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SIU 5

Documented Categorical Exclusion Re-Evaluation



Prepared for

MISSOURI DEPARTMENT OF TRANSPORTATION

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1.0 Introduction

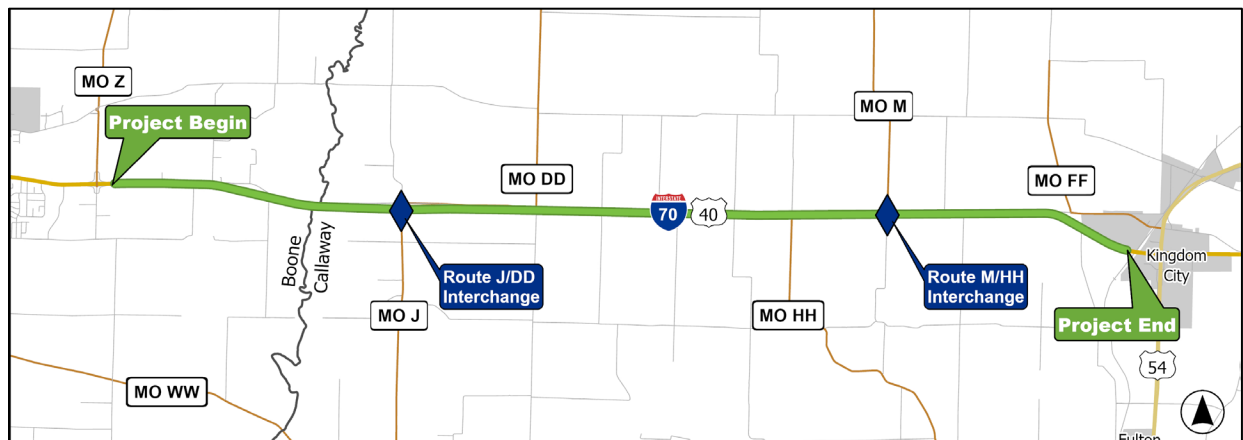
The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) are proposing to construct improvements to Interstate 70 (I-70) to meet the current and future transportation-related needs of this corridor. This document serves as a re-evaluation of the previous NEPA study to ensure that the proposed action remains in compliance with environmental regulations.

The study area for this project is located between Columbia and Kingdom City and is rural in nature with low population density. The approximately 13-mile-long study area is shown in **Figure 1.1** and is defined as the entirety of Section of Independent Utility (SIU) 5 of the I-70 corridor, from mile marker 134.0 just east of the Missouri Route Z interchange in Boone County to mile marker 147.6 just west of the U.S. Highway 54 (US 54) interchange in Callaway County. SIU 5 includes the MoDOT Job Number J4I1341H specified in the previous environmental study and has two interchanges — the Route J and DD interchange and the Route M and HH interchange.

Previous environmental studies related to proposed improvements along I-70 include the 2001 Interstate 70 Corridor First Tier Environmental Impact Statement (EIS) and Record of Decision (ROD) signed December 18, 2001; the 2004 Second Tier Approved Categorical Exclusion (CE) for the I-70 SIU 5 signed June 4, 2004; and the 2009 Supplemental EIS and ROD for Truck-Only Lanes signed August 14, 2009, which supplement the previous first and second tier studies. The 2009 Truck-Only Lanes ROD was amended on December 5, 2023, and can be found in **Appendix A**.

FHWA and MoDOT's Engineering Policy Guide require a re-evaluation to comply with the National Environmental Policy Act (NEPA) (23 Code of Federal Regulations [CFR] 771.129) and associated laws due the amount of time since the 2004 CE was approved. The following NEPA re-evaluation is required to validate the original 2004 Second Tier Approved CE clearances and approvals with respect to the current project setting, design, and regulations.

Figure 1.1 SIU 5 Project Location





determined to be consistent with the decisions made in the 2001 ROD, as it would fit within the limits of the previously evaluated footprint, to the extent possible, utilizing the preserved future transportation corridor identified in the Widen Existing I-70 Strategy.

On December 5, 2023, an Amended ROD to the 2009 SEIS, was signed by FHWA. In accordance with 23 CFR 771.127(b), the Amended ROD selects the 2001 Final EIS (FEIS) and ROD's Preferred Alternative, widening of the I-70 corridor to six general-purpose travel lanes, which was fully evaluated in the study. The Amended ROD can be found in **Appendix A**.

The proposed improvements to SIU 5 are currently possible due to funding provided by the National Highway Performance Program (NHPP) and are included in MoDOT's Statewide Transportation Improvement Program (STIP) for construction in the fiscal years 2024-2028. The entirety of ST0021 (Stadium to U.S. 54 in Kingdom City) and 5S3411 (Route 63 connector interchange, bridge rehabilitation, and resurfacing of I-70) is included in MoDOT's 2024-2028 STIP.



3.0 Existing and Future Traffic Conditions

The following provides information on the existing and the future traffic conditions for I-70 and specifically SIU 5.

3.1 Traffic Trends on I-70

The overall volume of traffic on I-70 is estimated to grow approximately 20 percent between 2023 and 2050¹. With the No-Build Alternative, these increases result in poor operational conditions for travelers on I-70. One element of the proposed project is to develop alternatives that accommodate both existing and projected traffic volumes.

Table 3.1 summarizes traffic volume projections for existing, opening (when construction is complete), and design year conditions by roadway section under the No-Build Alternative. The projections are given in Average Annual Daily Traffic (AADT). In 2023, existing I-70 operates at around 40,000 vehicles a day throughout SIU 5. In 2030, I-70 traffic volumes are expected to operate at 43,000 vehicles per day and eventually reach 50,000 by year 2050. Both the overall magnitude of the volumes and the projected increases remain relatively consistent throughout the corridor. **Table 1** shows that the total volume of traffic is slightly higher on the western ends as I-70 nears Columbia.

Table 3.1 Existing & No-Build I-70 Traffic Volumes

SIU 5 Subsection	2023 Average Annual Daily Traffic	2030 Average Annual Daily Traffic	2050 Average Annual Daily Traffic
1. Route Z/Rangeline to Route J/DD	42,850	45,720	54,200
2. Route J/DD to Route M/HH	40,000	42,440	49,780
3. Route M/HH to US 54	40,000	42,440	49,780

Volumes for the 2030 and 2050 design year analysis were developed by assessing growth trends from historical MoDOT data and matching volumes from the SIU 4 Access Justification Report (AJR) and the adjacent US-54/Kingdom City interchange Traffic Safety and Operations Report (Exit 148). Volumes at the two study interchanges within SIU #5 have grown at an approximate two percent annual growth rate based on trends from MoDOT data. For mainline I-70 AADT, a one percent annual growth rate was assigned based on historical trends from MoDOT data.

The increase in projected AADT over the next 20 years will only further contribute to the existing and observed traffic congestion along the I-70 corridor. The project is aimed at alleviating both the existing and projected congestion within the study area as well as equipping the I-70 facility with the proper capacity and interchange configurations for the expected growth in surrounding areas.

3.2 Highway Operations (Level of Service)

Using the existing year (2023) and forecasted (2030 and 2050) traffic volumes along I-70, operational analyses were completed to determine the ability of the existing I-70 facility to serve the corridor's travel demands. The analysis was performed using the basic freeway section methodologies from the

¹ The project's ultimate traffic condition.



Highway Capacity Manual. The analysis calculates a level of service (LOS) for freeway sections based upon hourly volumes, percent of heavy vehicles in the vehicle mix, and the freeway section attributes.

Along with the volume of traffic and the number of lanes on a roadway, the roadway terrain also impacts how well traffic flows. Changing grades can cause average truck speeds to be substantially reduced as compared to passenger car and light truck traffic. The reduced speeds result in trucks taking up a larger percentage of the available roadway capacity.

A brief description of the LOS categories is as follows:

- LOS A – uninterrupted traffic flow, lower volumes, and higher travel speeds.
- LOS B – stable traffic flow, increasing traffic and reduced travel speeds due to congestion.
- LOS C – stable flow, increasing traffic, travel speeds and maneuverability restricted by higher volumes.
- LOS D – approaching unstable flow, tolerable travel speeds although considerably affected by changes in operating conditions.
- LOS E – unstable flow, with possible stopped conditions, lower operating speeds than level of service D, volume approaching capacity of the roadway.
- LOS F – unstable flow, with speeds at low or stopped condition for varying times caused by congestion when downstream traffic volumes are at or over the roadway capacity.

As seen in **Tables 3.2** and **3.3** below, I-70 currently has capacity issues, with two eastbound segments operating at LOS E in the 2023 PM period. As volumes are forecasted into 2030 and 2050, more segments feature drops in LOS and two segments drop to LOS F. As more LOS E and F conditions occur, less usable gaps for traffic maneuvers are available in the traffic stream and traffic disruptions can cause queuing.

Table 3.2 Eastbound I-70 Freeway Capacity of No-Build vs Build

I-70 Eastbound	2023				2030				2050			
	No-Build		Build		No-Build		Build		No-Build		Build	
	LOS		LOS		LOS		LOS		LOS		LOS	
Segment	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Mainline - Between Rt Z/Rangeline Rd On Ramp and Rts DD/J Off Ramp	B	D	A	C	B	E	A	C	B	F	B	C
Ramp - Off Ramp to Rts DD/J	B	E	B	C	B	E	B	C	C	F	B	C
Mainline - Between Rts DD/J Ramps	B	D	A	B	B	D	A	C	B	E	A	C
Ramp - On Ramp from Rts DD/J	B	D	A	B	B	D	B	C	B	D	B	C
Mainline - Between On Ramp from Rts DD/J and Off Ramp to Rts M/HH	B	D	A	C	B	D	A	C	B	E	A	C
Ramp - Off Ramp to Rts M/HH	B	E	B	C	B	E	B	C	C	E	B	C
Mainline - Between Rts M/HH Ramps	B	D	A	B	B	D	A	C	B	D	A	C
Ramp - On Ramp from Rts M/HH	B	D	A	B	B	D	B	C	B	D	B	C
Mainline - Between On Ramp from Rts M/HH and US 54 Off Ramp	B	D	A	B	B	D	A	C	B	E	A	C


Table 3.3 Westbound I-70 Freeway Capacity of No-Build vs Build

I-70 Westbound	2023				2030				2050			
	LOS				LOS				LOS			
	No-Build		Build		No-Build		Build		No-Build		Build	
Segment	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Mainline - Between On Ramp US 54 and Rts M/HH Off Ramp	B	C	A	B	B	C	A	B	B	C	A	B
Ramp - Off Ramp to Rts M/HH	B	C	B	B	B	C	B	B	C	D	B	C
Mainline - Between Rts M/HH Ramps	B	C	A	B	B	C	A	B	B	C	A	B
Ramp - On Ramp from Rts M/HH	B	C	B	B	B	C	B	B	B	C	B	B
Mainline - Between On Ramp from Rts M/HH and Off Ramp to Rts DD/J	B	C	A	B	B	C	A	B	B	C	B	B
Ramp - Off Ramp to Rts DD/J	B	C	B	B	B	C	B	B	C	D	B	C
Mainline - Between Rts DD/J Ramps	B	C	A	B	B	C	A	B	B	C	A	B
Ramp - On Ramp from Rts DD/J	B	C	B	B	B	C	B	B	C	D	B	B
Mainline - Between Rts DD/J On Ramp and Rt Z/Rangeline Rd Off Ramp	B	C	A	B	B	C	A	B	C	D	B	B

The Build scenario, reflecting a condition in which widening improvements are implemented, features the same or better LOS values throughout all eastbound and westbound I-70 segments. Incorporating a third lane into the network allows traffic to operate under its capacity, with all I-70 segments of all analysis periods operating at LOS C or better. Under LOS C conditions, traffic operates near free flow speed (FFS) and gaps for traffic maneuvers are available. As additional capacity is added to other segments along I-70, maintaining continuity through SIU 5 is beneficial to gain corridor wide safety and operational improvement.

3.3 Intersection Operations

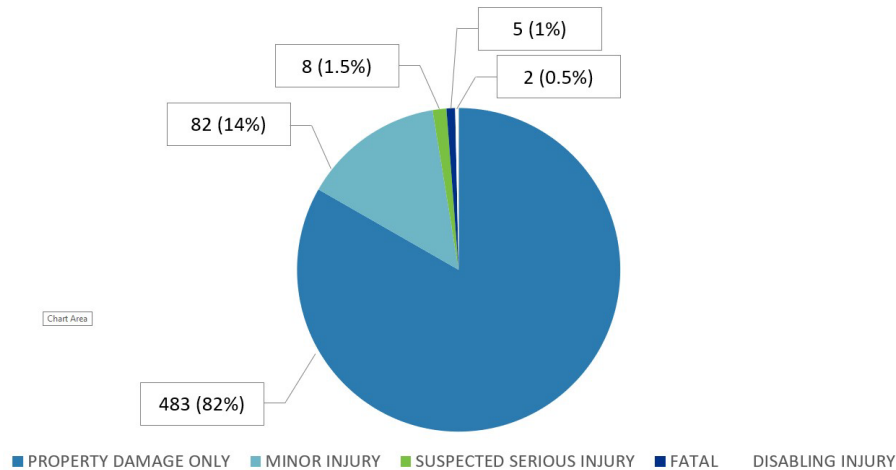
LOS calculations were also conducted for the ramp terminal intersections and outer road intersections at the two studied interchanges (See Appendix B for details). All study intersections are forecasted to operate at LOS A overall through 2050 in both the No-Build and Build scenarios. This finding indicates that future capacity concerns are expected to relate to the mainline, not interchanges.



3.4 Historic Crash Trends

This re-evaluation analyzed crash records for the five-year period between 2017 and 2021. A total of 580 crashes occurred along I-70, in SIU 5 during the study period. Of those crashes, 278 occurred on I-70 eastbound and 275 occurred on I-70 westbound. A crash rate of 61.5 collisions per 100 million vehicle miles traveled was calculated along the 13.5-mile segment, **which is less than the Missouri statewide average**. A breakdown of the total crashes and crash severities is shown in **Figure 3.1** below.

Figure 3.1 I-70 Crashes by Severity Rating



Analyzing crash types and attributes throughout a corridor can point to safety issues and help in identifying potential opportunities for mitigation or countermeasures. The top three crash types along the corridor are out of control, rear end, and passing. The following graphics are called heat map which are a tool to show higher concentrations of collisions (or collision conditions/type) occurring in a similar vicinity along a corridor. Areas in the map depicted in yellow or red show locations with larger clusters of crashes (hot spots) whereas blue color reflects the locations with a lower number of collisions occurring. These types of crashes can be associated with congestion, sudden unexpected speed differential, or vehicles attempting to pass. These crash types and prominent locations for these crashes are discussed below:

- Out of control collisions make up 49 percent of all collisions, with a total of 282 occurring throughout the study period. This crash type occurs when drivers overcorrect or swerve to avoid other cars. When combined with wet road conditions, these maneuvers create exposure for collisions as drivers struggle to regain control.
- Rear end collisions make up 16 percent of collisions throughout the corridor and can occur from stopping and starting along congested segments of roadway. **Figure 3.2** below shows a heat map of the rear end collisions throughout SIU 5. Rear end crashes are concentrated west of the interchanges at Route J/DD and Route M/HH. The proximity to the interchanges indicates that cars are struggling to change speeds while merging and diverging with traffic on I-70.



Figure 3.2 Rear End Collisions Along SIU 5

- Roughly 50 percent of collisions are classified as off roadway collisions, indicating drivers struggling to regain control of their vehicle and ultimately leaving the travel way. **Figure 3.3** below shows a heat map with locations of off roadway collisions along SIU 5. As shown, off roadway collisions are concentrated at the curve approximately one mile west of Route J/DD and the curve 1.5 miles west of US 54.



Figure 3.3 Off-roadway Collisions

- A total of 217 collisions occurred in dark conditions, which accounts for over one third of collisions throughout the study area. As seen in **Figure 3.4** below, a large portion of the collisions in dark conditions occur on the west side of the corridor, with crashes concentrated around mile point 136.6.

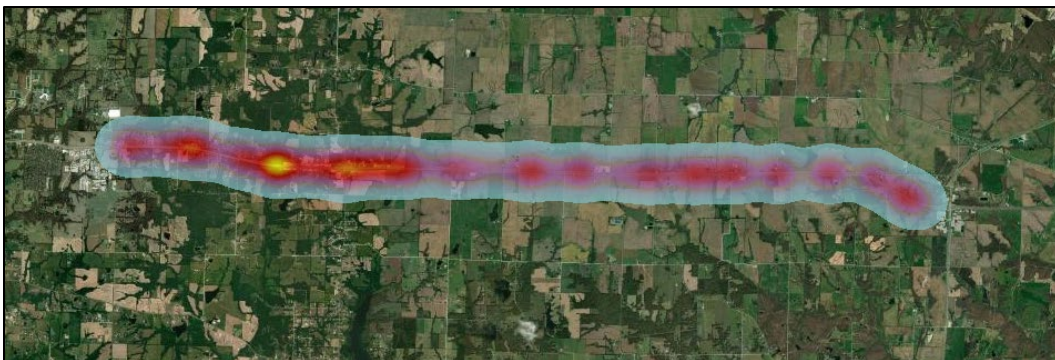


Figure 3.4 Collisions Occurring Under Dark Conditions



- As demonstrated in the heat maps, the one-mile segment around Cedar Creek west of Route J/DD represents a common hotspot for vehicle collisions both on- and off-roadway. In addition, this location is a hotspot for Wildlife-Vehicle Collisions (WVCs) with 15 reported WVC/year from 2012-2021. WVCs can be anywhere from 2-9x underreported and pose a significant risk of injury to both motorists and wildlife.

As noted previously, this segment of I-70 has a lower crash rate than similar highways in Missouri. MoDOT's recent Road Safety Audit documented known collision locations, including WVCs, and driver concerns, along with potential safety implementations throughout the study area. Findings from this audit aligned with historic crash trends. Roadway deficiencies involving geometric and safety concerns will be addressed by using the agreed upon design guidance for the Preferred Alternative to the extent practical. The preferred alternative will provide wider shoulders (10' inside, 12' outside), enhanced ramp merge and diverge distances, improved clear zone and roadside protection, current superelevation rates and vertical curve design criteria, and increased sight distance at ramps. The additional lane on I-70 will better accommodate truck traffic and allow passing opportunities on grades.

3.5 Design Elements

For the 2004 Approved CE, MoDOT adopted minimum design criteria. For the purposes of this re-evaluation, the design criteria for I-70 will follow MoDOT's Engineering Policy Guide (EPG) and provisions of the American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highway and Streets, 2018, 7th Edition, and a Policy on Design Standards - Interstate System, 2016, where possible.

Wherever possible, using the agreed upon design guidance, the proposed design improvements will address geometric and safety concerns to the extent practical. These design elements could include wider shoulders, improved interchange performance, improved vertical alignment, superelevation rates, clear zone distance, and improved site distances.



4.0 Preferred Alternative

The Second Tier Approved CE to be re-evaluated was completed in 2004 and refined the selected alternative presented in the First Tier EIS completed in 2001. For the purposes of alternatives evaluation in the First Tier and Second Tier studies, SIU 5 was segmented into three subsections separated by the two interchanges (MO J/DD and MO M/HH). The First Tier EIS recommended a selected alternative that widened I-70 to the north throughout all three subsections. Evaluation of preliminary data during the Second Tier Approved CE supported recommendations for roadway Subsections 1 and 3 from the First Tier EIS. However, the analysis for roadway Subsection 2 supported widening to the south rather than to the north as previously recommended. The Second Tier Approved CE Preferred Alternative included an additional lane in each direction, the replacement of all existing interchanges and overpasses, access management where appropriate, and frontage roads on both sides of I-70 with the exception of an area on the south side of I-70 along Tucker Prairie.

As part of this re-evaluation, the selected alternative from the 2004 Second Tier Approved CE was analyzed for the purpose of determining if the design still the best solution for the project. Design concepts considered for main lanes and interchanges within SIU 5 are presented in this section. Design criteria developed for SIU 5 was created using MoDOT's EPG and AASHTO's A Policy on Geometric Design of Highways and Streets, 7th Edition (2018). Practical design was used with an appropriate footprint to allow some future design flexibility.

Three concepts were developed for adding a through lane to I-70 in each direction. These concepts included the following:

- Selected Alternative from the 2004 Second Tier Approved CE
- Widen to the inside of the existing lanes on I-70
- Widen to the outside of the existing lanes on I-70

Using a weighted matrix with ten agreed-upon factors, Design Workshop #1, held November 7, 2023 with participants from MoDOT's project team, identified the preferred mainline alternative as the "Widen to Inside Alternative". This decision provided the Conceptual Study Report (CSR) team with guidance on the development of the interchange alternatives. The CSR includes design schematics and further information on the alternatives analysis and is attached in **Appendix B**.

For the interchange at Route J, three interchange alternatives were developed (Diamond, Folded Diamond, and Roundabouts). For the interchange at Route M, two interchange alternatives were developed (Diamond and Roundabouts). During Design Workshop #2, held December 12, 2023, a new interchange alternative called the "Minimal Build Alternative" was suggested for both the Route J and Route M interchanges. During the workshop the group defined the new interchange alternative as follows:

- The Minimal Build Alternative at the Route J interchange would closely match the existing interchange and ramp configuration and would require a design exception due to ramp intersection distance. Outer roads would not be improved.
- The Minimal Build Alternative at the Route M interchange would closely match the existing interchange and ramp configuration and would require a design exception due to ramp



intersection distance. The north outer roads would be improved/realigned, although not to current standard intersection offset, while the south outer roads would not be improved.

Using a weighted matrix with ten agreed-upon factors, the preferred interchange alternative was identified as the Minimal Build Alternative for both the Route J and Route M interchanges.

The Preferred Alternative identified in the current re-evaluation of SIU 5 would widen I-70 to the inside of the existing lanes and make only minimal interchange improvements. A detailed exhibit of the Preferred Alternative is provided in **Appendix C**.

The Preferred Alternative for this SIU 5 re-evaluation differs from the selected alternative from the 2004 Second Tier Approved CE for SIU 5. The Preferred Alternative, as described above, would result in substantially fewer impacts and less cost compared to the 2004 recommended alternative. The Preferred Alternative for this SIU 5 re-evaluation would not include any improvements, relocations, or additional frontage roads adjacent to I-70. For this analysis, continuous frontage roads were not considered. There are locations along SIU 5 where frontage roads have gaps currently; however, these sections will remain with gaps in the Preferred Alternative and may be covered in an additional project if necessary.

In February 2024 MoDOT awarded JST0021, a design-build contract to expand I-70 to 6-lanes from Columbia to Kingdom City. As part of that contract, the typical section of I-70 will be built with a 12' outside shoulder, 3 – 12' lanes, and a 5' inside shoulder. The narrowed template allows for the construction to stay entirely within the existing I-70 pavement bounds, and greatly reduces the impact to surrounding land and the environment in SIU 5. No environmental resource impacts are anticipated due to the change in template. Engineering consequences related to the change in expected safety impact of the 5' inside shoulder versus the preferred 10' inside shoulder are being evaluated and documented by the design-builder as they prepare for construction. These impacts are anticipated to be slight increases in predicted crash numbers relative to the preferred alternative.

Revisions to the configuration of the Preferred Alternative identified in this re-evaluation document may occur during project delivery. Any modifications to the Preferred Alternative, and their related impacts, would need to be assessed for consistency with the findings of this re-evaluation document. Assuming that any modifications are consistent with the findings of this re-evaluation document, this re-evaluation document will remain valid.



5.0 Public and Agency Coordination

MoDOT hosted a total of seven kick-off public information meetings for the Improve I-70 Program between August 28 and September 7, 2023. Approximately 600 people attended these meetings across the state, leaving approximately 200 comments both online and in-person. 197 comments were received online, and 79 comments were written from the public information meetings. The closest public meeting to SIU 5 was held in-person in Columbia, MO, on September 6, 2023. Of the seven public meetings, this meeting had the largest number of attendees. Additional public meetings will be held in Spring 2024. The public information meeting summaries are attached in **Appendix D**.

On September 13, 2023, notices were sent to local, state, and federal agencies describing the proposed actions and seeking comments relative to the interests of each agency. Comments were requested by October 25, 2023. The Missouri State Historic Preservation Office (SHPO) responded on October 4, 2023, that they have no comments at this time. The Missouri Federal Assistance Clearinghouse responded on September 26, 2023, that none of the agencies involved in the review had comments or recommendations at this time. The Missouri Department of Natural Resources responded on October 5, 2023, and provided information on a number of natural resources throughout the study area.

Agency Coordination materials are included in **Appendix E**. The Section 106 Programmatic Agreement was fully executed on August 29, 2023, and is included in **Appendix F**.



6.0 Resource Impact Evaluation

Environmental Re-Evaluation/Consultation Form (NEPA)

6.1 23 CFR 771.129

Missouri Department of Transportation/Federal Highway Administration

REGION Missouri Division	STATE PROJECT NO. ST0021	I-70 SIU 5, Documented CE
DATE APPROVED	FEDERAL AID NO.	

REASON FOR CONSULTATION:

FHWA and MoDOT's Engineering Policy Guide require a re-evaluation to comply with NEPA (23 Code of Federal Regulations [CFR] 771.129) and associated laws due the amount of time since the 2004 CE was approved.

**WILL THE TIME LAPSE OR MODIFIED ALIGNMENT CHANGE THE IMPACTS TO THE FOLLOWING:****1) LAND USE**YES ☐ NO ☒More Impacts ☐ Same ☒ Fewer Impacts ☐

Development in the area between the 2004 Second Tier Approved CE and this re-evaluation has generally stayed the same. The SIU 5 study area is east of the urban center of Columbia, Missouri. The majority of land surrounding SIU 5 is rural in character with commercial/residential areas near the western extent and agricultural land uses near the eastern extent. Undeveloped land is common throughout the corridor. Commercial land uses are concentrated at the interchange with State Road J in Lindberg but can also be found sparingly throughout the rest of the corridor. Commercial uses consist of farming equipment suppliers, construction contractors, storage facilities, antique retail stores, and auto dealers that focus on trucks and RVs. Residential development in the area generally consists of small single-family housing with some mobile home development along I-70 frontage roads.

SIU 5 Corridor – 2004 Second Tier Approved CE

Within the study area, only Boone County had adopted land use planning or zoning regulations at the time Second Tier Approved CE was published. The proposed improvements were not expected to cause substantial amounts of growth in the region or study area and would be consistent with Boone County's Master Plan (adopted 1996). Individual parcels would have been affected by the Selected Alternative due to necessary right-of-way acquisition, however the overall use of the lands adjacent to the corridor were not expected to change. The existing lack of infrastructure in the corridor was considered a limiting factor in the potential for future commercial, industrial, and higher density uses.

SIU 5 Corridor – Re-Evaluation

Since the 2004 Second Tier Approved CE, no significant developments have occurred along the corridor. At the time of this re-evaluation, Boone County is in the process of developing a new 2024 Master Plan. It is expected that the proposed improvements would be consistent with the transportation and mobility goals presented in this plan as I-70 is included in MoDOT's STIP. Additionally, as there is less right-of-way acquisition required due to minimal build strategies in the Preferred Alternative, fewer individual parcels would be affected. Refer to Section 3 – Right-of-Way Acquisition and Displacements for more information.



2) PRIME AND UNIQUE FARMLAND

YES ☒ NO ☐More Impacts ☐ Same ☐ Fewer Impacts ☒

The landscape cover in Boone and Callaway Counties within the SIU 5 corridor predominately consists of agricultural uses. The utilization of existing farmland for the proposed improvements would convert agricultural land to non-agricultural purposes, resulting in a loss of prime farmland and a reduction in agricultural production and income. Prime farmland is defined as land best suited to producing food, feed, forage and fiber and oilseed crop and is available for these uses.

Prime farmland impacts were analyzed by the Natural Resources Conservation Service (NRCS) for both studies. Coordination with the NRCS was conducted pursuant to the Farmland Protection Policy Act of 1981 (FPPA). Requests for an evaluation were submitted to the NRCS on the Farmland Conversion Impact Rating, Form AD-1006. According to the FPPA, sites receiving low Farmland Conversion Impact Rating scores are least suitable for protection. Sites that receive a total score of 160 or less are given a minimal level of consideration for protection and no additional sites need to be evaluated.

SIU 5 Corridor – 2004 Second Tier Approved CE

NRCS classified approximately 357,631 acres of land in Boone County and 393,425 acres of land in Callaway County as prime farmland. Within the study area, approximately 59.6 acres and 391.3 acres of prime farmland were anticipated to be impacted across Boone County and Callaway County, respectively. In Boone County, acres impacted account for 0.017 percent of the total agricultural land in the county. In Callaway County, the acres impacted account for 0.10 percent of the total. Neither county reported a Farmland Conversion Impact Rating of higher than 160. Therefore, no additional sites needed to be evaluated.

SIU 5 Corridor – Re-Evaluation

As proposed right-of-way would only be required within Callaway County, NRCS returned classifications according to Callaway County. Approximately 392,871 acres within Callaway County are considered farmland according to NRCS. The Preferred Alternative would directly convert 26.2 acres of farmland of statewide/local importance, or 0.005 percent of the county's total agricultural land. The project would not impact any prime farmland. The Farmland Conversion Impact Rating was determined to be below 160, therefore no additional alternatives require further evaluation. Refer to the completed Form AD-1006 in **Appendix G**.



3) RIGHT-OF-WAY ACQUISITION AND DISPLACEMENTS

YES ☒ NO ☐More Impacts ☐ Same ☐ Fewer Impacts ☒SIU 5 Corridor – 2004 Second Tier Approved CE

The 2004 Second Tier Approved CE identified 439.6 acres of right-of-way impacts along the entire SIU 5 corridor, amounting to 21 total parcel acquisitions and 71 partial parcel acquisitions. There were 14 residential displacements and 16 business displacements for the Selected Alternative.

SIU 5 Corridor – Re-Evaluation

This Re-evaluation identified 26.35 acres of right-of-way impacts along the entire SIU 5 corridor, amounting to 18 partial parcel acquisitions. The Preferred Alternative presented in this re-evaluation would reduce the anticipated right-of-way impacts by approximately 413.3 total acres. The breakdown of these impacts are as follows:

- Residential impacts include 0.6 acre.
- Commercial impacts include 1.10 acres.
- Industrial impacts include 0.34 acre.
- Agricultural (wooded/vacant) impacts include 24.31 acres.

During the re-evaluation, the selection of a Preferred Alternative that widens I-70 towards the inside lanes rather than outward has allowed the project to minimize the number of required displacements. New right-of-way for the Preferred Alternative will be required exclusively at interchange locations. One residence at the western terminus of the M/HH bypass will require relocation due to a loss of access from the implementation of proposed frontage roads.



4a) COMMUNITY IMPACTS—ECONOMIC GROWTH AND DEVELOPMENT

YES ☒ NO ☐More Impacts ☐ Same ☐ Fewer Impacts ☒

The SIU 5 study area is primarily rural with limited development. Development in the area between the 2004 Second Tier Approved CE and this re-evaluation has generally stayed the same. Businesses include farming equipment suppliers, construction contractors, and some auto dealers that focus on trucks and recreational vehicles. In addition, there are a couple of storage facilities and antique retail stores. No major employment generators are located in the study area; however, concentrations of businesses and employment centers are located nearby in Columbia and Kingdom City.

SIU 5 Corridor – 2004 Second Tier Approved CE

The 2004 Second Tier Approved CE identified that no major employers in the corridor would be displaced and no significant job losses would occur. Based on the 16 businesses that would be displaced, it was estimated that between 80 and 120 jobs would be directly impacted. Employment generated by the construction of the project would be a direct impact from construction of the proposed facility. Construction employment and payroll would also generate induced impacts as a result of payroll dollars being spent.

The 2004 Second Tier Approved CE identified that the acquisition of land and improvements for right-of-way associated with highway improvements would result in the direct loss of property that is subject to property taxes by local taxing districts. The reduction of assessed valuation as a result of the proposed improvements in the 2004 Second Tier Approved CE was approximately 0.002 percent in Boone County and 0.021 percent in Callaway County. As such, the reduction in assessed valuation was determined to be minimal in each county.

SIU 5 Corridor – Re-Evaluation

During this re-evaluation, the selection of a Preferred Alternative widening I-70 towards the inside lanes rather than outward has allowed the project to reduce the number of required displacements. As a result, no business displacements would occur that result in job losses, which is a reduced impact from the 2004 Second Tier Approved CE. New right-of-way for the SIU 5 re-evaluation Preferred Alternative is less than that of the 2004 CE. Because the new right-of-way required has been reduced, the tax implications from acquisition would also be reduced and are expected to be minimal.



4b) COMMUNITY IMPACTS—ENVIRONMENTAL JUSTICE

YES [] NO [X]

More Impacts [] Same [X] Fewer Impacts []

Executive Order (EO) 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, mandates some federal-executive agencies to consider environmental justice as part of the NEPA analysis by identifying and addressing disproportionately high and adverse human health or environmental effects on minority and low-income populations.

EO 14096 – “Revitalizing Our Nation’s Commitment to Environmental Justice for All” was enacted on April 21, 2023. EO 14096 on environmental justice does not rescind EO 12898, which has been in effect since February 11, 1994, and is currently implemented through DOT Order 5610.2C. This implementation will continue until further guidance is provided regarding the implementation of the new EO 14096 on environmental justice.

SIU 5 Corridor – 2004 Second Tier Approved CE

The 2004 Second Tier Approved CE determined that the minority population in the SIU 5 study area was lower than that of Boone and Callaway Counties and the state of Missouri. Block groups in the study area had higher average incomes and a lower proportion of persons below poverty level compared to both Boone and Callaway Counties. None of the 14 residential displacements were in a concentrated area. The 2004 Second Tier Approved CE determined that the proposed action would not have disproportionate adverse impacts on minority and/or low-income populations as defined by EO 12898 and Federal Highway Administration (FHWA) Order 6640.23.

SIU 5 Corridor – Re-Evaluation

The SIU 5 study area has a smaller proportion of minority and low-income populations than Missouri, Boone County, and Callaway County. The study area has a smaller proportion of limited English proficiency population (LEP) than Missouri and Boone County but is slightly higher than Callaway County.

Approximately 4.4 percent of individuals living in the study area are minorities. This is lower than in Missouri (21.8 percent), Boone County (22.0 percent), and Callaway County (10.6 percent). There are three block groups within the study area with a higher percentage minority population than the study area, Census Tract (CT) 16.02, Block Group (BG) 1 at 5.9 percent, CT 16.02, BG 3 at 5.7 percent, and CT 701, BG 2 at 11.9 percent.

Approximately 5.9 percent of the individuals living in the study area are low-income. This is lower than in Missouri (8.5 percent), Boone County (6.5 percent), and Callaway County (9.2 percent). There are two BGs within the study area with a higher percentage low-income population than the study area, CT 701, BG 3 at 13.0 percent and CT 705, BG 4 at 16.8 percent.

Approximately 0.15 percent of individuals living in the study area have LEP. This is lower than the percent in Missouri (0.86 percent) and Boone County (0.96 percent) and higher than Callaway County (0.11 percent). There is one individual block group within the study area with a higher percent of LEP population than the study area average, CT 701, BG 3 at 1.4 percent.

The re-evaluation Preferred Alternative would require one residential acquisition, which is less than that of the 2004 Second Tier Approved CE. No business relocations would be required that could



burden minority ownership as compared to non-minority owned businesses. No minority or low-income populations would be adversely or disproportionately affected by the proposed project. Therefore, in accordance with EO 12898 and FHWA Order 6640.23, no further environmental justice analysis is required. This is consistent with the findings of the 2004 Second Tier Approved CE.

4c) COMMUNITY IMPACTS—COMMUNITY COHESION

YES ☐ NO ☒

More Impacts ☐ Same ☒ Fewer Impacts ☐

The study area is rural in nature with only one small township along I-70, Lindbergh, Missouri. Due to the rural nature of the corridor, community facilities are generally located outside of the SIU 5 study area. The Victory Baptist Church is located in the study area, just east of Route Z.

SIU 5 Corridor – 2004 Second Tier Approved CE

The 2004 Second Tier Approved CE determined that the proposed project would not affect the use of community facilities and would not physically divide or disrupt neighborhoods. There would be no impact to community cohesion.

SIU 5 Corridor – Re-Evaluation

The re-evaluation Preferred Alternative would not require the relocation of, or disrupt access to, any community facilities. One residential displacement would occur; however, it would not physically divide or disrupt any neighborhoods. Because the proposed project would not affect the use of community facilities, and would not physically divide or disrupt neighborhoods, there would be no impact to community cohesion. This is consistent with the findings of the 2004 Second Tier Approved CE.



5) WETLANDS AND WATERS OF THE U.S.

YES ☒ NO ☐More Impacts ☐ Same ☐ Fewer Impacts ☒

The U.S. Army Corps of Engineers (USACE) is the primary regulatory agency for wetlands, in accordance with the Clean Water Act (CWA), the determination of wetlands in active agricultural lands is deferred to the NRCS in accordance with the Food Security (Swampbuster) Act. Areas that retain wetland conditions most years, but which may not normally support wetland vegetation because they are farmed are designated farmed wetlands and are regulated under the CWA.

Public online databases and field reconnaissance were used to identify wetlands and streams in the study area for both evaluations. All streams within SIU 5 flow to the south into the Missouri River except for the tributaries of Manacle Creek which drain to the north. There are no traditional navigable waters within the study area. No Wetland Reserve Program areas are located in the study area.

SIU 5 Corridor – 2004 Second Tier Approved CE

Wetland features in the study area consisted of palustrine forested (PFO) wetlands, palustrine emergent (PEM) wetlands, and farmed wetlands (FW). Linear features in the study area consisted of intermittent and perennial streams. Several ponds were also identified throughout the study area. Most upland ponds were either historical livestock ponds or recreational fishing ponds. The USFWS National Wetland Inventory designated palustrine “unconsolidated bottom” (PUB) system ponds in the study area were identified through aerial review and site reconnaissance as sewage treatment ponds.

The potential project-related impacts due to the 2004 Approved CE selected alternative consisted of the following:

- 4.85 acres of total impacts to wetlands, including 3.27 acres of PEM wetlands and 1.58 acres of PFO wetlands
- 4,968 linear feet (LF) of total impacts to streams
- 2.38 acres of total impacts to open waters (ponds)

Impacts to water features were not categorized by permanent or temporary effect during this evaluation.

SIU 5 Corridor – Re-Evaluation

Wetland impacts were reduced by approximately 4.42 acres from the previous study. The total stream impacts reflect an increase of 1,133 LF from the previous study, though this is due to differences in the analysis methodologies. The 2004 Approved CE only reported impacts to potentially jurisdictional features, whereas this re-evaluation reports impacts to all features, regardless of determination, as a comprehensive and conservative approach. Following concurrence with USACE on jurisdictional determinations of water features, it is expected that the total impact to streams will likely be reduced for the Preferred Alternative when compared to the 2004 Approved CE.



Wetland and stream pedestrian surveys occurred October 16 to 19, 2023. Permanent impacts to water features were considered any area within the limits of construction (LOC) for the project, while temporary impacts to water features were considered any area between the LOC and the ultimate right-of-way for the project. Any staging areas incorporated into the project during final design would need to be considered as temporary impact areas.

The delineation identified 18 PEM wetlands, five palustrine shrub-scrub (PSS) wetlands, and four PFO wetlands. The potential project-related impacts to wetlands due to the Preferred Alternative are 0.43 acres and consist of the following:

- 0.12 acre of permanent impact and 0.22 acre of temporary impact to PEM wetlands.
- 0.04 acre of permanent impact and 0.05 acre of temporary impact to PSS wetlands.
- 0.003 acre of temporary impact to PFO wetlands.

The delineation also identified 37 streams in the study area, with impacts to 16 stream crossings. The potential project-related impacts to streams due to the Preferred Alternative total to 6,101 LF and consist of the following:

- 2,056 LF of permanent stream impacts
- 4,045 LF of temporary stream impacts

Twenty-two open water features including small ponds were identified in the study area, totaling 2.95 acres. Neither permanent nor temporary impacts are anticipated to occur to open water features resulting from the proposed improvements.

The Waters of the U.S. (WOUS) Delineation report can be found in **Appendix H**. Jurisdictional opinions were based on the Supreme Court decision *Sackett v. Environmental Protection Agency* and have not been validated by USACE. The findings of this report are not valid without written concurrence from the USACE Regulatory Branch, which is still being coordinated at the time of this re-evaluation.



6) FLOODPLAINS

YES ☒ NO ☐More Impacts ☐ Same ☐ Fewer Impacts ☒

Within the study area there are Federal Emergency Management Agency (FEMA) floodplains along Little Cedar Creek, Cedar Creek, Tributary to Manacle Creek, and Sallees Branch of Richland Creek. Cedar Creek is the largest floodplain area in the corridor and is also the boundary between Boone and Callaway Counties. No floodways were identified in the SIU 5 corridor.

SIU 5 Corridor – 2004 Second Tier Approved CE

The potential project-related impacts to the 100-year floodplain due to the Selected Alternative were 12.6 acres and consisted of the following:

- 0.8 acre of impact within the Little Cedar Creek 100-year floodplain.
- 7.9 acres of impact within the Cedar Creek 100-year floodplain.
- 2.4 acres of impact within the Tributary I to Manacle Creek 100-year floodplain.
- 1.5 acres of impact within the Sallees Branch of Richland Creek 100-year floodplain.

Based on the alternative identified, the small amount of impacted undeveloped floodplain area, and the measures to minimize harm, the proposed improvements were not expected to have significant impacts on natural and beneficial floodplain values.

SIU 5 Corridor – Re-Evaluation

The potential project-related impacts to the 100-year floodplain are 2.3 acres, representing a total decrease of 10.3 acres of impact when compared to the 2004 Second Tier Approved CE. It is possible that these impacts will be reduced during more detailed design. Total floodplain impacts can be itemized as follows:

- 1.1 acres of impact within the Little Cedar Creek 100-year floodplain.
- 1.1 acres of impact within the Cedar Creek 100-year floodplain.
- 0.1 acre of impact within the Tributary I to Manacle Creek 100-year floodplain.

Crossings would be designed to be consistent with the state emergency management agency's floodplain management goals and objectives. Additional fill and structures would be designed so as not to increase flood elevations and to avoid interruption to public transportation due to flood damage to the roadway or structures. Similar to the 2004 Second Tier Approved CE, the proposed improvements are not expected to have significant impacts to floodplains along the corridor. Refer to the floodplains technical memorandum in **Appendix I**.



7) AIR QUALITY

YES [] NO [X]

More Impacts [] Same [X] Fewer Impacts []

SIU 5 Corridor – 2004 Second Tier Approved CE

The project fell within the Northern Missouri Intrastate Air Quality Control Region (AQCR) #137. This AQCR has a designation of better than national standards for PM₁₀ and SO₂, unclassifiable/attainment for CO, attainment for ozone, cannot be classified or better than national standards for NO₂, and no designation for Pb. The Missouri STIP does not contain any transportation measures for this AQCR.

This evaluation used a qualitative approach to the air quality analysis for SIU 5. It was concluded that because there are no controlled intersections with congestion along this section of the corridor, it is exceedingly unlikely that, in the presence of free flow I-70 traffic, a detailed air quality analysis would project a violation. Additionally, the project was not located in an air quality non-attainment area, therefore a detailed analysis was not required.

SIU 5 Corridor – Re-Evaluation

This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxic (MSAT) concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause a meaningful increase in MSAT impacts of the project from that of the No-Build Alternative.

Moreover, Environmental Protection Agency (EPA) regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES3 model forecasts a combined reduction of over 76 percent in the total annual emissions rate for the priority MSAT from 2020 to 2060 while vehicle-miles of travel are projected to increase by 31 percent (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, January 18, 2023). This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.



8) NOISE

YES ☒ NO ☐More Impacts ☐ Same ☒ Fewer Impacts ☐

FHWA's Traffic Noise Model (TNM) was used to determine existing and proposed noise levels in the SIU 5 corridor under a no build and a build scenario for the selected alternatives in both studies. Where potential noise impacts were identified, noise abatement was considered and implemented if found both reasonable and feasible. When noise abatement measures are being considered, every reasonable effort is made to obtain substantial noise reductions. Slightly different criteria for reasonableness were applied to each study based on MoDOT's current, FHWA-approved noise policy at the time of analysis.

SIU 5 Corridor – 2004 Second Tier Approved CE

A noise screening was prepared for the SIU 5 corridor. Existing noise levels were observed to be fairly consistent throughout SIU 5. Not every residence was chosen to be a receptor; seven receptors were chosen to represent a broader area. The TNM analysis indicated that existing noise levels exceeded the noise abatement criteria (NAC) at every receptor. Analysis results for proposed noise levels indicated that the receptors would exceed the NAC criteria in the future, both under a build and no build scenario.

Using TNM, abatement measures were considered for each of the areas represented by the seven receptors. Based on the study completed, mitigation of noise impacts for the proposed project at the time of analysis did not meet all of MoDOT's definitions for reasonableness. According to FHWA and MoDOT guidance on noise abatement in 2004, feasibility and reasonableness factors included, but were not limited to:

- Noise wall must provide noise reduction of at least 5 A-weighted decibels (dBA) (benefitted receptors).
- Noise wall must provide attenuation for more than one receptor.
- Noise wall must be 18 feet (5.5 meters) or less in height above normal grade.
- Noise wall must not interfere with normal access to the property.
- Noise wall must not pose a traffic safety hazard.
- Noise wall must not exceed a cost of \$30,000 per receptor.

Therefore, no noise mitigation measures were further considered for the 2004 Selected Alternative.

SIU 5 Corridor – Re-Evaluation

A detailed noise study was performed for the SIU 5 corridor. The study evaluated increasing capacity from a four-lane facility to a six-lane facility by modeling the Preferred Alternative in TNM. A total of 78 receivers were distributed between four Noise Sensitive Areas (NSAs) and evaluated for noise impacts along the existing and proposed corridors. Of the total receivers, 59 had design-year sound level impacts.

Abatement measures were evaluated for feasibility. Feasibility requirements established by MoDOT include:



- Acoustic feasibility – minimum 5 dBA insertion loss for a minimum of two first-row, impacted receivers.
- Engineering feasibility – if physical/constructability constraints are too extreme (e.g. topography, access, drainage, safety, maintenance), a noise wall's height is limited to 20 feet.

Using TNM, abatement measures were also considered for appropriate groupings of receivers. Impacted receivers that were separated by long distances and not grouped in a community setting were not evaluated as they did not satisfy reasonableness criteria. According to MoDOT guidance on noise abatement, reasonableness factors include, but are not limited to:

- Viewpoints of owners and residents of the benefitted receptors will be obtained. These will usually be obtained by ballot through mailings or at a public forum.
- Noise abatement measures shall not exceed 1,300 square feet per benefitted receptor, in the case of noise walls. Where noise walls are not options, other noise abatement techniques may be considered, but cannot exceed \$46,000 per benefitted receptor.
- Noise abatement measures must provide a minimum reduction of 7 dBA for 100 percent of benefitted, first-row receptors.

Coordination with MoDOT led to the analysis of five noise barrier locations across three NSAs. None of the noise barriers were deemed both feasible and reasonable. Therefore, no noise mitigation measures were further considered for the Preferred Alternative. Refer to the detailed noise study attached in **Appendix J**.



9) THREATENED AND ENDANGERED SPECIES

YES [X] NO []

More Impacts [X] Same [] Fewer Impacts []

SIU 5 Corridor – 2004 Second Tier Approved CE

The evaluation of threatened and endangered species impacts for the 2004 Second Tier Approved CE included coordination with U.S. Fish and Wildlife Service (USFWS) and the Missouri Department of Conservation (MDC) as well as field investigations for individual species. The following species were identified as potentially occurring in the study area for SIU 5:

- Topeka shiner (*Notropis topeka*);
- Indiana bat (*Myotis sodalis*); and
- running buffalo clover (*Trifolium stoloniferum*).

Field investigations were performed for the Indiana bat and the Topeka shiner. Both descending banks and the riparian corridors south of the existing I-70 bridges over Little Cedar Creek and Cedar Creek were surveyed using straight-line transects throughout the riparian corridors and associated forested areas. It was determined that no impacts to high quality natural communities and threatened, endangered, and sensitive species would occur as a result of the proposed improvements, however commitments including further coordination between MoDOT, USFWS, and the MDC on bat protocol and running buffalo clover were anticipated to be necessary as the project progresses.

SIU 5 Corridor – Re-Evaluation

USFWS and MDC National Heritage Review (NHR) species lists were referenced during the re-evaluation to determine potential effects to protected species. A field site investigation was completed October 16 to 18, 2023, to identify potential suitable habitat for protected species. According to the USFWS Information for Planning and Consultation (IPaC) tool, the following federally and/or state-listed species were identified as potentially occurring in the study area for SIU 5:

- gray bat (*Myotis grisescens*);
- Indiana bat (*Myotis sodalis*);
- northern long-eared bat (*Myotis septentrionalis*);
- tricolored bat (*Perimyotis subflavus*); and
- monarch butterfly (*Danaus plexippus*).

According to USFWS, the project is located within critical habitat for the Indiana bat. Per guidance received from USFWS on January 5, 2021, conferencing for monarchs is not required unless MoDOT is receiving funding from the USFWS. Since that is not the case with this project, MoDOT will not make an effects determination for this species.

Acoustic surveys for bat presence were conducted from July 20 through August 4, 2023, at 11 sites within the study area. The acoustic auto-ID survey indicated potential Indiana and northern long-eared bat presence at two sites, tricolored bats at four sites, and gray bats at 11 sites. Visual vetting confirmed Indiana bat presence at both sites, but no calls consistent with northern long-eared bats



were identified. Additionally, tricolored and gray bats were confirmed at all 11 sites analyzed. Signs of bats were observed on the bridge over Cedar Creek.

Evidence of two migratory bird species, the barn swallow (*Hirundo rustica*) and the cliff swallow (*Petrochelidon pyrrhonota*), was present at several of the bridges and culverts in the study area. It is possible that any of the bridges or culverts could have cliff or barn swallow nests during any nesting season.

The project corridor has a total of 184 acres of forested areas (potential suitable bat habitat plus woodlands) within the SIU 5 study area. The potential suitable habitat is 146 acres. This acreage includes riparian habitat that would be considered suitable for foraging and travel for gray bat. The proposed improvements would impact approximately 5.2 acres of suitable bat habitat. With removal of this suitable habitat, it is expected that a determination of “may affect, but not likely to adversely affect” will be appropriate for gray bat, Indiana bat, and northern long-eared bat.

While the impact area of the project has decreased since the 2004 study, further investigations and updates in species listings and range has resulted in determinations of “may affect, but not likely to adversely affect” for three listed species whereas the 2004 Second Tier Approved CE determined no impact. Refer to the threatened and endangered species report and bat acoustic survey, located in **Appendix K**.



10) HISTORIC AND ARCHAEOLOGICAL SITES

YES [] NO [X]

More Impacts [] Same [X] Fewer Impacts []

The proposed action is considered a federal undertaking and is subject to compliance with federal regulations such as the National Historic Preservation Act (NHPA) and Section 106 of the NHPA due to the involvement of MoDOT.

SIU 5 Corridor – 2004 Second Tier Approved CE

Cultural resources evaluated and discussed include interstates and Interstate 70, architectural and bridge resources and archeological resources.

During the 2001 First Tier Study, discussions began with the Missouri State Historic Preservation Office (SHPO), within the Missouri Department of Natural Resources (MDNR), and the FHWA regarding the potential historic significance of I-70 in view of the National Historic Preservation Act of 1966 and its possible eligibility for the National Register of Historic Places (NRHP). The interstate system was approaching the 50-year-old threshold for consideration of eligibility, and as a result, the national interstate system was being studied by a national task force including representatives of the National Conference of State Historic Preservation Officers, the FHWA, select state Departments of Transportation, the Advisory Council on Historic Preservation (ACHP), the NRHP and other interested parties. The discussions within Missouri led to the development of a Memorandum of Understanding (MOU) that outlined a course of action to be followed with regard to I-70. The ACHP issued a Section 106 exemption for the Interstate Highway System on March 10, 2005, except for specific elements that were excluded from the exemption or previously determined to be eligible for listing on the NRHP. No elements in Missouri were included in the exemption.

A historic and architectural investigation was conducted to identify all historic, architectural, and bridge resources within the SIU 5 study area. The investigation provided an evaluation and assessment of identified properties as they related to their eligibility for listing on the NRHP. Following field investigations and application of the NRHP criteria, MoDOT concluded that none of the architectural resources in the area of potential effect (APE) possessed architectural and historical significance necessary to be eligible for listing as a historic property in the NRHP. Therefore, the proposed project was determined to have no effect on any significant architectural or historical resources listed on or eligible for listing on the NRHP and no additional investigations were necessary.

A Phase I archeological survey was conducted for the SIU 5 corridor. Four of the 15 total documented sites were believed to have the potential for intact subsurface deposits, and it was recommended that they be further investigated to determine their eligibility for listing on the NRHP. Because the proposed improvements were believed to potentially affect properties that may be included in or eligible for inclusion in the NRHP, a Programmatic Agreement was executed between ACHP, FHWA, SHPO, and MoDOT to outline assurances regarding further investigation of all four archeological sites prior to construction, as well as protocol for agency consultation and processing of collected materials.



SIU 5 Corridor – Re-Evaluation

Between the 2004 study and this re-evaluation, the previous PA has been superseded by a new PA, signed November 29, 2023, that applies to SIU 2, 3, 5, and 6. The Multi-SIU PA is attached in **Appendix F**.

A records review and cultural resources survey was conducted for SIU 5 from October 23 to November 11, 2023, and November 27 through December 9, 2023. An architectural survey was completed from October 16 to October 19, 2023. The surveys identified three new archeological sites, one precontact isolated find (IF), twelve site revisits, two site extensions of previously recorded sites, one cemetery, and 59 new architectural resources. Of the sites located within the limits of construction, the majority discovered and revisited were recommended not eligible for the NRHP. The remainder were unable to be assessed for NRHP eligibility due to a lack of access. Further work was recommended for portions of some sites outside of the APE. One resource in particular, a house located at 2951 County Road 247 outside Kingdom City designated as Architectural Resource (AR) 15, was identified as being eligible for the NRHP. MoDOT will follow the provisions of the Multi-SIU PA, specifically Stipulation IV, as access to properties is obtained, to ensure that properties without access are properly assessed for historic resources, and will consult with FHWA and SHPO regarding the NRHP eligibility of those properties.

FHWA and MoDOT have determined that the proposed project will have no adverse effect upon the dwelling designated as AR 15. AR 15 is eligible for listing in the NRHP under Criterion C: for architectural significance as a good example of a Colonial Revival house. MoDOT will continue consultation with FHWA and SHPO, per Stipulation VI of the Multi-SIU PA for any NRHP eligible properties identified, and to avoid or minimize any adverse effects. SHPO has been notified that concurrence with the determinations of "no historic properties adversely affected" will be used by FHWA in applying the de minimis impact criteria for Historic Sites in compliance with Section 4(f) (49 U.S.C. 303). Based upon the minimal use by the project on AR 15, FHWA has determined that the de minimis impact criteria has been met for this historic property.

It was concluded that, provided the recommendations are implemented for the minimization of effects, avoidance of previously recorded sites, cemeteries, un-revisited sites, and portions of revisited sites that are partially outside the limits of construction or within an inaccessible parcel, and/or cessation of ground-disturbing activities in the event of unanticipated post-Section 106 review discoveries, the project will have no adverse effect on cultural resources.



11) PUBLIC LANDS AND SECTION 4(f) AND 6(f)

YES ☐ NO ☒

More Impacts ☐ Same ☒ Fewer Impacts ☐

SIU 5 Corridor – 2004 Second Tier Approved CE

The Tucker Prairie Natural Area is located adjacent to I-70 east of Highway M. It is 145 acres of prairie owned by the University of Missouri-Columbia and open to the public. Tucker Prairie is classified as a Natural Area by the MDC and a National Natural Landmark by the U.S. Department of the Interior. Tucker Prairie was determined to be avoided entirely by the project.

Tucker Prairie was the only Section 4(f) property in the study area, however it was concluded that there would be no Section 4(f) uses. There are no Section 6(f) properties.

SIU 5 Corridor – Re-Evaluation

The Tucker Prairie Natural Area remains the only Section 4(f) property in the study area. Similar to the 2004 Second Tier Approved CE, there will be no Section 4(f) land uses.



12) HAZARDOUS WASTE SITES

YES ☒ NO ☐More Impacts ☐ Same ☒ Fewer Impacts ☐SIU 5 Corridor – 2004 Second Tier Approved CE

The identification of potential hazardous waste site locations was made through review of environmental regulatory databases and a windshield survey of the project corridor. Based on the information collected from the federal and state database searches, three underground storage tank (UST) sites were identified at the interchanges within the corridor.

Two UST sites were identified at the Route J/DD interchange, including Stuckey's Dairy Queen and a former Phillips 66 gas station. The Stuckey's Dairy Queen site is a UST and Leaking UST site located on the south side of the interchange, within 180 ft of the approximate right-of-way. Three tanks were removed at this site in March 2001, however contaminated soil was found. The site was under mitigation and being checked for groundwater contamination at the time of this second tier study. The former Phillips 66 gas station is located southwest of the interchange. According to MDNR, five USTs were removed from this site in 1977, but it may have operated with USTs following the removal.

One UST site was identified at the Route M/HH interchange and is described as an abandoned gas station known as Ratliff Towing. The site is located southwest of the M/HH interchange. One UST was removed from this location in 1995.

Two other sites were identified during the analysis as having the potential to impact the project. A-1 Auto Recyclers was located on the south side of I-70 and contained numerous scrap automobiles and therefore had the potential to generate waste fuels, solvents, oil/lubricants, and other materials generated from automotive operations. The Gygr Gas Plant #8 is a propane gas supplier and is located just east of the A-1 Auto Recyclers site. The site would have required relocation due to the project but was not listed as a hazardous waste generator.

The results of the evaluation concluded that each of the UST sites represents a potential source of contamination and has the potential to require remediation of contaminated soil or groundwater prior to construction and therefore represent impacts. It was recommended that further investigation of all three sites to determine the extent of contamination, if any, and estimated clean-up requirements and costs would need to be conducted prior to right-of-way acquisition.

SIU 5 Corridor – Re-Evaluation

An updated search of federal and state regulatory databases was conducted for the SIU 5. The three UST sites (Stuckey's Dairy Queen, the former Phillips 66 gas station, and Ratliff Towing) identified in the 2004 Second Tier Approved CE are still applicable to the re-evaluation of SIU 5 and still have the potential to affect the project, with some additional considerations.

Since the 2004 Second Tier Approved CE, the Stuckey's Dairy Queen site was closed in 2015 with a no further action required letter issued, contingent on several restrictive covenants regarding future land use planning. The site adjoins the proposed right-of-way to the east, however the areas under restrictive covenant and the remaining soil and groundwater contamination are located an additional 130 feet east within the site boundaries. According to the MDNR files, groundwater is migrating to the east and away from the potential improvements. Prior to construction in the right-



of-way, MDNR files of the site will be acquired to confirm the most recent locations of soil and groundwater impacts for health and safety and excavation planning purposes.

The former Phillips 66 gas station was not listed in the EDR Database or the MDNR ESTART database reviewed for this re-evaluation. However, at the time the 2004 Second Tier Approved CE was developed, the MDNR maintained records of five USTs that were removed in 1977. Because of this discrepancy, MDNR files of the site will be acquired and further reviewed to evaluate the significance of any potential releases and confirm the presence or absence of USTs prior to right-of-way acquisition.

The former gas station identified as Ratliff Towing was also referenced in the 2004 Second Tier Approved CE but not located in the reviewed databases at the time of re-evaluation. The site is currently vacant and has no improvements other than an asphalt lot. Because of ambiguity surrounding the environmental risk of this site, MDNR files of the site will be acquired to evaluate the significance of any potential releases and to confirm the presence or absence of USTs.

Efforts to minimize the amount of proposed ROW required by the proposed improvements during re-evaluation has allowed the project to avoid the relocation of two other sites, I-70 Towing & Recovery (previously reported as A-1 Auto Recyclers) and Gygr Gas Plant #8, which were not included in the database review as hazardous waste generators but could have been considered hazardous site impacts due to the materials handled.

In addition to previously referenced sites, a natural gas pipeline intersecting the project was identified during the re-evaluation analysis. A Panhandle Eastern Pipeline Company Line 100 natural gas pipeline crosses I-70 from north to south approximately 1,100 feet west of the M/HH interchange and may be affected by the proposed improvements depending on the buried depth of the pipeline, which is unknown. In general, natural gas transmission lines are placed in 6-foot trenches and are required to be buried at least 30 inches below ground surface. Pipelines crossing roads must be buried even deeper. The depth of the pipeline will be identified prior to the construction phase.

The above-referenced sites are considered “low-to-moderate” hazardous site risks to the project due to a lack of information that may increase the likelihood of further investigations prior to the construction phase. In general, the potential for hazardous materials impacts can be considered approximately the same.

13) OTHER

Not applicable to this project.



14) Mitigation and Commitments

Existing Commitments from the ROD Common to all SIUs:

1. MoDOT will comply with the appropriate currently adopted design criteria and design standards. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- MoDOT will comply with the appropriate currently adopted design criteria and design standards. However, design exceptions are possible. **(Applicable to SIU 5 CE Re-evaluation)**

2. MoDOT will incorporate suitable and reasonable Intelligent Transportation Systems elements into the Improve I-70 program. **(Applicable to this SIU 5 CE Re-evaluation)**

3. 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. **(Applicable to this SIU 5 CE Re-evaluation)**

4. MoDOT will construct frontage roads for the purposes of maintaining existing local service connections and maintaining existing access to adjacent properties, where warranted. The frontage roads as proposed in the Frontage Road Master Plan may be constructed in the future as needs arise and as funding becomes available. Where reasonably possible, the eight-foot (2.4 meters) paved shoulder along new frontage road construction could serve as a one-way bicycle facility. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- MoDOT will work to maintain existing local service connections and access to adjacent properties. Shoulder width will be determined in accordance with standards while balancing safety and available resources. **(SIU 5 CE Re-evaluation)**

5. MoDOT will develop a maintenance of traffic plan for the construction phases. Through traffic will be maintained along I-70 and at access points to the interstate from crossroads. It is likely that some interchange ramps and crossroads 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. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- MoDOT will develop a maintenance of traffic plan for construction phases. It is likely that some mainline, interchange ramps, and crossroads 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. **(SIU 5 CE Re-evaluation)**
- If the traffic plan could result in impacts that were not previously reviewed under NEPA – such as new or additional road closures, access changes, or other circumstances that could



cause new or modified impacts to resources – MoDOT will review these impacts prior to implementing the plan. **(SIU 5 CE Re-evaluation)**

6. MoDOT will coordinate with project area businesses regarding access issues, via direct communication throughout the construction period. **(Applicable to this SIU 5 CE Re-evaluation)**

- Communication may include a variety of tools (email updates, website, etc.). **(SIU 5 CE Re-evaluation)**

7. MoDOT will coordinate with local public service and utility service providers during the final design phase of the project and during the construction period to minimize infrastructure relocation, modifications, and connectivity requirements. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- MoDOT will coordinate with local public service and utility service providers during the design and construction phases of the project. **(SIU 5 CE Re-evaluation)**

8. During right of way acquisition and relocations, MoDOT will assure that this will be accomplished in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. MoDOT is committed to examining ways to further minimize property impacts throughout the corridor, without compromising the safety of the proposed facility, during subsequent design phases. **(Applicable to this SIU 5 CE Re-evaluation)**

9. During construction, MoDOT's standard specifications, MDNR Solid Waste Management Program, and MoDOT's Sediment and Erosion Control Program will all be followed. **(Applicable to this SIU 5 CE Re-evaluation)**

10. Through MoDOT's approved Pollution Prevention Plan for the National Pollutant Discharge Elimination System, the control of water pollution will 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 will comply with all conditions of appropriate USACE and MDNR permits and certifications. **(Applicable to this SIU 5 CE Re-evaluation)**

- MoDOT commits to obtaining the required permits and certifications from USACE and MDNR prior to construction and project activities. **(SIU 5 CE Re-evaluation)**

11. MoDOT 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 installed in accordance with the equipment manufacturers' specifications. **(Applicable to this SIU 5 CE Re-evaluation)**



12. MoDOT is committed to minimizing lighting impacts. Efficient lighting and equipment will be installed, where appropriate, to optimize the use of light on the road surface while minimizing stray light intruding on adjacent properties. **(Applicable to this SIU 5 CE Re-evaluation)**

13. To minimize impacts associated with construction, pollution control measures outlined in the MoDOT Standard Specifications for Highway Construction will be used. These measures pertain to air, noise and water pollution as well as traffic control and safety measures. **(Applicable to this SIU 5 CE Re-evaluation)**

14. MoDOT will review the Natural Heritage Database and coordinate with the USFWS periodically during the project development process to identify any new locations of threatened and endangered bat activity. **(Applicable to this SIU 5 CE Re-evaluation)**

15. Landscaping in the right of way 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. Where appropriate, MoDOT will partner with the MDC Grow Native program and implement the establishment of native vegetation along highway rights of way. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- MoDOT commits to following the EPG's roadside design guidelines. **(SIU 5 CE Re-evaluation)**

16. MoDOT has developed a Conceptual Wetland Mitigation Plan to compensate for wetland impacts, and appropriate mitigation will be adhered to in accordance with the plan. **(Not Applicable to this SIU 5 CE Re-evaluation)**

- If Waters of the US are impacted, MoDOT will mitigate stream and/or wetland impacts in accordance with most current regulations and guidance's. **(SIU 5 CE Re-evaluation)**

17. MoDOT will continue to coordinate with the SHPO and comply with the existing executed Programmatic Agreement that complies with the National Historic Preservation Act. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- MoDOT will comply with the newly executed Programmatic Agreement (approved 12-04-2023). Should design modifications and/or construction activities result in impacts to historic properties, MoDOT will coordinate with SHPO related to the Section 106 process. **(SIU 5 CE Re-evaluation)**

18. When trees are removed, MoDOT will implement the tree replacement policy and plant two trees for every tree removed that has a diameter greater than six inches at breast height. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- MoDOT no longer has a tree replacement policy in place. As a result, MoDOT will not implement replacement of removed trees. **(SIU 5 CE Re-evaluation)**



19. Where feasible, MoDOT's design process will minimize impacts to floodplains. **(Applicable to this SIU 5 CE Re-evaluation)**

20. 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 SEMA. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revisions below)**

- If the Contractor is unable to obtain No-Rise Certification(s), or if floodway(s) are expanded, MoDOT or the Design-Build Contractor will prepare a CLOMR for approval by SEMA prior to construction in affected areas. MoDOT or the Design-Build Contractor will also obtain an approved LOMR from SEMA after construction is complete. The Missouri Highway and Transportation Commission awarded a design-build contract for the I-70 section between the I-70/US 63 Connector Interchange and the I-70/US 54 interchange on February 14, 2024. **(SIU 5 CE Re-evaluation)**
- MoDOT commits to obtaining floodplain development permits from SEMA prior to Construction. **(SIU 5 CE Re-evaluation)**

21. MoDOT will continue to coordinate with the NRCS to determine appropriate mitigation measures for the loss of Conservation Reserve Program and Wetlands Reserve Program lands. **(Not Applicable to this SIU 5 CE Re-evaluation/revision below)**

- MoDOT has confirmed with NRCS that no WRP or CRP lands exist within SIU 5. **(SIU 5 CE Re-evaluation)**

22. Plans for suitable pedestrian, bicycle and wheelchair access across I-70 will be developed during the design of the interchanges. **Not Applicable to this SIU 5 CE Re-evaluation/ revision below)**

- Pedestrian, bicycle, and Americans with Disabilities Act (ADA) access will be considered across I-70 where there is connectivity to facilities on either side of I-70. **(SIU 5 CE Re-evaluation)**

23. The MoDOT Noise Policy will be used to address noise impacts. Where appropriate, possible noise abatement types and locations will be presented and discussed with the benefited residents during the preliminary design phase. Noise abatement measures will be considered that are deemed reasonable and feasible. **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- The updated MoDOT Noise Policy was used to address noise impacts. Following analysis, noise walls were determined neither feasible nor reasonable. Final decisions regarding the construction of noise barriers are made during the final design process. If design changes have occurred and a new noise policy has been approved since the original noise analysis, with FHWA approval the new policy is to be used for the new analysis and final decision. **(SIU 5 CE Re-evaluation)**



24. During the final design process, MoDOT will consider options to minimize new right of way acquisition. **(Applicable to this SIU 5 CE Re-evaluation)**

25. Additional study and proper remediation of hazardous waste sites that will be encountered by construction will be performed as needed to minimize exposure of construction workers and the public to hazardous wastes and to ensure proper disposal of contaminated earth and other substances. This includes proper disposal of demolition debris in accordance with state law. **(Applicable to this SIU 5 CE Re-evaluation)**

Existing Commitments from the 2004 CE Commitments Specific to SIU 5. These commitments are subject to change as the re-evaluation is approved:

26. Total avoidance of Tucker Prairie. No frontage road would be located on the south side of I-70 through the Tucker Prairie area. **(Applicable to this SIU 5 CE Re-evaluation)**

27. Further investigation of Stuckey's Dairy Queen, Ratliff Towing and the former Phillips 66 sites to determine the effect of the project on these underground storage tank sites **(Applicable to this SIU 5 CE Re-evaluation / Revision below)**

- Stuckey's Dairy Queen site has been remediated and closed and no longer requires further investigation into the presence or absence of USTs. However, prior to construction in the right-of-way, files from MDNR will still be referenced to confirm the most recent locations of soil and groundwater impacts for health and safety and excavation planning purposes. **(SIU 5 CE Re-evaluation)**
- MDNR files of the Ratliff Towing and former Phillips 66 sites will be acquired and further reviewed to evaluate the significance of any potential releases and confirm the presence or absence of USTs prior to right-of-way acquisition. **(SIU 5 CE Re-evaluation)**

28. Avoidance or further research through a Phase II investigation of four eligible archaeological sites. **(Applicable to this SIU 5 CE Re-evaluation)**

29. Field check for Running Buffalo Clover (*Trifolium stoloniferum*) at least one year prior to right of way acquisition and clearing activities at the Cedar Creek crossing and any new locations in the corridor as identified in the Natural Heritage Database **(Not Applicable to this SIU 5 CE Re-evaluation/ Revision below)**

- This species is no longer listed and therefore a survey is not required. **(SIU 5 CE Re-evaluation)**



Additional Commitments Specific to this SIU 5 CE Re-evaluation:

30. If there are changes in the project scope, project limits, existing conditions, pertinent regulations, or environmental commitments, MoDOT must re-evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from FHWA. **(SIU 5 CE Re-evaluation)**

31. MoDOT will include a Job Special Provision (JSP) in project contract(s) to help ensure that bridges are kept free of active nests and bats before and during construction. A nesting bird survey will be completed prior to construction related to structures. **(SIU 5 CE Re-evaluation)**

32. Bat acoustic monitoring for SIU 5 was completed August 15, 2023, for the Indiana bat, northern long-eared bat, gray bat, and the tricolored bat. The acoustic data report revealed the presence of threatened/endangered bat species; therefore, the removal of suitable roost trees will only be allowed between November 1 and March 31. **(SIU 5 CE Re-evaluation)**

33. For projects that encompass more than one SIU, MoDOT will combine the commitments of the affected SIUs into one document that will be converted into either Job Special Provisions or contract documents. **(SIU 5 CE Re-evaluation)**

34. MoDOT will complete consultation with USFWS prior to construction for all listed species affected. Any conservation measures outlined during the project development process will be adhered to. **(SIU 5 CE Re-evaluation)**

35. The depth of the natural gas pipeline that crosses SIU 5 will be identified prior to the construction phase. **(SIU 5 CE Re-evaluation)**



Table 6.1 Re-evaluation Summary Impact Table

Resource Evaluated	Measurement	Impact Findings	
		SIU 5 2004 Second Tier Approved CE Selected Alternative	SIU 5 Re-evaluation Preferred Alternative
RIGHT-OF-WAY IMPACTS			
Total Right-of-Way Required	acres	439.6	26.35
Total Right-of-Way Cost	USD (2023)	\$18,238,000 ²	\$17,217,090
ENVIRONMENTAL IMPACTS			
Wetland Impacts	acres	4.85	0.16
Open Water Impacts	acres	2.38	0
100-year Floodplain Impacts	acres	12.6	2.33
Regulatory Floodway	acres	0	0
Stream Crossings	#	13	16
Streams	LF	4,968	6,101 ³
Potential Bat Habitat Impacts	acres	Not Reported	5.2
Number of Hazardous Waste Sites	#	5	3
Farmland Impacts	acres	450.9	26.2
COMMUNITY IMPACTS			
National Register of Historic Places Impacted (NRHP)	#	0	0
Eligible Properties for NRHP Impacted	#	0	0
Section 4(f)/6(f) Properties	#	0	0
Potential Disproportionate Impacts to EJ Populations	#	0	0
Total Number of Parcels Affected	#	92	18
DISPLACEMENT IMPACTS			
Residential Impacts (Displacement of Dwelling Units)	#	14	1
Business Operation Impacts (Displacement of at Least One Structure)	#	16	0

² The total right-of-way costs for the SIU 5 Selected Alternative in the 2004 Approved CE was previously estimated at \$13,028,612 (in 2005 dollars). The total right-of-way cost for the 2004 alternative in 2023 dollars was calculated assuming a yearly average inflation rate of 2.58 percent from 2005-2023, as reported by the U.S. Bureau of Labor Statistics.

³ Total includes both permanent and temporary impacts to all stream features, regardless of potential jurisdictional determination. This analysis is a more conservative approach than the approach used in the Approved 2004 CE. It is anticipated that, following concurrence from USACE, the total impacts will be less than those reported in the previous study.



7.0 Conclusion

Impacts to socioeconomic and environmental resources identified in the 2004 Second Tier Approved CE have been minimized to the extent practicable through the Preferred Alternative identified in this re-evaluation. Results of the re-evaluation revealed the same or reduced impacts for all resources when compared to the 2004 Approved CE. The proposed project continues to meet the determinations in the 2004 study, and no further NEPA review is required. Any future modifications to the Preferred Alternative and related impacts would need to be assessed for consistency with the findings of this re-evaluation. Assuming that any modifications are consistent with the findings of this document, this re-evaluation document will remain valid.

70-3(309)
I-70 SIU 5, BOONE & CALLAWAY COUNTIES,
FROM ROUTE Z TO KINGDOM CITY
MODOT JOB NO. J4I1341H

Submitted Pursuant to
42 U.S.C. 4332(2)(c), 49 U.S.C. 303
by the
U.S. Department of Transportation
Federal Highway Administration and the
Missouri Department of Transportation

Date of Approval

For FHWA

Title