INTERSTATE 70 CORRIDOR

KANSAS CITY TO ST. LOUIS, MISSOURI

Second Tier Draft Environmental Impact Statement

Section of Independent Utility #7

Montgomery, Warren and St. Charles Counties, Missouri

Just West of Route 19 (Milepost 174) to Lake St. Louis Boulevard

MoDOT Job Number: J4I1341K

December 2004

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Interstate 70 Corridor
Section of Independent Utility 7
Montgomery, Warren and St. Charles Counties
Just West of Route 19 (Milepost 174) to Lake St. Louis Boulevard (Milepost 214)

DRAFT

Improve I-70 Second Tier Environmental Impact Statement

Submitted Pursuant to 42.U.S.C. 4332 (2)(c)
by the
U.S. Department of Transportation
Federal Highway Administration
Missouri Department of Transportation
And Cooperating Agencies
United States Army Corps of Engineers
United States Environmental Protection Agency

12/17/04 — Date of approval — For MoDOT

12-16-04 — Date of approval — For FHWA

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) are preparing to improve SIU 7, a 40-mile portion of the I-70 corridor from just west of Route 19 (milepost 174) to Lake St. Louis Boulevard (milepost 214), in Montgomery, Warren and St. Charles Counties to meet the current and future needs of this important facility. Improvements to the existing facility include 14 miles of widening to six lanes, 26 miles of widening to eight lanes, reconstruction of 13 interchanges and relocation of the existing rest areas and weigh stations.

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Comments on this Second Tier Draft EIS are due by _____, and should be sent to the persons listed above.

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Documents Available Upon Request

I-70 Corridor–Wide Documents

- Environmental Methodologies
- Rest Area Study
- Frontage Road Master Plan
- Median Area Study, Design Criteria and Cost Estimating Guide
- Geomorphological Report

SIU 7 Documents

- Rural Areas Alternative Screening Technical Memorandum
- Conceptual Corridor Reevaluation Report
- Interchange Screening Technical Memorandum and Addendum
- Interstate 70, SIU 7, Historical and Architectural Survey, Vol. 15
- Noise Technical Report
- Wetland Technical Report

To request any of the above documents, contact:

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Acronym List

AADT – Average Annual Daily Traffic

AASHTO – American Association of State Highway and Transportation Officials

ACHP – Advisory Council on Historic Preservation

ADT – Average Daily Traffic

APE – Area of Potential Effect

BRPC – Boonslick Regional Planning Commission

CADD – Computer Aided Design and Drafting

CCC – Commodity Credit Corporation

CEQ – Council of Environmental Quality

CIA – Community Impact Assessment

CO – Carbon Monoxide

CRM – Cultural Resource Management

CRP – Conservation Reserve Program

CVO – Commercial Vehicle Operations

CWA – Clean Water Act

DAR – Daughters of the American Revolution

dB - Decibel

DBH – Diameter at Breast Height

DMS – Dynamic Message Signs

EIS – Environmental Impact Statement

EPA – Environmental Protection Agency

EWGCC – East-West Gateway Coordinating Council

EWGCOG – East-West Gateway Council of Governments

FHWA – Federal Highway Administration

FTEIS – First Tier Environmental Impact Statement

GEC – General Engineering Consultant

GIS – Geographic Information System

HAR – Highway Advisory Radio

HPP – Historic Preservation Program

I-70 – Interstate 70

ITS – Intelligent Transportation System

JIT – Just In Time Delivery

KM – Kilometer

KPH – kilometers per hour

LM# – Localized Mainline I-70 Alternative

LOS – Level of Service

LAWCON – Land and Water Conservation Fund

M – Meter

M# – Full-length Mainline I-70 Alternative

MDC – Missouri Department of Conservation

MoDNR – Missouri Department of Natural Resources

MoDOT – Missouri Department of Transportation

MOU – Memorandum of Understanding

MP – Milepost

MPH – Miles Per Hour

MPO – Metropolitan Planning Organization

MSL – mean sea level

NAAQS – National Ambient Air Quality Standards

NEPA – National Environmental Policy Act

NOx – Nitrous Oxides

NPV – Net Present Value

NRCS – Natural Resource Conservation Service

NRHP – National Register of Historic Places

O3 – Ozone

OHWM – Ordinary High Water Mark

PDO – Property Damage Only

PPM – Parts Per Million

ROD – Record of Decision

RPC – Regional Planning Commission

RWIS – Road Weather Information System

SEC – Section Engineering Consultant

SHPO – Missouri State Historic Preservation Office

SIU – Section of Independent Utility

SMG – Study Management Group

STEIS – Second Tier Environmental Impact Statement

STRANET – Strategic Highway Network

TCRP – Transit Cooperative Research Program

TWLTL – Two-Way Left-Turn Lane

USACE – United States Army Corps of Engineers

USCG – United States Coast Guard

USEPA – United States Environmental Protection Agency

USFWS – United States Fish and Wildlife Service

VHT – Vehicle Hours Traveled

VMT – Vehicle Miles Traveled

VOC – Volatile Organic Compound

VPD – Vehicles Per Day

VPH – Vehicles Per Hour

WRP – Wetlands Reserve Program

Summary

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) have previously completed a First Tier Environmental Impact Statement for improvements to the I-70 corridor between the Kansas City and St. Louis metropolitan areas. That study identified improvement and widening of the existing I-70 corridor as the preferred strategy and established seven Sections of Independent Utility (SIU) in which to conduct more detailed National Environmental Policy Act (NEPA) studies. This Second Tier Environmental Impact Statement (STEIS) presents those more detailed studies for SIU 7, the portion of the I-70 corridor from just west of Route 19 (milepost 174) to Lake St. Louis Boulevard (milepost 214). This summary of the STEIS provides an overview and description of the study corridor within SIU 7, and summarizes the serious transportation problems within this section of the I-70 corridor that would be addressed by the proposed project.

A. Proposed Action

Given the current and projected traffic volumes and the outdated design of portions of existing I-70 (some sections date from as early as 1956), improvements to the I-70 corridor are considered critical to provide for a safe, efficient and economical transportation network that would meet traffic demands. The intent of the Second Tier EIS is to build on and extend the work of the First Tier EIS for improving I-70. This will be accomplished through an evaluation at the appropriate level of detail within the NEPA process. This study will present preferred alternatives, which will in turn lead to a final Environmental Impact Statement and Record of Decision within SIU 7 for improving I-70 along its mainline and at each interchange.

B. Need For Project

The following factors have been identified as critical deficiencies that can be met by the proposed action:

- Route Importance and System Linkage
- Existing and Future Traffic Volumes
- Level of Service
- Existing Highway Characteristics
- Crashes and Safety
- Modal Relationships
- Access Management
- National Defense/Homeland Security

C. Project Location and Description

The SIU 7 study corridor is approximately 40 miles (64 km) in length and is located in eastern Missouri, from just west of Route 19 (milepost 174), east to Exit 212 at Lake St. Louis Boulevard. There are 13 interchanges within the study corridor.

The study corridor includes portions of three counties: Montgomery, Warren and St. Charles. Many of the communities within the study corridor are some of the fastest growing in the state. Land uses are becoming more heterogeneous as farmland is converted to suburban residential, commercial and light industrial land uses. The rapid pace of this growth is reflected in the region's strained transportation system, particularly along this stretch of I-70.

2030 traffic projections indicate that SIU 7 of the Improve Existing I-70 conceptual corridor will need to be designed to carry six lanes from its western terminus just west of Route 19 to two miles (3.2 km) west of Route 47, where it would be widened to eight lanes through the eastern end of the section at Lake St. Louis Boulevard.

Since the Improve I-70 program involves potential improvements to the existing I-70 roadway, many interchanges in the section would need to be reconstructed. To the extent possible, any interchange reconstruction efforts would be built in accordance with MoDOT's access management guidelines. Access management involves the careful planning and design of points of access to the public roadway system to maximize the efficiency and safety of the roadway. Sound application of access management can have a significant beneficial impact on safety and the ability of a roadway to successfully carry traffic.

D. Project Background

In 1999, MoDOT conducted the Route I-70 Feasibility Study to document the existing condition and needs of I-70. The purpose of the Feasibility Study was to project future needs of the facility, analyze feasible solutions and prepare recommendations on the most appropriate course(s) of action to address these needs over the next several years.

To further study the environmental and engineering implications of the strategies identified in the I-70 Feasibility Study, and in compliance with NEPA, MoDOT initiated the I-70 Improvement Study. This study culminated in the preparation of the First Tier EIS for the I-70 corridor. The First Tier EIS, completed in the fall of 2001, considered a number of approaches to improving safety and travel efficiency within the corridor.

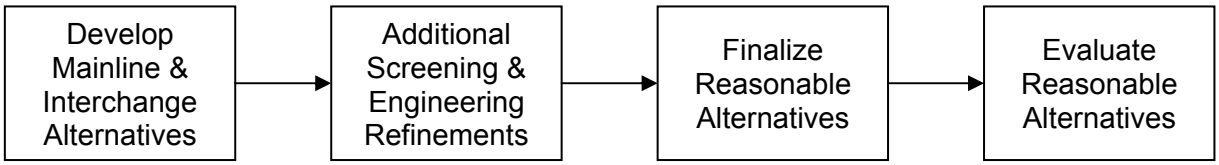
The current phase of the program, called Improve I-70, is a continuation of the I-70 Improvement Study. This effort consists of a group of seven independent but closely coordinated second tier studies that take into account engineering, environmental and community issues as improvement decisions are made. These Second Tier Studies will consist of more detailed analyses and more precise quantification of the environmental impacts associated with the improvements to I-70.

E. Alternatives

The initial I-70 SIU 7 improvement concepts included a variety of options for I-70, from the possibility of making modest improvements to the existing highway to constructing a new

freeway in a new location. These initial concepts were first evaluated at the conceptual screening level. In the second step of the process, interchange options were explored and mainline alternatives developed that addressed the project purpose. As engineering review and refinement was completed, the alternatives were refined or eliminated from further consideration. These were further refined in light of environmental constraints. In the third analysis phase, a set of reasonable project alternatives was evaluated in greater detail. This process is illustrated below:

Alternatives Development Process



A range of alternatives was developed for the I-70 SIU 7 project corridor. Each of these alternatives was evaluated for its ability to meet the purpose and need requirements of this project. In accordance with the Council on Environmental Quality (CEQ) guidelines, only those reasonable alternatives that passed the screening process were selected for detailed evaluation in this Draft EIS.

A conceptual corridor screening process was one element in a series of major steps undertaken to study the I-70 corridor and recommend a series of improvement strategies. The report generated from this effort was designed to reflect a community-based planning approach used to determine if the corridors identified in the First Tier EIS most efficiently met the project's purpose and need and merit advancement for additional study.

Four conceptual corridors were located in the central and eastern sections of the SIU 7 study corridor. In addition to existing I-70, three conceptual corridors on new alignment were considered:

- **South Conceptual Corridor** – this conceptual corridor was located south of the existing interstate. It began east of the I-70 interchange at Route A/B in Warren County, traveled to the south of Warrenton, stayed to the north of the Village of Innsbrook and tied into the future Page Avenue extension at US 40/61 in St. Charles County.
- **Near North Conceptual Corridor** – this conceptual corridor was located just to the north of the existing interstate. It began west of the Route A/B interchange with I-70 in Warren County and traveled to the east. It skirted the northern reaches of Warrenton, Wright City and Wentzville and reconnected with I-70 between exit 212 (Route A in St. Charles County) and exit 214 (Lake St. Louis Boulevard).
- **Far North Conceptual Corridor** – this conceptual corridor began at Jonesburg and traveled due east, following the Warren/Lincoln county line, running north of Incline Village. It reconnected with existing I-70 between exit 212 (Route A in St. Charles County) and exit 214 (Lake St. Louis Boulevard).

Based on the analysis presented, the Improve Existing I-70 conceptual corridor was the sole conceptual corridor carried forward for further study. Each of the factors considered in the analysis contributed to this conclusion. Taken together, these impacts clearly indicated that the Improve Existing I-70 conceptual corridor was the appropriate option. Local and regional traffic impacts alone were sufficient to remove the Near North and Far North conceptual corridors from further consideration. The substantial negative impacts to land use and an estimated total

project life cycle cost that was approximately $230 million higher than the estimated project costs for the Improve Existing I-70 option supply sufficient additional rationale to not advance the South conceptual corridor for additional study.

The process of evaluating the conceptual corridors and selecting a preferred conceptual corridor involved a balance of the benefits and impacts with regard to social and environmental considerations, capacity and safety issues and engineering constraints. It also must serve the state of Missouri's goals of preserving the existing transportation network, while reducing construction and maintenance costs. The preferred conceptual alternative – to widen and improve the existing I-70 corridor in SIU 7 – is the conceptual corridor that best met projected travel and safety needs in the corridor, while giving careful consideration to socioeconomic and environmental issues. Further, the preferred conceptual corridor is the one that most fully met the purpose and need as stated in the First Tier EIS.

The study process then proceeded to a preliminary alternative development stage and a detailed study stage. The detailed study stage was a thorough evaluation of those alternatives. The impacts of each alternative were presented and compared, consistent with the level of detail used for the analysis at each stage of the development process.

The initial screening process involved consideration of whether a specific alternative would meet the identified purpose and need requirements for this project. The primary requirements were that the alternative must:

- Provide a roadway consistent with Missouri statewide planning efforts and the intended highway function as a route of national, state, regional and local importance.
- Provide capacity and an adequate Level of Service for current and projected traffic volumes through 2030.
- Reduce congestion and travel time.
- Improve the safety of the highway by reducing traffic conflicts and the potential for crashes.
- Provide appropriate system linkages to other travel modes.
- Attempt to meet MoDOT's Access Management Guidelines.
- Fit within national, regional and local national defense and homeland security plans.

The alternative must also:

- Avoid or minimize adverse environmental disturbances, including impacts to wetlands and other natural resources and cultural resources such as historical and archaeological features.
- Support local community needs and interests, and be consistent with local development patterns.
- Minimize impacts due to right of way acquisition and relocation.

Only the alternatives that met the purpose and need requirements of this project were selected for detailed evaluation in this Draft EIS.

A No-Build Alternative was also evaluated in detail, as required by CEQ rule 40 CFR 1502.14, because it served as a baseline to evaluate the improvement alternatives.

Up to this point, the alternatives were initially developed and modified based on the criteria and inputs mentioned previously. They were then broken out by sections into a set of alternatives, to be carried forward for further analysis. To facilitate the evaluation of the environmental

impacts of each alternative, the corridor has been divided into 17 subsections with each subsection containing one to four alternatives. The following table provides the limits of the alternative subsections and the corresponding preliminary mainline and interchange alternatives from the previous section that make up the definition of the proposed alternatives.

Table 1: Summary of Alternatives

Alternative	Begin MP	End MP	Length in Miles (km)	Description
1	174.0	175.5	1.5 (2.4)	Route 19 Diamond Interchange
2A	175.5	179.0	3.5 (5.6)	East of Route 19 to west side of High Hill – South widening
2B	175.5	179.0	3.5 (5.6)	East of Route 19 to west side of High Hill – North widening
2C	175.5	179.0	3.5 (5.6)	East of Route 19 to west side of High Hill – South widening with shifted south outer roadway
3A	179.0	180.5	1.5 (2.4)	Route F diamond interchange
3B	179.0	180.5	1.5 (2.4)	Route F Diamond Interchange with roundabout ramp terminals
4	180.5	183.0	2.5 (4.0)	High Hill to Jonesburg including RR crossing realignment
5A	183.0	185.0	2.0 (3.2)	Route E/Y Diamond Interchange – Jonesburg
5B	183.0	185.0	2.0 (3.2)	Route E/Y Diamond Interchange – Jonesburg – alternative alignments
6	185.0	189.0	4.0 (6.4)	Jonesburg to east of Route A/B including Route A/B diamond interchange
7A	189.0	193.0	4.0 (6.4)	East of Route A/B to Warrenton
7B	189.0	193.0	4.0 (6.4)	East of Route A/B to Warrenton – alternative widening
8A	193.0	194.0	1.0 (1.6)	Route 47 single point diamond interchange
8B	193.0	194.0	1.0 (1.6)	Route 47 single point diamond interchange with alternative widening
8C	193.0	194.0	1.0 (1.6)	Route 47 diamond interchange
8D	193.0	194.0	1.0 (1.6)	Route 47 diamond interchange with alternative widening
9A	194.0	196.0	2.0 (3.2)	East of Route 47 to MP 196
9B	194.0	196.0	2.0 (3.2)	East of Route 47 to MP 196 alternative widening
10A	196.0	198.5	2.5 (4.0)	MP 196 to Wright City
10B	196.0	198.5	2.5 (4.0)	MP 196 to Wright City alternative north outer road
10C	196.0	198.5	2.5 (4.0)	MP 196 to Wright City with different north outer road alignment
11A	198.5	200.0	1.5 (2.4)	Wright City West diamond interchange with roundabouts
11B	198.5	200.0	1.5 (2.4)	Wright City West diamond interchange
12	200.0	203.0	3.0 (4.8)	Route F/J diamond interchange with roundabouts
13A	203.0	205.0	2.0 (3.2)	Route T/W diamond interchange
13B	203.0	205.0	2.0 (3.2)	Route T/W single point diamond interchange
13C	203.0	205.0	2.0 (3.2)	Route T/W tight diamond interchange
14	205.0	209.0	4.0 (6.4)	Wentzville Parkway diamond interchange
15	209.0	211.5	2.5 (4.0)	US-40/61 and Route Z interchanges
16A	211.5	213.0	1.5 (2.4)	Route A – double connector
16B	211.5	213.0	1.5 (2.4)	Route A – single connector
17	213.0	214.0	1.0 (1.6)	Lake St. Louis Boulevard existing diamond interchange

Preferred alternative is shaded in gray

In seven subsections of SIU 7, only one alternative is proposed. This is because either the subsection consists of only widening the mainline of the highway and there are no interchanges involved, or if during the interchange analysis and evaluation process, only one interchange could be effectively implemented that would meet the physical conditions of the interchange and also meet the project's purpose and need.

F. Affected Environment

The following environmental factors were evaluated to provide a baseline for the assessment of potential future transportation and economic benefits within SIU 7 and to provide a baseline for

the assessment of potential environmental, land use, cultural, social and economic effects of the potential action:

- Land Use and Related Characteristics
  - Comprehensive Plans and Zoning
  - Residential Land Use
  - Agricultural Land Use
  - Commercial/Industrial Land Use
  - Parks and Open Space
  - Transportation
- Socioeconomic Characteristics
  - Population
  - Economic Setting
  - Community Services
- Natural and Cultural Features
  - Geology,
  - Topography, Surficial Geology and Soils
  - Mineral Resources
  - Seismic Risk
  - Caves
  - Groundwater
  - Floodplains
  - Wetlands
  - Lakes, Rivers and Streams
  - Plant Communities
  - Wildlife and Aquatic Species
  - Threatened and Endangered Species
  - Hazardous Materials
  - Air Quality
  - Noise
  - Archaeological Resources
  - Historic Resources
  - Visual and Aesthetic Resources

G. Environmental Consequences

In order to determine the environmental feasibility of improving I-70 within SIU 7, socioeconomic and environmental constraints and issues were inventoried, field checked and analyzed to assist in the determination of a preferred alternative within SIU 7. A number of environmental factors could not be used in determining a preferred alternative. Some conditions were simply not present in the corridor (threatened and endangered species, for example). Others were indistinguishable between alternatives (wetland and air quality, for example). The alternatives carried forward for further study included 17 subsections discussed previously and the No-Build Alternative. Refer to Table 3: Summary of Impacts by Alternative (English units) and Table 4: Summary of Impacts by Alternative (Metric units) at the end of this chapter for detailed information on the environmental factors considered in selecting the preferred alternative. Specific impacts that do affect the choice of a proposed action are as follows:

- *Land Use* – SIU 7 is dominated by three main categories of land use: agricultural, residential and service/retail commercial uses. In the more rural western portion of the

study corridor where agriculture predominates, land uses likely will not appreciably shift as a result of any alternative, since most of it is located within the existing right of way. In the more densely developed eastern portion of the study corridor, land uses may shift as access is changed, and in this portion of the study corridor, agricultural land uses are most notably impacted by the alternatives. However, it is unlikely that any alternative will have a disproportionate impact over any other. Further, each alternative is intended to be compatible with the comprehensive planning efforts of the impacted cities and counties.

- *Residential and Neighborhood Impacts* – While community impacts are not expected to be substantial under any of the alternatives under consideration, within Alternatives 9A and 9B (at Jonesburg), 12 (at Wright City) and 17 (at Lake St. Louis Boulevard) care will be required during the interchange design phase to minimize impacts to the pedestrian nature of those communities.
- *Community Cohesion* – Transportation improvements of this nature require that some homes and businesses be taken, potentially disrupting community cohesion in some areas. While preliminary engineering for this study has attempted to minimize relocation and access impacts, the nature of the communities along this section of I-70 is not likely to be considerably altered by the improvements to the highway.
- *Residential and Commercial Takings* – Takings of individual structures is fairly evenly distributed within each alternative, and do not go up appreciably moving from west (less dense and more rural) to east (increased density and more suburban). Of notable exception is a trailer park that will be impacted in Alternative 9B and not impacted in Alternative 9A.
- *Existing Business Access* – Travel patterns at most of the interchanges within SIU 7 will change under the alternatives being considered. In some cases, access management policies require changes in access to existing businesses.
- *Floodplains, Wetlands, Ponds, Lakes, Rivers and Streams* – All have a nominal presence within SIU 7 and do not appreciably influence the selection of the preferred alternative.
- *Threatened and Endangered Species* – Since land within the study corridor is already highly disturbed and developed, there is minimal habitat to support wildlife and aquatic fauna, and there is no evidence of the presence of threatened or endangered species.
- *Architectural and Historical Resources* – Thirteen individual properties and four districts are recommended as eligible for listing on the National Register of Historic Places. Alternatives 2A, 2B, and 10A each have at least one eligible property that would be adversely impacted should that alternative be selected. The Preferred alternative will have no adverse effects on any properties considered eligible for the National Register of Historic Places, and thus no Section 4(f) evaluation is needed.
- *Noise Impacts* – Noise impacts on individual structures is also fairly evenly distributed within each alternative. However in this case, noise impacts do impact a notably higher number of structures moving from west (less dense and more rural) to east (increased density and more suburban).

H. Comments and Coordination

The public involvement planning efforts began with the development of a corridor-wide and a section-specific public involvement plan. This comprehensive plan provides the general framework for conducting public involvement activities throughout the study. The corridor-wide plan, coordinated by the Public Involvement Consultant (PIC), includes the following tools: survey research, toll-free hotline, newsletters, a fact sheet, brochures, media kit, media releases and advisories, general and section mailing list databases and a Web site. The SIU 7 plan, coordinated by Section Engineering Consultant (SEC), includes:

- Local Land Use Forum
- Interchange Workshops
- Drop In Center
- Public Meetings
- Public Hearing
- Section-level Newsletter updates

In addition, two sets of open-house style public meetings were held to solicit input at key milestones during the study. The meetings were held in April and September 2003, in both Wentzville and Warrenton. Following publication of this Draft Environmental Impact Statement, a public hearing will be held within the study area to allow local officials and citizens the opportunity to enter their comments on the project into the official record. All comments received during the comment period will be considered prior to a final decision on the proposed action.

Wetland impacts associated with the range of reasonable alternatives are subject to permitting and associated water quality certification under Sections 404 and 401 of the Clean Water Act (CWA). This project is being processed in accordance with the policy of merging the NEPA review and compliance with the CWA. Key to merging the review is the coordination between the MoDOT and FHWA with the U. S. Army Corps of Engineers (USACE) and Missouri Department of Natural Resources (MoDNR) at several concurrence points. In this way, the full rationale of the decisions by the MoDOT and FHWA can be shared with the regulators as the decisions are made, reducing the potential for having to revisit critical planning decisions at a later time.

Further, coordination with local governments, regional agencies and MoDOT districts has been ongoing throughout the second tier process. The environmental scoping process has been performed since the beginning of the Improve I-70 process in January 2002. This process has helped identify the issues and concerns that would affect the definition and evaluation of the alternatives. In addition to the formal scoping process, a Management Team monitors progress within SIU 7 periodically.

I. Preferred Alternative

The preferred alternative description in this DEIS is the course of action that has been preliminarily recommended to be most desirable in terms of a balance of functional efficiency as well as environmental, social and economic effects. This recommendation of a preferred alternative in the DEIS is considered preliminary and remains subject to revision. The final evaluation and selection of a preferred alternative will be based on a project public hearing, public and agency comments on this DEIS, and other relevant information that may become

available prior to the FHWA issuing its Record of Decision. Comments and information that would assist in such an evaluation are invited.

The preferred alternative for SIU 7 is defined by selecting the one preferred alternative from each of the 17 subsections. Table 2 lists the preferred subsections.

Table 2: Preferred Alternative

Alternative	Begin Mile Post	End Mile Post	Right of Way Costs (Millions)	Design and Construction Costs (Millions)	Total Costs (Millions)	Description and Rationale for Selection
1	174.0	175.5	$17.5	$31.4	$48.9	▪ Six lanes, rural section ▪ Widen to South ▪ Reconfigured Route 19 diamond interchange ▪ Recommended by Rural Reevaluation Report
2C	175.5	179.0	$3.6	$46.9	$50.5	▪ Six lanes, rural section ▪ Widen to South ▪ New weigh station ▪ Avoids adverse impacts to NRHP-eligible properties
3B	179.0	180.5	$12.1	$24.6	$36.7	▪ Six lanes, rural section ▪ Widen to South ▪ Reconfigured Route F diamond interchange with roundabout ramp terminals ▪ Lower stream impacts ▪ Avoids communications tower ▪ Lower overall cost
4	180.5	183.0	$1.6	$45.7	$47.3	▪ Six lanes, rural section ▪ Transition widening South to North ▪ New alignment to cross over Railroad ▪ Recommended by Rural Reevaluation Report
5A	183.0	185.0	$4.3	$32.3	$36.6	▪ Six lanes, rural section ▪ Widen to North ▪ Reconfigured Route E/Y diamond interchange ▪ Lower floodplain impacts ▪ Less new right of way required
6	185.0	189.0	$6.5	$71.8	$78.3	▪ Six lanes, increased to eight lanes east of Route A/B interchange, MP 188, rural section ▪ Widen to North ▪ Reconfigured Route A/B diamond interchange ▪ New rest area/welcome center ▪ Recommended by Rural Reevaluation Report
7A	189.0	193.0	$4.1	$45.2	$49.3	▪ Eight lanes, transition to urban section ▪ Avoids communications tower ▪ Lower floodplain, stream and wetlands impacts
8C	193.0	194.0	$7.7	$30.0	$37.7	▪ Eight lanes, urban section ▪ Reconfigured Route 47 tight diamond interchange ▪ Lowest commercial & residential structure impacts ▪ Second lowest wetlands impact ▪ Lowest cost
9A	194.0	196.0	$3.0	$22.6	$25.6	▪ Eight lanes, urban section ▪ Greatly lower residential relocations ▪ Lower stream impacts
10C	196.0	198.5	$0.3	$25.1	$25.4	▪ Eight lanes, urban section ▪ Avoids adverse impacts to NRHP-eligible property ▪ Lowest residential relocations ▪ Avoids extensive new frontage road construction ▪ Lowest overall cost
11A	198.5	200.0	$7.1	$27.0	$34.1	▪ Eight lanes, urban section ▪ Reconfigured Wright City West diamond interchange with roundabout ramp terminals

Alternative	Begin Mile Post	End Mile Post	Right of Way Costs (Millions)	Design and Construction Costs (Millions)	Total Costs (Millions)	Description and Rationale for Selection
						▪ Fewer residential and commercial structure impacts ▪ Lesser impacts to floodplains, floodways, rivers & streams ▪ Greatly lower overall costs
12	200.0	203.0	$4.9	$43.0	$47.9	▪ Eight lanes, urban section ▪ Reconfigured Route F/J diamond interchange with roundabout ramp terminals ▪ Roundabouts better accommodate local streets ▪ Lower construction cost than alternative
13A	203.0	205.0	$11.7	$42.2	$53.9	▪ Eight lanes, urban section ▪ Route T/W standard diamond interchange ▪ Best access management ▪ Lowest wetland impacts ▪ Lowest overall cost
14	205.0	209.0	$6.4	$47.7	$54.1	▪ Eight lanes ▪ Widen to North ▪ Uses all 2003 interchange reconstruction ▪ Provides adequate future LOS at least cost ▪ Improved alignment for RR crossing
15	209.0	211.5	$11.0	$110.3	$121.3	▪ Three-level directional interchange with US 40/61 ▪ Provides access from Pitman Road to EB I-70 ▪ Better constructibility than other alternatives ▪ Improved interchange with Route Z
16A	211.5	213.0	$0.7	$17.0	$17.7	▪ Provides connector roads on both sides of Route A ▪ Improves access management and safety ▪ Provides better access to Pitman Avenue
17	213.0	214.0	$0.7	$8.4	$9.1	▪ Existing diamond interchange has least impact & expense given uncertainties of future development ▪ Improvement to south outer roadway cause least impact ▪ Uses current O'Fallon improvements to north outer road
		Total:	**$103.20**	**$671.20**	**$774.40**	

J. Outstanding Issues

- **Schedule for Program Development**: At the present time, sufficient funding is not available to construct all of the improvements under consideration in the Improve I-70 program. Following selection of a Preferred Alternative and completion of the current NEPA process, it will be necessary to develop a schedule for implementation of the improvements. This program development schedule will need to prioritize the improvements within each SIU, considering safety, congestion, local development plans and the availability of funding. In all likelihood, improvements will be packaged into smaller implementable sections that can be constructed within one or two construction seasons with the highway funding that is available at the time.
- **Detailed Noise Studies**: Detailed noise studies may be conducted in all areas where noise impacts to sensitive receptors are projected to occur. These studies will be designed to determine the exact extent of the impacts and the feasibility and reasonableness of any potential mitigation measures. MoDOT intends to install noise abatement measures that are found to be both feasible and reasonable, in accordance

with MoDOT's noise abatement policy. A final decision on the installation of noise abatement measures will be made upon completion of the project design and the public involvement process.

- **Railroad Right of Way**: Some permanent right of way will need to be acquired from the existing railroad line over a length of about 100 feet for the relocated north outer road between Route A and Lake St. Louis Boulevard in St. Charles County. This will include a strip of permanent right of way about six feet (2 m) wide over this length, and another 10 feet (3 m) of construction easement over the same length to allow construction of a curb and gutter section of frontage road with a properly graded slope. Since the curb and gutter would improve drainage over existing conditions, it is believed that this betterment should be able to be successfully negotiated with the railroad.
- **Lake St. Louis Boulevard Interchange**: A major residential development to the immediate north of the Lake St. Louis Boulevard interchange is currently being proposed by developers. The scale of the proposed development is such that it may have a major impact on traffic volumes utilizing the interchange in future years. In addition, the planned extension northward of Lake St. Louis Boulevard by St. Charles County will likely encourage even greater future development. Although current analyses indicate that the recently-constructed interchange may not be able to provide the desired Level of Service D in the year 2030, the inherent uncertainties regarding planned future developments make it unwise to commit at this time to major expenditures on the north side of this interchange. This study therefore recommends that the existing interchange configuration be maintained and that development and traffic operations at this location be monitored closely through the coming years.

K. Future Actions

Currently MoDOT spends money each year on I-70, conducting maintenance activities and making limited improvements. In the past five years, about $87 million was spent on the rural portions of I-70, and that general level of spending will likely continue into the future. In addition to maintenance and continued resurfacing projects, in recent years MoDOT has installed guard cable barriers in the median of I-70 to improve safety, and more projects of this type are on the horizon.

Preliminary estimates indicate more than $3 billion in today's dollars would be needed to widen and reconstruct I-70 between Independence and Lake St. Louis. Major widening and reconstruction of I-70 will require increases in state and federal funding beyond current levels. With the variability of transportation funding at both the state and federal level, it is unclear how much of the Improve I-70 program will be able to be implemented in the near term.

This STEIS will help to make certain that any improvements made in the coming years are compatible with the long-term vision for I-70. This effort will determine where and to what extent major I-70 improvements could be made. The Federal Highway Administration, the United States Army Corps of Engineers and the Missouri Department of Transportation have executed an Interagency Partnering Agreement to facilitate processing the environmental documentation for the Improve I-70 project. See Appendix H for a copy of the Agreement. The Agreement stipulates that SIU 7 will be processed as an environmental impact statement, and that a cooperative merged NEPA/404 process will be used. A Cooperating Agency agreement was signed by FHWA and USEPA.

Ultimately, MoDOT will implement the long-term program of I-70 improvements to the extent it can afford with the funds available.

L. Regulatory Compliance

The planning, agency coordination, public involvement and impact evaluation for the project were coordinated in accordance with the NEPA, the Clean Water Act (CWA), the Clean Air Act (CAA), the Farmland Provision Policy Act, Executive Order 11988 on Wetland and Floodplain Protection, the Fish and Wildlife Coordination Act, the Endangered Species Act (ESA), the National Historic Preservation Act (NHPA) and other state and federal laws, policies and procedures for environmental impact analyses and preparation of environmental documents.

This document complies with United States Department of Transportation (USDOT) and FHWA policies to determine whether a proposed project will have disproportionate impact on minority or low-income populations. It meets the requirements of the Presidential Executive Order on Environmental Justice 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. Neither minority nor low-income populations would receive disproportionately adverse impacts under the reasonable range of alternatives.

River and wetland impacts associated with the range of reasonable alternatives are subject to permitting and associated water quality certification under Sections 404 and 401 of the CWA. This project is being processed in accordance with the policy of merging the NEPA review and compliance with the CWA. Key to merging the review is the coordination between the MoDOT and FHWA with the USACE and MoDNR at several concurrence points. In this way, the full rationale of the decisions by the MoDOT and FHWA can be shared with the regulators as the decisions are made, reducing the potential for having to revisit critical planning decisions at a later time.

Relocation Assistance Plans for all potential acquisitions and displacements would require approval before being implemented. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, provides for payment of just compensation for property acquired for a federal aid project. The relocation program provides assistance to displaced persons in finding comparable housing that is decent, safe and sanitary. This applies to businesses, farms, nonprofit organizations and residential properties.

Upon selection of a preferred alternative, further investigation will be done to verify that the improvements will not affect important archaeological resources. If the proposed improvements affect archaeological or historical sites eligible to the National Register of Historic Places (NRHP), the requirements under Section 106 of the NEPA will be completed. Additionally, the project team is coordinating with FHWA to satisfy Section 4(f) requirements associated with historic site impacts (see Chapter IV).

Further informal coordination with the MDC will be required to determine whether the proposed improvements would affect state-protected species discussed in Chapter III, Affected Environment. Further coordination will also be required with the USFWS to determine whether the project would adversely affect federally protected species.

M. List of Commitments

- MoDOT is committed to adhering to the appropriate currently adopted criteria and design standards.
- MoDOT is committed to construct frontage roads for the purposes of maintaining existing local service connections and maintaining existing access to adjacent properties.

- Plans for pedestrian, bicycle, and wheelchair access across I-70 will be developed during the design of the interchanges.
- Relocation assistance will be provided for all businesses, nonprofit organizations and residents that must be relocated. Assistance will be provided by MoDOT in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act. Relocation assistance under the program will be made available without discrimination to all who will be relocated. During construction, changes in access to existing businesses will be supported through the use of directional signage and access will be maintained to the extent practicable.
- Mitigation efforts to prevent the rise in flood elevation of each of the water bodies affected will be employed in an effort to obtain a No-Rise Certification permit from the State Emergency Management Agency (SEMA).
- Best management practices (BMP) will be implemented to minimize impacts to wetlands, reduce soil erosion and sedimentation in local waterways and sinkholes. MoDOT will employ methods for stormwater management during and after construction in accordance with its Standard Specifications Book for Highway Construction and National Pollutant Discharge Elimination System (NPDES) stormwater permit. Disturbed areas will be restored with suitable vegetation to stabilize the area over the long term.
- A survey of trees suitable for Indiana bat roosting habitat will be performed in the area of the preferred alternative. To avoid potential impact to the bat during the period when the bat will most likely use these habitats, MoDOT will not cut suitable maternity roost trees during the period April 1 to September 30. If cutting of suitable trees during that period is unavoidable, biologists will perform a complete assessment of the habitat in advance to certify that the habitat is not currently in use by the bat.
- Surveys for populations or potential habitat of the Running Buffalo clover will be performed prior to construction activities.
- Stream flows will not be interrupted and all temporary in-channel fills that have the potential to impound water will be contained within culverts.
- Wildlife crossings will be investigated in final design, if applicable.
- Landscaping in the ROW will include native plant species and other enhancements in accordance with the statewide I-70 Corridor Enhancement Plan to the maximum extent possible. In accordance with MoDOT standards, new seed mixes, mulch and plant materials will be free of invasive weedy species to the extent possible to reduce the spread of invasive species along the highway to natural areas and adjacent properties.
- Weed management along the corridor will be performed in accordance with MoDOT standards.
- Utilize the MoDOT Noise Policy to mitigate noise impacts.
- A maintenance of traffic plan will be developed for the construction phases. Through traffic will be maintained along I-70 and at access points to the interstate from cross roads. It is likely that some interchange ramps and cross roads will be closed and temporary detours required. Construction schedules, road closures and detours will be coordinated with police forces and emergency services to reduce impact to response times of these agencies.
- The mobile home park located near milepost 195 will not be impacted by the preferred alternative.

- No buildings will be removed from the High Hill Historic District.
- No parks will be impacted.
- No existing or planned bicycle or pedestrian facilities will be negatively impacted.
- Erosion control measures to mitigate impacts to natural resources will be designed and detailed in construction plans and implemented by the contractor during construction to minimize the effects of erosion.
- Contractors will be required to follow dust control measures contained in the construction contract during construction.
- Applicable portions of the Corridor Enhancement Plan will be incorporated into this SIU. This implementation will be in conjunction with local support and funding availability.
- Coordination with project area businesses regarding access issues, via direct communication, will occur throughout the construction period.
- MoDOT will consult with emergency responder agencies involved in traffic incident management on I-70 in future design and maintenance of traffic plan development as the Improve I-70 program progresses.
- MoDOT will coordinate with the U.S. Army Corps of Engineers to ensure compliance with Sections 401 and 404 of the Clean Water Act. This will address impacts to streams, wetlands and other waters of the United States during the design process. Clean Water Act permits will require a detailed delineation and evaluation of waters and wetlands affected by the project, minimization of impacts through design and mitigation according to the State of Missouri Aquatic Resources Mitigation Guidelines. Minimization may include steeper embankment slopes to reduce the construction footprint near wetlands and streams. Mitigation typically includes restoration or replacement of the affected habitat at a ratio dependent on the resource affected, to be determined at the time of the permit application.

Table 3: Summary of Impacts by Alternative (English Units)

Alternative	Consistency with Local Plans	Land Use Impacts																								Conservation Reserve Program Properties	Community Impact Assessment						Natural and Cultural Features Impacts												Right of Way Costs (Millions)	Design and Construction Costs (Millions)	Estimated Costs	Preferred Alternative
		Suburban Residential		Rural Residential		Urban Residential		General Sales or Services (commercial)		Manufacturing and Construction		Transportation, Communication, & Utilities		Arts, Entertainment, & Recreation		Education, Public Administration, Health Care		Mining and Extraction		Agriculture, Forestry, Fishing & Hunting		Vacant Land		Total			Residential and Neighborhood Impacts	Property Takings		Total Residential Structures	Total Commercial Structures	Business Access	Floodplains	Regulated Floodways	Wetlands	Ponds	Rivers & Streams	Cultural	NRHP Eligible Property (within APE)	Section 4(f) (Adverse Effects)	Noise (total units impacted)	Wells				
		AC	%	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%			Partial	Full				AC	AC	AC	AC	FT									
1		0.0	0.0%	22.7	28.3%	0.6	0.7%	27.3	34.2%	0.0	0.0%	0.4	0.5%	0.0	0.0%	0.0	0.0%	0.0	0.0%	14.8	18.4%	14.3	17.8%	80.0	0		25	3	3	4	11	1.2	0.0	0.15	0.7	4,579		0	0	0	1	$17.5	$31.4	$48.9	
2A		0.0	0.0%	15.4	12.9%	0.0	0.0%	18.7	15.6%	8.6	7.2%	0.8	0.7%	0.0	0.0%	7.9	6.6%	0.0	0.0%	66.6	55.7%	1.6	1.3%	119.6	0		23	3	5	1	0	0.0	0.0	0.00	0.6	1,275		2	1	4	2	$3.7	$46.9	$50.6	
2B		0.0	0.0%	1.9	1.6%	0.0	0.0%	5.0	4.3%	5.3	4.5%	0.1	0.1%	0.0	0.0%	5.0	4.3%	0.0	0.0%	98.7	84.5%	0.8	0.7%	116.9	0		30	1	5	2	0	0.4	0.0	0.08	0.0	994		2	2	1	0	$3.2	$46.3	$49.5	
2C		0.0	0.0%	15.3	12.6%	0.0	0.0%	18.1	14.9%	8.5	7.0%	0.8	0.7%	0.0	0.0%	8.6	7.1%	0.0	0.0%	68.5	56.4%	1.5	1.3%	121.4	0		22	3	6	0	0	0.0	0.0	0.01	0.0	2,886		2	0	1	2	$3.6	$46.9	$50.5	
3A		0.0	0.0%	4.8	5.9%	0.0	0.0%	14.9	18.1%	0.7	0.9%	0.0	0.0%	0.0	0.0%	0.1	0.1%	0.0	0.0%	44.8	54.5%	16.9	20.5%	82.2	2		39	12	9	8	1	0.0	0.0	0.00	0.4	6,447		1	0	33	0	$11.5	$29.4	$40.9	
3B		0.0	0.0%	3.8	6.9%	0.0	0.0%	15.8	28.9%	0.8	1.5%	1.2	2.2%	0.0	0.0%	0.1	0.2%	0.0	0.0%	27.2	49.6%	5.9	10.8%	54.9	0		34	15	11	9	0	0.0	0.0	0.00	0.3	1,416		0	0	33	0	$12.1	$24.6	$36.7	
4		0.0	0.0%	0.7	0.7%	0.0	0.0%	2.2	1.9%	4.1	3.7%	4.8	4.3%	0.0	0.0%	0.0	0.0%	0.0	0.0%	75.7	67.5%	24.6	21.9%	112.2	0		25	2	0	1	0	0.0	0.0	0.62	0.2	2,265		0	0	0	0	$1.6	$45.7	$47.3	
5A		0.0	0.0%	14.2	18.0%	0.0	0.0%	3.2	4.1%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.3	0.4%	0.0	0.0%	43.2	55.1%	17.6	22.4%	78.4	0		34	10	4	3	0	0.6	0.0	0.08	0.0	4,040		2	0	21	0	$4.3	$32.3	$36.6	
5B		0.0	0.0%	14.4	17.2%	0.0	0.0%	2.0	2.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.3	0.4%	0.0	0.0%	49.2	58.8%	17.6	21.1%	83.6	0		35	7	4	2	0	2.3	0.0	0.08	0.0	4,284		1	0	21	0	$3.9	$32.4	$36.3	
6		0.0	0.0%	11.5	5.9%	0.0	0.0%	3.9	2.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	174.9	89.3%	5.5	2.8%	195.8	0		30	3	8	2	0	0.0	0.0	0.14	0.0	4,851		0	0	5	1	$6.5	$71.8	$78.3	
7A		0.0	0.0%	23.2	21.7%	0.0	0.0%	10.2	9.5%	0.0	0.0%	0.0	0.0%	0.0	0.0%	5.5	5.2%	0.0	0.0%	45.3	42.5%	22.4	21.0%	106.6	0		43	5	3	3	0	2.1	0.2	0.69	0.0	9,379		0	0	14	0	$4.1	$45.2	$49.3	
7B		0.0	0.0%	18.2	17.7%	0.0	0.0%	14.9	14.4%	1.4	1.4%	0.0	0.0%	0.0	0.0%	2.1	2.0%	0.0	0.0%	43.7	42.4%	22.8	22.1%	103.1	0		28	10	4	11	0	2.8	1.9	1.33	0.3	2,526		0	0	13	0	$4.4	$42.7	$47.1	
8A		0.0	0.0%	6.0	14.2%	1.6	3.7%	8.4	19.8%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	4.5	10.6%	21.9	51.7%	42.4	0		42	12	8	3	21	0.0	0.0	0.11	0.0	2,526		1	0	35	0	$7.5	$33.8	$41.3	
8B		0.0	0.0%	7.1	15.9%	1.9	4.2%	9.5	21.1%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.4	0.9%	0.0	0.0%	2.2	4.8%	23.9	53.1%	44.9	0		46	21	10	5	21	0.0	0.0	0.03	0.0	2,282		0	0	26	0	$8.1	$34.1	$42.2	
8C		0.0	0.0%	6.0	14.1%	1.7	4.0%	8.7	20.3%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	4.4	10.3%	22.0	51.4%	42.8	0		41	17	8	3	21	0.0	0.0	0.11	0.0	2,549		0	0	35	0	$7.7	$30.0	$37.7	
8D		0.0	0.0%	7.1	15.9%	1.9	4.2%	9.5	21.1%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.4	0.9%	0.0	0.0%	2.2	4.8%	23.9	53.1%	44.9	0		47	22	10	5	21	0.0	0.0	0.50	0.0	2,282		0	0	26	0	$8.1	$30.3	$38.4	
9A		0.0	0.0%	0.3	0.9%	0.0	0.0%	4.7	15.5%	3.6	11.8%	0.0	0.0%	0.0	0.0%	4.2	13.9%	0.0	0.0%	16.1	53.1%	1.5	4.8%	30.3	0		22	1	0	3	0	0.0	0.4	0.48	0.0	1,181		0	0	33	0	$3.0	$22.6	$25.6	
9B		0.0	0.0%	2.9	8.2%	0.0	0.0%	3.6	10.2%	0.0	0.0%	0.0	0.0%	0.0	0.0%	4.4	12.4%	0.0	0.0%	22.7	64.8%	1.5	4.4%	35.1	0		23	3	24	5	0	0.1	0.5	0.09	0.5	1,739		0	0	33	0	$3.3	$22.4	$25.7	
10A		0.0	0.0%	8.5	21.0%	0.0	0.0%	2.2	5.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	27.6	67.7%	2.4	5.9%	40.7	0		12	6	2	0	0	4.3	0.0	0.09	0.0	989		2	2	15	0	$0.8	$25.8	$26.6	
10B		0.0	0.0%	6.6	11.5%	0.0	0.0%	1.0	1.8%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	36.1	63.4%	13.2	23.2%	56.9	0		20	3	7	0	0	5.4	0.0	0.02	0.0	918		2	0	13	0	$1.5	$27.8	$29.3	
10C		0.0	0.0%	4.8	25.8%	0.0	0.0%	0.2	0.9%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	13.1	71.0%	0.4	2.3%	18.4	0		11	3	0	0	0	3.9	0.0	0.09	0.0	740		2	0	13	0	$0.3	$25.1	$25.4	
11A		0.0	0.0%	1.1	3.9%	0.0	0.0%	9.4	32.2%	0.0	0.0%	0.3	0.9%	0.0	0.0%	0.6	2.1%	0.0	0.0%	12.0	41.1%	5.8	19.9%	29.1	0		21	0	0	6	5	0.0	0.0	0.05	0.0	1,083		4	0	58	0	$7.1	$27.0	$34.1	
11B		0.5	0.8%	7.7	13.4%	0.0	0.0%	16.3	28.3%	3.4	5.8%	0.7	1.3%	0.0	0.0%	2.8	4.9%	0.0	0.0%	16.3	28.2%	9.9	17.2%	57.6	0		33	5	9	7	7	1.2	0.6	0.06	0.0	4,056		0	0	61	0	$15.2	$39.1	$54.3	
12		0.0	0.0%	16.9	23.9%	0.0	0.0%	19.4	27.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	2.8	4.0%	0.0	0.0%	22.4	31.6%	9.3	13.1%	70.9	0		27	26	19	9	0	0.0	0.0	0.02	0.0	1,790		1	0	59	1	$4.9	$43.0	$47.9	
13A		0.0	0.0%	7.3	8.7%	2.3	2.7%	13.7	16.4%	1.3	1.5%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	51.0	61.1%	8.0	9.5%	83.4	0		37	7	0	3	9	0.0	0.0	0.02	0.0	3,452		0	0	12	1	$11.7	$42.2	$53.9	
13B		0.0	0.0%	6.7	8.9%	2.1	2.8%	15.1	20.2%	1.4	1.8%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	41.9	56.0%	7.7	10.3%	74.8	0		38	5	0	5	9	0.0	0.0	0.05	0.0	3,261		0	0	12	1	$12.4	$47.8	$60.2	
13C		0.0	0.0%	6.8	7.0%	7.3	7.6%	29.7	30.9%	1.3	1.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	42.0	43.7%	9.1	9.4%	96.1	0		40	3	0	4	6	0.0	0.0	0.07	0.0	3,048		0	0	11	1	$12.5	$43.3	$55.8	
14		0.0	0.0%	9.5	19.4%	2.4	4.8%	9.4	19.2%	2.7	5.5%	0.0	0.0%	0.0	0.0%	2.4	4.8%	0.0	0.0%	11.9	24.3%	10.7	21.8%	49.0	0		71	9	4	4	0	0.0	0.0	0.04	0.0	1,036		1	0	31	1	$6.4	$47.7	$54.1	
15		0.1	0.2%	1.1	1.8%	0.0	0.0%	2.2	3.5%	5.7	9.2%	0.1	0.2%	2.1	3.4%	13.3	21.7%	0.0	0.0%	20.8	33.9%	16.1	26.1%	61.5	0		31	6	0	2	0	2.8	0.0	0.01	0.0	6,109		2	0	69	0	$11.0	$110.3	$121.3	
16A		0.0	0.0%	0.5	6.3%	0.0	0.0%	1.2	14.2%	0.0	0.0%	0.0	0.0%	0.1	1.4%	0.3	3.1%	0.0	0.0%	3.9	47.3%	2.3	27.7%	8.2	0		8	0	0	0	0	0.0	0.0	0.00	0.0	2,025		0	0	180	0	$0.7	$17.0	$17.7	
16B		0.0	0.0%	0.5	5.2%	0.0	0.0%	0.8	8.6%	0.0	0.0%	0.2	2.1%	0.1	0.8%	0.1	1.6%	0.0	0.0%	1.2	12.6%	6.4	69.1%	9.3	0		10	0	0	0	0	0.0	0.0	0.00	0.0	2,011		0	0	180	0	$0.3	$17.0	$17.3	
17		0.0	0.0%	0.0	0.0%	0.0	0.0%	3.1	29.9%	0.0	0.0%	0.0	0.0%	0.1	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	7.2	70.1%	10.3	0		6	1	0	0	0	0.8	0.0	0.00	0.0	23		0	0	140	0	$0.7	$8.4	$9.1	
No Build		0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0		0	0				0.0	0.0	0.00	0.0	0				0					
Minimum:		0.1		119.8		6.6		135.6		19.8		5.7		2.2		31.0		0.0		587.7		174.2		1,136.2	0		473	116	63	50	46	11.3	0.6	1.96	1.1	39,973		9	0	693	5	$101.1	$672.7	$770.5	
Maximum:		0.5		154.3		12.1		183.6		31.6		8.3		2.2		40.9		0.0		693.1		210.5		1,273.4	2		535	111	109	69	49	16.8	2.9	3.25	2.6	58,460		16	4	712	7	$114.3	$700.6	$813.7	
Preferred:		0.1	0.0%	135.0	12.3%	7.0	0.6%	136.7	12.4%	25.8	2.4%	6.4	0.6%	2.2	0.2%	38.0	3.5%	0.0	0.0%	578.0	52.6%	169.1	15.4%	1,098.4	0		488	111	55	43	46	11.3	0.6	2.5	0.8	47,989		14	0	671	7	$91.0	$646.6	$737.7	

In year 2005 dollars

Key to Symbols

Positive — Neutral — Negative

Table 4: Summary of Impacts by Alternative (Metric Units)

Alternative	Consistency with Local Plans	Land Use Impacts: Suburban Residential HA	%	Rural Residential HA	%	Urban Residential HA	%	General Sales or Services (commercial) HA	%	Manufacturing and Construction HA	%	Transportation, Communication, & Utilities HA	%	Arts, Entertainment, & Recreation HA	%	Education, Public Administration, Health Care HA	%	Mining and Extraction HA	%	Agriculture, Forestry, Fishing & Hunting HA	%	Vacant Land HA	%	Total HA	Conservation Reserve Program Properties	Community Impact Assessment: Residential and Neighborhood Impacts	Property Takings Partial	Property Takings Full	Total Residential Structures	Total Commercial Structures	Business Access	Floodplains HA	Regulated Floodways HA	Wetlands HA	Ponds HA	Rivers & Streams M	Cultural: Archaeological Resources	NRHP Eligible Property (within APE)	Section 4(f) (Adverse Effects)	Noise (total units impacted)	Wells	Right of Way Costs (Millions)	Design and Construction Costs (Millions)	Estimated Costs	Preferred Alternative
1	●	0.0	0.0%	9.2	28.3%	0.2	0.7%	11.1	34.2%	0.0	0.0%	0.2	0.5%	0.0	0.0%	0.0	0.0%	0.0	0.0%	6.0	18.4%	5.8	17.8%	32.4	0	○	25	3	3	4	11	0.5	0.0	0.06	0.3	1,396		0	0	0	1	$17.5	$31.4	$48.9	✓
2A	●	0.0	0.0%	6.2	12.9%	0.0	0.0%	7.6	15.6%	3.5	7.2%	0.3	0.7%	0.0	0.0%	3.2	6.6%	0.0	0.0%	27.0	55.7%	0.6	1.3%	48.4	0	○	23	3	5	1	0	0.0	0.0	0.00	0.2	389		2	1	4	2	$3.7	$46.9	$50.6	
2B	●	0.0	0.0%	0.8	1.6%	0.0	0.0%	2.0	4.3%	2.1	4.5%	0.0	0.1%	0.0	0.0%	2.0	4.3%	0.0	0.0%	39.9	84.5%	0.3	0.7%	47.3	0	○	30	1	5	2	0	0.1	0.0	0.03	1.0	303		2	2	1	0	$3.2	$46.3	$49.5	
2C	●	0.0	0.0%	6.2	12.6%	0.0	0.0%	7.3	14.9%	3.5	7.0%	0.3	0.7%	0.0	0.0%	3.5	7.1%	0.0	0.0%	27.7	56.4%	0.6	1.3%	49.1	0	○	22	3	6	0	0	0.0	0.0	0.00	0.0	880		2	0	1	2	$3.6	$46.9	$50.5	✓
3A	●	0.0	0.0%	2.0	5.9%	0.0	0.0%	6.0	18.1%	0.3	0.9%	0.0	0.0%	0.0	0.0%	0.0	0.1%	0.0	0.0%	18.1	54.5%	6.8	20.5%	33.3	2	○	39	12	9	8	1	0.0	0.0	0.00	0.2	1,965		1	0	33	0	$11.5	$29.4	$40.9	
3B	●	0.0	0.0%	1.5	6.9%	0.0	0.0%	6.4	28.9%	0.3	1.5%	0.5	2.2%	0.0	0.0%	0.0	0.2%	0.0	0.0%	11.0	49.6%	2.4	10.8%	22.2	0	○	34	15	11	9	0	0.0	0.0	0.00	0.1	432		0	0	33	0	$12.1	$24.6	$36.7	✓
4	●	0.0	0.0%	0.3	0.7%	0.0	0.0%	0.9	1.9%	1.7	3.7%	2.0	4.3%	0.0	0.0%	0.0	0.0%	0.0	0.0%	30.6	67.5%	10.0	21.9%	45.4	0	○	25	2	0	1	0	0.0	0.0	0.25	0.1	691		0	0	0	0	$1.6	$45.7	$47.3	✓
5A	●	0.0	0.0%	5.7	18.0%	0.0	0.0%	1.3	4.1%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.1	0.4%	0.0	0.0%	17.5	55.1%	7.1	22.4%	31.7	0	○	34	10	4	3	0	0.2	0.0	0.03	0.0	1,232		2	0	21	0	$4.3	$32.3	$36.6	✓
5B	●	0.0	0.0%	5.8	17.2%	0.0	0.0%	0.8	2.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.1	0.4%	0.0	0.0%	19.9	58.8%	7.1	21.1%	33.8	0	○	35	7	4	2	0	0.9	0.0	0.03	0.0	1,306		1	0	21	0	$3.9	$32.4	$36.3	
6	●	0.0	0.0%	4.6	5.9%	0.0	0.0%	1.6	2.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	70.8	89.3%	2.2	2.8%	79.2	0	○	30	3	8	2	0	0.0	0.0	0.06	0.0	1,479		0	0	5	1	$6.5	$71.8	$78.3	✓
7A	●	0.0	0.0%	9.4	21.7%	0.0	0.0%	4.1	9.5%	0.0	0.0%	0.0	0.0%	0.0	0.0%	2.2	5.2%	0.0	0.0%	18.3	42.5%	9.1	21.0%	43.1	0	○	43	5	3	3	0	0.8	0.1	0.28	0.0	2,859		0	0	14	0	$4.1	$45.2	$49.3	✓
7B	●	0.0	0.0%	7.4	17.7%	0.0	0.0%	6.0	14.4%	0.6	1.4%	0.0	0.0%	0.0	0.0%	0.8	2.0%	0.0	0.0%	17.7	42.4%	9.2	22.1%	41.7	0	○	28	10	4	11	0	1.1	0.8	0.54	0.1	770		0	0	13	0	$4.4	$42.7	$47.1	
8A	●	0.0	0.0%	2.4	14.2%	0.6	3.7%	3.4	19.8%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	1.8	10.6%	8.9	51.7%	17.2	0	○	42	12	8	3	21	0.0	0.0	0.04	0.0	770		1	0	35	0	$7.5	$33.8	$41.3	
8B	●	0.0	0.0%	2.9	15.9%	0.8	4.2%	3.8	21.1%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.2	0.9%	0.0	0.0%	0.9	4.8%	9.7	53.1%	18.2	0	○	46	21	10	5	21	0.0	0.0	0.01	0.0	696		0	0	26	0	$8.1	$34.1	$42.2	
8C	●	0.0	0.0%	2.4	14.1%	0.7	4.0%	3.5	20.3%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	1.8	10.3%	8.9	51.4%	17.3	0	○	41	17	8	3	21	0.0	0.0	0.04	0.0	777		0	0	35	0	$7.7	$30.0	$37.7	✓
8D	●	0.0	0.0%	2.9	15.9%	0.8	4.2%	3.8	21.1%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.2	0.9%	0.0	0.0%	0.9	4.8%	9.7	53.1%	18.2	0	○	47	22	10	5	21	0.0	0.0	0.20	0.0	696		0	0	26	0	$8.1	$30.3	$38.4	
9A	●	0.0	0.0%	0.1	0.9%	0.0	0.0%	1.9	15.5%	1.5	11.8%	0.0	0.0%	0.0	0.0%	1.7	13.9%	0.0	0.0%	6.5	53.1%	0.6	4.8%	12.3	0	◒	22	1	0	3	0	0.0	0.2	0.19	0.0	360		0	0	33	0	$3.0	$22.6	$25.6	✓
9B	●	0.0	0.0%	1.2	8.2%	0.0	0.0%	1.4	10.2%	0.0	0.0%	0.0	0.0%	0.0	0.0%	1.8	12.4%	0.0	0.0%	9.2	64.8%	0.6	4.4%	14.2	0	◒	23	3	24	5	0	0.0	0.2	0.04	0.2	530		0	0	33	0	$3.3	$22.4	$25.7	
10A	●	0.0	0.0%	3.5	21.0%	0.0	0.0%	0.9	5.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	11.1	67.7%	1.0	5.9%	16.5	0	○	12	6	2	0	0	1.7	0.0	0.04	0.0	301		2	2	15	0	$0.8	$25.8	$26.6	
10B	●	0.0	0.0%	2.7	11.5%	0.0	0.0%	0.4	1.8%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	14.6	63.4%	5.4	23.2%	23.0	0	○	20	3	7	0	0	2.2	0.0	0.01	0.0	280		2	0	13	0	$1.5	$27.8	$29.3	
10C	●	0.0	0.0%	1.9	25.8%	0.0	0.0%	0.1	0.9%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	5.3	71.0%	0.2	2.3%	7.4	0	○	11	3	0	0	0	1.6	0.0	0.03	0.0	226		2	0	13	0	$0.3	$25.1	$25.4	✓
11A	●	0.0	0.0%	0.5	3.9%	0.0	0.0%	3.8	32.2%	0.0	0.0%	0.1	0.9%	0.0	0.0%	0.2	2.1%	0.0	0.0%	4.8	41.1%	2.3	19.9%	11.8	0	○	21	0	0	6	5	0.0	0.0	0.02	0.0	330		4	0	58	0	$7.1	$27.0	$34.1	✓
11B	●	0.2	0.8%	3.1	13.4%	0.0	0.0%	6.6	28.3%	1.4	5.8%	0.3	1.3%	0.0	0.0%	1.1	4.9%	0.0	0.0%	6.6	28.2%	4.0	17.2%	23.3	0	○	33	5	9	7	7	0.5	0.2	0.02	0.0	1,237		0	0	61	0	$15.2	$39.1	$54.3	
12	●	0.0	0.0%	6.9	23.9%	0.0	0.0%	7.9	27.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	1.1	4.0%	0.0	0.0%	9.1	31.6%	3.8	13.1%	28.7	0	◒	27	26	19	9	0	0.0	0.0	0.01	0.0	546		1	0	59	1	$4.9	$43.0	$47.9	✓
13A	●	0.0	0.0%	2.9	8.7%	0.9	2.7%	5.5	16.4%	0.5	1.5%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	20.6	61.1%	3.2	9.5%	33.8	0	○	37	7	0	3	9	0.0	0.0	0.01	0.0	1,053		0	0	12	1	$11.7	$42.2	$53.9	✓
13B	●	0.0	0.0%	2.7	8.9%	0.9	2.8%	6.1	20.2%	0.5	1.8%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	16.9	56.0%	3.1	10.3%	30.3	0	○	38	5	0	5	9	0.0	0.0	0.02	0.0	994		0	0	12	1	$12.4	$47.8	$60.2	
13C	●	0.0	0.0%	2.7	7.0%	3.0	7.6%	12.0	30.9%	0.5	1.4%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	17.0	43.7%	3.7	9.4%	38.9	0	○	40	3	0	4	6	0.0	0.0	0.03	0.0	929		0	0	11	1	$12.5	$43.3	$55.8	
14	●	0.0	0.0%	3.8	19.4%	1.0	4.8%	3.8	19.2%	1.1	5.5%	0.0	0.0%	0.0	0.0%	1.0	4.8%	0.0	0.0%	4.8	24.3%	4.3	21.8%	19.8	0	○	71	9	4	4	0	0.0	0.0	0.02	0.0	316		1	0	31	1	$6.4	$47.7	$54.1	✓
15	●	0.0	0.2%	0.4	1.8%	0.0	0.0%	0.9	3.5%	2.3	9.2%	0.0	0.2%	0.8	3.4%	5.4	21.7%	0.0	0.0%	8.4	33.9%	6.5	26.1%	24.9	0	○	31	6	0	2	0	1.1	0.0	0.00	0.0	1,863		2	0	69	0	$11.0	$110.3	$121.3	✓
16A	●	0.0	0.0%	0.2	6.3%	0.0	0.0%	0.5	14.2%	0.0	0.0%	0.0	0.0%	0.0	0.0%	1.4%	0.1	3.1%	0.0	0.0%	1.6	47.3%	0.9	27.7%	3.3	0	○	8	0	0	0	0	0.0	0.0	0.00	0.0	617		0	0	180	0	$0.7	$17.0	$17.7	✓
16B	●	0.0	0.0%	0.2	5.2%	0.0	0.0%	0.3	8.6%	0.0	0.0%	0.0	2.1%	0.0	0.8%	0.1	1.6%	0.0	0.0%	0.5	12.6%	2.6	69.1%	3.7	0	○	10	0	0	0	0	0.0	0.0	0.00	0.0	613		0	0	180	0	$0.3	$17.0	$17.3	
17	●	0.0	0.0%	0.0	0.0%	0.0	0.0%	1.2	29.9%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	2.9	70.1%	4.2	0	◒	6	1	0	0	0	0.3	0.0	0.00	0.0	7		0	0	140	0	$0.7	$8.4	$9.1	✓
No Build	■	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0	○	0	0				0.0	0.0	0.00	0.0	0				0					
Minimum:		0.0		48.5		2.7		54.9		8.0		2.3		0.9		12.5		0.0		237.8		70.5		459.8	0		473	116	63	50	46	4.6	0.2	0.79	0.5	12,187		9	0	693	5	$101.1	$672.7	$770.5	
Maximum:		0.2		62.4		4.9		74.3		12.8		3.3		0.9		16.6		0.0		280.5		85.2		515.2	2		535	111	109	69	49	6.8	1.2	1.32	1.1	17,823		16	4	712	7	$114.3	$700.6	$813.7	
Preferred:		0.0	0.0%	54.6	12.3%	2.8	0.6%	55.3	12.4%	10.5	2.4%	2.6	0.6%	0.9	0.2%	15.4	3.5%	0.0	0.0%	233.9	52.6%	68.4	15.4%	444.5	0		488	111	55	43	46	4.6	0.2	1.0	0.3	14,631		14	0	671	7	$91.0	$646.6	$737.7	

In year 2005 dollars

Key to Symbols

Positive ● ◒ ◒ ○ Neutral ◒ ◒ ■ Negative