Final
Section 4(f) Evaluation

Proposed Improvements

Interstate Highway 64/United States Highway 40
from west of Spoede Road in St. Louis County
to west of Sarah Street in the City of St. Louis

MoDOT Job No. J6I0978 and J6I1248

Prepared pursuant to 23 U.S.C. 138 and 49 U.S.C. 303

by

The United States Department of Transportation
Federal Highway Administration
and the
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Date of Approval For FHWA Title

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Final Section 4(f) Evaluation

A. Introduction

1. BACKGROUND

The following Section 4(f) discusses the proposed improvements to the I-64 Corridor (including the I-170 interchange) and the impacts to parkland and historic properties. Extensive planning efforts to avoid and minimize impacts have been conducted and are addressed in this document as well as potential mitigation and enhancement for the resource impacts.

This Section 4(f) Evaluation does not include the following three resources that were previously part of this evaluation in the Draft EIS process: #193 recommended NRHP eligible residence, Bennett Street Historic District, and The Heights Community Center (recreational facility and memorial library). Residence #193 has been determined by the State Historic Preservation Office to be not eligible for the National Register of Historic Places, and is therefore not a section 4(f) resource. As a result of alignment and design adjustments, the Bennett Street Historic District (a/k/a Clayton Park Addition) and The Heights Community Center are no longer impacted by the preferred alternative, and have therefore been excluded from this 4(f) Evaluation.

Four historic bridges (Spoede Road, Lindbergh Boulevard, McKnight Road and McCutcheon Road); five historic buildings; one historic district - Lavinia Gardens, and two public parks - A. B. Green Athletic Complex and Forest Park are impacted by the proposed project (see Exhibit 4f-A1). The historic resources presented in this document are those that were identified from the historic survey (see Chapters III and IV of the I-64 DEIS) as eligible for the National Register of Historic Places (NRHP) and those adversely affected by the proposed project (see DNR letter dated January 23, 2003 in Appendix 4f-J – Bridge K468 at Sarah Street falls outside of this project area and has been cleared in conjunction with a separate project). Resources already listed on the NRHP would not be impacted by the proposed project. The following information has been submitted to the Keeper of the National Register of Historic Places: Cultural Resources Evaluation, Determination of Eligibility, Determination of Effect, the cultural resources evaluation from Richmond Heights and a summary of the consultation process.

2. GENERAL 4(f)/6(f) PROCESS

The Section 4(f) legislation, as established under the U. S. Department of Transportation Act of 1966 (49 USC 303, 23 USC 138) provides protection for publicly owned parks, recreation areas, or wildlife and/or waterfowl refuges of national, state or local significance or land of an historic site of national, state, or local significance from conversion to transportation usage. Section 4(f) also applies to all archeological sites on or eligible for inclusion on the National Register and which warrant preservation in place. The Federal Highway Administration (FHWA) may not approve the use of publicly owned land of a publicly owned park; recreation area; wildlife and waterfowl refuge of national, state or local significance; or land of a historic site of national, state or local significance unless a determination is made that:

- There is no feasible and prudent alternative to the use of the land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 771.135).

When parkland has been acquired, or developed with funds provided by the Land and Water Conservation Fund (LWCF) Act of 1965 (16 USC 460-4 to 460-11) and this land is required for highway right-of-way, a Section 6(f) evaluation process must be followed. These properties may be converted to a transportation use only if the land is replaced with property, which is reasonably equivalent in usefulness and is of at least the same fair market value. Special coordination and approval of the National Park Service (NPS) and the Department of the Interior (DOI) is necessary for parks where this funding has been utilized.

Section 106 of the National Historic Preservation Act of 1966 requires that FHWA take the effects of federally-funded and permitted projects on historic properties into account, to coordinate these effects with the staff of the State Historic Preservation Officer (SHPO) and interested parties, and to avoid or mitigate any adverse effects on historic properties. Further, Section 106 requires that FHWA give the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such actions. Section 106 applies to properties that have been listed in the NRHP, properties that have been determined to be eligible for inclusion in the National Register, and properties that may be eligible but have not yet been evaluated. If a property has not yet been listed to the National Register or determined eligible for inclusion, it is the responsibility of the Federal agency involved to ascertain its eligibility, following procedures spelled out in Advisory Council regulations (36CFR800.4(c)), where the procedures and appropriate NRHP regulations are cited.

The National Register of Historic Places Criteria for Evaluation, as found in 36 CFR 60.4, include “the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and (A) that are associated with events that have made a significant contribution to the broad patterns of our history; or (B) that are associated with the lives of persons significant in our past; (C) that embody distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or (D) that have yielded, or may be likely to yield, information important in prehistory or history.”

Section 4(f) impacts may also occur in certain cases where there is no direct conversion of parkland, but there are indirect impacts to a site. This is called a constructive use of Section 4(f) property. Constructive use occurs when the transportation project does not require land from a 4(f) resource, but the proximity impacts are so severe that they cause substantial impairment to the protected activities, features, or attributes that qualify a resource for 4(f) protection. Substantial impairment occurs only when the protected activities, features or attributes of the resource are substantially diminished. Indirect impacts due to noise, aesthetics, access, land use changes and impacts to ecological features could potentially affect the utility of a 4(f) property. (See 23CFR 771.135.(p)(iii))

3. PROPOSED ACTION

a. General Project Description

As stated in Chapter I of this EIS, the Missouri Department of Transportation and the Federal Highway Administration are proposing to reconstruct the existing Interstate 64/US 40 facility with new and wider pavements, new interchange configurations, and bridges in St. Louis County and the city of St. Louis. The project would begin on I-64 west of Spoede Road in St. Louis County and continue east to west of Sarah Street in St. Louis, and on I-170 from south of Brentwood Boulevard to Eager Road.

The proposed project is the reconstruction of the I-64 mainlines and interchanges to be consistent with current design standards in 2004. Sections of I-64 (US 40) were originally constructed between 1927 and 1959. The design features of the existing facility reflect outdated design standards.

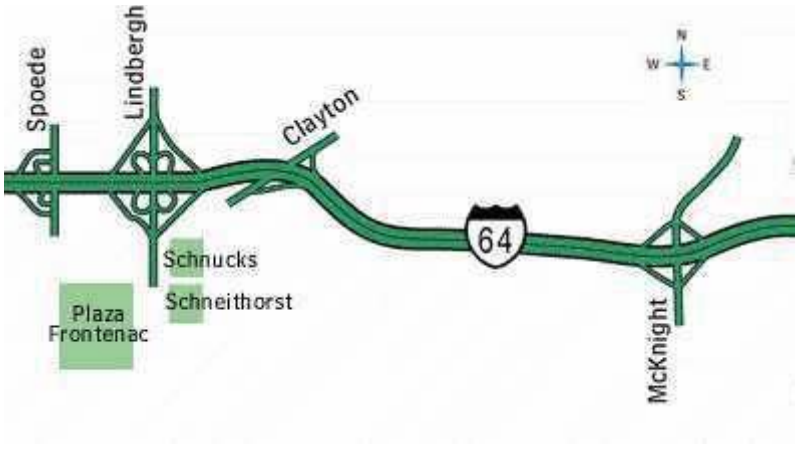
b. Purpose and Need for Project

The proposed improvements would replace the deteriorating facility and substandard interchanges, provide operational improvements, increase roadway capacity of I-64 between I-170 and Spoede Road, reduce the number of traffic related crashes, improve the movement of people and goods, improve aesthetics, enhance neighborhood connectivity, and serve as a stimulus for community redevelopment.

c. Study Area Description

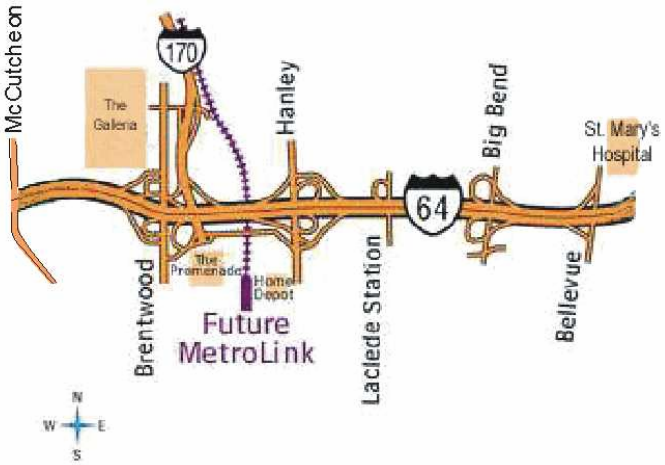
The study corridor covers about twelve miles (19.3 km). The corridor was split into three subcorridors, based on the characteristics of the properties directly adjacent to the existing I-64 right-of-way.

Greenway Subcorridor



The Greenway Subcorridor begins 4,900 feet west of the Spoede Road overpass and continues east to just west of the McCutcheon Road overpass. The Subcorridor is located entirely within St. Louis County. The Greenway Subcorridor is about 4.4 miles (7.4 kilometers) long and contains four interchanges: Spoede Road, Lindbergh Boulevard, Clayton Road/Warson Road, and McKnight Road. The name "Greenway" was given to this subcorridor because of the many trees and green spaces encountered while traveling this section of I-64.

Thruway Subcorridor



The Thruway Subcorridor is located entirely within St. Louis County. It begins on the west, just west of the McCutcheon Road overpass and extends eastward to just past the Bellevue Avenue interchange. The subcorridor is about 2.6 miles (4.2 kilometers) long, and contains six interchanges: Brentwood Boulevard, I-170, Hanley Road, Laclede Station Road, Big Bend Boulevard, and Bellevue Avenue. This subcorridor was given its name because of the densely developed residential and commercial areas directly adjacent to the existing I-64 right-of-way.

Parkway Subcorridor

The Parkway Subcorridor is about 3.3 miles (5.3 kilometers) long. The Parkway begins just east of the Bellevue Avenue interchange in St. Louis County and continues east into the city of St. Louis to the eastern end of the study corridor west of Sarah Street. It contains six interchanges: McCausland Avenue, Oakland Avenue, Clayton Road, Hampton Avenue, Kingshighway Boulevard, and Boyle Avenue. The name "Parkway" was given to this section because I-64 travels through the south edge of Forest Park, a prominent feature in this subcorridor.

d. Types of Section 4(f) Properties Impacted

The following Section 4(f) discusses the proposed improvements to the I-64 Corridor and the impacts to parkland and historic resources. The types of historic resources include bridges, districts and individual architectural properties. Each of these Section 4(f) resources impacted by the proposed project are described in the following sections.

The location of each Section 4(f) property discussed in this evaluation can be found on Exhibit 4f-A and on Plan Plates in Appendix C of the DEIS. A plate number is given for each property. The referenced plates will show the Preferred Alternative in relation to the 4(f) property and other environmental factors. Additional exhibits in Appendices 4f-C through 4f-G of this Section 4(f) Evaluation show the impacts to each property in more detail. Appendices 4f-H and 4f-I of this evaluation show the Avoidance Alternative and typical avoidance cross-sections.

B. Bridges

1. SPOEDE ROAD BRIDGE (K601R), PLATE G2

This bridge, built in 1937, is a steel girder, a structural type that was adopted by the Missouri State Highway Department in the 1920s and has maintained widespread usage (see Exhibit 4f-B1.) It is the only unrecorded bridge within the I-64 area of potential effects that has piers and abutments constructed with a decorative motif suggestive of the Art Deco style. For this reason, the bridge may be eligible to the NRHP under criterion C.

Replacement of the bridge is necessary because it is structurally deficient and lacks adequate vertical and horizontal clearances. The

existing clearance is approximately 14 feet (4.3 meters) and the structure has been hit several times by trucks traveling on I-64.

No-Build Alternative

The No-Build Alternative includes only minor short-term activities, including pavement overlays, routine maintenance and bridge repair. This concept would involve maintenance activities required to keep this bridge open for as long of a period as possible. While the No-Build Alternative does not meet the Purpose and Need for the project due to not providing for current design standards in 2004, the No-Build Alternative serves as a baseline against which the other alternatives can be compared.

Preferred Build Alternative

The preferred Build Alternative would replace the existing bridge structure at Spoede Road with a new bridge structure, which would meet current design standards in 2004 and clearance requirements. The proposed vertical clearance would be 16'-6" (5.0 meters). This alternative would result in the displacement of two residences. There would be no change to existing access with the preferred Build Alternative since a grade separation currently exists.

Avoidance Alternative

Shifting the horizontal alignment approximately 200 feet (61.0 meters) to the north between Conwyck Lane and the vicinity of Lynbrook is the only avoidance alternative available (see Exhibit 4f-H1). This would require extensive additional right-of-way, would displace 8-14 residences and would create an inadequate geometry for the proposed facility. The avoidance alternative would also have more of an adverse aesthetic impact in this area since this would be constructing portions of the facility on new location through established neighborhoods.

In summary, the avoidance alternative would cost an estimated $31 million more than the preferred Alternative, would cause an additional 6-12 displacements, and would not correct the safety issues of the current structure. This alternative includes an extensive magnitude of additional disruption to the community, several displacements and excessive costs.

Measures to Minimize Harm

Measures to minimize harm include agreement among SHPO, ACHP and FHWA through the Section 106 process. Procedures for determining the level of documentation necessary for the resource are included in the executed Programmatic Agreement (PA), which is located in Appendix K of Volume II, Final Environmental Impact Statement-Appendices. Through the public involvement process aesthetic improvements to the replacement bridge will be addressed. The proposed bridge design features will be coordinated with the urban landscape design of the overall project and coordinated with the local community.

The preferred Build Alternative anticipates an adverse effect without relocation of the bridge. This type of bridge structure does not lend itself to relocation. Mitigation of the Adverse Effect will be accomplished through archival photographs and documentary records. Although the documentation does not avoid an adverse effect, it does mitigate the adverse effect. This scenario would include the demolition of the bridge.

Summary

Based upon the above considerations, there is no feasible and prudent alternative to the use of the Spoede Road Bridge, and the proposed action includes all possible planning to minimize harm to the bridge resulting from such use.

2. LINDBERGH BOULEVARD BRIDGE (K600R2), PLATE G3, G4

This concrete rigid frame bridge was constructed in 1940. It has similar visual and structural characteristics with the bridges at Spoede Road, McKnight Road, and McCutcheon Road (see Exhibit 4f-B1). The piers and abutments are formed in a rectilinear decorative motif. The rarity of the structural type and the application of architectural style to the bridge demonstrated that the bridge is NRHP eligible under criterion C. The existing clearance is approximately 14 feet (4.3 meters). Replacement of the bridge is necessary because it is structurally deficient and functionally obsolete and lacks adequate vertical and horizontal clearances.

No-Build Alternative

The No-Build alternative would involve maintenance activities required to keep this bridge open to traffic for as long a period as possible. This bridge is structurally deficient and deteriorated (see Table I-2, Chapter I, FEIS for bridge rating). The structure has inadequate horizontal and vertical clearance. The No-Build alternative does not meet the Purpose and Need for the project because it does not provide for current design standards in 2004.

Preferred Build Alternative

The preferred Build Alternative would replace the existing bridge structure at Lindbergh Boulevard with a new bridge structure, which would meet current design standards in 2004 and clearance requirements. The proposed clearance would be 16'-6" (5.0 meters). This alternative would result in the displacement of four residences. There would be no change to existing access and minimal changes to aesthetics with the preferred Build Alternative.

Avoidance Alternative

The only avoidance alternative would consist of shifting the horizontal alignment approximately 400 feet (122 meters) to the south between Lynbrook and Warson Road (see Exhibit 4f-H2). This alternative would require extensive additional right-of-way, would require a total of 17 displacements including a hotel, grocery store, two commercial office buildings, a church and approximately twelve residences and would create an inadequate geometry for the proposed facility. Further, the avoidance alternative would cost an estimated $43 million more than the preferred alternative. The avoidance alternative would also have more of an adverse aesthetic impact in this area since this would be constructing portions of the facility on new location through established neighborhoods and developed areas. This alternative consists of excessive costs and displacements.

Many design options were studied early in the alternatives analysis process and the complexity of the intersection with Lindbergh Boulevard poses special problems. Elevating or depressing Lindbergh Boulevard to avoid impacting the bridge structure on I-64 is undesirable due to the required grades for access ramps and intersection movements. This would also create a negative aesthetic change to the area and would require an extensive amount of additional right-of-way while not solving the problem of the deteriorating bridge structure on I-64. Elevating or depressing I-64 would also require removing the historic bridge structure.

Measures to Minimize Harm

Measures to minimize harm include agreement among SHPO, ACHP and FHWA through the Section 106 process. Procedures for determining the level of documentation necessary for the resource is included in executed PA, which is located in Appendix K of Volume II, Final Environmental Impact Statement-Appendices. Through the public involvement process aesthetic improvements to the replacement bridge will be addressed. The proposed bridge

design features will be coordinated with the urban landscape design of the overall project and coordinated with the local community.

The preferred Build Alternative anticipates an adverse effect without relocation of the bridge. The material of the existing bridge does not lend itself to relocation. Mitigation consisting of archival photographs and documentary records would be supplied to the SHPO and local repositories. Although the documentation does not avoid an adverse effect, it does mitigate the adverse effect. This scenario would include the demolition of the bridge.

Summary

Based upon the above considerations, there is no feasible and prudent alternative to the use of the Lindbergh Boulevard Bridge, and the proposed action includes all possible planning to minimize harm to the bridge resulting from such use.

3. MCKNIGHT ROAD BRIDGE (K854R), PLATE G7

This bridge, built in 1940, is of concrete rigid frame construction and has previously been recorded and is eligible under criterion C. The Missouri State Highway Department (MSHD) used the structural type very sparingly in urban overpass situations, and never adopted concrete rigid frame as a state construction standard. Only seven bridges of this type have been identified within the state of Missouri, and only three are located in St. Louis County. Replacement of the bridge is necessary because it is structurally deficient and lacks adequate vertical and horizontal clearances. The existing clearance is approximately 14 feet (4.3 meters). (See Exhibit 4f-B2.)

No-Build Alternative

The No-Build Alternative includes maintenance activities required to keep this bridge open to traffic for as long a period as possible. Totally avoiding any impact to the bridge structure would not meet the purpose and need of the project to improve the design and safety standards of the structure. This bridge is the most structurally deficient and deteriorated bridge in the corridor (see Table I-2, Chapter I, FEIS for bridge rating). The structure has inadequate horizontal and vertical clearance and the bridge has been struck many times due to the inadequate clearance of I-64.

Preferred Build Alternative

The preferred Build Alternative would replace the existing bridge structure at McKnight Road with a new bridge structure, which would meet current design standards in 2004 and clearance requirements. The proposed clearance would be 16’-6” feet (5.0 meters) and the proposed grade of I-64 would be lowered by approximately five feet (1.5 meters). This alternative would result in the displacement of five residences. There would be no change to existing access and minimal changes to aesthetics with the preferred Build Alternative.

Avoidance Alternative

The only avoidance alternative would consist of shifting the horizontal alignment of I-64 to the north approximately 600-650 feet (182.9-198.1 meters) from Warson Road to the vicinity of Ladue Lane where it would cross I-64 (see Exhibit 4f-H3). This alternative would require extensive additional right-of-way and would displace 48 residences. This alternative would split and severely disrupt an established neighborhood on the north side of I-64 and would result in isolating six residences from the neighborhood. Further, the avoidance alternative would cost an estimated $22 million more than the preferred Build Alternative. Additional cultural resource impacts could result as well since some of this area is outside the assessed area of potential

effects for the current study. Noise impacts would be more extensive since the facility would shift toward residences that were not already adjacent to I-64. The avoidance alternative would also have more of an adverse aesthetic impact in this area since this would be constructing portions of the facility on new location. This alternative consists of excessive costs, displacements and disruption to the area.

Elevating or depressing I-64 to avoid impacting the bridge structure at McKnight Road is not desirable due to the required grades for access ramps and intersection movements. This would create a negative aesthetic change to the area and would require an extensive amount of additional right-of-way while not solving the problem of the deteriorating bridge structure.

Measures to Minimize Harm

Measures to minimize harm include agreement among SHPO, ACHP and FHWA through the Section 106 process. Procedures for determining the level of documentation necessary for each resource are included in the executed Programmatic Agreement (PA), which is located in Appendix K of Volume II, Final Environmental Impact Statement-Appendices.

Through the public involvement process aesthetic improvements to the replacement bridge will be addressed. The proposed bridge design features will be coordinated with the urban landscape design of the overall project and coordinated with the local community.

The preferred Build Alternative anticipates an adverse effect without relocation. This type of bridge structure does not lend itself to relocation. Mitigation consisting of archival photographs and documentary records would be supplied to the SHPO and local repositories. Although the documentation does not avoid an adverse effect, it does mitigate the adverse effect. This scenario would include the demolition of the bridge.

Summary

Based upon the above considerations, there is no feasible and prudent alternative to the use of the McKnight Road Bridge, and the proposed action includes all possible planning to minimize harm to the bridge resulting from such use.

4. MCCUTCHEON ROAD BRIDGE (K861R), PLATE T17

This bridge, built in 1944, is of concrete rigid frame construction and has previously been recorded and is eligible under criterion C. The MSHD used the structural type very sparingly in urban overpass situations, and never adopted concrete rigid frame as a state construction standard. Only seven bridges of this type have been identified within the state of Missouri, and only three are located in St. Louis County. Replacement of the bridge is necessary because it is structurally deficient and lacks adequate vertical and horizontal clearances. The existing clearance is approximately 14 feet (4.3 meters). (See Exhibit 4f-B2.)

No-Build Alternative

The No-Build Alternative includes maintenance activities required to keep this bridge open to traffic for as long a period as possible. Totally avoiding any impact to the bridge structure would not meet the purpose and need of the project to improve the design and safety standards of the structure. This bridge is a structurally deficient and deteriorating bridge in the corridor (see Table I-2, Chapter I, FEIS for bridge rating). The structure has inadequate horizontal and vertical clearance and there have been numerous collisions due to the inadequate clearance of I-64.

Preferred Build Alternative

The preferred Build Alternative would replace the existing bridge structure at McCutcheon Road with a new bridge structure, which would meet current design standards in 2004 and clearance requirements. The proposed clearance would be 16'-6" (5.0 meters) and the proposed grade of I-64 would be lowered by approximately 10 feet (3.0 meters). This alternative would result in the displacement of two to three residences and six apartment buildings with approximately eight units per building. There would be no change to existing access and minimal changes to aesthetics with the preferred Build Alternative.

Avoidance Alternative

The only avoidance alternative would consist of shifting the horizontal alignment of I-64 approximately 350 feet (106.7 meters) to the south between Ladue Lane and Brentwood Boulevard (see Exhibit 4f-H4). This alternative would require extensive additional right-of-way and would displace 15 residences and an additional 24 apartment buildings (estimated at 100-150 apartment units). This alternative would move the facility approximately 50 feet closer to a historic property (# 484). The avoidance alternative would cost an estimated $16 million more than the preferred Build Alternative. The avoidance alternative would also have more of an adverse aesthetic impact in this area since this would be constructing portions of the facility on new location. This alternative consists of excessive costs, displacements and the potential to affect an additional 4(f) resource.

Elevating or depressing I-64 to avoid impacting the bridge structure at McCutcheon Road is not desirable due to the required grades for access ramps and intersection movements. This would create a negative aesthetic change to the area and would require an extensive amount of additional right-of-way while not solving the problem of the deteriorating bridge structure.

Measures to Minimize Harm

Measures to minimize harm include agreement among SHPO, ACHP and FHWA through the Section 106 process. Procedures for determining the level of documentation necessary for each resource are included in executed PA, which is located in Appendix K of Volume II, Final Environmental Impact Statement-Appendices. Through the public involvement process aesthetic improvements to the replacement bridge will be addressed. The proposed bridge design features will be coordinated with the urban landscape design of the overall project and coordinated with the local community.

The preferred Build Alternative anticipates an adverse effect without relocation. This type of bridge structure does not lend itself to relocation. Mitigation consisting of archival photographs and documentary records would be supplied to the SHPO and local repositories. Although the documentation does not avoid an adverse effect, it does mitigate the adverse effect. This scenario would include the demolition of the bridge.

Summary

Based upon the above considerations, there is no feasible and prudent alternative to the use of the McCutcheon Road Bridge, and the proposed action includes all possible planning to minimize harm to the bridge resulting from such use.

C. Historic Districts

1. LAVINIA GARDENS HISTORIC DISTRICT, RICHMOND HEIGHTS, PLATE T19

Improvements to I-64 include improvements to I-170 north of I-64. This improvement will provide interchange ramps from I-170 to I-64. The Lavinia Gardens Historic District is located north of

I-64 between Linden Avenue and I-170. The district is eligible for the NRHP under Criterion C; was platted in 1938 and includes buildings dating between 1937 and 1940. The district contains 19 virtually identical primary buildings constructed in the Tudor Revival Style.

The boundary of the Lavinia Gardens Historic District may be described as McMorrow Avenue and I-170 on the west, Redbud Avenue on the south and east, and the Residence Inn property on the north. This triangular shaped Historic District includes 19 residences, all but three of which are located along Antler Drive. (See Exhibit 4f-C1)

The district is a remnant of a larger subdivision that was previously bisected by improvements to Brentwood Boulevard and the construction of I-170, as well as commercial development. The boundaries of the historic district encompass an intact core of minimally altered buildings.

No Build Alternative

The No-Build Alternative includes only maintenance operations for the I-64 facility and would include the maintenance operations for this portion of I-170 as well. The maintenance is limited to replacing deteriorated pavement within the existing right-of-way. The No-Build Alternative would not meet the purpose and need of this project to bring the I-64 and its interchange with I-170 to current design and safety standards.

Preferred Build Alternative

The preferred Build Alternative would acquire four residences from the Historic District (see Exhibit 4f-C1). Three residences are on McMorrow Avenue and one is on Antler Drive. These acquisitions would have an adverse effect on the integrity of the Lavinia Gardens Historic District. None of the residences acquired are individually eligible for listing on the National Register but the residences are contributory elements of the district.

Avoidance Alternative

The avoidance alternative would be shifting the entire interchange westward so the westbound I-64 to northbound I-170 ramps would be located west of the Lavinia Gardens Historic District (see Exhibit 4f-H5). The east edge of right-of-way for the Ramp 15, westbound I-64 to northbound I-170, is the west edge of right-of-way for McMorrow Ave. This allows for McMorrow to remain open and the three residences within the Lavinia Gardens Historic District would continue to have access to McMorrow. This alternative would avoid impacts to the Lavinia Gardens Historic District. The Avoidance Alternative would cost approximately 2.8 million dollars more than the proposed Alternative Alignment 3 at the I-170 interchange.

This would require eleven additional displacements on the west side of I-170. This would include nine residences, and two businesses, the Joe Martin Building and an unnamed business. Two residences on Francis Place, north of Redbud Avenue would be acquired to provide a relocated Redbud Avenue to Francis Place connection. This would provide access to the remaining six residences on Francis Place. There are seven structures on Francis Place between Antler Drive and Darst Court. Two of these structures have been converted to office space while the remaining five are in residential uses.

Since McMorrow Street would remain open in the Avoidance Alternate, the impacts to the Residence Inn have been avoided. Due to a realignment of Ramp 15, an additional residence would be acquired on Everett Street, however four residences, two on Antler Drive and two on Linden Avenue are now avoided.

The Avoidance Alternative would impact the proposed Pace Development, a mixed use center that is being planned for the property between I-64, I-170 and the St. Louis Galleria. The city has the property classified as a mixed use center on its comprehensive plan. The mixed use center has been refined in the Brentwood/I-170 corridor plan area to include office, service and retail uses.

Measures to Minimize Harm

The measures to minimize harm include consultation among the SHPO, ACHP, FHWA MoDOT and the consulting parties through the Section 106 process. Mitigation may include archival and aerial photographs , site plans of the district, a contextual history of the district, and possible relocation of the impacted buildings. Although the documentation does not avoid an adverse effect, it does mitigate the adverse effect. Procedures for consultation are included in the executed PA, which is located in Appendix K of Volume II, Final Environmental Impact Statement-Appendices. The design of the Preferred Alternative's interchange of I-170 and I-64 was amended to reduce residential acquisitions in the Lavinia Gardens Historic District to four, properties #397, #398, #399 and #400.

Coordination

The city of Richmond Heights was consulted during the evaluation process. The city officials expressed interest in minimizing adverse impacts to residential neighborhoods while providing areas for targeted economic development. The avoidance alternative would preserve the residences in the Historic District while acquiring other residences, some in a neighborhood targeted for redevelopment and the others in a neighborhood that the City Plans show as low density residential.

Summary

Based upon the above considerations, there is no feasible and prudent alternative to the use of the Lavinia Gardens Historic District, and the proposed action includes all possible planning to minimize harm to the district resulting from such use.

D. Individual Architectural Resources

1. PROPERTIES # 195, 178, 179, 172, 156. PLATE P1

These properties are grouped for discussion in the following text as the No-build and Avoidance Alternatives are the same for these properties.

Alma Noetemann Residence (Property # 195), Plate P1

Improvements to I-64 would have a direct impact on the Alma Noetemann residence at 7464 Warner Avenue (see Exhibit 4f-D1a). The residence, eligible for the NRHP under criterion C, was constructed in 1919 of the Craftsman style, one of the later styles of the modern Eclectic movement. Craftsman housing derived from the work of Greene and Greene. A direct descendent of the English Arts and Crafts movement, the style was also influenced by the prevailing fascination with Japan. The porch is supported by two sets of three Doric columns on brick piers with a brick balustrade. The center, stucco gabled dormer on the front facade has a bank of three fixed windows with exposed rafter tails and knee brackets, typical of Craftsman styles. It is a well preserved and exceptional urban example of the Craftsman style that has undergone little or no alteration since construction.

Preferred Build Alternative – The preferred Build Alternative would require the use of this structure due to the access ramps required at Big Bend Road (see Exhibit 4f-D1b/D2b). Shifting the improvements to the south would impact another historic property #206 and would also impact the Richmond Heights Municipal Complex.

Kettler Residence (Property # 178), Plate P1

Improvements to I-64 would have a direct impact on the Stephanie M. and Newport Kettler residence at 1334 Highland Terrace (see Exhibit 4f-D3a). The 1928 residence, constructed in the Colonial Revival style, is eligible for the NRHP under criterion C. A style of the first distinctive period of the Eclectic movement, Colonial Revival was based on a rebirth of interest in the houses built by the Dutch and English colonists on the Atlantic coast. Typical decorative elements of the style seen on the residence include an accentuated front door with a decorative pediment, an asymmetrical facade, and banked windows. The steeply pitched gambrel roof with a continuous shed dormer containing a bank of windows is indicative of the Dutch Colonial subtype. This is a well preserved example of the subtype and has undergone little alteration since its construction.

Preferred Build Alternative – The preferred Build Alternative would require the use of this structure due to the construction impacts resulting from retaining walls of approximately 50 horizontal feet (15.2 meters) needed in this area (see Exhibit 4f-D3b/D4b).

Newport Residence (Property # 179), Plate P1

Improvements to I-64 would have a direct impact on the Thomas P. Newport residence at 1336 Highland Terrace (see Exhibit 4f-D4a). The 1904 residence, constructed in the Shingle style, is eligible for the NRHP under criterion C. The building is constructed in the Shingle style (1880-1900), a style of the Victorian era. The styles of the Victorian era of American architecture are derived from those of housing popular during the last decades of Queen Victoria's reign. The Shingle style does not emphasize particular details around doors and windows, but instead attempts to give the effect of a continuous surface that envelops the entire house. Primarily a high-fashion, architect's style, houses built in the Shingle style are relatively uncommon except in coastal New England (McAlester 1996:290). The building is an excellent and well-preserved urban example of an uncommon architectural style. Within the entire Interstate 64 corridor, only two other Shingle houses were recorded. Property # 179 is in good condition and has undergone little to no alteration since its construction.

Preferred Build Alternative – The preferred Build Alternative would require the use of this structure due to the construction impacts, resulting from the retaining walls, approximately 50 horizontal feet (15.2 meters) is needed in this area (see Exhibit 4f-D3b/D4b).

Apartment Building (Property # 172), Plate P1

Improvements to I-64 would have a direct impact on the apartment building owned by Delmar and Karen Poe at 1330/1338 Hawthorne Place (see Exhibits 4f-D5a to D5e). The building is significant under criterion C. The large, multi-family apartment building is built in the Art Deco style, a later phase of the Eclectic Period (1880-1940). Patterned after Eliel Saarinen's second-place 1922 entry for the *Chicago Tribune* competition (McAlester 1996: 465), characteristic traits of Art Deco include a soaring vertical emphasis achieved through towers and other vertical building elements rising above the roof line. Stylized geometric patterns accent the building and the wall surfaces are kept smooth and planar. Art Deco was largely confined to public buildings and apartment houses, however, being mainly a style of ornament, could be applied to all building types (Whitten 1996). Many of the most common decorative motifs are present on the apartment building, and include fluting, reeding, chevrons, and zigzags. Property #172 is a well-preserved, exceptional example of the style executed on apartment housing and has undergone little to no alteration since its construction.

Preferred Build Alternative – The preferred Build Alternative would require the use of this structure due to the construction impacts, resulting from retaining walls, approximately 50 horizontal feet (15.2 meters) is needed in this area (see Exhibit 4f-D5f).

Residence (Property # 156), Plate P1

Improvements to I-64 would have a direct impact on the Willman Equity Holdings Property at 7125 Nashville (see Exhibits 4f-6a to 6c). The residence is eligible for the National Register under Criterion C. Built in 1930, the residence was constructed in the Mission style, an architectural style that became popular during the second period of the Eclectic movement. The Mission style originated in California and is based on a free adaptation of the Spanish Mission of the state's colonial past. The only building found within the I-64 Area of Potential Effect (APE) that was constructed in this style, the residence is a well-preserved and exceptional example of the architectural style. Several elements typical of the style are found on the residence, including a shaped parapet on the front facade and an elaborate arcade. Property # 156 is well preserved and has undergone no additions or modifications.

Preferred Build Alternative – The preferred Build Alternative would require the entire use of this property (see Exhibit 4f-D6d).

No-Build Alternative

The No-Build Alternative includes reconstructing the I-64 facility in place to replace deteriorated pavement within the existing right-of-way. The No-Build Alternative does not satisfy the purpose and need of this project to bring the I-64 facility up to the current design and safety standards.

Avoidance Alternative (Properties # 195, 178, 179, 172, 156)

The only possible avoidance alternative in this area would consist of a double deck or stacked option within the existing R/W (see Exhibits 4f-H6 & H7). The stacked option would start just west of Hanley Road and extend to the Kingshighway interchange. Any other alternative on new location would impact other 4(f) resources particularly historic residential buildings as well as numerous residential displacements. This alternative is significantly more costly than the preferred Build Alternative by a magnitude of three to four times.

Measures to Minimize Harm

Measures to minimize harm include consultation among SHPO, ACHP, FHWA, MoDOT and other consulting parties through the Section 106 process. Mitigation may consist of archival and aerial photographs, historic context documents for the settlement of the areas, site plans, and possible relocation of the buildings. Although the documentation effort does not avoid an adverse effect, it does mitigate the adverse effect. Procedures for determining the level of documentation necessary for each resource are included in the executed PA, which is located in Appendix K of Volume II, Final Environmental Impact Statement-Appendices.

Summary

Based upon the above considerations, there is no feasible and prudent alternative to the use of properties # 195, 178, 179, 172 and 156, and the proposed action includes all possible planning to minimize harm to these properties resulting from such use..

E. Parks

1. A. B. GREEN ATHLETIC COMPLEX, CITY OF RICHMOND HEIGHTS, PLATE T20

Site Description

The A. B. Green Athletic Complex, located at 7875 Dale Avenue, was purchased from the Maplewood/Richmond Heights School District in January 1997. The city of Richmond Heights' Parks and Recreation Department operates the 4.28 acre (1.73 ha) recreational facility. The St. Louis County Department of Revenue lists the appraised value of this property at $75,900 for tax year 2002.

Activities and Use

Facilities include two tennis courts, two basketball courts, one playground, restrooms, one baseball field, one soccer field, bleachers/benches, eight high mast light poles, one pavilion with concessions, two barbecue pits, and 13 picnic tables (see Exhibit 4f-F1a & F1b). The complex is used for various annual community events, soccer and baseball leagues, tennis lessons, sports camps, open play, special events, and adult sports leagues. The property includes a 30-space parking lot that is used by Chaney Elementary School faculty during school hours, and park users after school hours. The city of Richmond Heights owns this parking lot along with the adjacent athletic complex. The entire city-owned site is leased to the Maplewood Richmond Heights School District for use between the hours of 7:00 a.m. and 4:00 p.m. Neither the school building nor the site on which it is located, which are owned by the Maplewood Richmond Heights School District, would be impacted by the proposed improvements to I-64.

Access

Access to the site is from Dale Avenue and Laclede Station Road as well as Boland Place.

Ownership

The A. B. Green Athletic Complex is owned by the city of Richmond Heights. On February 13, 1997, the city and the School District of Maplewood/Richmond Heights entered into a lease agreement. The lease is for a period of five years; the school district has the option to renew the lease agreement for five successive one-year terms. Under the lease agreement, the school district has use of the premises between the hours of 7:00 a.m. and 4:00 p.m. on any weekday that Chaney Elementary (formerly A. B. Green Middle School) is in session. The facility functions as a city recreation facility between the hours of 4:00 p.m. and 7:00 a.m. on weekdays that the Middle School is in session, all weekends, and full days when the school is not in session.

Clauses – The Maplewood/Richmond Heights School District has the option to purchase the property any time during the term of the lease or any renewal term by delivering a Notice of Intent to Purchase to the city at least 90 days before the end of such term. The city of Richmond Heights has the option to purchase the land and recreational facilities located on lots 10, 11, 12, and 13 of Strodtman's Addition. The property was not planned, developed, or improved with LWCF funds.

Relationship to Other Similar Resources

The A. B. Green Athletic Complex is the only facility of its type operated by the city of Richmond Heights. The city owns Highland Park, a small (one acre) (0.4 ha) neighborhood park that is a landscaped area with playground equipment and a gazebo for picnics.

Unusual Characteristics

The park is adjacent to the Chaney Elementary School. The park provides special recreational facilities for the adjacent school. The parking lot is a shared use parking facility for the school and park and is owned by the city.

No-Build Alternative

The No-Build Alternative includes reconstructing the I-64 facility in place to replace deteriorated pavement within the existing right-of-way. The No-Build Alternative does not satisfy the purpose and need of this project to bring the I-64 facility up to the current design and safety standards.

Preferred Build Alternative/Impacts to the Section 4(f) Resource

Various design options were considered in this area to avoid impacts to the A. B. Green complex. The preferred alternative (Alternative 3 in the Thruway Subcorridor) would impact 0.43 acres (0.17 ha) of the park or 10% of the total 4.28 acre (1.73 ha) park. The required right-of-way strip needed along I-64 at the north end of the park would vary in width from 0-75 feet (0-23 meters) at a length along I-64 of approximately 480 feet (146.3 meters). The additional right-of-way required for excavation and a retaining wall would impact the tennis courts, basketball courts, park pavilions, a cell tower, the playground area, and the parking lot (see Exhibit 4f-F1b). During construction of the retaining wall for the highway improvements, at least 22 of the parking spaces would be lost out of 30 existing parking spaces. A temporary construction easement containing 0.08 acres (0.03 ha) would be required at the parking lot for retaining wall construction. Following completion of the retaining wall, there would be space for approximately 14 parking spaces. Aesthetics would not change appreciably since the roadway is currently very close to the park. The only aesthetic change would possibly be a change in the location of the activity areas or grading of the site to create more useable space near the parking lot and school.

A noise analysis was prepared in compliance with 23 USC Section 109(h) and (i), the FHWA guidelines for the assessment of traffic-generated noise. The study compares projected design year 2020 noise levels with existing 2001 noise levels along I-64 (see FEIS Chapter IV). Existing noise levels along the south side of I-64 at the basketball goal opposite I-64 in A. B. Green Athletic Complex are approximately 65 dBA. The observation point is located east of the south edge of the A. B. Green tennis courts. Year 2020 noise levels are expected to increase to 72.6 dBA (L_{eq}). This is a perceptible change in noise to the park user. A noise barrier averaging 13.5 feet in height would reduce the noise level to 63.8 dBA, a reduction of 8.8 dBA.

Further coordination will be conducted with the city of Richmond Heights to determine if city officials are in favor of noise mitigation at the A. B. Green Athletic Complex. Although a noise wall would create a barrier, it would be a beneficial aesthetic impact by eliminating undesirable views of the road from the park.

Avoidance Alternative

Because the 4(f) eligible West Moor Park #2 Subdivision District and 4(f) eligible property #278 are located directly across from the athletic complex, on the north side of I-64, the only possible avoidance alternative in this area would consist of a double-deck or stacked option within the existing right-of-way (see Exhibit 4f-H6). The stacked option would start just west of Hanley Road and extend to the Kingshighway interchange. Any other alternative on new location would impact other 4(f) resources particularly historic residential buildings as well as numerous residential displacements.

The stacked option from I-170 to Kingshighway was eliminated from further consideration due to high project costs and interchange access difficulties.

Measures to Minimize Harm/Mitigation

Mitigation options to minimize harm include re-building impacted park facilities further back on the site by re-grading or using retaining walls within the park to create more useable space near the parking lot or school or possibly relocating the facilities to another location within the complex.

A short distance south of the A. B. Green Athletic Complex and Chaney School, at the southeast quadrant of the Dale Avenue/Laclede Station intersection is the Church of God in Christ. While the A. B. Green/Chaney School parking lot is unavailable during construction, an agreement to share the church parking lot may be feasible, since the church and the school would not need the parking spaces at the same times.

Noise mitigation is recommended at this location and would consist of a noise wall approximately 14 feet (4.3 meters) in height and would be implemented following public involvement if desired by a majority of the adjacent receivers, which would include residential property owners and the city of Richmond Heights. Parks sometimes do not desire noise shielding due to the fact that it can also obstruct views; however since this park is well contained within this neighborhood, with no access directly from I-64, this issue will be discussed in the public involvement process.

Specific and more detailed mitigation measures were discussed with the Richmond Heights Director of Parks and Recreation in a meeting held on June 4, 2003 (see letter in Appendix 4f-J). The following mitigation measures were proposed by MoDOT.

- *Acreage* – The total acreage impacted is 0.43 acres. Proposed total replacement acreage is 1.7 acres, located at the existing loop ramp just north of I-64, west of Laclede Station Road.

- *Tennis Courts Relocation* – The proposed relocation of the tennis courts is to locate two courts where the existing loop ramp is located just north of I-64. (See Exhibit 4f-F1c) The relocated tennis court area will include: restrooms; court lighting; parking; landscaping; a screen wall between courts and residences; and a lighted walkway under I-64 along Laclede Station Road. Lighting would be configured so as to not impact adjacent residences.

- *Parking* – The 16 parking spaces lost and the surface drive will be replaced and relocated in the northwest corner of the existing complex (12 new spaces) and at the tennis court area (8 new spaces).

- *Basketball Courts* – Sufficient play area will remain where the courts are currently located and reconfigured at the existing complex as desired.

- *Cell Tower* – The cell tower will be relocated to a Richmond Heights desired location.

- *Playground* – Playground will be replaced and relocated to a Richmond Heights desired location at the existing complex. A second playground area will be provided adjacent to the tennis courts.

- *Two Pavilions* – The two park pavilions will be functionally replaced and relocated to a Richmond Heights desired location at the existing complex.

- *Cross walk* – A cross walk will be provided on Laclede Station Road south of I-64.

Coordination

The city of Richmond Heights was consulted throughout the evaluation process. The city officials expressed strong interest in eliminating adverse impacts to the Little Flower neighborhood to the north of I-64. Also discussed was the construction of a new elementary school to replace Chaney Elementary and Bruce Elementary. The new school is scheduled to open in August 2004. This construction opens the possibility for the city to purchase the school site for future expansion of the A. B. Green Athletic Complex. With these alternatives in sight, Richmond Heights officials expressed a greater interest to work with MoDOT to relocate the impacted recreational uses at A. B. Green Athletic Complex.

As stated above, a meeting with the Richmond Heights Director of Parks and Recreation was held on June 4, 2003 to discuss possible measures to mitigate impacts to the athletic complex. MoDOT presented options to replace impacted recreational facilities and to provide replacement land near the complex in an area of excess right-of-way (at the loop ramp) that has sufficient space for the facilities as described above. The city requested that a meeting also be held with the neighborhood adjacent to the loop ramp to present the proposed mitigation plans to replace the tennis courts at that location.

On October 29, 2003, a meeting was held with the adjacent neighborhoods (Clayton Park Addition [Bennett Avenue] and West Moor Park Subdivision) and representatives from the city of Richmond Heights to discuss the mitigation plans at the loop ramp. The majority of the people in attendance supported the proposed mitigation. A few had concerns about noise, lights, and attracting persons from outside the neighborhood. A city representative stated that the lights could be eliminated or timed so that they would not be on past a specific time. A follow-up meeting was held with the city on February 3, 2004 to discuss impacts to the A. B. Green Athletic Complex and specific details of the new replacement recreational facilities such as lighting for the tennis courts, number of parking spaces provided and other design development details. A summary of this meeting is provided in Table 4f-7 and a follow-up letter from the city, dated February 10, 2004 is included in Appendix 4f-J. The letter from the city stated acceptance of the concept of locating replacement facilities in a new separate park to be located north of I-64 at Laclede Station Avenue, listed items that were discussed in the meeting and also included the City's additional design development recommendations for the facilities at the athletic complex and the replacement land area (separate new park). The recommendations as stated in the letter are as follows:

Recommendations for A. B. Green Athletic Complex

- Eliminate two separate pavilions – combine west of playground
- Extend pavilion and playground to end of basketball court
- Restrooms – heated and ADA compliant
- Gated storage with 8' fence and windscreens for security
- Pavilion size – minimum 30' x 60' with 20' x 20' storage area
- System to block sport fields from unauthorized vehicles
- Provide utility access chase in restrooms
- Replace existing drinking fountains
- Ability to control sports field lighting and irrigation system from storage area
- Replace existing barbecue pits

- Fencing between basketball courts, playground, barrier between courts/field, as noted on plan mark-up
- Option to purchase 4 properties west side of Laclede near impacted area
- Security lighting in playground area
- Playground designed for use of 2 to 5-year olds and 5 to 12-year olds
- Poured in place surfacing for playground
- Surface drainage system along service drive to catch court runoff onto field
- Alignment of crosswalk with Laclede sidewalk (west side)
- Angled parking off of Laclede – joint effort
- Review placement of cell tower placement – possibly flag pole
- Include ADA parking
- Review timeline of projects and ability to relocate layout before finalizing
- Ability to be involved in equipment selection

Recommendations for New Park Development

- Dusk to dawn security lights only
- Eliminate tennis court lighting
- Uni-sex restroom with storage for cleaning supplies and programs
- Drinking fountain
- Small pavilion attached to restrooms – large enough for 2 picnic tables only
- Parking spaces reduced to four regular, plus one ADA spot
- Removable bollard installed at end of parking area to prohibit vehicle access beyond that point
- Install 12’ double gate at court entrance for service vehicle access
- Install walk-thru gate at court entrance
- Eliminate fencing between tennis courts
- Add one covered picnic table near playground
- 6 benches around court area, 2 at playground site
- Poured in place surface for playground
- 4’ ornamental fencing around playground
- Trash receptacles
- No street parking at site
- Review addition of sidewalk on east side of street – joint effort
- Ability to be involved in equipment selection

Coordination with the city of Richmond Heights has been completed and these recommendations, as they apply to appropriate project impact mitigation, will be considered further as on-going coordination with the city progresses into the design phase.

Summary

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from the A. B. Green Athletic Complex, and the proposed action includes all possible planning to minimize harm to the complex resulting from such use.

2. FOREST PARK, CITY OF ST. LOUIS, PLATES P2-P5

a. Background

At 1,293.22 acres,[1] (477.1 ha) Forest Park is the nation's seventh largest urban park, larger than Central Park in New York City. Forest Park is owned by the city of St. Louis and is operated and maintained by the city of St. Louis' Department of Parks, Recreation and Forestry. This facility, located at the western edge of the city of St. Louis, is a regional park offering a diversity of uses that attracts approximately twelve million persons each year. In addition to the natural features and recreational facilities, Forest Park is the home to a number of cultural facilities – theater, art museum, history museum, and a zoo.

Forest Park was established in 1874 when the Missouri Legislature established three parks in St. Louis County – Forest Park, Carondelet Park, and O'Fallon Park. At the time, only the state legislature could establish a park. The park was placed under the jurisdiction of a Board of Parks Commissioners in April 1875. At that time, the park consisted of 1,326.009 acres[2] (536.6 ha) of land. The board had been established by the Missouri Legislature in 1864 during an earlier attempt to establish a centrally located park. The "Municipal Divorce Bill" was included in the new Missouri Constitution in 1875, which included the procedure for the city of St. Louis and St. Louis County to be separated from one another. This bill included the stipulation that gave all of the parks and the park tax to the city of St. Louis and also allowed the city of St. Louis to extend its boundaries past Carondelet Park, O'Fallon Park, and Forest Park.

Forest Park was dedicated on June 24, 1876. At the beginning, the park was a virgin forest two miles west of the St. Louis city limits. In the early years, the only access to the park was on the Wabash Railroad. The first horse car reached the park on Laclede Avenue in 1885.

The St. Louis Amateur Athletic Association, or Triple A, was formed in 1897. The group built a clubhouse, tennis courts, baseball diamonds, and a nine-hole golf course on a 125-acre tract south and west of DeBaliviere and Lindell. Since this original site was required for the Louisiana Purchase Exposition, the city gave the Triple A a 70-acre site in the southeastern portion of the park.

Over the years, various improvements were added. The Louisiana Purchase Exposition (1904 World's Fair) used nearly the western half of the park (Exhibit 4f-G1). More than 19 million visitors were attracted to St. Louis by the fair. The St. Louis Art Museum, originally the Palace of Fine Arts, was the only permanent building constructed for the 1904 World's Fair. Expanded recreational activities and new single-purpose sports facilities, including public golf courses, athletic fields, and tennis courts were added between 1911 and 1930. New facilities such as the Jewel Box, Steinberg Rink, a boathouse, and the Dwight Davis Tennis Center became popular destinations for Forest Park visitors.

Today, Forest Park is one of the region's leading attractions, visited by more than twelve million persons annually. An estimated half million people attend special events such as the Great Forest Park Balloon Race, the Great St. Louis Kite Festival, and the Antique Car Show. There is a primary forest, a secondary successional forest, and several fragile ecosystems within the park boundaries. The John F. Kennedy Forest is one of the few wooded areas remaining in the

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[1] City of St. Louis Department of Parks, Recreation, & Forestry. *List of St. Louis City Parks.* http://stlouis.missouri.org/citygov/parks/parks_div/list.html

[2] History of Forest park at http://stlouis.missouri.org/citygov/parks/forestpark/history/early.html
Forest Park Forever states that the 1874 survey by Julius Pitzman showed the park at 1,371.75 acres, see http://www.forestparkforever.org/about_FPF/history.html

city. Exclusive of those in the Kennedy Forest and at the St. Louis Zoo, there are about 14,000 trees in the park. The Dwight D. Eisenhower Municipal Golf Course and the Triple A Club are the only golf courses located in the city of St. Louis (Exhibit 4f-G2). Interstate 64/U.S. 40 was constructed through the south edge of the park in the 1950's, leaving a narrow sliver of the park south of the highway. Turtle Playground is located in this narrow strip between the highway and Oakland Avenue (Exhibit 4f-G2).

There are a number of access points into Forest Park. Access from I-64/U.S. 40 is through an interchange at Hampton Avenue and an interchange at Kingshighway Boulevard. Kingshighway Boulevard forms the eastern boundary of the park. Several roads lead off of it into the park. Skinker Boulevard forms the western boundary of the park. Three park roads provide access from that thoroughfare. Lindell Boulevard forms the north boundary. Four park roads provide access into the park from that thoroughfare. Tamm Avenue provides access across I-64/US 40 for people living in the neighborhoods south of Forest Park, and the two portions of the Science Center are linked by a pedestrian bridge over the highway.

Activities and Use

Forest Park offers an unusually wide variety of activities, including cultural activities, physical activity, and contemplation. Over its 128-year existence, the park has developed into a unique regional resource. A wide variety of natural, recreational, and cultural facilities are listed below and correspond to the numbers shown on Exhibit 4f-G2.

1. Forest Park Forever Offices
2. The Jefferson Memorial Building
3. The Lindell Pavilion
4. The Cabanne House
5. The Mark C. Steinberg Memorial Skating Rink
6. The Richard C. Hudlin Tennis Courts
7. The St. Louis Science Center
8. The Triple A Golf and Tennis Club
9. Department of Parks, Recreation, and Forestry Offices and Greenhouse Complex
10. The Jewel Box (Municipal Floral Conservancy)
11. The Muny (Municipal Opera Theater)
12. The Forest Park Boat House
13. The World's Fair Pavilion
14. The Saint Louis Zoo
15. The Saint Louis Art Museum
16. The Dwight D. Eisenhower Municipal Golf Courses
17. The Dwight F. Davis Tennis Center [recipient of a LWCF grant – 6(f)]
18. Turtle Playground/Park
19. The Forest Park Recreational Path

Not shown on the map are the athletic fields known as Aviation Field, located on the north side of I-64, just east of the Parks Department Headquarters (#9). The Forest Park Headquarters Building located at 115 Union, and the Jewel Box (#10) located at the junction of Wells and McKinley Drive are listed on the National Register of Historic Places (NRHP). The portion of Forest Park bounded by I-64, Kingshighway Boulevard, Lindell Boulevard, and Skinker Boulevard is eligible for inclusion on the NRHP as a historic district.

Master Plan Improvements

In 1995 the city of St. Louis adopted the *Forest Park Master Plan* to restore the natural characteristics of the park and create a "total park experience." Over the years, erosion, overuse, and lack of funding for maintenance have damaged the integrity of Forest Park. This master plan included major construction projects throughout the park to improve waterways, natural beauty, history, culture, infrastructure, public access, recreation, and education. The master plan improvements were completed in the Spring of 2004 and a grand re-opening was held on New Year's Eve 2003-2004. Events were held throughout 2004 to celebrate the 100th Anniversary of the 1904 World's Fair. The proposed improvements combined public and private funds for a total of $102 million. A fact sheet discussing the renovation is included in Appendix 4f-G2a.

Relationship to Other Similar Resources

During the evaluation of Section 4(f) properties, it is important to consider the context of each such property as it relates to other similar facilities in the area. This provides a measure of the uniqueness of the Section 4(f) resource that would be impacted and the importance of that impact to the context of the overall community and region.

The 103 city parks total 3,101.29 acres. At 1,293.22 acres, Forest Park accounts for nearly 42 percent of the total parkland in the city and offers the most diverse recreational opportunities in the system. The other 102 parks range in size from the 0.4 acre Aboussie Park located at 13th and Lynch to the 289 acre Tower Grove Park bounded by Kingshighway, Magnolia, Grand, and Arsenal. Forest Park is considered the jewel of the St. Louis Parks Department (see Exhibit 4f-G3).

The St. Louis County Department of Parks and Recreation operates 63 parks totaling nearly 13,000 acres. The park facilities include a wide variety of recreational facilities, historic buildings, and specialized attractions such as the Museum of Transportation, Laumeier Sculpture Park, and the American Kennel Club Museum of the Dog in Queeny Park.

No-Build Alternative

The No-Build Alternative includes reconstructing the I-64 facility in place to replace deteriorated pavement within the existing right-of-way. The No-Build Alternative does not satisfy the purpose and need of this project to bring the I-64 facility up to the current design and safety standards.

Preferred Build Alternative

The preferred Build Alternative through Forest Park would include reconstructing an eight-lane facility with twelve foot lanes and twelve foot shoulders and auxiliary lanes between Skinker Boulevard/Oakland Avenue on the west end to Kingshighway Boulevard (see Exhibits 4f-G5a to G5f). The highway would be depressed west of Hampton Avenue and would utilize retaining walls to minimize right of way acquisition and impacts to park resources.

Oakland Avenue will also be reconstructed with four ten-foot lanes and a raised median between Clayton Road and Kingshighway. The proposed improvements to I-64 would shift Oakland Avenue slightly to the south; however, from southeast of the Hampton Avenue interchange it would be reconstructed only as a four-lane section. The improvements to Oakland Avenue are included in the scope of the proposed project.

The proposed highway improvements have been coordinated with the St Louis Parks, Recreation and Forestry Department to assure that they fit the park master plan proposals. The planned park improvements are being implemented, and will be completed before the highway

improvements are undertaken. A summary of the various coordination meetings that have been held is included later in this evaluation.

b. Impacts to and Mitigation of Resources

Impacts of the preferred build alternative to park resources or areas include permanent impacts and temporary impacts.

Permanent Impacts – Permanent impacts include right-of-way acquisition, permanent easements, and other conversions of park land and built park uses. The acquisition of right-of-way involves the transfer of property ownership from Forest Park to MoDOT. Permanent easements, required for retaining wall construction and highway signage, have many of the same characteristics as a temporary easement (described below), except MoDOT would have the right of access to maintain or repair its facilities within the easement, which would remain in Forest Park ownership. The surface would be available for any non-structural use by the park.

Other permanent impacts include conversions within park property that do not involve transfer of ownership or right of access. A permanent impact could occur where park open space is converted to local road use, where park open space is converted to a built park use, or where a built park use is converted to a local road use. Permanent impacts can also involve a conversion of road use or park use that results in a gain of park open space, such as the removal of road or path pavement that can be converted to park open space. The gain in park open space could be used to offset some of the permanent impacts that reduce park space.

Temporary Impacts – Temporary impacts (easements) are considered those that do not leave permanent changes or cause disturbances that cannot be restored to pre-existing conditions, such as those that provide ease of access for construction equipment. The easement ceases to exist once construction is completed.

Impacts to Planned Facilities – Possible impacts to park improvements that are proposed in the Forest Park Master Plan are also discussed where highway improvements would affect the planned resource.

Permanent and temporary impacts, as described above, can also occur as a result of mitigation efforts. In addition, the redesign of interchange areas would result in a smaller footprint of the roadway. The removal of existing ramp pavement would leave open land in the right-of-way that would no longer be needed for construction and maintenance of the highway. Although this excess land in the right-of-way could remain in MoDOT ownership, it would be transferred to Forest Park as a measure to minimize or offset the permanent impacts in other areas of the park.

Tree Removal – Impacts to some of the trees of Forest Park would also occur due to the requirements of the project and through mitigation efforts. Right-of-way acquisition and permanent and temporary easements needed for construction would require the removal of trees. As noted previously Forest Park contains over 14,000 trees, not counting those in the Kennedy Forest and at the St. Louis Zoo.

A field survey was conducted to review species, caliper size, and condition of existing trees. This field survey supplemented existing data found by the review of topographic maps, aerial photos, and a windshield survey. The field survey provided an estimate of the number of trees that will have to be removed. Because the estimate was based on preliminary right-of-way acquisition and permanent and temporary easements, the number of trees that will actually be

removed during construction will most likely vary from this estimate. Trees counted as being removed as part of this estimate, may avoid removal during construction based on the final limits of grading and construction. Also, because construction can impact the root zone of trees located adjacent to proposed construction easements, trees located outside, but adjacent to the impact zones were included in the estimate. Thus, the number of trees counted for removal is approximate and may error on a higher quantity than may actually be removed during construction. Steps will be taken during both design and construction to limit the number of trees that must be removed. Design steps may include retaining walls instead of extensive grading and aeration of root zones in areas of new soil fill. Construction documents and specifications will detail and specify steps by the contractor to protect existing trees. Contractors will be required to follow steps such as tree protection fencing, avoidance of soil compaction, and not storing materials on top of root areas. These steps will help limit the total number of trees that will have to be removed. During the design phase when detailed construction limits are determined, a more detailed assessment of the number, species, and size of trees that would be removed will be undertaken. Tree removal is included in the discussion of each resource/area impacted, and is summarized at the end.

For analysis purposes, impacted trees were grouped into three categories: canopy/overstory trees (deciduous), ornamental/understory trees (deciduous), and evergreen trees. Canopy trees include: Norway Maple, Silver Maple, Red Maple, Thornless Honey Locust, American Linden, Hackberry, White Ash, Green Ash, Blue Ash, Red Oak, Pin Oak, Bald Cypress, American Elm, Ginkgo, Goldenrain Tree, Hickory, Osage Orange, and Sycamore. Ornamental/understory trees include: Amur Maple, Crabapple, Hawthorn, Redbud, Magnolia, and Pear. Evergreen trees include: Eastern Redcedar, Austrian Pine, Eastern White Pine, Scotch Pine, and Spruce.

Given the size and diversity of Forest Park, the impacts to the Park are described in terms of the individual areas or resources located within the Park, generally from west to east. Exhibit 4f-G4 shows the location of the areas and resources of Forest Park that would be impacted by the project, and the location of the exhibit sheets that show the impacts of the preferred build alternative (Exhibits 4f-G5a thru G5f). Tables 4f-4 and 4f-5 (located at the end of the 4(f) evaluation text) present the detailed project impacts and the detailed mitigation impacts for each park resource or area impacted, and assign a letter-number designation (such as A-1, B-2, etc.) for a specific item or area impacted. These letter-number designations correspond to those shown on the exhibit sheets.

c. Resources/Areas Impacted

The park resources/areas that would be impacted, or were evaluated for impacts, are discussed in the text that follows and include:

1) Open Space (North Side of I-64 from Skinker to Tamm)
2) Open Space (In the Clayton/Oakland/I-64 Interchange Area)
3) Open Space (South Side of I-64 from the Clayton/Oakland/I-64 Interchange to Tamm)
4) Open Space (North Side of I-64 from Tamm to Wells Drive/Hampton Intersection)
5) Tamm Avenue Reconstruction
6) Turtle Playground
7) Zoo Parking Area
8) St. Louis Zoo
9) Forest Park Recreational Path
10) Wells Drive/Hampton Avenue Intersection
11) Open Space (Wells Drive/Hampton Avenue Intersection)

12) Open Space (North Side of I-64 from Hampton to Kingshighway)
13) Employee Parking/Shuttle Bus Drop-Off Area
14) Open Space (South Side of I-64 from Hampton to Kingshighway)
15) Pedestrian Crossings (Shared with Vehicular Use)
16) Pedestrian Crossings(Non-vehicular/Stand-alone Structures)
17) Aviation Field (Athletic Fields)
18) Trees
19) Aesthetics
20) Cultural Resources
21) Construction Impacts
22) Highway Signage

1) Open Space (North Side of I-64 from Skinker to Tamm)

Description – The open space (see Exhibit 4f-G6) on the north side of I-64, from Skinker to Tamm Avenue, is composed of trees, grass, and the Forest Park Recreational Path. The project would impact open space in this area by right-of-way acquisition, permanent easement, temporary easement, and tree removal. The recreational path, however, would not be impacted in this area of the project (see Exhibit 4f-G5a & G5b).

Permanent Project Impacts – The Preferred Alternative in this area, as a result of cutting operations for road widening and retaining wall placement, would require 0.28 acres of open space for right-of-way acquisition (A-2), and 0.73 acres for permanent easement (A-2).

Temporary Project Impacts – The Preferred Alternative in this area at the west end of Forest Park would require 0.29 acres of open space for temporary easement (A-1).

Tree Removal – The impacts in this area would also include the removal of 29 canopy trees, 25 ornamental/understory trees, and 24 evergreen trees.

Mitigation and Measures to Minimize Harm – As mitigation and as a measure to minimize harm for impacts to open space and tree removal in this area, trees, shrubs and grass will be planted in disturbed areas as appropriate, and in other areas within Forest Park, as designated by and subject to approval by the St. Louis Department of Parks, Recreation, and Forestry. Within the permanent easements, construction of retaining walls will utilize techniques that minimize the area of disturbance. Areas of open space within temporary easements will be restored to pre-existing conditions or conditions consistent with adjacent areas of the park.

2) Open Space (In the Clayton/Oakland/I-64 Interchange Area)

Description – The open space in the Clayton/Oakland/I-64 interchange area is composed of trees and grass. The project would impact open space in this area by permanent easement, temporary easement, and tree removal (see Exhibit 4f-G5a).

Permanent Project Impacts – The Preferred Alternative in this area, as a result of cutting operations for road widening, would require 0.14 acres of open space for permanent easement (B-2).

Temporary Project Impacts – The Preferred Alternative in this area would require 0.40 acres of open space for temporary easement (B-1).

Tree Removal – The impacts in this area would also include the removal of 11 canopy trees.

Mitigation and Measures to Minimize Harm – Mitigation and measures to minimize harm for impacts to open space and tree removal in this area are similar for all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*).

3) Open Space (South Side of I-64 from the Clayton/Oakland/I-64 Interchange to Tamm)

Description – The open space on the south side of I-64 from the Clayton/Oakland/I-64 Interchange to Tamm is composed of trees and grass. The project would impact open space in this area by right-of-way acquisition, permanent easement, and tree removal (see Exhibit 4f-G5a & G5b).

Permanent Project Impacts – The Preferred Alternative in this area, as a result of excavation operations for road widening and retaining wall placement, would require 0.17 acres of open space for right-of-way acquisition (C-1), and 0.82 acres of open space for permanent easement (C-2).

Temporary Project Impacts – There would be no temporary easements in this area.

Tree Removal – The impacts in this area would also include the removal of 34 canopy trees.

Mitigation and Measures to Minimize Harm – Mitigation and measures to minimize harm for impacts to open space and tree removal in this area are similar for all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*).

4) Open Space (North Side of I-64 from Tamm to Wells Drive/Hampton Intersection)

Description – The open space on the north side of I-64 from Tamm Avenue to the Wells Dr./Hampton Avenue intersection is composed of trees, grass and the Forest Park Recreational Path (which is discussed under a separate heading). The project would impact open space in this area by right-of-way acquisition, permanent easement, temporary easement, and tree removal (see Exhibit 4f-G5b & G5c).

Permanent Project Impacts – The Preferred Alternative in this area, as a result of cutting operations for road widening and retaining wall placement, would require 0.80 acres of open space for right-of-way acquisition (D-2), and 0.39 acres of open space for permanent easement (D-2).

Temporary Project Impacts – The Preferred Alternative in this area would require 0.24 acres of open space for temporary easement (D-1 & D-3).

Tree Removal – The impacts in this area would also include the removal of 49 canopy trees and 33 evergreen trees. Most of these trees are concentrated south and southeast of the zoo parking lot in a narrow area that has been landscaped to provide a buffer between I-64 and the recreational path and parking lot.

Mitigation and Measures to Minimize Harm – Mitigation and measures to minimize harm for impacts to open space and tree removal are similar for all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*). In addition, the excess right-of-way at the existing Hampton Avenue/I-64 interchange area, which was formerly park land before I-64 was initially constructed, (1.39 acres in the northwest quad [O-1] and 0.95 acres in the northeast quad [O-2]) would be given to Forest Park as a mitigation measure to offset impacts to park open space (see Exhibit 4f-G5c). It would be graded, shaped and

landscaped using trees, shrubs and grass as appropriate and subject to approval by the St. Louis Department of Parks, Recreation and Forestry. The resultant land would be suitable for immediate public park use.

5) Tamm Avenue Reconstruction

Description – Tamm Avenue acts as a local vehicular and pedestrian connection across I-64 from the high density Dogtown neighborhood directly south of Oakland Avenue to and from Forest Park. The Tamm Avenue reconstruction would include replacing the existing bridge with a longer bridge that would allow for an underpass of the recreational path on the north side of I-64. The project would impact open space in this area by right-of-way acquisition, permanent easement, and temporary easement (see Exhibit 4f-G5b).

Permanent Project Impacts – The Preferred Alternative in this area, as a result of cutting operations for road widening and bridge construction, would require 0.03 acres of Tamm Avenue for right-of-way acquisition (E-1), and 0.04 acres of Tamm Avenue for permanent easement (E-1).

Temporary Project Impacts – The Preferred Alternative in this area would require the temporary removal of 0.22 acres of street pavement in temporary easement (E-1). Temporary construction impacts to open space, in conjunction with the Tamm Avenue reconstruction are included in the open space discussion for the Tamm Avenue area above (see D-1).

Tree Removal – Tree removal in conjunction with the Tamm Avenue reconstruction is included in the open space discussion for the Tamm Avenue area above (see D-1).

Mitigation and Measures to Minimize Harm – The new longer Tamm Avenue bridge over I-64 would not only provide for a recreational path underpass on the north side, but it would continue to provide pedestrian access from Turtle Playground on the south side of I-64 to the zoo parking lot and the recreational path on the north side.

6) Turtle Playground

Description - This a children's play area featuring giant sculpted land turtles created by St. Louis artist Bob Cassily. It also contains a restroom facility, paved walking paths, a parking lot, several trees, and grassed open space (see Exhibit 4f-G7a). Turtle Playground is at the southern-most edge of Forest Park at the northeast corner of Tamm and Oakland Avenues on the south side of I-64/U.S. 40. The project would impact open space in this area by right-of-way acquisition, permanent easement, temporary easement, and tree removal (see Exhibit 4f-5b).

Permanent Project Impacts – The Preferred Alternative in this area, as a result of cutting operations for road widening and retaining wall placement, would require 0.53 acres of open space for right-of-way acquisition (F-1), and 0.45 acres of open space for permanent easement (F-1). The concrete turtles in Turtle Playground would not be impacted by the project.

Temporary Project Impacts – The Preferred Alternative would require 0.18 acres of open space for temporary easement at the far east end of the Turtle Playground area (F-2). In addition, approximately 0.01 acres (420 sq. ft.) of paved walking path would be temporarily removed by highway construction (F-3).

Tree Removal – The impacts in this area would also include the removal of 32 canopy trees, 4 ornamental/understory trees, and 4 evergreen trees.

Mitigation and Measures to Minimize Harm – The retaining walls that would be constructed at the highway right-of-way line, and within the permanent easement, would allow the portion of Turtle Playground adjacent to the highway to be reconfigured with a flatter, more usable surface (see Exhibit 4f-G7b *Turtle Park Retaining Wall* and Exhibit 4f-G7c *Turtle Playground*).

Temporary Mitigation Impacts – The portion of the paved walking path that would be removed during highway construction would be replaced in the permanent easement area described above, and would likely require an additional 0.02 acres of temporary easement for replacement.

Mitigation and measures to minimize harm for impacts to open space and tree removal in the Turtle Playground area are similar to those of all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*).

7) Zoo Parking Area

Description – The Saint Louis Zoo parking lot (see Exhibit 4f-G8a) contains 1059 parking spaces and is located north of I-64 between Tamm Avenue and Hampton Avenue. The project impacts would require that the southeast corner of the parking lot be modified resulting in a loss of parking (see Exhibit 4f-G5b).

Permanent Project Impacts – The preferred Build Alternative in this area, as a result of cutting operations for road widening and retaining wall placement, would require 0.01 acres of the parking lot for right-of-way acquisition (G-1), and 0.05 acres of the parking lot for permanent easement (G-1). These impacts would result in the loss of 30 parking spaces.

Temporary Project Impacts – No temporary easements related to project construction would be required in the zoo parking lot, however, temporary impacts would occur as a result of mitigation as discussed below.

Tree removal – There are no trees located within the parking lot.

Mitigation and Measures to Minimize Harm – Through the coordination efforts, the loss of 30 zoo parking spaces would be mitigated by expanding the existing parking lot to the east and re-striping the southern edge of the lot, resulting in no net loss of parking capacity (see Exhibit 4f-5b and Exhibit 4f-G8b *Zoo Parking Option 5b-1059 Spaces with Multi-use Trail).* This alternative has evolved through discussions with the St. Louis Zoo and St. Louis Department of Parks Recreation and Forestry officials, and further discussions will take place.

Permanent Mitigation Impacts – Construction of the new parking area (Q-2), including cutting operations, would result in a permanent impact of 0.12 acres of open space being converted to a paved parking area. However, reconfiguration of the parking lot in the northeast corner would involve the removal of 0.08 acres of paved parking area (Q-3) that would be converted to park open space.

Temporary Mitigation Impacts – The mitigation efforts would include a temporary easement along the south and southeast edges of the parking lot (Q-1) containing 0.84 acres of paved parking. Within this temporary easement, 0.07 acres of existing paved parking use would be converted to paved recreational path use (switching one paved park use for another). The actual parking spaces within this area have been included in the 30-space loss discussed above. Parking mitigation would also result in temporary impacts to 0.06 acres of open space (O-3).

Tree Removal – The parking mitigation efforts would result in the removal of 5 canopy trees.

Mitigation and measures to minimize harm for impacts to open space and tree removal in the zoo parking lot area are similar to those of all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*).

8) The St. Louis Zoo

Description – The St. Louis Zoo is one of the world's premier zoological gardens and is home to more than 6,500 animals, including many exotic and endangered species. It is located directly north of the zoo parking lot that was discussed previously.

Noise – The preferred Build Alternative would not directly impact the zoo facilities, however, a noise analysis was prepared, in compliance with 23 USC Section 109(h) and (i), the FHWA guidelines for the assessment of traffic-generated noise, to determine if the anticipated noise levels of the preferred Build Alternative would adversely impact the zoo. The study compared projected design year 2020 noise levels with existing 2001 noise levels along I-64 (see EIS Chapter IV). In the area of the St. Louis Zoo, the noise analysis found that the anticipated year 2020 noise levels at the zoo would not approach or exceed the 67 dBA (L_{eq}), which is the FHWA's Noise Abatement Criteria (NAC) for a park. The preferred Build Alternative would, therefore, not have an adverse noise impact on the zoo. Limited noise impacts on the zoo are attributed to the fact that the highway would be depressed in this area (from 5 to 15 feet below grade), and that the zoo is approximately 300 feet from the north right-of-way line of I-64 at its nearest point. The impacts of construction related activities on the zoo are discussed under the Construction Impacts section.

9) The Forest Park Recreational Path

Description – The Forest Park Recreational Path is a 10-foot wide, 7.5-mile long, asphalt multi-use path that is popular with cyclists, roller-bladers, joggers, and walkers (see Exhibit 4f-G9a). The portions of the path that travel near I-64 are located from approximately 2000 feet west of Tamm Avenue to the Wells Drive/Hampton intersection. Project impacts to the recreational path would consist of removal of some of the path by right-of-way acquisition, permanent easement, and conversion of a portion of the path to local road use (see Exhibits 4f-G5b & G5c).

Permanent Project Impacts – The preferred Build Alternative, as a result of cutting operations for road widening and retaining wall placement in the area southeast of the zoo parking lot (H-1), would require 0.06 acres of recreational path for right-of-way acquisition, and 0.04 acres of the path for permanent easement. These impacts would result in the removal of 445 linear feet of path.

At the Wells Drive/Hampton Avenue intersection (H-2), local road improvements related to the construction of a roundabout would convert 0.03 acres of path to road pavement. This would result in the removal of 140 linear feet of path.

Temporary Project Impacts – No temporary impacts related to highway improvements or intersection improvements would result in additional impacts to the recreational path, however, temporary impacts would occur as a result of mitigation as discussed below.

Tree removal – Tree removal associated with project impacts in this area is included in the previous discussion under *Open Space (North Side of I-64 from Tamm to Wells Dr./Hampton Intersection).*

Impacts to Planned Facilities – The Forest Park Master Plan indicates that the recreational path is planned to be extended along the south edge of the Aviation Field athletic fields, adjacent to the north side of I-64, and west toward Hampton Avenue (see Exhibit 4f-G9b, *Planned Recreational Path at Aviation Field*). The path extension has been designed and will be constructed when funding becomes available. It would most likely be in place by 2007, before I-64 improvements would occur, and could thereby be impacted by grading operations for road widening in permanent easement between the park greenhouses and the off-ramp to the Hampton interchange (see Exhibit 4f-G5c). The amount of path impacted would depend on its exact location at the time of highway construction. Since the path is a non-structural use it would be replaced in approximately the same location. The road in this location would be approximately the same elevation as the park elevation.

Mitigation and Measures to Minimize Harm – As mitigation for project impacts to the Forest Park Recreational Path, portions of the path would be relocated to improve its continuity and safety. The path would be relocated south and southeast of the zoo parking lot. In addition, portions of the recreational path would be rerouted and grade-separated from the roads to travel under Tamm Avenue, north of I-64, and under Hampton Avenue, south of Wells Drive (see Exhibits 4f-G5b & G5c). This would remove the path from vehicular traffic entering and exiting the park at Tamm and Hampton (the existing path currently crosses Tamm and Hampton Avenues at grade). In order to determine additional design considerations for the relocated path (and pedestrian crossings), beyond those included in AASHTO design standards, a meeting was held with Paraquad, an organization representing persons with disabilities. These items, such as flatter pedestrian grades and voice activated crossings will be considered in the design process.

Permanent Mitigation Impacts – Relocating the path south and southeast of the zoo parking lot would result in 0.03 acres of open space that would be converted to new recreational path (R-2). This equates to 150 linear feet of new relocated path that would be constructed.

Relocating the path in the Tamm Avenue vicinity would result in 0.14 acres of existing path being removed and converted to open space (S-2). This equates to 595 linear feet of recreational path that would be removed. The new relocated path would result in 0.09 acres of open space that would be converted to new recreational path (S-3). This equates to 375 linear feet of new relocated path that would be constructed. An additional 50 linear feet of new path would be located under the new Tamm Avenue bridge on the north side of I-64.

Relocating the path at the Wells Dr./Hampton Avenue intersection would result in 0.09 acres of existing path being removed and converted to open space (T-2). This equates to 400 linear feet of recreational path that would be removed. The new relocated path would result in 0.21 acres of open space that would be converted to new recreational path (T-3). This also includes a connector path (see Exhibit 4f-G9c*, Wells/Hampton Intersection Improvements).* The new relocated path and the connector path equate to 930 linear feet of path that would be constructed. An additional 90 linear feet of new path would be located under Hampton Avenue, south of Wells Drive.

At the proposed pedestrian tunnel east of the Science Center (also discussed later in relation to Pedestrian Crossings), mitigation efforts would include the addition of a 10-foot wide path connection from the tunnel to the Forest Park Recreational Path (north side of I-64), and from the tunnel to Oakland Avenue (south side of I-64) (see Exhibit 4f-5h). The connector path on the north side would also include stairs between curvilinear path segments to accommodate users who prefer a shorter route (see Exhibit 4f-G9d, *Pedestrian Tunnel Plan*). The connection from the tunnel to the recreational path would be serpentine in configuration to maintain a slope that is ADA compliant. These additions to the recreational path system would result in 810 linear feet of new recreational path and 145 linear feet of stairs that would be constructed. An additional 270 feet of recreational path would travel through the tunnel under I-64. Impacts regarding conversion of open space to recreational path in this location are discussed in a subsequent section, *Pedestrian Crossings (Non-vehicular/Stand Alone Structures).*

Temporary Mitigation Impacts – The mitigation efforts for the recreational path would include a temporary easement south and southeast of the zoo parking lot containing 0.26 acres (O-4). Temporary impacts to the recreational path in this area, consisting of 0.14 acres (R-1), would occur where existing path is removed and replaced with new path pavement on the same location. This equates to 610 linear feet of path that would be removed and replaced. Within this temporary easement, 0.07 acres of paved recreational path would be placed on an area that was previously used as zoo parking (switching one paved park use for another) prior to redesign of the parking lot through parking mitigation, equating to 300 linear feet of new relocated path.

Mitigation efforts in the Tamm Avenue vicinity would include a temporary easement containing 0.72 acres of open space (O-5). Temporary impacts to the recreational path, consisting of 0.03 acres, would occur where existing path is removed and replaced with new path pavement (S-1). This would result in 125 linear feet of path that would be removed and replaced on the same location.

Mitigation efforts at the Wells Drive/Hampton Avenue intersection would include a temporary easement containing 1.66 acres of open space (O-6). Temporary impacts to the recreational path, consisting of 0.05 acres, would occur where existing path is removed and replaced with new path pavement (T-1). This would result in 200 linear feet of path that would be removed and replaced on the same location.

Mitigation efforts in relation to a temporary easement for the recreational path connector at the proposed pedestrian tunnel east of the Science Center are discussed in a subsequent section, *Pedestrian Crossings (Non-vehicular/Stand Alone Structures).*

Tree Removal – Mitigation efforts for impacts related to the recreational path south and southeast of the zoo parking lot would result in the removal of 4 canopy trees; in the Tamm Avenue vicinity it would result in the removal of 2 canopy trees; in the Wells Dr./Hampton intersection vicinity it would result in the removal of 5 canopy trees, 6 ornamental/understory trees, and 3 evergreen trees. Tree removal at the connector path to/from the proposed pedestrian tunnel east of the Science Center is discussed in a subsequent section, *Pedestrian Crossings (Non-vehicular/Stand Alone Structures).*

Table 4f-1
Recreational Path Length Summary

Area (see Exhibits 4f-G5a thru G5f)	Path Length Permanently Removed	Path Length Added (on new location)	Temporary Impacts - Removed & Replaced (on same location)
Project Related			
H-1	445		
H-2	140		
Mitigation Related			
R-1		300	610
R-2 (in open space)		150	
R-2 (in zoo parking lot)		300	
S-1			125
S-2	595		
S-3		375	
S-3 (under Tamm Avenue)		50	
T-1			200
T-2	400		
T-3		930	
T-3 (under Hampton Avenue)		90	
U-1 (planned rec. path)			360
X-3		810	
X-3 (through tunnel under I-64)		270	
TOTALS	**1580**	**3275**	**1295**
Gain of Path Length	**1695**		

Impacts to Planned Facilities – The recreational path that is planned to be extended along the south edge of the Aviation Field athletic fields, adjacent to the north side of I-64, would be in place before I-64 improvements would occur, and could thereby be impacted by construction of the proposed pedestrian overpass in that location (see Exhibit 4f-G11b and U-1 on Exhibit 4f-G5d). Approximately 0.08 acres (360 linear feet) of the path, within the permanent easement required for construction of the overpass, could be temporarily impacted. However, it would be replaced and appropriate connections to the overpass system would be incorporated.

Mitigation and measures to minimize harm for impacts to open space and tree removal related to the Forest Park Recreational Path are similar to those of all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*).

As shown in Table 4f-1, project impacts and mitigation impacts to the length of recreational path would total 1580 linear feet of path being permanently removed. Mitigation efforts would total 3275 linear feet of path being relocated or added on new location. The end result would be an increase of 1695 linear feet of path length that would provide improved access to the park and a safer recreational experience for pedestrians, bicyclists, joggers and hikers.

10) Wells Drive/Hampton Avenue Intersection

Description – The Wells Drive/Hampton Avenue intersection (see Exhibit 4f-G10), which is on park property and not within MoDOT right-of-way, would be reconstructed as a roundabout for increased safety (see Exhibit 4f-G9c *Wells/Hampton Intersection Improvements*). The project would impact road pavement, a sidewalk, and open space in this area by conversion of uses, temporary easement, and tree removal (see Exhibit 4f-G5c).

Permanent Project Impacts – The improvements to the intersection would result in 0.02 acres of sidewalk (located apart from the roadway) that would be removed and converted to open space (I-2). Other conversions of use are discussed in the subsequent section, *Open Space (Wells Dr./Hampton Avenue Intersection).*

Temporary Project Impacts – The improvements to the intersection would result in the temporary removal of 1.32 acres of road pavement and integral concrete sidewalk (I-1). Temporary impacts to open space related to intersection improvements are discussed in the subsequent section, *Open Space (Wells Dr./Hampton Avenue Intersection).*

Tree Removal – Tree removal related to intersection improvements is discussed in the subsequent section, *Open Space (Wells Dr./Hampton Avenue Intersection).*

Mitigation and Measures to Minimize Harm – As part of the mitigation efforts, construction of a roundabout at the Wells Drive/Hampton Avenue intersection would (with help from the single point interchange at I-64/Hampton) reduce congestion, eliminate a traffic signal at that location thereby reducing maintenance costs, stay consistent with the traffic circle theme within the park, and provide for a gateway opportunity for Forest Park at that location. In addition, a crossing under Hampton, south of Wells Drive, would provide a grade separated crossing for the recreational path. The separate sidewalk that was removed, and the integral sidewalks, would be replaced by being integral to the new road pavement.

11) Open Space (Wells Drive/Hampton Avenue Intersection)

Description – The open space at the Wells Dr./Hampton Avenue intersection, is composed of trees, grass, and the Forest Park Recreational Path. The project would impact open space in this area by conversion of use, temporary easement, and tree removal (see Exhibit 4f-G5c). Impacts to the recreational path in this area have been previously discussed in the section, *The Forest Park Recreational Path.*

Permanent Project Impacts – The intersection improvements would result in 0.23 acres of open space being converted to road pavement (J-2), and 0.08 acres of road pavement being converted to open space (J-3).

Temporary Project Impacts – The intersection improvements would require 1.02 acres of open space for temporary easement (J-1).

Tree Removal – The impacts to open space in this area (related to intersection improvements) would also include the removal of 10 canopy trees, and 6 ornamental/understory trees.

Mitigation and Measures to Minimize Harm – Mitigation and measures to minimize harm for impacts to open space and tree removal in this area are similar for all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm).*

12) Open Space (North Side of I-64 from Hampton to Kingshighway)

Description – The open space on the north side of I-64, from Hampton Avenue to Kingshighway, is composed of trees, grass, the Aviation Field athletic fields, and the Forest Park Recreational Path. The project would impact open space in this area by right-of-way acquisition, permanent easement, temporary easement, and tree removal (see Exhibits 4f-G5c thru G5f). Impacts to the recreational path in this area have been previously discussed in the section, *The Forest Park Recreational Path.* The athletic fields at Aviation Field (currently under renovation) would not be physically impacted by the project or mitigation. However, proximal impacts to the fields are discussed in a subsequent section, *Aviation Field (Athletic Fields)*.

Permanent Project Impacts – The Preferred Alternative in this area, to accommodate embankment, would require 1.71 acres of open space for right-of-way acquisition (K-1: 0.77 ac), (K-5: 0.35 ac) and (K-7: 0.59 ac); and 1.58 acres of open space for permanent easement (K-2: 0.51 ac), (K-3: 0.25 ac) and (K-4: 0.82 ac). In addition, a 6-foot wide concrete walk, which would provide a connection between Clayton Avenue and the proposed pedestrian overpass at the interchange, would be added near the northeast quad of the kingshighway/I-64 interchange, just west of the Central Institute for the Deaf (K-9). This would result in 0.03 acres of open space being converted to sidewalk.

Temporary Project Impacts – The Preferred Alternative in this area would require 1.07 acres of open space for temporary easement (K-6: 0.63 ac) and (K-8: 0.44 ac).

Tree Removal – The impacts to open space in this area would also include the removal of 46 canopy trees, 145 ornamental/understory trees, and 65 evergreen trees.

Mitigation and Measures to Minimize Harm – Mitigation and measures to minimize harm for impacts to open space and tree removal in this area are similar for all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*). In addition, excess right-of-way on the north side of I-64 would be given to Forest Park as a mitigation measure to offset impacts to park open space. Near the existing pedestrian tunnel, across from Macklind Avenue, an area of excess right-of-way, which was formerly park land before I-64 was initially constructed, contains 0.44 acres (X-2); at the northwest quad of the Kingshighway interchange there is an area of excess right-of-way (formerly park land) containing 2.12 acres (X-4); and at the northeast quad of the Kingshighway interchange there is an area of excess right-of-way containing 4.11 acres (X-5), 4.08 acres of which was formerly park land (see Exhibits 4f-G5d thru G5f). This land was sold to the State Highway Commission in 1962 by warranty deed for highway purposes. The only stipulation was that the money should go into a special park fund for the purpose of replacing in Forest Park the improvements removed with the widening project. There was no stipulation that the land would have to be returned to Forest Park if at some point it was no longer needed for highway purposes. These areas of excess right-of-way would be graded, shaped and landscaped using trees, shrubs and grass as appropriate and subject to approval by the St. Louis Department of Parks, Recreation and Forestry. The resultant land would be accessible and suitable for immediate public park use.

13) Employee Parking/Shuttle Bus Drop-off Area (At Proposed Overpass at FPCC)

Description – This area, located at the proposed overpass at Forest Park Community College (FPCC) near the southwest corner of Aviation Field, is currently a Forest Park shuttle bus drop off area (mostly used by students and staff from FPCC) and a parking area for greenhouse and maintenance employees of Forest Park. Parking is unmarked, but occurs in the center of the turnaround and along the edge of the road, which is McKinley Drive. The project would impact this area by requiring permanent easement (see Exhibit 4f-G5d).

Permanent Project Impacts – The preferred Build Alternative would result in 0.05 acres (approximately a 10-foot wide strip) of road at the southern edge of the shuttle bus drop off area being required for permanent easement (L-1) as a result of cutting operations for road widening and retaining wall placement. This would not affect the parking or the function of the drop off area.

Temporary Project Impacts – No temporary easements related to the project would be required.

Tree Removal – No trees would be removed in this area.

Mitigation and Measures to Minimize Harm – Since the drop off and parking area would incur additional impacts as a result of pedestrian crossing mitigation, the mitigation and measures to minimize harm for impacts to this area are discussed in the subsequent section titled *Pedestrian Crossings (Non-vehicular/Stand-Alone Structures).*

14) Open Space (South Side of I-64 from Hampton to Kingshighway)

Description – The open space on the south side of I-64, from Hampton Avenue to Kingshighway is composed of trees and grass. The project would impact open space in this area by right-of-way acquisition, permanent easement, temporary easement, and tree removal (see Exhibits 4f-G5c thru G5f).

Permanent Project Impacts – The Preferred Alternative in this area, to accommodate embankment, would require 2.72 acres of open space for right-of-way acquisition (M-1: 0.43 ac), (M-2: 2.17 ac) and (M-5: 0.12 ac); and 0.40 acres of open space for permanent easement (M-3).

Temporary Project Impacts – The Preferred Alternative in this area would require 0.32 acres of open space for temporary easement (M-4).

Tree Removal – The impacts to open space in this area would also include the removal of 35 canopy trees, 9 ornamental/understory trees, and 3 evergreen trees.

Mitigation and Measures to Minimize Harm – Mitigation and measures to minimize harm for impacts to open space and tree removal in this area are similar for all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*). In addition, excess right-of-way on the south side of I-64, which was formerly park land before I-64 was initially constructed, would be given to Forest Park as a mitigation measure to offset impacts to park open space. At the southwest quad of the Kingshighway interchange there is an area of excess right-of-way (formerly park land) containing 1.89 acres (X-6); and at the southeast quad of the Kingshighway interchange there is an area of excess right-of-way containing 3.03 acres (X-7), 0.80 acres of which was formerly park land (see Exhibits 4f-G5e & G5f). This land was sold to the State Highway Commission in 1962 by warranty deed for highway purposes. The only stipulation was that the money should go into a special park fund for the purpose of replacing in Forest Park the improvements removed with the widening project. There was no stipulation requiring that the land would have to be returned to Forest Park if at some point it was no longer needed for highway purposes. These areas of excess right-of-way would be graded, shaped and landscaped using trees, shrubs and grass as appropriate and subject to approval by the St. Louis Department of Parks, Recreation and Forestry. The resultant land would be suitable for immediate public park use. The land in the southwest quadrant would be accessible from the north side via a new pedestrian tunnel. The land in the southeast quadrant would be accessible from the north side via a new pedestrian overpass.

15) Pedestrian Crossings (Shared with Vehicular Use)

Description – The following bridges over I-64 that would be reconstructed have pedestrian crossings/sidewalks that provide access to Forest Park:

- *Oakland Avenue Bridge* – Located at the west end of Forest Park (see Exhibit 4f-G5a). Pedestrian usage is very low (less than 50/day) and even then the destination is usually not Forest Park but instead nearby commercial land uses located west of Skinker Boulevard. Pedestrian use of this vehicular bridge is not expected to increase dramatically.

- *The Tamm Avenue Bridge* – It is estimated that over 50 pedestrian and cyclists use Tamm Avenue overpass for park access during the weekdays. Its usage increases by at least twice as much on the weekends. It is located adjacent to Turtle Playground on the south side of I-64 and zoo parking lot on the north side (see Exhibit 4f-G5b). Zoo patrons are allowed to park on Oakland Avenue and use the Tamm Avenue overpass to access the zoo as an alternative to the zoo parking lot. Tamm Avenue also acts as a local street connection from the high density Dogtown neighborhood directly south of Oakland Avenue. Under the preferred Build Alternative, usage is expected to decrease due to increased usage of the more efficient Hampton Avenue interchange.

- *The Existing Hampton Avenue Interchange* – This acts as a pedestrian and bicycle connection for Forest Park. Current usage is very low, less than 25 per day. The preferred Build Alternative is expected to increase usage. The new Hampton Avenue bridge over I-64 would provide improved pedestrian access. Its sidewalks would connect to the Forest Park Recreational Path, which would allow pedestrians to cross under Hampton Avenue (see Exhibit 4f-G5c).

- *The Existing Kingshighway Boulevard Interchange* – This cloverleaf interchange acts as a pedestrian and bicycle connection for Forest Park (see Exhibits 4f-G5e & G5f). Current usage is very low, at less than 25 per day. The preferred Build Alternative is expected to encourage an increase in usage by providing wider sidewalks and signalized crosswalks.

Permanent Project Impacts – The Preferred Alternative would not result in permanent impacts to the pedestrian crossings that are shared with vehicular use.

Temporary Project Impacts – The Preferred Alternative would have only temporary impacts to the pedestrian crossings in that they would be removed when the bridges or interchanges are reconstructed, and replaced in an improved condition.

Tree Removal – No tree removal would occur with the rebuilding of these pedestrian crossings.

Mitigation and Measures to Minimize Harm – The pedestrian crossings would be replaced and improved as the bridges and interchanges are reconstructed. New bridges would accommodate pedestrians with design standards to improve accessibility and safety. The design standards include complying with the ADA design recommendations. Circulation and accessibility would be improved and accomplished through defined walks, crosswalks and synchronized signals. Separating walks from traffic by using curbs and vertical edge treatments of railings, and barrier walls would enhance safety. Pedestrian level lighting would supplement street lighting to provide additional security, safety, and enhance the pedestrian environment. A meeting was held with Paraquad, an organization representing persons with disabilities, to discuss additional design considerations beyond those included in AASHTO design standards. These items, such as flatter pedestrian grades and voice activated crossings will be considered in the design process.

16) Pedestrian Crossings (Non-vehicular/Stand-Alone Structures)

Description – The existing pedestrian crossings of I-64 that would be impacted by the preferred Build Alternative include the following:

- *The Pedestrian Bridge at Forest Park Community College* – Located near Highlander Avenue (see Exhibit 4f-G5d and Exhibit 4f-G11a). It currently has moderate usage of less than 100 pedestrians per day. The existing bridge provides a connection for

students and staff from Forest Park Community college south of I-64 to a bus line in Forest Park that connects them to a light rail transit (MetroLink) station north of the park.

- *The Pedestrian Tunnel* – Located at Macklind Avenue, west of the Science Center overpass (see Exhibit 4f-G5d). This existing tunnel currently has moderate usage of less than 200 pedestrians per day. It provides a connection for students and staff from St. Louis University High School and Drew Middle School south of I-64 to the Aviation Field ball fields in Forest Park. The tunnel is also tall enough to allow the city of St. Louis's mounted police to cross under I-64 from their facility in Forest Park as needed.

- *The Science Center Overpass* – Located north of the Science Center and south of the Planetarium (see Exhibit 4f-G11a). The overpass would remain in place and would not be impacted by the project.

Permanent Project Impacts – The pedestrian overpass at the Forest Park Community College would be removed by the preferred Build Alternative, requiring 0.01 acres for cutting operations in permanent easement (N-1) (see Exhibit 4f-G5d). The pedestrian tunnel near Macklind Avenue would also be removed by the preferred Build Alternative, requiring 0.04 acres of right-of-way acquisition for embankment on the south side of I-64 (N-2) and resulting in 0.04 acres of tunnel access use being converted to park open space on the north side of I-64 (see Exhibit 4f-G5d).

Temporary Project Impacts – No temporary impacts would be incurred.

Tree Removal – No tree removal would occur with the removal of these pedestrian crossing structures.

Mitigation and Measures to Minimize Harm – Mitigation for removal of the two pedestrian crossings described above, would involve replacement of the crossings, but in different locations. The location of the new pedestrian bridge over I-64 at the FP Community College would be shifted to the west of the existing bridge (see Exhibit 4f-G5d), and the new tunnel would be located east of the Science Center overpass (see Exhibits 4f-G5e).

- *Permanent Mitigation Impacts* – Construction of the new pedestrian bridge and access ramp at the FP Community College would require 0.15 acres of permanent easement in the shuttle bus drop off area and employee parking area (W-1) for embankment. It would also require 0.18 acres of permanent easement in park open space for embankment.

- The construction of the new pedestrian tunnel east of the Science Center overpass would cut into the embankment within the acquired right-of-way and permanent easement required for I-64 improvements, and would not result in additional impacts. However, the connector to the recreational path system would result in 0.22 acres of open space that would be converted to new recreational path and stairs (X-3).

- *Temporary Mitigation Impacts* – Temporary easements would not be required for construction of the pedestrian bridge and tunnel. However, mitigation efforts in relation to the recreational path connector at the proposed pedestrian tunnel east of the Science Center overpass would include a temporary easement containing 1.14 acres of open space (X-3).

- *Tree Removal* – Mitigation efforts at the new pedestrian bridge would result in the removal of 1 ornamental/understory tree and 1 evergreen tree. Mitigation efforts at the connector path to/from the proposed pedestrian tunnel east of the Science Center overpass would result in the removal of 12 canopy trees and 1 ornamental/understory tree.

- *Impacts to Planned Facilities* – As previously discussed in the impacts section for *The Forest Park Recreational Path*, approximately 0.08 acres (360 linear feet) of planned recreational path, within the permanent easement required for construction of the overpass, could be temporarily impacted. However, it would be replaced and appropriate connections to the overpass system would be incorporated (see Exhibit 4f-G11b and U-1 on Exhibit 4f-G5d).

The location of the new pedestrian bridge over I-64 at the FPCC would be shifted to the west of the existing bridge so that the ramp reaches the ground at Highlander and Oakland Avenues, allowing pedestrians to cross Oakland Avenue at the intersection (see Exhibit 4f-G11b *Pedestrian Bridge at Sta. 1182+00* and Exhibit 4f-G11c *Pedestrian Bridge at 1183+80*). This would provide a more convenient access to Forest Park for FPCC students and staff, and also for employees at the Highlands office park. Usage of the bridge is expected to increase slightly in the future as the Highlands Office Park acquires more tenants that would use the bridge for recreational purposes throughout the day. The north terminus of the bridge, within the permanent easement, would be coordinated with the drop off location of the existing Forest Park shuttle bus. There would be adequate space remaining in this vicinity for re-configuring employee parking and bus drop off (including the area within the permanent easement). The bridge and its ramp connections would be built to current design standard and ADA compliant.

The new pedestrian tunnel located east of the Science Center overpass would provide a more open, straight crossing with increased visibility (see Exhibit 4f-G11d *Proposed Tunnel)*, and would include the addition of a 10-foot wide path connection from the tunnel to the Forest Park Recreational Path (north side of I-64), and from the tunnel to Oakland Avenue (south side of I-64) (see Exhibit 4f-G5e). The connector path on the north side would also include stairs between curvilinear path segments to accommodate users who prefer a shorter route (see Exhibit 4f-G9d, *Pedestrian Tunnel Plan*). The connection from the tunnel to the recreational path would be serpentine in configuration to maintain a slope that is ADA compliant. Usage of the tunnel is expected to increase due to closer proximity to St. Louis University High School and improvements made to make it straighter, wider and more visually pleasing to pedestrians.

To improve pedestrian access to Forest Park from the Forest Park Southeast neighborhood (listed as a district on the National Register of Historic Places), a new pedestrian overpass would be located across I-64 in the Kingshighway interchange area (see Exhibit 4f-G5f). Pedestrian paths and walks (located in the excess right-of-way that would be given to the park) would connect the overpass to the Forest Park Southeast neighborhood and to Clayton Avenue, thereby providing connections to the BJC Hospital Complex, a light rail transit (MetroLink) station, and to the Central West End neighborhood. This new pedestrian overpass would replace an existing pedestrian overpass located just east of the new overpass and off of Forest Park property. In addition to usage by the Forest Park SE neighborhood residents, the Central Institute for the Deaf (CID) previously used the existing overpass as access between its facilities on the north and south side of I-64. However, the CID has moved out of the building on the south side which has been sold and is currently occupied by the St. Louis College of Health Careers.

The new pedestrian crossings would be Americans with Disabilities Act (ADA) compliant and would provide improved access and safety. Pedestrian level lighting would supplement street lighting to provide additional security, safety, and enhance the pedestrian environment.

Mitigation and measures to minimize harm for impacts to open space and tree removal in these areas are similar for all open space areas impacted (see text under *Open Space – North Side of I-64 from Skinker to Tamm*).

17) Aviation Field (Athletic Fields)

Description – Aviation Field is a complex of athletic fields that can be used for baseball, softball, football, soccer, rugby, etc. (see Exhibit 4f-G12a).

Impacts – The athletic fields would not be impacted by right-of-way acquisition, permanent easement, temporary easement, or tree removal (see Exhibit 4f-G5d).

Noise – A noise analysis was prepared in compliance with 23 USC Section 109(h) and (i), the FHWA guidelines for the assessment of traffic-generated noise. The study compares projected design year 2020 noise levels with existing 2001 noise levels along I-64 (see EIS Chapter IV). Existing noise levels were measured at two sites at Aviation Field. One site (Site 8) was located at the southwest-most ball field, 110 feet from home plate along the left field line. Interstate 64 will be elevated approximately 10 feet above the surrounding landscape in this area. The second site (Site 9) was located at first base on the northeast-most ball field. Table 4f-2 shows the comparison of existing and anticipated future noise levels at these two sites.

Table 4f-2
Noise Levels at Aviation Field

Receiver	Existing 2001	Future 2020	With 12' – 14' High Noise Wall	Reduction with Wall
8	67	73.1	66.1	7.0
9	61	66.8	62.9	3.9

The two ball field noise receiver locations will experience a noise impact by an approximate increase in noise levels of 6 dBA (L_{eq}) under the worst case scenario by the year 2020. This increase in noise level would be less noticeable closer to home plate or in the bleachers since these areas are more distant from I-64. Noise levels drop by 3 dBA (L_{eq}) for each doubling of the distance from the noise source.

Mitigation and Measures to Minimize Harm – Although the noise level increases by approximately 6 dBA (L_{eq}) at Site 9, the anticipated future level is still within FHWA's recommended Noise Abatement Criteria (NAC) of 67 dBA for parks. A noise barrier that is 12 feet to 14 feet in height at the athletic fields would mitigate projected year 2020 noise levels that would approach and exceed the NAC. A noise barrier would be most effective for the closer ball field (Site 8). It would reduce year 2020 noise levels by approximately 7 dBA (L_{eq}).

Coordination with the city of St. Louis Department of Parks, Recreation, and Forestry will be conducted to determine whether noise walls are desired to mitigate traffic noise impacts. The players and spectators at a baseball game constitute a noise source in and of themselves, and careful consideration should be given to the effectiveness of noise mitigation measures. A noise wall would have an aesthetic impact on the open space of Forest Park. The placement of a noise wall along the freeway would also hide the view of the park from persons on the highway.

As a measure to minimize harm, the project planning also includes the rebuilding of Oakland Avenue between Hampton Avenue and the Science Center, in order to avoid impacts to the athletic fields, while providing a full shoulder on I-64. The rebuilt Oakland Avenue would have 10-foot wide travel lanes and a landscaped median (see Exhibit 4f-G5d and Exhibit 4f-G12b *Option 4 Streetscape*).

18) Trees

Tree removal would occur through project impacts and mitigation impacts as a result of right-of-way acquisition, permanent easement, temporary easement, and other conversion of park open space to a built use. In order to estimate an approximate number of trees that could be impacted, a field survey was conducted to review species, caliper size, and condition of existing trees. This field survey supplemented existing data found by the review of topographic maps, aerial photos, and a windshield survey. Table 4f-3 presents a summary of the approximate number of trees that could potentially be removed, according to type (canopy, ornamental/understory, or evergreen), and includes an estimate of the percentage of impacted trees that could potentially be transplanted (relocated).

Table 4f-3
Potential Tree Removal Summary

Impact Type & Resource Area	Canopy Trees	Ornamental/ Understory Trees	Evergreen Trees	Total
Project Impacts				
Open Space	214	185	125	524
Turtle Playground Area	32	4	4	40
Subtotal	**246**	**189**	**129**	**564**
Mitigation Impacts				
Zoo Parking Lot	5	0	0	5
Forest Park Recreational Path	11	6	3	20
Pedestrian Crossings	12	2	1	15
Subtotal	**28**	**8**	**4**	**40**
TOTAL	**274**	**197**	**133**	**604**
Potential Transplant (Percentage & Number)	22% (61)	85% (167)	71% (95)	53% (323)

Project impacts could potentially impact 564 trees, and mitigation impacts would result in the potential removal of 40 trees. This is an estimated total of 604 trees that may potentially be impacted, which includes 274 canopy trees, 197 ornamental/understory trees, and 133 evergreen trees. Of the 604 potentially impacted trees, approximately 364 were identified as trees that will have to be removed, based on the current plans shown in this document. The remaining trees could potentially be kept in place. The 604 potentially impacted trees is the worst case scenario for the number of trees that would have to be removed, and the approximation of 364 trees is the minimum number of trees that will have to be removed. The actual number of trees that will have to be removed will likely fall in the range of 364 to 604 and will be predicated on the success of tree protection measures and the limits of construction during detailed design.

Forest Park contains over 14,000 trees, not counting those in the Kennedy Forest and at the St. Louis Zoo, therefore, the 604 potentially impacted trees would be approximately four percent of the 14,000 trees, or less when all trees are included in the equation.

In response to the parks department's concern about tree removal, several steps have been, and will be taken to minimize and mitigate the potential impacts:

- The planning process included adjustments to the highway alignment and inclusion of retaining walls in order to reduce the amount of parkland impacted, thereby reducing the number of trees requiring removal. In particular, the alignment was shifted to the south in the Aviation Field area, between the Hampton interchange and the Science Center. At the Kingshighway interchange and the Hampton interchange, the narrower single-point configuration reduces the amount of land needed for the interchanges and results in excess right-of-way converted to parkland rather than acquiring more parkland for interchange improvements.

- Steps will be taken during both design and construction to limit the number of trees that must be removed. Design steps may include retaining walls instead of extensive grading, and aeration of root zones in areas of new soil fill. Construction documents and specifications will detail and specify steps by the contractor to protect existing trees. Contractors will be required to follow steps such as tree protection fencing, avoidance of soil compaction, and not storing materials on top of root zones. These steps will minimize the potential impact to trees adjacent to construction areas and help limit the total number of trees that will have to be removed.

- Replacement trees will be planted in disturbed areas as appropriate, and in other areas within Forest Park, as designated by, and subject to approval by the St. Louis Department of Parks, Recreation, and Forestry.

- Mitigation efforts will include transplanting (relocating) as many trees as possible within Forest Park. The tree survey also included an analysis of the transplant suitability of the impacted trees. The ability to transplant a tree is determined by its caliper size, species, and location on the land. For each category of trees, the following sizes of trees may be suitable for transplanting: canopy trees up to 10-12" caliper, ornamental/understory trees up to 10-12" caliper, evergreens, up to 10-14" caliper. However, the size limitations vary from species to species within each category. Location of existing trees is also a factor in determining the ability to transplant. Trees located on steep slopes or other inaccessible areas will be harder to transplant. It was estimated that approximately 53% of the 604 potentially impacted trees are suitable for transplanting, including 22% of the canopy trees, 85% of the ornamental/understory trees, and 71% of the evergreen trees. The analysis of transplanting suitability is based on current tree sizes. Depending on the schedule of transplanting, trees may grow too large to transplant if there is a wait to transplant until right before construction begins. It is therefore advantageous to plant and transplant trees as far in advance of construction as possible.

19) Aesthetics

Aesthetics would not change appreciably through the area of Forest Park since the freeway facility already exists. Existing slopes would be altered slightly as the grade of the freeway would be lowered in this area. Some re-grading of adjacent parkland would be conducted to create more useable space at Turtle Playground and at the Kingshighway interchange and other areas along the north side of I-64. The appearance of the recreational path would change

slightly where it would be depressed under Tamm Avenue and Hampton Avenue. The preferred Build Alternative has been coordinated very closely with Forest Park officials to insure that the project is in keeping with the spirit of the Master Plan which is to maintain a natural appearance and the cultural integrity of the park. Retaining walls in front of the zoo provide the opportunity for typical urban landscape treatments or with additional private funding could display a special motif or characterize the city or park (see Exhibit 4f-G13a *Retaining Wall at Zoo Parking Lot*). Similar treatments could be incorporated in noise walls if it is determined that walls are needed in the vicinity of Aviation Field, since a noise wall would have an aesthetic impact on the open space of Forest Park. The placement of a noise wall along the freeway would also hide the view of the park from persons on the highway.

As stated in previous discussions on mitigation and measures to minimize harm, and in order to restore and enhance the aesthetic quality of the park, landscaping will be implemented in disturbed areas as appropriate, and in other areas within Forest Park, as designated by and subject to approval by the St. Louis Department of Parks, Recreation, and Forestry. Areas of open space within temporary easements will be restored to pre-existing conditions or conditions consistent with adjacent areas of the park.

20) Cultural Resources

There is a potential that archeological sites may be present along the proposed construction area within Forest Park. For example, the proposed zoo parking lot expansion would affect an area of the park that appears to be minimally disturbed, based on the mature trees growing in the area. This area, therefore, has some potential to include intact archeological deposits including perhaps archeological remains from an important 1904 World's Fair building, the Inn in the Park.

The construction of retaining walls and other highway related construction could potentially impact archeological resources. Prior to construction of the I-64 project, an archeological survey of the area of potential effects (APE) will be conducted sufficient to identify any sites that might be considered eligible for the NRHP. A report detailing the results of the survey will be submitted to the State Historic Preservation Office (SHPO) for review and concurrence. If any NRHP-eligible archeological resources are identified, MoDOT, in consultation with the SHPO, interested Indian tribes, and other consulting parties, shall apply the criteria of adverse effect. If the project will result in an adverse effect on the NRHP-eligible archeological site, MoDOT will consult with the SHPO, interested Indian tribes, and other consulting parties to consider actions that could minimize or mitigate the adverse effects. If impacts to significant sites cannot be avoided, MoDOT will implement a plan to mitigate adverse effects through recovery of archeological information by means of controlled excavation and other scientific recording methods. MoDOT will develop and implement a research design and data recovery plan based on firm background data, sound planning, and accepted archeological methods. Data recovery and analysis will be accomplished in a thorough and efficient manner, using the most cost-effective techniques practicable. Results of the data recovery excavations will be disseminated in a technical report submitted to the SHPO and available upon request to other interested parties. Appropriate arrangements for curation of archeological materials and records will be made. MoDOT and FHWA will ensure that adequate time and funds are budgeted for fulfillment of the overall plan.

Historic buildings present in Forest Park such as the park headquarters, Art Museum or Science Center would not be impacted by the construction of the facility. There are no other historic resources within close proximity to the proposed right-of-way that would be affected by the project.

21) Construction Impacts

From a regional standpoint, Forest Park is over 1,300 acres in size accessed on all four sides by minor and principle arterial roads other than I-64 such as Skinker Boulevard, Forest Park Parkway, Lindell Boulevard, Kingshighway Boulevard and Oakland Avenue. During construction, access to the park along the south side provided by the Clayton Avenue, Oakland Avenue, Tamm Avenue, Hampton Avenue and Kingshighway Boulevard overpasses would be staged so that not all the overpasses would be closed at the same time. Access along the west, north and east sides of Forest Park would remain open and not impacted during I-64 construction. The access points for the park's facilities, including the ones nearest the I-64 construction, such as the St. Louis Zoo, and the Science Center and Planetarium, would remain open to the public during I-64 construction.

Access at the interchanges along Forest Park would remain the same or be enhanced as part of the preferred Build Alternative by providing more interchange capacity and reducing traffic congestion.

Access at the Clayton Road/Skinker Boulevard interchange would remain the same as existing under the No-Build or the preferred Build Alternative.

Construction activities relating to the re-construction of I-64 would have potential impacts to the sensitive animals that reside at the St. Louis Zoo. Early in the project planning phase, a meeting was held with zoo officials to discuss construction issues and how they might affect the zoo animals and zoo operations. The construction issues that zoo officials were concerned about the most were noise, dust, lights, and vibration.

Each animal species has varying tolerances to noise, dust, lights, and vibration. The animals most affected by noise, and in particular sudden noise, is hoof stock. The hoof stock is located close to the Washington Avenue (Hampton Avenue)/Wells Drive intersection. Animals are more tolerable of noise from construction when it happens during the day rather than at night, as they can become acclimated to the usual noise that occurs during the day. During past internal construction projects at the zoo, music or other sounds have also been piped through a sound system in order to acclimate the animals to noise. Ambient dirt particles can also have an effect on certain animals. Dust curtains around construction sites at the zoo have been used in the past to help keep dust to a minimum. Breeding could also be affected by night lighting. In the past, the zoo has tried to reduce light impacts on internal construction projects by allowing construction to take place only in daylight hours.

Another concern is the vibration that would occur if blasting were required for excavation. In this case, as with all aspects of the construction activities near the zoo, it is important that communication is continuous and mutual among MoDOT, zoo officials, and the construction manager in order to anticipate potential problems and develop working solutions. Zoo officials requested that they have information made available to them regarding the specific construction schedule as it occurs. For example, if they were to introduce new animals, they might delay it to miss a period of potential construction impact. Further analysis and coordination with zoo personnel to assess the zoo's needs will be necessary to determine appropriate measures to be taken during construction of the highway improvements.

22) Highway Signage

At this time, it is anticipated that the areas identified as permanent easements would accommodate appropriate signage. The details of sign placement will be determined during final design of the highway improvements.

d. Summary of Impacts to Park Resources

As discussed in the previous text, the preferred Build Alternative would physically impact park open space, Tamm Avenue, Turtle Playground, the Zoo parking lot, the Forest Park Recreational Path, the Wells Drive/Hampton Avenue intersection, the employee parking area/shuttle bus drop off area, the pedestrian overpass at the Community College, and the pedestrian tunnel near Macklind Avenue. Table 4f-4 at the end of the 4(f) evaluation text presents a summary of project related impacts to each park resource, including permanent impacts by right-of-way acquisition and permanent easement. Other permanent impacts include conversion of park open space to a local road use (road pavement of Wells/Hampton intersection), conversion of park open space to built park use (sidewalk, recreational path, parking lot), conversion of built park use (recreational path, parking lot) to local road use (road pavement of Wells/Hampton intersection). Permanent impacts can also involve a conversion of road use or park use that results in a gain of park open space, such as the removal of road or path pavement that can be converted to park open space. The gain in park open space could be used to offset some of the permanent impacts that reduce park space. Temporary impacts are also included in Table 4f-4.

Tree removal would occur through project impacts as a result of right-of-way acquisition, permanent easement, temporary easement, and other conversion of park open space to a built use.

Permanent Impacts

A total of 6.35 acres of park land would be acquired for right-of-way, a total of 4.7 acres of park land would be required for permanent easement, a total of 0.23 acres of park open space would be converted to local road use, a total of 0.03 acres of park open space would be converted to a built park use, and a total of 0.03 acres of built park use would be converted to local road use. All of these permanent impacts would total 11.34 acres.

Conversion to/Gain of Open Space

A total of 0.06 acres of built park use would be removed and converted to park open space, and a total of 0.08 acres of local road use would be removed and converted to park open space. This results in a gain of 0.14 acres of open space. However, the 11.34 acres of permanent impacts would offset this gain and result in a net loss of 11.2 acres of park open space.

Temporary Impacts

Temporary impacts related to the construction of the highway, retaining walls, and local intersections and roads would total 5.07 acres. Areas within temporary easements will be restored to pre-existing conditions or conditions consistent with adjacent areas of the park.

Tree Removal

Project impacts would result in the potential removal of 564 trees, of which 246 are canopy trees, 189 are ornamental/understory trees, and 129 are evergreen trees.

Other Impacts

The athletic fields at Aviation Field could be impacted by highway noise. The existing aesthetic quality of the landscape would be impacted by highway and wall construction and re-grading of slopes. It is also possible that undiscovered archeological resources could be impacted. Construction impacts could affect some access points to the park, and could affect zoo animals by noise, dust, lights, and vibration.

Impacts to Planned Facilities

The Forest Park Recreational Path could be impacted by permanent easement between the park greenhouses and the off-ramp to the Hampton interchange. The amount of path impacted would depend on its exact location at the time of highway construction. Since the path is a non-structural use it would be replaced in approximately the same location.

e. Summary of Mitigation and Measures to Minimize Harm

A number of measures would be incorporated into the highway improvement project to minimize harm and to mitigate impacts to Forest Park. These have been discussed in detail in previous sections for each specific resource impacted and include the following:

- *Open Space and Tree Removal* – Trees, shrubs and grass will be planted in disturbed areas as appropriate, and in other areas within Forest Park, as designated by and subject to approval by the St. Louis Department of Parks, Recreation, and Forestry. Within the permanent easements, construction of retaining walls will utilize techniques that minimize the area of disturbance.

- *Tamm Avenue Reconstruction* – Provide a longer replacement bridge with an underpass for the recreational path.

- *Turtle Playground* – Landscaping of disturbed open space, re-grading of disturbed area for a more usable surface, and replacement of a portion of the paved walking path.

- *Zoo Parking Area* – Expand and re-stripe the east end of the existing parking lot to result in no net loss of parking spaces.

- *Forest Park Recreational Path* – Relocate portions of the path to improve continuity and safety. Portions of the path would be grade-separated from the roads to travel under Tamm Avenue and Hampton Avenue. Connections to pedestrian crossings would be included. Path mitigation efforts would result in 1695 linear feet of additional recreational path being installed in Forest Park.

- *Wells Dr./Hampton Intersection Improvements* – Construction of a roundabout to reduce congestion, eliminate a traffic signal, and provide a gateway opportunity. In addition, a crossing under Hampton, south of Wells Drive, would provide a grade separated crossing for the recreational path.

- *Employee Parking/Shuttle Bus Drop Off Area* – The north terminus of the new pedestrian overpass, within the permanent easement, would be coordinated with the drop off location of the existing Forest Park shuttle bus. There would be adequate space remaining in this vicinity for re-configuring employee parking and bus drop off (including the area within the permanent easement).

- *Pedestrian Crossings (Shared with Vehicular Use)* – The pedestrian crossings would be replaced and improved as the bridges and interchanges are reconstructed. New bridges would accommodate pedestrians with design standards to improve accessibility and safety.

- *Pedestrian Crossings (Non-vehicular/Stand-alone Structures)* – As mitigation for removal of the existing pedestrian overpass, the location of a new pedestrian bridge over I-64 at the FPCC would be shifted to the west of the existing bridge so that the ramp reaches the ground at Highlander and Oakland Avenues, allowing pedestrians to cross Oakland Avenue at the intersection. As mitigation for removal of the pedestrian tunnel near Macklind Avenue, a new tunnel would be located east of the Science Center overpass

and would provide a more open, straight crossing with increased visibility. It would include the addition of a 10-foot wide path connection from the tunnel to the Forest Park Recreational Path and to Oakland Avenue. To improve pedestrian access to Forest Park from the Forest Park Southeast neighborhood a new pedestrian overpass would be located across I-64 in the Kingshighway interchange area, and would include pedestrian paths and walks. All pedestrian structures would be built to current design standards in 2004 and would be ADA compliant.

- *Aviation Field (Athletic Fields)* – As mitigation for noise impacts to the athletic fields, coordination with the city of St. Louis Department of Parks, Recreation, and Forestry will be conducted to determine whether noise walls are desired to mitigate traffic noise impacts. As a measure to minimize harm, the project planning also includes the rebuilding of Oakland Avenue between Hampton Avenue and the Science Center, in order to avoid impacts to the athletic fields.

- *Aesthetics* – Retaining walls and noise walls could provide the opportunity for typical urban landscape treatments or could display a special motif or characterize the city or park as might be funded by others.

- *Cultural Resources* – If any NRHP-eligible archeological resources are identified, and If the project would result in an adverse effect on an NRHP-eligible archeological site, actions will be considered that could minimize or mitigate the adverse effects. If impacts to significant sites cannot be avoided, MoDOT will implement a plan to mitigate adverse effects through recovery of archeological information by means of controlled excavation and other scientific recording methods.

- *Construction Impacts* – Construction at access points would be staged so that not all access to the park would be closed at the same time. Also, coordinate with zoo officials to determine measures to minimize the affects of noise, dust, lights, and vibration on zoo animals during construction.

Mitigation measures would also result in permanent and temporary impacts (shown in Table 4f-5 located at the end of the 4(f) evaluation text) similar to those described above under the Summary of Impacts to Park Resources.

Permanent Impacts

No park land would be acquired for right-of-way as a result of mitigation, however a total of 0.33 acres of park land would be required for permanent easement related to the placement of a new pedestrian overpass at Forest Park Community College. The new overpass is mitigation for the removal of the existing overpass in this vicinity. In addition, mitigation for the removal of zoo parking space and removal of portions of the recreational path would result in 0.67 acres of park open space being converted to an additional parking area and relocated portions of the recreational path. All of these permanent impacts would total 1.0 acre.

Conversion to/Gain of Open Space

As a result of the removal of portions of the zoo parking lot and recreational path for redesign of these uses, 0.31 acres of built park use would be converted to park open space. As mitigation for permanent impacts to the park, land currently used for roadways and interchanges would be given to the city for park use, consistent with the Forest Park Master Plan. Excess right-of-way at the Kingshighway and Hampton Avenue interchanges, and a small portion north of Macklind Avenue, will be donated to Forest Park in the amount of 13.93 acres. These areas would be graded, shaped and landscaped using trees, shrubs and grass as appropriate and subject to approval by the St. Louis Department of Parks, Recreation and Forestry. The resultant land

would be suitable for immediate public park use. This donation, and the 0.31 acres of park use converted to open space, would result in a gain of 14.24 acres of open space. However, the 1.0 acre of permanent impacts would offset this gain and result in a net gain of 13.24 acres of park open space.

Temporary Impacts

Temporary impacts related to the mitigation measures would total 5.0 acres. Areas within temporary easements will be restored to pre-existing conditions or conditions consistent with adjacent areas of the park.

Tree Removal

Impacts related to the mitigation measures would result in the potential removal of 40 trees, of which 28 are canopy trees, 8 are ornamental/understory trees, and 4 are evergreen.

Impacts to Planned Facilities

The recreational path that is planned to be extended along the south edge of the Aviation Field athletic fields, adjacent to the north side of I-64, could be impacted by construction of the proposed pedestrian overpass in that location. Approximately 0.08 acres (360 linear feet) of the path, within the permanent easement required for construction of the overpass, could be impacted. Since the path is a non-structural use, it would be replaced and appropriate connections to the overpass system would be incorporated.

f. Summary of Impacts and Mitigation

As shown in Table 4f-6, impacts to resources in Forest Park and mitigation of those impacts would result in 6.35 acres of right-of-way acquisition, 5.03 acres of permanent easement, 0.23 acres of park open space being converted to local road use, 0.7 acres of park open space being converted to a built park use, and 0.03 acres of a built park use being converted to local road use. These permanent impacts total 12.34 acres. Permanent easement would remain in the ownership of Forest Park and would be available for any non-structural park use.

Project activities and mitigation efforts would also involve a conversion of road use or park use that results in a gain of park open space. As a result, 0.37 acres of built park use would be converted to park open space, and 14.01 acres of local road use and excess right-of-way would be converted to park open space, resulting in a gain of 14.38 acres of park open space. This gain of 14.38 acres of park open space would offset the 12.34 acres of permanent impacts for an overall net gain of 2.04 acres of park open space. The total permanent impacts include 5.99 acres of permanent easement and other impacts that remain in Forest Park ownership and would be available for park recreational use.

Project impacts and mitigation efforts would also result in 10.07 acres of temporary impacts, and in the potential removal of a total of 604 trees, of which 274 are canopy trees, 197 are ornamental/understory trees, and 133 are evergreen. Of the 604 potentially impacted trees, approximately 364 were identified as trees that will have to be removed, based on the current plans shown in this document. The remaining trees could potentially be kept in place. The 604 potentially impacted trees is the worst case scenario for the number of trees that would have to be removed, and the approximation of 364 trees is the minimum number of trees that will have to be removed. The actual number of trees that will have to be removed will likely fall in the range of 364 to 604 and will be predicated on the success of tree protection measures and the limits of construction during detailed design.

The athletic fields at Aviation Field could be impacted by highway noise, and zoo animals could be impacted by construction noise, dust, lights and vibration. The existing aesthetic quality of

the landscape would be impacted by highway and wall construction and re-grading of slopes, however, tree relocation, re-landscaping and wall treatments would contribute to the restoration of the park's aesthetic quality. It is also possible that undiscovered archeological resources could be impacted.

Table 4f-6
Summary of Impacts – Forest Park

Park Resource/ Area	Permanent Impacts (Acres)					Conversion to/ Gain of Open Space (Acres)		Net Gain or Loss (Ac.)	Temp. Impacts (Ac.)
	I-64 R/W Acquis.	I-64 Perm. Esm't.	Open Space to Local Road Use	Open Space to Built Park Use	Built Park Use to Local Road Use	Built Park Use to Open Space	Road Use to Open Space		
Project Impacts									
Open Space	5.68	4.06	0.23	0.03	0	0	0.08		3.34
Tamm Avenue Reconstruction	0.03	0.04	0	0	0	0	0		0.22
Turtle Playground	0.53	0.45	0	0	0	0	0		0.19
Zoo Parking Area	0.01	0.05	0	0	0	0	0		0
Forest Park Recreational Path	0.06	0.04	0	0	0.03	0	0		0
Wells Drive/Hampton Intersection	0	0	0	0	0	0.02	0		1.32
Employee Parking/ Bus Drop Off	0	0.05	0	0	0	0	0		0
Pedestrian Crossings	0.04	0.01	0	0	0	0.04	0		0
Subtotals	**6.35**	**4.70**	**0.23**	**0.03**	**0.03**	**0.06**	**0.08**		**5.07**
	11.34					**0.14**		**-11.20**	
Mitigation Impacts									
Open Space	0	0.18	0	0.22	0	0	13.93		3.84
Turtle Playground	0	0	0	0	0	0	0		0.02
Zoo Parking Area	0	0	0	0.12	0	0.08	0		0.84
Forest Park Recreational Path	0	0	0	0.33	0	0.23	0		0.30
Pedestrian Crossings	0	0	0	0	0	0	0		0
Employee Parking/ Bus Drop Off	0	0.15	0	0	0	0	0		0
Subtotals	**0**	**0.33**	**0**	**0.67**	**0**	**0.31**	**13.93**		**5.00**
	1.00					**14.24**		**13.24**	
Project & Mitigation Impact Totals	**6.35**	**5.03**	**0.23**	**0.70**	**0.03**	**0.37**	**14.01**		**10.07**
SUMMARY TOTAL	**12.34**					**14.38**		**2.04**	

Additional advantages that offset impacts include an increase of 1665 linear feet of recreational path, improved and safer pedestrian access with grade separated crossings, improved vehicular access and circulation, and aesthetic treatments.

The only planned park improvement that could be impacted by the proposed I-64 improvements is the Forest Park Recreational Path. However, since the path is a non-structural use it would be replaced in approximately the same location.

g. Avoidance Alternatives and Other Alternatives Considered

Avoidance Alternatives

No-Build Alternative – The existing I-64/US40 through the study corridor is generally a six-lane highway, with three lanes of travel in each direction from Spoede Road to McCausland Avenue and an eight-lane highway, with four lanes of travel in each direction from McCausland Avenue to west of Sarah Street. The "No-Build Concept" does not include changes or modifications to the existing configuration of the I-64 mainline or to the configuration of interchanges on I-64. Further, the "No-Build Concept" would not bring the roadway within the study corridor up to current MoDOT standards for urban freeways, would not improve safety within this corridor, and would not add needed capacity between I-170 in St. Louis County and west of Sarah Street in the city of St. Louis.

Double Decking (Elevated Alignment) – A double-decked option was considered for the section of I-64 between McCausland Avenue and Kingshighway Boulevard. The double-decked highway would provide for eight lanes of traffic. Four lanes would be on structure and four lanes would be near the existing grade within the existing right-of-way (see Exhibits 4f-H1 to H10 and Exhibits 4f-I1 to I4).

This alternative would include over two miles of elevated structures to carry four lanes of I-64 traffic above the remaining four lanes. It would be difficult to replace existing overpasses linking the adjacent communities to Forest Park. The double-decked structure would also result in the adverse visual and noise impacts associated with elevated roadway structures. The construction cost of such a system of bridges would be approximately $709 million from I-170 to Kingshighway, more than twice the cost of the preferred Build Alternative in this area. The increased cost, combined with the other negative impacts, resulted in this being considered an unreasonable, or fatally flawed alternative. This alternative is not desirable due to the excessive costs, noise and negative impacts to aesthetics.

Other Alternatives Considered

Lid Concept (Cut and Cover Concept) – In this approach, I-64 and its eight lanes of traffic would be depressed, a tunnel constructed and then fill placed on top of the tunnel. If used in the Parkway Subcorridor, portions of parkland that currently exists on both sides of I-64 would be reconnected above the interstate via the tunnel that acts as a cover over the interstate. Interstate 64 would be lowered up to 30 feet (9.1 meters) throughout the entire Parkway Subcorridor. At interchanges, the tunnel would end so that the ramps could come out of the tunnel to access the arterial roadways. The strategy would require tunnel easements within the existing right-of-way, but the areas above the interstate on structure would be open potentially for public use as parkland, adding approximately 27 acres to the park. This approach would result in the need to acquire additional right-of-way at the interchange areas. Providing access at these interchanges would be difficult. The structures and tunnel accommodations would also have high costs, estimated to be $189 million, nearly three times the cost of the preferred Build Alternative in this area. Ventilation of the tunnel, particularly the existence of exhaust vents in the park may be difficult to mitigate successfully. Traffic management during construction would also be considerably more difficult.

New Location (Alignment to South) – One option to rebuild I-64 to present MoDOT standards but avoid taking any right-of-way from Forest Park would be to construct I-64 to the south of the

existing alignment and outside of the park boundaries. The concept reviewed assumed that I-64 would be constructed on new alignment approximately 500 to 600 feet (152.4-192.9 meters) south of the existing I-64. The new alignment would tie back into the existing I-64 alignment east of Bellevue Avenue and west of Boyle Avenue.

Due to the dense urban characteristic of the I-64 study corridor, this alternative would involve significant adverse impacts to the adjacent built environment that includes many historic neighborhoods and NRHP-eligible resources. The neighborhoods immediately south of I-64 are old, stable neighborhoods. Other adverse impacts include urban development disruptions along approximately 2.5 miles (4.0 kilometers) of the Parkway subcorridor.

New Location (Alignment to North) – To the north of Forest Park are historic, densely developed, middle and upper income neighborhoods. The area has a diverse housing stock, including expensive single-family mansions, affordable senior citizen apartments, upscale apartments, and condominiums. There are many NRHP listed and eligible resources located to the east, north, and west of Forest Park that would be adversely impacted by an alignment to the north. If this alignment were chosen, these resources would require consideration under Section 4(f). Constructing I-64 to the north of Forest Park on new alignment would result in significant adverse impacts to a part of St. Louis that has been attracting residents in recent years. Such development would be detrimental to this positive trend.

h. Coordination (Forest Park)

Prior to the start of the EIS process, which began in November of 2001, correspondence and meetings took place regarding potential impacts that would occur to Forest Park as a result of I-64 improvements (see Meeting Minutes dated September 8, 1999 in Appendix 4f-J). The Office of the Mayor of the city of St. Louis (see letter dated March 3, 2000 in Appendix 4f-J) transmitted recommendations concerning the I-64 Interchange Reconstruction Project, which included some specific concerns related to Forest Park. MoDOT responded to those recommendations in a letter dated June 13, 2000 (see Appendix 4f-J), which included pedestrian and bicycle access on all bridges; land returned to Forest Park should be appropriately graded, lighted, and landscaped; establish an advisory committee to provide input on aesthetics and other issues; include an artist as part of the design team; design bridges to be compatible with the scale and density of Forest Park; design fencing to be compatible with the aesthetics of the park; design bridges to allow separation of vehicular and pedestrian users; and design bridges and sidewalks with connections to the recreational path. MoDOT's response indicated that those recommendations were either part of MoDOT's plan or would be considered.

The city of St. Louis Community Development Administration (see memo dated May 16, 2001) and the Department of Parks, Recreation & Forestry (see letter dated September 24, 2001) had a number of concerns regarding project impacts on Forest Park. There concerns were that the need to acquire right-of-way would require substantial tree loss, impacts to the existing bicycle path and proposed dual path, and a possible reconstruction of Aviation Field. Meetings were held with the Parks Department to discuss ways to avoid, minimize or mitigate these potential impacts. Through discussion, the conceptual design plans were modified to adjust the St. Louis Zoo parking lot, provide for the bicycle and dual path, and to avoid property impacts to the athletic fields of Aviation Field. The Parks Department also indicated that they preferred that areas of current highway right-of-way be returned to Forest Park. The Office of the Mayor also provided input on the location of pedestrian bridges and on improvements to the Hampton Avenue/Wells Drive intersection (see letter dated October 25, 2001 in Appendix 4f-J).

On December 19, 2002, MoDOT met with the city of St. Louis Department of Parks, Recreation and Forestry to discuss land area impacts, facility impacts, and tree removal impacts to Forest Park. MoDOT expressed it's willingness to work with the department and Forest Park to develop a landscape plan for the I-64 corridor through Forest Park that would implement the vision and intent of the Forest Park Master Plan along the highway. MoDOT would pay for transplanting and replacement plantings, but would prefer that the parks department implement the plan. There was also some discussion relating to inclusion of tree protection measures in the plans and specifications, and proper implementation of those measures prior to and during construction. The Parks Department sent a letter to MoDOT dated February 26, 2003 (Appendix 4f-J), stating that it understands and concurs with the impacts and mitigation measures as described in the Section 4(f) Evaluation of the Draft EIS. The Office of the Mayor also provided a letter, dated June 17, 2003 (Appendix 4f-J), supporting on behalf of the City of St. Louis, the proposed mitigation measure for Forest Park.

The St. Louis Zoo also stated their concerns (see letter dated February 15, 2002 in Appendix 4f-J) including the restoration of zoo parking spaces, ensuring that the proposed roundabout at the Wells/Hampton intersection be consistent with St. Louis City public safety standards, and continuing discussions concerning possible realignment of Wells Drive. A meeting was held with the zoo officials on March 26, 2002 to further discuss these and other issues related to zoo access and construction impacts to zoo animals. It was determined that, during construction, the access points to the zoo would not all be closed at the same time, and that constant communication between MoDOT and zoo officials will be undertaken during construction to avoid or minimize potential construction impacts (noise, dust, lights, vibration) to zoo animals. Additional correspondence with zoo officials will also continue throughout the design process.

i. Summary (Forest Park)

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

F. Coordination Summary

Prior to, and after the start of the EIS process in November of 2001, coordination meetings took place regarding potential impacts that could occur as a result of I-64 improvements. A series of coordination meetings was held with representatives of potentially affected organizations and agencies, as summarized in Table 4f-7.

Table 4f-7
Coordination Meeting Summary

Date	Location	Group	Representing	Subject Discussed
September 8, 1999			St. Louis City Agencies, Forest Park & St. Louis Zoo, Missouri Historical Society, Science Center, Muny, Bi-State Development Agency (Metro), St. Louis Art Museum, Mounted Patrol (Forest Pk.)	Bus Access @ Kingshighway, Tunnel/Pedestrian Overpass, Forest Park Master Plan, Artists & Architects, EB ramp merge to Oakland,
February 16, 2001	The Equitable Building	Parkway Members	St. Louis City Agencies, BJC	Treatment of Papin Avenue; a BJC representative confirmed their willingness to donate a piece of land to the project.

Date	Location	Group	Representing	Subject Discussed
March 8, 2001	Dewey School		Hi-Pointe, Clayton/Tamm, Cheltenham, Franz Park neighborhoods	McCausland interchange options. Lesley Hoffarth promised that any expansion of McCausland accompanying interchange improvements would not encroach on the Firehouse building on SW corner of interchange.
March 13, 2001	St. Louis Science Center	Parkway Subcorridor	Forest Park institutions	Corridor options were displayed. Topics included funding, sound walls, landscaping, and how project would interface with FP development plans.
March 16, 2001	The Equitable Building	Parkway Members	St. Louis City agencies	Hampton options, McCausland options, impacts to Forest Park.
May 3, 2001	Salvation Army Building, Hampton Avenue	Parkway Advisory Committee	Cheltenham Neighborhood	Reviewed principles behind the I-64 project. Explained latest options for the Hampton Avenue interchange.
May 23, 2001	5600 Clayton Avenue	Forest Park officials	Forest Park institutions	Forest Park development plans, land use issues, impact of New I-64 project on Forest park lands.
June 7, 2001	The Equitable Building	Parkway Subcorridor	City of St. Louis Street Department, Parks Department, Bureau of Public Service, Mayor's Office, SLDC.	Potential impacts to Forest Park - trees along the highway, plan to redevelop Aviators' Field, St. Louis Zoo parking lot, and pedestrian trail in Forest Park. Potential impacts to Oakland Avenue.
July 11, 2001	The Equitable Building	Parkway Advisory Committee	City of St. Louis Street Department, Parks Department, Bureau of Public Service, Mayor's Office, SLDC, city Traffic Department, Alderman 28th Ward, Alderman 17th Ward.	Wider shoulders (12 feet) would conflict with plans for Aviator's Field expansion. Configuration of Oakland Avenue between Hampton and Macklind discussed. Two options discussed.
July 26, 2001	The Equitable Building	Parkway Subcorridor	City of St. Louis Mayor's Office, Traffic Department, Parks Department, SLDC, PDA, Bureau of Public Service, St. Louis Community College, Saint Louis Zoo, St. Louis University High School, Balke Brown Associates.	Oakland Avenue Options 3 and 4 presented in response to city and Forest Park desires to preserve 2 lanes in each direction and provide streetscaping. Other items discussed: pedestrian bridge plans, proposed tunnel, Zoo parking lot Option 1, Zoo parking lot Option 2, and Turtle Playground.

Date	Location	Group	Representing	Subject Discussed
August 7, 2001	The Equitable Building	Parkway Subcorridor	City of St. Louis Mayor's Office, Traffic Department, Parks Department, SLDC, PDA, St. Louis Community College, Saint Louis Zoo, Balke Brown Associates.	Discussed 3 pedestrian bridge possibilities, proposed tunnel, Zoo parking lot Options 1, 2, and 3, and Wells/Washington Drive intersection Options 1 and 2.
August 10, 2001		Alderman Roddy, Parkway members	Parkway subcorridor	MoDOT to review request to return right-of-way to adjacent private property of redevelopment area north of Chouteau Ave. (abutting an historic district) between Newstead Ave. and Tower Grove Ave. MoDOT to review impacts to the 4500 block of Chouteau Ave., trying to minimize impacts to the area by redesigning alley and adjacent right-of-way open space. Discussed possible impacts to Emanaus Baptist Church at 4500 Chouteau Ave.
August 10, 2001	St. Louis City Hall		City of St. Louis Mayor's Office, Forest Park Southeast Housing Corporation, State Legislature	Preservation of historic districts, new development plans city is considering.
August 14, 2001	HNTB Office	Paraquad	Paraquad	Intersection crossing treatments for sight impaired, sidewalk slopes, Forest Park Shuttle Service.
August 21, 2001	Richmond Heights City Hall		Richmond Heights Mayor, City Manager, Engineering, Traffic	Reducing property impacts, treatment of partial takings, traffic circulation, Community Center impacts, minimizing impacts to public properties, A.B. Green School impacts not seen as negative.
August 27, 2001	Richmond Heights City Hall		Richmond Heights Mayor, City Manager, Engineering, Traffic	Preserving St. Luke's recreational area, minimizing impacts to Little Flower neighborhood, relocate A.B. Green School playground.
December 4, 2001	Richmond Heights Community Center	Thruway Advisory Committee	St. Louis County Dept. of Highway & Traffic, Crawford Bunte Brammeier, Dierberg Markets, Hanley Downs, Little Flower Church, Sierra Club, SSM Health Care, Hanley Industrial Court, Richmond Heights Transportation Board, City of Richmond Heights, Hycel Properties, Inc., Hampton Park Neighborhood	EIS process and environmental issues to be addressed. Alignment of I-64 and I-170 interchanges.

Date	Location	Group	Representing	Subject Discussed
December 5, 2001	Saint Louis Zoo	Parkway Advisory Committee	Hi-Pointe Residents, District 65, Washington University, Lindell Bank, St. Louis Zoo, Trailnet	EIS process and environmental issues to be addressed, alignment of I-64 between interchanges, Forest Park issues and opportunities.
January 16, 2002	Richmond Heights Community Center	Thruway Advisory Committee	St. Louis County Dept. of Highway & Traffic, Crawford Bunte Brammeier, Dierberg Markets, Hanley Downs, Little Flower Church, Sierra Club, SSM Health Care, Hanley Industrial Court, Richmond Heights Transportation Board, City of Richmond Heights, Hycel Properties, Inc., Hampton Park Neighborhood	Environmental issues to be addressed and discussion of I-170 interchange.
January 17, 2002	Traffic Information Center, MoDOT	Greenway Advisory Committee	Richmond Hills, Clayton Road Park, Alderman, Frontenac Mayor, Ladue	Presentation of the Lindbergh Interchange and discussion of the Lindbergh/I-64 and Clayton/Lindbergh Intersections.
February 13, 2002	Saint Louis Zoo	Parkway Advisory Committee	Hi-Pointe Resident's Assoc., Washington University, St. Louis Zoo, Trailnet	EIS process and cultural resource work. Discussion of Hampton Interchange and urban design. Issues related to revised design options.
February 20, 2002	Richmond Heights Community Center	Thruway Advisory Committee	St. Louis County Dept. of Highway & Traffic, Crawford Bunte Brammeier, Dierberg Markets, Hanley Downs, Little Flower Church, Sierra Club, SSM Health Care, Richmond Heights Transportation Board, City of Richmond Heights, Hycel Properties, Inc., Hampton Park Neighborhood	Big Bend, Bellevue areas, property impacts, revised design options.
March 21, 2002	Richmond Heights Community Center	Thruway Advisory Committee	St. Louis County Dept. of Highway & Traffic, Richmond Heights City Council, Hanley Downs, Sierra Club, Richmond Heights Mayor, Richmond Heights Transportation Board	EIS process and review of the Open House. Discussion of the "stacked" and "flat" options.
March 26, 2002	St. Louis Zoo Hdqrts.	Zoo Officials	St. Louis Zoo	Access to zoo via Oakland Ave. and during construction, relocation of Wells Dr. at the zoo parking lot, relocating the rec. path away from I-64, alleviating potential impacts to zoo animals during construction, and open communication during construction.

Date	Location	Group	Representing	Subject Discussed
August 14, 2002	Richmond Heights Community Center	All – Advisory Committee Meeting	Brentwood Economic Development Council, Hi-Pointe Neighborhood, St. Louis County Highway and Traffic, Ladue Ridge Road Subdivision, Northcote Road, Missouri Botanical Garden, Crawford Bunte Brammeier, York Village, St. Louis County Planning, Tenet Healthcare, Maplewood, Clayton Road Park, Richmond Heights, Hanley Downs Board of Trustees, Lindell Bank, Lake Forest Subdivision, SSM Health Care, FHWA, St. Louis Planning Agency, Hampton Park Neighborhood, Hanley Industrial Park, Gissler Ave. Assoc., Brentwood, Hycel Properties,	Effect of Prop B, EIS schedule, value planning study, decision process for Build options, urban design renderings
December 19, 2002	City of St. Louis Parks, Recreation and Forestry, Forest Park	Parks Officials	City of St. Louis Parks, Recreation and Forestry	Tree impacts to Forest Park, tree replacement criteria.
January 8, 2003	Richmond Heights Community Center	All – Advisory Committee Meeting	Brentwood Economic Development Council, Brentwood Forest Condominiums, Hi-Pointe Neighborhood, Crawford Bunte Brammeier, Cody Kluto & Kilo, York Village, League of Women Voters, St. Louis County Planning, Tenet Healthcare, Maplewood, Clayton Road Park, Richmond Heights, Hanley Downs Board of Trustees, Truman Bank, Urban Strategies, Lindell Bank, Hanley Industrial Park, Gissler Ave. Assoc., Brentwood, Frontenac, Hycel Properties, Hampton Park Neighborhood, Trailnet	Environmental documentation process, sound abatement, selecting preferred alternatives, Forest Park impacts, role of committee members, impacts in Richmond Heights, **Thruway:** Bellevue Ramp, sound wall locations, types of impacts (construction vs. permanent), St. Luke's athletic fields and A.B. Green **Parkway:** St. Mary's access, public information helpful **Greenway:** Straightening I-64, sound walls, drainage, McKnight overpass, shifting north at Spoede and Lindbergh
June 4, 2003			Richmond Heights	Impacts to and mitigation for public parks and recreation facilities in Richmond Heights
July 28, 2003	Richmond Heights Community Center		Richmond Heights Mayor, City of Richmond Heights	Property impacts in Richmond Heights, Big Bend and Bellevue, Lavinia Gardens, Bennett Street, The Heights, Hanley/I-170, stacked option

Date	Location	Group	Representing	Subject Discussed
September 3, 2003	MoDOT TIC Center		Richmond Heights, City of St. Louis, Post-Dispatch, TRC	Identify cultural resource issues, discuss previously identified properties, present additional properties, effects/mitigation measures
October 29, 2003			Richmond Heights, Bennett Avenue Residents, West Moor Park Subdivision	Impacts at Bennett Avenue, A.B. Green mitigation
January 13, 2004	MoDOT TIC Center		St. Louis County Parks, MDNR/SHPO, Richmond Heights	Cultural resources coordination, submittal to the Keeper of the National Register because of differences of opinion related to the eligibility of cultural resources
February 3, 2004	Richmond Heights City Hall		Richmond Heights	A.B. Green Athletic Complex mitigation and design development recommendations

G. Conclusion

The preferred Build Alternative for improvements to I-64, from west of Spoede Road in the city of Frontenac to west of Sarah Street in the city of St. Louis, include potential impacts to properties eligible for the National Register, and park areas. The properties include four historic bridges (Spoede Road, Lindbergh Boulevard, McKnight Road and McCutcheon Road), one historic district (Lavinia Gardens Historic District) and, five historic residences (Property #195, #178, #179, #172 and #156). The preferred Build Alternative would also impact two parks: A. B. Green Athletic Complex (city of Richmond Heights) and Forest Park (city of St. Louis).

Avoidance alternatives were considered, and were determined to not be prudent and feasible. The proposed design options represent the result of minimization of impacts to these 4(f) sites. Measures to minimize harm and mitigation opportunities include, reconstructing facilities at A. B. Green Athletic Complex, donation of land to Forest Park, use of retaining walls to minimize impacts to park land, and many other improvements to Forest Park including street and intersection improvements, recreational path improvements, re-building and improving pedestrian crossings, improvements to Oakland Ave., replacing zoo parking, and improving overall aesthetics with improved roadway grades, re-grading of parkland, tree planting and transplanting, and other landscaping treatments.

Mitigation of impacts to cultural resources will include photographic documentation, architectural or engineering drawings, site plans, contextual information, and possible relocation of resources. The procedures to determine the level of documentation and mitigation for each resource are set forth in the executed Programmatic Agreement. There has been extensive coordination with the Keeper of the National Register for property eligibility resolution and coordination with the Advisory Council on Historic Preservation for the 106 Process.

Based upon the above considerations, there are no prudent and feasible alternatives to the removal of four historic bridges, four houses in one historic district, four historic residential buildings, one historic apartment complex, and the use of land from the A. B. Green Athletic

Complex and Forest Park, and the proposed action includes all possible planning to minimize harm to these resources resulting from such use.

Coordination with the city of Richmond Heights and the city of St. Louis has been completed. The city of St. Louis Department of Parks, Recreation and Forestry, and the Mayor's office of the city of St. Louis sent letters of concurrence regarding impacts and mitigation of Forest Park (see letters in Appendix 4f-J dated February 26, 2003 and June 17, 2003). The impacts and mitigation proposals regarding the A. B. Green Athletic Complex were presented to the city of Richmond Heights and a meeting was held to discuss the city's requested revisions to the plan. The city sent a letter stating acceptance of the concept of locating replacement facilities in a new separate park to be located north of I-64 at Laclede Station Avenue and listing their specific recommendations for the design development of the athletic complex and the replacement facilities (see letter in Appendix 4f-J dated February 10, 2004). These recommendations, as they apply to appropriate project impact mitigation, will be considered further as on-going coordination with the city progresses into the design phase.

Table 4f-4
Permanent and Temporary Impacts of the Preferred Alternative - Forest Park

	Permanent Impacts of Preferred Alternative (Acres)					Conversion to/Gain of Open Space (Acres)		Net Gain or Loss (Ac.)	Temp. Impacts (Ac.)
Park Resource/ Area	*I-64 R/W Acquis.*	*I-64 Perm. Esm't.*	*Open Space to Local Road Use*	*Open Space to Built Park Use*	*Built Park Use to Local Road Use*	*Built Park Use to Open Space*	*Road Use to Open Space*		
Open Space (North Side of I-64 from Skinker to Tamm)									
A-1									0.29
A-2	0.28	0.73							
Subtotal	**0.28**	**0.73**							**0.29**
Open Space (In the Clayton/Oakland/ I-64 Interchange Area)									
B-1									0.40
B-2		0.14							
Subtotal		**0.14**							**0.40**
Open Space (South Side of I-64 from Skinker to Tamm									
C-1	0.17								
C-2		1.19							
Subtotal	**0.17**	**1.19**							
Open Space (North Side of I-64 from Tamm to Wells/Hampton Intersection									
D-1									0.11
D-2	0.80	0.39							
D-3									0.13
Subtotal	**0.80**	**0.39**							**0.24**
Tamm Avenue Reconstruction									
E-1	**0.03**	**0.04**							**0.22**
Turtle Playground									
F-1 Open space	0.53	0.45							
F-2 Open space									0.18
F-3 Paved walking path (6' wide)									0.01
Subtotal	**0.53**	**0.45**							**0.19**
Zoo Parking Area									
G-1	**0.01**	**0.05**							
Forest Park Recreational Path 10'									
H-1 SE of zoo parking lot	0.06	0.04							
H-2 At Wells/Hampton Intersection					0.03				
Subtotal	**0.06**	**0.04**			**0.03**				
Wells Drive/Hampton Intersection									
I-1 Pavement									1.32
I-2 Sidewalk removed						0.02			
Subtotal						**0.02**			**1.32**
Open Space (At Wells/Hampton Intersection)									
J-1									1.02
J-2			0.23						
J-3							0.08		
Subtotal			**0.23**				**0.08**		**1.02**
Open Space (North Side of I-64 from Hampton to Kingshighway)									
K-1	0.77								
K-2 From Hampton to employee pkg.		0.51							
K-3 S of Aviation Field, employee pkg. to existing pedestrian tunnel		0.25							
K-4 From existing pedestrian tunnel to Kingshighway		0.82							
K-5	0.35								
K-6									0.63
K-7	0.59								
K-8									0.44
K-9 Concrete walk (6' wide)				0.03					
Subtotal	**1.71**	**1.58**		**0.03**					**1.07**
Employee Pkg/Bus Drop Off (At proposed overpass at FPCC)									
L-1		**0.05**							
Open Space (South Side of I-64 from Hampton to Kingshighway)									
M-1	0.43								
M-2	2.17								
M-3		0.40							
M-4									0.32
M-5	0.12								
Subtotal	**2.72**	**0.40**							**0.32**
Pedestrian Crossings									
N-1 Overpass at FPCC - removed		0.01							
N-2 Tunnel near Macklind - removed	0.04					0.04			
Subtotal	**0.04**	**0.01**				**0.04**			
Subtotals	**6.35**	**5.07**	**0.23**	**0.03**	**0.03**	**0.06**	**0.08**		**5.07**
PROJECT IMPACT TOTALS	**11.71**					**0.14**		**-11.57**	

Table 4f-4
Permanent and Temporary Impacts of the Preferred Alternative - Forest Park

Table 4f-5
Mitigation Impacts - Forest Park

	Permanent Mitigation Impacts (Acres)					Conversion to/Gain of Open Space (Acres)		Net Gain or Loss (Ac.)	Temp. Impacts (Ac.)
Park Resource/ Area	***I-64 R/W Acquis.***	***I-64 Perm. Esm't.***	***Open Space to Local Road Use***	***Open Space to Built Park Use***	***Built Park Use to Local Road Use***	***Built Park Use to Open Space***	***Road Use to Open Space***		
Open Space (Tamm Avenue to Wells Dr./Hampton Intersection)									
O-1 Excess R/W							1.39		
O-2 Excess R/W							0.95		
O-3 Near east end of zoo parking lot - for parking mitigation									0.06
O-4 Near east end of zoo parking lot - for path mitigation									0.26
O-5 At Tamm Ave.- for path mitigation									0.72
O-6 At Wells/Hampton Intersection									1.66
Subtotal							**2.34**		**2.70**
Turtle Playground									
P-1 Paved walking path (6' wide)									**0.02**
Zoo Parking Area									
Q-1 South & east edge of pkg lot									0.84
Q-2 New parking in open space				0.12					
Q-3 Existing parking removed						0.08			
Subtotal				**0.12**		**0.08**			**0.84**
Forest Park Recreational Path 10' (South & SE of zoo parking lot)									
R-1 Path removed & replaced									0.14
R-2 New relocated path				0.03					
Subtotal				**0.03**					**0.14**
Forest Park Recreational Path 10' (Tamm Avenue vicinity)									
S-1 Path removed & replaced									0.03
S-2 Existing path removed						0.14			
S-3 New relocated path				0.09					
Subtotal				**0.09**		**0.14**			**0.03**
Forest Park Recreational Path 10' (At Wells Dr./Hampton Intersection)									
T-1 Path removed & replaced									0.05
T-2 Existing path removed						0.09			
T-3 New relocated path				0.21					
Subtotal				**0.21**		**0.09**			**0.05**
Forest Park Recreational Path 10' (At proposed FPCC overpass)									
U-1 Planned recreational path									**0.08**
Pedestrian Crossings									
V-1 Overpass at FP Comm. College (see W-1 of Employee Parking and X-1 of Open Space below)									
V-2 Proposed tunnel near Science Center (see X-3 of Open Space below)									
Employee Pkg/Bus Drop Off (At proposed overpass at FPCC)									
W-1		**0.15**							
Open Space (From Wells/Hampton intersection to Kingshighway)									
X-1 At proposed overpass at FPCC		0.18							
X-2 Excess R/W							0.44		
X-3 Connector path & stairs at proposed tunnel				0.22					1.14
X-4 Excess R/W							2.12		
X-5 Excess R/W							4.11		
X-6 Excess R/W							1.89		
X-7 Excess R/W							3.03		
Subtotal		**0.18**		**0.22**			**11.59**		**1.14**
Subtotals	**0**	**0.33**	**0**	**0.67**	**0**	**0.31**	**13.93**		**5.00**
MITIGATION IMPACT TOTALS	**1.00**					**14.24**		**13.24**	

Table 4f-5
Mitigation Impacts - Forest Park