focusing impacts on the low quality farmed wetlands and limiting impacts to the higher quality wooded wetlands. Less than 2% of wooded wetlands on site are proposed for impact.

According to the jurisdictional waters/wetlands survey conducted by Redwing on May 14, 2008, the proposed marina/transient dock will result in impacts to a total of 6.23 acres of jurisdictional waters which will be filled by the proposed project including 1.60 acres of riverbank above the normal pool, 4.56 acres of fill in the riverbed below normal pool, and 0.07 acres for the mooring anchors. No wetlands were noted during the survey. National Wetland Inventory (NWI) mapping does not indicate any wetland designations within the bounds of the proposed marina/transient dock facility with the exception of the Ohio River.

Agency Coordination & Required Permits

Redwing Ecological Services, Inc. (Redwing) submitted a Joint Application for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a Stream Construction Permit for the proposed boat launch project to the U.S. Army Corps of Engineers (USCOE) and the Kentucky Department for Environmental Protection (Kentucky Division of Water) on May 30, 2007. An Addendum was submitted in February 2008 which revised the original plan for both the impacts and mitigation to the acreages as detailed in the "Potential Wetland Impact" section above. The Kentucky Division of Water issued Water Quality Certification #2008-0029-1 for the boat launch project on April 8, 2008. Pursuant to Section 401 of the Clean Water Act, the Commonwealth of Kentucky certified it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 5, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the Clean Water Act, would not be violated by the boat launch project provided that the USCOE authorizes the activity under 33 CFR part 330, and certain conditions attached to the certification are met. The Section 401 Water Quality Certification was renewed by letter from the regulator on December 8, 2011. The City of Paducah received a Stream Construction Permit (Permit #16689) on September 7, 2007. This permit was renewed by the regulator by letter on November 29, 2011. The USCOE issued a Section 10/Section 404 Permit (Permit #LRL-2007-811-GJD) on May 23, 2008. Redwing will submit applications for a Section 404 Individual Permit, a Section 10 Navigable Waters Permit, a Section 401 Water Quality Certification, and a

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These mitigation requirements will be met with on-site wetland preservation and restoration. The 11.0 acres of proposed mitigation more than compensates for impacts to wetlands (10.8 acres of required mitigation) by the proposed boat launch facility. The major components of the mitigation plan include wetland preservation, wetland restoration, and upland buffer preservation. Approximately 34.4 acres of existing high quality forested wetland will be permanently preserved under a conservation easement/deed restriction within a designated

conservation area. Approximately 7.3 acres of existing farmed wetland will be restored to forested wetland through planting of native wetland tree species. Approximately 3.4 acres of existing forested upland buffer will be permanently preserved under a conservation easement/deed restriction. Approximately 765 linear feet of wooded riparian buffer will be restored along the Ohio River through planting of native trees.

Alternate sites for the marina/transient dock facility are currently established with structures, not protective of impacts from the Ohio & Tennessee Rivers, heavily vegetated, and/or not owned by the City of Paducah. The use of the city/county-owned, underutilized riverfront property chosen will allow the facility to be constructed with minimal ecological impacts. The proposed marina/transient dock site represents the alternative with the least environmental impacts for meeting the river access needs of the community. Since there are no wetlands within the marina/transient dock development site with the exception of the Ohio River, no compensatory mitigation will be required for wetland impacts.

During construction of the boat launch and marina/transient dock facilities, erosion and sediment-laden storm water runoff may occur at a greater degree than presently occurring on existing terrain. Contractors will be required to design, install, and maintain best management practices (BMP) to prevent erosion and to control sediment-laden storm water runoff from leaving the construction sites. As in all construction sites, efforts to control these phenomena are not 100% efficient and therefore, it is expected that temporary erosion impacts will occur. The proposed projects are not expected to have any long-term impacts on the water quality of jurisdictional waters/wetlands or the Ohio River.

Cumulative & Indirect Impacts

The proposed boat launch site will have impacts to jurisdictional wetlands; however, compensatory mitigation has been designed through preservation and restoration of the wooded, farmed, and open field wetlands found within the project site. The proposed marina/transient dock will be permitted through the U.S. Corps of Engineers and the Kentucky Department for Environmental Protection, Division of Water, for impacts to the Ohio River and the associated riverbank. It is anticipated that no compensatory mitigation will be required for these impacts due to the relatively limited nature of the impacts in relation to the Ohio River system. There are no cumulative or indirect impacts to wetlands, streams, etc. expected for the proposed projects.

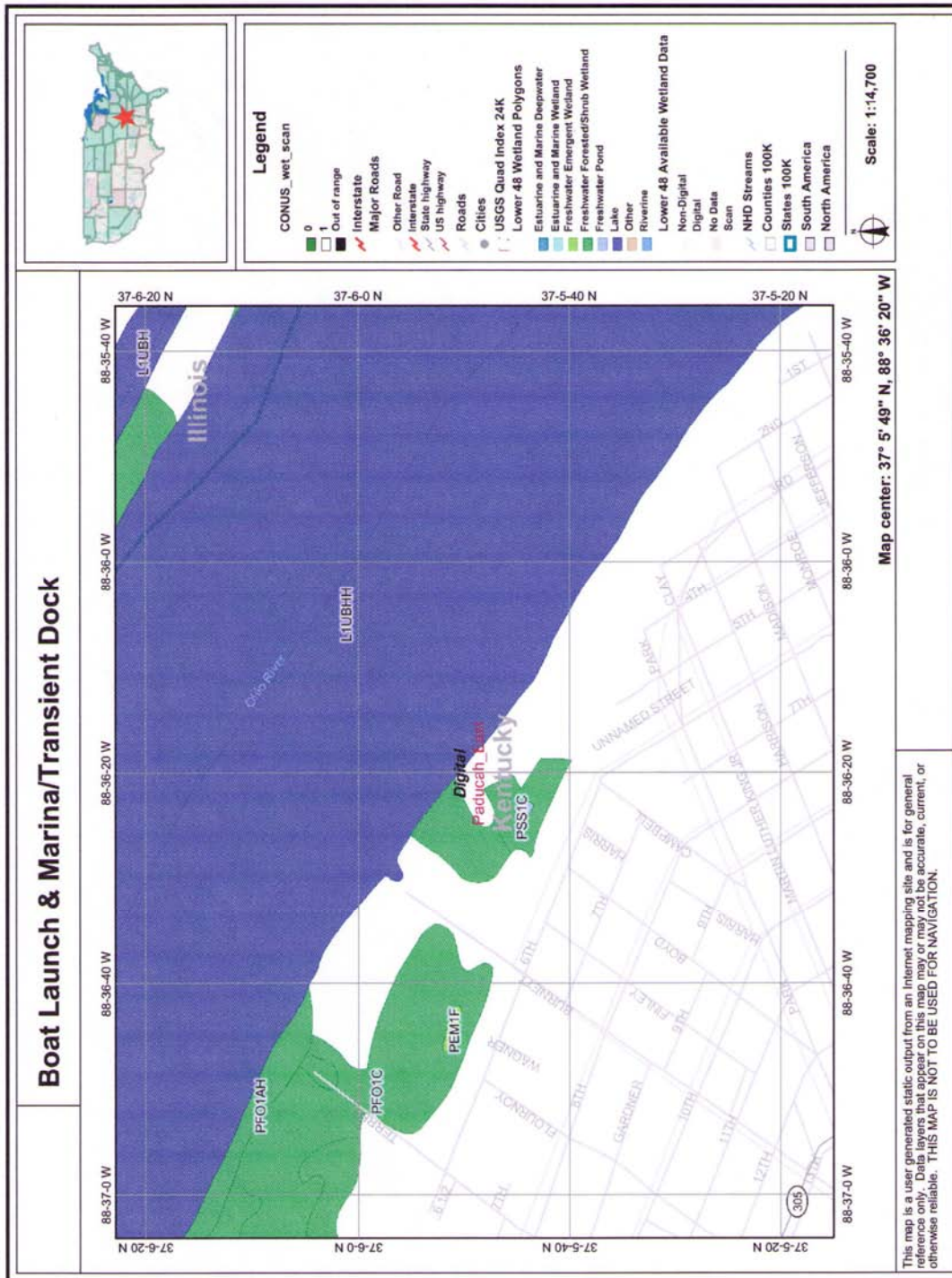


Figure 13

Wild & Scenic Rivers

Baseline Conditions and Identification of Designated Wild & Scenic Rivers

The Wild and Scenic Rivers Act (the Act) established a National Wild and Scenic Rivers System in 1968 for the protection of certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values. These rivers are to be preserved in free-flowing condition and their immediate environments are to be protected for the benefit and enjoyment of present and future generations. The Act also contains procedures and limitations for control of lands in federally administered components of the System and for disposition of lands and minerals under federal ownership. A portion of the Red River located in Menifee and Wolfe Counties is the only federally designated Wild and Scenic River in Kentucky. The Kentucky Wild Rivers Act of 1972 was established to preserve the state's most pristine rivers. Administered by the Division of Water under the Kentucky Department for Environmental Protection, the program protects portions of nine rivers from unwise use and development. Some activities are strictly prohibited within a Wild River corridor, such as surface mining, clear-cutting of timber and construction of dams or other in-stream disturbances. Existing residential and agricultural uses continue, but developments that might impair the river's water quality or natural condition are regulated through a permit system. The nine rivers with portions designated as state Wild Rivers and their counties are: Cumberland River (McCreary, Whitley), Rockcastle River (Pulaski, Laurel), Green River (Edmonson, Hart), Big South Fork of the Cumberland River (McCreary), Rock Creek (McCreary), Martins Fork of the Cumberland River (Harlan), Little South Fork of the Cumberland River (Wayne, McCreary), Red River (Menifee, Wolfe), and Bad Branch (Letcher). The proposed boat launch project will impact approximately 0.5 acres of the Ohio River near mile marker 936. The proposed marina/transient dock will impact the river due to 4.56 acres of fill in the riverbed and 0.07 acres of impact for the mooring anchors near Mile Marker 935. The Ohio River is not designated as a federal Wild and Scenic River or a state Wild River under The Wild and Scenic Rivers Act or The Kentucky Wild Rivers Act of 1972, respectively; therefore, the regulations do not apply to these projects.



Cumulative & Indirect Impacts

Not Applicable.

Location and Impact of Wild & Scenic Rivers, if applicable

Not Applicable.

Threatened & Endangered Species

Baseline Conditions

The boat launch project site has 16 acres of farmed wetlands which are considered low quality and offer minimal wetland functions, particularly in terms of wildlife/aquatic habitat, water quality, and outdoor education/recreation. The site also has 37 acres of wooded wetlands. This acreage is of moderate to high quality, providing important wetland functions and values in terms of floodwater attenuation, water quality, wildlife habitat, aquatic habitat, and potential outdoor recreation and education. Habitat diversity of the wooded wetlands is enhanced by two depressions. An approximate one-acre depression is located in the south-central portion of the site. A seven-acre depression is located in the central portion of the site on the northern edge of the wooded wetlands. Neither of these depressions is associated with flows from blue-line streams but receive runoff from adjacent slopes, wet weather conveyances (ditches), and/or flooding from the Ohio River. The wooded wetland area contains man-made features associated with a pump station located immediately across the levee from the western portion of the site. A pond and ditch have been constructed at the base of the earthen flood wall in the southwest portion of the site to help control discharge from the pump station. Discharge flows are pumped into the pond, from where they flow approximately 200 feet along a constructed ditch to a culvert, which appears to conduct flows to the Ohio River. The blue-line stream feature shown on the USGS topographic map no longer exists and it is assumed that it was created to manage pump station discharges in the past. The marina/transient dock site consists of undeveloped riverbank consisting of riprap and limited vegetation, Schultz Park, and surface waters of the Ohio River. There are no wetlands or streams within the bounds of this project site with the exception of the river. There are no named streams within either of the project sites according to USGS topographic mapping, National Wetland Inventory, soils maps, and the ecological study.

Redwing Ecological Services, Inc. (Redwing) conducted a terrestrial threatened/endangered species survey of the boat launch area on April 2-3, 2007, as part of a joint application package for wetland and stream alteration permits. This survey concluded that the project site contains potential habitat for the federally endangered *Myotis sodalis* (Indiana bat). The wooded portion of the site contains scattered trees that represent potential summer roosting/maternity habitat for the Indiana bat. These include dead snags and live trees with loose, exfoliating bark and cracks. Redwing conducted a terrestrial threatened/endangered species survey of the proposed marina/transient dock site on May 14, 2008. There were no indications of protected species or habitats. Literature reviewed indicates that protected mussel species have the potential to occur in the Ohio River.

According to the U.S. Fish & Wildlife Service (USFWS), the proposed boat launch and marina/transient dock projects are in close proximity to several federally protected mussel records known to occur within the Ohio River. A mussel survey was conducted by Redwing with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the boat launch and marina/transient dock areas from August 5-8, 2008. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat Pocketbook), at both the boat launch and marina/transient dock locations. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels, specifically the Fat Pocketbook mussel, was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the proposed marina/transient dock project is likely to adversely affect three

federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). Formal consultation on the matter was initiated by the Federal Highway Administration (FHWA) to the USFWS on February 12, 2010. As a result, a Biological Opinion (BO) was issued on July 6, 2010 and revised on December 21, 2010 by the USFWS for impacts to the three species. The BO concluded that the boat launch and marina/transient dock projects are not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat. However, in order to be exempt from Section 9 of the Endangered Species Act of 1973 (the Act) for “take” of a species, FHWA must comply with non-discretionary terms and conditions which implement reasonable and prudent measures and outline reporting/monitoring requirements.

Since the completion of the initial Biological Assessment (BA) and Biological Opinion (BO) for impacts to federally protected mussel species in December 2008 and July 2010, respectively, (1) the reach for the marina/transient dock has been categorized as an Outstanding State Resource Water (OSRW) due to the presence of federally-protected mussels by the Kentucky Division of Water (November 2010), (2) the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the Endangered Species Act of 1973 (the Act) (January 2011), and (3) the marina/transient dock project area has been shifted 500 linear feet downstream (northwest) from its original position.

The additional species proposed for listing are *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose) as endangered and *Quadrula cylindrica* (Rabbitsfoot) as either threatened or endangered. As a result of this proposal, the Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the boat launch and marina/transient dock projects. The conference was requested to take into account the effects of the two projects on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the projects will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase.

The marina/transient dock project area has been shifted 500 linear feet downstream (northwest) of its original position in order to minimize potential impacts to freshwater mussels. This shift is a result of the findings based on additional mussel surveys in October 2010 and October 2011 after the marina/transient dock reach was categorized as an Outstanding State Resource Water (OSRW). The additional mussel surveys indicated varying mussel bed densities along the Ohio River shoreline. The proposed marina/transient dock project has been shifted downstream to a less-dense mussel assemblage area. A new Biological Assessment (BA) was completed for the boat launch and new marina/transient dock project site by Redwing on January 3, 2012. FHWA submitted their request for formal consultation to USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch and new marina/transient dock project areas. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

Coordination with USFWS, KDFWR & KSNPC

As required for the Environmental Assessment (EA) for the projects, coordination with the U.S. Fish and Wildlife Service (USFWS), Kentucky Department of Fish and Wildlife Resources (KDFWR), and the Kentucky State Nature Preserves Commission (KSNPC) has been conducted. The summary of the coordination is as follows:

- Letters of Intent for the boat launch project are forwarded to the USFWS, KDFWR, and KSNPC describing the project background, purpose and need, and funding mechanism (July 2007)
- The U.S. Corps of Engineers (USCOE) issues a public notice concerning the proposed boat launch project (July 2007)
- The USFWS concurs that the boat launch project will not likely affect Indiana Bats or federally protected mussel species based on commitments made in the public notice issued by the USCOE (September 2007)
- Amended Letters of Intent for the boat launch and marina/transient dock projects are forwarded to the USFWS, KDFWR, and KSNPC describing the project backgrounds, purposes and needs, and funding mechanisms (November 2007)
- Application made to the KSNPC for historical threatened/endangered species research (November 2007)
- KSNPC completes historical threatened/endangered species research (December 2007)
- KDFWR recommends environmental commitments to protect Indiana Bats and consultation with the USFWS concerning federally protected mussel species. (December 2007)
- USFWS requests a mussel survey for the marina/transient dock area (January 2008)
- Mussel survey conducted at the boat launch and marina/transient dock areas by Redwing Ecological Services, Inc. (Redwing) and others (August 2008)
- USFWS identifies dead mussel shells as Fat Pocketbook mussels, a state and federally listed endangered species (October 2008)
- USFWS requests a Biological Assessment (BA) of the boat launch and marina/transient dock projects based on the identification of the Fat Pocketbook mussels (October 2008)
- Redwing conducts a BA of the boat launch and marina/transient dock (October 2008)
- Redwing submits the BA to USFWS for concurrence (December 2008)
- Federal Highway Administration (FHWA) requests formal consultation with USFWS concerning freshwater mussels (February 2010)
- USFWS completes Biological Opinion (BO) (July 2010)
- Redwing conducts additional mussel survey in boat launch and marina/transient dock areas (October 2010)
- Kentucky Division of Water categorizes the marina/transient dock reach as Outstanding State Resource Water (OSRW) due to federally-protected mussels (November 2010)
- USFWS re-issues Biological Opinion (BO) (December 2010)
- USFWS proposes additional endangered mussel species for listing (January 2011)
- FHWA requests formal conference opinion from USFWS for proposed listing of additional freshwater mussel species (March 2011)
- USFWS completes the formal conference opinion on additional mussels (July 2011)
- Redwing conducts additional mussel survey in marina/transient dock area (October 2011)
- Redwing submits a BA to FHWA for impacts on freshwater mussel species based on data compiled in additional mussel surveys (January 2012)

- FHWA requests consultation with USFWS for Biological Opinion (BO) (January 2012)

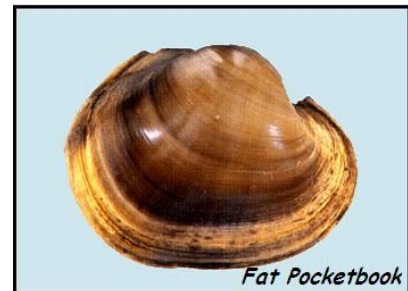
Impacts to Federally Threatened/Endangered Species and/or Habitat

Boat Launch

Redwing Ecological Services, Inc., (Redwing) conducted a terrestrial threatened/endangered species survey of the boat launch area on April 2-3, 2007, as part of a joint application package for wetland and stream alteration permits. This survey concluded that the project site contains potential habitat for the federally endangered *Myotis sodalis* (Indiana bat). To ensure that no impacts to the Indiana bat will occur, tree clearing in the southeast corner and the western portion of the site will be coordinated with the US Fish and Wildlife Service (USFWS) through the execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction.



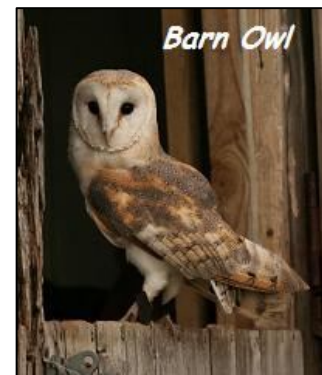
The USFWS reviewed the U.S. Army Corps of Engineers public notice issued on July 19, 2007, for the boat launch project. According to USFWS records, the Indiana bat (*Myotis sodalis*) has been documented within five miles of the site. Based on this information, the USFWS believes that (1) forested areas in the vicinity of or on the project area may provide potentially suitable summer roosting and foraging habitat, and (2) caves, rock shelters, and abandoned underground mines in the vicinity of and on the project area may provide potentially suitable winter hibernation habitat. The USFWS concurred with Redwing in that the proposed boat launch project will not likely adversely affect Indiana bats due to the absence of suitable winter habitat and the commitment that the removal of trees onsite will be coordinated with the USFWS through execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. The USFWS stated that the subject project is within close proximity to several federally protected mussel records known to occur within the Ohio River. A mussel survey was conducted by Redwing with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the boat launch area from August 5-8, 2008. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat Pocketbook), at the boat launch location. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the proposed boat launch project is not likely to adversely affect three federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). A Biological Opinion (BO) was issued on July 6, 2010 and revised on December 21, 2010 by the USFWS for impacts to the three species. The BO concluded that the boat launch project is not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat. Since the completion of the initial Biological Assessment (BA) and Biological Opinion (BO), the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the Endangered Species Act of 1973 (the Act). As a result of this proposal, the



Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the boat launch project. The conference was requested to take into account the effects of the project on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the project will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase. A new Biological Assessment (BA) was completed by Redwing on January 3, 2012. FHWA requested formal consultation with USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch project area. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

The Kentucky Department of Fish and Wildlife Resources (KDFWR) reviewed the boat launch project. The KDFWR Information System indicated that federal/state threatened and/or endangered fish and wildlife species are known to occur within close proximity to the area. The Indiana bat utilizes a wide array of habitats, including riparian forests, upland forest, and fencerows for both summer foraging and roosting habitat. Indiana bats typically roost under exfoliating bark, in cavities of dead and live trees, and in snags. Trees in excess of 16 inches diameter at breast height are considered optimal for maternity colony roosts, but trees in excess of nine inches appear to provide suitable maternity roosting habitat. Male Indiana bats have been observed roosting in trees as small as three inches in diameter. Removal of suitable Indiana bat roost trees due to construction of the proposed project will be coordinated with the US Fish and Wildlife Service (USFWS) through the execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. KDFWR also stated that several federally listed mussel species are located within this portion of the Ohio River.

The Kentucky State Nature Preserves Commission (KSNPC) was contacted with the purpose of allowing them to review their database and comment on the boat launch project. They determined that no occurrences of the plants or animals and no occurrences of the exemplary natural communities that are monitored by the KSNPC are reported as occurring in the boat launch area. KSNPC further expounded on specific species and their relationship to the project. *Myotis austroriparius* (Southeastern myotis) and *Myotis sodalis* (Indiana bat) are known to occur in the bottomland hardwood forest adjacent to the boat launch project area. In order to avoid impacts to bats, KSNPC recommends that bottomland forests and riparian corridors not be disturbed. *Nycticeius humeralis* (Evening bat) is known to occur within 10 miles of the project site. Summer habitats include bottomland forests, swamps, and riparian corridors. Many of the fish and mussel species listed by the KSNPC are believed to be extirpated or are known only through historical records. Some species; however, are still in existence in the area. These species are sensitive to increased turbidity, sediment, and other adverse influences on water quality. KSNPC data is not sufficient to guarantee absence of these species from the project site and they recommend that impacted streams be thoroughly surveyed by a qualified biologist prior to any in-stream disturbance. Mussel surveys were conducted by Redwing in August 2008 in the boat launch project area. Biological Assessments (BA) were submitted to USFWS through formal consultation by FHWA for Biological Opinions (BO) on impacts to listed mussels and/or habitat. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI). *Sterna antillarum athalassos* (interior least tern) occurs near the project area and is typically found on bare or nearly bare alluvial islands and sand bars. *Ammodramus henslowii* (Henslow's sparrow)



is associated with fallow hayfields, ungrazed pastures with scattered small trees and tall weeds, grassland, and brushland. *Accipiter striatus* (Sharp-shinned hawk) can be found in a variety of habitats from semi-open farmland to woodland openings and borders. This species typically nests in areas of extensive forest, especially areas with some evergreen trees. *Tyto alba* (Barn owl) can be found in hollow trees, old buildings, barns, silos, and other abandoned structures. If Barn owl habitat will be disturbed, the USFWS will be consulted prior to commencement. According to KSNPC, the reports reviewed summarize the existing information known to the Kentucky Natural Heritage Program at the time of the review regarding the biological elements or locations in question. The summary is not to be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Marina/Transient Dock

Redwing Ecological Services, Inc., (Redwing) conducted a terrestrial threatened/endangered species survey of the marina/transient dock area on May 14, 2008, as part of a joint application package for wetland and stream alteration permits. The U.S. Fish and Wildlife Service (USFWS) reviewed the marina/transient dock project. According to their records, several mussels which are endangered and one candidate for listing are known to occur in the Ohio River. These mussels include the following: *Cyprogenia stegaria* (Fanshell), *Pleurobema plenum* (Rough pigtoe), *Lampsilis abrupta* (Pink mucket), *Potamilus capax*



(Fat pocketbook), *Plethobasus cooperianus* (Orangefoot pimpleback), *Pleurobema clava* (Clubshell), and *Plethobasus cyphus* (Sheepnose). The USFWS recommended a survey of the footprint of the project area and also a certain distance both upstream and downstream of the project site in order to determine the presence or absence of these mussel species in an effort to determine the potential impacts. A mussel survey was conducted by Redwing with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the marina/transient dock project area from August 5-8, 2008. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat Pocketbook), at the marina/transient dock location. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the proposed marina/transient dock project is likely to adversely affect three federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). A Biological Opinion (BO) was issued on July 6, 2010 and revised on December 21, 2010 by the USFWS for impacts to the three species. The BO concluded that the marina/transient dock project is not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat.

Since the completion of the initial Biological Assessment (BA) and Biological Opinion (BO) for impacts to federally protected mussel species in December 2008 and July 2010, respectively, (1) the reach for the marina/transient dock has been categorized as an Outstanding State Resource Water (OSRW) due to the presence of federally-protected mussels by the Kentucky Division of Water (November 2010), (2) the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the

Endangered Species Act of 1973 (the Act) (January 2011), and (3) the marina/transient dock project area has been shifted 500 linear feet downstream (northwest) from its original position.

The additional species proposed for listing are *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose) as endangered and *Quadrula cylindric* (Rabbitsfoot) as either threatened or endangered. As a result of this proposal, the Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the boat launch and marina/transient dock projects. The conference was requested to take into account the effects of the project on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the project will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase.

The marina/transient dock project area has been shifted 500 linear feet downstream (northwest) of its original position in order to minimize potential impacts to freshwater mussels. This shift is a result of the findings based on additional mussel surveys in October 2010 and October 2011 after the marina/transient dock reach was categorized as an Outstanding State Resource Water (OSRW). The additional mussel surveys indicated varying mussel bed densities along the Ohio River shoreline. The proposed marina/transient dock project has been shifted downstream to a less-dense mussel assemblage area. A new Biological Assessment (BA) was completed for the boat launch and new marina/transient dock project site by Redwing on January 3, 2012. FHWA submitted their request for formal consultation to USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the new marina/transient dock project area. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

The Kentucky Department of Fish and Wildlife Resources (KDFWR) reviewed the marina/transient dock project. The KDFWR Information System indicated that federal/state threatened and/or endangered fish and wildlife species are known to occur within close proximity to the area. Specifically, *Myotis sodalis* (Indiana bat) and several federally listed mussel species are known to occur within the project area. Removal of suitable Indiana bat roost trees due to construction of the proposed project will be coordinated with the US Fish and Wildlife Service (USFWS) through the execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction.

The Kentucky State Nature Preserves Commission (KSNPC) was contacted with the purpose of allowing them to review their database and comment on the marina/transient dock project to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the KSNPC occur in area. *Myotis austroriparius* (Southeastern myotis) and *Myotis sodalis* (Indiana bat) are known to occur near the proposed project. A thorough survey for these species should be conducted by a qualified biologist if suitable habitat will be disturbed. The survey should include a search for potential roost and winter sites, and a mistnetting census at numerous points within the proposed corridor, particularly in preferred summer habitat. Summer foraging habitats include upland forests, bottomland forests and riparian corridors. Suitable roost and winter sites include sandstone and limestone caves, rockhouses, clifflines, auger holes, and abandoned mines. In order to avoid impacts to bats, bottomland forests and riparian corridors, particularly near caves, should not be disturbed. *Nycticeius humeralis* (Evening bat) occurs within the project area. Summer habitats include bottomland forests, swamps, and riparian corridors. In order to avoid impacts to these

bats, a thorough survey should be conducted. The survey should include a search for potential roost and winter sites, and a mistnetting census at numerous points within the proposed corridor, particularly in preferred summer habitat. Aquatic species and habitats in the area are sensitive to increased turbidity, sediment, and other adverse influences on water quality. KSNPC data is not sufficient to guarantee absence of these species from the project site and they recommend that impacted streams be thoroughly surveyed by a qualified biologist prior to any in-stream disturbance. Mussel surveys were conducted by Redwing in August 2008, October 2010, and October 2011 in the marina/transient dock project area. Biological Assessments (BA) were submitted to USFWS through formal consultation by FHWA for Biological Opinions (BO) on impacts to listed mussels and/or habitat. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI). *Sterna antillarum athalassos* (interior least tern) occurs near the project area and is typically found on bare or nearly bare alluvial islands and sand bars. *Haliaeetus leucocephalus* (Bald eagle) can be found near seacoasts, rivers, and large lakes. The species prefers to roost in conifers in winter in some areas. In winter, the species may associate with waterfowl concentrations or congregate in areas with abundant dead fish. *Ammodramus henslowii* (Henslow's sparrow) is associated with fallow hayfields, ungrazed pastures with scattered small trees and tall weeds, grassland, and brushland. *Accipiter striatus* (Sharp-shinned hawk) can be found in a variety of habitats from semi-open farmland to woodland openings and borders. This species typically nests in areas of extensive forest, especially areas with some evergreen trees. According to the Kentucky State Nature Preserves Commission (KSNPC), the reports reviewed summarize the existing information known to the Kentucky Natural Heritage Program at the time of the review regarding the biological elements or locations in question. The summary is not to be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The marina/transient dock facility area consists of undeveloped riverbank (rip rap), limited scrub vegetation, Schultz Park, and Ohio River surface waters; therefore, it is unlikely that any habitat is present with the exception of the listed mussel species as described above. It is unlikely that the proposed marina/transient dock facility will impact the terrestrial species described.



The following list of threatened species (T), endangered species (E, LE), candidate species (C), historic (H), special concern (S), and species of management concern (SOMC) for McCracken County was obtained from the document entitled *Report of Endangered, Threatened, and Special Concern Plants, Animals, and Natural Communities for McCracken County, Kentucky* published by the Kentucky State Nature Preserves Commission in June 2007 and a *Standard Occurrence Report* for the specific project areas conducted by the Commission.

Taxonomic Group

State, Federal Status

Vascular Plants[^]

Red Buckeye (<i>Aesculus pavia</i>)	T, NA
Lakecress (<i>Armoracia lacustris</i>)	T, NA
Water Hickory (<i>Carya aquatica</i>)	T, NA
Common Silverbell (<i>Halesia tetraptera</i>)	E, NA
Broad-leaf Golden-aster (<i>Heterotheca subaxillaris</i>)	T, NA
Ovate Fiddleleaf (<i>Hydrolea ovata</i>)	E, NA
One-flower Fiddleleaf (<i>Hydrolea uniflora</i>)	E, NA
Rough Rattlesnake-root (<i>Prenanthes aspera</i>)	E, NA

Sweet Coneflower (<i>Rudbeckia subtomentosa</i>)^	E, NA
Nine Species	S, NA
Four Species	H, NA
 <u><i>Aquatic Snails</i></u>	
Onyx Rocksnail (<i>Leptoxis praerosa</i>)^	S, SOMC
Armored Rocksnail (<i>Lithasia armigera</i>)**	S, SOMC
Ornate Rocksnail (<i>Lithasia geniculata</i>)*	S, SOMC
Varicose Rocksnail (<i>Lithasia verrucosa</i>)*	S, SOMC
 <u><i>Freshwater Mussels</i></u>	
Pink Mucket (<i>Lampsilis abrupta</i>)*	E, LE
Pocketbook (<i>Lampsilis ovata</i>) *	E, NA
Ring Pink (<i>Obovaria retusa</i>)*	E, LE
Orangefoot Pimpleback (<i>Plethobasus cooperianus</i>)*	E, LE
Fat Pocketbook (<i>Potamilus capax</i>)*	E, LE
Sheepnose (<i>Plethobasus cyphus</i>)*	E, C
Pyramid Pigtoe (<i>Pleurobema rubrum</i>)*	E, SOMC
Rabbitsfoot (<i>Quadrula cylindrica cylindrica</i>)*	T, SOMC
Bleufer (<i>Potamilus purpuratus</i>)^	E, NA
Purple Lilliput (<i>Toxolasma lividus</i>)^	E, SOMC
Longsolid (<i>Fusconaia subrotunda</i>)*	S, NA
 <u><i>Crustaceans</i></u> [^]	
Swamp Dwarf Crayfish (<i>Cambarellus puer</i>)	E, NA
Shrimp Crayfish (<i>Orconectes lancifer</i>)	E, NA
Gray-speckled Crayfish (<i>Orconectes palmeri palmeri</i>)	E, NA
 <u><i>Insects</i></u> [^]	
Rare Cane Borer Moth (<i>Papaipema sp. 5</i>)	T, NA
Duke's Skipper (<i>Euphyes dukesi</i>)	S, NA
Northern Hairstreak (<i>Satyrrium favonius ontario</i>)	S, NA
 <u><i>Fishes</i></u>	
Lake Sturgeon (<i>Acipenser fulvescens</i>)*	E, SOMC
Alligator Gar (<i>Atractosteus spatula</i>)^	E, SOMC
Lake Chubsucker (<i>Erimyzon sucetta</i>)^	T, NA
Cypress Darter (<i>Etheostoma proeliare</i>)^	T, NA
Cypress Minnow (<i>Hybognathus hayi</i>)^	E, NA
Dollar Sunfish (<i>Lepomis marginatus</i>)^	E, NA
Redspotted Sunfish (<i>Lepomis miniatus</i>)^	T, NA
Inland Silverside (<i>Menidia beryllina</i>)*	T, NA
Taillight Shiner (<i>Notropis maculatus</i>)^	T, NA
Central Mudminnow (<i>Umbra limi</i>)^	T, NA
Northern Madtom (<i>Noturus stigmosis</i>)^	S, SOMC
Chestnut Lamprey (<i>Ichthyomyzon castaneus</i>)*	S, NA
Burbot (<i>Lota lota</i>)*	S, NA
Blacktail Shiner (<i>Cyprinella venusta</i>)^	S, NA
Chain Pickerel (<i>Esox niger</i>)^	S, NA
Black Buffalo (<i>Ictiobus niger</i>)^	S, NA
 <u><i>Amphibians</i></u>	
Green Treefrog (<i>Hyla cinerea</i>)*	S, NA
Northern Crawfish Frog (<i>Rana areolata circulosa</i>)^	S, NA

Reptiles

Alligator Snapping Turtle (<i>Macrochelys temminckii</i>)*	T, SOMC
Midland Smooth Softshell (<i>Apalone mutica mutica</i>)^	S, NA
Western Mud Snake (<i>Farancia abacura reinwardtii</i>)^	S, NA
Eastern Ribbon Snake (<i>Thamnophis sauritus sauritus</i>)^	S, NA

Breeding Birds

Bachman's Sparrow (<i>Aimophila aestivalis</i>)*	E, SOMC
Hooded Merganser (<i>Lophodytes cucullatus</i>)^	T, NA
Osprey (<i>Pandion haliaetus</i>)*	T, NA
Interior Least Tern (<i>Sterna antillarum athalassos</i>)**	E, LE
Bank Swallow (<i>Riparia riparia</i>)*	S, NA
Sharp-shinned Hawk (<i>Accipiter striatus</i>)*	S, NA
Henslow's Sparrow (<i>Ammodramus henslowii</i>)*	S, SOMC
Barn Owl (<i>Tyto alba</i>)*	S, NA
Bald Eagle (<i>Haliaeetus leucocephalus</i>)**	T, Delisted
Fish Crow (<i>Corvus ossifragus</i>)^	S, NA
Mississippi Kite (<i>Ictinia mississippiensis</i>)^	S, NA
Bell's Vireo (<i>Vireo bellii</i>)*	S, SOMC

Mammals

Southeastern Myotis (<i>Myotis austroriparius</i>)*	E, SOMC
Indiana Bat (<i>Myotis sodalis</i>)*	E, LE
Evening Bat (<i>Nycticeius humeralis</i>)*	S, NA

* Listed in both documents

** Listed in *Standard Occurrence Report*

^ Listed in *Report of Endangered, Threatened, and Special Concern Plants, Animals, and Natural Communities for McCracken County, Kentucky*

NA- No status listed

Affected Wildlife Migration Patterns

Western Kentucky hosts a variety of migratory birds, from wintering bald eagles, gulls, ducks, and geese, to neotropical migratory birds such as hummingbirds, warblers, and tanagers. Western Kentucky is also within two non-principal routes of the North American Migration Flyways; the Atlantic Flyway and the Mississippi Flyway. Both are migratory paths from Canada that cross the United States. Due to the minimum boat launch footprint in the Ohio River, minimized and designed tree removal, and commitment to compensatory mitigation of wetland impacts in the form of conservation and restoration of wetlands, the boat launch project will not impact the migratory pattern of birds traveling within the two migration flyways. The marina/transient dock area is currently made up of undeveloped riverbank, Schultz Park, and water surface of the Ohio River. Due to the minimized marina/transient dock footprints and the absence of woodland vegetation on the riverbank, the marina/transient dock facility will not impact the migratory pattern of birds traveling within the two migration flyways.

Of the fifteen bat species known in the State of Kentucky, *Lasiurus noctivagans* (Silver-haired bat), *Lasiurus borealis* (Red bat), *Lasiurus cinereus* (Hoary bat), and *Nycticeius humeralis* (Evening bat) are migratory. The Evening bat is a state species of concern and has been recorded in McCracken County, Kentucky. Ten species hibernate which includes *Myotis sodalis* (Indiana bat) and *Myotis austroriparius* (Southeastern myotis), with both having also been recorded in McCracken County, Kentucky. The Indiana bat is both a state and federally listed endangered species. The Southeastern myotis is a state endangered species and a

federal species of management concern. One additional bat species, *Tadarida brasiliensis* (Brazilian Free-Tailed bat), is an accidental, autumn wanderer from the south. A survey of the boat launch project site concluded that the site contains potential habitat for the Indiana bat. To ensure that no impacts to the Indiana bat will occur, tree clearing in the southeast corner and the western portion of the site will be coordinated with the US Fish and Wildlife Service (USFWS) through the execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. There is no potential habitat for bat species within the marina/transient dock project area. Based on the minimized tree removal in the boat launch area as well as the lack of habitat in the marina/transient dock facility area, there should be no impacts to the migratory activities of bat species.



Location of Habitat, if present, and Avoidance Alternatives

Redwing Ecological Services, Inc., (Redwing) conducted a terrestrial threatened/endangered species survey of the boat launch area on April 2-3, 2007, as part of a joint application package for wetland and stream alteration permits. This survey concluded that the project site contains potential habitat for the federally endangered *Myotis sodalis* (Indiana bat). The wooded portion of the site contains scattered trees that represent potential summer roosting/maternity habitat for the Indiana bat. These include dead snags and live trees with loose, exfoliating bark and cracks. To ensure that no impacts to the Indiana bat will occur, tree clearing in the southeast corner and the western portion of the site will be coordinated with the USFWS through execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. If clearing must be done outside of this period, detailed surveys and consultation with the U.S. Fish and Wildlife Service (USFWS) will be completed prior to the initiation of any disturbance activities. Redwing conducted a terrestrial threatened/endangered species survey of the marina/transient dock area on May 14, 2008 as part of a joint application package for stream alteration permits. The marina/transient dock facility area consists of undeveloped riverbank (rip rap), limited scrub vegetation, the existing Schultz Park, and Ohio River surface waters; therefore, it is unlikely that any habitat is present with the exception of the listed mussel species.

Both the boat launch and marina/transient dock projects involve the Ohio River. A mussel survey was conducted by Redwing with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the boat launch and marina/transient dock areas from August 5-8, 2008. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat Pocketbook), at both the boat launch and marina/transient dock locations. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the proposed marina/transient dock project is likely to adversely affect three federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). A Biological Opinion (BO) was issued on July 6, 2010 and revised on December 21, 2010 by the USFWS for impacts to the three species. The BO determined that the boat launch and marina/transient dock projects are not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat. Since the completion of the initial Biological

Assessment (BA) and Biological Opinion (BO), the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the Endangered Species Act of 1973 (the Act) and the reach of the marina/transient dock area has been categorized as an Outstanding State Resource Water. As a result of this information, the Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the boat launch and marina/transient dock projects. The conference was requested to take into account the effects of the two projects on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the projects will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase. In addition, the marina/transient dock project area has been shifted 500 linear feet downstream (northwest) from its original position in order to minimize potential impacts to freshwater mussels. This shift is based on additional mussel surveys in October 2010 and October 2011 which details mussel bed densities in the area. A new Biological Assessment (BA) was completed by Redwing on January 3, 2012. FHWA requested formal consultation with USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch and new marina/transient dock project areas. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

Biological Assessment Requirements and Section 7 Consultation Requirements

To comply with Section 7 of the Endangered Species Act of 1973, as amended, biological assessments are required to determine the potential for and/or presence of endangered and threatened species. Redwing Ecological Services, Inc. (Redwing) conducted a terrestrial threatened/endangered species survey of the boat launch and marina/transient dock areas on April 2-3, 2007, and May 14, 2008, respectively, as part of joint application packages for wetland and stream alteration permits. Redwing also conducted mussel surveys at the boat launch site and marina/transient dock site in August 2008, October 2010, and October 2011. Biological Assessments (BA) were submitted to USFWS through formal consultation by FHWA for Biological Opinions (BO) on impacts to listed mussels and/or habitat. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI). Letters of intent requesting comments and describing the project backgrounds, purpose and needs, and funding mechanisms were sent to the U.S. Fish and Wildlife Service, Kentucky Department of Fish and Wildlife Resources, and the Kentucky State Nature Preserves Commission. Each responded with discussion of the protection of one or more species known to occur in the areas of concern.

Mitigation of Impacts to Threatened/Endangered Species or Habitat

To ensure that no impacts to the Indiana bat will occur, tree clearing in the southeast corner and the western portion of the boat launch project site will be coordinated with the US Fish and Wildlife Service (USFWS) through the execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. Both the boat launch and marina/transient dock projects involve the Ohio River. Redwing conducted mussel surveys at the boat launch site and marina/transient dock site in August 2008, October 2010, and October 2011. Biological Assessments (BA) were submitted to USFWS through formal consultation by FHWA for Biological Opinions (BO) on impacts to listed mussels and/or habitat. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

Aquatic and/or terrestrial habitat for both the boat launch and marina/transient dock projects is detailed in Figure 14.

Cumulative & Indirect Impacts

Endangered and threatened species research concluded that the boat launch project site contains potential habitat for the federally endangered *Myotis sodalis* (Indiana bat). To ensure that no impacts to the Indiana bat will occur, tree clearing in the southeast corner and the western portion of the site will be coordinated with the US Fish and Wildlife Service (USFWS) through the execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. Redwing conducted mussel surveys at the boat launch site and marina/transient dock site in August 2008, October 2010, and October 2011. Biological Assessments (BA) were submitted to USFWS through formal consultation by FHWA for Biological Opinions (BO) on impacts to listed mussels and/or habitat. Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI). Cumulative and indirect impacts are not expected since commitments have been made to reduce stress on bat and mussel species that have the potential to be within the construction areas of the proposed boat launch and marina/transient dock facilities.

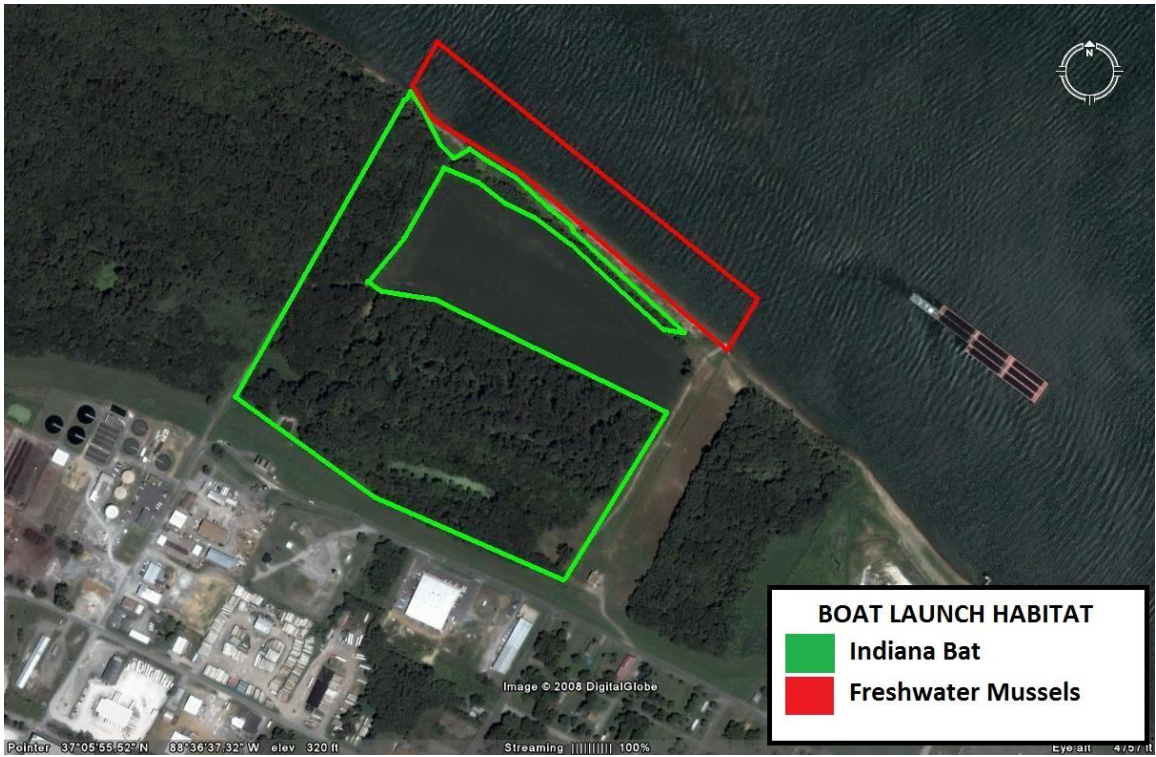


Figure 14

Section 106

State Historic Preservation Office

Section 106 of the National Historic Preservation Act of 1966 as amended requires federal agencies to consider the effects of their actions on historic properties. Coordination with the Kentucky Heritage Council/State Historic Preservation Office (the Council) was conducted to identify and help predict the locations of significant archaeological and architectural resources in the vicinity of the proposed boat launch and marina/transient dock projects.

The mandate of the Council is to identify, preserve, and protect the cultural resources of Kentucky. The Council also maintains continually updated inventories of historic structures and archaeological sites and nominates properties to the National Register of Historic Places. Within the Council are the Native American Heritage Commission and the Kentucky African-American Heritage Commission. The Council reviewed the boat launch and marina/transient dock projects. This review indicated that (1) the northwest portion of the boat launch project area and the marina/transient dock project area have the potential to contain archaeological sites that are eligible for listing in the National Register of Historic Places, and (2) there are numerous historic structures located within and adjacent to both project areas. The Council recommended that the boat launch and marina/transient dock project areas be surveyed to determine if the projects will impact archaeological sites as described. The Council also recommended that an architectural survey be conducted of the Area of Potential Effect (APE) for each project to determine if it will affect structures that are eligible for or listed in the National Register of Historic Places.



Native American Consultation (NAC) is held at a sovereign government to government level; therefore, the lead federal agency, Federal Highway Administration (FHWA), initiates consultations and discussions with interested tribes. FHWA has established specific NAC protocols with a number of federally-recognized tribes who have expressed interest in portions of Kentucky. When necessary, FHWA consults with the Chickasaw Nation, the Shawnee Tribe, the Absentee Shawnee Tribe of Oklahoma, the Eastern Shawnee Tribe of Oklahoma, and the Peoria Indian Tribe of Oklahoma for projects located in McCracken County. After review of archaeological survey reports, the Kentucky Transportation Cabinet submits the results to FHWA who then consults with the interested tribes if either prehistoric human remains and/or prehistoric artifacts are found. Results of the archaeological surveys are forwarded to the interested tribes for comment. After a period of 45 days has elapsed, FHWA collects all comments and submits the comments for inclusion in the Finding of No Significant Impact (FONSI). If one or more tribes express concern, additional consultation is conducted. Consultation is closed once the concerns are addressed or the tribes are invited to be signatories to a Memorandum of Agreement. If no prehistoric remains or artifacts are found in the surveys, no consultation with the tribes is required. A Phase I Archaeological Survey was

conducted for the proposed boat launch and marina/transient dock sites by American Resources Group, Ltd. on May 10, 2008. The survey was achieved through a site file search by the Kentucky Heritage Council, a literature review, and an archaeological field survey. No archaeological sites were found within the proposed boat launch and marina/transient dock sites; therefore, no consultation with tribal representatives is required.

Additional Agency & Local Involvement

The City of Paducah's Historic & Architectural Review Commission (1) provides exclusive jurisdiction as a Board of Adjustment over historic zones and the Neighborhood Service Zone within the city, (2) reviews applications for a Certificate of Appropriateness or a Certificate of Zoning Compliance, and (3) reviews all nominations for the National Register of Historic Places at the local level. Local historic designations were also reviewed as part of the assessment. According to the City of Paducah Zoning Map, there are two historic zonings within the city limits. The two historic zonings are: Historic Commercial (H-1) and Historical Neighborhood (H-2). The Historic Commercial (H-1) area is approximately 1,470 linear feet southeast of the proposed marina/transient dock facility and is also separated from the project area by the existing concrete flood wall. The Historic Commercial (H-1) area is approximately 5,500 linear feet southeast of the proposed boat launch site and is also separated from the project area by the existing flood wall. The Historical Neighborhood (H-2) area is approximately 660 linear feet southwest of the proposed marina/transient dock facility. The Historical Neighborhood (H-2) area is approximately 2,100 linear feet southeast of the proposed boat launch project. Both projects are separated from the historic areas by the existing flood wall.



The approximate elevations of the proposed boat launch and the boat launch parking area are 310 and 320 feet above Mean Sea Level (MSL), respectively. The earthen floodwall elevation near the intersection of Burnett Street and North 6th Street is approximately 350 feet above MSL; therefore, the proposed boat launch facility will not have any significant visual impacts on nearby areas in Paducah.

The proposed marina/transient dock will have a "floating" gangway deck system with a maximum elevation of 347 feet above MSL based on the maximum historic flood level. The elevation at the top of the flood wall at Harrison Street, Madison Street, and Monroe Street is approximately 349 feet above MSL; therefore, the gangway deck system, the marina, and the transient dock will not have any visual impacts on downtown Paducah. The marina/transient dock will have three individual sets of four pipe piles that will support the "floating" gangway deck system. The top of the pipe piles will be at an approximate elevation of 353 feet above MSL and positioned 390, 470, and 560 linear feet from the floodwall on the river side of the wall. The elevation at the top of the floodwall in this area is approximately 349 feet above MSL; therefore, the tops of the pipe piles will be above the floodwall. Vertical axis wind turbines will be placed at the top of each of the twelve pipe piles with top turbine elevations of 362 feet above

MSL. The vertical axis wind turbines are proposed as an environmentally-friendly electricity generator to power a portion of the lighting of the marina/transient dock facility. According to literature, the turbines are relatively “soundless” (53 dB @ 10-12 feet) and have non-reflecting surfaces to eliminate shadow strobing effects. The use of the pipe pile support structures and any associated visual impacts will be coordinated with the Kentucky Heritage Council/State Historic Preservation Office (the Council). Consultation on the matter will be completed prior to the completion of a Finding of No Significant Impact (FONSI). See Figure 15 for a photograph of a vertical axis wind turbine. See Figure 16 for the historical zone locations.



Figure 15

The National Register of Historic Places (the Register) is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archaeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The Register is administered by the National Park Service, which is part of the U.S. Department of the Interior. The City of Paducah has twenty six historic properties listed on the Register.

Historic Structures or Districts

Studies Conducted in Determining Historic Characteristics of the Area

Section 106 of the National Historic Preservation Act of 1966 as amended requires federal agencies to consider the effects of their actions on historic properties. According to the City of Paducah Zoning Map, there are two historic zonings within the city limits. The two historic zonings are: Historic Commercial (H-1) and Historical Neighborhood (H-2). The Historic Commercial (H-1) area is approximately 1,470 linear feet southeast of the proposed marina/transient dock facility and is also separated from the project area by the existing concrete flood wall. The Historic Commercial (H-1) area is approximately 5,500 linear feet southeast of the proposed boat launch site and is also separated from the project area by the existing flood wall. The Historical Neighborhood (H-2) area is approximately 660 linear feet southwest of the proposed marina/transient dock facility. The Historical Neighborhood (H-2) area is approximately 2,100 linear feet southeast of the proposed boat launch project. Both project areas are separated from this historic zoning by the existing flood wall. The historical zones are detailed in Figure 16.

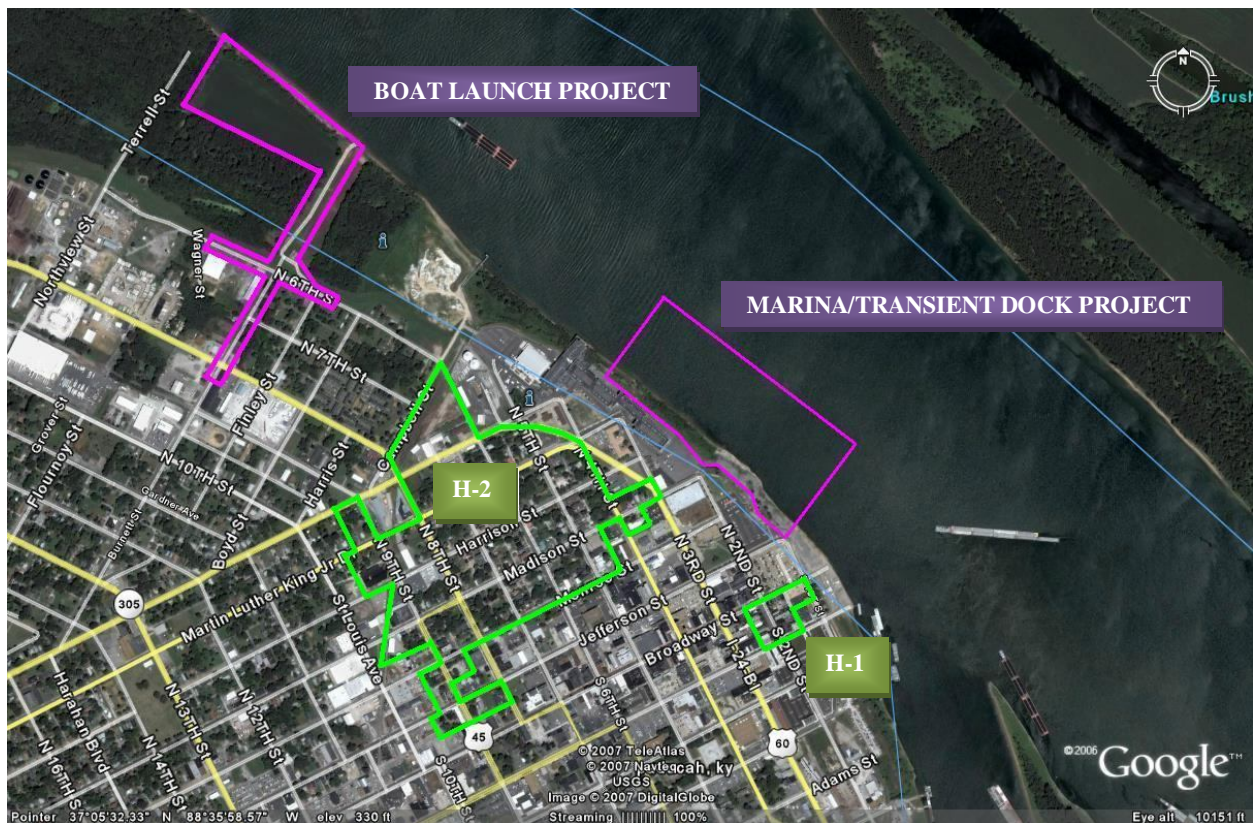


Figure 16

The National Register of Historic Places (the Register) is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archaeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology,

engineering, and culture. The Register is administered by the National Park Service, which is part of the U.S. Department of the Interior. The City of Paducah has twenty six historic properties listed on the Register. The registered historic sites in closest vicinity of the boat launch and marina transient dock projects are shown spatially in Figures 17 and 18, respectively. The registered sites are: 1-Confederate Monument, 2-Home of the Friendless, 3-Lower Town Neighborhood District, 4-Mayor David A. Yeiser House, 5-Saint Mary Academy Complex, 6-Paducah Downtown Commercial District (Boundary Increase), 7-People's First National Bank & Trust, 8-Market House, 9-Paducah Market House District, 10-Paducah Downtown Commercial District, and 11-Hotel Irvin Cobb. Registered sites 8-Market House, 9-Paducah Market House District, and 10-Paducah Downtown Commercial District are positioned inside the Historic Commercial Zone (H-1). Sites 3-Lower Town Neighborhood District and 4-Mayor David A. Yeiser House are positioned inside the Historical Neighborhood Zone (H-2). An architectural survey within an approved Area of Potential Effect (APE) was conducted for the proposed boat launch site on May 5, 2008 to determine if the proposed project will affect structures that are eligible for or listed in the Register. The Council recommended that the appropriate APE for the proposed marina/transient dock facility was the project site itself and that it should not extend beyond the project limits. The Council was requested by letter dated April 15, 2009 for formal confirmation of the APE limits for the marina/transient dock. The Council did not respond to the request and the Kentucky Transportation Cabinet considered the matter closed by letter to the Council on July 17, 2009. Since there are no standing buildings located within the APE, no architectural survey for the marina/transient dock was conducted.



Figure 17



Figure 18

Areas of Potential Effect (APE)

An architectural survey of the Area of Potential Effect (APE) for the proposed boat launch was conducted on May 5, 2008 by American Resources Group, Ltd. The primary objectives of the historic architectural survey were (1) to locate and record all properties over 50 years old that are located within the APE and (2) to make a preliminary assessment of their historical significance using National Register of Historic Places (NRHP) criteria. The APE for the boat launch site was defined as the area of Paducah between 6th and 8th Streets north to south and the area between the end of the proposed boat launch project area east to Boyd Street. This area covers approximately 25 acres. The Kentucky Heritage Council (the Council) reviewed the architectural survey report for the proposed boat launch site and concurred by letter dated July 3, 2008 that none of the sixteen structures identified within the APE that were older than 50 years will be impacted by the project. The Council recommended that the appropriate APE for the proposed marina/transient dock facility was the project site itself. The project area extends from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet while extending approximately 550 linear feet at its maximum into the Ohio River. Since there are no standing buildings located within the APE, no architectural survey for the marina/transient dock was conducted.

Properties Eligible or Determined to be Eligible for the National Register

Sixteen structures older than 50 years were identified during the architectural survey of the Area of Potential Effect (APE) for the proposed boat launch. One of these structures



(McNP976) may meet the criteria for inclusion in the National Register of Historic Places and has been evaluated as eligible for listing due to its age and well-maintained condition. The structure was constructed between 1899 and 1924 and is located at 920 N. 7th Street. However, based on the findings of the architectural survey for the boat launch site, the proposed project will have no effect on the eligible site. The Kentucky Heritage Council (the Council) reviewed the architectural survey report for the proposed boat launch site and concurred by letter dated July 3, 2008 that none of the sixteen structures identified within

the APE that were older than 50 years will be impacted by the project. There are no standing buildings within the APE for the marina/transient dock site; therefore, the proposed project will not have any effect on eligible sites.

Potential Effects on each Historic Property

Sixteen structures that are older than 50 years were identified during the architectural survey of the Area of Potential Effect (APE) for the proposed boat launch. One structure may meet the criteria for inclusion in the National Register of Historic Places (the Register) and has been evaluated as eligible for listing. However, the proposed project will have no effect on the eligible site. The remaining fifteen structures do not appear to meet the Register criteria of significance; consequently, these are evaluated as ineligible for the Register. Based on the findings of the architectural survey for the boat launch site, the proposed project will have no effect on any of the sixteen structures described. The Kentucky Heritage Council (the Council) reviewed the architectural survey report for the proposed boat launch site and concurred by letter dated July 3, 2008 that none of the sixteen structures identified within the APE that were older than 50 years will be impacted by the project. There are no standing buildings within the APE for the marina/transient dock site; therefore, the proposed project will not have any effect on eligible sites.

Coordination with SHPO Regarding Eligibility and Effects

The Kentucky Heritage Council (the Council) reviewed the architectural survey report for the proposed boat launch site and concurred by letter dated July 3, 2008 that none of the sixteen structures will be impacted by the project. The Council recommended that the appropriate APE for the proposed marina/transient dock facility was the project site itself. Since there are no standing buildings located within the APE, no architectural survey for the marina/transient dock was conducted. The Council was notified by letter on December 10, 2011, of the re-location of the marina/transient dock within the agreed upon Area of Potential Effect (APE). The Council concurred by letter on January 11, 2012 that the update to the marina/transient dock will have no impacts on properties within the APE. Figure 19 details the

proposed projects' architectural Areas of Potential Effect (APE) and the eligible structure site within the boat launch APE.

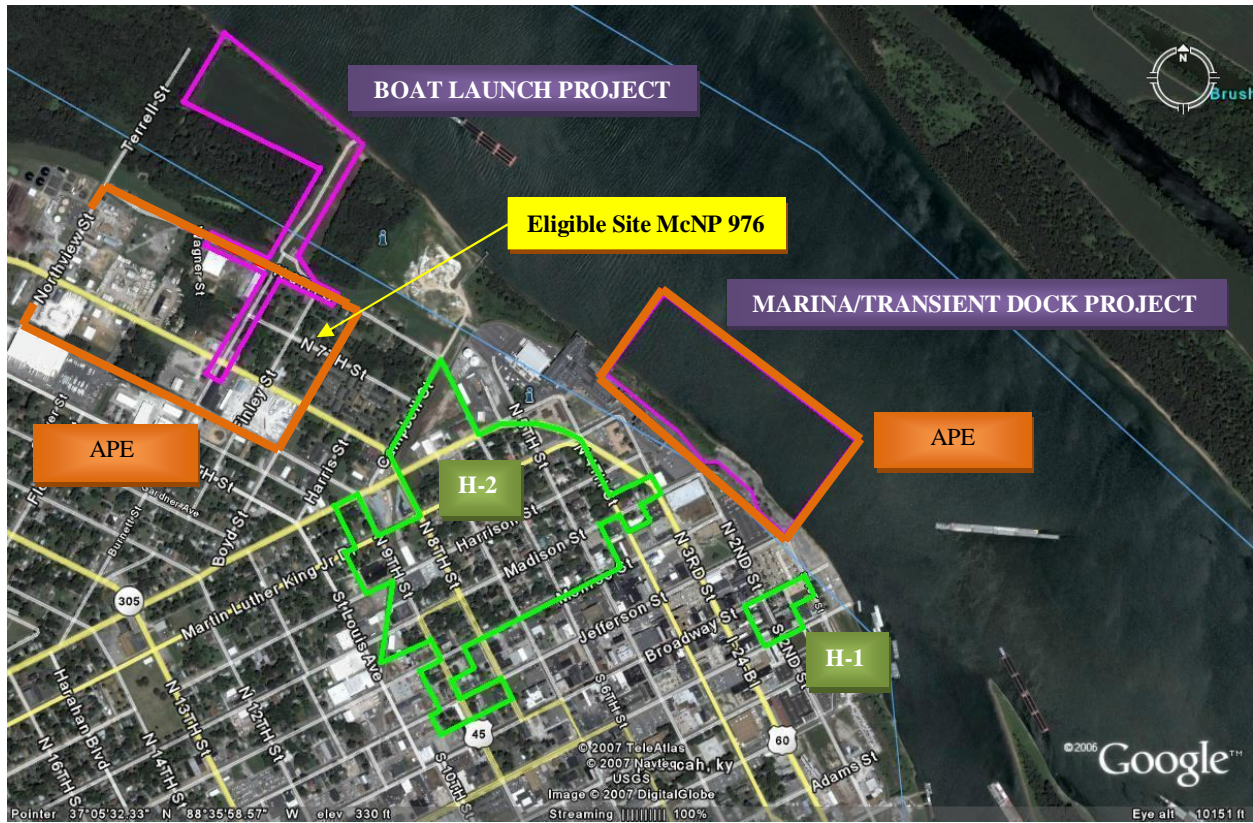


Figure 19

Adverse Effects and Avoidance Alternatives

Based on the findings of the architectural survey conducted within a prescribed Area of Potential Effect (APE) for the boat launch site, the proposed project will have no effect on any of the sixteen structures older than 50 years within the APE. The Kentucky Heritage Council (the Council) reviewed the architectural survey report for the proposed boat launch site and concurred by letter dated July 3, 2008 that none of the sixteen structures identified within the APE that were older than 50 years will be impacted by the project. There are no standing buildings within the APE of the proposed marina/transient dock facility; therefore, the project will not have any effect on eligible sites.

Cumulative & Indirect Impacts

There are no known cumulative and/or indirect impacts to historic resources that would result from the proposed boat launch and marina/transient dock projects.

Identify APE and Historic Structures and/or Districts within the Project Areas

An architectural survey of the Area of Potential Effect (APE) for the proposed boat launch was conducted on May 5, 2008 by American Resources Group, Ltd. The APE for the boat launch site was defined as the area of Paducah between 6th and 8th Streets north to south and the area between the end of the proposed boat launch project area east to Boyd Street. This area covers approximately 25 acres. The Kentucky Heritage Council (the Council) reviewed the architectural survey report for the proposed boat launch site and concurred by letter dated July 3, 2008 that none of the sixteen structures older than 50 years will be impacted by the project. The Council recommended that the appropriate APE for the proposed marina/transient dock facility was the project site itself and that it should not extend beyond the project limits. The Council was requested by letter dated April 15, 2009 for formal confirmation of the APE limits for the marina/transient dock. The Council did not respond to the request and the Kentucky Transportation Cabinet considered the matter closed by letter to the Council on July 17, 2009. This project area extends from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet while extending approximately 550 linear feet at its maximum into the Ohio River. Since there are no standing buildings located within the APE, no architectural survey for the marina/transient dock was conducted. According to the City of Paducah Zoning Map, there are two historic zonings within the city limits. The two historic zonings are: Historic Commercial (H-1) and Historical Neighborhood (H-2). The Historic Commercial (H-1) area is approximately 1,470 linear feet southeast of the proposed marina/transient dock facility and is also separated from the project area by the existing concrete flood wall. The Historic Commercial (H-1) area is approximately 5,500 linear feet southeast of the proposed boat launch site and is also separated from the project area by the existing flood wall. The Historical Neighborhood (H-2) area is approximately 660 linear feet southwest of the proposed marina/transient dock facility. The Historical Neighborhood (H-2) area is approximately 2,100 linear feet southeast of the proposed boat launch project. Both project areas are separated from this historic zoning by the existing flood wall. The approximate elevations of the proposed boat launch and the boat launch parking area are 310 and 320 feet above Mean Sea Level (MSL), respectively. The earthen floodwall elevation near the intersection of Burnett Street and North 6th Street is approximately 350 feet above MSL; therefore, the proposed boat launch facility will not have any significant visual impacts on nearby areas in Paducah. The proposed marina/transient dock will have a "floating" gangway deck system with a maximum elevation of 347 feet above MSL based on the maximum historic flood level. The elevation at the top of the flood wall at Harrison Street, Madison Street, and Monroe Street is approximately 349 feet above MSL; therefore, the gangway deck system, the marina, and the transient dock will not have any visual impacts on downtown Paducah. The marina/transient dock will have three individual sets of four pipe piles that will support the "floating" gangway deck system. The top of the pipe piles will be at an approximate elevation of 353 feet above MSL and positioned 390, 470, and 560 linear feet from the floodwall on the river side of the wall. The elevation at the top of the floodwall in this area is approximately 349 feet above MSL; therefore, the tops of the pipe piles will be above the floodwall. Vertical axis wind turbines will be placed at the top of each of the twelve pipe piles with top turbine elevations of 362 feet above MSL. The vertical axis wind turbines are proposed as an environmentally-friendly electricity generator to power a portion of the lighting of the marina/transient dock facility. According to literature, the turbines are relatively "soundless" (53 dB @ 10-12 feet) and have non-reflecting surfaces to eliminate shadow strobing effects. The use of the pipe pile support structures and any associated visual impacts will be coordinated with the Kentucky Heritage Council/State Historic Preservation Office (the Council). Consultation on the matter will be completed prior to the completion of a Finding of No Significant Impact (FONSI).

Archaeological Sites

Areas of Potential Effect (APE)

Phase I Archaeological Surveys were conducted within the proposed boat launch and marina/transient dock sites on May 10, 2008. The Area of Potential Effect (APE) for the boat launch site encompasses a 26-acre area within a corridor along Burnett Street from 8th Street to the Ohio River and approximately 500 feet along 6th Street on each side of Burnett Street. The APE for the marina/transient dock site is the project area itself and encompasses a 17-acre area within the project boundary which extends from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet while extending approximately 550 linear feet at its maximum (transient dock portion) into the Ohio River.



Archaeological Investigations

According to the Kentucky Heritage Council (the Council), the northwest portion of the boat launch project area and the entire marina/transient dock area have the potential to contain archaeological sites that are eligible for listing in the National Register of Historic Places. A Phase I Archaeological Survey was conducted at both sites by American Resources Group, Ltd. on May 10, 2008. The surveys were conducted through site file searches, literature review, and archaeological field surveys. No archaeological sites were identified within the proposed project areas. The Phase I Archaeological Survey report was submitted to the Council on June 19, 2008. The Council concurred with the report findings by letter on September 30, 2008. The Council was notified by letter on December 10, 2011, of the re-location of the marina/transient dock within the agreed upon Area of Potential Effect (APE). The Council concurred by letter on January 11, 2012 that the update to the marina/transient dock will have no impacts on properties within the APE.

Archaeological Sites Identified

A Phase I Archaeological Survey was conducted at both the boat launch and marina/transient dock sites by American Resources Group, Ltd. on May 10, 2008. No archaeological sites were identified within the two project areas. The Kentucky Heritage Council concurred with the report findings by letter on September 30, 2008.

Sites Eligible or Determined to be Eligible for the National Register

There were no archaeological sites found during the surveys conducted at the boat launch and marina/transient dock sites; therefore, no sites are eligible or determined to be eligible for the National Register of Historic Places.

Cumulative & Indirect Impacts

There were no archaeological sites found during the surveys conducted at the boat launch and marina/transient dock sites; therefore, there are no known cumulative and/or indirect impacts to archaeological sites that would result from the proposed boat launch and marina/transient dock projects. The Kentucky Heritage Council concurred with the report findings by letter on September 30, 2008. Figure 20 details the archaeological Areas of Potential Effect (APE) for the proposed projects.



Figure 20

Surface Water/Land Use

Existing Surface Water/Land Use and Anticipated Changes in Use

The proposed boat launch facility project area consists of undeveloped upland woods, one agricultural field, a narrow wooded strip of Ohio River bank, and open field. There are no private, commercial, or industrial activities occurring on the property with the exception of City of Paducah water intakes in the extreme northeastern corner of the proposed site. There is also currently a gravel/dirt road paralleling the site eastern boundary leading to a single concrete boat ramp. The proposed marina/transient dock facility project area consists of undeveloped riverbank, Schultz Park, and surface waters of the Ohio River. There are no private, commercial, or industrial activities occurring on the property. The properties are owned by the City of Paducah and/or Paducah/McCracken County; therefore, the acquisition of additional right-of-way will not be required.



The boat launch facility will impact 9.2 acres of land through the proposed access road, parking, and boat ramp approach and 0.5 acres of the Ohio River through the placement of the boat ramp. This 9.7 acre impact is out of the overall 54 acres available of which 30 of the 54 total acres is considered the boat launch site. Therefore, 68% of the project site will maintain the current land use with a commitment to preserve 45 acres of wooded and upland forest wetlands as well as to restore 765 linear feet of riparian buffer along the Ohio River. The marina/transient dock project consists of approximately 42 acres comprised of riverbank (12 acres), including the existing Schultz Park, and water surface (30 acres) of the Ohio River. The marina/transient dock facility will directly impact 1.60 acres along the riverbank and 4.56 acres of riverbed through the placement of fill as well as 0.07 acres for the mooring anchors. Therefore, 85% of the project site will maintain its current utilization as riverbank and surface water.

Project Compatibility with Existing Water/Land Use Plans

The current zoning for both project areas is Conservancy Zone (C-1). According to the City of Paducah Zoning Ordinance, the Conservancy Zone is intended to establish a zone to meet the needs of the Ohio and Tennessee Rivers and their tributaries in times of flood and to prevent the undue loss of life and property by not allowing encroachment into the zone of uses which will either be damaged by flood or will increase floodwater heights. The principal permitted uses include: (1) open type uses such as loading and unloading areas, parking lots and gardens auxiliary to uses permitted in any adjoining district, (2) storage yards for equipment and material not subject to major flood damage, (3) water-port facilities, and (4) open-type public and private recreation facilities such as public parks. Conditionally permitted uses are special exceptions and require written approval of the Board of Adjustment as long as the requested use is determined to be of the same general character as the principal permitted

uses. Both the boat launch and marina/transient dock projects are compatible with current water and land uses and will conform to the current zoning, specifically principal permitted uses (1), (3), and (4).

Growth Inducement

Since the proposed project areas will remain zoned as Conservancy Zone (C-1), development within the zoning is restricted to principal and conditional permitted uses neither of which allow low-density or high-density residential development. The boat launch and marina/transient dock developments will not have any effects on the population growth rate of the City of Paducah.

Cumulative & Indirect Impacts

Since the proposed projects are exclusive to the City of Paducah (the City) riverfront, portions of the Ohio River will be impacted through their subsequent development. The proposed boat launch facility will be a transfer of this amenity from the northern end of Broadway Street downstream to north of Burnett Street; therefore, no cumulative impact to the Ohio River will occur due to this project. The proposed marina/transient dock facility will be constructed in an area presently utilized as a riverfront amenity for the City; therefore, no cumulative impact to the Ohio River will result. No additional impacts to the Ohio River system will occur due to the similar utilization of the subject areas. No indirect impacts to the Ohio River system are expected as a result of the proposed projects.

Community Impacts

Baseline Conditions

Paducah is the largest city in the Jackson Purchase Region of Western Kentucky and the county seat of McCracken County. It is located at the confluence of the Tennessee and Ohio Rivers. Twenty blocks of Downtown Paducah have been placed on the National Register of Historic Places. It is the hub for the Paducah Micropolitan Area, which includes Ballard and Livingston Counties in Kentucky and Massac County in Illinois. According to the United States Census Bureau, Paducah is made up of 19.5 square miles of land and 0.04 square miles of water. Paducah was incorporated as a town in 1830.

Population

According to the U.S. Census Bureau, the population for Paducah, Kentucky was 25,720 in 2009. The population for McCracken County, Kentucky was 65,762 in 2009; therefore, Paducah made up 39% of the county population in 2009.

Age Distribution

According to the U.S. Census Bureau, the age distribution in Paducah, Kentucky for the year 2010 was as follows: under 20 (23.8%), 20-34 (18.9%), 35-54 (25.8%), 55-64 (13.2%), and 65 and older (18.1%). The median age was 41.4.

Community Cohesion

Community cohesion is “the magnitude or degree to which people reside and share activities.” The relationship between proposed actions and community life must be examined as part of the investigation of impacts that may cause personal, sociological, and/or psychological hardships. Proposed actions can not have significant impacts on the typical interaction among persons and groups nor can it cause significant change of the social relationships and patterns of a community. Community cohesion impacts include but are not limited to: increased traffic volumes, decreased safety for pedestrians and/or school children, neighborhood congestion, decreased property values, business relocations, residential relocations, increased noise levels, employment effects, and isolation. Since the proposed boat launch and marina/transient dock projects will be riverfront amenities and will be separated from the public by the existing floodwall, the projects will not produce any of the community cohesion impacts listed.

Another method to determine the impacts to community cohesion is the disruption of interdependency of persons or groups within a community. In this case, the businesses and residences in the immediate vicinity of the proposed boat launch (along N. 6th Street from Northview Street to Campbell Street) were identified and noted as to whether or not they are dependent upon one another. The businesses in the immediate vicinity of the marina/transient dock were also noted as to their interdependency. These residences and businesses and the property owners are listed in Tables 5 and 6.

TABLE 5- RESIDENCES/BUSINESSES NEAR BOAT LAUNCH

Address	Description	
	Property Use	Photograph
1201 N. 6 th Street	Ceiling & Wall Supply	
1251 N. 6 th Street	Premier Fire Protection, Inc.	
1019 N. 6 th Street	Bell Residence	
1011 N. 6 th Street	Parrott Estate Residence	
Finley Street & N. 6 th Street	Abandoned Business	
927 N. 6 th Street	Bell Residence	
824 & 826 N. 6 th Street	Sosa Residences	

TABLE 5- RESIDENCES/BUSINESSES NEAR BOAT LAUNCH



812 & 816 N. 6 th Street	Bledsoe & Sweatt Residences	
Campbell Street & N. 6 th Street	Barn Structure (Harper)	
Campbell Street & N. 6 th Street	Bass Abandoned Residence	
719 & 801 N. 6 th Street	Bass & Riggins Residences	
829 N. 6 th Street	Payne, Joyce Residence	
Boyd Street & N. 6 th Street	Bell Trailer Residence	
Burnett Street & 7 th Street	Abandoned Residence	
N. 6 th Street	Auto Salvage	-----
N. 6 th Street	Fire Training Area	-----
N. 6 th Street	City Pump Station	-----
616 Northview Street	Harper Construction, Inc.	-----

TABLE 6- BUSINESSES NEAR MARINA/TRANSIENT DOCK

Address	Description	
	Property Use	Photograph
215 Jefferson Street	Museum of the American Quilter's Society	
123 N. 2 nd Street, N. 2 nd Street, 201 Broadway Street	Whaler's Catch Restaurant, Office Space (renovation), Paducah Harbor Plaza Bed & Breakfast	
100-136 Broadway Street	Doe's Eat Place, Crash Comics, Visitor's Bureau, Paducah Area Painters Alliance, Paducah Tent & Awning, The Ice Cream Factory, Gift Shoppe, d. Starnes Restaurant, Maiden Alley, Office Space, Office Space	
100 Broadway Street, 117 S. Water Street, 111 Kentucky Avenue	Fox Briar Inn, River Heritage Museum, Center for Maritime Education/Attorney Office	
200 N. Riverfront	Schultz Park & Ohio River	
322 N. 3 rd Street	AmerisourceBergen (Pharmaceutical Distribution)	-----
N. 2 nd Street & Broadway Street	Parking	-----
N. 2 nd Street & Jefferson Street	Parking & Public Restrooms	-----
N. 2 nd Street & Monroe Street	Farmer's Market & Parking	-----

According to Table 5, there are ten inhabited single-family residences, two abandoned single-family residences, seven in-use business properties, and one abandoned business structure within the immediate area of the proposed boat launch project. All of the properties are separated from the proposed boat launch by the earthen floodwall. The seven active businesses are not dependent upon one another to sustain existence. There are no community centers, daycares, parks, or common areas within these property uses; therefore, no communal activities will be impacted. There are no apparent family groups or socially interdependent clusters within the area of the subject residences. There are no barriers associated with the proposed boat launch project that may cause isolation along N. 6th Street. None of the ten inhabited single-family residences and seven businesses will be required to be relocated. The only impacts to the residences and businesses may be re-arranged traffic patterns and noise caused by construction. Both of these impacts are temporary and will not cause cumulative affects to the neighboring properties. The purpose of the boat launch project is to relocate the existing boat ramp facility located at the northeastern end of Broadway Street allowing for the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point along the Ohio River.

According to Table 6, there are twenty one business entities, three parking lots, one public restroom facility, and one public park within the immediate area of the proposed marina/transient dock project. All of the properties are located on the opposite side of the concrete flood wall from the proposed marina/transient dock with the exception of Schultz Park. The businesses are not dependent upon one another to sustain existence but work together to provide riverfront/downtown amenities and/or employment to the public. The three parking areas are common to the immediate area of the proposed marina/transient dock project and serve the neighboring businesses; however, there are no reductions in parking spaces expected. None of the properties will be converted into different uses. The only impacts to the properties may be re-arranged traffic patterns and noise caused by construction. Both of these impacts are temporary and will not cause cumulative affects to the neighboring properties. The one permanent impact due to the proposed marina/transient dock is the enhancement of Schultz Park located on the opposite side of the concrete floodwall from the downtown merchants; however, the enhancement of Schultz Park complies with the purpose & need of the proposed marina/transient dock project. The purpose of the marina/transient dock is to provide accommodations for transient boaters and local recreational boat owners. This will provide a positive economic stimulus to the downtown area. It is a major goal of the Paducah Waterfront Plan that the business entities listed will be positively affected by the proposed marina/transient dock project.

Employment and Labor Force

According to the 2010 Census compiled by the U.S. Census Bureau, 55.7% of the city population that were 16 years of age and over was in the work force. The top three occupation categories in the work force were as follows: management and related occupations (30.1%), sales and office occupations (22.0%), and service occupations (22.6%). The top three industries of the work force were: educational services (18.1%), retail trade (15.2%), and arts, entertainment, recreation (14.5%). Classes of worker were: private wage and salary workers (84.3%), government workers (9.7%), and self-employed workers (5.7%). The median family income was \$42,645. The per capita income was \$20,430. Families below the poverty level were 18.1% of the population. Individuals below the poverty level were at 22.0%. The boat launch and marina/transient dock projects will not negatively impact employment in the downtown business district. It is the overall goal of the marina/transient dock project to enhance

the riverfront amenities and therefore, increase opportunities for the public to use the resource. It is expected that the project will increase the available employment opportunities of the immediate area.

Community Resources

There are over eighteen parks within the Paducah City Parks System. Schultz Park will be directly affected by the proposed marina/transient dock facility since the project has been designed to redevelop and enhance the riverbank including the existing park. Riverfront Plaza and Wilson Stage will be indirectly affected by the proposed marina/transient dock facility since the project will visually change the riverfront amenities in the vicinity of the plaza and stage. The closest park to the boat launch site is Voor Park. The park is 0.8 miles south of the proposed boat launch.



There are over ninety churches listed in the City of Paducah. These churches serve a variety of faiths and/or denomination including but not limited to: Apostolic, Bahai, Baptist, Buddhism, Catholic, Church of Christ, Church of God, Jehovah's Witness, Jewish, Methodist, Nazarene, Pentecostal, Presbyterian, and Seventh Day Adventist. The closest church to the boat launch site is Bethel Baptist located 0.4 miles to the south. The closest church to the marina/transient dock facility is St. Francis De Sales located 0.4 miles to the south. Neither the proposed boat launch nor the proposed marina/transient dock facility will impact any religious groups of the local population.

There are a number of public and private schools in the City of Paducah. Of the seventeen public schools in Paducah, eleven serve elementary students, five serve middle school students, and 5 serve high school students. Of the six private schools in Paducah, five serve elementary students, three serve middle school students, and two serve high school students. The closest school to the boat launch site is McNabb Elementary which is approximately 1.5 miles to the southwest. The closest school to the marina/transient dock is also McNabb Elementary which is 1.7 miles to the southeast. McNabb Elementary will not be impacted by the two subject projects. Paducah also serves college/technical school students through the Murray State University Paducah Regional Campus, Paducah Technical College, and the West Kentucky Community & Technical College. None of these higher education institutions will be impacted by the boat launch or marina/transient dock facilities due to fact that the closest of these three entities is over 2 miles in distance.

There are two hospital facilities in Paducah, Kentucky. Lourdes Hospital is located immediately off of I-24 approximately 4.0 miles southwest of the proposed boat launch and marina/transient dock sites. Western Baptist Hospital is located approximately 2.0 miles southwest of the two proposed project sites. Neither of the hospitals will be impacted by the boat launch or marina/transient dock facilities.

Paducah is served by a number of nursing homes/assisted living facilities. The closest facility of this type to both the boat launch and the marina/transient dock is the Paducah Centre for Health & Rehabilitation. This facility is located 0.7 miles southeast of the boat launch site and 0.1 miles south of the marina/transient dock facility. The Paducah Centre for Health & Rehabilitation facility will not be affected by the two projects.

McCracken County Public Library is located at 555 Washington Street in Paducah, Kentucky. The library is positioned approximately 1.2 miles southeast of the proposed boat launch facility and 0.4 miles south of the proposed marina/transient dock. Neither project will impact library services.

The closest campground to both the boat launch and marina/transient dock projects is the Fern Lake Campground located 4.8 miles west of the boat launch and 5.4 miles west of the marina/transient dock facility. The campground will not be affected by the two projects.

Paducah, Kentucky has various shopping and restaurant locations within the downtown area as well as on the perimeter of the city. The downtown shopping opportunities include: antiques, collectibles, art galleries, books, clothing & accessories, coffee & sweets, fabric & quilt shops, florists & special event accessories, food & beverage markets, general services, gifts, home décor, jewelry, lawn & garden, nature & health food, outdoor, photography, hobby, and music. The Kentucky Oaks Mall as well as other “big box retailers” is located immediately off of I-24 approximately 5.0 miles west of the downtown Paducah area. Neither of the proposed projects will negatively impact the shopping and restaurant opportunities in the downtown area or on the perimeter of the city. Increased use of the riverfront amenities will most likely have a positive effect on the economic viability of downtown Paducah with this effect being one of the driving forces behind the redevelopment of the riverfront area. The community resources closest to the boat launch and marina/transient dock are shown spatially in Figure 21.

Impacts on Travel Patterns, Accessibility, Community Facilities, Economic Vitality, Established Business Districts, and Public Safety.

Since the proposed boat launch and marina/transient dock facilities are to be located as riverfront amenities, there will be no significant impacts to travel patterns, accessibility, community facilities, economic vitality, established business districts, or public safety. Traffic may be re-routed temporarily due to construction along the existing right-of-way on both North 6th Street and Burnett Street. Traffic may be altered temporarily due to the movement of construction vehicles in and out of the boat launch and marina/transient dock sites.

Social and Cultural Loss to the Community by Displacements

There are no social and/or cultural losses expected due to there being no displacements resulting from the proposed projects. The proposed boat launch and marina/transient dock facilities are to be located as riverfront amenities.

Impacts on Economic Vitality in Project Area and Established Business Districts

Paducah, Kentucky has various shopping and restaurants within the downtown area. The downtown shopping opportunities include: antiques, collectibles, art galleries, books, clothing & accessories, coffee & sweets, fabric & quilt shops, florists & special event

accessories, food & beverage markets, general services, gifts, home décor, jewelry, lawn & garden, nature & health food, outdoor, photography, hobby, and music. Neither of the proposed projects will negatively impact shopping, restaurant opportunities, or other businesses in the downtown area of the city. Increased use of the riverfront amenities will most likely have a positive effect on the economic viability of downtown Paducah with this effect being one of the driving forces behind the redevelopment of the riverfront area.

Cumulative & Indirect Impacts

The boat launch and marina/transient dock projects will have positive impacts on the downtown Paducah community. In the process, the existing boat ramp facility located at the northeastern end of Broadway Street will be relocated which will allow the northeastern end of Broadway Street to be converted back to its original use as a riverboat landing and community focal point along the Ohio River. The marina/transient dock facility will bring an economic stimulus to the downtown area through visitors that are traversing up and down the Ohio. Overall, the proposed projects will increase the economic vitality of downtown Paducah.



Figure 21

Displacements & Relocations

Number & Types of Relocations/Displacements

There are no relocations or displacements of businesses or residences expected as a result of the proposed projects since the boat launch and marina/transient dock facilities are exclusive to the riverfront and separated from the businesses and residences by the existing floodwall. Currently, there are no businesses or residential structures within either the boat launch site or the marina/transient dock facility site.

Cumulative & Indirect Impacts

No negative cumulative or indirect impacts are expected as a result of the proposed boat launch and marina/transient dock projects. The marina/transient dock facility will bring an economic stimulus to the downtown area without the need to acquire residential or commercial property. No displacements and/or relocations are expected.

Farmland

Baseline Conditions in Project Areas

The Farmland Protection Policy Act (FPPA) of 1981 is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. "Prime farmland", as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency. The proposed boat launch project involves construction within an area comprised of upland woods, one agricultural field, a narrow wooded strip of Ohio River bank, and an open field. The proposed marina/transient dock facility project involves construction within the undeveloped riverbank which currently consists of riprap and limited vegetation, Schultz Park, and surface waters of the Ohio River. There are no agricultural opportunities within the marina/transient dock facility area.



Impacts to Farmland

Through the review of soils data from the National Resource Conservation Service under the direction of the U.S. Department of Agriculture (USDA) in McCracken County, it has been determined that the proposed boat launch project area would involve lands protected under the Farmland Protection Policy Act (FPPA). The project area contains six soil types of which four are designated as prime farmland soils. The prime farmland soils are Huntington-Combs complex (Hm), Huntington-nolin silty clay loams (Hn), Newark-Lindsay complex (Ne), and Okaw silt loam (OhA). The entire project is located within these four soils with the exception of the riverbank (Water-W), the tree line paralleling the northern property boundary (Yeager fine sandy loam-Ye), the levee (Levee), and Burnett Street south of the earthen levee (Urban land-Udorthents complex-UtA). These soils are not designated as prime farmland, unique farmland, or statewide soils. The marina/transient dock facility contains three soil type designations (Udorthents-urban land complex-UdC, Urban land-Udorthents complex-UrA, and Water-W) of which none are designated as prime farmland, unique farmland, or statewide soils. A USDA Farmland Conversion Impact Rating (Form AD-1006) has been completed for the boat launch project. The form provides an evaluation and scoring system with criteria for evaluating adverse effects of projects on the protection of farmland. Sites receiving the highest combined scores up to a maximum of 260 are considered most suitable for protection while those with lowest scores are considered least suitable. According to the FPPA, sites receiving total scores of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated. The total score computed for the proposed boat launch area was 158, assuming a “relative value of farmland” score of 99 and a “site assessment score” of 59. The USDA Farmland Conversion Impact Rating (Form AD-1006) for the boat launch project is included as Figure 22.

Feasible Alternative to Avoid Farmland Impacts if Impact Rating > 160 points

According to the Farmland Protection Policy Act (FPPA), sites receiving total scores of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated. The total score computed for the proposed boat launch area was 158, assuming a “relative value of farmland” score of 99 and a “site assessment score” of 59.

Cumulative & Indirect Impacts

Since the farmland impact rating for the proposed boat launch area is less than 160, no alternatives need to be investigated and no protection of the area is warranted. This is based on the premise that no cumulative impact is expected from the conversion of farmed wetlands to non-farmed acreage within the development, i.e. the overall impact to the available agricultural property in McCracken County will not be significant. The loss of the farmed wetlands as a result of the boat launch project will have no impact on future farming opportunities in the county.

Prime Farmland within the Project Areas

The boat launch project area contains six soil types of which four are designated as prime farmland soils. The prime farmland soils are Huntington-Combs complex (Hm), Huntington-nolin silty clay loams (Hn), Newark-Lindsay complex (Ne), and Okaw silt loam (OhA). A soils map for the subject project is detailed in Figure 23. There are no prime farmland soils within the proposed marina/transient dock project area.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 11-15-07			
Name Of Project LOTH + BURKETT BOAT LAUNCH		Federal Agency Involved FHWA			
Proposed Land Use BOAT RAMP, PARKING, ACCESS RD		County And State MCCRACKEN CO., KY			
PART II (To be completed by NRCS)		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form).		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated 0	Average Farm Size 126
Major Crop(s) Corn / Soybeans	Farmable Land In Govt. Jurisdiction Acres: 149,545 % 90.5	Amount Of Farmland As Defined In FPPA Acres: 102,390 % 64		Date Land Evaluation Returned By NRCS 11-26-07	
Name Of Land Evaluation System Used	Name Of Local Site Assessment System				
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		7.0			
B. Total Acres To Be Converted Indirectly		48.7			
C. Total Acres In Site		0.0 (pl. 5)	0.0	0.0	0.0
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		22.2			
B. Total Acres Statewide And Local Important Farmland		0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		106			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		14			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		0	99	0	0
PART VI (To be completed by Federal Agency)		Maximum Points			
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))					
1. Area In Nonurban Use		15	11		
2. Perimeter In Nonurban Use		10	7		
3. Percent Of Site Being Farmed		20	4		
4. Protection Provided By State And Local Government		20	20		
5. Distance From Urban Builtup Area		15	5		
6. Distance To Urban Support Services		15	0		
7. Size Of Present Farm Unit Compared To Average		10	0		
8. Creation Of Nonfarmable Farmland		10	10		
9. Availability Of Farm Support Services		5	2		
10. On-Farm Investments		20	0		
11. Effects Of Conversion On Farm Support Services		10	0		
12. Compatibility With Existing Agricultural Use		10	0		
TOTAL SITE ASSESSMENT POINTS	160	0	59	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	0	99	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	0	59	0	0
TOTAL POINTS (Total of above 2 lines)	260	0	158	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Reason For Selection:					

(See Instructions on reverse side)

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Form AD-1006 (10-83)

Figure 22

Soil Map—Ballard and McCracken Counties, Kentucky
(Boat Launch)

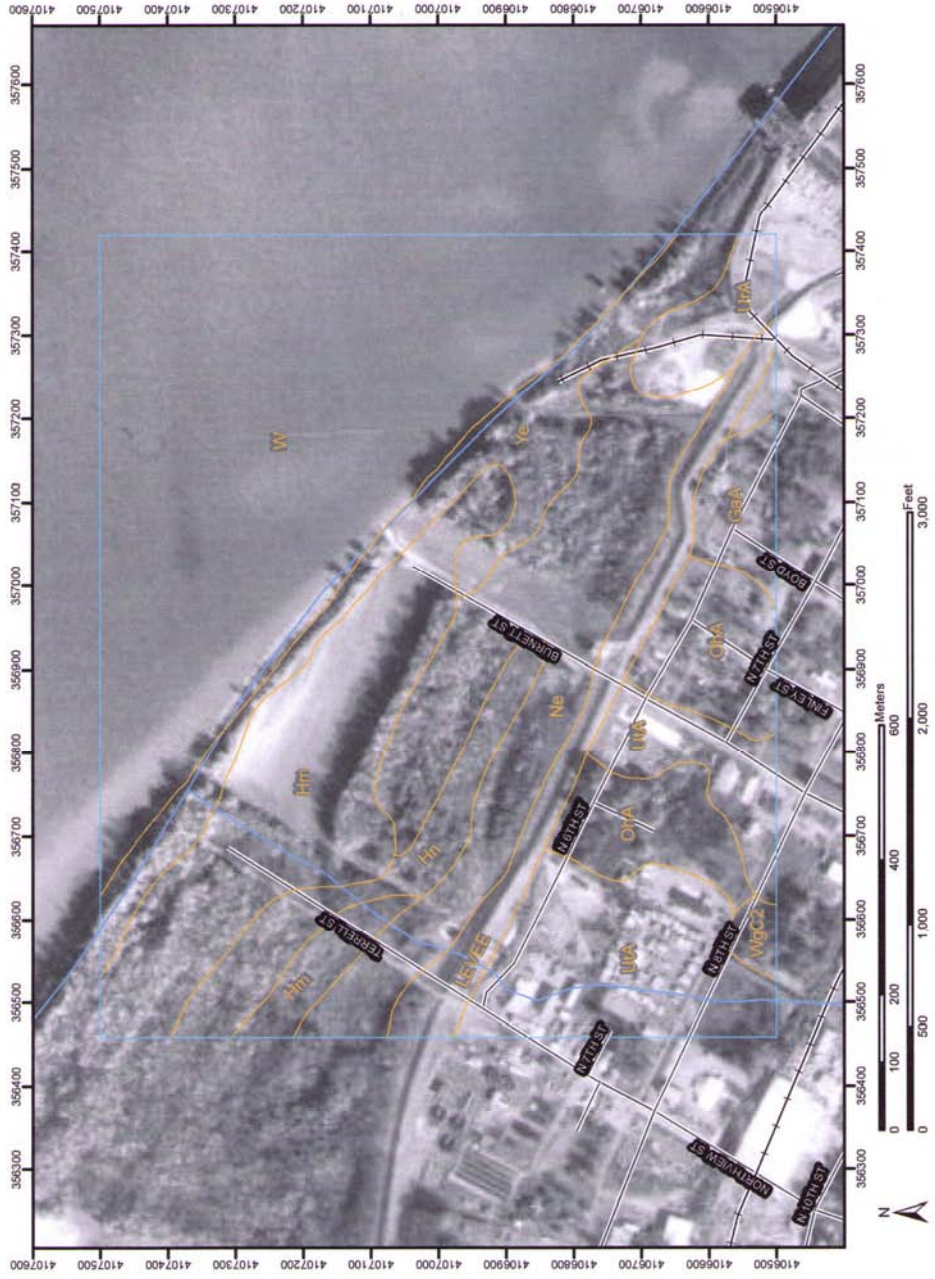


Figure 23

Environmental Justice

Baseline Conditions

A 1994 Presidential Executive Order (EO 12898) directed every Federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on minority populations and low-income populations. Effective transportation decision making depends upon understanding and properly addressing the unique needs of different socioeconomic groups. The three fundamental environmental justice principles are (1) to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations, (2) to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process, and (3) to prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.



The Housing Authority of Paducah manages six main housing opportunities for low-income individuals and families. The housing complexes include: Elmwood Court, Blackburn Apartments, Ella Munal Community, Dr. D.H. Anderson Court, Pierce Lackey Village, and Dolly McNutt Apartments. These housing complexes are not in the vicinity of either the boat launch or marina/transient dock projects. The closest private residence to the proposed boat launch is 1,370 linear feet to the south at 1019 North 6th Street. The closest private residence to the proposed marina/transient dock is 630 linear feet to the south at 303 Madison Street.

Compliance with Executive Order 12898

Executive Order 12898 of February 11, 1994, requires federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health and environmental effects, including the interrelated social and economic effects of their programs, policies, and activities on minority populations and low-income populations in the U.S. The boat launch and marina/transient dock projects will comply with Executive Order 12898 since there will be no anticipated effects on low-income and minority populations.

Impacts to Minority and/or Low Income Population

Neither the proposed boat launch nor the marina/transient dock facility should have any adverse human and environmental effects on minority populations or low-income populations due to the fact that the projects are separated from the nearest residences by 600-1,400 linear feet of space which will be comprised of wooded acreage, open field, earthen flood wall, existing roadways, existing urban development, and/or a concrete foodwall. Also, the benefits expected from the proposed boat launch facility and marina/transient dock facility are available to all. The temporary re-routing of traffic may occur along the right-of-way of both North 6th Street and Burnett Street during construction on the roadways; however, significant impacts to the residential areas is not expected.

Avoidance, Minimization and Mitigation

Impacts to traffic may occur during the movement of equipment and/or trucks in and out of the work sites; however, since the two projects are exclusive to the riverfront, traffic flows are not expected to be re-routed and/or adjusted over extended periods of time. Both the boat launch and marina/transient dock projects were located and designed to minimize impacts to the ecological, social, and cultural environments. Through this effort of avoidance and minimization of impacts, mitigation of impacts to minority and/or low income populations is not warranted.

Cumulative & Indirect Impacts

The proposed boat launch and marina/transient dock projects will not cause any disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations. The planning stage of the riverfront redevelopment plan has requested input from the local citizens to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process. The amenities afforded by the proposed projects will be available to all.

Pedestrian & Bicycle Facilities

Baseline Conditions

On August 10, 2005, President Bush signed into law the Safe Accountable, Flexible, Efficient Transportation Equity Act; a Legacy for Users (SAFETEA-LU). The new legislation built upon the significant changes made to Federal transportation policy and programs by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the 1998 Transportation Equity Act for the 21st Century (TEA-21). The legislation had a number of provisions that related to improving conditions for bicycling and walking and increasing the safety of the two modes. The legislation stated that (1) bicyclists and pedestrians should be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State, (2) bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction and transportation facilities, except where bicycle and pedestrian use are not permitted, and (3) transportation plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians.

The opportunities for pedestrians and bicyclists at present consist of sidewalks and open space areas in the associated vicinity of the existing Schultz Park at the northern end of Jefferson Street. There are limited opportunities for pedestrians and bicyclists at the proposed boat launch site.

Opportunities for Providing Pedestrian and Bicycle Facilities

The proposed marina/transient dock facility has incorporated the consideration of bicyclists and pedestrians in the design process. As part of the marina/transient dock facility, Schultz Park will be redeveloped to establish it as the gateway to the Paducah riverfront. The redevelopment of the park is to include:

- the use of Monroe Street as a pedestrian link between town and the waterfront
- an interpretive waterfront experience including a levee trail/garden/open space
- reconfiguration of roadway alignment to provide landscape buffer for pedestrians
- the creation of a pedestrian promenade
- clear delineation of all paths and trails with appropriate signs/markers
- established spatial & visual separation of vehicles, pedestrians, and bicyclists
- multiple destinations along paths and trails
- provide ADA accessibility
- include amenities such as benches, trash/recycling receptacles, & bike racks
- provide pedestrian lighting where applicable

The transient boat dock will provide a gangway system connecting the park with the dock. Also proposed is a walking path and public access along the gangway and dock facility. The marina portion of the site will share a gangway entrance with the transient boat dock with a secure entrance. The proposed boat launch site has been designed to serve private boat owners and will be limited in the opportunity for pedestrians and bicyclists due to the commitment to preserve surrounding acreage as part of the compensatory mitigation plan for impacts to wetlands on the site; however, bicyclists and pedestrians will be allowed to utilize the premises.

Cumulative & Indirect Impacts

The marina/transient dock will provide new opportunities for both bicyclists and pedestrians through the design of specific park amenities. The boat launch does not have specific amenities designed for these opportunities; however, the development will allow bicyclists and pedestrians to utilize the site within the local regulations. There are no negative cumulative or indirect impacts expected with either of the two proposed projects.

Underground Storage Tanks/Hazardous Materials/Wastes

Baseline Conditions

Underground storage tanks are regulated on the federal level by the Resource Conservation and Recovery Act (RCRA) and on the state level by Title 401 of the Kentucky Administrative Regulations, Chapter 42 (401 KAR 42). Chapter 42 regulates the design, construction, installation, registration, testing, and closure of underground storage tanks in the State of Kentucky. Hazardous material/waste sites are regulated on the federal level by the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, and the Superfund Amendments and Reauthorization Act of 1986 (SARA). Hazardous material/waste sites are regulated on the state level by Title 401 of the Kentucky Administrative Regulations, Chapters 30-38, 43 and 44. (401 KAR 30-38, 43, 44)

According to the Hazardous Waste Branch and the Underground Storage Tank Branch of the Kentucky Department for Environmental Protection, Division of Waste Management, there are no files and/or records for any former or present hazardous material/waste sites and underground storage tanks within the proposed boat launch and marina/transient dock facility project areas.

Sites Recommended for Phase II Site Assessments/Remediation

There are no files and/or records for any former or present hazardous material/waste sites and underground storage tanks within the proposed boat launch and marina/transient dock facilities project areas; therefore, no further environmental site assessments are warranted.

KYTC Process for Remediation, if necessary

Remediation design is not required at the boat launch and marina/transient dock facilities since there are no files and/or records for any former or present hazardous material/waste sites on the properties.

Cumulative & Indirect Impacts

According to the Hazardous Waste Branch and the Underground Storage Tank Branch of the Kentucky Department for Environmental Protection, Division of Waste Management, there are no files and/or records for any former or present hazardous material/waste sites and underground storage tanks within the proposed boat launch and marina/transient dock facility project areas. There are no negative cumulative or indirect impacts expected from underground storage tanks or hazardous materials/wastes with either of the two proposed projects.

Visual Impacts

Baseline Conditions

Visual perception is an important component of environmental quality that can be affected by transportation projects. The location, design, and/or maintenance of transportation facilities may adversely affect visual features of the landscape. In reviewing the visual impacts of transportation projects, two views are considered: the view from the facility and the view of the facility.

Description of Visual Impacts of and from the Facilities

The boat launch facility will be located on the Ohio River. The facility will be accessed by a roadway extending from North 6th Street. Sight lines of the boat launch facility will be obscured by the wooded acreage and the earthen flood wall between the Ohio River and 6th Street. The approximate elevations of the proposed boat launch and the boat launch parking area are 310 and 320 feet above Mean Sea Level (MSL), respectively. The earthen floodwall elevation



near the intersection of Burnett Street and North 6th Street is approximately 350 feet above MSL. Based on the elevations and the wooded area, no negative visual impact of the facility is expected. Views from the boat launch facility will be of the Ohio River to the immediate north, east, and west and wooded acreage to the south as it exists presently. No negative visual impact from the facility is expected. The marina/transient dock facility will extend from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet while extending approximately 550 linear feet at its maximum (transient dock portion) into the Ohio River. The sight lines of the marina/transient dock facility will be obscured by the concrete



floodwall paralleling the river. The proposed marina/transient dock will have a “floating” gangway deck system with a maximum elevation of 347 feet above MSL based on the maximum historic flood level. The elevation at the top of the flood wall at Harrison Street, Madison Street, and Monroe Street is approximately 349 feet above MSL; therefore, the gangway deck system, the marina, and the transient dock will not have any visual impacts on downtown Paducah. The marina/transient dock will have three individual sets of four pipe piles that will support the “floating” gangway deck system. The top of the pipe piles will be at an approximate elevation of 353 feet above MSL and positioned 390, 470, and 560 linear feet from the floodwall on the river side of the wall. The elevation at the top of the floodwall in this area is approximately 349 feet above MSL; therefore, the tops of the pipe piles will be above the floodwall. Vertical axis wind turbines will be

placed at the top of each of the twelve pipe piles with top turbine elevations of 362 feet above MSL. The vertical axis wind turbines are proposed as an environmentally-friendly electricity generator to power a portion of the lighting of the marina/transient dock facility. According to literature, the turbines are relatively “soundless” (53 dB @ 10-12 feet) and have non-reflecting surfaces to eliminate shadow strobing effects. The use of the pipe pile support structures and any associated visual impacts will be coordinated with the Kentucky Heritage Council/State Historic Preservation Office (the Council). Consultation on the matter will be completed prior to the completion of a Finding of No Significant Impact (FONSI).

Cumulative & Indirect Impacts

There are no negative cumulative or indirect visual impacts expected as a result of the boat launch and marina/transient dock projects.

Impacts of Construction Activities

Potential Adverse Impacts

Noise impacts associated with the proposed boat launch and marina/transient dock will occur during construction of the facilities; however, construction is conditionally exempt from the City Noise Ordinance. It is concluded that noise levels associated with construction will not exceed the criteria detailed in the City Noise Ordinance. The noise control ordinance exempts construction operations from 7:00 a.m. to 6:00 p.m. on weekdays for which building permits have been issued or construction operations not requiring permits due to ownership of the project by an agency of government; providing all equipment is operated in accordance with all standard equipment, manufacturers’ mufflers, and noise reducing equipment in use and in properly operating condition. Construction of the proposed boat launch and marina/transient dock facilities is not expected to cause traffic congestion due to the fact that main construction will be on the riverfront and not within the existing vehicle traffic patterns of downtown Paducah. It is expected that occasional traffic re-routing will be necessary for precautionary measures when construction equipment is entering and/or exiting the project sites and during the enhancement along 6th and Burnett Streets.

Waste and Borrow Sites

The boat launch and marina/transient dock project areas will not be used as waste and/or borrow sites during construction. Fill material for both sites will be obtained from off-site.

Mitigation Commitments

Boat Launch

The boat launch site has been designed to reduce environmental impacts by utilizing an existing roadway corridor and existing agricultural field for the entrance roadway and parking area. Other designs for this site would result in significantly greater impacts to higher quality wooded wetlands. Although the proposed site design results in the impacts to approximately 9.7 acres of wetlands, only about 0.7 acres of wooded wetlands will be impacted. These impacts are limited to fringe areas and will not fragment the existing forest. No viable alternative boat launch site exists within the immediate vicinity of downtown Paducah. The selected site minimizes ecological impacts while still meeting the river access needs of the community. A mitigation plan was developed by Redwing Ecological Services, Inc. (Redwing) for the boat launch project to provide compensation for unavoidable impacts to approximately 9.7 acres of waters/wetlands by construction. The impacts and committed mitigation for the boat launch project is as follows with measurements in acres unless otherwise stated:

Feature	Size	Impacted	Mitigation Ratio	Mitigation Required	Type	Size	Ratio	Credit
Wooded	37.0	0.7	3:1	2.1	Preservation	34.4	10:1	3.4
Wooded	37.0	0.7	3:1	2.1	Restoration	7.3	1:1	7.3
Farmed	16.0	8.3	1:1	8.3	-----	-----	-----	-----
Open Field	1.0	0.2	2:1	0.4	-----	-----	-----	-----
Up. Forest	-----	0.0	-----	-----	Preservation	3.4	10:1	0.3
Ohio River	-----	0.5 (250')	2:1	1.0 (500')	Restoration	765'	1:1	765'
TOTAL	54.0	9.7 (250')		10.8 (500')		45.1		11.0*

* Includes 765' of riparian buffer restoration

These mitigation requirements will be met with on-site wetland preservation and restoration. The 11.0 acres of proposed mitigation more than compensates for impacts to wetlands (10.8 acres of required mitigation) by the proposed boat launch facility. The major components of the mitigation plan include wetland preservation, wetland restoration, and upland buffer preservation. Approximately 34.4 acres of existing high quality forested wetland will be permanently preserved under a conservation easement/deed restriction within a designated conservation area. Approximately 7.3 acres of existing farmed wetland will be restored to forested wetland through planting of native wetland tree species. Approximately 3.4 acres of existing forested upland buffer will be permanently preserved under a conservation easement/deed restriction. Approximately 765 linear feet of wooded riparian buffer will be restored along the Ohio River through planting of native trees.

According to the U.S. Fish & Wildlife Service (USFWS), an endangered *Myotis sodalis* (Indiana bat) record has been documented within five miles of the proposed boat launch project site. Based on this information, USFWS believes that (1) forested areas in the vicinity of or on the project area may provide potentially suitable summer roosting and foraging habitat, and (2) caves, rock shelters, and abandoned underground mines in the vicinity of or on the project area may provide potentially suitable winter hibernation habitat for the endangered species. The removal of trees onsite will be coordinated with the US Fish and Wildlife Service (USFWS) through the execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction.

A mussel survey was conducted by Redwing Ecological Services, Inc. (Redwing) with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the boat launch area from August 5-8, 2008. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey

Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat Pocketbook), at the boat launch location. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the proposed boat launch project is not likely to adversely affect three federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). A Biological Opinion (BO) was issued on July 6, 2010 and revised on December 21, 2010 by the USFWS for impacts to the three species. The BO concluded that the boat launch project is not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitat. Since the completion of the initial Biological Assessment (BA) and Biological Opinion (BO), the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the Endangered Species Act of 1973 (the Act). As a result of this proposal, the Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the boat launch project. The conference was requested to take into account the effects on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the project will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase. A new Biological Assessment (BA) was completed by Redwing on January 3, 2012. FHWA requested formal consultation with USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch project area. Reasonable and prudent measures; terms & conditions; implementation and monitoring; and/or discretionary conservation measures will be attached to the Biological Opinion (BO). Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

Marina/Transient Dock

The proposed marina/transient dock facility project involves construction within the undeveloped riverbank which currently consists of riprap and limited vegetation, the existing Schultz Park, and surface waters of the Ohio River. There are no jurisdictional waters within the project area with the exception of the river. It is anticipated that there will be no mitigation requirements for the marina/transient dock due to the relatively limited nature of the marina/transient dock impacts in relation to the overall Ohio River system.

A mussel survey was conducted by Redwing with the assistance of Copperhead Environmental Consulting, Inc. and Gannett Fleming Engineers & Architects, P.C., for the marina/transient dock project area from August 5-8, 2008. The Mussel Survey Report was submitted to the USFWS on September 25, 2008. After review of the Mussel Survey Report, the USFWS identified a state and federally listed endangered mussel species, *Potamilus capax* (Fat Pocketbook), at the marina/transient dock location. A Biological Assessment (BA) document that estimates potential impacts to Ohio River mussels was completed and submitted to USFWS on December 19, 2008 for concurrence. The results of the BA indicated that the proposed marina/transient dock project is likely to adversely affect three federally protected species: *Potamilus capax* (Fat Pocketbook), *Lampsilis abrupta* (Pink Mucket), and *Plethobasus cooperianus* (Orangefoot Pimpleback). A Biological Opinion (BO) was issued on July 6, 2010 and revised on December 21, 2010 by the USFWS for impacts to the three species. The BO determined concluded that the marina/transient dock project is not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated

critical habitat. Since the completion of the initial Biological Assessment (BA) and Biological Opinion (BO) for impacts to federally protected mussel species in December 2008 and July 2010, respectively, (1) the reach for the marina/transient dock has been categorized as an Outstanding State Resource Water (OSRW) due to the presence of federally-protected mussels by the Kentucky Division of Water (November 2010), (2) the U.S. Fish & Wildlife Service (USFWS) has determined that additional mussel species are proposed for listing under the Endangered Species Act of 1973 (the Act) (January 2011), and (3) the marina/transient dock project area has been shifted 500 linear feet downstream (northwest) from its original position. The additional species proposed for listing are *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). As a result of this proposal, the Federal Highway Administration (FHWA) requested a formal conference opinion from the USFWS on March 4, 2011 for three species likely to be listed prior to the completion of the marina/transient dock project. The conference was requested to take into account the effects of the two projects on *Quadrula cylindrica* (Rabbitsfoot), *Cumberlandia monodonta* (Spectaclecase) and *Plethobasus cyphus* (Sheepnose). The US Fish and Wildlife Service (USFWS) completed the formal conference opinion on July 13, 2011. USFWS concurred that the project will likely adversely affect the Rabbitsfoot and Sheepnose and will not likely adversely affect the Spectaclecase. The marina/transient dock project area has been shifted 500 linear feet downstream (northwest) of its original position in order to minimize potential impacts to freshwater mussels. This shift is a result of the findings based on additional mussel surveys in October 2010 and October 2011 after the marina/transient dock reach was categorized as an Outstanding State Resource Water (OSRW). The additional mussel surveys indicated varying mussel bed densities along the Ohio River shoreline. The proposed marina/transient dock project has been shifted downstream to a less-dense mussel assemblage area. A new Biological Assessment (BA) was completed by Redwing on January 3, 2012. FHWA requested formal consultation with USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the new marina/transient dock project area. Reasonable and prudent measures; terms & conditions; implementation and monitoring; and/or discretionary conservation measures will be attached to the Biological Opinion (BO). Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

Section 4(f) *de minimis* Impacts of a Recreational Resource & Section 6(f)

Background

Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966, Section 6009, requires federal-aid projects to include special efforts to preserve the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Approval of projects that have the potential to impact any of these resources can be made only if the following conditions are met:

- I. There is no feasible or prudent alternative to the use of land from the property; and
- II. The action includes all possible planning to minimize harm to the property resulting from use.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) amended the existing Transportation Act legislation with Section 6009(a) in order to simplify the Section 4(f) process and approval of projects having a *de minimis* impact on a historic or recreational resource. With respect to parks, recreation areas, or wildlife or waterfowl refuges, the USDOT Secretary may make a finding of *de minimis* impact only if the following conditions are met:

- I. The Secretary has determined after public notice and opportunity for public review and comment, that the transportation program or project will not adversely affect the activities, features, and attributes of the park, recreation area, or wildlife or waterfowl refuge eligible for protection under this section; and
- II. The finding of the Secretary has received concurrence from the officials with jurisdiction over the park, recreation area, or wildlife or waterfowl refuge.

Section 4(f) Resources

The property in which the proposed boat launch facility will be constructed is owned by the City of Paducah; therefore, the property is designated as “publicly owned.” The subject property does not fall under the three basic resource categories of parks & recreation areas, refuges, or cultural resources.

Existing Raymond Schultz Riverfront Park (Schultz Park) will be utilized for the proposed marina/transient dock facility. The marina/transient dock will extend from the floodwall at the end of Jefferson Street westward for approximately 2,200 linear feet while extending approximately 550 linear feet at its maximum (transient dock portion) into the Ohio River. Schultz Park is owned by the City of Paducah and is considered a “publicly owned park”. According to the City of Paducah’s *Parks and Recreation Facilities Inventory*, Schultz Park is located on the Ohio River between Harrison Street and Route 45 and is 7.8 acres in size. The park has an outdoor theater (Wilson Stage), two boat launch ramps, an asphalt parking lot, benches, sidewalks, and a moveable floating dock. Schultz Park is home to the annual Paducah Summer Festival in July and the annual Bar-B-Que on the River celebration in September. Since the park will be impacted as part of this proposed project, the area is protected as a Section 4(f) property. The park is publicly owned, open to the public, and serves as a recreation area. The existing area is considered significant by the local authorities when compared to the other similar areas included in the community. However, since (1) the proposed marina/transient dock project will not

adversely affect the activities, features, and attributes of the park/recreation area but will add amenities to the area and (2) the mayor of the City of Paducah concurs with the fact that no adverse affect to the existing Schultz Park will occur as a result of the proposed project, requirements under Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966, Section 6009, can be satisfied utilizing the *de minimis* impact classification.

The boat launch and marina/transient dock facility will be located in the Ohio River which does not fall under any of the categories of Section 4(f). Because portions of the two projects will impact the Ohio River and associated riverbank, coordination with the U.S. Corps of Engineers and the Kentucky Department for Environmental Protection will be required.

Identify and Discuss any 6(f) Impacts

Section 6 (f) of the Land and Water Conservation Fund Act (the Act) concerns transportation projects that propose impacts, or the permanent conversion, of outdoor recreation property that was acquired or developed with grant assistance from the Land and Water Conservation Fund. Passed by Congress in 1965, the Act established a matching assistance program that provides grants which pay half the acquisition and development cost of outdoor recreation sites and facilities. Section 6 (f) of the Act prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the Department of Interior's National Park Service. The boat launch property was acquired by the City of Paducah (the City) in September of 1991. The marina/transient dock property was acquired by the City in October of 1985. Since neither property will be converted to a "non-recreational purpose", Section 6 (f) regulations do not apply to these proposed projects.

Furthermore, a literature search was conducted of the Land and Water Conservation Fund listings for McCracken County, Kentucky compiled by the National Park Service. Neither Schultz Park nor the proposed boat launch properties is listed; therefore, Section 6(f) is not applicable.

Indirect & Cumulative Impacts

Indirect Impacts

Indirect impacts, or indirect effects, are reasonably foreseeable impacts to the environment that are caused by an action, but occur later in time, or are further removed in distance from the project area. Indirect impacts are generally associated with impacts from induced growth, and other impacts that result from the induced changes in the existing land use patterns, population density, or growth rate of an area.

The indirect impact analysis for the proposed boat launch and marina/transient dock projects concluded that there are no reasonably foreseeable indirect impacts associated with the redevelopment of the riverfront in the two separate areas. There is low potential for future development within the project areas due to both being situated in the Conservancy Zone (C-1). According to the City of Paducah Zoning Ordinance, the Conservancy Zone is intended to establish a zone to meet the needs of the Ohio and Tennessee Rivers and their tributaries in times of flood and to prevent the undue loss of life and property by not allowing encroachment into the zone of uses which will either be damaged by flood or will increase floodwater heights. The principal permitted uses include: (1) open type uses such as loading and unloading areas, parking lots and gardens auxiliary to uses permitted in any adjoining district, (2) storage yards for equipment and material not subject to major flood damage, (3) water-port facilities, and (4) open-type public and private recreation facilities such as public parks. Conditionally permitted uses are special exceptions and require written approval of the Board of Adjustment as long as the requested use is determined to be of the same general character as the principal permitted uses. Therefore, it is not reasonably foreseeable that the boat launch and marina/transient dock projects will induce growth to the existing area. There are no reasonably foreseeable negative indirect impacts associated with the two projects. Increased use of the riverfront amenities will most likely have a positive effect on the economic viability of downtown Paducah with this effect being one of the driving forces behind the redevelopment of the riverfront area.

Cumulative Impacts

Cumulative impacts are the total impacts on a specific natural resource, ecosystem, or human community, which results from all other past, present, or reasonably foreseeable future actions. Cumulative impacts analysis is generally conducted on the resource(s) directly impacted from the project.

The proposed boat launch project will directly impact jurisdictional wetlands, prime farmland, floodplains, and the Ohio River. The direct impact of jurisdictional wetlands will be compensated through preservation and restoration of the balance of the surrounding wetlands available on the project site; therefore, the overall impacts to jurisdictional wetlands will not show a net loss of wetlands. The direct impact to prime farmland acreage has been evaluated utilizing a scoring system developed by the U.S. Department of Agriculture. Since the farmland impact rating for the proposed boat launch area is less than 160, no alternatives need to be investigated and no protection of the area is warranted. This is based on the premise that no cumulative impact is expected from the conversion of farmed wetlands to non-farmed acreage within the development, i.e. the overall impact to the available agricultural property in McCracken County will not be significant. The loss of the farmed wetlands as a result of the boat launch project will have no impact on future farming opportunities in the County. The proposed boat launch project has been developed in accordance with Executive Order 11988

(Floodplain Management) and 23 CFR 650A (Location and Hydraulic Design of Encroachments on Flood Plains). Though the project is within the 100-year floodplain, the project is not expected to be a “significant encroachment” as defined in 23 CFR 650A nor is it expected to have an appreciable environmental impact on the base floodplain. The level of risk analogous with the probable areas of flooding and its consequences attributed to this encroachment is not expected to be any greater than that associated with the present conditions of the project area. The project is not expected to have any increased cumulative potential for property loss and hazard to life. Without environmental commitments, the proposed boat launch may directly impact endangered/threatened bat species. Mitigation commitments have been established to reduce impacts to the Indiana bat. The removal of trees onsite will be coordinated with the USFWS through execution of an Indiana Bat Conservation Memorandum of Agreement (MOA) prior to initiation of construction. A new Biological Assessment (BA) was completed by Redwing Ecological Services, Inc. (Redwing) on January 3, 2012. FHWA requested formal consultation with USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the boat launch project area. Reasonable and prudent measures; terms & conditions; implementation and monitoring; and/or discretionary conservation measures will be attached to the Biological Opinion (BO). Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

The proposed marina/transient dock project will directly impact floodplains, the Ohio River, and a Section 4 (f) site, Schultz Park. The proposed project has been developed in accordance with Executive Order 11988 (Floodplain Management) and 23 CFR 650A (Location and Hydraulic Design of Encroachments on Flood Plains). Though the project is within the 100-year floodplain, the project is not expected to be a “significant encroachment” as defined in 23 CFR 650A nor is it expected to have an appreciable environmental impact on the base floodplain. The level of risk analogous with the probable areas of flooding and its consequences attributed to this encroachment is not expected to be any greater than that associated with the present conditions of the project area. The project is not expected to have any increased cumulative potential for property loss and hazard to life. The existing Schultz Park area in which the marina/transient dock facility will be constructed is a Section 4 (f) resource. Impacts to the resource will consist of redevelopment of the park, construction of a marina, and construction of the transient dock. Though the resource will be impacted, alterations to the area will not change its use. Schultz Park will remain as a park and recreation area. Since (1) the proposed marina/transient dock project will not adversely affect the activities, features, and attributes of the park/recreation area but will add amenities to the area and (2) the mayor of the City of Paducah concurs with the fact that no adverse affect to the existing Schultz Park will occur as a result of the proposed project, requirements under Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966, Section 6009, can be satisfied utilizing the *de minimis* impact classification. The riverfront redevelopment plan is to increase the opportunity for access to the river through boating opportunities, pedestrian and bicyclist amenities, as well as enhanced picnic areas. Without environmental commitments, the proposed marina/transient dock project may directly impact endangered/threatened mussel species. A new Biological Assessment (BA) was completed by Redwing on January 3, 2012. FHWA requested formal consultation with USFWS on January 19, 2012 for a Biological Opinion (BO) on impacts to ten freshwater mussel species in the new marina/transient dock project area. Reasonable and prudent measures; terms & conditions; implementation and monitoring; and/or discretionary conservation measures will be attached to the Biological Opinion (BO). Consultation on the matter will be completed prior to approval of a Finding of No Significant Impact (FONSI).

In conclusion, since the proposed boat launch and marina/transient dock projects are not likely to induce growth to the area, there are no reasonably foreseeable indirect impacts to the surrounding environment. In addition, the cumulative impacts associated with the proposed projects have been minimized or negated when assuming all other past, present, and reasonably foreseeable impacts to jurisdictional wetlands, prime farmland acreage, floodplains, the Ohio River, Section 4 (f) resources, and threatened/endangered species.

Planning & Public Involvement



V. PLANNING & PUBLIC INVOLVEMENT

Background

The riverfront redevelopment plan has relied on an interactive process involving a wide range of participants including the Riverfront Plan Executive Committee, Riverfront Plan Stakeholders, City of Paducah, and the general public. Each group offered unique insight into the needs and desires of the community and allowed ideas and concepts to be tested to determine the best match for the community. The recommendations within the plan represent the collaborative effort of each group to assure a high level of community commitment to the proposed enhancements.

Planning & Public Involvement Activities

The following is a timeline of activities and events conducted for stakeholder involvement:

- The City of Paducah and JJR meet with the U.S. Corps of Engineers to coordinate and discuss Paducah's general intent for riverfront improvements (January 2006)
- Separate project meetings involving City Staff, Executive Committee, Stakeholders, and the public are conducted over a two day period to review the overall project scope, planning boundaries, and schedule (March 8-9, 2006)
- A group bus tour to the riverfront cities of Chattanooga, Tennessee, and Evansville, Indiana, is conducted to allow key members of the Paducah Riverfront Redevelopment Plan to observe two communities possessing successful redeveloped riverfronts (March 23-24, 2006)
- A City staff meeting followed by a public hearing is held to present riverfront conditions analysis and perceived riverfront opportunities/alternatives (May 17-18, 2006)
- A preliminary consensus Riverfront Redevelopment Plan is developed and submitted to the City of Paducah (June 23, 2006)
- The City holds a series of meetings with riverfront property owners with land influencing the Riverfront Redevelopment Plan (June and July 2006)
- Based on new information, meetings, and input, a new Riverfront Redevelopment Plan is created shifting the proposed activities downstream (August and September 2006)
- U.S. Army Corps of Engineers, U.S. Coast Guard, Crouse Corporation, James Marine, City of Paducah, and the consultant team meet and discuss the new Plan (August 2006)
- Prominent display of informational boards in and around Schultz Park depicting a brief narrative, conceptual plan, and artistic renderings of a number of aspects associated with the proposed marina/transient dock facility (May 2008)
- Advertisement for consulting parties under Section 106 for available public meeting (January 2010) (There was no response to this advertisement)
- Public meeting to discuss the environmental assessment of the projects (March 2010)

During the planning process, input has been provided at public meetings, stakeholder meetings, and at presentations to museum boards. An understanding of current efforts as well as future plans of these entities was important in order to coordinate the interface with the cultural institutions and their efforts to link to the river. Some of these meetings included input from representatives from the Mural Walls, River Heritage Museum, Carson Four Rivers Center, and the historic railroad group.

Future Stakeholder Involvement

The Environmental Assessment for the proposed boat launch and marina/transient dock facilities will be available for public review after approval by the Division of Environmental Analysis of the Kentucky Transportation Cabinet, and the Federal Highway Administration (FHWA). A public meeting will be conducted to allow interested parties to comment on the projects and the associated impacts. Comments will be addressed and will be incorporated into the Finding of No Significant Impact (FONSI) document.