



LEGEND

- Ashland Park and Riverfront Park
- Proposed Greenway Corridor
- Area of Direct Encroachment on Ashland Park and Riverfront Park
- Area of Direct Encroachment on the Proposed Greenway Corridor

ALIGNMENT	RIGHT-OF-WAY
— C1	- - - C1
— C2	- - - C2
— C3	- - - C3

LOUISVILLE – SOUTHERN INDIANA
OHIO RIVER BRIDGES PROJECT
Environmental Impact Statement/Preliminary Design

**ASHLAND PARK, RIVERFRONT PARK
AND THE GREENWAY CORRIDOR**

0
2,000'

FIGURE 6.2-25

Alternative C-2 would have visual impacts to the remainder of the park; however, this impact is lessened somewhat by the existing crossings of U.S. 31 and I-65. Traffic noise levels from Alternative C-2 are projected to be approximately 64 dBA at this property by the year 2025, which would be an increase of approximately 11 dBA over existing noise levels.

Alternative C-3: This alternative would span over approximately 1.0 acre of the planned Greenway Corridor just west of existing I-65. Preliminary layouts indicate that bridge support piers and footings would use approximately 0.031 acres of park property. No park facilities or functions would be directly impacted. Visual impacts would be minor, since an elevated freeway already crosses the Greenway adjacent to this alternative. Traffic noise levels from Alternative C-3 are projected to be approximately 74 dBA at this property by the year 2025, which would be an increase of approximately 7 dBA over existing noise levels.

Avoidance Alternatives

The other downtown alternatives would use more park property and would have greater impacts to the park property than **Alternative C-1**. Alternative C-2 would use approximately 1.1 acres of the Greenway Corridor, with approximately 0.9 acre of that being within Ashland Park. Alternative C-3 would use approximately 1.1 acres of the Greenway Corridor just west of existing I-65.

Due to the length of the Greenway Corridor, an alignment shift far enough east or west to avoid it entirely would not be feasible (Figure 6.2-25). Design alternatives such as a reduced facility, retaining walls, etc., also would not avoid the parks. The only avoidance alternatives would be the No-Action Alternative, the Transportation Management Alternative, and the One Bridge/Highway Alternative (East End). As noted previously in Section 6.4.1, none of these alternatives would sufficiently meet the purpose and need for this project. The No-Action Alternative and the Transportation Management Alternative (by itself) would not meet any of the needs. The One Bridge/Highway Alternative would not sufficiently meet all of the needs so as to constitute a feasible and prudent long-term solution to the region's cross-river mobility needs. With any of the One Bridge/Highway Alternatives, the total cross-river demand-to-capacity ratio would once again be near or above 100 percent by the year 2025, meaning that additional improvements would once again be necessary. The One Bridge/Highway Alternative would not sufficiently resolve the congestion on the Kennedy Bridge and Kennedy Interchange. The LOS on the Kennedy Bridge would remain at E for the One Bridge/Highway Alternative (Downtown), and would only improve to D for the One Bridge/Highway Alternative (East End). The One Bridge/Highway Alternative would also not solve the traffic safety problems in the Kennedy Interchange and on the Kennedy Bridge and approach roadways. The Kennedy Interchange and Kennedy Bridge have a history of high crash rates. Traffic congestion is a contributor to those high crash rates, and the One Bridge/Highway Alternative would not reduce congestion sufficiently to resolve the traffic safety problems on those facilities. The One Bridge/Highway Alternative would not sufficiently meet all of the needs for this project and, therefore, is not a feasible and prudent alternative.

Measures to Minimize Harm

Alternative C-1 has been located as close as feasible to the existing I-65 crossing to minimize impacts to the park property. The park property will be spanned by bridge to minimize impacts and to allow access underneath the bridge. Any excess right-of-way (or existing right-of-way) adjacent to the park will be available for use by the park. The bridge will be designed to aesthetically compliment the existing landscape. Vegetative screening will be incorporated, as appropriate, into the design to decrease the amount of visual impacts upon the parks.

Coordination

The project was coordinated with the Ohio River Greenway Commission, the Jefferson Redevelopment Department, the Louisville District of the USACE, and the cities of Jeffersonville and Clarksville. Their information and input was used to develop alternatives that would minimize impacts to the parks and greenway.

Conclusion

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the Greenway Corridor/Riverfront Park, and the proposed action includes all possible planning to minimize harm to the Greenway Corridor/Riverfront Park resulting from such use.

Waterfront Park; Phase I (KD-PR-11) and Phase II (KD-PR-12) - Kentucky

The Louisville Waterfront Development Corporation (WDC) is currently developing a 55.1 acre park along the Ohio River in Louisville. When completed the park will extend along the shoreline from Clark Memorial Bridge to Towhead Island, and will include the upland area between the Ohio River and Bingham Way, Witherspoon Street, Preston Street, and River Road. There will be three major activity areas in the park, including a variety of active and passive recreation uses:

- Waterfront Plaza and Water Feature: The Waterfront Plaza encompasses 5.3 acres at the western edge of the park, adjacent to Downtown Louisville. It is a major urban public open space and festival ground, designed to accommodate crowds as large as 15,000 people. It includes a new wharf for the Star of Louisville, a 2.5 acre hard surfaced area, a waterfront restaurant, an observation tower, and a riverfront promenade. Two parallel concourses from the wharf to Witherspoon Street provide pedestrian connections to the Downtown area.
- Great Lawn and Harbor Inlet: The Great Lawn is the centerpiece of the Waterfront Park, providing a transition from the river to downtown. It is a 17.5 acre evenly sloped plane, extending from the river, underneath I-64 to a new extension of Witherspoon Street (from Bingham Way to Preston Street). River Road was relocated around the Great Lawn so as to direct traffic along its southern edge. A small harbor and marina are constructed at the east edge of the Great Lawn.

- **Linear Park:** The Linear Park is planned as a pedestrian-oriented space, extending from the edge of the harbor at the Great Lawn, north along the river to the western tip of Towhead Island. The area will be designed for passive recreation use. A system of pedestrian paths will connect various landscape features, including four shoreline inlets and a series of open spaces designed as play meadows. Pedestrian access to the Big Four Bridge, with a possible future connection to Indiana, will be provided by filling around the base of the bridge pier at the water's edge and constructing a circular looping path up to the bridge deck. The Linear Park will be completed as Phase II of the Waterfront Park.

The WDC did not use Land and Water Conservation Fund (LWCF) monies for Phase I of the park construction. It has not yet been determined if they will be available for use in Phase II.

Waterfront Park and its relationship to the downtown alternatives are shown on Figures 6.2-26, 6.2-27 and 6.2-28. The completed portion of the park is owned by the city of Louisville and, once completed, the entire Waterfront Park will be owned by the City. Access to the park is available by vehicles, boats and pedestrians. Attendance at the park during the year 2000 is estimated at approximately 1,275,250, including approximately 700,000 for the event, "Thunder over Louisville". This park has similar characteristics to the riverfront parks on the Indiana side of the Ohio River. There are no other unusual characteristics or features associated with this park.



(1)



(2)

Photographs 1-2 (from left to right): 1) View looking southeast toward Waterfront Park from the Clark Memorial Bridge. 2) View looking east along I-64 toward the Great Lawn.

Impacts

Alternative C-1: **Alternative C-1** would span over approximately 1.2 acres of the planned park (Phase II). The 1.2 acres spanned over by **Alternative C-1** has not been developed, and is currently being used in an industrial capacity as an asphalt transfer point. Preliminary layouts indicate that bridge support piers and footings would use approximately 0.050 acres of future park property. Visual impacts would be minor, since an elevated freeway already crosses the planned park adjacent to this alternative. Traffic noise levels from **Alternative C-1** are projected to be approximately 75 dBA at this property by the year 2025, which would be an increase of

approximately 14 dBA over existing noise levels and an increase of approximately 2 dBA over No Build noise levels.

Alternative C-3: Alternative C-3 would span over approximately 2.8 acres of the existing park. The 2.8 acres are part of the developed park, and are currently being used for recreation. Preliminary layouts indicate that bridge support piers and footings would use approximately 0.050 acres of developed park property. Visual impacts would be minor, since an elevated freeway already crosses the park adjacent to this alternative. Traffic noise levels from Alternative C-3 are projected to be approximately 75 dBA at this property by the year 2025, which would be an increase of approximately 14 dBA over existing noise levels and an increase of approximately 2 dBA over No Build noise levels.

Alternative C-2: Alternative C-2 itself would not use any property from the Waterfront Park; however, reconstruction of the Kennedy Interchange (which is included with all downtown alternatives) would use property from the park, as indicated below.

Relocated Reconstruction of Kennedy Interchange: The **Relocated option** for reconstruction of the Kennedy Interchange would span over approximately 4.1 acres of Waterfront Park due to the connecting ramps and widening of I-64. Preliminary layouts indicate that bridge support piers and footings would use approximately 0.171 acres of park property.

In-Place Reconstruction of Kennedy Interchange: The In-Place Kennedy Interchange option would impact approximately 4.2 acres of Waterfront Park, including a use of approximately 1.1 acres that would be required for the relocation of River Road to accommodate reconstruction of the I-64 to Third Street off-ramp. The relocation of River Road would also require 0.1 acre of temporary right-of-way from Waterfront Park to reconstruct their parking lot entrance and would require the removal of 16 of 71 parking spaces from the parking lot. Preliminary layouts indicate that bridge support piers and footings would use approximately 0.171 acres of park property. The total use of Waterfront Park property by the In-Place reconstruction of the Kennedy Interchange would be approximately 1.271 acres (0.171 acres from the bridge supports and 1.1 acres from the relocation of River Road). The I-64 to Third Street off-ramp cannot be shifted south to avoid impacts to River Road as it is located as close to the interstate highway mainline as feasible, and a shift to the north would take more Waterfront Park land.

Avoidance Alternatives

Alternative C-3 would impact more of the park (approximately 2.8 acres, and 6.9 acres when combined with reconstruction of the **Kennedy Interchange Relocated**) than **Alternative C-1**. The 2.8 acres impacted by Alternative C-3 are part of the developed park, and are currently being used for recreation, including a children's play area. The Great Lawn is a major point of interest and used for a number of major events. It is located on the downstream side of the existing Kennedy Bridge, has been noted by the Waterfront Development Corporation as one of the elements of the park that should be avoided. The Louisville Waterfront Development Corporation has gone on record as strongly supporting **Alternative C-1**, indicating that Alternative C-3 "...would cause major landscape changes in a portion of Waterfront Park that is already constructed..." They also expressed strong opposition to Alternative C-2, stating, "...its impact to downtown Louisville appear both disastrous and insurmountable..."



LEGEND

- Waterfront Park and Extreme Sports Complex Boundaries
- Area of Direct Encroachment Associated with an In-Place Kennedy Interchange
- Area of Direct Encroachment Associated with a Relocated Kennedy Interchange

ALIGNMENT

- Kennedy Interchange Relocated
- Kennedy Interchange In-Place

RIGHT-OF-WAY

- - - Kennedy Interchange Relocated
- - - Kennedy Interchange In-Place

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WATERFRONT PARK AND EXTREME SPORTS COMPLEX WITH ALIGNMENT C1

0 800'

FIGURE 6.2-26



LEGEND

- Waterfront Park and Extreme Sports Complex Boundaries
- Area of Direct Encroachment Associated with an In-Place Kennedy Interchange
- Area of Direct Encroachment Associated with a Relocated Kennedy Interchange

ALIGNMENT

- Kennedy Interchange Relocated
- Kennedy Interchange In-Place

RIGHT-OF-WAY

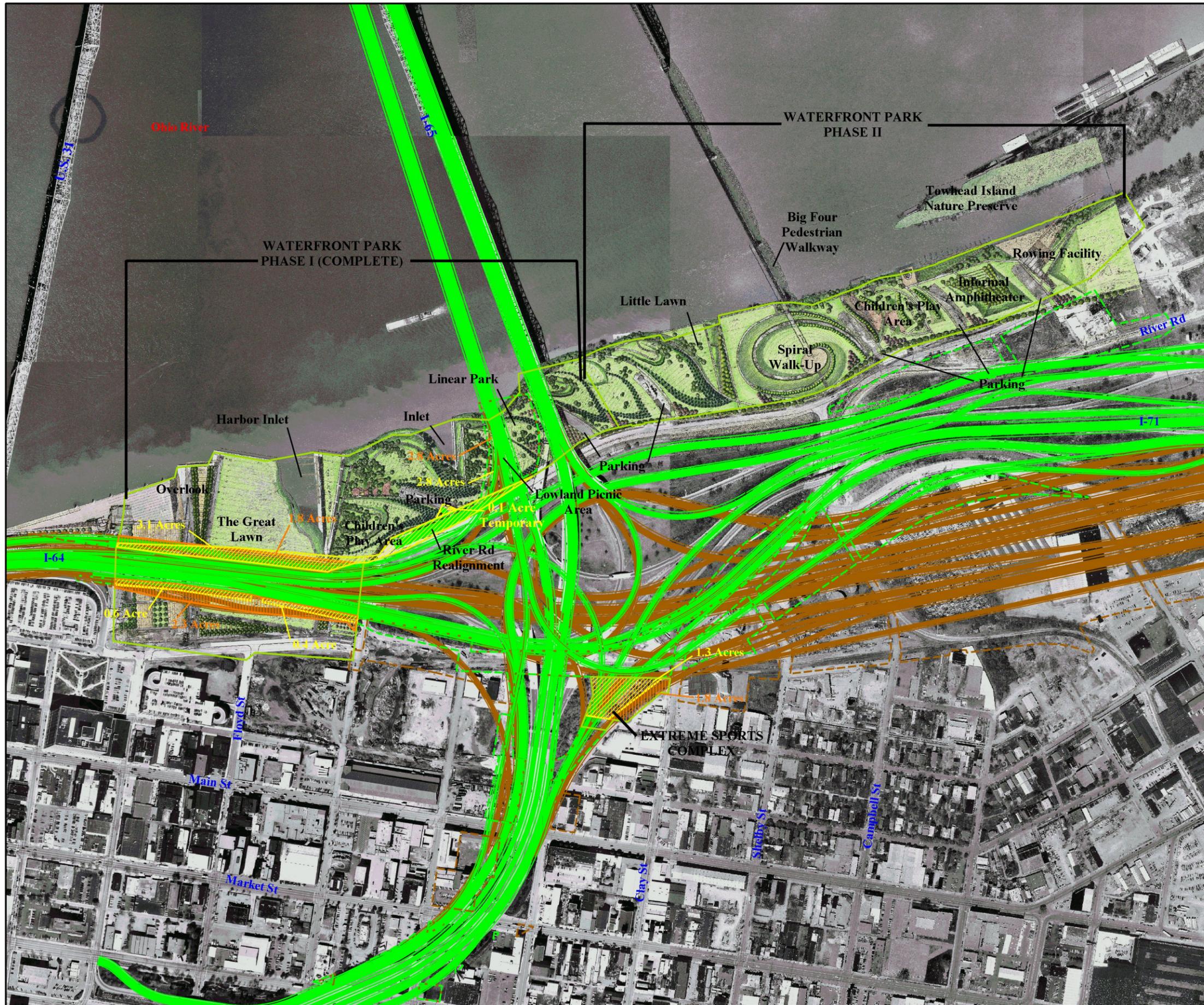
- - - Kennedy Interchange Relocated
- - - Kennedy Interchange In-Place

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WATERFRONT PARK AND EXTREME SPORTS COMPLEX WITH ALIGNMENT C2

0 800'

FIGURE 6.2-27



LEGEND

- Waterfront Park and Extreme Sports Complex Boundaries
- Area of Direct Encroachment Associated with an In-Place Kennedy Interchange
- Area of Direct Encroachment Associated with a Relocated Kennedy Interchange

ALIGNMENT

- Kennedy Interchange Relocated
- Kennedy Interchange In-Place

RIGHT-OF-WAY

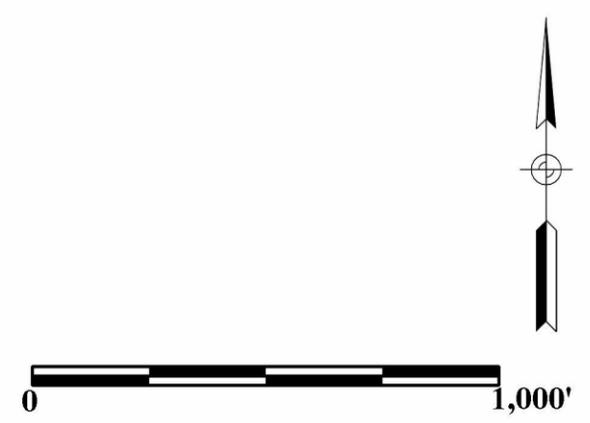
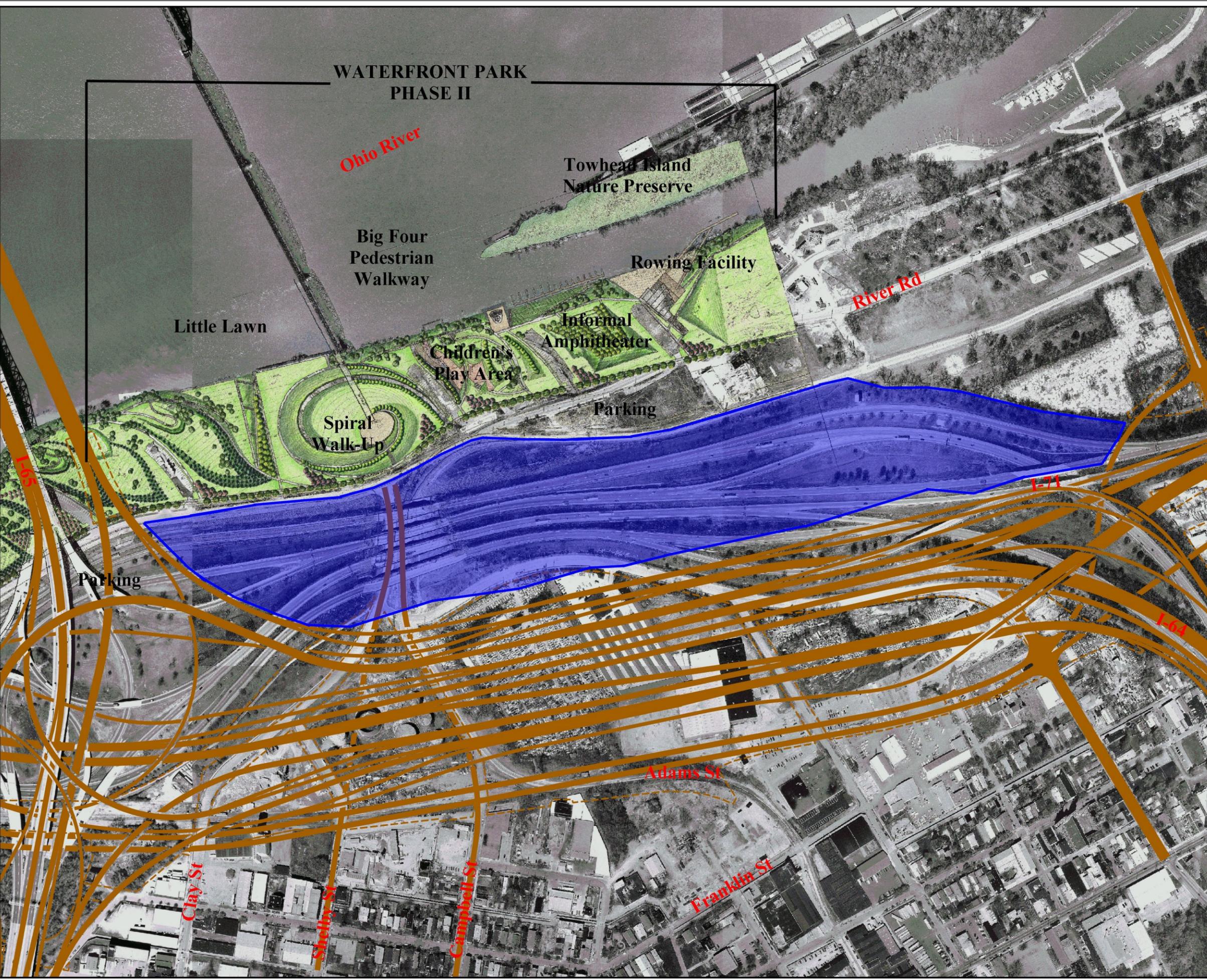
- - - Kennedy Interchange Relocated
- - - Kennedy Interchange In-Place

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WATERFRONT PARK AND EXTREME SPORTS COMPLEX WITH ALIGNMENT C3

0 800'

FIGURE 6.2-28



LEGEND

Surplus Land

Alignment

C1 and Kennedy Interchange Relocated

Right-of-Way

C1 and Kennedy Interchange Relocated

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**SURPLUS LAND ASSOCIATED WITH THE
COMPLETION OF THE PROJECT**

Although Alternative C-2 itself would not use any property from the Waterfront Park, reconstruction of the Kennedy Interchange (which is included with all downtown alternatives) would impact land from the park. Both the **Relocated** and the In-Place interchange options would require widening of existing I-64 where it crosses the west end of the park. Also, Alternative C-2 would use property from three Section 4(f) properties not impacted by **Alternative C-1** (Colgate-Palmolive Historic District, Ohio Falls Car and Locomotive Historic District, and West Main/10th Street Manufacturing Historic District). As noted previously, either interchange reconstruction (both In-Place and **Relocated options**) would use land from the park; therefore, a shift of the alternatives (Alternatives **C-1**, C-2 or C-3) would not avoid use of the park. A shift of the interchange and connecting roads (either option) east or west would not reduce park impacts, and a shift to the north would have greater impacts to the park. As noted previously, a shift of the interchange and connecting roads farther to the south would have substantially greater impacts to the historic structures and districts in the downtown area. Other design alternatives such as a reduced facility, retaining walls, etc., also would not avoid the park.

The **Relocated option** for reconstructing the Kennedy Interchange would impact less total acreage of park property (4.1 acres) than the In-Place option (4.2 acres), and would have less impact on park facilities. The In-Place option would require the relocation of River Road to accommodate reconstruction of the I-64 to Third Street off-ramp. This relocation of River Road would also require 0.1 acre of temporary right-of-way (in addition to the 1.1 acres of permanent right-of-way included in the 4.2 acres impacted) from Waterfront Park to reconstruct its parking lot entrance and would require the removal of 16 of 71 parking spaces from the parking lot.

Relocation of the interchange would allow for elimination of the numerous left-hand entrances and exits, difficult weaves, and conflict points that are part of the current Kennedy Interchange, and which have led the interchange to be known commonly as “Spaghetti Junction.” Currently, I-64 through traffic, which is not destined for downtown Louisville, must merge and weave with downtown oriented I-65 and I-71 traffic. The Kennedy Interchange **Relocation** would allow I-64 through traffic to pass through the interchange without encountering the numerous conflict points in the current interchange. All merging and diverging activities would take place on collector-distributor roads away from mainline roadway traffic, where they would not interfere with the flow of traffic through the interchange. These improvements would help to reduce congestion, improve safety in the Kennedy Interchange and would reduce the number of “conflict points” where crashes are more likely to occur.

The In-Place reconstruction of the Kennedy Interchange would not provide the same improvements and would not alleviate the unsatisfactory operating conditions associated with the difficult merges and weaving sections in the current interchange. Because the interchange would be reconstructed In-Place, requiring the maintenance of traffic operations while construction proceeded, a wholesale reconstruction of the Kennedy Interchange would not be possible. Thus, while improving some current conditions, an In-Place reconstruction would not eliminate all of the left-hand exits and entrances or complex weaving movements found in the current interchange. This would adversely impact I-64 through traffic route continuity and contribute to additional congestion and safety problems. By 2025, average peak hour speeds in the Kennedy Interchange are projected to be 5 mph less than under the Kennedy Interchange **Relocation option**. This significant decrease in the efficiency of the Kennedy Interchange would result in significantly greater congestion and delays, which would likely spill over onto adjacent

roadways, including the Kennedy Bridge. Thus, while providing some short-term benefit, the In-Place reconstruction of the Kennedy Interchange would not provide a long-term solution to the Kennedy Interchange deficiencies.

Consequently, the In-Place option would not meet the purpose and need for the project as outlined in Chapter 2 and, therefore, is not a feasible and prudent alternative for reconstruction of the Kennedy Interchange. Since the impacts to the Waterfront Park are due to the connecting ramps to existing I-64, shifting the interchange in any direction would not avoid use of the park property.

Reconstruction of the Kennedy Interchange has been a need for many years. The existing railroad and railroad bridge across the Ohio at the time of the original construction of the Kennedy Interchange resulted in substandard geometry that, coupled with short weaving sections and merge sections, causes severe congestion and an injury crash rate much higher than the statewide average. Delays for the motoring public has continued to grow, resulting in higher user costs and added pressure on the air quality of the region.

Reconstruction of the Kennedy Interchange is included as part of all the build alternatives, therefore, the only avoidance alternatives would be the No-Action Alternative and the Transportation Management Alternative. As discussed previously, neither of these alternatives alone would sufficiently meet the purpose and need of the project.

Measures to Minimize Harm

Alternative C-1 would be built over currently undeveloped (although planned) park property which is presently being used for industrial purposes (asphalt transfer facility), and has been located as close as practicable to the existing I-65 crossing to minimize impacts to the planned park property. The planned park would be spanned by bridge to allow access underneath the bridge between the existing park and the planned park. The Louisville Waterfront Development Corporation, which is responsible for the development and maintenance of this park, has gone on record as strongly supporting **Alternative C-1**, indicating that Alternative C-3 "...would cause major landscape changes in a portion of Waterfront Park that is already constructed..."

Approximately 40-45 acres within the existing interchange located adjacent to Waterfront Park will be available for re-use once the **Relocated Kennedy Interchange** is completed. These 40-45 acres will be provided for public use to the Waterfront Development Corporation through the Louisville-Jefferson County Metro Government in accordance with 23 CFR 710.403. This requires that KYTC evaluate the environmental effects of disposal and leasing actions requiring FHWA approval as provided in 23 CFR Part 771. In accordance with 23 CFR 710.409(d), the deed of conveyance shall provide for a reversion of the property, should it not continue in public ownership and use.

Fifteen (15) of these 40-45 acres will be donated for inclusion into Waterfront Park as mitigation for all park properties impacted by **Alternative C-1** and the **Relocated Kennedy Interchange**. The remaining approximate 30 acres will also be made available to the Waterfront Development Corporation through the Louisville-Jefferson County Metro Government. The activities for public use of these 40-45 acres will be determined in accordance with a comprehensive study of the

Waterfront Park and its relationship to east downtown Louisville conducted by the Louisville-Jefferson County Metro Government. This study will be coordinated with the historic preservation plans being developed in accordance with the MOA executed under the Section 106 of the Historic Preservation Act. After the relocated Kennedy Interchange is completed, the pavement and structures within these 40-45 acres will be removed prior to transferring of the property unless otherwise requested by the Louisville-Jefferson County Metro Government and the Waterfront Development Corporation. The bridge will be designed to aesthetically compliment the existing landscape. Vegetative screening will be incorporated, as appropriate, into the design to decrease the amount of visual impacts upon the park.

Coordination

The project was coordinated with the Louisville-Jefferson County Metro Government and the Louisville Waterfront Development Corporation to insure compatibility of the project with the current and planned facilities. Their information and input was used to develop alignments that would minimize impacts to the park facilities.

Conclusion

Based on the above considerations, there is no feasible and prudent alternative to the use of land from Waterfront Park, and the proposed action includes all possible planning to minimize harm to Waterfront Park resulting from such use.

Extreme Sports Complex (KD-PR-13) – Kentucky

The Extreme Sports Complex is approximately 2.0 acres in size, and is located at the Clay Street and Witherspoon Street intersection. The first phase has now been completed. When fully implemented, the park will provide skateboarding, roller-blading, and stunt biking opportunities for people of all ages. Its central location makes the park accessible from all parts of the community by vehicular and pedestrian means. The project includes a multi-purpose path and convenience station to connect and serve the Riverwalk (a 6 mile bike/pedestrian path that extends from downtown to west Louisville), the Beargrass Creek Trail (a 3.7 mile bike/pedestrian path that extends from downtown to east Louisville), and the Butchertown bike way (and neighborhood), as well as the new Extreme Sports Complex. The Extreme Sports Complex is owned by the city of Louisville. The complex and its relationship to the downtown alternatives are shown on Figures 6.2-26, 6.2-27 and 6.2-28. The facilities that will be provided by this complex are unique from those provided by other parks and recreational areas in the vicinity, and will add to the variety of recreational opportunities available in the Downtown area.

Impacts

Either option of reconstructing the Kennedy Interchange (In-Place or **Relocated**) would span over the complex; however, bridge support piers for either option would encroach into the site. Extensive coordination was conducted with the city of Louisville to ensure compatibility of the interchange design with the proposed facilities, and the facilities were designed so that the bridge support piers would not interfere with the operation of the complex. The **Relocated option** would span 1.8 acres of the 2.0 acre Extreme Sports Complex site, and the In-Place option would span 1.3 acres of the site. Six bridge support piers for the **Relocated option** would be within the complex,

using approximately 0.098 acre of the 2.0 acre site, while 7 piers for the In-Place option would use approximately 0.117 acre. Visual impacts would be minor since the site is adjacent to the existing interchange. Traffic noise levels for the **Relocated option** are projected to be approximately 77 dBA at this property by the year 2025, which would be an increase of approximately 9 dBA over existing noise levels and an increase of approximately 2 dBA over No-Build noise levels. Traffic noise levels for the In-Place option are projected to be approximately 76 dBA at this property by the year 2025, which would be an increase of approximately 8 dBA over existing noise levels and approximately 1 dBA over No-Build noise levels.

Photograph 1
*View looking southeast
toward the Extreme Sports
Complex from I-65.*



Avoidance Alternatives

The bridges spanning the complex are connecting I-71 and I-64 with I-65 South. Due to the proximity of the Extreme Sports Complex to I-65, shifting the interchange would not avoid the complex, plus there are other Section 4(f) properties in either direction of the interchange. The proposed **Relocated Kennedy Interchange** has been located to minimize impacts to Section 4(f) properties. The interchange is at the junction of three interstate highways (I-65, I-64 and I-71), and it is not feasible to relocate the interchange far enough to avoid all of the Section 4(f) properties in the Downtown area. Other design alternatives such as a reduced facility, retaining walls, etc., also would not avoid the park.

Reconstruction of the Kennedy Interchange has been a need for many years. The existing railroad and railroad bridge across the Ohio at the time of the original construction of the Kennedy Interchange resulted in substandard geometry that, coupled with short weaving sections and merge sections, causes severe congestion and an injury accident rate much higher than the statewide average. Delays for the motoring public has continued to grow, resulting in higher user costs and added pressure on the air quality of the region.

The only avoidance alternatives would be the No-Action Alternative and the Transportation Management Alternative and, as previously discussed, neither of these alternatives alone would sufficiently meet the purpose and need of the project.

Measures to Minimize Harm

The project was coordinated with the city of Louisville during the planning for the Extreme Sports Complex to maximize the compatibility of the interchange with the complex. Based on that coordination, the ramps and structures have been located so they would minimize impacts to the proposed facility. The city of Louisville had the Extreme Sports Complex designed so that bridge support piers for the **Relocated option** would not interfere with the facilities and activities of the complex. Piers for the In-Place option, however, would conflict with future planned facilities for the complex. Reconstructing the Kennedy Interchange In-Place would span slightly less park property than the **Relocated option**: 1.3 acres versus 1.8 acres. The In-Place option would have 7 piers within the complex using approximately 0.117 acres, while the **Relocated option** would have 6 piers within the complex using approximately 0.098 acres. The In-Place option would also have greater impacts to Waterfront Park, another Section 4(f) property; and would have greater overall Section 4(f) impacts than the **Relocated option**.

Also, as noted previously, traffic operations would not be satisfactory with the In-Place option. In-Place reconstruction of the Kennedy Interchange would not provide a long-term solution to the Kennedy Interchange deficiencies.

Coordination

As noted previously, the project was coordinated extensively with the city of Louisville, resulting in compatibility of the interchange with the complex. Since planning for the Extreme Sports Complex began while planning for the project was in the preliminary design stage, the two plans were able to be coordinated for maximum compatibility.

Conclusion

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the Extreme Sports Complex, and the proposed action includes all possible planning to minimize harm to Extreme Sports Complex resulting from such use.

6.3 COORDINATION

This project has been coordinated with the agencies and officials having jurisdiction over the Section 4(f) resources that would be impacted. Agency coordination is described in Chapter 7 of the FEIS. Archaeological and historical reports were coordinated with the IN and KY SHPOs for determination of eligibility and assessment of impacts. Parks, refuges and recreation areas were coordinated with the agencies and officials having jurisdiction over each resource. In addition to formal coordination meetings, there were numerous informal meetings, discussions and telephone conversations with local officials and park representatives to solicit information and concerns about individual resources.

A summary of the formal Coordination efforts follows.

1. Federal Stakeholders Executive Briefing of October 6, 1998

The following agencies with jurisdiction over Section 4(f) resources were in attendance at this briefing.

- a. KY SHPO - David Morgan
- b. National Register of Historic Preservation - Linda McClelland

2. Early Coordination

Early Coordination was initiated in December 1998. The following agencies with jurisdiction over Section 4(f) resources were contacted. Specific responses and correspondence related to Section 4(f) resources are listed below by date of comments. A copy of each response is included in Appendix C.

- a. U.S. National Park Service - February 11, 1999
- b. USACE - February 2, 1999
- c. IN SHPO
 1. January 6, 1999
 2. April 5, 1999
 3. April 15, 1999
 4. August 9, 1999
 5. February 16, 2000
 6. June 12, 2000
 7. August 14, 2000
 8. August 15, 2000/August 16, 2000
 9. August 22, 2000
 10. December 1, 2000
 11. April 11, 2001
 12. April 18, 2001
 13. August 30, 2001
- d. KY SHPO
 1. November 5, 1999
 2. November 29, 1999
 3. December 22, 1999
 4. August 18, 2000
 5. February 6, 2001
 6. February 20, 2001
 7. May 21, 2001
 8. June 18, 2001
 9. August 20, 2001
- e. Louisville Waterfront Development Corporation - June 14, 2000
- f. Early coordination was also initiated with the various city, county and other local officials, agencies and organizations within the project area. A detailed description of agency coordination and public involvement activities is included in Chapter 7.

3. Agency Scoping Meeting of September 8, 1999

- a. Attendance at the Agency Scoping Meeting included a representative from one agency with jurisdiction over Section 4(f) resources: the Kentucky State Nature Preserves Commission (KSNPC). Their correspondence (dated September 3, 1999) related to Section 4(f) resources is included in Appendix C.

4. Ohio River Greenway Commission Coordination Meeting of August 24, 1999

A meeting was held with representatives of the Commission to coordinate development of the Greenway with this project.

5. Review of Draft Section 4(f) Evaluation

The Draft Section 4(f) Evaluation was distributed as part of the DEIS. As part of that distribution, the following agencies and officials with jurisdiction over Section 4(f) properties were provided the opportunity to review and comment on the Draft Section 4(f) Evaluation:

- a. Advisory Council on Historic Preservation
- b. U. S. Department of Interior
- c. Kentucky Natural Resources and Environmental Protection Cabinet
- d. KY SHPO
- e. IDEM
- f. IDNR
- g. IN SHPO
- h. USACE
- i. City of Louisville, Kentucky
- j. City of Jeffersonville, Indiana
- k. Louisville Waterfront Development Corporation
- l. Ohio River Greenway Commission

Comments received on the Draft Section 4(f) Evaluation have been incorporated, as appropriate, into the Final Section 4(f) Evaluation. Extensive coordination was accomplished with the SHPOS regarding mitigation in the Section 106 process. It is detailed in Chapters 4.3, 5.3 and the MOA.

6.4 SECTION 4(f) LEAST HARM ANALYSIS

6.4.1 Comparison of Alternatives

This section summarizes and compares the Section 4(f) impacts of each alternative evaluated in the Section 4(f) Evaluation, and leads to a determination of the feasible and prudent alternative with the least harm to Section 4(f) properties. Table 6.4-1 presents the comparison of alternatives, showing both numbers of properties used and degree of harm.

No-Action Alternative

The No-Action Alternative would result in no use of any Section 4(f) properties; however, it would do nothing toward meeting the purpose and need for this project. The No-Action Alternative would not provide adequate transportation facilities for the existing and planned growth in population and employment in the Downtown area and in eastern Jefferson and southeastern Clark Counties; would not reduce traffic congestion on the Kennedy Bridge and in the Kennedy Interchange; would not reduce traffic safety problems in the Kennedy Interchange and on the Kennedy Bridge and its approach roadways; would not provide cross-river transportation system linkage and freeway rerouting opportunities in the eastern portion of the LMA; and would not be consistent with the locally-adopted transportation plan that calls for two new bridges across the Ohio River and reconstruction of the Kennedy Interchange.

**TABLE 6.4-1
SUMMARY OF SECTION 4(f) IMPACTS BY ALTERNATIVE**

EAST END ALTERNATIVES	RESOURCE NAME	RESOURCE SIZE (ACRES)	AMOUNT OF USE (ACRES)	IMPACTS
A-2	Swartz Farm Rural Historic District	203	57.3	Farmland, SplitsFarm, Central Passage
	Crowfoot	4.9	0.5	Land only, No Structures
	Fincastle	143	14.1	Land only, No Structures
A-9	Swartz Farm Rural Historic District	203	56.4	Farmland, SplitsFarm, Central Passage
	Country Estates Historic District	729.4	13.1	Land only, No Structures
	James A. Smith Farm	8.3	0.3	Impacts Access Lane
	Six Mile Island Nature Preserve	305.2	4.3	Buffer Zone of Island
A-13	Swartz Farm Rural Historic District	203	55.4	Farmland, SplitsFarm, Central Passage
A-15	Swartz Farm Rural Historic District	203	55.4	Farmland, SplitsFarm, Central Passage
A-16	Swartz Farm Rural Historic District	203	55.4	Farmland, SplitsFarm, Central Passage
B-1	Swartz Farm Rural Historic District	203	60.2	Farmland, Close to Structures
	Dellinger Farm	128.5	4.0	Strip of Farmland, Edge of Farm
	Midlands	8.6	4.4	Over Half of Property, Severe Impact
	River Hills/Stonebridge Historic District	101	6.0	Displaces Two Structures
DOWNTOWN ALTERNATIVES	RESOURCE NAME	RESOURCE SIZE (ACRES)	AMOUNT OF USE (ACRES)	IMPACTS
C-1	Old Jeffersonville Historic District	192.2	3.0	Five Contributing Structures
	George Rogers Clark Memorial Bridge	N/A	0.1	Requires Moving Pylons
	Greenway Corridor/Riverfront Park	170.3	0.031	Spans over 0.4 acre, Land only, No Facilities
	Waterfront Park	55.1	0.050	Spans over 1.2 acres of Undeveloped, Planned Park
C-2	Colgate-Palmolive Historic District	19.5	1.4	One Contributing Structure
	Ohio Falls Car and Locomotive Historic District	30.1	0.9	One Contributing Structure
	West Main/10th Street Manufacturing District	5.7	1.5	Takes Three Structures
	George Rogers Clark Memorial Bridge	N/A	0.1	Requires Moving Pylons
	Greenway Corridor/Ashland Park	170.3	0.031	Spans over 1.1 acres, Land only, No Facilities
C-3	George Rogers Clark Memorial Bridge	N/A	0.1	Requires Moving Pylons
	Greenway Corridor	170.3	0.031	Spans over 1.0 acre, Land only, No Facilities
	Waterfront Park	55.1	0.050	Spans over 2.8 acres of Developed Recreation Area
KENNEDY INTERCHANGE	RESOURCE NAME	RESOURCE SIZE (ACRES)	AMOUNT OF USE (ACRES)	IMPACTS
In-Place Option	Phoenix Hill Historic District	142	2.2	Two Contributing Structures
	Butchertown Historic District	197.9	1.23	One Contributing Structure
	Waterfront Park	55.1	1.217	Spans over / impacts 4.2 acres, Recreation Area, Parking Lot
	Extreme Sports Complex	2.0	0.117	Spans Over the Complex on Bridge, x Piers within Complex using 0.117 acre
Relocated Option	Phoenix Hill Historic District	142	2.2	Two Contributing Structures
	Butchertown Historic District	197.9	1.29	One Contributing Structures
	Waterfront Park	55.1	0.171	Spans over 4.1 acres. Impacted area not currently used as park, 45 Acres will be made available
	Extreme Sports Complex	2.0	0.098	Spans Over the Complex on Bridge, Six Piers within Complex using 0.098 acre

The No-Action Alternative would not meet the purpose and need for this project as outlined in Chapter 2 and, therefore, is not a feasible and prudent alternative.

Transportation Management Alternative

The Transportation Management Alternative, as described in detail in Chapter 3, includes non-motorized facility enhancements, employer-based trip reduction programs, expanded Intelligent Transportation System applications and incident management, and enhanced bus service. The Transportation Management Alternative would result in no use of any Section 4(f) properties. The Transportation Management Alternative would have some benefits to the transportation system, and it is included as a part of each of the build alternatives. The Transportation Management Alternative by itself, however, would not sufficiently meet the purpose and need for the project. It would not provide adequate transportation facilities for the existing and planned growth in population and employment in the Downtown area and in eastern Jefferson and southeastern Clark Counties; would not resolve traffic congestion on the Kennedy Bridge and in the Kennedy Interchange; would not resolve traffic safety problems in the Kennedy Interchange and on the Kennedy Bridge and its approach roadways; would not provide cross-river transportation system linkage and freeway rerouting opportunities in the eastern portion of the metropolitan area; and would not be consistent with the locally-adopted transportation plan that calls for two new bridges across the Ohio River and reconstruction of the Kennedy Interchange. The Transportation Management Alternative, by itself, would not meet the purpose and need for this project and, therefore, is not a feasible and prudent alternative.

One Bridge/Highway Alternative

The One Bridge/Highway Alternative consists of building one bridge across the Ohio River (with highway connections to the existing facilities) either downtown or on the eastern end of the metropolitan area, and reconstructing the Kennedy Interchange. As noted in Chapter 3, pages 3-49 through 3-69, the One Bridge/Highway Alternative would not sufficiently meet all of the needs identified in Chapter 2 so as to constitute a feasible and prudent long-term solution to the region's cross-river mobility needs. With any of the One Bridge/Highway Alternatives, the total cross-river demand-to-capacity ratio would once again be near or above 100 percent by the year 2025, meaning that additional improvements would once again be necessary. The One Bridge/Highway Alternative would not sufficiently resolve the congestion on the Kennedy Bridge and Kennedy Interchange. LOS provides a measure of congestion on a particular roadway segment. LOS range from A to F, with LOS A indicating the least congestion and best traffic flow, and LOS F indicating the most congestion and worst traffic flow. The LOS on the Kennedy Bridge would remain at E for the One Bridge/Highway Alternative (Downtown), and would only improve to D for the One Bridge/Highway Alternative (East End). The One Bridge/Highway Alternative would also not solve the traffic safety problems in the Kennedy Interchange and on the Kennedy Bridge and approach roadways. The Kennedy Interchange and Kennedy Bridge have a history of high crash rates. Traffic congestion is a contributor to those high crash rates, and the One Bridge/Highway Alternative would not reduce congestion sufficiently to resolve the traffic safety problems on those facilities. The inadequacy of the One Bridge/Highway Alternative is discussed in more detail in Section 3.6. The One

Bridge/Highway Alternative would not sufficiently meet all of the needs for this project and, therefore, is not a feasible and prudent alternative.

Two Bridge/Highway Alternatives

The Two Bridge/Highway Alternative consists of a combination of building one bridge across the Ohio River Downtown (with highway connections to the existing facility), building one bridge across the Ohio River on the East End (with connecting highways to the existing facility), and reconstructing the Kennedy Interchange. The Two Bridges/Highway Alternative provides the greatest improvement to cross-river mobility and best satisfies the needs identified in Chapter 2. None of the other alternatives (Single Bridge/Highway, Transportation Management, or No-Action) sufficiently meets all of the needs identified in Chapter 2 so as to constitute a feasible and prudent long-term solution to the region's cross-river mobility needs. The Two Bridges/Highway Alternative provides the greatest improvements in the efficiency of the transportation system, as measured by total vehicle hours of travel, miles of travel, and hours of delay. The Two Bridges/Highway Alternative is the only option that provides sufficient cross-river capacity to meet the region's long-term needs. With any of the Single Bridge/Highway Alternatives, the total cross-river demand-to-capacity ratio would once again be near or above 100 percent by 2025; meaning that the capacity of the Ohio River bridges to efficiently handle cross-river travel demand would have been reached and additional improvements would once again be necessary. In contrast, the Two Bridges/Highway Alternatives reduce that ratio to between 78 percent and 81 percent, providing additional capacity and a longer-term solution to the area's cross-river mobility needs. The Two Bridges/Highway Alternative also provides the greatest improvements to the Kennedy Bridge and the Kennedy Interchange. The performance of the Kennedy Bridge (I-65 crossing), as measured by demand-to-capacity ratios and LOS, would be improved the most by the Two Bridges/Highway Alternatives. Similarly, average peak hour speeds and hours of delay in the Kennedy Interchange would be improved the most under the two-bridge options.

This Section 4(f) Evaluation evaluated six alternatives on the East End, three alternatives in the Downtown, and two alternatives for reconstructing the Kennedy Interchange. To arrive at the combination that collectively has the least harm to Section 4(f) properties, alternatives for each of the three elements were evaluated and compared. Following is a summary of the Section 4(f) impacts for each alternative within each element.

Section 6.2 describes each potentially impacted Section 4(f) property, and also discusses avoidance and minimization considerations for each property with each alternative. Those descriptions and discussions are not repeated here.

East End Alternatives:

Alternative A-2 would use property from three Section 4(f) properties: the Swartz Farm Rural Historic District in Indiana and the Crowfoot and Fincastle properties in Kentucky. Alternative A-2 would require 57.3 acres of the Swartz Farm Rural Historic District; would split the Swartz Farm and would displace the Central Passage House. Alternative A-2 would require relocation of a portion of the farm lane, but would not impact the seasonal ford or the farm pond. It would

require 0.5 acre from the Crowfoot property and 14.1 acres from the Fincastle property, but would not impact the house on either property.

Alternative A-9 would use property from four Section 4(f) properties: the Swartz Farm Rural Historic District and the James A. Smith Farm in Indiana, the Six Mile Island Nature Preserve, and the Country Estates Historic District in Kentucky. Alternative A-9 would use 56.4 acres of the Swartz Farm Rural Historic District; would split the Swartz Farm and would displace the Central Passage House. Alternative A-9 would require relocation of a portion of the farm lane, but would not impact the seasonal ford or the farm pond on the Swartz Farm. Alternative A-9 would use 13.1 acres of property from the Country Estates Historic District (Shady Brook Farm). It would use 0.3 acres from the James A. Smith Farm, and would require the access lane to be relocated. Alternative A-9 would use 4.3 acres of the Six Mile Island Nature Preserve, passing through the buffer area northeast of the island.

Alternative A-13 would use property from one Section 4(f) property: the Swartz Farm Rural Historic District. Alternative A-13 would use 55.4 acres of the Swartz Farm Rural Historic District; would split the District and would displace the Central Passage House. Alternative A-13 would require relocation of a portion of the farm lane, but would not impact the seasonal ford or the farm pond on the Swartz Farm. Alternative A-13 would tunnel underneath the Drumanard property, minimizing impacts and avoiding use of the property.

Alternative A-15 would use property from one Section 4(f) property: the Swartz Farm Rural Historic District. **Alternative A-15** would use 55.4 acres of the Swartz Farm Rural Historic District; would split the District and would displace the Central Passage House. **Alternative A-15** would require relocation of a portion of the farm lane, but would not impact the seasonal ford or the farm pond on the Swartz Farm. **Alternative A-15** would tunnel underneath the Drumanard property, minimizing impacts and avoiding use of the property.

Alternative A-16 would use property from one Section 4(f) property: the Swartz Farm Rural Historic District. Alternative A-16 would use 55.4 acres of the Swartz Farm Rural Historic District; would split the District and would displace the Central Passage House. Alternative A-16 would require relocation of a portion of the farm lane, but would not impact the seasonal ford or the farm pond on the Swartz Farm. Alternative A-16 would have the greatest ecological impact of all the alternatives evaluated. Alternative A-16 would cross Harrods Creek three times and would have substantial impacts to the creek and surrounding area, which is a sensitive ecological resource. The USEPA's letter commenting on the DEIS indicated that this alternative would have the highest relative impact on wildlife/habitat of all the alternatives evaluated and rated Alternative A-16 as EO-2, indicating that they have environmental objections to this alternative.

Alternative B-1 would use property from four Section 4(f) properties: the Swartz Farm Rural Historic District and the Dellinger Farm in Indiana, and the Midlands and the River Hills/Stonebridge Historic District in Kentucky. Alternative B-1 would use 60.2 acres from the Swartz Farm Rural Historic District, taking property and one outbuilding (barn) from the Swartz Farm and from the Swartz-Voight Marble House property. Alternative B-1 would use 4.0 acres of farmland from the Dellinger Farm. It would use 4.4 acres (over half of the 8.6 total acres) of

the Midlands property. Alternative B-1 would use 6.0 acres and displace two structures from the River Hills/Stonebridge Historic District.

Comparison of East End Alternatives: Alternatives A-13, **A-15** and A-16 would use property from only one Section 4(f) property – the Swartz Farm Rural Historic District. Use of the property would consist of converting farmland and splitting the farm property, and would use (including the interchange reconfiguration) approximately 55.4 acres of farm property. These alternatives would require relocation of a portion of the farm lane, but would not impact the seasonal ford or the farm pond on the Swartz Farm. The farmhouse and outbuildings of the Swartz Farm Rural Historic District would not be directly impacted, but would be separated from a portion of the farm property. The Central Passage House would be displaced. The Central Passage House property lacks integrity of the main farmstead and existing defining features, but is considered an element in the rural historic district. All of the other Far East (A) alternatives and the Near East alternative (Alternative B-1) would also have a similar use of the Swartz Farm Rural Historic District property, but each would also use property from at least two or more other Section 4(f) properties. Alternative A-2 would use property from Crowfoot and Fincastle. Alternative A-9 would use property from the Country Estates Historic District, the James A. Smith Farmstead and Six Mile Island Nature Preserve. The Near East alternative, Alternative B-1, would use property from three other Section 4(f) properties: the Dellinger Farm, the River Hills/Stonebridge Historic District and the Midlands. The comparison of Section 4(f) impacts by alternative is presented in Table 6.4-1 on the next page.

The comparison of Section 4(f) uses demonstrates that Alternatives A-13, **A-15** and A-16 are the East End alternatives with the least harm to Section 4(f) properties. Each would use property from only one Section 4(f) property: the Swartz Farm Rural Historic District. Because these alternatives are common where they cross the Swartz Farm Rural Historic District, each would use the same amount of property and would have the same impacts on the District. Alternative A-16 would have substantially greater ecological impacts (as noted on the previous page) than the other two, and Alternative A-13 would have greater community impacts (to Utica) than the other two. Alternative A-13 traverses near the edge of Utica. **Alternative A-15** was developed in part to reduce impacts to the Utica community. **Alternative A-15** avoids the Utica community, resulting in 10 fewer displacements than Alternative A-13.

Conclusion for East End Alternatives: For the eastern bridge, **Alternative A-15** was determined to be the feasible and prudent alternative with the least harm to Section 4(f) Properties and with the least overall environmental impacts. Mitigation measures have been proposed at each property from which a Section 4(f) use occurs. These measures are intended to minimize the encroachment of **Alternative A-15** to the greatest extent possible on each resource.

Downtown Alternatives:

Alternative C-1 would use property from four Section 4(f) properties: the Old Jeffersonville Historic District, the George Rogers Clark Memorial Bridge, and the Greenway Corridor/Riverfront Park in Indiana, and the Waterfront Park in Kentucky. **Alternative C-1** would use 3.0 acres of property from the Old Jeffersonville Historic District, displacing five contributing structures and three non-contributing structures. Two of the five displaced

contributing structures and the three non-contributing structures are in need of repair. The five contributing structures would be relocated within the District and restored. **Alternative C-1** would use 0.1 acre of the property associated with the George Rogers Clark Memorial Bridge, requiring the pylons to be moved (but retained). It would span over 0.4 acre of property from Riverfront Park, which is included in the Greenway Corridor. Preliminary bridge layouts indicate that bridge supports for **Alternative C-1** would use approximately 0.031 acres of Riverfront Park. **Alternative C-1** would also span over 1.2 acres of undeveloped property from planned Phase II of Waterfront Park. Preliminary bridge layouts indicate that bridge supports for **Alternative C-1** would use approximately 0.050 acres of the future Waterfront Park property. The undeveloped land is currently being used as an asphalt transfer facility.

Alternative C-2 would use property from five Section 4(f) properties: the Colgate-Palmolive Historic District, the Ohio Falls Car and Locomotive Historic District, the George Rogers Clark Memorial Bridge and the Greenway Corridor/Ashland Park in Indiana, and the West Main/10th Street Manufacturing District in Kentucky. Alternative C-2 would use 1.4 acres of the Colgate-Palmolive Historic District, including one contributing structure. It would use 0.9 acre of the Ohio Falls Car and Locomotive Historic District, displacing one contributing structure. Alternative C-2 would use 1.5 acres and would displace three structures from the West Main/10th Street Manufacturing District. It would use 0.1 acre of property associated with the George Rogers Clark Memorial Bridge, requiring the pylons to be moved (but retained). Alternative C-2 would also span over 1.1 acres of the Greenway Corridor, including 0.9 acre of Ashland Park. Preliminary bridge layouts indicate that bridge supports for Alternative C-2 would use approximately 0.050 acres of park property.

Alternative C-3 would use property from three Section 4(f) properties: the Greenway Corridor and the George Rogers Clark Memorial bridge in Indiana, and the Waterfront Park in Kentucky. Alternative C-3 would span over 1.0 acre of the Greenway Corridor. Preliminary bridge layouts indicate that bridge supports for Alternative C-3 would use approximately 0.050 acres of the Greenway Corridor. It would use 0.1 acre of the property associated with the George Rogers Clark Memorial Bridge, requiring the pylons to be moved (but retained). And it would use 2.8 acres of a developed recreation area of Waterfront Park. Preliminary bridge layouts indicate that bridge supports for Alternative C-3 would use approximately 0.050 acres of the developed recreation area.

Comparison of Downtown Alternatives: Of the downtown alternatives, Alternative C-2 would have the most Section 4(f) impacts, using property from five Section 4(f) resources: 1.4 acres and one structure from the Colgate-Palmolive Historic District, 0.9 acre and one structure from Ohio Falls Car and Locomotive Historic District, 1.5 acres from the West Main Street/10th Street Historic District including the two-story brick New Enterprise Tobacco Warehouse and two other structures, and would impact 1.1 acres of the Greenway Corridor/Ashland Park, including a use of approximately 0.031 acres due to bridge support piers located within the park. Alternative C-3 would impact 1.0 acre of the Greenway Corridor, including a use of approximately 0.050 acres due to bridge support piers located within the park. Alternative C-3 would also span approximately 2.8 acres of a developed recreation area from Waterfront Park, including a use of approximately 0.050 acres due to bridge support piers located within the park. **Alternative C-1** would use 3.0 acres from the Old Jeffersonville Historic District. Five contributing structures

and three non-contributing structures in the District would be displaced. The impacts would be mitigated by relocating and restoring the five contributing structures onto vacant properties within the district. Two of the contributing structures that would be displaced are in need of repair, as are the three non-contributing structures. **Alternative C-1** would also impact 0.4 acre from Riverfront Park/Greenway Corridor (common at the point of crossing), including a use of approximately 0.031 acres due to bridge support piers located within the park. **Alternative C-1** would impact and 1.2 acres from an undeveloped portion of planned Phase II of Waterfront Park (which is currently being used as an asphalt transfer facility), including a use of approximately 0.050 acres due to bridge support piers located within the undeveloped portion of the planned park. Each of the Downtown alternatives would have the same impact to the George Rogers Clark Memorial Bridge. Each would use 0.1 acre of property and would require moving of the pylons.

While **Alternative C-1** would use slightly more total acreage of Section 4(f) properties than **Alternative C-3**, the overall impacts to Section 4(f) properties would be less for **Alternative C-1**. The impacts of **Alternative C-1** to the Old Jeffersonville Historic District would be mitigated by the relocation and restoration of the five contributing structures to vacant parcels within the District. The five structures are immediately adjacent to existing I-65, and two of the structures are in need of repair. The two structures in need of repair would benefit from restoration. The portion of Waterfront Park that would be used by **Alternative C-3** has been developed and is currently being used for recreation. The linear park and children's playground are used for recreation and the Great Lawn is the center of many major events drawing large crowds to downtown Louisville. **Alternative C-1** uses land that is shown in the future plans for Waterfront Park, but is currently being used as an asphalt transfer facility. This land is further from the Downtown core, planned for a less intense use than the park area downstream of the existing Kennedy Bridge, and requires remediation before it can be converted to an active part of the park. The Louisville Waterfront Development Corporation, which is responsible for the development and maintenance of this park, has gone on record as strongly supporting **Alternative C-1**, indicating that **Alternative C-3** "...would cause major landscape changes in a portion of Waterfront Park that is already constructed..." Based on the above information, **Alternative C-3** would have greater overall impacts to Section 4(f) properties than **Alternative C-1**. In addition, **Alternative C-3** would require 255 total relocations, including 180 residential units and 75 businesses and non-profit organizations (compared to 53 total relocations for **Alternative C-1**). The extremely high numbers of relocations for **Alternative C-3**, combined with its Section 4(f) impacts, make **Alternative C-3** not feasible and prudent.

Conclusion for Downtown Alternatives: For the downtown bridge, **Alternative C-1** was determined to be the feasible and prudent alternative with the least harm to Section 4(f) properties. Mitigation measures have been proposed at each property from which a Section 4(f) use occurs. These measures are intended to minimize the encroachment of **Alternative C-1** to the greatest extent possible on each resource.

Reconstruction of Kennedy Interchange:

The In-Place option for reconstruction of the Kennedy Interchange would use property from four Section 4(f) properties in Kentucky: the Phoenix Hill Historic District, the Butchertown Historic

District, the Waterfront Park and the Extreme Sports Complex. The In-Place option would use 2.2 acres from the Phoenix Hill Historic District, and would displace two contributing structures. It would use 1.23 acres of property from the Butchertown Historic District, displacing one contributing structure. The In-Place option would use 4.2 acres from Waterfront Park, including 1.1 acres that would be required for the relocation of River Road to accommodate reconstruction of the I-64 to Third Street off-ramp. This relocation of River Road would also require 0.1 acre of temporary right-of-way from Waterfront Park to reconstruct their parking lot entrance and would require the removal of 16 of 71 parking spaces from the parking lot. The In-Place option would also span over 1.3 acres from the Extreme Sports Complex, and would have seven piers within the Complex using approximately 0.117 acres of property.

The **Relocated option** for reconstructing the Kennedy Interchange would use property from the same four Section 4(f) properties as the In-Place option. The **Relocated option** would use 2.2 acres of property from the Phoenix Hill Historic District, including two contributing structures. It would use 1.29 acres from the Butchertown Historic District, displacing one contributing structure. The **Relocated option** would span over 4.1 acres of land from the Waterfront Park including approximately 0.171 acres used by bridge support piers, however, approximately 40-45 acres within the existing interchange located adjacent to Waterfront Park will be available for re-use once the **Relocated Kennedy Interchange** is completed. These 40-45 acres will be provided for public use to the Waterfront Development Corporation through the Louisville-Jefferson County Metro Government in accordance with 23 CFR 710.403 and 23 CFR 710.409. Fifteen (15) of these 40-45 acres will be donated for inclusion into Waterfront Park as mitigation for all park properties impacted by **Alternative C-1** and the **Relocated Kennedy Interchange**. The remaining approximate 30 acres will also be made available to the Waterfront Development Corporation through the Louisville-Jefferson County Metro Government. The activities for public use of these 40-45 acres will be determined in accordance with a comprehensive study of the Waterfront Park and its relationship to East Downtown Louisville conducted by the Louisville-Jefferson County Metro Government. This study will be coordinated with the historic preservation plans being developed in accordance with the memorandum of agreement executed under the Section 106 of the Historic Preservation Act. After the **Relocated Kennedy Interchange** is completed, the pavement and structures within these 40-45 acres will be removed prior to transferring of the property unless otherwise requested by the Louisville-Jefferson County Metro Government and the Waterfront Development Corporation. The Relocated option would also span over 1.8 acres from the Extreme Sports complex, and would have six piers within the Complex using approximately 0.098 acres of property.

Comparison of Options for Reconstruction of the Kennedy Interchange: The In-Place option of reconstructing the Kennedy Interchange would use 2.2 acres of the Phoenix Hill Historic District including 2 contributing structures, 1.23 acres of the Butchertown Historic District including one contributing structure, would impact 4.2 acres (including 1.271 acres used by bridge support piers and the relocation of River Road) of Waterfront Park (including a developed recreation area and parking facilities) and would span 1.3 acres of the Extreme Sports Complex, with 7 piers using approximately 0.117 acre of the Complex. The **Relocated option** would use 2.2 acres of the Phoenix Hill Historic District including 2 contributing structures, 1.29 acres of the Butchertown Historic District including one contributing structure, would impact 4.1 acres of the Waterfront Park (including 0.171 acre used by bridge support piers) and would span 1.8 acres of

the Extreme Sports Complex, with six piers using approximately 0.098 acre of the Extreme Sports Complex.

Both options of reconstructing the Kennedy Interchange would have the same impacts to the Phoenix Hill Historic District. The **Relocated option** would use slightly more acreage (approximately 0.06 acre more) from the Butchertown Historic District, however, that acreage is a junkyard and is not part of a contributing property. The **Relocated option** would span over slightly more acreage of the Extreme Sports Complex, but would have less impact to the complex since it will have fewer bridge support piers within the complex. Also, the city of Louisville had the Extreme Sports Complex designed to accommodate the **Relocated option** pier location. The In-Place option would have greater impacts to Waterfront Park facilities due to the required relocation of River Road with that option. In addition to having less impact to Waterfront Park, the **Relocated option** would also make available 40-45 acres (which would not be available with the In-Place option) for public use. As noted previously, 15 of those 40-45 acres will be donated for incorporation into Waterfront Park, resulting in a net benefit to the park. The public use of the available land will be determined in accordance with a comprehensive study of the Waterfront Park and its relationship to east Downtown Louisville conducted by the Louisville-Jefferson County Metro Government. After balancing all Section 4(f) impacts for the two options, the **Relocated option** would have less overall impacts to Section 4(f) resources than the In-Place option. In addition, traffic operations would not be satisfactory with the In-Place option. Relocation of the interchange would allow for elimination of the numerous left-hand entrances and exits, difficult weaves, and conflict points that are part of the current Kennedy Interchange, and which have led the interchange to be known commonly as “Spaghetti Junction.” Currently, I-64 through traffic, which is not destined for downtown Louisville, must merge and weave with downtown oriented I-65 and I-71 traffic. The **Relocated option** would allow I-64 through-traffic to pass through the interchange without encountering the numerous conflict points in the current interchange. All merging and diverging activities would take place on collector-distributor roads, away from mainline traffic, where they would not interfere with the flow of traffic through the interchange. These improvements would help to reduce congestion and improve safety in the Kennedy Interchange, and would reduce the number of “conflict points” where crashes are more likely to occur.

The In-Place reconstruction of the Kennedy Interchange would not provide the same improvements and would not alleviate the unsatisfactory operating conditions associated with the difficult merges and weaving movements in the current interchange. Because the interchange would be reconstructed In-Place, requiring the maintenance of traffic operations during construction, a wholesale reconstruction of the Kennedy Interchange would not be possible. Thus, while improving some current conditions, an In-Place reconstruction would not eliminate all of the left-hand exits and entrances or complex weaving movements found in the current interchange. This would adversely impact I-64 through-traffic route continuity and contribute to additional congestion and safety problems. By 2025, average peak hour speeds in the Kennedy Interchange are projected to be 5 mph less than under the Kennedy Interchange **Relocation option**. This significant decrease in the efficiency of the Kennedy Interchange would result in significantly greater congestion and delays, which would likely spill over onto adjacent roadways, including the Kennedy Bridge. Thus, while providing some short-term benefit, the In-Place reconstruction of the Kennedy Interchange would not provide a long-term solution to the Kennedy Interchange deficiencies. Consequently, the In-Place option would not meet all of the

needs for the project and, therefore, is not a feasible and prudent alternative for reconstruction of the Kennedy Interchange.

Conclusion for Reconstruction of the Kennedy Interchange: The **Relocated option** of reconstructing the Kennedy Interchange was determined to be the feasible and prudent alternative with the least harm to Section 4(f) properties. Mitigation measures have been proposed at each property from which a Section 4(f) use occurs. These measures are intended to minimize the encroachment of **Relocated option** to the greatest extent possible on each resource.

6.4.2 Conclusion

Based on the comparisons and evaluations of alternatives for each of the three elements of this project, it has been determined that the Two Bridge/Highway Alternative combination of **Alternative A-15** on the East End, **Alternative C-1** Downtown and the **Relocated Option** for reconstructing the Kennedy Interchange is the feasible and prudent alternative with the least harm to Section 4(f) properties and is, therefore, the Preferred Alternative. It has also been determined that there is no feasible and prudent alternative to the use of land from the Swartz Farm Rural Historic District, the Old Jeffersonville Historic District, the Phoenix Hill Historic District, the Butchertown Historic District, the George Rogers Clark Memorial Bridge, the Greenway Corridor/Riverfront Park, the Waterfront Park and the Extreme Sports Complex. The proposed action includes all possible planning to minimize harm to each of these resources.

There are several Section 4(f) properties that are in close proximity to one or more of the proposed alternatives for this project, but will have no land or facilities directly “used” by any alternative. The FHWA guidance on Section 4(f) indicates that a “constructive use” can occur, without physical occupation of the Section 4(f) property, when the proximity impacts of a transportation project are so severe that the protected activities, features or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Potential proximity impacts for those properties, and other properties where the issue of proximity impacts has been raised, have been evaluated to determine whether or not the proximity impacts would constitute a constructive use of the property. In evaluating those properties, it was considered that the proximity impacts with the most potential to reach the above thresholds for constructive use would be noise impacts, visual impacts to a property’s integrity/setting or vibration impacts. This evaluation of proximity impacts has indicated that implementation of the Two Bridge/Highway Alternative combination of **Alternative A-15** on the East End, **Alternative C-1** Downtown and the **Relocated Option** for reconstructing the Kennedy Interchange would not cause a “constructive use” of any property.