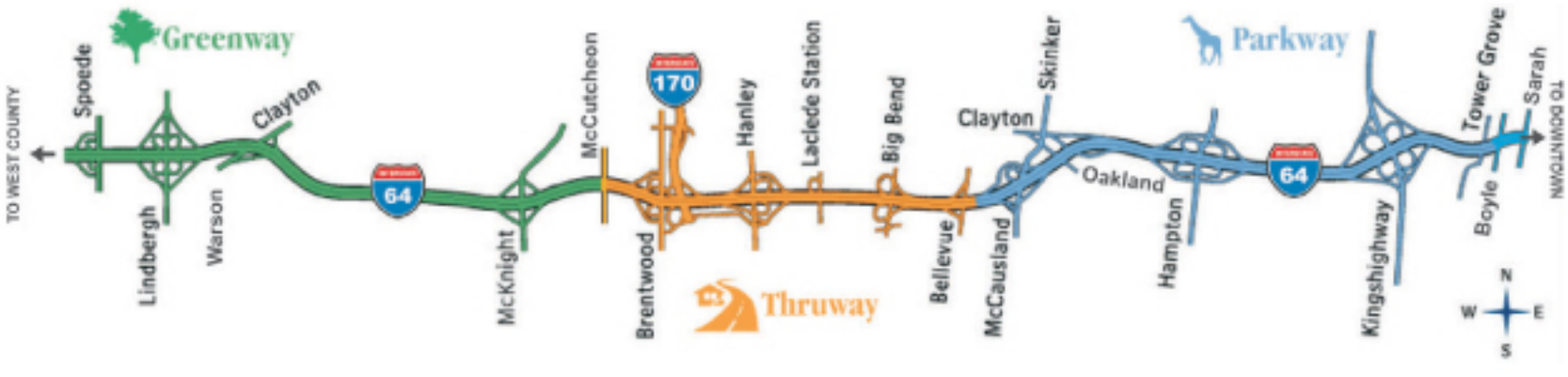
FINAL
Environmental Impact Statement



VOLUME 1

St. Louis and St. Louis County
MISSOURI

FHWA-MO-EIS-02-02-F
MoDOT Project No. J6I0978 and J6I1248

VOLUME 1

Interstate 64/U.S. Route 40 Corridor

From West of Spoede Road in St. Louis County to West of Sarah Street in the City of St. Louis, Missouri

FINAL
Environmental Impact Statement

Submitted Pursuant to 42 U.S.C. 4332 (2)(c)
and 49 U.S.C. 303 by the

U.S. Department of Transportation
Federal Highway Administration
and
Missouri Department of Transportation

3/29/05
date of approval

for MoDOT

3/29/05
date of approval

for FHWA

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) are preparing to reconstruct the existing I-64/U.S. Route 40 facility with new interchange configurations, roadway and structures in St. Louis County and the city of St. Louis, Missouri. The proposed project which includes work on I-170 from south of Brentwood Boulvard to I-64, begins west of Spoede Road in St. Louis County and continues easterly to west of Sarah Street in the city of St. Louis. It is the intent that this proposed reconstructed facility meet current design standards. The project is approximately 12 miles (19.3 kilometers) in length.

The following persons may be contacted for additional information concerning this document:

Mr. Don Neumann
Programs Engineer
Federal Highway Administration
209 Adams Street
Jefferson City, MO 65102
(573)636-7104

Mr. Kevin Keith
Chief Engineer
Missouri Dept. of Transportation
P.O. Box 270
Jefferson City, MO 65102
(573)751-2803

Comments on this Final EIS are due by **May 20, 2005,** and should be sent to the persons listed above.

EXECUTIVE SUMMARY

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) are proposing to reconstruct the existing Interstate 64/U.S. 40 facility with new interchange configurations, bridges and roadways in St. Louis County and the city of St. Louis. The proposed project begins on I-64 west of Spoede Road in St. Louis County and continues east to west of Sarah Street in the city of St. Louis, and on I-170 from south of Brentwood Boulevard to Eager Road. The project length on I-64 is 10.9 miles (17.5 kilometers) and on I-170 is 0.8 miles (1.3 kilometers). The location of the I-64 corridor is shown in Figure S-1. The proposed action includes adding through lane capacity between I-170 and Spoede Road. It is intended that the reconstructed facility will meet current interstate standards at the time of the facilities' design and construction. This proposed action is referred to as "The New I-64".

This Environmental Impact Statement (EIS) has been prepared to describe the development of alternatives, to evaluate the impacts of the alternatives and to determine a preferred alternative. A preferred alternative has been identified as the alternative that best meets the project goals. The preferred alternative was identified based on engineering analysis related to probable project costs, constructability and based on the evaluation of the social, economic and environmental impacts of the potential alternatives.

A. Purpose and Need for the Project

The purpose of the proposed project is to reconstruct this section of I-64 mainline, the section of I-170 near I-64, and reconstruct interchanges consistent with current design standards at the time of the facilities' design and construction. The proposed action would address several goals: 1) replace the deteriorating facility, including bridges and substandard interchanges; 2) increase roadway capacity between Spoede Road and I-170; 3) improve safety; 4) improve traffic operation and decrease congestion; and 5) promote community redevelopment. The following summarizes the purpose and need for improvement to I-64 and I-170. Additional detail and documentation can be found in Chapter I.

Interstate 64 is an aging highway and is in poor condition. The western section of the study corridor was built in the late 1930s and early 1940s. The eastern section of I-64 was rebuilt in the late 1950s and early 1960s. The concrete pavement and base have also been found to be in very poor condition. When the top surface was removed for the resurfacing in 1999, many joint problems were discovered. Most bridges in the study area are either greater than or nearing 50 years old. None of them meet today's standards for shoulder widths. All of the bridges over I-64 have less than 16'-6" clearance. The majority of I-64 bridges over local streets have less than 15'-2" (4.6 m) clearance. Despite the 1999 resurfacing project, potholes are already appearing on the I-64 bridges over local streets. Bridges on I-64 are deteriorating to the point that extensive maintenance is likely to be required in the future to keep a number of the bridges open.

Current roadway design features along I-64 are based on the prevailing design standards at the time of the original I-64 (U.S. 40) construction. Interstate 64's main geometric deficiencies are the existing inside and outside shoulder widths, which do not meet current design standards in 2004 of 12 feet (3.7 m). Insufficient shoulder widths make driving conditions uncomfortable and do not allow for emergency vehicle access following traffic crashes or breakdowns. All of the existing interchange configurations fail to meet current design standards in 2004 and have ramp geometrics that are too compact. These roadway design features may also negatively impact traffic safety.

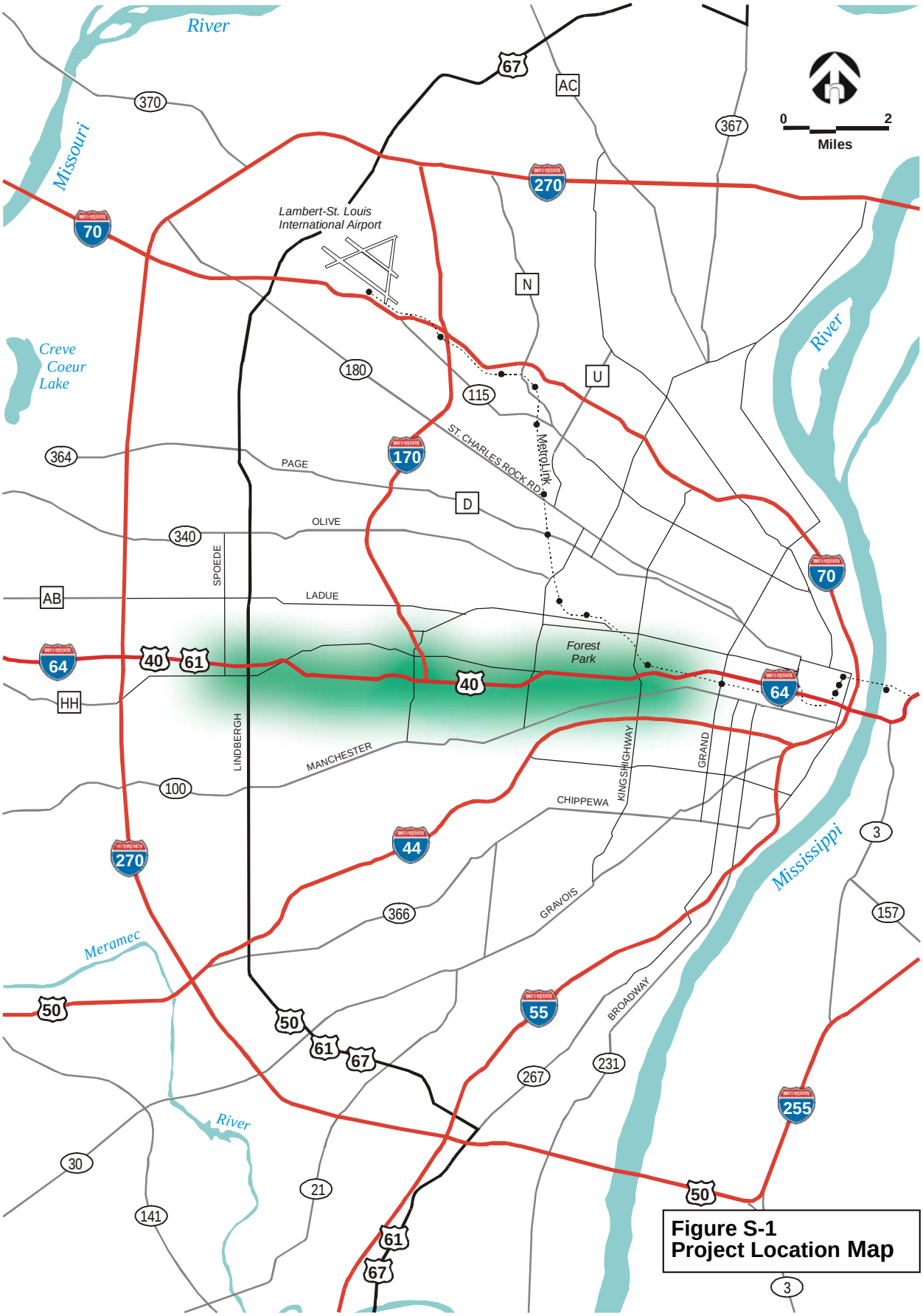


Figure S-1
Project Location Map

The specific needs being addressed by the proposed action are summarized as follows:

- *Freeway Condition/Interchange Design Features* – Improve the pavement surface and upgrade current roadway features along I-64, including roadway alignments, cross sections, vertical clearances and interchanges to MoDOT's current best practice design standards.

- *Capacity* – Increase roadway capacity by adding one lane each direction between I-170 and Spoede Road to improve the general operating conditions of this section of I-64. Improve the operating characteristics of travel between I-170 and Tower Grove Avenue without increasing the number of mainline lanes on I-64. Consistent with the 1997 Major Transportation Investment Analysis (MTIA), additional lanes are not being considered east of I-170 because the potential impact to the adjacent communities and destinations is considered too great. Improved traffic flow in this section of I-64 would be realized through improvements in the roadway standards and Transportation System Management (TSM) operations.

- *Traffic Safety* – Reduce the number of design or driver related crashes occurring along this section of I-64, through the use of Intelligent Transportation System (ITS) and improved roadway design.

- *Operation and Congestion* – Improve the movement of people and goods on I-64 by providing operational improvements such as acceleration/deceleration lanes, collector-distributor (CD) roads, wider roadway shoulders, improved ramps and improved signing.

- *Community Redevelopment* – Include special design elements on I-64 that would improve aesthetics, enhance neighborhood connectivity and serve as a stimulus for growth.

B. Project Description

The proposed project would reconstruct I-64 from west of Spoede Road in St. Louis County to west of Sarah Street in the city of St. Louis. The proposed action also includes I-170 from south of Brentwood Boulevard to Eager Road. The reconstruction includes actions to replace deteriorated pavement; replace structurally deficient and functionally obsolete bridges; improve traffic operations, geometrics, and safety; and to add mainline capacity between Spoede Road and I-170. Major improvements would be made to interchanges along I-64 and the Galleria Parkway interchange on I-170.

A considerable amount of public involvement was conducted during the formulation and evaluation of potential improvements. Three corridor subcommittees were formed and used to provide input into the evaluation process. A subcommittee was formed for each of the subcorridors: the Greenway, the Thruway and the Parkway. Participants in these subcommittees were representatives of individual neighborhood associations, representatives of local governments or individual citizens. In addition, region-wide public meetings were also held. The I-64 Public Hearing was held on January 29, 2003 at the St. Louis Science Center. Attendees were able to submit written comments or verbal comments to a court reporter. More details on the public involvement process and the function of the subcommittees can be found in Chapter VIII – Comments and Coordination.

The process used to evaluate potential improvement solutions that addressed the I-64 transportation needs began by first considering a number of different concepts. These initial concepts considered were:

- ***No-Build Concept*** – The No-Build Concept includes minor short-term activities, including pavement overlays, routine maintenance and bridge repair. The bridges in the I-64 Corridor are 40 to 60 years old or more, and this concept would involve maintenance activities required to keep these bridges open for as long of a period as possible.

- ***Reconstruction Concept*** – The reconstruction concept includes reconstruction of pavement, replacement or rehabilitation of structurally deficient bridges, and minor modifications to interchanges. These improvements would preserve the system, but would not improve traffic operation.

- ***Transportation System Management (TSM) / Travel Demand Management (TDM) Concept*** – Transportation System Management (TSM) improvements are low cost system enhancements that improve the transportation system efficiency. These improvements include minor interchange improvements, ramp metering and ITS.

- ***Transit Concepts*** – Transit concepts were considered in the development of improvement concepts. Based upon the evaluation of an available corridor adjacent to I-64, the property constraints within the I-64 corridor itself and a comparison of this option with the purpose and need for action, the extension of rail was not further considered within or immediately adjacent to I-64. The preferred strategy adopted by the region's Metropolitan Planning Organization (MPO), the East-West Gateway Coordinating Council (EWGCC) is to construct a light rail transit facility north of I-64 outside the study limits of the I-64 EIS. The extension of MetroLink is being pursued as part of a separate location and design study sponsored by the Bi-State Development Agency (Metro). Transit concepts alone do not fully address the project's purpose and need, and as such, a separate transit concept was not carried further in this EIS.

Build Concepts

A full range of build concepts were considered in the I-64 Corridor from west of Spoede Road to west of Sarah Street. Build concepts included the study of operational or capacity improvements to be made within or adjacent to the existing study corridor.

Conceptual improvement options for interchanges along I-64 and I-170 were studied. Based on the input from the public and stakeholders, an emphasis on reducing property impacts was made. The interchange types evaluated are described in Chapter II and Appendix A of this EIS, and included the following:

- No Interchange
- Half Diamond Interchange
- Half Single Point Urban Interchange
- Compact Diamond / Tight Diamond Interchange
- Single Point Urban Interchange (SPUI)
- Folded Diamond Interchange
- Offset Diamond Interchange
- Split Diamond Interchange
- Collector-Distributor Interchange System (CD Roads)
- Outer Road Interchange System
- 3-Level Single Point Urban Interchange

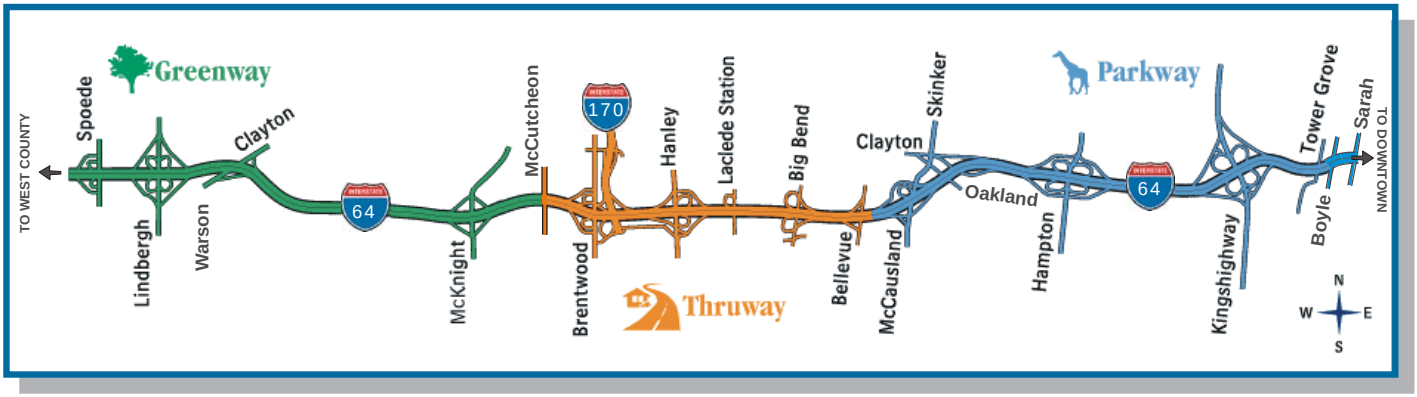
C. Initial Screening

The initial concepts listed above were then evaluated. Criteria related to the goals stated within the purpose and need, as well as environmental considerations were used to complete an initial screening of concepts. A summary of this screening is provided in Chapter II of this EIS. A concept was eliminated from further detailed consideration if an impact was apparent that would defeat the purpose of the project. Concepts which survived the initial screening and which presented no obvious, extraordinary impacts were considered reasonable alternatives warranting detailed analysis. The results of the initial screening were presented at a Public Meeting held on April 3, 2002.

D. Refined Project Alternatives

Following the initial concept screening, the concepts were further refined in order to develop a set of alternatives that were then carried forward into the detailed EIS evaluation process. Additional engineering, traffic and impacts analyses were conducted as more detailed engineering concepts and vertical profiles were prepared. Those interchange and mainline concepts that addressed the project purpose and need were then combined to create refined alternatives. The following alternatives were developed and are considered to meet the purpose of the proposed project and to not have obvious, extraordinary flaws. All Build Alternatives include reconstruction of bridges and interchanges as shown on the Plates in Appendix C. The subcorridors are illustrated in Figure S-2.

Figure S-2 Subcorridor Definition



The Build Alternatives analyzed are summarized below:

Greenway Subcorridor (west of Spoede Road to west of McCutcheon Road)

- ***No-Build Alternative*** – This alternative includes only minor short-term activities, including pavement overlays, routine maintenance and bridge repair. Many of the bridges in this subcorridor are 60 years old or more, and this concept would involve maintenance activities required to keep these bridges open for as long of a period as possible.

- ***Build Alternative (Preferred)*** – The Greenway Alternative 1 includes reconstructing the existing I-64 mainline and interchanges, with a widening from six to eight through lanes from west of Spoede Road to west of McCutcheon Road.

Thruway Subcorridor (west of McCutcheon Road to east of Bellevue Avenue)

- ***No-Build Alternative*** – This alternative includes only minor short-term activities, including pavement overlays, routine maintenance and bridge repair. Many of the bridges in this subcorridor are 45 years old or more, and this concept would involve maintenance activities required to keep these bridges open for as long of a period as possible.

- ***Build Alternatives*** – Within this subcorridor, the build alternatives include reconstructing the existing I-64 mainline and interchanges and widening a section of the I-64 mainline in the Thruway from west of McCutcheon Road to I-170. There are four build alternatives for this subcorridor. These include:

  - ***Thruway Alternative 2*** – A depressed CD system between Brentwood Boulevard and Hanley Road, with I-64 mainline lanes elevated, and the alignment west of I-170 partially located to the south of existing I-64 right-of-way. Eight mainline lanes are provided west of I-170, and six mainline lanes are provided east of I-170.

  - ***Thruway Alternative 2a*** – A depressed CD system between Brentwood Boulevard and Hanley Road, with mainline lanes elevated, and the alignment west of I-170 partially located to the north of existing I-64 right-of-way. Eight mainline lanes are provided west of I-170, and six mainline lanes are provided east of I-170.

  - ***Thruway Alternative 3 (Preferred)*** – A CD system between Brentwood Boulevard and Hanley Road, located adjacent to the freeway mainlines, and the alignment west of I-170 partially located to the south of existing I-64 right-of-way. Eight mainline lanes are provided west of I-170, and six mainline lanes are provided east of I-170.

  - ***Thruway Alternative 3a*** – A CD system between Hanley Road and west of Brentwood Boulevard located adjacent to the freeway mainlines, and the alignment west of I-170 partially located to the north of existing I-64 right-of-way. Eight mainline lanes are provided west of I-170, and six mainline lanes are provided east of I-170.

Parkway Subcorridor (east of Bellevue Avenue to west of Sarah Street)

- ***No-Build Alternative*** – This alternative includes only minor short-term activities, including pavement overlays, routine maintenance and bridge repair. Many of the bridges in this subcorridor are 40 years old or more, and this concept would involve maintenance activities required to keep these bridges open for as long of a period as possible.

- ***Build Alternatives*** – The build alternatives include reconstructing the I-64 mainline and interchanges through the entire Parkway Subcorridor. There are two build alternatives for this subcorridor**.** Parkway Alternative 1 in this subcorridor includes a ramp to Oakland Avenue from eastbound I-64 located just east of McCausland Avenue. In Parkway Alternative 2 (Preferred), this ramp is omitted.

In order to evaluate and compare alternatives for the entire project length, the subcorridor alternatives were combined to create project alternatives. The combination of the alternatives within each subcorridor yielded eight distinct project alternatives. These refinements are reflected in the FEIS. These are defined in Table S-1.

Table S-1 – Project Alternatives

Project Alternative	Subcorridor Alternative		
	Greenway	**Thruway**	**Parkway**
No-Build	No-Build	No-Build	No-Build
Alternative I	Build Alternative	Alternative 2: Stacked– South Alignment	Alternative 1: Ramp to Oakland at McCausland
Alternative II	Build Alternative	Alternative 2a: Stacked– North Alignment	Alternative 1: Ramp to Oakland at McCausland
Alternative III	Build Alternative	Alternative 3: Flat – South Alignment	Alternative 1: Ramp to Oakland at McCausland
Alternative IV	Build Alternative	Alternative 3a: Flat – North Alignment	Alternative 1: Ramp to Oakland at McCausland
Alternative V	Build Alternative	Alternative 2: Stacked– South Alignment	Alternative 2: No ramp to Oakland at McCausland
Alternative VI	Build Alternative	Alternative 2a: Stacked– North Alignment	Alternative 2: No ramp to Oakland at McCausland
Alternative VII (Preferred)	**Build Alternative**	**Alternative 3: Flat – South Alignment**	**Alternative 2: No ramp to Oakland at McCausland**
Alternative VIII	Build Alternative	Alternative 3a: Flat – North Alignment	Alternative 2: No ramp to Oakland at McCausland

Following receipt of comments on the Draft I-64 Environmental Impact Statement, the build alternatives were refined in a number of locations in order to further minimize impacts. Based upon the refined analysis of engineering and traffic service considerations, and based on the evaluation of social, economic, environmental impacts and public and resource agency involvement, MoDOT identified Project Alternative VII – the combination of the Greenway Build Alternative, Thruway Alternative 3 and Parkway Alternative 2 as its preferred alternative.

E. Summary of Major Impacts

There are a number of important issues and factors to be considered when evaluating the merits and disadvantages of the various alternatives for a proposed action. In some cases one issue may be in direct conflict with another, and what may be the most important to some may not be as critical to others. The challenge for transportation decision-makers is to balance the overall benefits and impacts of the alternatives and to identify the best alternative that accomplishes the goals of the project as well as addressing the concerns and comments offered through the agency and public coordination process.

As a means of providing an overall evaluation of the engineering, environmental and social/economic benefits and impacts of the project alternatives, a summary matrix table has been prepared and is presented in Exhibit S-1. This table provides an overall evaluation of the key factors that define and characterize the alternatives. Wherever possible, these issues have been defined using quantifiable measures. In other cases, more subjective assessments have been summarized using a rating scale. These evaluations were performed based on the investigations and assessments as presented and documented in this FEIS. In the development of these alternatives and the determination of their respective impacts, all reasonable measures have been incorporated to avoid, minimize and mitigate their adverse impacts. The following section summarizes the major impact factors for the Build Alternatives.

1. ENGINEERING AND TRAFFIC

a. Project Cost

The preliminary project cost estimates for the project length are comprised of the combination of the individual subcorridors; the Greenway, Thruway and Parkway. The project costs include construction, property acquisitions, mitigation costs of social, economic and environmental

impacts including relocation costs, costs of pedestrian and bicycle modifications, noise mitigation and other mitigation costs. The cost in 2003 dollars for the preferred alternative was estimated at $552 million.

The earliest construction is expected to begin is 2008, depending on available funding. Completion will depend on the level of funding provided. Three funding scenarios are discussed in this EIS. In the full funding scenario, construction projects would be contracted within three years and the entire project completed in six years. With partial funding, the rate of funding would be slightly slower, resulting in the project taking up to eight years. The third funding scenario assumes relatively low levels of funding per year. In this funding scenario, the I-64 reconstruction would be completed over 16 years.

When inflation is considered, the project costs vary depending on the length of time taken to complete the project. If construction costs are assumed to increase three percent per year, the total project costs would increase between the current year and the year the last project segment is contracted. With inflation, the total project costs for the Preferred Alternative would range between $679 million and $787 million depending on the funding scenario, with the higher costs shown for longer construction schedules. The project cost for the No-Build Alternative is estimated at $79 million over a twenty-year period including inflation.

b. Construction Impacts

Construction impacts are similar between the Build Alternatives. Construction impacts include waste disposal, water quality, air, noise, vibration, utility relocation, and maintenance of traffic. Construction impacts will be more fully known when more detailed design plans have been completed. MoDOT will work with the public to address concerns during final design of projects within the I-64 Corridor and will provide further coordination with impacted parties and individuals.

Noise impacts will be mitigated by constructing noise abatement as soon as possible, limiting night construction in residential areas, coordinating with the St. Louis Zoo to minimize noise impacts on the zoo animals, monitoring and minimizing construction related vibration and coordinating with utilities to minimize disruption.

The reconstruction of I-64 will be accomplished by maintaining traffic on I-64 on at least two lanes in each direction, coordinating traffic to other routes, and coordinating construction activities and closures with public agencies, semi-public agencies, private industries and local news media. The duration of construction for the project could extend for a period of six to 16 years. Efforts will be made to maintain traffic service across I-64 along major arterial routes. During subsequent design phases, a detailed traffic management plan will be prepared to address specific construction issues related to individual construction projects. MoDOT will also coordinate with transit service providers to encourage the use of public transportation during construction.

c. Level of Service

All of the Build Alternatives provide similar number of lanes and meet current AASHTO and MoDOT design standards. And as such, they all provide a similar result when estimating mainline level of service (LOS). Based on analysis of Year 2020 volumes, the Build Alternative will provide mainline LOS of C or D throughout the I-64 Corridor during the a.m. and p.m. peak hours. The No-Build Alternative would provide a LOS of E or F as forecast for the year 2020 during the a.m. or p.m. peak hours.

d. System Measures

Due to the similarity of the Build Alternatives, only two estimates of the change in miles and hours traveled were generated, and these estimates were very similar. Small differences in hours and miles traveled were obtained between the Alternatives 2/2a and 3/3a in the Thruway. Other changes to the interchange configuration did not impact the vehicle miles traveled (VMT) or vehicle hours traveled (VHT) reported by the travel models. The change in hours and miles traveled for the Build Alternatives were compared to the No-Build Alternative as a measure of the improved efficiencies of the regional transportation system. As shown in Exhibit S-1, the decrease in hours of travel with the Build Alternatives was 9,355 to 9,370 hours per day. The improved level of service provided by the Build Alternatives also led to increased vehicle miles of travel.

e. Safety

Projections have been made to measure the anticipated reductions in the year 2020 crashes for the Build Alternatives as compared to the No-Build Alternative. The total annual crashes would be reduced by 634. This reduction reflects the improved safety from traffic operational improvements included in the Build Alternatives.

2. SOCIAL AND ECONOMIC

a. Property Impacts

This factor enumerates direct property impacts to existing residential, business and public use structure due to the Build Alternatives. These impacts may be either a total acquisition or partial acquisition. The partial acquisition does not acquire the primary structure on the property being affected. The alternatives are comparable in many categories; there is little substantial difference among alternatives with respect to commercial, recreational, institutional land uses. The substantive difference among Alternatives is in the single-family residential displacements associated with total acquisitions; in the Thruway subcorridor this can range from 75 to 99. A similar situation exists with multi-family residences although in this case, either eight units or 48 units of the Town & Country Apartment Complex would be acquired, also in the Thruway subcorridor.

The number of total single family acquisitions for the Preferred Alternative is 117. The lowest number of total acquisitions of single-family residences, 98, would occur with Alternative V which includes the "stacked"[1] design in the Thruway subcorridor; the highest number 123 would occur with Alternative IV which includes the "flat"[2] design and north alignment to the west of Brentwood Boulevard. There is less difference with respect to total acquisitions of commercial properties, 42 as the low and 47 as the high. While there is no total acquisition of public or semi-public facilities, there are substantial impacts to several.

There are a number of public and semi-public land uses affected by the Preferred Alternative. Most of the impacts are minor in nature, generally consisting of construction easements or right-of-way acquisitions in the front or side yard areas as is the case with the Reform Jewish Academy of St. Louis and the Dewey International Studies School. Other schools, will have some of their existing parking lot acquired, such as the Central Institute for the Deaf (CID), Washington University Medical School (WUMS) and the William Stix School (WSS). Each, however, would have a different mitigation. The CID parking lot would be redesigned to accommodate the replacement spaces. A new parking lot will be developed on vacant land by

[1] "stack" refers to Options 2 and 2a in the Thruway where the I-64 mainline is above collector-distributor roads located at-grade.

[2] "flat" refers to Options 3 and 3a in the Thruway where both the mainline and collector-distributor roads are at-grade.

MoDOT if necessary, for WUMS and WSS within two blocks of their existing parking lots. The St. Louis College of Health Services, located in the former CID building on the south side of I-64, will have the circular drive in front of the building acquired and it will be redesigned within the new ROW. The Junior League, a civic service group, will have a very minor loss of rear yard but no parking spaces in their lot will be taken. Mitigation would occur on site. One church, the Salem Methodist Church would have both a portion of the front and side yard, as well as the sign for the church, acquired for right-of-way, however the existing setback of the church is such that only minor impacts are anticipated.

Alignment refinements have reduced many of these impacts from levels described in the DEIS. The city complex of Frontenac will not have any structures acquired, the Heights Community Center will not have any parking spaces acquired, and the Ladue Recycling center will not be impacted by the Preferred Alternative. The Wright School will also now have no property acquired.

The A.B. Green Athletic Facility will be impacted, and impacts are further described in the Section 4(f) Evaluation, mitigation will include development of additional recreational facilities in the same neighborhood as the facility impact will occur. The Forest Park and St. Louis Zoo are affected by the Preferred Alternative, mitigation has been developed to address the issues raised during the environmental review process and Section 4(f) Evaluation. The issues of noise, vibration and dust with regard to the zoo animals have not been resolved at this time but given the special nature of the zoo facility discussions on mitigation measures will occur as the preliminary and final engineering plans are developed.

There are differences between alternatives in three locations. First, alternatives that include the "flat" option in the Thruway (Alternatives III, IV, VII and VIII) have more displacements than do the alternatives that include the "stacked" options (Alternatives I, II, V and VI). Second, the alternatives that have an alignment to the north on the west side of Brentwood Boulevard (Alternatives II, IV, VI and VIII) have fewer property impacts than do those alternatives that go to the south (Alternatives I, III, V and VII). Third, the alternatives that include an eastbound ramp to Oakland just east of McCausland (Alternatives I, II, III and IV) have more property impacts than do alternatives that do not include this ramp (Alternatives V, VI, VII and VIII).

An analysis of the real estate market was completed in May 2002 and in November 2003 to determine if an adequate supply of safe, decent and sanitary replacement housing is presently available or is not presently available in the general area of the acquired property. The number of residences for sale was found to have changed from the information first obtained in May 2002. In summary, it can be said that more residences are for sale now than previously noted and that there are more residences noted as being priced within the estimated construction cost ranges for right-of-way and real estate acquisition. Based upon this analysis, the area of highest concern is with portions of Richmond Heights located in the Thruway.

While the supply of replacement housing may be greater than initially determined, if all of the homes in specific Richmond Heights neighborhoods such as Sheridan Hills were acquired at once, then it is likely that there will not be an adequate supply of replacement housing within that neighborhood and households would need to be relocated to adjacent or other neighborhoods.

b. Neighborhood/Community Cohesion

All of the alternatives are located within or adjacent to the existing I-64 state property. The initial severing of neighborhoods and impacts to community cohesion occurred as part of the construction of and subsequent upgrades to U.S. 40 that occurred between the late 1930's and early 1960's. The Preferred Alternative and the other Build Alternatives include urban design

elements to minimize and mitigate impacts to neighborhood cohesion through improved pedestrian connections and aesthetic treatments.

c. Environmental Justice and Title VI

The Executive Order on Environmental Justice (E.O.12898) states that, to the extent practicable and permitted by law, neither minority nor low-income populations may receive disproportionately high or adverse impacts as a result of a proposed project. MoDOT is also committed to the provisions of the Americans with Disabilities Act of 1990 (ADA) and the provisions of Title VI of the Civil Rights Act of 1964. This is to ensure that no person shall, on the grounds of race, color, national origin, age, sex or disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

During the course of the I-64 Corridor Study, there has been a concerted effort made to minimize residential displacements and other impacts to the adjacent communities and neighborhoods. Public involvement and demographic analysis contributed to identifying and avoiding disproportionate impacts. Public outreach included meetings and involvement with minority and low-income residents. Efforts have been and will continue to be made to reduce impacts by utilizing interchange designs that utilize less property than conventional interchanges and by the use of retaining walls to minimize property needs adjacent to the freeway.

Efforts have been made to enhance pedestrian movement across I-64, to minimize the impacts of I-64 as a barrier and improve the pedestrian connections between neighborhoods and activities on each side of I-64 through the improvement of pedestrian bridges and tunnels, improving the accessibility of pedestrian trails and sidewalks, widening sidewalks and preserving transit stops in numerous locations. A collaborative process between MoDOT, subcorridor committees, neighborhood representatives and community leaders helped to identify the concerns and interests of those affected. These contacts will continue to be used throughout the decision-making process to proactively involve the public. Based upon these efforts, disproportionately high impacts to minority or low-income residents in the I-64 Corridor are not expected.

d. Economic Benefits

The Build Alternatives will have similar impacts to population, employment and tax revenues within the corridor and for the region. The proposed action is not expected to result in an impact to the population within the project corridor. By improving regional accessibility, the proposed action will support a number of residential and commercial redevelopment projects within or adjacent to the I-64 corridor, and the continued population and economic growth of the St. Louis region. There are a number of major employment centers located along I-64 that will benefit from improved accessibility resulting from the proposed action. Improved accessibility will also be a positive factor contributing to increased sales tax collections within the corridor and for the St. Louis region.

Economic user benefits that would be experienced by the motoring public were estimated. Dollar costs were assigned based upon current MoDOT methodology for vehicle hours of travel, vehicle miles of travel and crashes. When compared to the No-Build Alternative, the Build Alternatives would produce positive net project benefits.

3. ENVIRONMENTAL

a. Parks and Recreation Facilities

The Preferred Alternative would impact two public parks/recreation facilities as there were no reasonable and prudent parkland avoidance alternatives. The total corridor impacts are shown

in Exhibit S-1 and are the summation of the following individual park and recreational facilities impacts: 0.51 acres (0.2 hectares) of impacts to parkland at A. B. Green Athletic Complex (city of Richmond Heights) which includes 0.43 acres (0.17 hectares) of property acquisition and 0.08 acres (0.03 hectares) of temporary construction easement; and 22.41 acres (9.07 hectares) of parkland in Forest Park (city of St. Louis) which includes 6.35 acres (2.57 hectares) of property acquisition, 5.40 acres (2.18 hectares) of permanent easements, 0.96 acres (0.39 hectares) of other permanent impacts converting park open space to another use within the park, and 10.07 acres (4.1 hectares) of temporary construction impacts which would be returned to park use following construction. The proposed action would also include a gain of 14.38 acres (5.82 hectares) of park open space, including a conversion of 13.93 acres (5.64 hectares) of highway right-of-way to Forest Park, and an additional conversion of 0.45 acres (0.18 hectares) of built park use or road use to park open space. A detailed discussion of park impacts, avoidance alternatives, and measures to minimize harm can be found in the Section 4(f) Evaluation.

b. Air Quality

A detailed air quality analysis for inclusion in an environmental document (EIS) is prepared on federally-funded projects if the project meets the criteria for regional significance as defined by the Clean Air Act Amendments (CAAA). The traffic volumes encountered in the sections of I-64 included in this project meet the criteria of a regionally significant project as defined by the East West Gateway Coordinating Council, FHWA, the Missouri Department of Natural Resources and MoDOT. Therefore an analysis of the air quality impacts was performed.

The St. Louis metropolitan area was reclassified by the U.S. Environmental Protection Agency (USEPA) from moderate non-attainment for ozone to a maintenance area for the one-hour ozone standard in May, 2003. However, as of April 15, 2004, the USEPA designated the St. Louis areas as a moderate non-attainment area for the new eight-hour ozone standard. As a moderate non-attainment area for ozone, any federally funded or regionally significant highway project must be included in a conforming regional transportation plan. The preferred alternative was part of a conformity determination approved by USDOT and EPA on August 8, 2003. In addition, the preferred alternative was included in the long-range transportation plan, Legacy 2025, approved on March 27, 2002. Consequently, for the ozone precursors of volatile organic compounds and nitrogen oxides, the project has been shown to have emission levels that satisfy the emission inventory budgets.

New control strategies for ozone resulting in additional emissions reductions will be studied by EWGCC to achieve the new national air quality standards. EWGCC will now prepare a new conformity analysis showing how the region will attain the air quality standards by the year 2010. According to the EWGCC, the I-64 project is part of an existing conformity plan and would not be affected by the implementation policy for the eight-hour standard.

A carbon monoxide (CO) analysis was also completed to determine the concentrations of CO emissions in the vicinity of the I-64 corridor. The determined carbon monoxide levels revealed that the Build Alternatives for this project will not result in any new violations of the one-hour or eight-hour NAAQS.

c. Noise

The existing L_{eq} (equivalent sound level) values on the project in the vicinity of I-64 corridor generally exceed the FHWA and MoDOT impact criteria levels throughout the corridor. The Build Alternatives will result in increasing the level of noise in the I-64 Corridor. This is primarily due to the highway moving closer to the first row of residents located adjacent to I-64. It is widely held that a noise level elevated by three dBA (decibels) is barely perceptible to the

human ear. Given the presence of the existing noise environment, the increase in noise levels farther away from I-64 is not large. Although the noise levels for certain receptors farther away from I-64 might also be considered high, the noise increase from the Build Alternatives may be considered imperceptible or barely perceptible and that is not considered a substantial increase in noise caused by the project. The Preferred Alternative and the other Build Alternatives are expected to result in an increase of 315 receptors that would incur a noise level elevated by over three dBA. While minor differences in noise receptors impacted might occur, estimating these minor differences would require more detailed engineering information than is available at this stage in the project development process.

To mitigate the year 2020 noise impacts in the I-64 corridor, a barrier system would be considered as part of the project. Because barrier heights are limited by MoDOT policy to 18 feet (5.4 m) due to aesthetics, cost, and constructability issues, substantial noise reduction is most likely to be achieved for those receptors located closer to a constructed barrier. Like most states, MoDOT requires that receptors receive at least a five dBA reduction in order to be considered as "benefited", because a change of less than five dBA would not be considered as a "substantial reduction" as defined by FHWA. As mentioned earlier, it takes at least a three dBA change to be perceptible by the human ear. Those receptors at farther distances into the community and away from I-64 that already have high noise levels will not be affected, and should not notice a substantial change in noise level with the Build alternatives. Noise barriers can only address impacts in the area closer to the highway, within the first two or three rows.

Possible noise abatement types and locations will be presented and discussed with the benefited residents during the preliminary design phase, which begins after the EIS is approved by FHWA. Noise abatement measures will be considered that are deemed reasonable and feasible.

d. Water Resources

The water resources in the study corridor include streams, wetlands, and ponds. This project is not using a merged NEPA/Section 404 process due to the minimal impacts on waters of the United States. Since the project involves improvement of an existing roadway, all of the stream crossings have previously been culverted, relocated, or bridged. In most cases, existing culverts would either be replaced with new longer culverts, or would be extended to accommodate additional roadway width or re-alignment. Among the Build Alternatives, the total linear feet of stream that would be impacted by fill material, culverting, or other channel disturbance ranges from a minimum of 3,650 feet (1112.5 m) to a maximum of 3,940 feet (1,200.9 m). The Preferred Alternative would impact 3800 feet (1158.2 m) of stream channels. Deer Creek is currently bridged and will continue to be bridged in order to avoid or minimize impacts.

There could be impacts to potential wetlands within Alternatives 2a and 3a. A 0.06 acre (0.02 hectares) portion of a potential "emergent/scrub-shrub" wetland, located northwest of the I-64/Brentwood Boulevard interchange (see Plan Plates T9 and T21 in Appendix C), falls within the area that would be acquired for state property in Thruway Alternatives 2a and 3a. The ramps at this location would be on piers and could possibly impact as much as 0.06 acres of this potential wetland. The Preferred Alternative would have no impact to this potential wetland. The only impact to ponds would occur in the Parkway Subcorridor where 0.01 acres (0.004 hectares) of a 2.4-acre (0.97-hectare) detention pond located adjacent to the northwest quadrant of the Kingshighway interchange would be impacted by both of the Build Alternatives.

e. Floodplains

As an overall measure of an alternative's potential impacts on flooding risks and the natural benefits of floodplains, this factor is expressed by the linear feet (meters) of floodplain crossed,

and by the acreage (hectares) of floodplains impacted. Impacts of the Build Alternatives range from 1,405 linear feet (428.2 m) to 2,355 linear feet (717.8 m), and from 0.94 acres (0.39 hectares) to 1.3 acres (0.53 hectares). The Preferred Alternative would cross 1555 linear feet (473.9 m) of floodplain comprising 1.3 acres (0.5 hectares) of surface area.

The proposed roadway modifications and bridge elevations are set well above 100-year frequency flood elevations, based on studies prepared by Federal Emergency Management Agency (FEMA). Consequently, the risk of flooding to users of the roadway, and the potential for property loss and hazard to life is minimal.

f. Natural Communities

A search of the Missouri Department of Conservation's Natural Heritage Database was conducted, but it was found that no high-quality natural communities occur in the study corridor.

g. Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) (see letter in Appendix I, dated November 8, 2001) has indicated that the federal endangered Indiana bat (*Myotis sodalis)* could occur within the study corridor, however, there are currently no known or recorded occurrences of the Indiana bat within the study corridor. During construction of the I-64 improvements, suitable roost trees in probable habitat areas of the Indiana bat will not be removed during the range-wide maternity period of April 1 through September 30, thereby avoiding direct mortality to the bats and thus avoiding adverse impacts. However, if it is not feasible to schedule tree removal except during this period, a survey, to determine the presence or absence of Indiana bats, will be conducted by a qualified biologist and consultation with the USFWS will be undertaken.

h. Cultural Resources

This factor reflects an alternative's likelihood of adversely impacting cultural resources based on the predictive assessments and the presence of known archeological, historic and architectural sites in the Area of Potential Effects (APE) adjacent to the I-64 alignment.

The No-Build Alternative would not have an adverse effect on four eligible bridges. The No-Build Alternative would not include lane additions or alignment changes, and the bridges would not be replaced.

None of the Build Alternatives differentiate themselves regarding their potential impact to predictive or previously recorded historical or archeological sites. Of the 403 historic properties recorded during the course of the survey, the area within the APE contains 28 architectural resources that are individually eligible for listing to the National Register of Historic Places (NRHP). Four bridges and twelve historic districts are eligible as well. During the conceptual design process, alignment adjustments were made and retaining walls were included in the design in order to avoid and minimize impacts to many of these recommended eligible resources. A total of twelve individually eligible architectural resources would be impacted; five adversely. Four eligible bridges would be adversely affected by the Build Alternatives. Two eligible historic districts would be adversely affected by I, II, V, and VI. Only one historic district would be adversely affected by III, IV, VII, and VIII.

For the preferred alternative, those cultural resources that are likely to be totally acquired, or are likely to have their cultural setting substantially altered, require a Section 4(f) evaluation. Five individually eligible architectural resources (residences) are adversely affected, as are four eligible bridges and one historic district. The Section 4(f) evaluation has been prepared for these cultural resources.

i. Hazardous Waste Sites

Potential hazardous waste sites were identified during the hazardous material screening. Build Alternatives II, IV, VI, and VIII would impact one moderate risk hazardous waste site, a service station located at 1240 South Brentwood. The other alternatives would have no impacts on any known hazardous waste sites. Any impacts would be remediated prior to, or as part of, the construction of the roadway improvements. The greatest impact might be from leaking underground storage tanks and possible contaminated soil and groundwater. The Preferred Alternative has no impacts to hazardous waste sites.

j. Visual Quality

This factor is a qualitative measure of the potential impacts to the visual environment by the Build Alternatives including the impacts to the existing visual resource, the relationship of impacts to views from I-64 and to persons viewing I-64 from adjacent areas.

The mature, lush vegetation that is a visual strength for drivers of I-64, is also the common visual strength for views toward I-64, particularly in the Greenway Subcorridor. Bridges within the Greenway Subcorridor have architecturally significant detailing and visual interest. A number of existing bridge abutments and parapet wall shapes and details were influenced by the Art-deco style design. The Thruway Subcorridor contains a large commercial center and residential areas. The Parkway Subcorridor contains the city of St. Louis' Forest Park. The landscape and major institutions of the park are visible from I-64 and help provide way-finding for park visitors. The Planetarium, Science Center, St. Louis Zoo, and Aviation Field are all highly visible from the interstate.

Impacts of the Build Alternatives include bridge removal, removing vegetation, expanding the roadway, smoothing the hills on the roadway, and adding retaining walls and possible sound abatement. The existing visual buffer would be reduced with the loss of vegetation, and some residential areas would face retaining walls within the I-64 property. Highway infrastructure such as ramps, piers, retaining walls, and bridges would increase and be more visible to drivers as well as residents.

With the Build Alternative, including the preferred, there will be sections where the roadway profile is lowered and sections where it will be a higher roadway profile. The lower profile sections will have reduced visual impacts toward I-64 and the higher profile sections will have increased visual impacts toward I-64. As a result of a slightly lower roadway profile in the Forest Park area, the overall ability for vistas into the park from I-64 would be somewhat reduced. East of Kingshighway, the lower alignment profile would help soften the visual impact (views toward the road) through this segment.

The visual experience will be enhanced by incorporating architectural detailing in new bridges, incorporating landscaping, visual treatments, and urban design elements. These measures could provide an aesthetically enhanced experience for users of the highway, and potentially help maintain the property values of the neighborhoods adjacent to the freeway.

k. Secondary and Cumulative Impacts

Cumulative impacts or effects on the natural resources within the geographic area of this project are not expected to be substantial. Cumulative impacts or effects on people and the built environment include actions by other agencies within the project area such as the extension of MetroLink from Forest Park to I-170 on an alignment paralleling I-64; and the Manchester Corridor Revitalization Plan was prepared to assist the communities of Brentwood, Maplewood, Rock Hill, Glendale, Warson Woods, and Kirkwood in visualizing and implementing revitalization

actions for the Manchester Road Corridor (Missouri Route 100). These six participating municipalities jointly funded this effort by providing the local share to match a grant from the EWGCC Community Improvement Challenge Grant program. Local governmental actions supporting economic redevelopment include the Forest Park Southeast Revitalization Plan, BJC Hospital expansion plans and the Highlands redevelopment. Additional transit projects within the I-64 Corridor include constructing a transit center at Forsyth and Bonhomme and bus shelters on Kingshighway and on Manchester.

Several local re-development projects are proposed along Hanley Road south of the I-64 Corridor. The projects, if they would move forward, would include large commercial businesses, smaller retail shops and a mix of residential density. St. Louis County has prepared a preliminary conceptual improvement of Hanley Road from I-64 to the south. This project includes widening Hanley Road, adding traffic control medians and providing a direct traffic movement from northbound Hanley Road to westbound Eager Road.

F. Preferred Alternative

The No-Build and eight Build Alternatives were retained for detailed evaluation in the Draft EIS. These nine alternatives remained under consideration through the project's public hearing and the review and comment period for the Draft EIS. Considering all comments received and in consideration of all issues yet to be resolved, **Alternative VII (the combination of the Greenway Build Alternative, Thruway Alternative 3 and Parkway Alternative 2) has been identified by MoDOT as the Preferred Alternative for the I-64 Study Corridor.**

The process to select the preferred alternative was to evaluate and compare the effectiveness of the alternatives based on: (1) the ability to accomplish the Purpose and Need for Action, (2) project cost, (3) the comparison of social, economic and environmental factors and (4) input from the public and review agencies.

1. PURPOSE AND NEED OBJECTIVES

a. No-Build Alternative

The No-Build Alternative was not identified as the preferred alternative because it would fail to meet the project purpose and need for action. The key reasons include the following:

- While the pavement surface could continue to be maintained and overlays continued to be used to provide for a smooth driving surface, this alternative would not improve the existing vertical alignment, provide for sufficient inside or outside shoulder width, provide sufficient vertical clearance for bridges, or sufficient geometrics for vehicle merging and diverging.

- The alternative would not provide sufficient capacity for the movement of mainline traffic, nor would it provide needed operational improvements at interchanges. The No-Build Alternative would not improve safety for vehicles traveling I-64 or entering or exiting the freeway.

- The No-Build Alternative would continue to limit the movement of pedestrians, and it would not support the traffic access to existing or planned future economic development.

b. Build Alternatives

Because all of the Build Alternatives follow essentially the same alignment and include similar lane geometrics, each Build Alternative would improve freeway condition and interchange design. All of the Build Alternatives would increase freeway capacity. The traffic considerations

are similar between the Build Alternatives. The Build Alternatives would be expected to reduce the number of crashes on this section of I-64 by 47 percent as compared to the No-Build Alternative. Overall traffic operation for the mainline, for weaves and for merges/diverges would improve from a LOS E/F with the No-Build Alternative to LOS C/D with the Build Alternatives. All of the Build Alternatives would include special design elements on I-64 that would improve aesthetics, enhance neighborhood connectivity and support community redevelopment. There was some concern that Project Alternatives I, II, V and VI which include the stacked feature in the Thruway, could result in negative impacts related to aesthetics and may not fully support community redevelopment. However, there was support for these same stacked alternatives because they reduced property impacts.

2. PROJECT COST

Major differentiators between Build Alternatives were the engineering factors of project cost and project constructability. The primary cost differences were with the "stacked" Thruway Alternatives 2 and 2a with the "flat" Thruway Alternatives 3 and 3a. Thruway Alternatives 2 and 2a are estimated to cost over $60 million more than were Thruway Alternatives 3 and 3a assuming staged construction over a 16 year period, beginning in the year 2008 and an annual construction cost inflation rate of three percent. Given these assumptions, the length of the elevated mainline with Thruway Alternatives 2 and 2a was also considered to have more complex construction than would Thruway Alternatives 3 and 3a. The estimated costs of the Build Alternatives ranged from $853 million to $775 million. The preferred alternative, Project Alternative VII has an estimated cost of $787 million.

3. SOCIAL, ECONOMIC AND ENVIRONMENTAL FACTORS

Social considerations also provided differentiation between build alternatives. In the Parkway Subcorridor, Alternative 2 was identified because it would impact fewer residences and would lessen traffic volumes on the section of Oakland Avenue west of Hampton Boulevard. No reasonable and prudent parkland avoidance alternatives to the use of parkland were available. Among the two alternatives in this subcorridor, Alternative 2 was selected. For this reason, Project Alternatives I through IV are not the preferred alternative.

The Thruway Alternative 2 and 3 were identified as more desirable than Thruway Alternatives 2a and 3a. Thruway Alternatives 2 and 3 followed the alignment further to the south in the portion of I-64 located immediately west of Brentwood. These alternatives did have a greater impact on the Town and Country and Manhassett Village Apartments. However, Thruway Alternatives 2 and 3 have less impact on land area north of I-64 that is planned as a commercial extension adjacent to the St. Louis Galleria mall. These alternatives also have less impact to Black Creek. For these reasons, Project Alternatives VI and VIII are not the preferred alternative.

Of the two remaining reasonable alternatives, Project Alternative V includes the "stacked" option (Thruway Alternative 2) and Project Alternative VII includes the "flat" option (Thruway Alternative 3). These project alternatives are similar except for this difference. Project Alternative V would have 17 fewer full and two fewer partial property impacts than would Project Alternative VII. The majority of the displaced residential properties are located along Everett Avenue and along Hanley Downs in the city of Richmond Heights. The stacked design was considered to result in visual impacts where I-64 would be at a height above or at the same height as adjacent residences. Due to these reasons and the cost differential described previously, the flat option, Project Alternative VII (Thruway Alternative 3), became the preferred alternative.

4. PUBLIC / AGENCY PARTICIPATION AND COMMENT

The selection of the Preferred Alternative, to be documented in this Final EIS, is based on the consideration of all comments received during the official public and agency review of the Draft EIS, extending from January 3, 2003 to May 30, 2003, as well as any other comments received prior to the release of this document.

Public and agency comments have substantiated and confirmed the preferred alternative as recommended in the draft document. Although some questions and concerns were submitted, all substantive comments have been addressed in this Final EIS. A summary of the comments received from the Draft EIS review and responses to these comments are presented in Chapter VIII – Comments and Coordination.

A public hearing was held January 29, 2003. The hearing took place at the St. Louis Science Center. In addition to the availability at 13 public locations within or near the Study Corridor, the Draft EIS was made available on the study Web site at *www.thenewi64.org*. Visitors to the Web site were able to review the document and submit comments through an online comment form and e-mail.

5. SUMMARY OF ISSUES

a. Unresolved Issues

In accordance with Missouri Department of Natural Resources' Historic Preservation Program standards, additional investigations of the Preferred Alternative will be performed to identify archeological sites. This is included in the executed Programmatic Agreement dated August 24, 2004. The procedure has been specified in this Programmatic Agreement but the additional investigations have not taken place at this time. The executed Programmatic Agreement closes the Section 106 requirements for this project. The archeological work and the mitigation for architectural properties still remains to be done but that work is covered within the Programmatic Agreement requirements.

Determinations of eligibility have been completed for the identified cultural resources and the State Historic Preservation Office has concurred. All but one of the historic districts noted in the submittals concerning resources in Richmond Heights have been through the Determination of Eligibility process. The Keeper determination on July 5, 2004 was that the Hampton Park Historic District had insufficient information to determine eligibility. The SHPO and MoDOT still recommend the Hampton Park Subdivision as eligible. The Hampton Park Historic District is presently undergoing the nomination process for listing on the NRHP.

The Section 106 Process will address the effect of the proposed noise walls on the architectural resources and historic districts when the noise walls location and design has been determined. This is anticipated to occur during the design phase of the I-64 Improvement Project.

The City of Richmond Heights opposes the construction of a half diamond at Bellevue Avenue, given full access is provided at Big Bend Boulevard as indicated in the preferred alternative. Their concerns relate to full and partial property impacts associated with the reconstruction of the two ramps at Bellevue Avenue. The design concept was not modified in the FEIS, however MoDOT is committed to examining ways to further minimize property impacts during subsequent design phases.

b. Future Coordination

Following the Final EIS, the ongoing coordination with the public, stakeholders, organizations and resource agencies will continue to develop appropriate mitigation measures and

commitments as well as project coordination into the future during project design and construction. Additional decision-making related to future coordination will be made when more detailed design information becomes available.

G. List of Commitments

The following is a summary of the commitments offered in this I-64 Final Environmental Impact Statement (FEIS). Please refer to subsequent chapters of this FEIS for details regarding specific commitments.

1. GENERAL

- *Future Coordination* – MoDOT will continue to work with the public, organizations and appropriate agencies to collaborate on urban design issues and address concerns during the final design of projects within the I-64 Corridor.

- *Property Impacts* – MoDOT is committed to examining ways to further minimize property impacts throughout the corridor, without compromising the safety of the proposed facility, during subsequent design phases.

- *Community Impacts* – Urban design elements will be used to minimize and mitigate impacts to neighborhood cohesion through improved pedestrian connections and aesthetic treatments.

- *Lighting* – In order to minimize lighting impacts, efficient lighting and equipment will be installed to optimize the use of light on the road surface while minimizing stray light intruding on adjacent properties.

- *Bicycle and Pedestrian Accommodations* – I-64 street crossings will incorporate bicycle and pedestrian accommodations, including wider sidewalks and pedestrian level lighting on bridges. Crossings will accommodate bicycles. Designated bike paths will be striped and signed.

- *Landscaping and Visual Impacts*

  – As mitigation for forest impacts, tree plantings will occur along the corridor wherever practicable.

  – Landscape plantings would seek to restore visual buffer areas through the use of evergreen and deciduous material and locating material where it would achieve the greatest level of visual screening.

- *Noise and Vibration*

  – Possible noise abatement types and locations will be presented and discussed with the benefited residents during the preliminary design phase. Noise abatement measures will be considered that are deemed reasonable, feasible and cost effective.

  – Construction zone strategies to address construction noise and vibration impacts will be used. Contractors will be required to build walls early in the construction sequence if possible, and monitor vibrations and effects to adjacent facilities due to construction activities.

- *ITS* – MoDOT will be incorporate suitable and reasonable ITS elements into the Build Alternative.

- *Construction Traffic Management* – A detailed traffic management plan for the duration of construction will be prepared and coordinated with local jurisdictions.

2. A.B. GREEN ATHLETIC COMPLEX

A.B. Green Athletic Complex mitigation measures are highlighted below. More information can be found in the Final Section 4(f) Evaluation, Section E.1.

- *Acreage* – The total acreage impacted is 0.43 acres. Proposed total replacement acreage is 1.7 acres.

- *Tennis Courts Relocation* –New courts will be built where the existing loop ramp is located just north of I-64. (See Exhibit 4f-F1c)

- *Parking* – Net increase in parking

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

- *Cell Tower* – The communications 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 relocated 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

3. FOREST PARK

Forest Park mitigation measures are highlighted below. More information can be found in the Final Section 4(f) Evaluation, Section E.2.

- *Open Space and Tree Removal* – Plant trees, shrubs and grass in disturbed areas as appropriate, and in other areas within Forest Park, as designated by and subject to approval by the City of St. Louis Department of Parks, Recreation, and Forestry.

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

- *Turtle Playground* – Landscape disturbed open space, re-grade disturbed area for a more usable surface, and replace 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.

- *Wells Dr./Hampton Intersection Improvements* – Construct a roundabout with a grade separated crossing under Hampton, south of Wells Drive, for the recreational path.

- *Employee Parking/Shuttle Bus Drop Off Area* – Coordinate the north terminus of the new pedestrian overpass east of Hampton with the drop off location of the existing Forest Park shuttle bus.

- *Pedestrian Crossings over I-64 (Shared with Vehicular Use)* – Replace and improve the pedestrian crossings. New bridges would accommodate pedestrians with design standards to improve accessibility and safety.

- *Pedestrian Crossings (Non-vehicular/Stand-alone Structures)* – Replace and improve the three existing pedestrian crossings in Forest Park (bridge over I-64 east of Hampton, tunnel under I-64 east of Hampton, bridge over I-64 east of Kingshighway including flatter grades on access to the structures and voice-activated crossing signals).

- *Aviation Field (Athletic Fields)* – As mitigation for noise impacts to the athletic fields, coordinate with the city of St. Louis Department of Parks, Recreation, and Forestry to determine whether noise walls are desired to mitigate traffic noise impacts. Also narrow the width of Oakland Avenue and add a raised median between Hampton Avenue and the Science Center 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. Incorporate landscaping to restore and enhance the aesthetic quality of the park.

- *Cultural Resources* – If any NRHP-eligible archaeological resources are identified within Forest Park, and if the project would result in an adverse effect on an NRHP-eligible archaeological 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 archaeological information by means of controlled excavation and other scientific recording methods.

- *Construction Impacts* – Stage construction at access points 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 possible adverse effects of noise, dust, lights, and vibration on zoo animals during construction.

4. REGULATORY REQUIREMENTS

MoDOT is committed to fulfilling federal and state environmental regulatory requirements for all applicable laws, regulations and executive orders through subsequent project design, property acquisition and construction. These include, but are not limited to, the following:

- The Clean Water Act
- The Clean Air Act Amendments
- The Endangered Species Act

- The National Historic Preservation Act
- Various Hazardous Waste and Solid Waste Acts
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act
- FEMA and SEMA Requirements
- The Noise Control Act of 1972
- Title VI of the Civil Rights Act of 1964
- Executive Order 12898 (Environmental Justice)
- Section 4(f) of the USDOT Act

EVALUATION FACTORS	UNITS	PROJECT ALTERNATIVES								
		NB	I	II	III	IV	V	VI	VII[1]	VIII
	Subcorridor Alternative -Greenway	No-Build	Build	Build	Build	Build	Build	Build	Build	Build
	Subcorridor Alternative -Thruway	No-Build	Alt. 2	Alt. 2a	Alt. 3	Alt. 3a	Alt. 2	Alt. 2a	Alt. 3	Alt. 3a
	Subcorridor Alternative -Parkway	No-Build	Alt. 1	Alt. 1	Alt. 1	Alt. 1	Alt. 2	Alt. 2	Alt. 2	Alt. 2
ENGINEERING & TRAFFIC CONSIDERATIONS										
PROJECT COST										
Construction Cost Estimate	$ (Million)	$79.3	$741.8	$744.5	$674.1	$674.8	$738.1	$740.8	$670.4	$671.1
Right-of-Way and Relocation Cost	$ (Million)	$0.0	$111.4	$104.1	$117.5	$104.4	$110.8	$103.5	$116.9	$103.8
TOTAL PROJECT COST[2]	$ (Million)	$79.3	$853.2	$848.6	$791.6	$779.2	$848.9	$844.3	$787.3	$774.9
CONSTRUCTABILITY ISSUES	Rating	○	●	●	●	●	●	●	●	●
LEVEL OF SERVICE										
Mainline (2020)	Peak Hour LOS (AM / PM)	E / F	C / D	C / D	C / D	C / D	C / D	C / D	C / D	C / D
SYSTEM MEASURES										
Daily Vehicle Miles Traveled (2020)	(miles/day) <> No-Build	NA	165,619	165,619	166,050	166,050	165,619	165,619	166,050	166,050
Daily Vehicle Hours Traveled (2020)	(hours/day) <> No-Build	NA	-9,355	-9,355	-9,370	-9,370	-9,355	-9,355	-9,370	-9,370
SAFETY[3]										
Crashes 2020 - (PDO)	Number	947	506	506	506	506	506	506	506	506
Crashes 2020 - (Injury)	Number	391	197	197	197	197	197	197	197	197
Crashes 2020 - (Fatal)	Number	1	2	2	2	2	2	2	2	2
SOCIAL CONSIDERATIONS										
TOTAL ACQUISITIONS										
Single-Family Residential	Dwelling Units	0	99	104	118	123	98	103	117	122
Multi-Family Residential	Dwelling Units	0	112	72	112	72	112	72	112	72
Business	Establishments	0	44	47	42	43	44	47	42	43
Public/Semi-Public Facilities	Buildings	0	0	0	0	0	0	0	0	0
PARTIAL ACQUISITIONS										
Single-Family Residential	Dwelling Units	0	119	125	122	124	111	117	114	116
Multi-Family Residential	Dwelling Units	0	1	1	2	2	1	1	2	2
Business	Number	0	28	28	28	28	28	28	28	28
Public/Semi-Public Facilities	Number	0	13	13	12	12	13	13	12	12
NEIGHBORHOOD/COMMUNITY COHESION	Rating	○	○	○	○	○	○	○	○	○
ECONOMIC CONSIDERATIONS										
HIGHWAY USER BENEFITS	$ (Million) <> No-Build	NA	$545.96	$545.92	$546.13	$546.13	$545.92	$545.92	$546.13	$546.13

Impact Rating Scale: ○ – Low Impact, ◔ – Low/Moderate Negative Impact, ◒ - Moderate Impact, ◕ – Moderate/High Impact, ● – High Impact

[1] Preferred Alternative
[2] Assumes construction starts in 2008, takes 16 years and 3% inflation.
[3] Accident statistics and safety data summarized or presented in this table are protected under federal law. See Appendix AA.

EVALUATION FACTORS	UNITS	PROJECT ALTERNATIVES								
		NB	I	II	III	IV	V	VI	VII[1]	VIII
	Subcorridor Alternative -Greenway	No-Build	Build	Build	Build	Build	Build	Build	Build	Build
	Subcorridor Alternative -Thruway	No-Build	Alt. 2	Alt. 2a	Alt. 3	Alt. 3a	Alt. 2	Alt. 2a	Alt. 3	Alt. 3a
	Subcorridor Alternative -Parkway	No-Build	Alt. 1	Alt. 1	Alt. 1	Alt. 1	Alt. 2	Alt. 2	Alt. 2	Alt. 2
ENVIRONMENTAL CONSIDERATIONS										
PARKLAND – Section 4(f)/6(f)	Number	0	3	3	2	2	3	3	2	2
Gross Area of Park Open Space Gained	Acres	0	14.38	14.38	14.38	14.38	14.38	14.38	14.38	14.38
Total Permanent Impacts	Acres	0	13.24	13.24	13.14	13.14	13.24	13.24	13.14	13.14
Total Temporary Impacts	Acres	0	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.15
AIR QUALITY	CO Exceedences	0	0	0	0	0	0	0	0	0
IMPACTED NOISE RECEPTORS	Dwelling Units	0	315	315	315	315	315	315	315	315
WATER RESOURCES										
Streams	Number	0	9	10	10	11	9	10	10	11
	Linear Feet	0	3,650	3,800	3,800	3,940	3,650	3,800	3,800	3,940
Wetlands	Acreage	0	0	0.06	0	0.06	0	0.06	0	0.06
Ponds	Acreage	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
FLOODPLAINS	Linear Feet	0	1,405	2,205	1,555	2,355	1,405	2,205	1,555	2,355
	Acreage	0	0.94	0.94	1.3	1.3	0.94	0.94	1.3	1.3
NATURAL COMMUNITIES										
Upland Forests	Acreage	0	19	17.8	19.3	18.1	18.9	17.7	19.2	18
Riparian Forests	Acreage	0	1.9	2.6	2	2.7	1.9	2.6	2	2.7
THREATENED & ENDANGERED SPECIES	Number	0	0	0	0	0	0	0	0	0
CULTURAL RESOURCES										
NRHP Eligible Architectural Resources No Adverse Effect	Number	0	6	6	6	6	6	6	6	6
NRHP Eligible Architectural Resources[2] Adverse Effect – 4(f)	Number	0	5	5	5	5	5	5	5	5
NRHP Eligible Bridges Adverse Effect – 4(f)	Number	0	4	4	4	4	4	4	4	4
NRHP Eligible NR Historic Districts Adverse Effect – 4(f)	Number	0	2	2	1	1	2	2	1	1
HAZARDOUS WASTE SITES (CERCLA etc.)	Number	0	0	1	0	1	0	1	0	1
VISUAL QUALITY										
Views From I-64	Rating	○	◒	◒	◒	◒	◒	◒	◒	◒
Views Toward I-64	Rating	○	◒	◒	◒	◒	◒	◒	◒	◒

Impact Rating Scale: ○ – Low Impact, ◒ – Low/Moderate Negative Impact, ◒ - Moderate Impact, ◒ – Moderate/High Impact, ● – High Impact

[1] Preferred Alternative
[2] Recommended NRHP Eligible Individual Architectural Resources

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Appendices

PLEASE NOTE:
Technical Reports / Memos / Public Comments / Comments from Web Site
AVAILABLE ON REQUEST