



INTERSTATE 70 CORRIDOR

KANSAS CITY TO ST. LOUIS, MISSOURI

Second Tier Environmental Assessment and Draft Section 4(f) Evaluation

Section of Independent Utility #3
Boonville (Route 5) to Rocheport (Route BB)
MoDOT Job Number: J4I1341F

Oct. 15, 2004





SECOND TIER ENVIRONMENTAL ASSESSMENT AND
DRAFT SECTION 4(f) EVALUATION
SECTION OF INDEPENDENT UTILITY 3
BOONVILLE (ROUTE 5) TO ROCHEPORT (ROUTE BB)
COOPER AND BOONE COUNTIES
MODOT JOB NUMBER J411341F

Submitted Pursuant to 42 United States Code 4332 (2)(c)
and 49 United States Code 303 by the

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

in Cooperation with
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Coast Guard

10-8-04

Date of Approval

For Federal Highway Administration

9/30/04

Date of Approval

For Missouri Department of Transportation

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

Mr. Donald Neumann, Programs Engineer
Federal Highway Administration
209 Adams Street
Jefferson City, Missouri 65101-3203
573-636-7104

Mr. Kevin Keith, Chief Engineer
Missouri Department of Transportation
P.O. Box 270
Jefferson City, Missouri 65102-0270
573-751-2803

The proposed project includes the widening and reconstruction of I-70 to a six-lane fully controlled access highway from a western terminus at Route 5 (mile marker 99) in Cooper County to an eastern terminus at Route BB (mile marker 115) in Boone County for a total length of approximately 17 miles. This includes the construction of a second bridge across the Missouri River, widening of the median along I-70 and the reconstruction of the Routes 5, B, 87, 179 and BB interchanges .

October 2004

Table of Contents

<u>Section</u>	<u>Page</u>
CHAPTER I Project Description and Purpose and Need.....	I-1
A. Project Background and Tiered National Environmental Policy Act Process.....	I-1
B. Logical Termini and Independent Utility	I-1
C. Proposed Action	I-2
D. Purpose and Need for Action	I-2
1. Existing Roadway and Bridge Geometry.....	I-3
a. Design Criteria	I-3
b. Existing Mainline I-70.....	I-3
c. Interchanges and Crossroads.....	I-5
d. Rest Areas	I-6
2. Roadway Capacity	I-7
a. Mainline I-70 Capacity Analysis	I-7
b. Crossroad Capacity Analysis	I-9
3. Traffic Safety	I-11
4. Missouri River Bridge	I-12
a. Bridge Geometry and Configuration	I-12
b. Existing Structural Condition.....	I-13
5. Goods Movement.....	I-14
6. Access to Recreational Facilities.....	I-15
7. National Security	I-15
CHAPTER II Project Alternatives.....	II-1
A. Overview of First Tier Alternative Analysis	II-1
1. Selection of the Preferred Strategy	II-2
2. Summary of Preferred Strategy Impacts	II-3
a. Environmental Impacts	II-3
b. Social and Economic Impacts.....	II-4
c. Selection of Second Tier Studies.....	II-4
B. Development of Second Tier Alternatives	II-4
1. Preliminary Constraints	II-4
2. North-South Mainline Alternative Analysis	II-7
a. Summary of First Tier EIS Mainline Location.....	II-7
b. Overview of Scope and Level of Analysis.....	II-7
c. Description of Alternatives Considered.....	II-7
d. Results of Mainline Alternative Analysis: West of Overton Bottoms.....	II-8
3. Missouri River/Overton Bottoms Alternatives.....	II-9
a. Length, Constructability and Cost.....	II-9
b. Bridge Condition and Location.....	II-10
c. Floodway/Floodplain Encroachment and Hydraulics	II-10
d. Wetland and Surface Water Impacts	II-11
e. Public Lands	II-12
4. Interchange Alternatives.....	II-12
a. Routes 5 and 179.....	II-13
b. Routes B, 87 and BB	II-14
c. Cost Estimates.....	II-16

Table of Contents (continued)

- C. Alternatives Retained for Detailed Analysis..... II-17
 - 1. No-Build Alternative..... II-17
 - 2. Build Alternatives..... II-17
 - 3. Intelligent Transportation Systems II-19
 - 4. Bicycle and Pedestrian Use II-19
- D. Rest Area Site Location Study..... II-20
 - 1. Background II-20
 - 2. Development of Alternative Site Locations..... II-20
 - 3. Preferred Site Location..... II-22
- E. Description of the Recommended Preferred Alternative II-23
- CHAPTER III Affected Environment and Environmental Consequences III-1
 - A. Social and Economic Conditions III-1
 - 1. Demographics III-1
 - a. Regional Population Trends..... III-1
 - b. Housing Characteristics III-2
 - c. Age Characteristics..... III-2
 - d. Racial Characteristics III-3
 - e. Economic and Labor Force Characteristics III-3
 - f. Summary of Demographic Conditions III-5
 - 2. Community Facilities and Characteristics III-5
 - a. Parks, Recreation and Open Space III-5
 - b. Pedestrian and Bicycle Facilities III-9
 - c. Churches..... III-9
 - d. Schools III-10
 - e. Cemeteries..... III-10
 - f. Emergency Services III-10
 - 3. Residential and Business Relocations III-11
 - a. Residential Impacts..... III-11
 - b. Neighborhood Impacts..... III-12
 - c. Business Impacts..... III-12
 - d. Mitigation for Residential and Business Relocations III-13
 - 4. Community Cohesion/Accessibility III-14
 - 5. Environmental Justice III-15
 - 6. Employment III-15
 - 7. Tax Impacts..... III-16
 - B. Land Use and Zoning III-16
 - 1. Existing Land Use III-16
 - 2. Land Use Planning..... III-17
 - 3. Land Use Impacts III-17
 - 4. Consistency with Land Use Plans..... III-18
 - C. Cultural Resources III-18
 - 1. Historic Setting III-19
 - a. Contact and Colonialism (A.D. 1673-1803) III-20
 - b. European-American Settlement, Agricultural Expansion (A.D 1803-1865) III-20
 - c. Industrialization and Urbanization (A.D. 1865-1930) III-20
 - d. Economic Renewal and Suburbanization (A.D. 1930-present) III-21
 - 2. National Register Properties III-21
 - 3. Archaeological Resources..... III-21

4.	Historic Architectural Survey	III-22
5.	Missouri Interstate 70 and History.....	III-23
	a. Background.....	III-23
	b. Missouri Interstate 70 Memorandum of Understanding.....	III-24
D.	Agricultural Resources	III-25
	1. Affected Environment.....	III-25
	2. Impacts to Agricultural Resources.....	III-26
E.	Air Quality	III-27
F.	Hydrogeology/Geology	III-28
	1. Geologic Resources	III-28
	a. Boonville Area.....	III-29
	b. Overton Area Uplands	III-29
	c. Overton Bottoms (Missouri River Floodplain)	III-30
	d. Rocheport Karst Area	III-30
	e. Potential Impacts	III-31
	2. Water Wells.....	III-32
G.	Terrestrial Ecology.....	III-32
	1. Land Cover.....	III-32
	2. Wildlife.....	III-35
	3. Terrestrial Impacts.....	III-35
H.	Water Quality and Aquatic Ecology	III-37
	1. Water Quality	III-37
	2. Aquatic Ecology	III-42
I.	Sensitive Species	III-44
J.	Special Waste/Hazardous Materials.....	III-51
K.	Floodplains/Floodways	III-56
L.	Wetlands and Waters of the United States.....	III-59
	1. Regulatory Overview	III-59
	2. Rivers and Streams.....	III-60
	3. Wetlands	III-61
	a. Riparian Corridor Wetlands – West of Overton Bottoms	III-62
	b. Missouri River Floodplain (Overton Bottoms) Wetlands	III-62
	c. Rocheport Wetlands	III-63
	4. Ponds	III-64
	5. Impacts.....	III-64
	a. River and Stream Impacts	III-67
	b. Wetland Impacts	III-68
	c. Pond Impacts.....	III-68
	6. Mitigation	III-69
M.	Noise	III-70
N.	Visual Environment.....	III-73
O.	Construction Impacts.....	III-74
P.	Secondary and Cumulative Impacts.....	III-75
	1. Introduction	III-75
	2. Existing I-70 Overall Corridor	III-76
	a. Land Use.....	III-76
	b. Parklands.....	III-77
	c. Prime Farmland	III-77
	d. Terrestrial and Aquatic Communities.....	III-77
	e. Threatened and Endangered Species	III-78
	f. Wetlands and Waters of the United States	III-78

Table of Contents (continued)

- g. Air Quality III-78
- h. The Land and Visual Quality III-78
- 3. Mitigation and Enhancement of I-70 Overall Corridor
Cumulative Impacts III-79
- 4. Section of Independent Utility 3 Secondary and Cumulative
Impacts III-80
 - a. Natural III-80
 - b. Social and Economic III-80
 - c. Known and Anticipated Actions (Projects) By Others III-81
- CHAPTER IV Coordination IV-1
 - A. Public Involvement IV-1
 - 1. Summary of Public Concerns IV-1
 - 2. Public Meetings IV-1
 - 3. Small Group Meetings IV-3
 - 4. Other Public Outreach IV-4
 - 5. Public Hearing IV-4
 - B. Agency Coordination IV-4
 - C. Other Coordination Efforts IV-6
- CHAPTER V Draft Section 4(f) Evaluation for the Katy Trail State Park, I-70 SIU 3,
Cooper and Boone Counties V-1
 - A. Proposed Action V-2
 - A. Proposed Action V-2
 - B. Section 4(f) Property – Katy Trail State Park V-3
 - C. Impacts to Section 4(f) Property – Katy Trail State Park V-3
 - 1. Mile Marker 100 Crossing V-3
 - 2. Mile Marker 114 Crossing V-4
 - D. Proposed Avoidance Alternatives of Section 4(f) Resource –
Katy Trail State Park V-4
 - E. Measures to Minimize Harm to the Section 4(f) Resources V-4
 - F. Coordination V-5
- CHAPTER VI Circulation List VI-1
 - A. Federal VI-1
 - B. State Agencies VI-2
 - C. Local Government Agencies VI-2
 - D. Elected Officials VI-3
 - E. Stakeholders VI-3
 - F. Copies Available for Public Viewing VI-3
- CHAPTER VII References VII-1

List of Appendices

Appendix A	Summary of the First Tier EIS
Appendix B	Tort Liability Statement: Traffic Accident and Safety Data
Appendix C	Analysis of Mainline Widening, North vs. South, Environmental and Engineering Review
Appendix D	Correspondence
Appendix E	Analysis of Interchanges: Engineering and Environmental Review
Appendix F	Draft Programmatic Agreement
Appendix G	Memorandum of Understanding and Agency Agreements
Appendix H	Missouri State Operating Permit Water Pollution Control Program
Appendix I	List of Preparers and Reviewers

List of Documents Available Upon Request

1. First Tier EIS, I-70 Corridor (Kansas City to St. Louis, Missouri)
2. Traffic Forecasts and Operations Technical Memorandum, Section of Independent Utility 3
3. Missouri River Bridge Technical Memorandum, Section of Independent Utility 3
4. Interstate 70 Crossing of the Missouri River near Overton, Missouri – Hydraulic Information for Floodplain Structures
5. Plan and Profile Sheets and Cost Estimates, Section of Independent Utility 3
6. Rest Area Study
7. Interstate 70 Enhancement Plan
8. Environmental Methodologies
9. Frontage Road Master Plan
10. Median Area Study, Design Criteria and Cost Estimating Guide
11. Cultural Resources Methodology and Geomorphology Report
12. Interstate 70 Tier II Cultural Resource Investigations Volume 7: SIU 3 Architectural Survey, MoDOT Job No. J4HI1341F
13. Section of Independent Utility 3, Wetland and Stream Delineation Report

Table of Contents (continued)

List of Tables

Table I-1:	Distance to First Intersection at Each Interchange within SIU 3.....	I-5
Table I-2:	Average Daily Traffic (ADT) on Mainline I-70.....	I-7
Table I-3:	Average Daily Traffic Changes, 2000 to 2002.....	I-8
Table I-4:	Level of Service Characteristics for Freeways	I-8
Table I-5:	Level of Service Analysis Summary for Mainline I-70	I-9
Table I-6:	Average Daily Traffic on Study Crossroads.....	I-9
Table I-7:	Level of Service Thresholds for Intersections.....	I-10
Table I-8:	Level of Service Analysis Summary for Study Crossroads	I-11
Table I-9:	Crash Data Changes, 2001 to 2003.....	I-12
Table II-1:	Summary of Issues for Reasonable Strategies	II-2
Table II-2:	List of Environmental and Engineering Constraints at the Route 5 and Route 179 Interchanges	II-13
Table II-3:	Advantages and Disadvantages of Interchange Options at Route B	II-14
Table II-4:	Advantages and Disadvantages of Interchange Options at Route 87.....	II-15
Table II-5:	Advantages and Disadvantages of Interchange Options at Route BB	II-16
Table II-6:	Preliminary Costs – Recommended Preferred Alternative	II-17
Table II-7:	Mainline I-70 LOS Analysis	II-18
Table II-8:	Level of Service Analysis Summary for Study Crossroads	II-18
Table III-1:	State and County Population Trends.....	III-1
Table III-2:	Census Tract Location and Population Trends within the Study Area	III-2
Table III-3:	Housing Characteristics, 2000	III-2
Table III-4:	Age Characteristics, 2000	III-3
Table III-5:	Racial and Ethnic Characteristics, 2000.....	III-3
Table III-6:	Income Characteristics	III-4
Table III-7:	Assessed Value of Real Estate by Select Taxing District, 2002.....	III-4
Table III-8:	Employment by Job Type, 2001	III-5
Table III-9:	Displacements, Property Acquisitions and Costs Associated with SIU 3 Improvements.....	III-11
Table III-10:	Business Displacements Resulting from the Recommended Preferred Alternative	III-12
Table III-11:	Estimated Employment Impacts.....	III-15
Table III-12:	Potential Reduction of Assessed Value Associated with the Recommended Preferred Alternative	III-16
Table III-13:	Potential Existing Land Use Impacts Associated with the Recommended Preferred Alternative	III-17
Table III-14:	Historic Cultural Traditions	III-19
Table III-15:	Properties Initially Recommended as Eligible for the NRHP	III-22
Table III-16:	Agricultural Statistics	III-25

Table III-17:	Missouri and National Ambient Air Quality Standards.....	III-27
Table III-18:	Land Cover Impacts	III-36
Table III-19:	River and Stream Crossings and Relocations Impacts	III-38
Table III-20:	Federal and State Listed Species Reported to Occur within the Vicinity of the I-70 Study Area	III-45
Table III-21:	Potential Hazardous Waste Sites within the SIU 3 Project Area	III-53
Table III-22:	Impacts to Floodplains	III-57
Table III-23:	Wetland and Jurisdictional Pond Impacts.....	III-65
Table III-24:	Upland Pond Impacts	III-67
Table III-25:	Summary of Estimated Impacts to Wetlands and Jurisdictional Ponds	III-69
Table III-26:	Federal Highway Administration Noise Abatement Criteria (NAC) for Applicable Land Use Activity Categories.....	III-70
Table III-27:	Design Hour Noise Levels, dBA L _{eq} (h), SIU 3	III-71
Table III-28:	Factors to Determine Reasonableness of Noise Mitigation	III-72

Table of Contents (continued)**List of Figures** (figures are located at the end of their respective chapters)

Figure I-1	I-70 SIU 3 Study Area (Aerial photography flown in November 2000)
Figure II-1	Typical Sections
Figure II-2	Missouri River Crossing Alternatives (Aerial photography flown in November 2000)
Figure II-3	Proposed Interchanges at Route 5 and Route 79 (Aerial photography flown in November 2000)
Figure II-4	Interchange Alternatives at Route B (Aerial photography flown in November 2000)
Figure II-5	Interchange Alternatives at Route 87 (Aerial photography flown in November 2000)
Figure II-6	Interchange Alternatives at Route BB (Aerial photography flown in November 2000)
Figure II-7	Rest Area Site Location Alternatives (Aerial photography flown in November 2000)
Figure III-1	Environmental Features (Aerial photography flown in November 2000)
Figure III-2	Displacements (Aerial photography flown in November 2000)
Figure III-3	Land Use (Aerial photography flown in November 2000)
Figure III-4	Land Cover (Aerial photography flown in November 2000)
Figure III-5	Noise Analysis Receptors (Aerial photography flown in November 2000)
Figure V-1	Katy Trail State Park (Aerial photography flown in November 2000)
Figure V-2	Katy Trail Detour (Aerial photography flown in November 2000)

List of Abbreviations and Acronyms

ADT	average daily traffic
AADT	annual average daily traffic
APE	area of potential effect
AQCR	Air Quality Control Region
AST	aboveground storage tanks
BC	Boone County
CC	Cooper County
CFR	Code of Federal Regulations
CRP	Conservation Reserve Program
CSR	Code of State Regulations
CWA	Clean Water Act
dBA	hourly A-weighted noise levels in decibels (dBA)
EA	Environmental Assessment
EDR	Environmental Data Resources
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FW	farmed wetland
HMVMT	hundred million vehicle miles traveled
I-70	Interstate 70
LOS	level of service
LUST	leaking underground storage tanks
MASS	Missouri Agriculture Statistics Service
MDC	Missouri Department of Conservation
MDNR	Missouri Department of Natural Resources
MoDOT	Missouri Department of Transportation
N.	North
NAAQS	National Ambient Air Quality Standards
NAC	National Abatement Criteria
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHWM	ordinary high water mark
PEM	palustrine emergent
PFO	palustrine forested
PSS	palustrine scrub-shrub
PUB	palustrine, unconsolidated bottom, diked/impounded
RM	River Mile
S.	South
SIU	Sections of Independent Utility
SMG	Study Management Group
STR	stream
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tanks
vpd	vehicles per day
WRP	Wetland Reserve Program

Executive Summary

Introduction

Interstate 70 (I-70) is a major interstate highway crossing the United States in a general east-west direction. Interstate 70 is part of the Eisenhower Interstate System of Highways and retains its separate identity within the National Highway System.

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) have proposed improvements to I-70 between the metropolitan areas of Kansas City and St. Louis (I-70 corridor) to meet the current and future transportation-related needs of the corridor. A tiered environmental process was used to evaluate the improvements within this I-70 corridor. A tiering process is a procedure that allows compliance with the National Environmental Policy Act by using two separate stages, or tiers, of decision making.

The tiered process for consideration of potential improvements to I-70 began with the assessment of strategies for transportation improvements within a 199-mile (320-kilometer) long corridor extending from Kansas City to St. Louis. The I-70 Study Corridor was approximately 10 miles (16.1 kilometers) wide, five miles (eight kilometers) on either side of existing I-70.

As a result of a thorough analysis of alternatives during the First Tier Environmental Impact Statement (EIS) (available upon request), Strategy No. 3 (Widen Existing I-70) was selected as the preferred strategy. The Widen I-70 Strategy included the identification of seven Sections of independent utility (SIUs). Within two of the three urban SIUs (SIU 4-Route BB to Route Z and SIU 7-Route 19 to Lake St. Louis), this strategy called for the preparation of EISs as they included options for widening the existing roadway as well as options for constructing a relocation facility on new location. In contrast, within rural sections, the selected strategy called for the development of mainline alternatives that were immediately adjacent to the existing facility. SIU 3 is a rural section and entails the consideration of mainline alternatives immediately to the north or south of the existing I-70 facility. The study area for SIU 3 is defined as an approximately 700-foot (213.3-meter) wide corridor centered over existing I-70 within which alternatives would be developed. The following boundaries were defined for SIU 3:

- approximately two miles (3.2 kilometers) west of the Route 5 interchange in Cooper County near mile marker 99 (western terminus); and
- 0.6 mile (0.97 kilometer) east of the Route BB interchange in Boone County at mile marker 115 (eastern terminus).

Proposed improvements within SIU 3 include upgrading the current roadway design features by widening the median, reconfiguring the five interchanges that currently exist within the study area and constructing an additional bridge over the Missouri River at Overton Bottoms.

Proposed improvements within SIU 3 are evaluated as part of this Environmental Assessment (EA).

Project Purpose and Need

The purpose of this project is to provide a safe, efficient, environmentally sound and cost-effective transportation facility that is responsive to the local and system-wide need and the expectations of a national interstate. The specific project purposes and needs for this project can be summarized as follows:

- **Service Conditions and Existing Roadway and Bridge Geometry** – Upgrade current roadway design features including mainline roadway, interchanges and crossroads to account for additional I-70 lanes.
- **Roadway Capacity** – Increase roadway system capacity in accordance with the projected travel demands to improve the general operating conditions.
- **Traffic Safety** – Reduce the number and severity of traffic-related crashes.
- **Missouri River Bridge** – Address the functional and structural needs of the bridge over the Missouri River.
- **Goods Movement** – Improve the efficiency of freight movement on I-70.
- **Access to Recreational Facilities** – Facilitate the usage by motorists of nearby regional recreation facilities by maintaining clear accessibility.
- **National Security** – Provide a facility to accommodate potential modal shifts in transportation due to issues related to national security.

These system-wide purposes and needs (substantiated in the First Tier EIS) (available upon request) are incorporated as a basis for the more local purposes and needs of SIU 3.

Project Alternatives

The formulation of alternatives for the Second Tier Studies in SIU 3 was an iterative process that entailed considerations of a full range of environmental and engineering factors, design guidelines and public and agency input.

Constraint information was developed by acquiring and consolidating information from a variety of sources including public involvement meetings, file information from MoDOT, other state agencies (i.e., Missouri Department of Natural Resources [MDNR]) and federal agencies (i.e., Natural Resources Conservation Service [NRCS], U.S. Fish and Wildlife Service [USFWS], U.S. Environmental Protection Agency [USEPA], Federal Emergency Management Agency, U.S. Geological Survey, U.S. Army Corps of Engineers [USACE]) and field reconnaissance. Alternative development and analysis entailed a consideration of a full range of environmental and engineering issues and also factored in public comments. Factors considered included cultural resources; rare, threatened or endangered species; parklands; floodways; floodplains; residential and commercial displacements; land uses; wetlands and water resources; traffic and access management issues; engineering design guidelines and other factors.

Alternative development was conducted in a step-wise fashion in which the first step in the process entailed a consideration of the mainline, whereas the second step considered improvements at each of the five interchanges. As a result of these analyses, a recommended preferred alternative was identified consisting of I-70 mainline widening to the south and modification of each of the five interchanges that provide for needed improvements in access and safety while minimizing impacts to the human and natural environment.

In addition, because of the potential for greater environmental impacts in the vicinity of Overton Bottoms, a second mainline alternative parallel to and north of the existing alignment was retained for detailed analysis. This alternative extends from the western Missouri River bluff, across the floodplain and the Missouri River and the eastern bluff and crosses over to the south, east of the interchange at Route BB in Rocheport. Design features and potential traffic characteristics of this northern alternative are similar to those of the south alternative.

Affected Environment and Environmental Consequences

Land Use and Social and Economic Effects

Section of Independent Utility 3 is located in a predominantly rural rolling landscape within central Missouri. Accordingly, the environmental setting of the project area is largely characterized by a gently rolling terrain west of the Missouri River that is dissected by valleys of tributaries of the Petite Saline Creek. Land use in the rural areas is predominantly agricultural with scattered residential and agricultural based development. In contrast, residential and commercial development characterizes Route 5 and Route BB in Boonville.

Proposed improvements to I-70 would result in 10 residential displacements and 25 commercial displacements. Agricultural lands would be the greatest affected land use type (474 acres, 192 hectares).

Parkland and Wildlife Refuges

Section 4(f) of the U.S. Department of Transportation Act of 1966, as codified and amended, has afforded publicly owned parkland protection from being converted to uses other than park and recreation. The Katy Trail State Park is the only 4(f) land potentially affected by the proposed project. Interstate-70 crosses the Katy Trail along the Missouri River at the base of the Manitou Bluffs and is crossed by the Katy Trail just west of the Route 5 interchange in Boonville.

Proposed improvements to I-70 within SIU 3 would result in 1.1 acre (0.4 hectare) of direct impact to the Katy Trail at the western crossing.

Other public lands within the project area include the Overton Bottoms Conservation Area and the Big Muddy National Fish and Wildlife Refuge (Big Muddy Refuge). Both of these lands are immediately adjacent to I-70 in the Overton Bottoms. Improvements to I-70 would be made within a 300-foot (91.4-meter) reserved corridor within these lands resulting in approximately 15 acres (6.0 hectares) of impact for either the North Missouri River Alternative or South Missouri River Alternative. Consequently, no adverse impacts to either of these lands will occur.

Taylor's Landing is a public access facility located within the Big Muddy Refuge. It is owned and operated by the Missouri Department of Conservation (MDC) and is located upstream of the existing I-70 bridge. No impact to the landing is expected with either a north or south alignment of future improvements to I-70.

With the reconstruction of existing interchanges, there will be the opportunity to provide increased trails plus bicycle and pedestrian infrastructure. Additionally, these areas could provide the opportunity for community initiated enhancement features.

Prime Farmland

The proposed reconstruction and widening of I-70 would result in impacts to prime farmland due to farmland conversion along the new required right of way. It is estimated that approximately 80.0 acres (32.4 hectares) of farmland would be directly impacted along the length of the corridor in SIU 3. Additionally, approximately 20.7 acres (8.4 hectares) of Conservation Reserve Program designated lands would be affected by the improvement. No Wetland Reserve Program lands will be impacted.

Air Quality

With the improved mobility and the access management policy implemented as part of the ultimately reconstructed I-70 corridor, this project is not anticipated to cause a violation of the National Ambient Air Quality Standards. Improvement to the mainline facility coupled with reduced congestion at the interchange intersections will provide for better localized air quality as compared to the No-Build Alternative.

Terrestrial Communities

It is estimated that approximately 230 acres (93.2 hectares) of forest land would be directly impacted along the length of the corridor. Impacts to wildlife associated with these habitats would also occur in conjunction with loss of habitat and, in some cases, increased fragmentation of riparian corridors.

Wetlands and Waters of the United States

There is the potential for the proposed reconstruction and widening of the I-70 Corridor to contribute to impacts to wetlands and other waters of the United States. During the construction phase, activities that impact these sites through sedimentation, changes in the nature of stream hydraulics or clearing of vegetation in riparian habitat are likely to have impacts on wetland functions and values of downstream or downslope waters of the United States, including wetlands. It is estimated that approximately 12.1 acres (4.9 hectares) of jurisdictional wetlands and ponds would be directly impacted within SIU 3. It should be noted, however, that there would be wetland mitigation planned within the corridor to ensure, at a minimum, no net loss of wetlands as a resource.

The Missouri River floodplain is the primary floodplain resource. Other smaller floodplains occur in association with tributaries of the Petite Saline Creek. In total, approximately 71.8 acres (29.0 hectares) of floodplain would be impacted by the project.

The Missouri River is the primary jurisdictional riverine resource within the SIU 3 project area. Smaller tributaries of the Petite Saline Creek (west of the Missouri River) and of Moniteau Creek east of the Missouri River) would also be crossed by the project. In total, 18,779 feet (5,724 meters) of jurisdictional stream would be impacted by the improvement.

Threatened and Endangered Species

According to agency information, federally listed threatened and endangered species potentially occurring within the corridor include the pallid sturgeon (threatened), gray bat (endangered), and Indiana bat (endangered). These species are either directly found within the Missouri River (pallid sturgeon) or the surrounding bluffs. Other state-listed species noted by MDC as occurring within the Missouri River include the sicklefin chub, sturgeon chub, ghost shiner and plains killifish. While these species occur in the project vicinity, the improvements to I-70 will not have an impact on them.

The information of record identified buffalo grass (*Buchloe dactyloides*, state listed as S1, critically imperiled) as being potentially present within the general area of the rest area along eastbound I-70 between Route B and Route 87, and would be impacted by the southern alternative. Field studies conducted indicate that the population at the eastbound rest area is likely to have been extirpated as no population of buffalo grass was observed.

Noise

Localized noise impacts to residential receptors would occur with the proposed project. A total of 11 noise sensitive receptors were determined to have projected noise levels at or above the Noise Abatement Criteria in the design year.

Cultural Resources

The data in the information of record does not identify National Register of Historic Places (NRHP) listed archaeological sites within the study area. Any archaeological impacts resulting from a northern or southern alternative are likely to be similar in overall magnitude although locations may vary. A detailed archaeological investigation has been conducted for the recommended preferred alternative and has identified four sites that have the potential for intact subsurface deposits. Results of additional investigation and coordination regarding these sites will be reported in the Final EA.

An architectural investigation of all standing structures and bridges within the area of potential effect resulted in the identification of one structure near the interchange of Route 5 as potentially eligible for NRHP listing. Additionally, the existing I-70 bridge over the Missouri River was also considered to be potentially eligible for NRHP listing. The barn at the Route 5 interchange will not be impacted by the project. By comparison, the I-70 bridge will be part of the future roadway system, but will not be altered by the project. Consequently, there will be no adverse effect on these structures.

The Moses U. Payne house is the only NRHP listed property in the vicinity of SIU 3. The site, however, is located outside the area of potential effect south of the Rocheport interchange and will, therefore, not be affected.

No cemeteries will be impacted by the proposed improvements to I-70 in SIU 3.

Commitments and Future Actions

During the course of the Second Tier Studies, MoDOT has agreed to the following commitments and future actions during the design and construction phases of future improvements in the SIU 3 corridor. The agreed upon commitments and future actions include:

- The frontage roads as proposed in the Frontage Road Master Plan (available upon request) may be constructed in the future as needs arise and as funding becomes available. The Missouri Department of Transportation is committed, however, to construct frontage roads for the purposes of maintaining existing local service connections and maintaining existing access to adjacent properties.
- MoDOT would 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.
- Where reasonably possible, the eight-foot (2.4-meter) paved shoulder along the new frontage road construction could serve as a one-way bicycle facility.
- During right of way acquisition and relocations, MoDOT is responsible for assuring that this would be accomplished in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. If acquisition of only a portion of property leaves the owner with a remnant, MoDOT would determine whether the remnant maintains utility or value to the present owner. The Missouri Department of Transportation Right of Way Division would carry out the acquisition and relocation of commercial and industrial properties in accordance with the Act of 1970, as amended.
- Should I-70 or any part thereof be determined eligible for the NRHP at a later date, FHWA and MoDOT would enter into consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation pursuant to 36 Code of Federal Regulations 800.
- Bottomless culverts would be considered in the design phase to minimize indirect impacts to the groundwater system. Detention basins or other engineering controls that treat sediment in surface water before it reaches the losing stream would also be considered in the design phase.
- Through MoDOT's approved Pollution Prevention Plan, the control of water pollution would be accomplished. The plan specifies berms, slope drains, ditch checks, sediment basins, silt fences, rapid seeding and mulching and other erosion control devices or methods as needed. In addition, all construction and project activities would comply with all conditions of appropriate USACE and MDNR permits and certifications.
- Impacts to aquatic communities would be minimized by strict adherence to MoDOT's Temporary Erosion and Sediment Control Procedures.
- For the Missouri River bridge, future design and location of bridge piers would be coordinated with the USFWS and MDC during the design phase to consider seasonal patterns of pallid sturgeon habitat use, avoid potential habitat and enhance existing habitat.
- To address USFWS and MDC concerns, MoDOT would review the Natural Heritage Data Base periodically during the project development process to identify any new locations of Indiana bat activity. The Missouri Department of Transportation would

continue to consult with the USFWS to avoid or minimize potential impacts to this species and the gray bat species.

- The Missouri Department of Transportation would commit to conducting running buffalo clover surveys at the Loutre River crossing, the Auxvasse Creek crossing, in SIU 6, the Cedar Creek crossing in SIU 5 and the Lamine River crossing in SIU 2 prior to construction. The Missouri Department of Transportation recognizes the importance of riverine corridors for a variety of benefits, including habitats suitable for endangered species such as the Indiana bat and running buffalo clover. It has developed a stream mitigation and enhancement plan for the major river crossings, including those noted above.
- Under MoDOT's current design criteria, new bridges must have a backwater for the design flood of no greater than one foot (0.3 meter). In situations where the proposed new bridge would be in the vicinity of an existing bridge that has an existing backwater and other regulations or criteria do not control, MoDOT would make a case-by-case decision as to whether design of the new bridge should consider the existing bridge backwater or only the backwater associated with the new bridge.
- Corridor-wide mitigation planning is currently being addressed by the Study Management Group. Development of a wetland mitigation site or sites would be conducted through consultation with USACE, USFWS, and MDC. The Loutre River valley has been identified as a potential wetland mitigation site.
- The Missouri Department of Transportation has special provisions for construction which require that all contractors comply with all applicable local, state and federal laws and regulations relating to noise levels permissible within and adjacent to the project construction site. Construction equipment is required to have mufflers constructed in accordance with the equipment manufacturers' specifications.
- To minimize impacts associated with the construction of the recommended preferred alternative, pollution control measures outlined in the Missouri Standard Specifications for Highway Construction would be used. These measures pertain to air, noise and water pollution as well as traffic control and safety measures.
- Applicable parts of the I-70 Enhancement Plan (available upon request) will be incorporated and committed to in the final EA and decision document for this project.
- The Federal Highway Administration and MoDOT would temporarily detour the Katy Trail during construction. The trail currently crosses I-70 approximately at mile marker 100. The detour would consist of re-routing the trail just north of I-70 west of Old Highway 40. It would run approximately 3,400 feet (1,036 meters) along Old Highway 40 to Dunkles Drive. There it would turn left and cross I-70 via Dunkles Drive and continue to the south approximately 1,900 feet (579 meters) to Prairie Lick Road. From there it would run southwesterly approximately 1,500 feet (457 meters) along Prairie Lick Road at which point it would intersect with the trail again.
- Although approximately 1.08 acres (0.44 hectare) of the Katy Trail State Park would be required near mile marker 100, FHWA and MoDOT would compensate for the loss by replacing the existing crossing with a bridge that extends over a wider median and the proposed additional lanes. Compensation for impacts to this area of the park will be determined through coordination with MDNR and may include an acre for acre acquisition of lands to be dedicated to the Katy Trail State Park.
- The Federal Highway Administration and MoDOT would consult with MDNR regarding the design of the new crossing at mile marker 100. Coordination would ensure that vertical and horizontal clearances for the crossing would be established and maintained

according to the National Trails System Act, MDNR and MoDOT guidelines. Consideration would be given to the use of the existing bridge as a part of the crossing during the design phase.

- Regarding the crossing at mile marker 100, the FHWA and MoDOT would provide advance notification of extended trail detour dates and times to the public as well as appropriate information signing on the trail and at nearby trailheads. Additional signage would also be provided to warn motorists of the presence of bicyclists and pedestrians on the detour route.
- Consideration would be given to identification of a bike lane on the detour route.
- The Federal Highway Administration and MoDOT would provide advance notice and signing on the trail and at nearby trailheads for the crossing at mile marker 114, should this crossing require a temporary closure. (Any closure at this location is anticipated to be of short duration, several hours or less.) Either a roofed structure over the trail or a safety net could be installed to protect the trail users and minimize temporary closures.
- If practicable, FHWA and MoDOT would time trail closures and detour (mile marker 100) to occur during periods of off-peak use.
- Further coordination between FHWA, MoDOT and MDNR would result in an intergovernmental agency agreement that addresses project coordination about the Katy Trail and would detail mitigation measures to be followed to minimize any disruptions in use of the trail.
- Compensation for impacts to Overton Bottoms Conservation Area may include the acquisition of adjacent lands and their subsequent title transfer to MDC. Additionally, compensation for impacts may include the dedication of funds for habitat enhancements (i.e., wetland establishment and tree planting) and ecosystem restoration.

Description of the Recommended Preferred Alternative

As a result of a thorough investigation of the environmental and engineering constraints of the project area, an evaluation of both mainline and interchange alternatives and an analysis of a second Missouri River crossing alternative (see Chapter III), the recommended preferred alternative within SIU 3 is proposed to consist of the south mainline alternative (including constructing a new parallel bridge over the Missouri River immediately to the south) and reconstructed interchanges at Routes 5, B, 87, 179 and BB. The recommended preferred alternative interchanges consist of the following:

- Route 5 – a diamond interchange with a new overpass immediately east of the existing bridge;
- Route B – a diamond interchange with a new overpass immediately west of the existing bridge;
- Route 87 – a diamond interchange with a new overpass immediately east of the existing bridge;
- Route 179 – a diamond interchange with a new overpass immediately east of the existing bridge and a roundabout at the westbound ramps and Route 98; and
- Route BB – a diamond interchange with a new overpass 200 feet west of the existing bridge.

The recommended preferred alternative also consists of reconstructed eastbound and westbound rest areas at the sites of the existing rest areas just east of Route B in Boonville.

Planimetric depictions of the recommended preferred alternative including an illustration of proposed pavement, grades and rights of way are available upon request.

Final selection of the alternative, however, will not be made until the approval of the final EA after all impacts have been considered and all agency and public comments have been received and evaluated.