

**NEPA Re-evaluation of the
I-70 Second Tier
Section of Independent Utility 6
MoDOT Job No. J5P3417
Environmental Assessment**

August 4, 2022

Table of Contents

Introduction	3
Background	5
2022 Re-evaluation	6
Purpose and Need	6
Preferred Alternative	8
Public and Agency Coordination	9
Resource Impact Evaluation	10
Environmental Re-Evaluation Matrix for Interstate 70, SIU 6 Corridor, Second Tier Environmental Assessment	11
Re-evaluation Conclusion	30

Figures

Figure 1 – Project Location.....	5
Figure 2 - Preferred Alternative for the US 54 and I-70 Interchange.....	10

Tables

Table 1 – Existing and Future Traffic Volumes.....	8
Table 2 – SIU 6 EA Re-evaluation Summary Impact Table.....	26

Appendices

Appendix A – 2005 Selected Alternative	
Appendix B – Agency and Public Coordination Letters	
Appendix C – Map of Environmental Resources	
Appendix D – Wetland and Other Waters of the U.S for Project J5P3417 Technical Memorandum	
Appendix E – State Historic Preservation Office Concurrence Letter	

List of Abbreviations and Acronyms

AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
ACS	American Community Survey
AASHTO	American Association of State Highway and Transportation Officials
BMP	Best Management Practices
CFR	Code of Federal Regulations
DDI	Diverging Diamond Interchange
EA	Environmental Assessment
EIS	Environmental Impact Statement
E-Start	Environmental Site Tracking and Research Tool
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
IPaC	Information for Planning and Consultation
I-70	Interstate 70
LOS	Level of Service
MDC	Missouri Department of Conservation
MDNR	Missouri Department of Natural Resources
MoDOT	Missouri Department of Transportation
NHD	National Heritage Database
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
ROD	Record of Decision
SHPO	State Historic Preservation Officer
SIU	Section of Independent Utility
SEMA	State Emergency Management Agency
SEIS	Supplemental Environmental Impact Statement
STIP	State Transportation Improvement Program
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USFWS	U.S. Fish and Wildlife Service
USDOT	U.S. Department of Transportation
WOUS	Waters of the U.S.

Introduction

The study area for this re-evaluation is defined as SIU 6 of the I-70 corridor, which encompasses the US 54 interchange at Kingdom City in Callaway County and is referred to as MoDOT project J5P3417. It is shown below in **Figure 1**. Previous environmental studies related to proposed improvement of the US 54 and I-70 interchange at Kingdom City include the 2001 Interstate 70 Corridor First Tier Environmental Impact Statement (EIS) and Record of Decision (ROD) signed December 18, 2001; the Final 2005 Second Tier Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the I-70 Section of Independent Utility (SIU) 6 signed May 26, 2005; and the 2009 Supplemental EIS and ROD for Truck Only Lanes signed August 14, 2009 which supplemented the previous first and second tier studies. Finally, in 2020, MoDOT completed a Re-Evaluation of SIU 6 for MoDOT projects J2I3226 and J2I3226B which proposed to construct eastbound and westbound climbing lanes on I-70 at Mineola Hill

The Federal Highway Administration (FHWA) and MoDOT's Engineering Policy Guide (EPG) require a re-evaluation when there has been greater than three years since the ROD was signed or when changes related to the original study have occurred. A re-evaluation also requires validating the original purpose and need. Due to the length of time between the current project and the previous environmental studies, a re-evaluation of the 2005 SIU 6 Second Tier EA is required in accordance with the National Environmental Policy Act (NEPA) (23 Code of Federal Regulations [CFR] 771.129) and associated laws.

1 Figure 1. SIU 6 and Kingdom City Project Location



Background

In the fall of 1999, MoDOT initiated a tiered environmental decision-making process, referred to as the Improve I-70 First Tier Study, to evaluate strategies for improving the I-70 corridor in Missouri, between the metropolitan areas of Kansas City and St. Louis. The tiering process allows for a focus on corridor-wide issues and reduces repetition in environmental documentation. First Tier decisions frame and narrow the scope of second tier studies and related decisions. The Second Tier Studies, known collectively as Improve I-70, looked more specifically at the recommended strategies for each SIU and their local impacts. In order to ensure an appropriate level of detail, the Improve I-70 Second Tier program divided the interstate into seven different geographic sections (i.e., SIUs), each with its own environmental study and recommendations.

The Interstate 70 Corridor First Tier EIS was prepared to aid in determining the most appropriate type of improvement concept for I-70. The ROD, approved by FHWA in 2001, selected the “Widen Existing I-70 Strategy” as the preferred alternative. This strategy would improve existing I-70 by making it six lanes, three in each direction, in rural areas and a minimum of eight lanes, four in each direction, through Columbia and in the metropolitan areas of Kansas City and St. Louis. The preferred alternative also included improved access management, reconstruction of the existing roadway to enhance safety and performance, and provisions for future transportation improvements within the median.

In 2005, the Second Tier EA and FONSI were completed, assessing impacts specific to SIU 6, from Kingdom City to Montgomery City. In general, the selected alternative included an additional lane in each direction along I-70, the replacement of all existing interchanges and overpasses, access management where appropriate, and the provision for continuous frontage roads on both sides of I-70 as deemed necessary. At Kingdom City, a standard diamond interchange with a larger footprint than the current interchange was selected as the preferred alternative. This interchange would be reconstructed to accommodate three lanes of travel for I-70 in both directions. Future access roads to businesses south of I-70 were proposed. Also proposed were directional ramps to the south and east between I-70 and US 54 once traffic volumes warranted it. The railroad bridge west of Kingdom City would remain as it was still in use at the time of the 2005 EA. **Appendix A** includes a series of figures showing the 2005 Selected Alternative.

Building on the work of the first and second tier studies, MoDOT initiated a Supplemental Environmental Impact Statement (SEIS) to evaluate the impacts of a new strategy for I-70 consisting of dedicated truck-only lanes. Approved in a 2009 ROD, the Truck-Only Lanes Strategy would construct two truck-only lanes and two or more general purpose lanes in each direction along existing I-70. Concrete barriers, buffer separations or grassed areas would separate the truck-only lanes and general-purpose lanes from each other, depending on the location along the corridor. This strategy was 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. Interchange features of the Widen Existing I-70 Strategy at the majority of the interchanges along the corridor would also be retained.

In 2020, MoDOT completed a Re-Evaluation of SIU 6 for MoDOT projects J2I3226 and J2I3226B which proposed to construct eastbound and westbound climbing lanes on I-70 at Mineola Hill to enable both

truck and passenger traffic to flow more safely and efficiently. The re-evaluation assessed potential effects to resources impacted by the projects.

2022 Re-evaluation

MoDOT project J5P3417 proposes to improve the US 54 and I-70 interchange at Kingdom City to enhance safety, traffic flow, and operations. A Conceptual Study was completed on April 14th, 2022, which describes the alternatives analysis, stakeholder involvement and the process in reaching the preferred alternative. This Study is available upon request and is not included with this document due to file size. Most of the project would be constructed within existing right-of-way. The project proposes to convert the existing interchange from a diamond configuration to a diverging diamond interchange (DDI). The DDI will better handle the current and future traffic volumes and improve operations of the interchange. The existing bridge over I-70 will be repurposed to accommodate the DDI in lieu of replacing this bridge. Eastbound and westbound entrance and exit ramps will be lengthened to improve the merge distance and also improve safety when entering or exiting I-70. On US 54 north of I-70, no changes are planned. However, on US 54 south of I-70 at Janice Avenue, intersection modifications are planned. These modifications will improve access and traffic flow to and from businesses that exist in this vicinity. These improvements do not preclude the future full build out of I-70 since an improvement to the interchange at Kingdom City was always planned. Further, the US 54 bridge over I-70 will need to be replaced with a longer bridge to accommodate an extra lane in each direction and by utilizing the existing bridge, this does not affect future widening of I-70.

The proposed improvements at the US 54 and I-70 interchange are being considered for addition to the Draft 2023-2027 State Transportation Improvement Program (STIP).

This re-evaluation assesses potential effects to resources impacted by Project J5P3417 at the US 54 and I-70 interchange at Kingdom City in SIU 6 and compares these effects to the findings of the 2005 EA, as the selected alternative in the EA has the potential to be implemented in the future.

Purpose and Need

As noted in the 2001 First Tier EIS, the goal of I-70 improvements along the entire Missouri corridor is to provide a safe, efficient, environmentally sound, and cost-effective transportation facility that responds to the needs of the study corridor and to the expectations of a nationally important interstate.

Additionally, the 2005 Second Tier EA documented the development of the purpose and need for the SIU 6 improvements. The specific purpose and need addressed by the proposed action in SIU 6 is summarized as follows:

- **Roadway Capacity** - Capacity improvements for the Kingdom City interchange, as well as mainline I-70 were selected to improve the general operating conditions of I-70.
- **Traffic Safety** - Reduce the number and severity of traffic-related crashes occurring along the SIU 6 portion of I-70 including localized safety improvements in the Kingdom City interchange.
- **Roadway Design Features** - Upgrade current roadway design features to meet recommended design criteria for I-70 improvements, including interchanges, roadway alignment and cross sections, median and outer roads.

- **System Preservation** - Preserve the existing I-70 facility as needed to carry existing and future loads.
- **National Security** - The enhancements offered by the typical section, including improvements to the Kingdom City interchange, will enhance the ability of the I-70 Corridor to support the system needs for disaster response and national security.

The 2009 SEIS did not alter the project's purpose and need. Therefore, the 2005 Second Tier EA purpose and need was reviewed to ensure validity as part of this current re-evaluation. Each purpose and need element are discussed below.

Roadway Capacity

As noted in the 2005 EA, the actual traffic volumes or Average Daily Traffic (ADT) on US 54 north and south of I-70, were 11,220 and 14,010 respectively. The traffic volume for the same period on the SIU 6 segment of I-70 at Kingdom City was 29,890 ADT. Although a slower rate of growth than projections indicated in the 2005 EA, the corridor is still experiencing notable growth in traffic levels which will lead to increases in travel delay and queueing. Current and projected traffic ADTs are shown in the **Table 1** below.

Table 1. Existing and Future Traffic Volumes

Location	Existing Traffic Volumes for 2021	2045 Traffic Projections
I-70 Mainline near Kingdom City	40,573	45,732
US 54 North of I-70	11,941	13,459
US 54 South of I-70	16,763	18,895

In the 2005 EA, these volumes were projected to increase to 16,010 (US 54 north of I-70), 19,650 (US 54 south of I-70) and 69,010 on I-70 at Kingdom City by 2030. This would result in the roadway level of service (LOS) to drop below MoDOT standards to a LOS of E. The 2045 projections would still result in a lower LOS and therefore, the roadway capacity element of the purpose and need remains valid for Project J5P3417.

Traffic Safety

MoDOT strives to reduce the number and severity of crashes on the state's roadways as traffic safety is a primary goal of the department. According to the crash data in the 2005 EA, SIU 6 needs several safety upgrades. While this project does not include improvements to the cross-section of I-70, the 2005 EA noted that medians should be improved in areas where median widths are not up to existing standards to prevent cross-median crashes. Specifically, in the Kingdom City area, longer ramps and merge/acceleration lanes would allow heavy trucks to better enter the flow of traffic, as this area tends to have higher volumes and a higher percentage of large trucks. Crashes were evaluated at the ramp merge sections of the interchange, and it was found that actual crashes were higher than what was predicted using the Highway Safety Manual freeway and ramp crash prediction methodology. At the eastbound entrance ramp merge area, total crashes are six times higher than predicted with fatal and injury crashes nearly three times what is predicted. At the westbound entrance ramp merge area, total crashes are eight times higher than predicted with fatal and injury crashes seven times higher than predicted. The crashes in this merge area included two fatal crashes during the five-year crash period analyzed. The proposed improvements to the US 54/ I-70 interchange and ramp merge lengths will effectively reduce the number and severity of traffic-related crashes. Therefore, the traffic safety element of the purpose and need remains valid for Projects J5P3417.

Roadway Design Features

For the Improve I-70 study, MoDOT adopted fairly stringent minimum design criteria. In general, design criteria were based on the MoDOT EPG and provisions of the American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highway and Streets, 2001, Fourth Edition, where applicable. There are four interchanges in SIU 6 including the US 54 interchange at Kingdom City. Each of these is a standard diamond interchange. Each interchange was evaluated to determine if it met current requirements for spacing between ramp termini and between ramp termini and outer roads. The evaluation concluded that none of the interchanges meet the Improve I-70 Study minimum design criteria and MoDOT access management guidelines of 800 feet spacing between ramp termini and a minimum ramp spacing of 1,350 feet between ramp termini and outer roads or 800 feet between ramp termini and right turns.

At the US 54 interchange, ramp termini spacing is 545 feet; spacing between ramp termini and outer road is 850 feet for eastbound entrance/exit ramps and 1500 feet for westbound entrance/exit ramps; and spacing between ramp termini and driveway is 500 feet for westbound entrance/exit ramps and not applicable for eastbound entrance/exit ramps. Project J5P3417 would alter some elements of the interchange; therefore, the roadway design features of the purpose and need would still apply for the project.

System Preservation

Based on 2002 data, the majority of pavement in SIU 6 is rated, on average, either Poor or Fair. Since that time, pavement has been resurfaced by MoDOT as necessary. Improving the US 54 and I-70 Interchange at Kingdom City is needed for safety and traffic operations with traffic volumes increasing and is part of preserving the existing I-70 facility to carry it into the future. Therefore the system preservation element of the purpose and need remains valid to Project J5P3417.

National Security

I-70 is a key corridor in the Strategic Highway Network and a primary facility for moving personnel and equipment for deployment and emergency response. As stated in the 2005 EA, the interchange at I-70 and US 54 is an important node in the state's portion of the Strategic Highway Network. At the Kingdom City interchange, US 54 links the resources located in the state capital, the Lake of the Ozarks, and Fort Leonard Wood with I-70, which in turn, connects it to the broader state and interstate system. The enhancements offered by the typical section, including improvements to the Kingdom City interchange, would enhance the ability of the I-70 Corridor to support the system needs for disaster response and national security. Therefore, the national security element of the purpose and need remains valid for Project J5P3417.

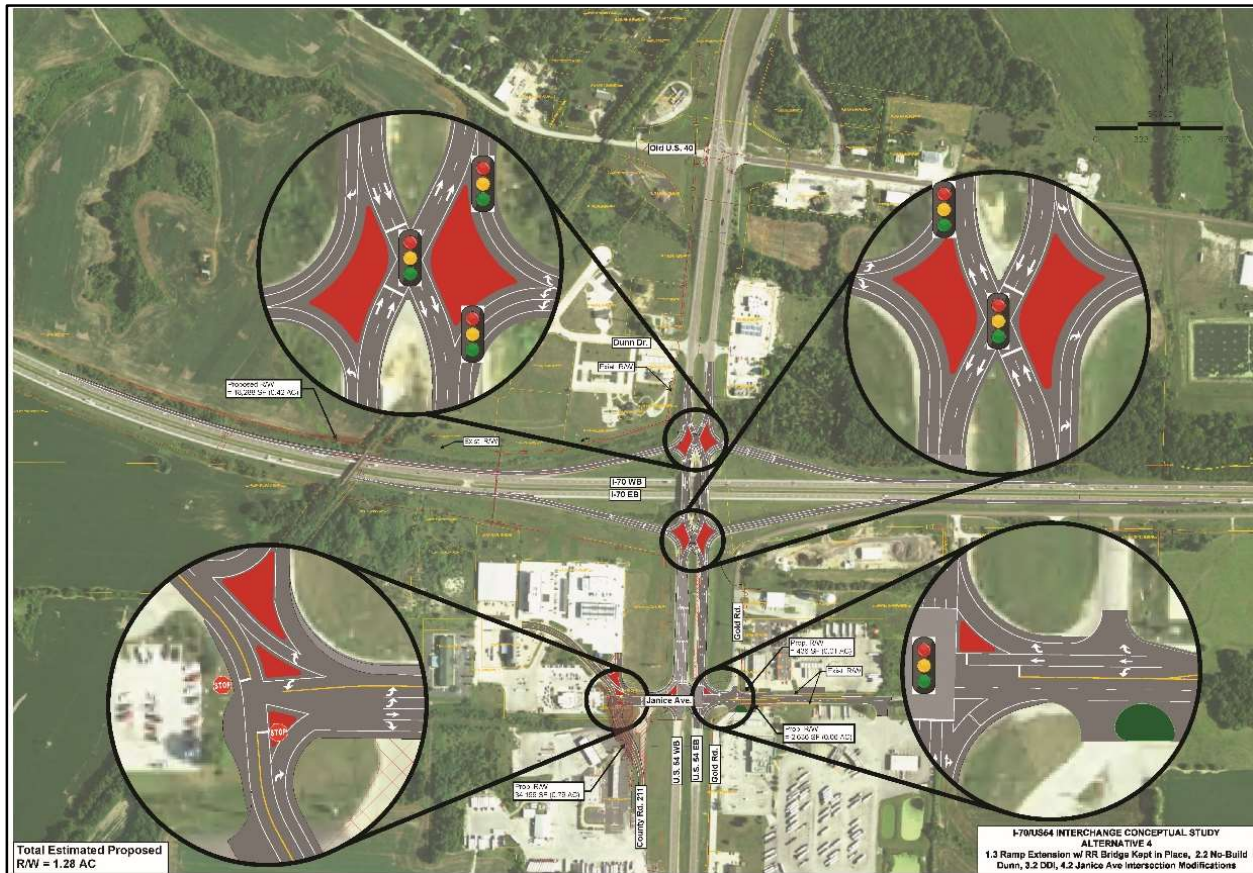
In summary, except for the System Preservation elements, the purpose and need identified in the 2005 Second Tier EA remains valid for the current re-evaluation for the US 54 and I-70 interchange project J5P3417.

Preferred Alternative

The proposed project J5P3417 would improve the US 54 and I-70 interchange by converting the existing diamond interchange to a diverging diamond interchange (DDI). The project would also significantly extend both entrance ramps and both exit ramps to improve traffic operations and safety for traffic entering and exiting I-70. South of I-70 on US 54, the Janice Avenue intersection would be modified to better accommodate trucks and other traffic at this location. No changes would be made to local streets north of I-70 as part of this project as the DDI will create gaps in traffic that will enable left-hand turns

from the I-70 westbound exit ramp onto Dunn Drive. Most of the improvements will be completed within existing MoDOT right-of-way. Only minor amounts of right-of-way will be required, totaling approximately 1.28 acres. The preferred alternative is shown in **Figure 2**. For comparison the 2005 Kingdom City selected alternative and environmental features maps are shown below in **Appendix A**.

Figure 2. Preferred Alternative for the US 54 and I-70 Interchange



Public and Agency Coordination

On September 10, 2021, during the planning stages of the project, MoDOT issued a notice informing the public of the proposed US 54 and I-70 interchange project at Kingdom City and the re-evaluation of the 2005 Second Tier EA. MoDOT accepted public comments through October 11, 2021, and six comments were received. The comments were neutral to supportive of the proposed project and noted safety, traffic delays, and truck traffic as factors which support the need to improve the interchange. In addition, a Public Safety Survey was conducted from September 22-October 15, 2021 and Stakeholder Meetings were held September 21, October 25, and November 17, 2021. Input received from these outreach efforts is in **Appendix B**.

On October 22, 2021, notices were sent to local, state, and federal agencies describing the proposed actions and seeking comments relative to the interests of each agency. (The letters emailed to each agency were misdated with October 22, 2020 and requested comments by December 3, 2022. This end date should have been December 3, 2021. Subsequently a notification was sent to Tribal, Federal and

State agencies correcting the end date for comments and requesting input by March 1, 2022.) The State Emergency Management Agency (SEMA) responded on November 8, 2021, that permits would be required if the project impacts floodplain or regulatory floodway. The Missouri State Historic Preservation Office (SHPO) responded on November 15, 2021, acknowledging receipt of the agency coordination letter. Notices were also sent to federally recognized tribes on October 28, 2021. On October 28, 2021, the Miami Tribe of Oklahoma responded that they had no objection to the project assuming that it did not impact Graham Cave, the Loutre Valley Rock Shelter, the Mineola Hill Rock Shelter or other historically or culturally significant sites. Further, the Miami Tribe accepted the invitation to serve as a consulting party on the proposed project. Comment and coordination letters from the SEMA, SHPO, Missouri Federal Assistance Clearinghouse, and the Miami Tribe of Oklahoma are provided in **Appendix B**. As of the date of this submittal, no other comments from agencies or tribes have been received.

MoDOT established a website for this project, <https://www.modot.org/KingdomCityInterchange>. Through this website, project information was disseminated, and public comment was solicited. In addition, an online public meeting was conducted via the website and public comment was sought from February 15 to March 15, 2022. A total of 110 comments were received. Below is a breakdown of the comments by general category. Note that the percentages total more than 100 since many commentors had multiple comments in their response.

• In favor of the project:	58%
• Not in favor:	15%
• Does not like the DDI:	33%
• Wants flyover ramps/other interchange configuration:	14%
• Other comments:	26%
• Concern about impacts:	3%

Some of the issues in “Other Comments” included improvements at Janice and/or Dunn, extending the entrance and exit ramps, the railroad bridge and other questions.

All of the comments received are shown in **Appendix B**.

Resource Impact Evaluation

The following matrix presents an analysis of resources evaluated in the 2005 Second Tier EA and describes changes to resources and findings regarding the potential impact to each resource. The matrix below identifies resource impacts within the US 54 and I-70 segment of SIU 6, in association with Project J5P3417, separately from resource impacts within the remaining SIU 6 corridor and includes a determination of whether the impact has changed or remained the same from the 2005 EA. Following this matrix is a summary table of the impact evaluation findings (**Table 2**). A map identifying environmental resources within the US 54 and I-70 Project J5P3417, is included in **Appendix C**.

1 Environmental Re-Evaluation Matrix for Interstate 70, SIU 6
2 Corridor, Second Tier Environmental Assessment

Socioeconomics	
SIU 6 Corridor, Kingdom City Segment (Project J5P3417)	
Is there an impact to this resource?	Yes ☒ No ☐
The study area in the Kingdom City area has experienced some additional development since the 2005 EA, where two additional hotels, a small office building, and a storage unit facility have since been constructed. It is expected that there would be a limited short-term economic decline during construction since the interchange would be reconstructed at its existing location. However, economic opportunities would improve after the interchange was reconstructed.	
Remaining SIU 6 Corridor	
Is there an impact to this resource?	Yes ☒ No ☐
Change since 2005 EA	More Impacts ☐ No Change ☒ Fewer Impacts ☐
The social setting in the vicinity has remained consistent since the 2005 EA. Based on the most recent American Community Survey (ACS) 5-year estimates provided by the U.S. Census Bureau (USCB), the populations in the study corridor have experienced only minor changes since the EA was published. Specifically, the population of Callaway County increased from 40,766 in 2000 to 44,743 in 2019, and Montgomery County decreased from 12,136 in 2000 to 11,487 in 2019. Correspondingly the study area outside Kingdom City has experienced very minor additional development. Based on the lack of significant changes in the affected environment, impacts to socioeconomics are expected to remain the same as those evaluated in the 2005 EA.	
Land Use	
SIU 6 Corridor, Kingdom City Segment (Project J5P3417)	
Is there an impact to this resource?	Yes ☐ No ☒
According to review of current and historic aerial imagery, a small number of new commercial properties have been developed in the vicinity of the Kingdom City interchange since the publication of the 2005 EA, including two hotels, a small office building, and a storage unit facility. However, this area was identified as developed in the 2005 EA and these activities do not constitute a change in land use. As reported in the 2005 EA, Callaway County and Kingdom City do not have formal zoning regulations or land use plans in place. Improvements to the US 54 and I-70 interchange, would further promote commercial land use in the area and could increase the potential for future conversion of agricultural or undeveloped land to commercial or industrial uses in the vicinity of the interchange. However, the US 54 and I-70 interchange improvements would have no negative impact on community land use plans and policies.	
Remaining SIU 6 Corridor	
Is there an impact to this resource?	Yes ☐ No ☒
Change since 2005 EA	More Impacts ☐ No Change ☒ Fewer Impacts ☐
Development along the remaining corridor has been minimal as much of the surrounding area remains agricultural or undeveloped.	
Displacements	
SIU 6 Corridor, Kingdom City Segment (Project J5P3417)	
Is there an impact to this resource?	Yes ☐ No ☒

The improvements at the US 54 and I-70 interchange would be constructed almost entirely within existing right-of-way. Approximately 1.28 acres would need to be acquired to construct the interchange improvements. No business or residential displacements would occur. Of the 1.28 acres, 0.42 acres would be required as part of the interchange reconstruction; 0.86 acres would be needed from three parcels for the Janice Avenue improvements. The individual parcel acquisitions are estimated to be 0.79 acres on the west side of US 54 and 0.01 and 0.06 acres east of US 54.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☒ No ☐
 Change since 2005 EA More Impacts ☐ No Change ☐ Fewer Impacts ☒

The 2005 EA identified 16 residential dwellings and eight businesses that would be displaced along the entire SIU 6 corridor. Of these displacements, one residential dwelling and one business are located within the Mineola Hill segment and are no longer being displaced, leaving 15 residential buildings and seven 7 businesses identified for displacement within the remaining SIU 6 corridor according to the 2020 Re-evaluation for Mineola Hill. However, since the publication of the 2005 EA, there have been structures that were identified as displacements that no longer exist, as well as new construction in potentially impacted areas. The following changes were noted based on a review of current aerial imagery:

Disposition of displacements identified in the 2005 EA:

- Residential parcel at County Road 149 and Old US 40, north of I-70 – structures have been removed.
- Residential parcel east of County Road 145, north of I-70 – all four structures on the parcel were removed by 2017, but one new structure was added in 2018.
- Residential parcel, east of US 54 near County Road 220, south of Kingdom City intersection – structures have been removed.
- Residential; triangular parcel east of County Road 159, south of I-70 – structures have been removed.
- Residential; southwest quadrant at Hwy A intersection, south of I-70 and north of Hwy Z – structures have been removed with exception of one remaining barn.

New construction with potential for displacement:

- Residential displacement; southeast quadrant of Jade Road and County Road 159, south of I-70 – proposed road passes through a residence (Note: not new construction but was not marked as displacement in the 2005 EA, although it appears unavoidable with the proposed alignment).
- New structure south of Route N and Micah Road intersection.
- Residential displacement: new structure (barn or shed) on residential parcel near Powell Road/Boonslick intersection, south of I-70.

During the design phase, additional analysis would be completed to determine the exact number of parcels that would be impacted and the current use and occupancy of each structure to be removed. Based upon a desktop review, there are approximately the same number of previously identified displacements that have been removed from the impacted areas as there have been properties newly developed within potentially impacted areas. Therefore, the proposed I-70 improvements would result in roughly the same number of displacements as evaluated in the 2005 EA.

Environmental Justice

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☐ No ☒

EO 12898 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.

Kingdom City falls within Callaway County and one census tract covers the entire study area. Utilizing 2019 5-Year American Community Survey (ACS) data, Callaway County has a minority population of eight percent while in the entire census tract the minority population is 4.5 percent. The minority population in the study area is less

than 50 percent of the total population and doesn't significantly exceed the minority population in the county or state (17.8 percent). The low-income population of Callaway County and the census tract are nearly identical at 10.6 and 10.4 percent respectively. Similar to minority populations, this portion of the population does not exceed 50 percent of the total population or significantly exceed the low-income populations of Callaway County or the state (13.7 percent). Based on this data and a review of the communities adjacent to the study area, no readily identifiable groups of minority or low-income persons are located in the vicinity of the US 54 and I-70 Interchange. As in previous NEPA documents, the analysis did not identify any environmental justice populations in the study area that would experience disproportionately high and adverse effects resulting from project activities.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☐ No ☒

Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

The SIU 6 corridor spans five census block groups and the counties of Callaway and Montgomery. The minority populations in the block groups along the corridor range from 0 to 8.4 percent of the total population. None exceed 50 percent of the total population or significantly exceed the minority populations of the counties (9.8 percent in Callaway and 5.6 percent in Montgomery) or state (20.2 percent).

Low-income populations in the block groups along the corridor range from 7.0 to 25.0 percent of the total population. None of the block groups contain low-income populations that exceed 50 percent of the total population or significantly exceed (i.e., greater than or equal to 20 percent) the low-income populations of the counties (12.3 percent in Callaway and 16.1 percent in Montgomery) or state (14.6 percent). Based on this data and a review of the communities adjacent to the project corridor, no readily identifiable groups of minority or low-income persons are located in the vicinity of the SIU 6 corridor. Therefore, as in the 2005 EA, the analysis did not identify any environmental justice populations in the SIU 6 corridor that would experience disproportionately high and adverse effects resulting from project activities.

Soils and Geology

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☒ No ☐

Construction of the proposed interchange and Janice Avenue improvements would require the permanent clearing of vegetation along areas where additional roadway would be constructed. Thus, the soils present within the project area may become more erodible during the construction phase. However, areas temporarily cleared of vegetation would be introduced with site-appropriate seed upon completion of construction, lessening the erosion hazard and minimizing the impact. In addition, to minimize potential soil erosion during construction activities, MoDOT's Sediment and Erosion Control Program would be followed and measures described in the approved Pollution Prevention Plan, such as the utilization of berms, slope drains, ditch checks, sediment basins, silt fences, rapid seeding and mulching, and other erosion control devices or methods would be implemented as needed. Therefore, impacts to soils and geology would be minor.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☒ No ☐

Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

As the majority of geologic change and changes in soil composition occur gradually over long periods of time, and no major natural disasters or human developments have occurred in the region that would have notable impacts to geology or soils, geologic conditions along the project corridor are not expected to have experienced notable changes since the 2005 EA. Since the proposed I-70 improvements are consistent with those proposed in the 2005 EA, with the exception of the Mineola Hill segment, impacts to soils and geology within the remaining corridor would be consistent with the 2005 determinations and the EA would remain applicable for this resource.

Surface Water Resources	
SIU 6 Corridor, Kingdom City Segment (Project J5P3417)	
Is there an impact to this resource? Field work was conducted by a Hg Consult biologist in November 2021. Many of the same streams and other Waters of the US (WOUS) were found. The complete memo, <i>Interchange Improvements at the US 54 and I-70 Interchange in Kingdom City: Waters of the U.S. Delineation</i> is included in Appendix D. A summary of findings are as follows: - A total of eight streams were identified of which five are within the Preferred Alternative potential impact area. - The five streams within the Preferred Alternative potential impact area are ephemeral and total 2,297 linear feet in length. A total of four wetlands were delineated of which three are within the Preferred Alternative potential impact area. - Maximum total potential wetland impact: 0.12 acres. - Stream and wetlands are shown on the map in Appendix C. Efforts will be made to avoid and minimize wetland and stream impacts for the US 54 and I-70 interchange improvements. Estimated total impacts are below 0.5 acres, meeting the threshold of a Section 404 Nationwide Permit. Compensatory mitigation may be required for wetland impacts greater than 0.1 acre and stream impacts greater than 0.03 acre. If stream mitigation is required, MoDOT will purchase credits from an in-lieu fee provider. If wetland mitigation is required, MoDOT will purchase credits from an in-lieu fee provider, deduct credits from a MoDOT mitigation bank outside the service area (at a potentially higher mitigation ratio), or purchase credits from a non-MoDOT mitigation bank in the service area.	Yes ☒ No ☐
Remaining SIU 6 Corridor	
Is there an impact to this resource? Change since 2005 EA Based on a desktop review and “windshield” survey of previously identified water features along the corridor in the fall of 2019, most features (streams, wetlands, and ponds) appeared to be in relatively the same condition as noted in the 2004 WOUS delineation for the 2005 EA. However, four streams and three wetlands were identified that were not identified in 2004. In 2005, total estimated stream impacts for the overall SIU 6 corridor were 27,069.74 linear feet/3.32 acres. Based on the review conducted for the 2020 re-evaluation, current estimated stream impacts for the remaining SIU 6 corridor were 23,854.1 linear feet/3.015 acres. As identified in the 2005 EA, implementation of the preferred alternative would impact 3.32 acres of streams and 7.65 acres of wetlands throughout the SIU 6 corridor. The 2020 Mineola Hill re-evaluation identified 7.95 acres of permanent wetland impact, 0.44 acres in the Mineola Hill segment and 7.51 acres for the remaining SIU 6 corridor. In terms of overall impact, combined stream and wetland impact slightly decreased from 10.97 acres determined during the 2005 EA to 10.96 acres determined during the re-evaluation, or a total stream and wetland impact decrease of 0.04 acres.	Yes ☒ No ☐ More Impacts ☐ No Change ☐ Fewer Impacts ☒
Groundwater	
SIU 6 Corridor, Kingdom City Segment (Project J5P3417)	
Is there an impact to this resource? The project will occur mainly within the existing right of way and involve minimal excavation. Construction activities are not expected to impact groundwater in this area. A search of the Missouri Department of Natural Resources’ (MDNR) Wellhead Information Management System database shows 30 total wells near the US 54 and I-70 interchange, sorted by location and well type, they are shown in the table below.	Yes ☐ No ☒

**I-70 SIU 6 Environmental Assessment Re-evaluation
Missouri Department of Transportation**

	Abandoned Soil Borings	Monitoring Wells	Abandoned Monitoring Wells	Abandoned Domestic Wells
North of I-70				
East of US 54 at Dunn Dr	1	8		
East of US 54 at Old US 40				1
South of I-70				
East of US 54, North of Janice Ave		1		
East of US 54, South of Janice Ave	3	4	3	
West of US 54, South of Janice Ave		5	4	
Total	4	18	7	1

One abandoned well (since 2013) is located east of US 54, north of Janice Ave is located within the project footprint. Monitoring wells in the study area are monitoring for petroleum and related substances. None of the wells are anticipated to be impacted by the project and will be avoided if possible. If any of these wells cannot be avoided by the project, the wells would be appropriately closed and sealed to prevent any contamination to groundwater.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☐ No ☒
 Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

A database search for groundwater wells within one mile of the SIU 6 corridor for the 2005 EA identified 79 wellheads and 15 public water supply wells, with a concentration of wells located in the western part of SIU 6 near Kingdom City. A recent search of the MDNR's Wellhead Information Management System database identified 79 domestic water wells within one mile of the SIU 6 corridor. Although specific well locations were not identified in the 2005 EA, the recent research indicates that wells are primarily dispersed throughout the area on farms and residential properties which is consistent with resource findings in 2005. As no substantial land use changes have occurred that would affect groundwater since the 2005 EA, and the proposed I-70 improvements have not changed outside the Mineola Hill segment, impacts to groundwater within the SIU 6 corridor would remain consistent with the determinations of the 2005 EA.

Floodplains

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☐ No ☒

A check of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) online for Kingdom City (Panel number 29027C0200E) showed the only floodplain is associated with McKinney Creek. This is outside the potential impact area of the preferred alternative and thus no floodplains will be impacted by the project.

In accordance with 23 CFR 650.111, the project is not expected to increase the potential for loss of life or property and would therefore not be considered a significant risk. The project does not result in a substantial adverse impact on natural and beneficial floodplain values. Since there will be temporary soil disturbance during construction activities, sediment and erosion control best management practices (BMPs) will be utilized during construction and disturbed areas will be seeded following construction. The proposed project would not create new access to undeveloped lands and would therefore not support incompatible floodplain development.

Remaining SIU 6 Corridor	
Is there an impact to this resource?	Yes ☒ No ☐
Change since 2005 EA	More Impacts ☐ No Change ☐ Fewer Impacts ☒
The 2005 EA identified 100-year regulatory floodplains within the remaining SIU 6 study corridor associated with the following streams and creeks: Houf's Branch, McKinney Creek, McCredie Branch, Maddox Branch, Auxvasse Creek, and Whetstone Creek. The proposed improvements will still encroach upon each of these floodplains; however, based on revised FEMA FIRMs, the acreage of floodplain impacted by the project would be less than that described in the 2005 EA. The FIRMs for the project corridor (panel numbers 29027C0200E, 29027C0225E, 29027C0250E, 29139C0225D, 29139C0250D, and 29139C0275D), effective May 18, 2009, and September 5, 2012, were updated to reflect existing development, removing portions of the built-up area associated with the I-70 corridor from the 100-year floodplain. Thus, the acreage of 100-year floodplain impacted along the remainder of the SIU 6 corridor would be less than the 20.1 acres noted in the 2005 EA. Additionally, there would be no impacts to regulatory floodways in the Mineola Hill segment which is consistent with the 2005 EA. As MoDOT would obtain floodplain development permits from SEMA prior to FHWA authorization for construction within the 100-year floodplain, floodplain impacts would remain bounded by the findings and conditions of the 2005 EA.	
Public Lands	
SIU 6 Corridor, Kingdom City Segment (Project J5P3417)	
Is there an impact to this resource?	Yes ☐ No ☒
Section 4(f) states that land from a publicly owned park, recreation area, wildlife or waterfowl refuge, or land of a historic site can be used for a transportation project only if there is no feasible and prudent alternative and all possible measures have been taken to minimize harm. There are no publicly owned parks in the project area. The FastLane Pup Park is located near the FastLane convenience store at the intersection of Janice Ave and the entrance to FastLane. Because the Pup Park is privately owned, Section 4(f) does not apply. Furthermore, this park will not be impacted by the improvements at this intersection.	
Remaining SIU 6 Corridor	
Is there an impact to this resource?	Yes ☐ No ☒
Change since 2005 EA	More Impacts ☐ No Change ☒ Fewer Impacts ☐
Public lands, recreational facilities, and wildlife refuges, subject to Section 4(f), that were identified along the study corridor in the 2005 EA include Graham Cave State Park, Whetstone Creek Conservation Area, McCredie Farm Lake, Prairie Fork Creek Conservation Area, and Loutre Lick Access. Graham Cave State Park had the potential to be impacted by the Mineola Hill climbing lanes however the improvements would occur within existing right-of-way and thus the park would be avoided. As noted in the EA, none of these properties would be directly impacted by the proposed improvements and there would be no use of Section 4(f) resources. Based on a review of state and federal databases from Missouri Department of Conservation (MDC), Missouri State Parks, and the Protected Areas database of the U.S., Moore's Mill Access was identified in the vicinity of the SIU 6 corridor, approximately 1.4 miles south of the Route Z interchange. This facility, subject to Section 4(f), is managed by MDC and provides primitive campsites and access to Auxvasse Creek. However, given the distance between this facility and the SIU 6 corridor, there would be no direct or indirect impacts to this resource resulting from the proposed I-70 improvements. Therefore, impacts to public lands along the SIU 6 corridor would remain consistent with the determinations of the 2005 EA.	
Prime Farmland	
SIU 6 Corridor, Kingdom City Segment (Project J5P3417)	
Is there an impact to this resource?	Yes ☐ No ☒

**I-70 SIU 6 Environmental Assessment Re-evaluation
Missouri Department of Transportation**

A minor amount of right-of-way (1.28 acres) classified as "land committed to other uses" is needed to construct the project.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☒ No ☐
Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

Impacts to soils with prime farmland characteristics were quantified in the 2005 EA. Based on consultation with the Natural Resources Conservation Service (NRCS), conversion impact rating totals reported on the Farmland Conversion Impact Rating Form AD-1006 completed for each county along the corridor were determined as follows: 138 points for Callaway County and 142 points for Montgomery County. Both counties were below the 160 points needed to require additional avoidance and or/mitigation measures. The recommended preferred alternative would convert approximately 410 total acres of prime and unique farmland to highway right of way. As the proposed I-70 improvements have not changed from what was proposed in the 2005 EA, with the exception of the Mineola Hill climbing lane segment, and underlying soil types in the project corridor are not expected to have experienced notable changes since that time, impacts to prime farmland would remain consistent with the 2005 determinations and the EA would remain applicable for this resource.

Visual Quality

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☐ No ☒
This project would replace an existing diamond interchange with a diverging diamond interchange. Once complete, the new interchange would not have any change in the visual characteristics of the area.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☒ No ☐
Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

The Visual Assessment conducted for the 2005 EA notes that overall, the proposed I-70 improvements associated with the expansion of the interstate along the existing mainline path would have a minimal visual impact and would not significantly change the viewshed for viewers either from or of I-70 in the remaining segment. While construction would eliminate some woodlands and farmland, and there may be increased lighting impacts at night near intersections, the view from the majority of the corridor would remain relatively the same, with a slightly wider roadway in the viewshed. As the proposed I-70 improvements have not changed outside the Mineola Hill segment and there has been no notable development resulting in new visually sensitive receptors, the impacts to visual quality would remain consistent with the 2005 determinations and the findings from the EA would remain applicable for this resource.

Air Quality

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☐ No ☒
According to the 2005 EA, the most likely occurrence for exceeding the National Ambient Air Quality Standards is at a controlled intersection which has the potential to create excessive traffic queues. Making improvements at the US 54 and I-70 interchange will reduce queues and congestion, improve traffic flow, operations and safety. The proposed improvements would not result in increased miles traveled; therefore, there would be no adverse impact to air quality.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☐ No ☒
Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

For air quality impacts, the 2005 EA is still applicable. SIU 6 is contained within Callaway and Montgomery counties which fall into the Northern Missouri Intrastate Air Quality Control Region. Callaway and Montgomery counties are currently in attainment for all criteria pollutants (40 CFR 81.326) (<https://www3.epa.gov/airquality/greenbook/anc1.html>). The proposed alignment would not result in increased miles traveled; therefore, there would be no adverse impact to air quality.

Noise

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☐ No ☒

There are no sensitive noise receptors located within, or adjacent to, the preferred alternative. The improvements at the interchange do not substantially alter the configuration that would impact noise sensitive receptors. In addition, improvements at Janice Avenue do not substantially alter the roadway to halve the distance to a frequent human use area. Therefore, no elements of this project would meet the criteria to designate it a Type I project. There are no noise impacts related to project J5P3417.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☒ No ☐

Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

A noise study was completed for the 2005 EA, analyzing noise impacts to selected receptors along the length of the SIU 6 corridor. That study and the analysis conducted for the Mineola Hill segment in 2020 found that a number of receptors along the remainder of the corridor would experience noise impacts (meeting or exceeding 66 dBA) under the 2030 Build conditions, primarily due to increasing amounts of traffic. As the average annual daily traffic (AADT) projections utilized in the noise study were considerably higher than current projections for 2040, noise impacts along the corridor would remain consistent with or less than those determined in the noise study. Therefore, the findings of the 2005 EA would remain valid for this resource.

Noise mitigation measures were not considered for the proposed improvements in the 2005 EA, as they did not meet specific definitions for reasonableness. It was determined that noise walls would not be cost-effective or reasonable due to the sparse number of sensitive noise receptors close to the interstate. As the criteria for noise abatement reasonableness and feasibility have since changed, the consideration of noise mitigation would be re-evaluated if improvements within the remaining corridor are implemented in the future.

Threatened and Endangered Species

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☒ No ☐

The section below on the remaining SIU 6 corridor lists threatened and endangered species identified in the project area.

During field work conducted in November 2021, potential bat habitat was identified near the I-70 westbound exit ramp. The wooded area is located just north of the ramp and appears to have suitable roost trees for the Indiana Bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*). These species are listed as federal and state-listed endangered; and federal-listed threatened, respectively. These species as well as the Gray Bat (*Myotis grisescens*) (federal and state-listed endangered) and the Monarch Butterfly (*Danaus plexippus*) (candidate species) are listed on Information for Planning and Consultation (IPaC) (11/5/2022).

An updated USFWS IPaC official species list was generated March 7, 2022 (Project Code 2022-0016475) and contains the following species: Gray, Indiana, northern long-eared bats; Monarch butterfly.

Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. Indiana and northern long-eared bat hibernate in caves during winter and roost in forested habitat in summer where they use trees with suitable characteristics (cracks, crevices, peeling bark) for roosting. The listed bat species occasionally use bridges for roosting. The MDC Heritage Database (updated Feb 2022) and

MSS Cave Database (updated Feb 2022) show no records for bats or caves near the project area. This project will not impact caves. The bridges present in the project area are not ideal for roosting because of the interstate traffic. This project may impact up to 0.87 acres of trees within 100 feet of the existing roadway. A habitat assessment has not been completed, but the area has been assumed to contain potentially suitable roost trees. Winter tree clearing dates (tree clearing only Nov 1- Mar 31) will be adhered to.

MoDOT, acting as the designated non-federal lead agency for T&E determination for FHWA, has determined that this project may affect, but is not likely to affect, Indiana and northern long-eared bats. MoDOT has determined that this project will not impact habitats suitable to gray bat; this project will have no effect on gray bat. The USFWS IPAC determination key was completed and submitted to USFWS on 05/18/22. The USFWS has not responded within their 14 days to provide comments. Therefore, concurrence with the FWS that this project may affect, but is not likely to affect, Indiana and Northern long-eared bats and will have no effect on gray bats was provided on June 2, 2022.

There are two Monarch butterfly populations in North America, east and west of the Rocky Mountains. These populations migrate to overwintering sites in Mexico and California. Milkweed is an obligate host plant for eggs and larvae, and adult butterflies requires a diversity of blooming nectar sources during breeding and migration. Per guidance received from USFWS on 1/5/2021, conferencing for monarchs is not required unless MoDOT is receiving funding from the USFWS. Since that is not the case with this project, MoDOT has not made an effects determination for this species.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☐ No ☒
Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

The 2005 EA found no impacts to threatened or endangered species from the preferred alternative, but it recommended further consultation of the Missouri Department of Conservation Natural Heritage Database as projects are close to implementation, and avoidance of instream activities between March 15 and June 15 for reaches of Whetstone Creek.

For the 2020 Re-evaluation, project screening for threatened and endangered species for the SIU 6 corridor was conducted through IPaC (11/1/2019) and MDC (12/12/19). The US Fish and Wildlife Service (USFWS) and MDC identified the following federal species that could be potentially affected by the project, however critical habitat for each species was not identified in the project area.

Bald eagles

Bald eagles (*Haliaeetus leucocephalus*) nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. No eagle nests were identified in the project area.

Gray Bat

Gray bats (*Myotis grisescens*, federal and state-listed endangered) occur in Callaway and Montgomery Counties and could occur within one mile of the project area, as they forage over streams, rivers, and reservoirs.

Indiana Bat and Northern long-eared Bat

Indiana bats (*Myotis sodalis*, federal and state-listed endangered) and Northern long-eared bats (*Myotis septentrionalis*, federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams.

The federally listed threatened and endangered species assessed in the 2005 EA consisted of the running buffalo clover (*Trifolium stoloniferum*) and Indiana bat (*Myotis sodalis*). Since that time, the endangered Gray bat

(*Myotis grisescens*) and the threatened Northern long-eared bat (*Myotis septentrionalis*) have been added to the USFWS federal listed species and the running buffalo clover has been removed for the project area.

The Natural Heritage records from MDC also identified several other state-listed endangered species and/or state-ranked (not state-listed endangered) and natural communities of conservation concern in the project area. These include the following:

- False mermaid (*Floerka proserpinacoides*)
- Yellow False Mallow (*Malvastrum angustum*)
- A Liverwort species (*Marsupella sullivantii*)
- Prairie Dandelion (*Nothocalais cuspidate*)
- Blacknose Shiner (*Notropis heterolepis*)
- Eastern Eulophus (*Perideridia Americana*)
- American Badger (*Taxidea taxus*)

As no construction or tree clearing will be conducted outside of the Kingdom City segment, no threatened or endangered species would be impacted in the remaining SIU 6 corridor. For future projects in the remaining SIU 6 corridor, surveys to identify federal- and state-listed protected species and/or their habitat would be required.

Hazardous Materials and Waste Management

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☐ No ☒

The 2005 EA identified 14 sites in the US 54 and I-70 interchange area. An EDR report and MDNR's E-START interactive map was used to determine if there are potential hazardous materials sites within the study area at Kingdom City. A total of 12 potential hazardous materials sites occur in the study area and are summarized in the table below. The map in **Appendix C** shows the location of these sites.

Facility	Map ID	Address	Description	Potential Impact (Yes/No)	Potential Risk (Low, Medium, High)
From the EDR Report					
Abandoned Site	E1/1*	5475 Hwy FF	LUST, Spills, UST	No	Low
UST Facility	E2/2*	Old Hwy 40E	UST	No	Low
Fastlane Crossroads	E3/4*	3154 US 54	FINDS, ECHO	No	Low
Kingdom City Repeater Station	E4/3*	5409-5599 Angel Dr/5584 Dunn St	FINDS, Brownfield	No	Low
Fastlane #51	E14/9*	3325 County Rd 211	LUST, UST, Spills	No	Low
Kingdom City Shell	E16		UIC	No	Low
Petrolube/Kingdom City Stopping Center	E17/8*	3296 Gold Road	LUST, UST, Spills, ERNS, ECHO, FINDS	No	Low
From MDNR E-Start Database					
Yesway #1135	5	3179 US 54	UST	No	Low

**I-70 SIU 6 Environmental Assessment Re-evaluation
Missouri Department of Transportation**

MM-1 Kingdom City Weigh Station F-1	6	I-70 & US 54	UST	No	Low
Fastlane #53	7	3259 County Rd 211	UST	No	Low
Westland Travel Center	10	3269 Gold Rd	UST	No	Low
University of Missouri McCredie Research Farm	11	County Rd 145	Long-term Stewardship for pesticide contamination	No	Low

*Found in both the MDNR E-Start Database and EDR report.

Project activities would be mostly limited to MoDOT's existing right of way with the exception of 1.28 acres, there likely would be no direct impact to any sites and low risk for potential surface or subsurface contamination. Based on the preferred alternative preliminary alignment, none of the properties listed above would be impacted by the project. Specifically, there would be 0.01 acre acquired from the site labeled E16 in the table above. This site has a UIC or Underground Injection Control and construction would be at the edge of the parcel. The other site is labeled as 10 in the table above. This site contains a UST and would have 0.06 acre needed from the edge of the parcel for construction of Janice and the entrance to this property. Efforts to avoid or minimize encountering the UIC and UST will be made. Regarding Site 10, DNR issued a No Further Action (NFA) letter in July 2013 based on a review of information and risk assessment from cleanup and remediation from a release of 30,000 gallons of diesel fuel. Efforts to avoid or minimize encountering the UIC and UST will be made. Kingdom City Stopping Center (Map ID E17/8 in the table above) is not anticipated to be impacted but is a location of a petroleum release. It was issued a NFA in July 2002 based on a review of analytical data and information submitted. No impacts to hazardous materials are expected and no remediation is warranted. However, there is a low likelihood of encountering unexpected hazardous materials, and therefore, if any are discovered (e.g., underground storage tanks, contaminated soils), construction would be stopped, and appropriate remediation would be implemented.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☐ No ☒
Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

From the 2020 re-evaluation, MDNR's E-START interactive map was used to determine if there are potential hazardous materials sites within the SIU 6 corridor that were not previously identified in the 2005 EA. All records of hazardous substance investigation or cleanup sites and regulated storage tank facilities identified on the E-START map in the project vicinity were reviewed. All records either corresponded with previously identified hazardous materials sites (mapped in Appendix C of the 2004 Draft EA) or, upon further investigation, were found to be associated with properties considerably outside the project's proposed limits of disturbance. As no additional hazardous materials sites were identified along the corridor, the 2005 EA findings remain applicable for this resource.

Cultural and Historic Resources

SIU 6 Corridor, Kingdom City Segment (Project J5P3417)

Is there an impact to this resource? Yes ☐ No ☒

MoDOT initiated Section 106 consultation with the State Historic Preservation Office (SHPO) on May 31, 2022 by sending the cultural resource survey titled "Cultural Resources Survey: Callaway County, Route 54, MoDOT Job No. J5P3147". On June 15, 2022, the SHPO provided concurrence that project would result in "No Historic Properties Affected". A copy of SHPO's Section 106 concurrence letter is provided in Appendix E.

In conjunction with Section 106, notices regarding the project were sent to federally recognized tribes on October 28, 2021. On October 28, 2021, the Miami Tribe of Oklahoma responded that they had no objection to the project assuming that it did not impact Graham Cave, the Loutre Valley Rock Shelter, the Mineola Hill Rock

Shelter or other historically or culturally significant sites. Further, the Miami Tribe accepted the invitation to serve as a consulting party on the proposed project.

Remaining SIU 6 Corridor

Is there an impact to this resource? Yes ☐ No ☒
Change since 2005 EA More Impacts ☐ No Change ☒ Fewer Impacts ☐

Four potentially significant archaeological sites have been identified within the I-70 right of way in the Mineola Hill segment. Measures were taken to avoid and/or minimize the potential for impacts to archaeological resources 23MT1431, 23MT1432, 23MT1436, and 23MT1496. No ground disturbing activities were permitted in those site areas without either prior evaluative testing or measures to preserve the sites in place by placement of a protective covering comprised of geotextile and a layer of fill suitable to prevent rutting of the ground, and preservation of the archaeological data. On February 11, 2020, the Missouri State Historic Preservation Office (SHPO) concurred that with implementation of the stipulations. No historic properties will be adversely affected by the Mineola Hill project.

The Missouri SHPO Archaeology Viewer interactive map was reviewed to determine if any new cultural resource surveys and archaeological sites have been recorded since publication of the 2005 EA. No new archaeological sites were found. No new surveys were identified within the remaining SIU 6 corridor, and all other sites and surveys corresponded with previously identified sites and surveys as included in the 2005 EA. As no additional archaeological sites were identified along the corridor, the 2005 EA findings remain applicable for this resource.

Mitigation and Environmental Commitments

Decisions

The following provides a review of decisions made through the course of the First and Second Tier Studies.

12-18-2001 Interstate 70 Corridor, Kansas City to St. Louis, Missouri Final First Tier EIS and ROD – Within the first Tier of the EIS, FHWA approved the selection of the Widen Existing I-70 Strategy for the I-70 Corridor. The strategy would improve existing I-70 by adding lanes and reconstructing the existing roadway to enhance safety and performance, including improved access management. This strategy included provisions for future transportation improvements within the median in rural areas, and the ability to add capacity in the future. (Applicable to Project J5P3417)

05-26-2005 Interstate 70 SIU 6 Corridor Final Second Tier EA and FONSI - The second tier EA evaluated impacts to SIU 6, defined as an 850-foot band centered along existing I-70 from the U.S. 54 interchange with I-70 (mile post 147) near Kingdom City to Route 19 but not including the interchange near Montgomery City (mile post 174). The selected alternative included an additional lane in each direction, the replacement of all existing interchanges and overpasses, access management where appropriate, and the provision for continuous frontage roads on both sides of I-70 as deemed necessary. (Applicable to Project J5P3417)

08-14-2009 Interstate 70 Corridor, Kansas City to St. Louis, Missouri Supplemental EIS and ROD – Within the First Tier of the I-70 SEIS, the Truck-Only Lanes Strategy was determined to be the selected improvement strategy. The Truck-Only Lanes Strategy would construct two truck-only lanes and two or more general purpose lanes in each direction along existing I-70. Concrete barriers, buffer separations or grassed areas would separate the truck-only lanes and general-purpose lanes from each other, depending on the location along the corridor. The Truck-only Lanes Strategy was determined to be consistent with the decisions made in the 12-18-2001 ROD, as it would fit within the limits of the previously evaluated footprint, to the extent possible, utilizing the future transportation corridor identified in the Widen Existing I-70 Strategy. The footprint for the truck-only lanes through Mineola Hill will remain entirely within the previously evaluated footprint identified in the original Improve I-70 Second Tier Studies. Interchange features of the Widen Existing I-70 Strategy at the majority of the interchanges along the corridor would be retained. **(Not Applicable to Project J5P3417)**

List of Commitments

As identified in the 12-18-01 ROD for the Tier 1 EIS and the 5-26-05 Final Second Tier FONSI for SIU 6, MoDOT agreed to the commitments and future actions during the design and construction phases of future improvements in the SIU 6 corridor. The agreed upon commitments and future actions are summarized below. In addition, applicability of the commitments as related to Project J5P3417 are identified. Changes or updates to these commitments are shown below each commitment where applicable.

Existing Commitments from the 2005 FONSI Common to all SIUs:

1. *MoDOT will comply with the appropriate currently adopted design criteria and design standards. (Applicable to Project J5P3417)*
2. *MoDOT will incorporate suitable and reasonable Intelligent Transportation Systems elements into the Improve I-70 program. (Applicable to Project J5P3417)*
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 Project J5P3417)*
4. *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. (Applicable to Project J5P3417)*
5. *MoDOT will coordinate with project area businesses regarding access issues, via direct communication throughout the construction period. (Applicable to Project J5P3417)*
6. *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. (Applicable to Project J5P3417)*
7. *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 Project J5P3417)*
8. *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 Project J5P3417)*
9. *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 US Army Corps of Engineers (USACE) and MDNR permits and certifications. (Applicable to Project J5P3417)*
 - To minimize potential soil erosion during construction activities, MoDOT's Sediment and Erosion Control Program would be followed and measures described in the approved Pollution Prevention Plan, such as the utilization of berms, slope drains, ditch checks, sediment basins, silt fences, rapid seeding and mulching, and other erosion control devices or methods would be implemented as needed. (SIU 6 EA Re-evaluation)
10. *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 Project J5P3417)*

11. MoDOT is committed to minimize 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 Project J5P3417)**

12. 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 Project J5P3417)**

13. MoDOT will review the Natural Heritage Database and coordinate as necessary with the USFWS periodically during the project development process to identify any new locations of threatened and endangered bat activity and to ensure that any newly listed or proposed listed species are addressed. MoDOT will ensure that there will be no tree clearing beyond 100 feet from the existing roadway north of I-70 and beyond 50 feet from the existing roadway south of I-70, and that clearing of suitable roost trees for Indiana and northern long-eared bats will occur during the inactive season (November 1-March 31). **(Applicable to Project J5P3417)**

14. 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. **(Applicable to Project J5P3417)**

- MoDOT will follow standard policy of planting cool season grasses adjacent to right of way and plant warm season natives outside of the 30-foot clear zone since the current project improvements are not requiring new right of way. **(SIU 6 EA Re-evaluation)**

15. 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. **(Applicable to Project J5P3417)**

- If mitigation is required, MoDOT will mitigate stream impacts with an in-lieu fee provider, and wetland impacts will be mitigated either at a MoDOT bank outside the service area at a higher ratio, or by purchase of credits from an outside bank in the service area. **(SIU 6 EA Re-evaluation)**

16. 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 Project J5P3417)**

- The Programmatic Agreement has expired. MoDOT will coordinate with SHPO related to the Section 106 process should design modifications and/or construction activities result in impacts to historic properties. **(SIU 6 EA Re-evaluation)**

17. 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 Project J5P3417)**

- MoDOT no longer has a tree replacement policy in place. Trees will only be removed from the area required for the expanded I-70, including the US54 and I-70 interchange (if applicable) and no open space for planting will be created. As a result, MoDOT will not implement replacement of removed trees. **(SIU 6 EA Re-evaluation)**

18. Where feasible, MoDOT's design process will minimize impacts to floodplains. **(Not applicable to Project J5P3417)**

19. 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 Project J5P3417)**

20. 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 Project J5P3417)**

21. Plans for suitable pedestrian, bicycle and wheelchair access across I-70 will be developed during the design of the interchanges. **(Applicable to Project J5P3417)**

Existing Commitments from the 2005 FONSI Commitments Specific to US 54 and I-70 Kingdome City SIU 6:

22. MoDOT will not construct the directional ramps at Kingdom City until such time that traffic volumes degrade the operation of the interchange to an unacceptable level and not until such time as a re-evaluation of the need has been completed. **(Applicable to Project J5P3417)**

23. Any impacted well will be avoided if possible and if not they will appropriately closed and sealed to prevent any contamination of groundwater. **(Applicable to Project J5P3417)**

Additional SIU 6 EA Re-evaluation Commitments:

24. 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.

25. Any previously unknown hazardous waste sites that are found during project construction will be handled in accordance with Federal and State Laws and Regulations. (Responsible Party – MoDOT/Contractor)

26. The Contractor shall not disturb the groundline around or any trees marked by Do Not Disturb on the plans during construction.

27. MoDOT will ensure that that there will be no tree clearing beyond 100 feet from the existing roadway north of I-70 and beyond 50 feet from the existing roadway south of I-70, and that clearing of suitable roost trees for Indiana and northern long-eared bats will occur during the inactive season (November 1-March 31).

28. The Contractor shall not disturb any wetlands or streams marked by Do Not Disturb on the plans during construction. The contractor shall use appropriate BMPs to prevent silt, sediment, and construction materials from entering streams and wetlands. If mitigation is required, MoDOT will mitigate stream impacts with an in-lieu fee provider, and wetland impacts will be mitigated either at a MoDOT mitigation bank outside the service area at a higher ratio, or through the purchase of credits from an outside mitigation bank in the service area.

29. The contractor shall follow EPG Section 127.22 for Offsite Borrow. MoDOT shall review and document the contractor's compliance with state and federal laws concerning offsite activities in the project file.

Table 2. SIU 6 EA Re-evaluation Summary Impact Table
Comparison of Impacts from the 2005 Second Tier EA to the Current Project

Resource Evaluated	Impact Findings		
	2005 Second Tier EA	SIU 6 EA Re-evaluation	
		US 54 and I-70 Interchange (Project J5P3417)	Remaining SIU 6 Corridor*
Socioeconomics	Minimal impacts include short-term economic declines during reconstruction of interchanges but improved opportunities following completion.	No impact. No changes to intersections or exits, and therefore, no change in visibility or accessibility to existing businesses.	Findings remain consistent with 2005 EA. Social setting and development has remained largely unchanged.
Land Use	No impact to community land use plans and policies.	No impact. Construction mainly limited to existing right of way designated for transportation use (1.28 ac needed for construction).	No impact. Findings remain consistent with 2005 EA.
Displacements	Sixteen residential dwellings and 8 businesses would be displaced.	No displacements. Construction mainly limited to existing MoDOT right of way (1.28 ac needed for construction).	Approximately same number of displacements. Findings remain consistent with 2005 EA.
Environmental Justice	No impact.	No impact.	No impact.
Soils and Geology	No impact.	No impact.	No impact.
Surface Waters	7.27 acres of wetlands and 27,187.7 linear feet of streams (3.33 acres) impacted by the preferred alternative.	0.12 acre of permanent wetland impact and 2,297 linear feet of ephemeral stream. No impact to permanent streams. Impacts would require a Section 404/401 Nationwide Permit with mitigation if wetland impacts cannot be reduced to below 0.1 acre. Stream mitigation is required for impacts greater than 0.03 acre.	Approximately 7.81 acres of wetlands and 23,854.1 linear feet of streams (3.36 acres). Impacts are less, but similar to 2005 EA.

Resource Evaluated	Impact Findings		
	2005 Second Tier EA	SIU 6 EA Re-evaluation	
		US 54 and I-70 Interchange (Project J5P3417)	Remaining SIU 6 Corridor*
Groundwater	No impacts.	No impacts. Wells that cannot be avoided by the project would be sealed and capped to prevent any contamination of groundwater.	No impacts. Findings remain consistent with 2005 EA.
Floodplains	38.9 acres of 100-year floodplain impacted by improvements.	No impact.	Fewer impacts to floodplains than 2005 EA due to revised FEMA FIRM mapping.
Public Lands	No impact.	No impact.	No impact.
Prime Farmland	Conversion of approximately 410 acres of prime and unique farmland.	No impact. Minor right of way needed (1.28 ac); no parcels are farmland.	Findings remain consistent with 2005 EA. Soil types within the project area have not experienced notable change.
Visual Quality	Minimal impacts associated with expansion of the interstate and elimination of some woodlands and farmland.	No impact.	Findings remain consistent with 2005 EA. No notable development resulting in new visually sensitive receptors.
Air Quality	No impact.	No impact.	No impact.
Noise	Fourteen receptors would exceed FHWA's Noise Abatement Criteria. Mitigation measures deemed not cost-effective or reasonable.	No impact. No noise sensitive receptors in this project and the project is designated as a Type III project.	Findings remain consistent with 2005 EA.
Threatened and Endangered Species	No impacts from the preferred alternative but recommended further consultation of the NHD and avoidance of instream activities between March 15 and June 15 for reaches of Whetstone Creek.	Field surveys for bat habitat were conducted in November 2021. Field surveys concluded a narrow strip of suitable habitat for listed Indiana, and northern long-eared bat species may be cleared during the inactive season. Effects on the	No impact. Additional surveys and consultation with USFWS would be conducted for future projects.

Resource Evaluated	Impact Findings		
	2005 Second Tier EA	SIU 6 EA Re-evaluation	
		US 54 and I-70 Interchange (Project J5P3417)	Remaining SIU 6 Corridor*
		Indiana bat and Northern long-eared bat were determined to be “may affect, but not likely adversely affect” under the FHWA Programmatic Agreement. The impact determination for Gray bats was “no affect”.	
Hazardous Materials and Waste Management	12 hazardous materials sites identified with low potential for impact.	A total of 12 sites are located within the project area. Two sites have small amounts of ROW (0.01 and 0.06 acre) from the edge of the parcels No impact to these or any of the sites is anticipated.	Findings remain consistent with 2005 EA. No new sites identified via review of MDNR’s E-START map.
Cultural and Historic Resources	Archaeological sites impacted by the preferred alternative: eight sites were recommended for avoidance; 11 sites were determined to have a potential for intact subsurface deposits. Historic Resources were avoided by the preferred alternative. Recommendations were made to avoid impacts to Graham Rock, although it was determined to be not eligible for the National Register of Historic Places (NRHP) by MoDOT and FHWA; SHPO	MoDOT initiated Section 106 consultation with the State Historic Preservation Office (SHPO) on May 31, 2022 by sending the cultural resource survey titled “Cultural Resources Survey: Callaway County, Route 54, MoDOT Job No. J5P3147”. On June 15, 2022, the SHPO provided concurrence that project would result in “No Historic Properties Affected”. A copy of SHPO’s Section 106 concurrence letter is provided in Appendix E.	No impact. No additional archaeological sites were identified along the corridor and the 2005 EA findings remain applicable.

**I-70 SIU 6 Environmental Assessment Re-evaluation
Missouri Department of Transportation**

Resource Evaluated	Impact Findings		
	2005 Second Tier EA	SIU 6 EA Re-evaluation	
		US 54 and I-70 Interchange (Project J5P3417)	Remaining SIU 6 Corridor*
	concurred with the recommendation.		

*Analysis in the remaining SIU 6 corridor considers the preferred alternative in the 2005 SIU 6 EA which consists of an approximately 850-foot-wide corridor.

Re-evaluation Conclusion

Most of the impacts to socioeconomic and environmental resources resulting from the proposed project would remain the same as the impacts identified in the 2005 Second Tier EA. Although the roadway alignment has generally not changed, the US 54 and I-70 interchange project would occur mainly within the existing right of way, a smaller footprint than was recommended for the preferred alternative in the 2005 EA. The proposed project would result in wetland impacts; however, these impacts are consistent with impact findings in this section of SIU 6 which were evaluated in the 2005 EA.

This re-evaluation document demonstrates that the 2005 Final I-70 Second Tier EA and FONSI for SIU 6 remain valid. The proposed project continues to meet the purpose and need identified in the 2005 EA. Therefore, a supplemental study of the 2005 EA is not necessary for the current project.

US 54 and I-70 Interchange Project
Callaway County, Missouri
MoDOT Project J5P3417

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

Appendix A

2005 Selected Alternative

FRONTAGE ROADS: For clarification, this exhibit differentiates between frontage roads that are reasonably foreseen to be constructed with the initial reconstruction and widening of I-70 from those that may be constructed in the future as needs arise and funding becomes available. It is a goal of MoDOT to work toward one continuous frontage road along I-70, on one side or the other. Some sections of frontage road shown on this exhibit may never be constructed; however, impacts were assessed in this document for the entire footprint.

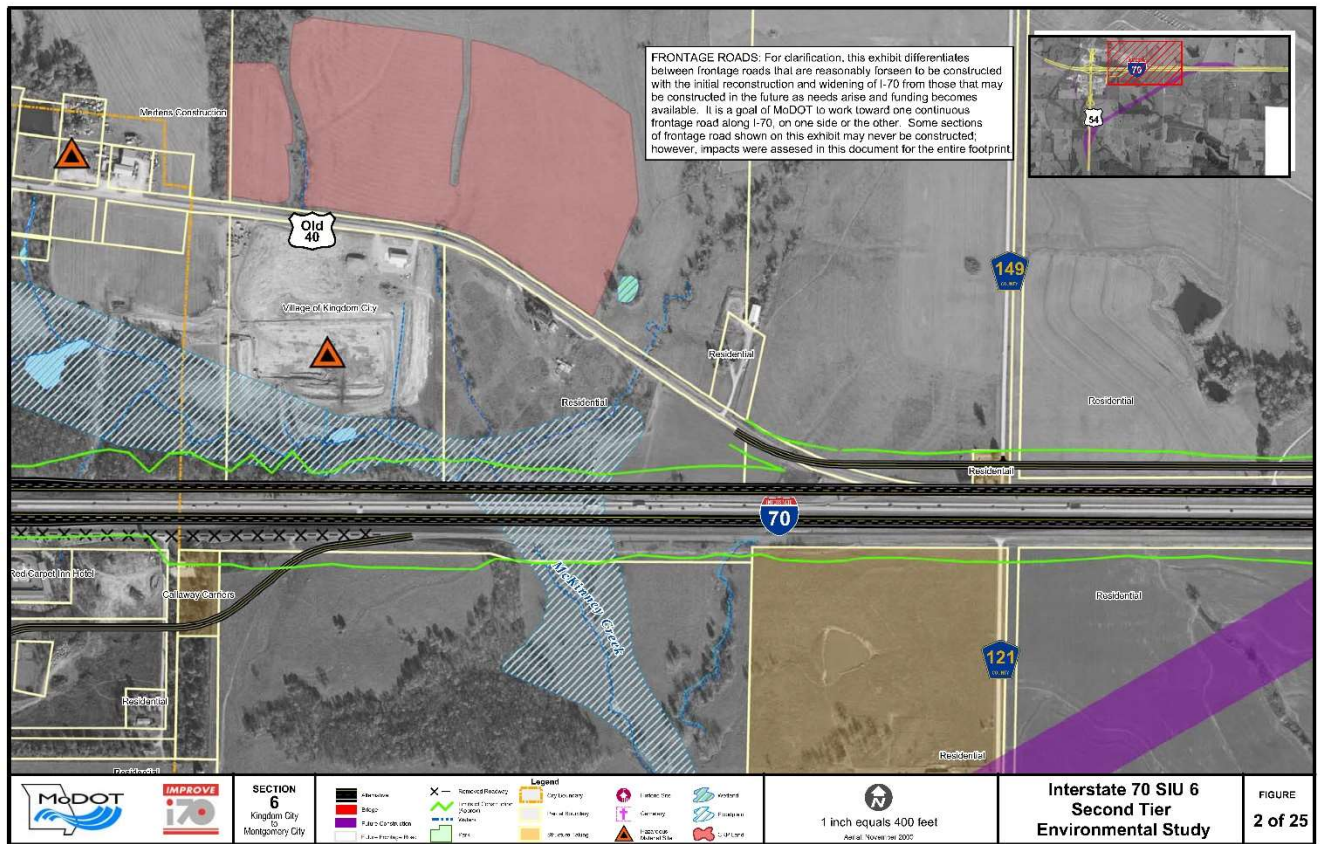
Legend

Alteration	Electronic Roadside	City Boundary	Highway	Waterway
Bridge	Limits of Construction	Parcel Boundary	Interchange	Wetland
Future Construction	Station	Shaded Parking	Roundabout	Wetland
Future Intersected	Park		Signal	Wetland

Scale: 1 inch equals 400 feet
 North Arrow

Interstate 70 SIU 6 Second Tier Environmental Study

FIGURE 1 of 25



[illegible]

FRONTAGE ROADS: For clarification, this exhibit differentiates between frontage roads that are reasonably foreseen to be constructed with the initial reconstruction and widening of I-70 from those that may be constructed in the future as needs arise and funding becomes available. It is a goal of MoDOT to work toward one continuous frontage road along I-70, on one side or the other. Some sections of frontage road shown on this exhibit may never be constructed; however, impacts were assessed in this document for the entire footprint.

SECTION 6
Kinginger City
to
Montgomery City

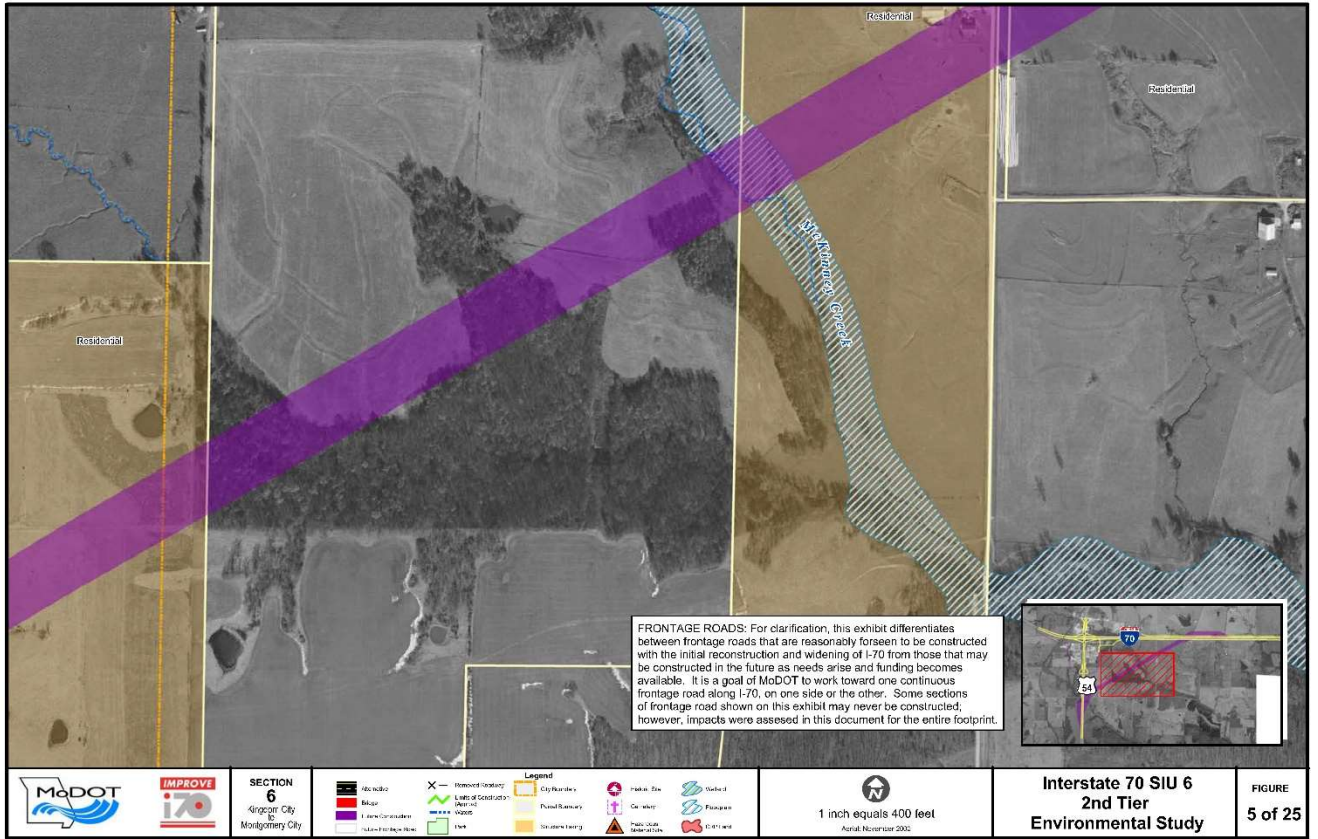
Legend

Frontage Road	Easement/Conveyance/Right-of-Way	City Block Line	Water in Site	Wetland
Private Property	Forest	Parcel Boundary	Cemetery	Recreation
Public Property Road	Forest	Forest Boundary	Cemetery	Recreation

**Interstate 70 SIU 6
Second Tier
Environmental Study**

FIGURE 4 of 25

**I-70 SIU 6 Environmental Assessment Re-evaluation
Missouri Department of Transportation**



FRONTAGE ROADS: For clarification, this exhibit differentiates between frontage roads that are reasonably foreseen to be constructed with the initial reconstruction and widening of I-70 from those that may be constructed in the future as needs arise and funding becomes available. It is a goal of MoDOT to work toward one continuous frontage road along I-70, on one side or the other. Some sections of frontage road shown on this exhibit may never be constructed; however, impacts were assessed in this document for the entire footprint.

Legend

Interchange	Interchange Station	City Boundary	Historic Site	Future Frontage Road
Frontage Road	Interchange Station	Future Frontage Road	Historic Site	Future Frontage Road
Future Frontage Road	Interchange Station	Future Frontage Road	Historic Site	Future Frontage Road
Future Frontage Road	Interchange Station	Future Frontage Road	Historic Site	Future Frontage Road
Future Frontage Road	Interchange Station	Future Frontage Road	Historic Site	Future Frontage Road

SECTION 6
Kingdom City to Montgomery City

Interstate 70 SIU 6
Second Tier
Environmental Study

FIGURE 6 of 25

Appendix B

Agency and Public Coordination Letters



54
ATI-70

Project Communications & Public Involvement

*Interstate 70/U.S. Route 54
Interchange at Kingdom City*



Table of Contents

Overall Approach
Public Safety Survey
Stakeholder Advisory Committee
Online Public Meeting

Appendix
Public Safety Survey Results
Promotion Materials
Presentation Materials
Public Comments



Overall Approach

Overall Public Involvement Approach

The project approach to communications, and stakeholder/public involvement activities for the Missouri Department of Transportation (MoDOT)'s Interstate 70/U.S. 54 Interchange Study in Callaway County was to engage area stakeholders and the community in the study process to gather feedback and input that will help ensure the study recommendations reflect the needs of the users of the system. The study goal was to develop a concept study and identification of interchange improvements that would enhance safety, manage congestion, and maintain accessibility to the nearby area businesses.

The outreach activities were completed in partnership with the consultant team and MoDOT, and were completed in three key phases:

1. Discovery & Data Collection
2. Draft Alternatives & Response
3. Preferred Alternative & Public Update

Outreach Tools

Upon project kickoff, the team worked together with MoDOT to determine the most appropriate strategy for establishing and distributing the following.

- » Project webpage – A study webpage was established on the existing MoDOT website to explain the goals of the study and anticipated timeline.
- » Comment form for stakeholders and the public to provide comments on the project webpage.
- » Email list – A list of stakeholders and interested parties was compiled and maintained for project updates, as available.
- » Press release – Press releases were used at key milestones of the project to encourage public comments and provide updates on the study recommendations.
- » Public notice – A 30-day public notice was posted in the Fulton Sun to advertise the start of a public comment period.
- » Social media posts – Social media posts were provided to MoDOT for posting on their Central District social channels.
- » Direct-mail – Stakeholder invitation letters and right of entry letters were distributed to property owners and nearby businesses.



54
ATI-I-70

Public Safety Survey

Public Safety Survey

A public safety survey was launched on September 22, 2021, and open for public response until October 15, 2021. The survey was promoted on the project webpage, email, and stakeholders were asked to share. The City of Kingdom City also promoted the survey with their elected officials and social media channels.

Around 60% of participants from the survey travel through the I-70/US 54 interchange on either a daily or weekly basis. Another 25% use the interchange on a monthly basis. Nearly 68% of surveyors were local residents, 7.5% were business owners in Callaway County (not directly located near this interchange), and 5.5% were owners/operators of a business near the I-70/US 54 interchange. The other 19% would describe themselves in other categories.

Surveyors selected their top safety concerns regarding the I-70/US 54 interchange and were encouraged to choose all options they felt were true. The top three concerns reported were interactions between heavy trucks and passenger vehicles (196 responses), traffic backing up at intersections north and/or south of the interchange (185 responses), and difficulty merging onto I-70 from US 54 ramps (174 responses).

Responders were shown a map of specific points within the intersection where they may have specific safety concerns. They were encouraged to select locations of key concerns. The top locations reported included the intersections on US 54 at I-70 ramps (181 responses), the entrance ramps from US 54 towards I-70, and the intersection on US 54 at Janice/Gold Rd.

Participants were asked what they believed may contribute to crashes or potential crashes on the I-70/US 54 interchange. They were encouraged to select all options that applied. Their responses included high traffic volumes (288 responses), interaction between trucks and passenger vehicles (182 responses), and running red lights (160 responses).

The survey input was used by the technical team to consider intersection improvements that addressed top concerns.



**SEPTEMBER 22–
OCTOBER 15, 2021**



**400
PARTICIPANTS**



TOP CONCERNS

- ① Interactions between heavy trucks and passenger vehicles
- ② Traffic backing up at intersections north and/or south of the interchange
- ③ Difficulty merging onto I-70 from US 54 ramps



54
ATI-I-70

Stakeholder Advisory Group Meetings

Meeting 1
Subgroup Meeting 1
Meeting 2

Stakeholder Advisory Committee

A project Stakeholder Advisory Committee (SAC) was established to serve as the project's local sounding board. Letters were distributed to nearby business/properties and follow up calls were made to invite attendees to participate. Some stakeholders preferred to be kept informed via email as the study progressed.

The SAC was invited to attend two SAC meetings. A subgroup meeting was also held and focused on select intersection access and one-on-one discussions to explore specific property access and impacts. A list of stakeholders invited to participate in the SAC follows.

PARTICIPATION	BUSINESS	REPRESENTATIVE
SAC participant	Callaway Carriers Inc.	John Lummis
SAC participant	Callaway County Ambulance District	Charles (Charlie) Anderson, Director
SAC participant	Callaway County Ambulance District	Linda Ellis, Assistant Director
SAC participant	Callaway County Commission	Randy Kleindienst, East District
SAC participant	Callaway County Commission	Roger Fischer
SAC participant	Callaway County Engineer	Paul Winkelmann
SAC participant	Callaway County Sewer District	Kent Wood
SAC participant	FedEx Freight	Don Logan, Advisor-Safety Project Management
SAC participant	FedEx Freight	Brent Sims, Local driver and resident
SAC participant	Kingdom City	Larry Doyle, City Administrator
SAC participant	Kingdom City	Curt Warfield, City Administrator
SAC participant	Kingdom City	Linda Diluvio, Board of Trustees
SAC participant	Magic Wash	Adam Stanberry, owner
SAC participant	McDonald's	Mark Mehle, owner
SAC participant	Missouri State Highway Patrol	Sgt Jerry Arnold, Zone Sergeant Callaway County
SAC participant	Missouri State Highway Patrol	Corporal Cody Frame
SAC participant	Missouri State Highway Patrol	Trooper McKinney
SAC participant	Missouri State Highway Patrol	Justin Turner
SAC participant	Motel 6 and Amerihost Inn & Suites	Sam Waheed, owner
SAC participant	North Callaway School District	Doug Kee, Transportation Director/Safety Coord.
SAC participant	Opies Transport Inc.	Brandon Opie, VP
SAC participant	Ozarkland	Kent Reed, General Manager
SAC participant	Warrenton Oil Company and Gasper's	Jim Baker, owner Mary Banmiller, Direct or of Retail & Operations
SAC participant	West Land Travel Center / Phillips 66	George Eble, owner

PARTICIPATION	BUSINESS	REPRESENTATIVE
Invited	Days Inn	Jack
Invited	Callaway County Commission	Gary Jungermann
Invited	Missouri State Highway Patrol	Sgt Ryan Thompson, Zone Sergeant
Invited	Ozark Valley Railroad	Heath Haden, VP Operations
Invited	Taco Bell	Letter invitation was mailed; phone call follow up
Invited	XVIII Wheelers Truck Wash	Letter invitation was mailed; phone call follow up
Invited	Petro/Mobil	Letter invitation was mailed; phone call follow up
Invited	Carpet Values	Letter invitation was mailed; phone call follow up
Invited	Arby's	Letter invitation was mailed; phone call follow up
Invited	Burger King	Letter invitation was mailed; phone call follow up
Invited	Denny's	Letter invitation was mailed; phone call follow up
Invited	Frontier Motel	Letter invitation was mailed; phone call follow up
Invited	Iron Skillet	Letter invitation was mailed; phone call follow up
Invited	Dairy Queen	Letter invitation was mailed; phone call follow up
Invited	Holiday Inn	Letter invitation was mailed; phone call follow up
Invited	Quality Inn	Letter invitation was mailed; phone call follow up
Invited	Gully Transportation Inc	Letter invitation was mailed; phone call follow up
Invited	Yesway	Letter invitation was mailed; phone call follow up
Invited	Fast Lane	Letter invitation was mailed; phone call follow up
Invited	Phillips 66	Letter invitation was mailed; phone call follow up
Invited	Gulf	Letter invitation was mailed; phone call follow up

The Lake Area Chamber of Commerce and the Missouri Trucking Association were informed of the project public survey as well as the online public meeting information and were asked to share the link to participate with their networks.

Those who provided their email address via the public survey received an email notification of the online public meeting information and opportunity to comment.

Stakeholder Advisory Committee (SAC) Meeting #1

Date: September 21, 2021

Location: Online via Zoom

Attendees: 28 total attendees (15 SAC members, 13 project team)

- » John Lummis, Callaway Carriers
- » Randy Kleindienst, East District Commissioner
- » Charlie Anderson, County Ambulance
- » Brent Sims, FedEx
- » Don Logan, FedEx
- » Larry Doyle, Kingdom City
- » Curt Warfield, Kingdom City
- » Adam Stanberry, Magic Wash
- » Corporal Frame, MO State Highway
- » Sergeant Arnold, MO State Highway
- » Sam Waheed, Motel 6 and Amerihost Inn & Suites
- » Doug Kee, North Callaway School District
- » Brandon Opie, Opies Transport
- » Kent Reed, Ozarkland
- » Jim Baker, Warrenton Oil Company

Project team included: MoDOT - Mia Peters, Matt Burcham, Cyrus Meller, Randall Glaser, Kirsten Munck, Randy Aulbur; Burns & McDonnell - Mike Herleth, Jessica Hutton, Meghan Jansen, Lisa Kay Hummel, Seth Gilliam, Tim Cope; HG Consult - Buddy Desai

The meeting started with SAC participants introducing themselves and sharing one or two items of most importance regarding the interchange. Common themes related to creating an overall safer interchange for I-70/US 54, increasing traffic flow efficiency for truck traffic, considerations for improvement for frequent backups and flow of traffic during lake season, and better flow on and off I-70.

Listed below are a highlight of local insights provided:

- » Farmers are moving their equipment in the spring/fall and it causes a slowdown in traffic. The machinery being moved is often wider than the typical highway lane.
- » Westbound on-ramp to I-70 does not provide enough room for heavy commercial vehicles to merge in heavy traffic.
- » Rain events cause a lot of accidents, especially with trucks.
- » MoDOT previously applied a high friction surface treatment on 54 north off the interchange for a curve section on a downgrade. The high friction surface was very helpful, but it is wearing down. This friction is important for school buses.
- » I-70 traffic is continuing to increase and speeding is also trending upward.
- » Better signing could help people choose their lane so they don't have to weave and cut people off to get to the exit they need.
- » Longer merging lane on I-70 east would be desirable.
- » Project team should look at the whole 54 corridor in this area and not just the interchange.
- » MoDOT should consider schedule construction impacts to have minimal impact to traffic and businesses and doesn't happen during the peak traffic/tourism months.

Stakeholder Subgroup Meeting #1

Date: October 25, 2021

Location: Online via Zoom

Attendees: 16 total attendees (9 select* SAC members, 7 project team)

- » Randy Kleindienst, East District County Commissioner
- » Paul Winkelmann, Callaway County Engineer
- » Curt Warfield, Kingdom City
- » Larry Doyle, Kingdom City
- » Sam Waheed, Motel 6 and Amerihost Inn & Suites
- » Jim Baker, Warrenton Oil Company
- » Mary Banmiller, Warrenton Oil Company
- » Mark Mehle, McDonald's
- » George Eble, Westland Travel Center

**Stakeholders with access considerations at Dunn Road and Janice Avenue were invited.*

Project team included: MoDOT - Mia Peters, Kirsten Munck; Burns & McDonnell - Mike Herleth, Lisa Kay Hummel, Seth Gilliam, Tim Cope; HG Consult - Buddy Desai

Topics presented: Goals for the study's potential interchange improvements, Dunn Rd Intersection Improvements (North), Janice Avenue Intersection Improvements (South). The SAC members invited were those with access considerations at Dunn Road and Janice Avenue.

Key Takeaways:

- » Keep access to businesses to support the local economy while improving traffic flow
- » Would like to see construction completed outside of the busy summer month period. Also peak lake traffic periods need to be considered on Friday evenings and all-day Sunday
- » Main objectives should be keeping business going and safety
- » Any improvements need to consider how to best accommodate semi-truck traffic
- » Backage road concept would be detrimental to certain businesses on the north side and opposed to the idea. Loss of direct access from Route 54 would be a business killer.
- » Backage road idea: west side would be best accommodated through the cul-de-sac. Kingdom City had planned any connection would occur in this manner and not impact platted development tracts. Also shared the city has plans for water improvements that would be shared with the team.
- » Explore the option to move the Dunn Road intersection north to create separation between the I-70 ramp terminals.
- » Redesign of Janice, Co Rd 211: Potential that land near existing signs could be used to limit parking impacts. The city had purchased/manages property near that space and had been planning infrastructure improvements such as lighting
- » Bypassing the existing intersection would be bad. People won't turn around and loop back.



Stakeholder Advisory Committee (SAC) Meeting #2

Date: November 17, 2021

Location: Online via Zoom

Attendees: 16 attendees (18 SAC members, 16 project team)

- » Randy Kleindienst, Callaway County Commission
- » Roger Fischer, Callaway County Commission
- » Corporal Cody Frame, MO State Highway Patrol
- » Trooper McKinney, MO State Highway Patrol
- » Justin Turner, MO State Highway Patrol
- » Linda Ellis, Callaway County Ambulance District
- » Curt Warfield, Kingdom City
- » Larry Doyle, Kingdom City
- » Linda Diluvio, Kingdom City Board of Trustees
- » Kent Wood, Callaway County Sewer District
- » Doug Kee, North Callaway School District
- » Adam Stanberry, Magic Wash
- » John Lummis, Callaway Carriers
- » Brent Sims, FedEx
- » Sam Waheed, Motel 6 and Amerihost Inn & Suites
- » Mark Mehle, McDonald's
- » Jim Baker, Warrenton Oil Company
- » Mark Baker, Warrenton Oil Company

Project team included: MoDOT - Mia Peters, Matt Burcham, Cyrus Meller, Randall Glaser, Kirsten Munck, Randy Aulbur, Machelles Watkins, Adam Pulley; FHWA - Charles Pursley; Burns & McDonnell - Mike Herleth, Jessica Hutton, Meghan Jansen, Lisa Kay Hummel, Seth Gilliam, Tim Cope; HG Consult - Buddy Desai

SAC participants were provided a presentation of the proposed study alternatives being considered and asked to provide input and preference on a preferred alternative. The alternatives discussed are organized by study section below. Topics presented: Proposed project alternatives for the I-70 Ramps, North Intersection - Dunn Road, Interchange, and South Intersection - Janice Avenue

I-70 Ramps

- » From a trucking perspective, both ramp options were noted as being spot on; also noted that congestion still needs to be addressed.

Stakeholder Advisory Committee (SAC) Meeting #2, continued

North Intersection - Dunn Road

- » Option 1 Relocation: preferred the left-in turn lane into business (vs. rerouting traffic for the U-turn). In general, would like to keep the left-in movement as close to their business (car wash) as possible; biggest fear is losing revenue.
- » Concerned with semi-trucks making the U-turn movement at Old US 40.
- » Might be a good option for heavy traffic to avoid the intersection.
- » Concerned with additional traffic flow on Old US 40 on the west side of 54.

Interchange

- » DDI was favored by some SAC members – if turning left, no substantial delays; this in conjunction with the ramp extensions where you would then only have one light to potentially hold up traffic flow.
- » It was noted that most crashes at the interchange happen at ramp 6998 (EB off ramp heading WB 54).
- » It was asked what type of increase in traffic capacity could we expect with the DDI? There was an opinion that the area is missing out on potential traffic interested in stopping for fuel, etc. due to backup.

South Intersection - Janice Avenue

- » Attendees needed more time to think about this concept.

The SAC meeting members were informed they would be contacted early in the month of December to offer one-on-one discussions. A follow up email was distributed to all those invited to the meeting with a PDF of the meeting presentation and link to draft concept plans.

Stakeholder Advisory Committee (SAC) One-on-Ones

Following the second and final SAC meeting, SAC members were emailed with an offer to schedule a one-on-one discussion with the project team to discuss the study's proposed alternatives prior to the preferred alternative being selected and announced for public comment.

Three meetings were held with interested participants on December 8, 9 and 10th of 2021. Participating organizations included Warrenton Oil, Magic Wash, and Ozarkland. In some cases, SAC members invited additional organization representatives to be a part of the discussion.



54
ATI-I-70

Online Public Meeting

Online Public Meeting

An online public meeting with self-guided review and comment was hosted from February 15 through March 15, 2022. The comment period was extended from March 1 (as originally promoted). The goal of online meeting was to present a MoDOT preferred alternative to the project stakeholders and broader community for review and input.

The online opportunity for review and comment was promoted on the project webpage with a press release distributed by MoDOT Central District, emails to project stakeholders and interested parties, social media posts, and hard copy fliers distributed by the City of Kingdom City. MoDOT also sent an email to subscribers in all of the counties along I-70 and Route 54. A display board with the study preferred alternative was printed and made available for review at Kingdom City Hall and the MoDOT Central District office.

MoDOT collected 110 comments through the project webpage; they are included in the appendix of this report.



Appendix

Public Safety Survey Results
Promotion Materials
Presentation Materials
Public Comments



Public Safety Survey Results



I-70/US 54 Interchange at Kingdom City Safety Survey

Please take a moment to share your experience traveling the I-70/US 54 interchange at Kingdom City, Missouri. Your input will be incorporated into a safety study currently being performed by MoDOT Central District.

1. On average, how often do you travel through the I-70/US 54 interchange?

- ☐ Daily ☐ About once a month
- ☐ A few times a week ☐ A few times a year or less
- ☐ A few times a month

2. Overall, how would you rate the safety of this interchange compared to other interchanges you drive through?

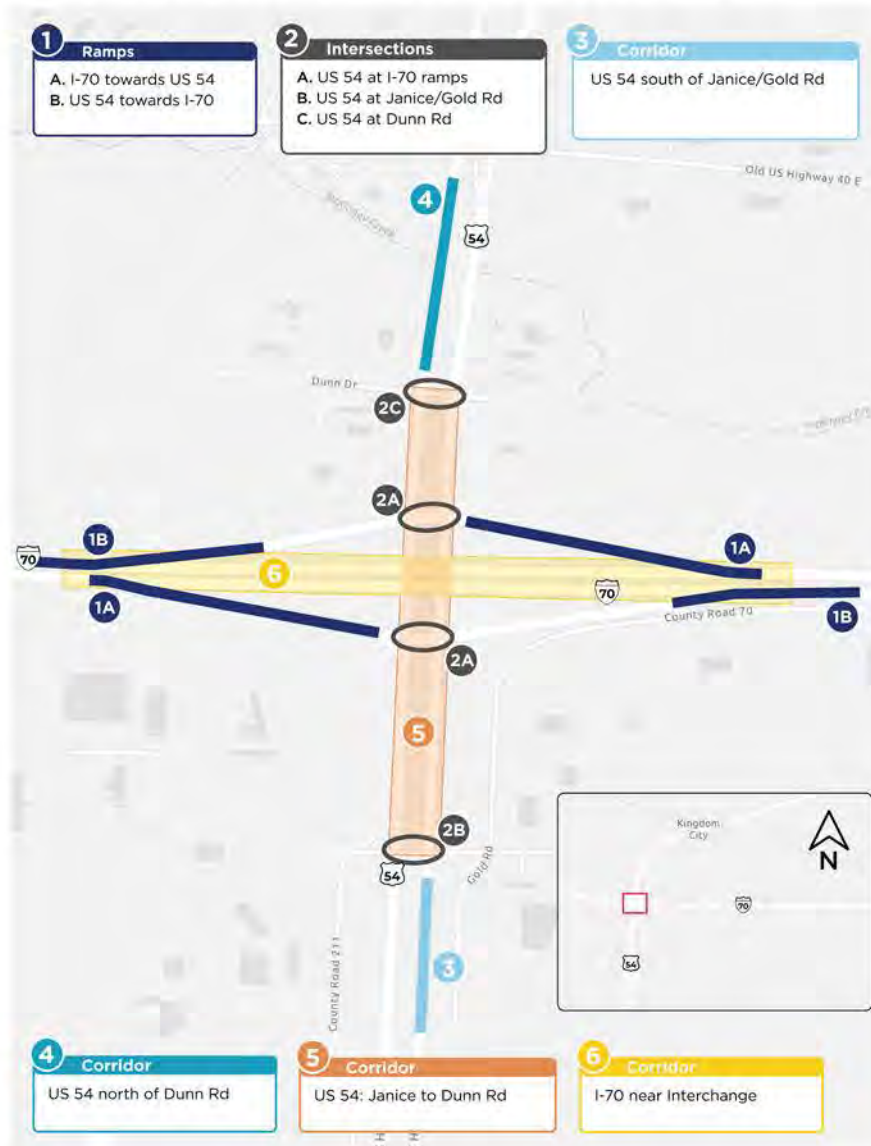
- ☐ Much more safe
- ☐ Slightly more safe
- ☐ About the same
- ☐ Slightly less safe
- ☐ Much less safe

3. Select the top safety concerns you have at this specific interchange from the list below. (Select all that apply.)

- ☐ Signing and pavement markings to help drivers choose the correct lane or position
- ☐ Storage for turning vehicles (to prevent vehicles from blocking through traffic)
- ☐ Traffic backing down the ramps to I-70
- ☐ Difficulty merging onto I-70 from US 54 ramps
- ☐ Traffic backing up at intersections north and/or south of the interchange
- ☐ High speeds through the area
- ☐ Poor sight lines for movements at the interchange or nearby intersections
- ☐ Interactions between heavy trucks and passenger vehicles
- ☐ Interactions between motor vehicles and pedestrians/cyclists
- ☐ Wrong-way drivers
- ☐ No real safety concerns at this interchange
- ☐ Other (please specify)

4. Where do you experience the most safety concerns or issues? Refer to the image below, and select all that apply.

I-70 / US 54 Interchange Area



- | | |
|---|---|
| ☐ 1a Exit ramps from I-70 towards US 54 | ☐ 3 US 54 south of Janice/Gold Rd |
| ☐ 1b Entrance ramps from US 54 towards I-70 | ☐ 4 US 54 north of Dunn Rd |
| ☐ 2a Intersections on US 54 at I-70 ramps | ☐ 5 US 54 between Janice Rd and Dunn Rd |
| ☐ 2b Intersection on US 54 at Janice/Gold Rd | ☐ 6 I-70 near interchange |
| ☐ 2c Intersection on US 54 at Dunn Rd | ☐ None of the above / No safety concerns |

Please share any specific safety concerns you have at the locations you selected.

5. In your experience, which of the following do you feel most contribute to crashes or potential crashes at the I-70/US 54 interchange? (Select all that apply.)

- | | |
|---|--|
| ☐ Speeding | ☐ Icy/snowy weather or pavement |
| ☐ Running red lights | ☐ Darkness |
| ☐ Interaction between trucks and passenger vehicles | ☐ Drivers under the influence of drugs or alcohol |
| ☐ High traffic volumes (such as during summer weekend peaks) | ☐ Not sure / No real safety concerns |
| ☐ Wet weather/pavement | |
| ☐ Other (please specify) | |

6. Which of the following best describes you? Your response will help us better understand your unique perspective.

- | | |
|--|---|
| ☐ Owner/operator of a business near the I-70/US 54 interchange | ☐ Community organizer or advocate |
| ☐ Business owner in Callaway County (not directly located near this interchange) | ☐ Local resident |
| ☐ City or County elected or appointed official | ☐ Commercial vehicle driver |
| ☐ City or county staff | |
| ☐ Other (please specify) | |

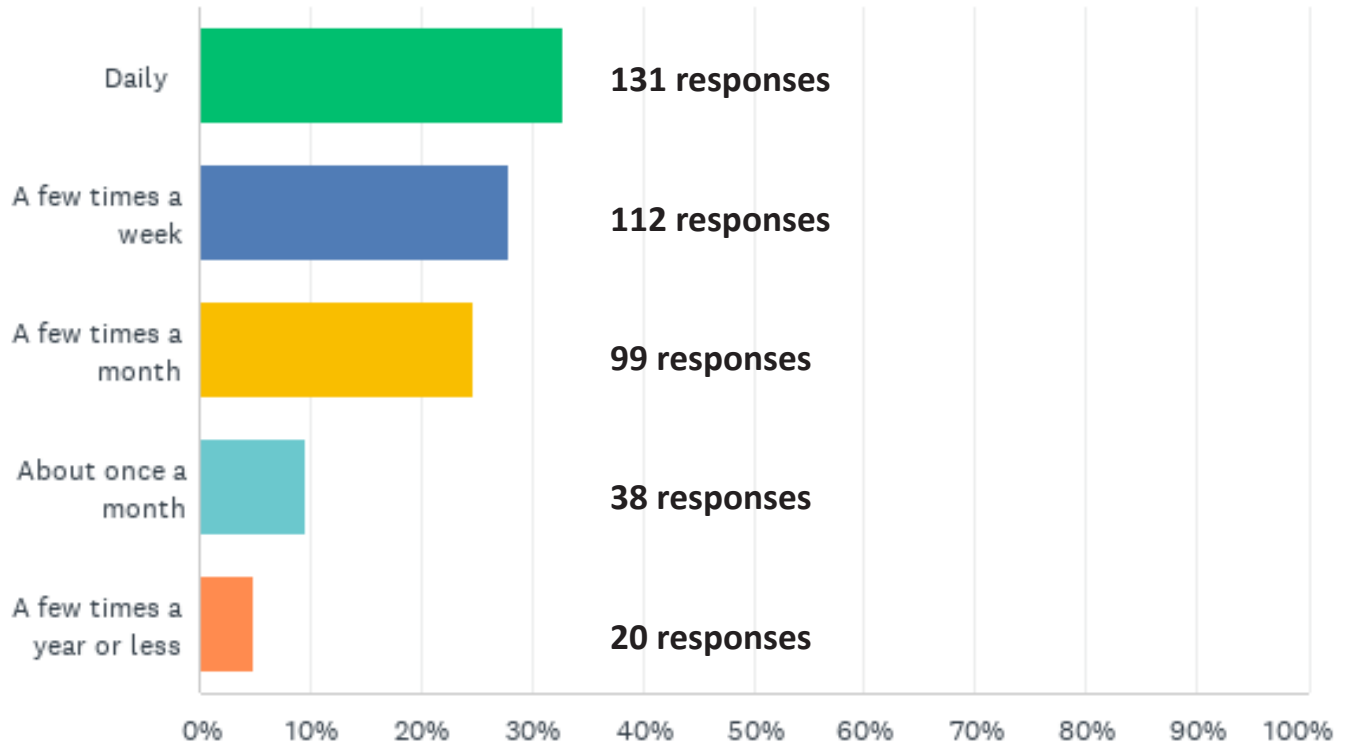
7. Provide an email address if you would like to receive updates about the I-70/US 54 interchange study at Kingdom City.

8. Please share any additional comments or safety concerns you have for the I-70/US 54 interchange at Kingdom City.

Q1 On average, how often do you travel through the I-70/US 54 interchange?

Answered: 400

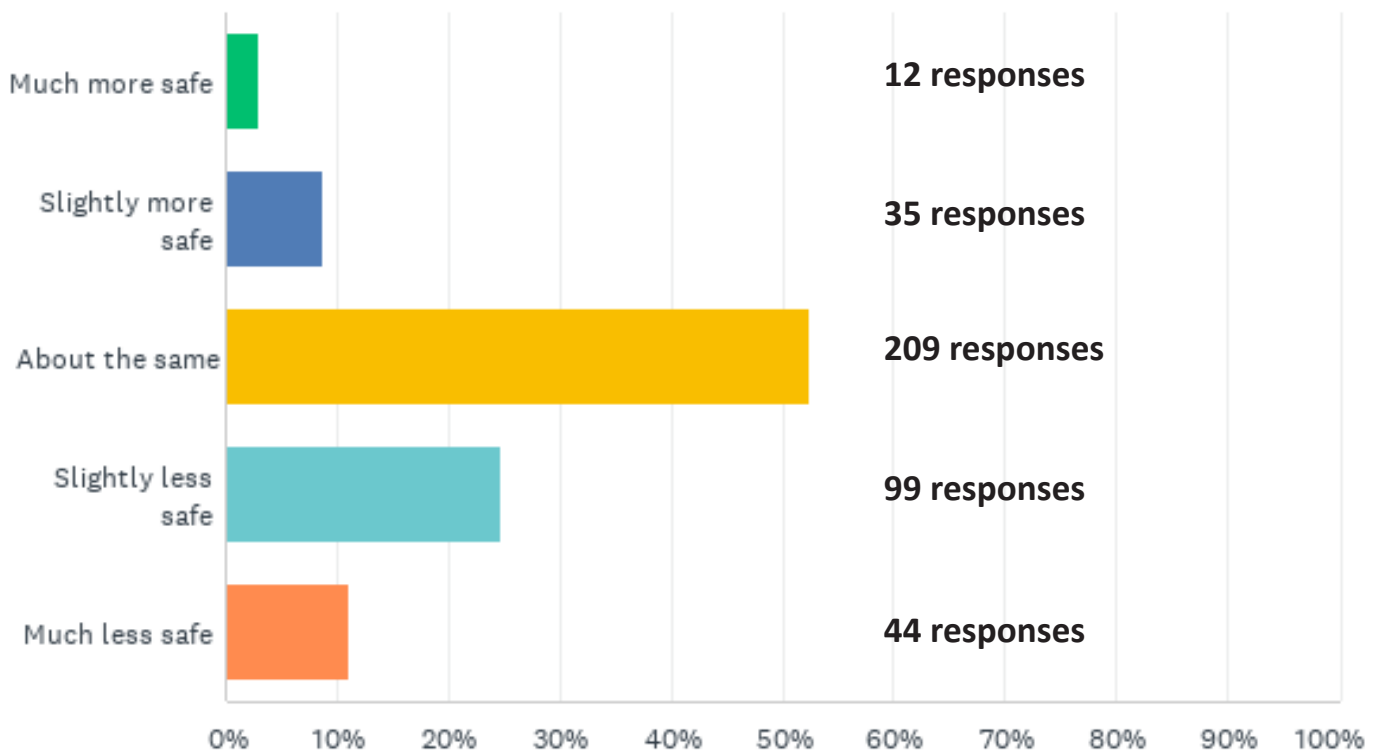
Skipped: 0



Q2 Overall, how would you rate the safety of this interchange compared to other interchanges you drive through?

Answered: 399

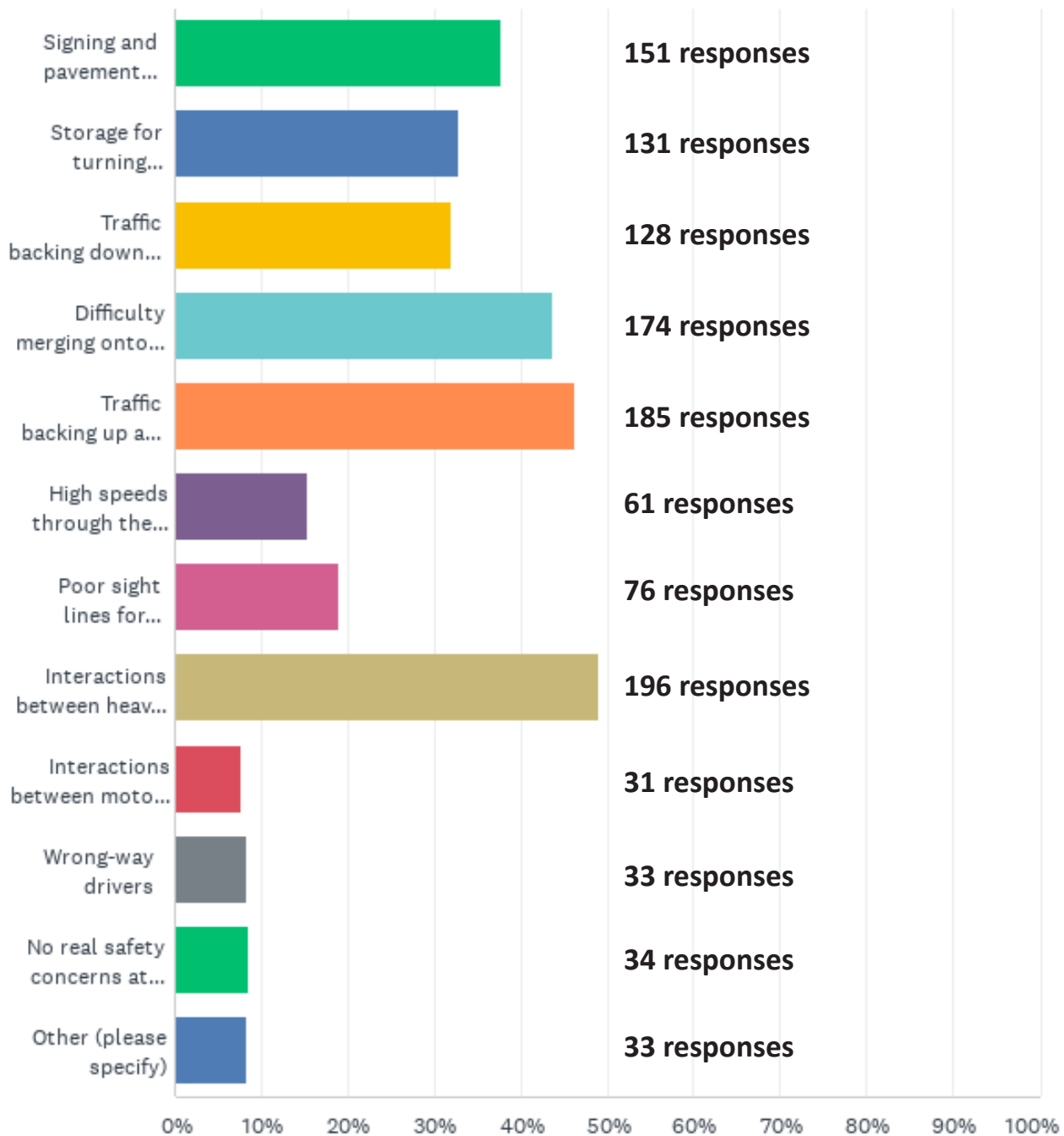
Skipped: 1



Q3 Select the top safety concerns you have at this specific interchange from the list below. (Select all that apply.)

Answered: 399

Skipped: 1

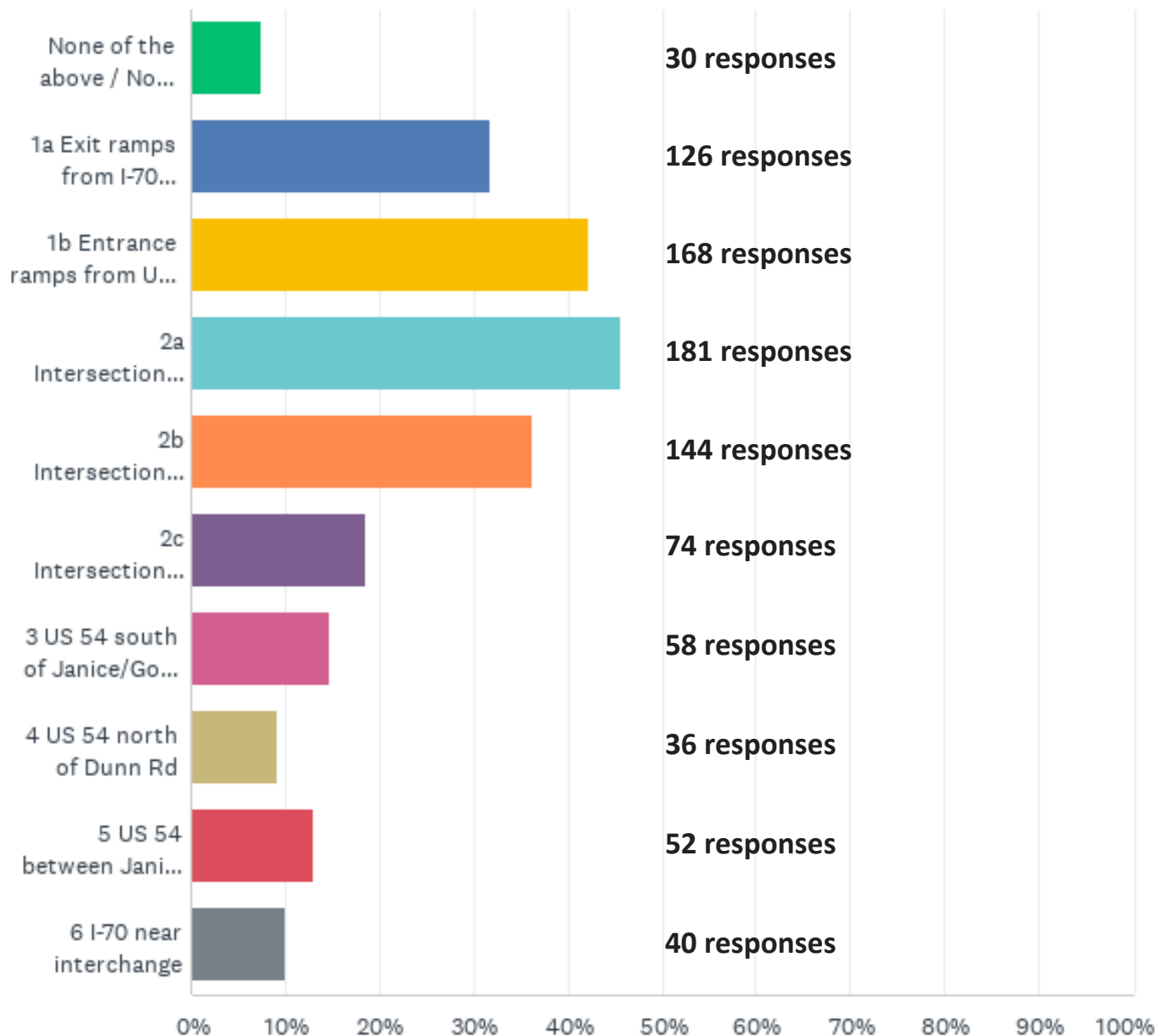


- Signing and pavement markings to help drivers choose the correct lane or position
- Storage for turning vehicles (to prevent vehicles from blocking through traffic)
- Traffic backing down the ramps to I-70
- Difficulty merging onto I-70 from US 54 ramps
- Traffic backing up at intersections north and/or south of the interchange
- High speeds through the area
- Poor sight lines for movements at the interchange or nearby intersections
- Interactions between heavy trucks and passenger vehicles
- Interactions between motor vehicles and pedestrians/cyclists
- Wrong-way drivers
- No real safety concerns at this interchange
- Other (please specify)

Q4 Where do you experience the most safety concerns or issues? Refer to the image below, and select all that apply.

Answered: 397

Skipped: 3

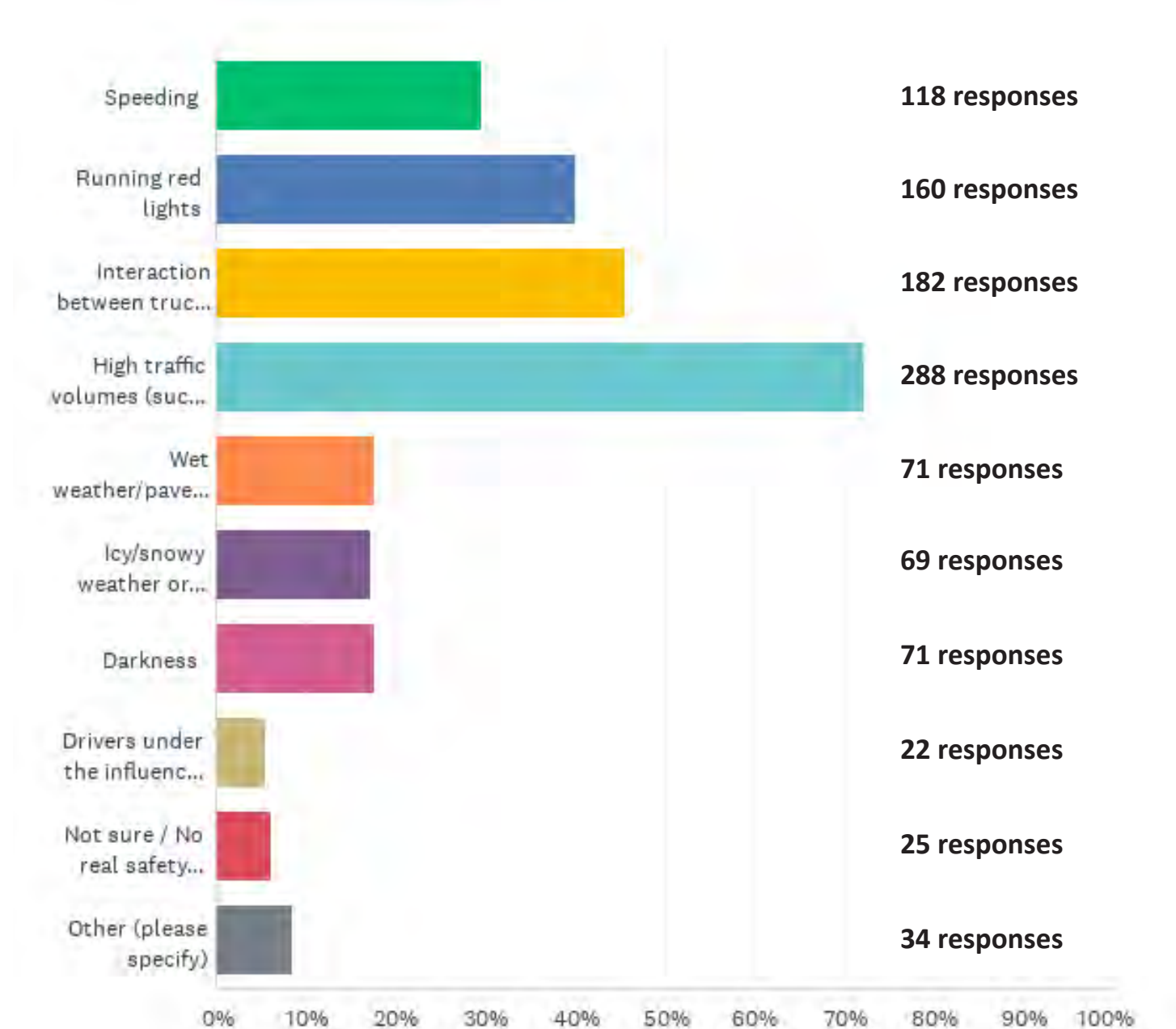


- None of the above / No safety concerns
- 1a Exit ramps from I-70 towards US 54
- 1b Entrance ramps from US 54 towards I-70
- 2a Intersections on US 54 at I-70 ramps
- 2b Intersection on US 54 at Janice/Gold Rd
- 2c Intersection on US 54 at Dunn Rd
- 3 US 54 south of Janice/Gold Rd
- 4 US 54 north of Dunn Rd
- 5 US 54 between Janice Rd and Dunn Rd
- 6 I-70 near interchange

Q5 In your experience, which of the following do you feel most contribute to crashes or potential crashes at the I-70/US 54 interchange? (Select all that apply.)

Answered: 399

Skipped: 1

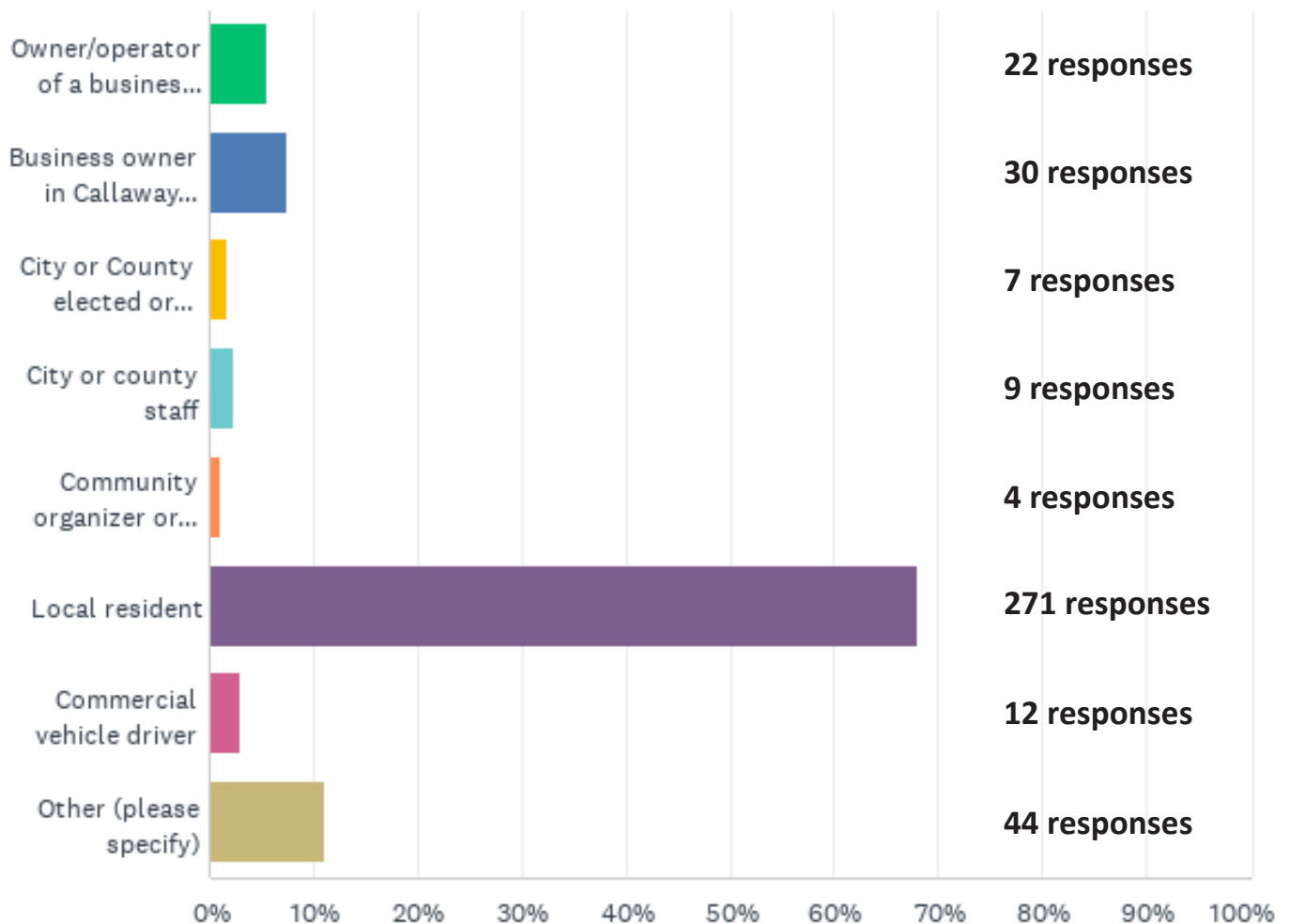


- Speeding
- Running red lights
- Interaction between trucks and passenger vehicles
- High traffic volumes (such as during summer weekend peaks)
- Wet weather/pavement
- Icy/snowy weather or pavement
- Darkness
- Drivers under the influence of drugs or alcohol
- Not sure / No real safety concerns
- Other (please specify)

Q6 Which of the following best describes you? Your response will help us better understand your unique perspective.

Answered: 399

Skipped: 1



- Owner/operator of a business near the I-70/US 54 interchange
- Business owner in Callaway County (not directly located near this interchange)
- City or County elected or appointed official
- City or county staff
- Community organizer or advocate
- Local resident
- Commercial vehicle driver
- Other (please specify)

Q8 Please share any additional comments or safety concerns you have for the I-70/US 54 interchange at Kingdom City.

Answered: 67

Skipped: 333

#	RESPONSES	DATE
1	movement/mixing of trucks and cars happen too slowly for the distance between traffic lights and turns vs pass through lanes. This can cause back ups beyond the 70 off ramp from the East.	10/15/2021 10:05 AM
2	Thank you for looking at this! Hope you guys work on it.	10/15/2021 9:10 AM
3	THE PANHANDLERS SHOULD NOT BE ALLOWED AT THOSE INTERSECTIONS	10/14/2021 10:20 PM
4	I think that an interchange that didn't stop traffic, that allowed for the smooth flow of traffic would be safer and more beneficial.	10/13/2021 9:52 AM
5	just old roads falling apart... need updating since so much traffic goes thru there.	10/12/2021 3:22 PM
6	with the increase of volume of traffic to and from the lake on weekends and holidays, this really is past due to update the interchange.	10/12/2021 12:19 PM
7	Keep it simple.	10/10/2021 9:26 PM
8	Rather than spend money on I70/US 54 intersection, more lives could be saved by adding third lane on I70 between Kingdom City and Columbia.	10/10/2021 10:14 AM
9	Definitely need street lights....too dark on all exits	10/9/2021 9:13 PM
10	Truckers who might be tired or distracted	10/8/2021 8:23 PM
11	It would be great to streamline that intersection and at the same time make it safer. There is heavy traffic that flows through that area.	10/8/2021 12:02 PM
12	When the pavement is wet the lane markings on 54 on the bridges are hard to see.	10/8/2021 11:29 AM
13	Lower and ENFORCE speed limits.	10/8/2021 8:51 AM
14	Nope	10/8/2021 6:23 AM
15	Get rid of the dopers	10/7/2021 10:24 PM
16	Intersection at Janice and County Rd 211	10/7/2021 9:37 PM
17	None at this time.	10/7/2021 8:28 PM
18	Ramps are to short for trucks to get up to speed as I70 traffic is usually 75mph...it bottlenecks high speed traffic at the bottom of the ramps as faster moving cars behind semis jerk out into the fast lane at the bottom of the ramp.	10/7/2021 4:02 PM
19	I wish they could keep the lines on the pavement painted more often. They don't seem to last very long, and in wet weather, after snow plows scrape in the winter, or after dark, I see out of town folks struggling to know where to turn because they can't see the road markings. The signs in the air are fine, but often the lane markings are worn off or unreadable.	10/7/2021 3:10 PM
20	Here are the main areas all together that are safety concerns. Entire area on both directions on 54 from before over passes needs redone on pavement and markings Second biggest is semis trying to merge all the way from one side to the other to get on 70. They don't look and just merge over at way slower speeds then a vehicle going 45 or faster coming Thursday when the lights turn green or are all green coming thru the over passes.	10/7/2021 2:58 PM
21	Panhandlers	10/7/2021 1:40 PM
22	I am very anxious to see this interchanged improved to provide a better flow of traffic and improve safety.	10/7/2021 10:45 AM

I-70/US 54 Interchange at Kingdom City Safety Survey

23	This intersection has enough traffic to have a cloverleaf and no traffic lights	10/6/2021 11:12 AM
24	too many stop lights in to short a distance which doesn't allow traffic to fully evacuate the area before being stopped. The intersection for the Truck stops can cause significant backup and delays.	10/6/2021 10:18 AM
25	Leave it alone. Spend the money fixing the roads that are beat to crap!	10/6/2021 7:53 AM
26	Please bypass Kingdom already. It's the only stoplights between STL and the Lake.	10/5/2021 9:05 PM
27	None	10/5/2021 5:16 PM
28	This should have been updated years ago when Andy Huey did all that work, can't they make these larger circles or something?	10/5/2021 1:03 PM
29	N/A	10/5/2021 9:25 AM
30	Get rid of ALL the pan handlers	10/2/2021 11:05 AM
31	No traffic flow. Traffic light timing is horrible. Nothing flows traffic sits at red light for a long period with no other opposing traffic. Most of your traffic problems are due to poor set up of traffic lights almost no set up. Its problematic everywhere in Missouri. Sit and wait no one moving any direction only state I drive through that no one is moving, even left lane lights are out of sequence. You really need to start there, you don't need to spend millions redesigning the intersect with 99% of your trouble is with traffic light discipline and programming.	10/2/2021 12:03 AM
32	Additional lanes for those turning left to merge onto 70.	10/1/2021 3:38 PM
33	Too many large trucks that block vision, speeding and inattentive drivers.	10/1/2021 3:32 PM
34	None	10/1/2021 2:53 PM
35	None	10/1/2021 12:24 PM
36	The top three issues I see daily is when people are merging from i-70 to south 54. People do not watch and merge anyway. The other spot is from 54 getting onto east i-70. I know there is limited space but I feel like that Lane while stopped needs to be widened. People so speed through this area and tend to run red lights.	10/1/2021 10:44 AM
37	Getting onto I-70 WB from hwy 54 seems to be incredibly dangerous, several accidents have been caused there due to the train bridge post that blocks the shoulder if you are unable to merge into the driving lane due to high traffic volume and driver's not allowing you to merge	10/1/2021 10:08 AM
38	I marked that I only come through there a few times a month. We recently moved to Fulton and out of the area. I traveled through there daily to work and for shopping for 25+ years. The amount of traffic is unreal and such a growing problem. Much success to those who are trying to correct the problems.	10/1/2021 9:50 AM
39	The panhandlers on the exit ramps. Not sure what can be done. Dangerous for them and for the drivers. I see them cut in and out of traffic.	10/1/2021 9:36 AM
40	flowing interchange needed east of Kingdom City for and keeping present interchange open for those vehicles needing the services that are presently there.	10/1/2021 9:15 AM
41	lake traffic is a concern. Heavy truck use will increase with any future development . If the port authority is built on the river at Jefferson City, expect truck traffic in Kingdom City to increase as well	10/1/2021 7:52 AM
42	traffic from i70 (columbia) going to petro. changing lanes	9/30/2021 9:49 PM
43	Pedestrians crossing road beggars putting signs in drivers view, very dark at night. Need fluorescent paint to highlight road better	9/30/2021 9:09 PM
44	A sensor on the south intersection that faces east onto the Denny's and Petro area still needs help identifying traffic in the left turn lane that turns south to Fulton/JC direction.	9/30/2021 8:49 PM
45	None	9/30/2021 8:36 PM
46	Na	9/30/2021 8:32 PM
47	Please whatever your process to improve this intersection will be . Take into consideration that many high school students drive through this area daily while getting to school and work. Many	9/30/2021 8:31 PM

I-70/US 54 Interchange at Kingdom City Safety Survey

of us in the area have issues with the many semis and them pulling out in front of us. I appreciate what they do! But is it is difficult to swerve around them.

48	Truckers driving to fast, switching lanes without signaling and in general hogging the entire road	9/30/2021 8:23 PM
49	For me the worst part is so many intersections with hardly any markings as to where roads and turns are while watching out for semis	9/30/2021 8:19 PM
50	My children, attend NCHS and NCMS. I am driving this area 4 to 8 times a day. I have great concerns for their safety as they begin to drive in this congested area. The possibility of heavy, long lasting construction during their beginning driving years also seriously concerns me.	9/30/2021 8:01 PM
51	The turn lane going onto I-70 East from 54 is a bad area because the lanes are not marked well and people get confused and don't necessarily follow the lane lines.	9/30/2021 7:17 PM
52	Bridge intersection from east to west needs a proper lane expansion so there is adequate room for a turn lane onto I70 towards St. Louis.	9/30/2021 7:17 PM
53	Anything that can be done to modernize the roadway/interchange will help minimize safety concerns, stagnant traffic, and frustration. This area is a gateway for nationwide traffic, and it is imperative that traffic flow is improved not only for safety, but for tourism and commerce.	9/30/2021 5:49 PM
54	Love that we still have the interchange, it gives me quick access to services going to and from work.	9/30/2021 4:47 PM
55	The only issue I have is getting off 54 onto 70 going west towards Columbia. Semi's don't get over in time and the ramp and lane seem like they could be a little longer to give more time to merge	9/30/2021 4:15 PM
56	None	9/30/2021 3:53 PM
57	N/a	9/30/2021 3:33 PM
58	The biggest concern is lake traffic exiting on Friday evening from St. Louis backed up on the interstate. I just try to avoid the area on Friday eve. and The panhandlers are an issue. You've done a good job with this exit.	9/30/2021 2:47 PM
59	There are no "Do Not Block Intersection signs" for vehicles facing east at the Gasper's entrance (Janice ave/211 intersection. It blocks trucks and smaller vehicle traffic trying to turn into Gasper's, which backs up the 2B intersection in all directions (North, East, West, and even some traffic headed South).	9/30/2021 1:34 PM
60	Painting the lines for the lanes and arrows would be a great start.	9/30/2021 12:03 PM
61	A lot of the problems are driver error and then also lake traffic. When it's not prime lake time the traffic and flow is not terrible in Kingdom City	9/30/2021 10:51 AM
62	RR Bridge over 70 that was abandoned needs to come down and ramps need to be longer to eliminate slower traffic at merge. Ban parking on the ramps. 6 truck stops in Kingdom City. Plenty of room to park. A diverging diamond interchange like at 70 and Stadium in Columbia would be ideal based on the excessive volume of traffic at the Kingdom City interchange.	9/30/2021 10:35 AM
63	people loitering at each intersection panhandling is not safe.	9/30/2021 10:17 AM
64	Thanks for the new stop light/ school entrance.	9/30/2021 9:48 AM
65	The train bridge on the outer road keeps truck traffic from being routed on that road during an accident on I-70. It would be nice to have it removed during this project since it hasn't been used for years and the line is dead on the other side of Auxvasse, MO. It would take millions of dollars to make it operational again. It also keeps economic development from happening along that corridor.	9/29/2021 4:53 PM
66	There are too many access and conflict points in a short distance which creates opportunity for crashes and mobility.	9/23/2021 2:53 PM
67	I feel the I-70 expansion should be address 1st or in expansion with Kingdom City, then the Kingdom City interchange 2nd.	9/22/2021 4:34 PM



54
ATI-I-70

Promotional Materials



TELL US WHAT YOU THINK!

Review & comment on
proposed improvements to
the I-70/U.S. 54 Interchange
in Kingdom City
before March 1, 2022



Information about proposed improvements is
available for review at the following locations:

- **Online**

- www.MoDOT.org/KingdomCityInterchange
- *Use your phone camera to hover over the QR code then click to view the project website.*

- **Kingdom City Hall**

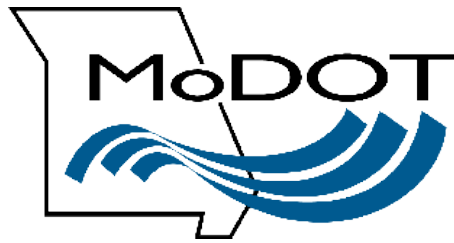
- 5584 Dunn Dr., Kingdom City, MO 65262

- **MoDOT Central District Office**

- 1511 Missouri Blvd., Jefferson City, MO 65102



**Comment via the online form or by calling
1-888-ASK-MODOT before March 1, 2022.**



Re-Evaluation of Environmental Study Underway for Interstate 70/U.S. Route 54 Interchange in Kingdom City

As part of the planning stages for the improvements to the I-70/US 54 interchange at Kingdom City, the Missouri Department of Transportation is accepting public comments as part of a re-evaluation of an environmental assessment completed in 2005. The results of that study can be found at improvei70.org/environmental_6.htm.

Individuals or organizations wishing to learn more or comment can do so by visiting www.modot.org/KingdomCityInterchange or by calling 1-888-ASK MODOT.

Comments must be submitted by Monday, October 11, 2021.

INTERSTATE 70 / U.S. 54 INTERCHANGE IN KINGDOM CITY

Study Update & Preferred Alternative for Public Input



COMMENT ON PROPOSED IMPROVEMENTS BEFORE MARCH 1



STUDY OVERVIEW MoDOT is studying a preferred alternative design for the I-70/U.S. 54 interchange to enhance safety and mobility through the corridor, provide access to nearby businesses and promote economic growth in Kingdom City.

TELL US WHAT YOU THINK

A welcome video and self-guided presentation about proposed improvements to the I-70/U.S. 54 interchange in Kingdom City are available for review online.



There are two ways to comment:

1) Online

Use your phone camera to hover over the QR code then click to view the project website or visit: [MoDOT.org/KingdomCityInterchange](https://www.mdot.org/KingdomCityInterchange)

2) Call 1-888-ASK-MoDOT (1-888-275-6636)

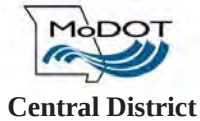
Comments received before March 1, 2022 will be factored into the final results of the study, which is expected to be complete later this spring.

ANTICIPATED BENEFITS

Anticipated benefits of the proposed improvements include:

- **Enhanced safety** through the reduction of conflict points
- **Improved traffic flow**
- Opportunities for **less disruption** to local businesses*

*Compared to other options considered. Construction timing and phasing details will be advanced in the next phase of the project.



For more information, contact 1-888-ASK MODOT

February 4, 2022

Proposed I-70/U.S. 54 Interchange Improvements Available for Public Review and Comment Feb. 15-28

JEFFERSON CITY – The Missouri Department of Transportation is inviting the public to review and provide feedback on proposed changes to the Interstate 70 and U.S. Route 54 interchange in Kingdom City.

The recommended improvements are part of a traffic and safety study being completed by MoDOT and a consultant team. The goal of the study is to identify a preferred alternative design for the interchange that enhances safety and mobility through the corridor, provides access to nearby businesses and promotes economic growth in Kingdom City.

“After analyzing some of the preliminary results of the study and discussing those results with a local advisory group for this project, MoDOT is recommending that the interchange be updated to a Diverging Diamond Interchange,” said Project Manager Mia Peters. “This would be similar to the Interstate 70 and Stadium Boulevard interchange in Columbia.”

A welcome video and self-guided presentation going over the preferred alternatives are now available on the project web page (www.modot.org/KingdomCityInterchange), at Kingdom City Hall (5584 Dunn Dr, Kingdom City, MO 65262), and at MoDOT Central District Office (1511 Missouri Boulevard, Jefferson City, MO 65102).

The public is invited to make comments and ask questions about the recommended improvements. Those wanting to comment can do so via the online comment form on the project web page or by calling 1-888-ASK-MODOT. Those comments will be factored into the final results of the study, which is expected to be complete later this spring.

All comments must be received by Monday, February 28 to be considered.

This project is being considered for addition to the Draft 2023-2027 Statewide Transportation Improvement Program (STIP).

For more information and updates about this project or other transportation-related matters, please call 1-888-ASK-MoDOT (275-6636) or visit www.modot.org/central. Follow the MoDOT Central Missouri District on Instagram, Facebook and Twitter for project updates.

Links to related information:

[MoDOT Central District](#)

To view information about MoDOT visit <https://www.modot.org>

To change or delete your subscription information visit <https://www6.modot.mo.gov/eMoDOTWeb/jsp/signon/signon.jsp>

To unsubscribe send an email to: Central.news@modot.mo.gov

To view MoDOT's privacy policy view <https://www.modot.org/privacy>

Online Public Meeting Email

From: Hummel, Lisa K
Sent: Friday, March 4, 2022 9:16 AM
Cc: Mia Peters - Missouri Department of Transportation (maria.peters@modot.mo.gov) <Maria.Peters@modot.mo.gov>
Subject: RE: I-70/U.S. 54 Interchange Study Update & Public Comment Period - Extended

Good morning,
The comment period for the I-70/U.S. 54 Interchange Study comment period has been extended to March 15, 2022.

From: Hummel, Lisa K
Sent: Tuesday, February 15, 2022 11:25 AM
Cc: Mia Peters - Missouri Department of Transportation (maria.peters@modot.mo.gov) <Maria.Peters@modot.mo.gov>
Subject: I-70/U.S. 54 Interchange Study Update & Public Comment Period

Hello,

MoDOT is studying a preferred alternative design for the I-70/U.S. 54 interchange to enhance safety and mobility through the corridor, provide access to nearby businesses and promote economic growth in Kingdom City. A welcome video and self-guided presentation about proposed improvements to the I-70/U.S. 54 interchange in Kingdom City are **available for review online and comment before March 1, 2022**.

There are two ways to comment:

- 1) **Online:** www.MoDOT.org/KingdomCityInterchange
- 2) **Call:** 1-888-ASK-MoDOT (275-6636)

Comments received before March 1, 2022, will be factored into the final results of the study, which is expected to be complete later this spring.

Please share this information with others who may be interested in this study. A flier promoting the opportunity for review and comment is also attached.

Lisa Kay Hummel

On behalf of MoDOT Central District

Phone 816-349-6821

lkhummel@burnsmcd.com



[News](#) [Sports](#) [Obits](#) [Digital FAQ](#) [Events](#) [Contests](#) [Classifieds](#) [Autos](#) [Jobs](#) [Newsletters](#)

ADVERTISEMENT

Public comment period extended for MoDOT project

by [Michael Shine](#) | March 5, 2022 at 4:00 a.m.

The Missouri Department of Transportation extended the public comment period for a potential Kingdom City project.

MoDOT is considering a project to rework where Interstate 70 and U.S. 54 intersect.

The project is being considered for the draft 2023-27 Statewide Transportation Improvement Project.

All comments must be received by Tuesday, March 15 to be considered.

A welcome video and self-guided presentation going over the preferred alternatives are now available on the project webpage (www.modot.org/KingdomCityInterchange), at Kingdom City Hall (5584 Dunn Dr, Kingdom City), and at MoDOT Central District Office (1511 Missouri Boulevard, Jefferson City).

The recommended project is part of a traffic and safety study being completed by MoDOT and a consultant team. The goal of the study is to identify a preferred alternative design for the interchange that enhances safety and mobility through the corridor, provides access to nearby businesses and promotes economic growth in Kingdom City.

"After analyzing some of the preliminary results of the study and discussing those results with a local advisory group for this project, MoDOT is recommending that the interchange be updated to a Diverging Diamond Interchange," said Project Manager Mia Peters. "This would be similar to the Interstate 70 and Stadium Boulevard interchange in Columbia."

Print Headline: Public comment period extended for MoDOT project

2/16/22, 9:37 AM

Proposed Kingdom City interchange enhancements available for review



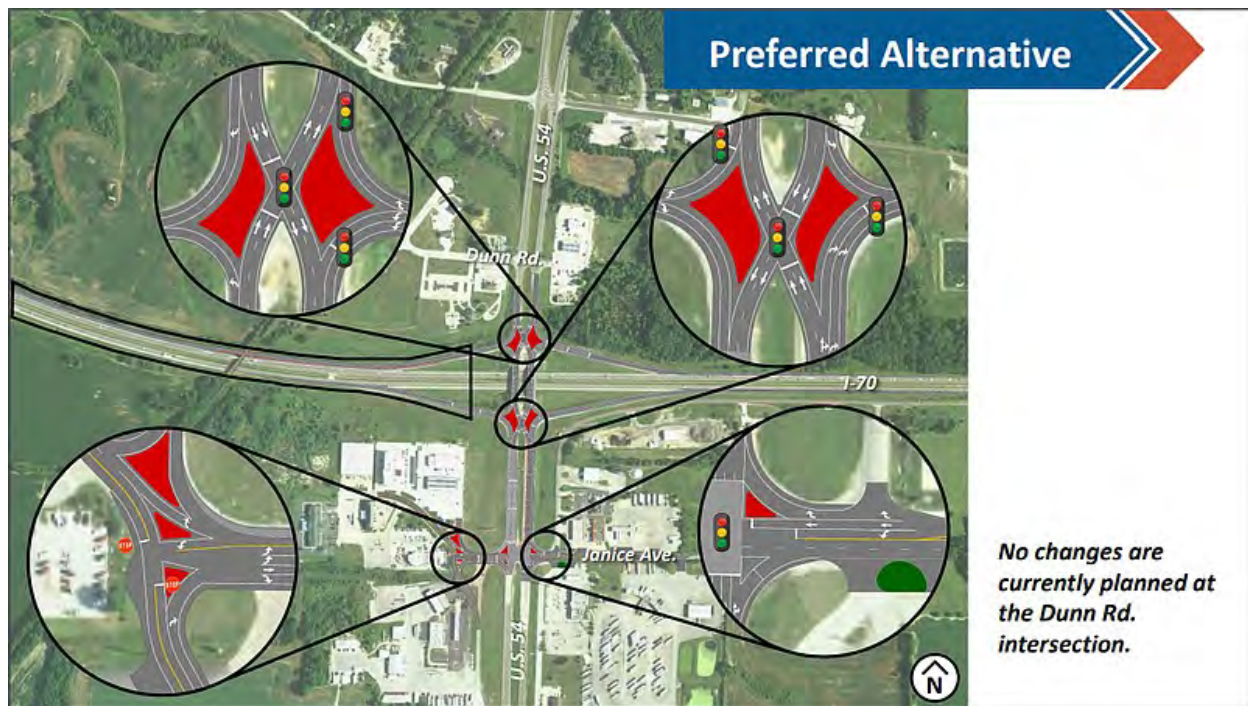
News Sports Obits Digital FAQ Events Contests Classifieds Autos Jobs Newsletters

ADVERTISEMENT

Proposed Kingdom City interchange enhancements available for review

by [Michael Shine](#) | February 15, 2022 at 11:27 p.m.

0



A diagram of MoDOT's preferred option for a potential program reworking the intersections of U.S. 54 and I-70 in Kingdom City. (Submitted)

The Missouri Department of Transportation is seeking community input on a potential Kingdom City project.

The proposed project looks to improve traffic flow through the Interstate 70 and U.S. 54 interchange.

Weekly Email Newsletters

Stay connected and informed with our free [FultonSun.com](https://www.fultonsun.com) weekly news update delivered straight to your inbox.

[Sign Up](#)

Comments are due Feb. 28 and can be submitted online, or by calling 1-800-ASK-MODOT.

The recommended improvements are part of a traffic and safety study being completed by MoDOT and a consultant team.

The goal of the study is to identify a preferred alternative design for the interchange that enhances safety and mobility through the corridor, provides access to nearby businesses and promotes economic growth in Kingdom City.

ADVERTISING

[Learn more](#)

“After analyzing some of the preliminary results of the study and discussing those results with a local advisory group for this project, MoDOT is recommending that the interchange be updated to a Diverging Diamond Interchange,” Project Manager Mia Peters said. “This would be similar to the Interstate 70 and Stadium Boulevard interchange in Columbia.”

A diverging diamond interchange would have U.S. 54 split, adding stoplights and directing traffic onto long ramps depending on the direction they’re trying to go.

The project also proposes extending the on and off ramps of I-70 on both sides of U.S. 54.

Early studies also looked at changes to Dunn Road, but MoDOT isn’t recommending any at this time due to lower traffic volumes and substantially fewer crashes.

There is not currently a timeline for the completion of the project, but officials are looking at it for the

2023-27 Statewide Transportation Improvement Plan.

“The problem we’re having, and this was right before COVID, was that here is a pathway to the Lake,” Kingdom City Manager Larry Doyle Jr. said. “They had a problem where people were like waiting for two hours to get out of say the McDonald’s side of the road. Everything was just backing up because so many people are doing it.”

More information can be found at www.modot.org/KingdomCity Interchange.



54
ATI-I-70

Presentation Materials

Zoom Meeting Tips



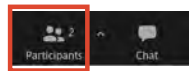
Please remain on **MUTE** unless you are speaking.



We encourage **VIDEO ON** so we can engage with each other.



Also use the **CHAT BOX** to ask questions or share.



Need to change your NAME?

RENAME yourself using the Participants Tab, click "More."

Please note this meeting is being recorded and will be part of the public record.

Welcome!



**Interstate 70/U.S. Route 54
Interchange at Kingdom City**

***Stakeholder Advisory Committee
Meeting #1***

*September 22, 2021
1:30 – 2:30 p.m.*

Study Team

MoDOT

Mia Peters – project manager
Kirsten Munck – area engineer
Matthew Burcham – environmental lead
Cyrus Meller – project designer
Randall Glaser – design liaison
Randall Aulbur – assistant district engineer

Consultants

Mike Herleth – project manager
Jessica Hutton – safety
Tim Cope – traffic & congestion
Seth Gilliam – alternative analysis
Meghan Jansen – public involvement
Lisa Kay Hummel – public involvement
Buddy Desai – NEPA re-evaluation



Mia Peters

Study Phases



**Discovery & Data
Collection** (current)



**Draft Alternatives &
Response** (Nov. 2021*)



**Preferred Alternative &
Public Update** (Jan. 2022*)

**Anticipated timing*



Mia Peters

Advisory Role

We value your time and input in this study.

As a project stakeholder who understands the community and travels through this interchange, **your insight will help to deliver a preferred alternative informed by local needs.**



Mia Peters

Advisory Representatives

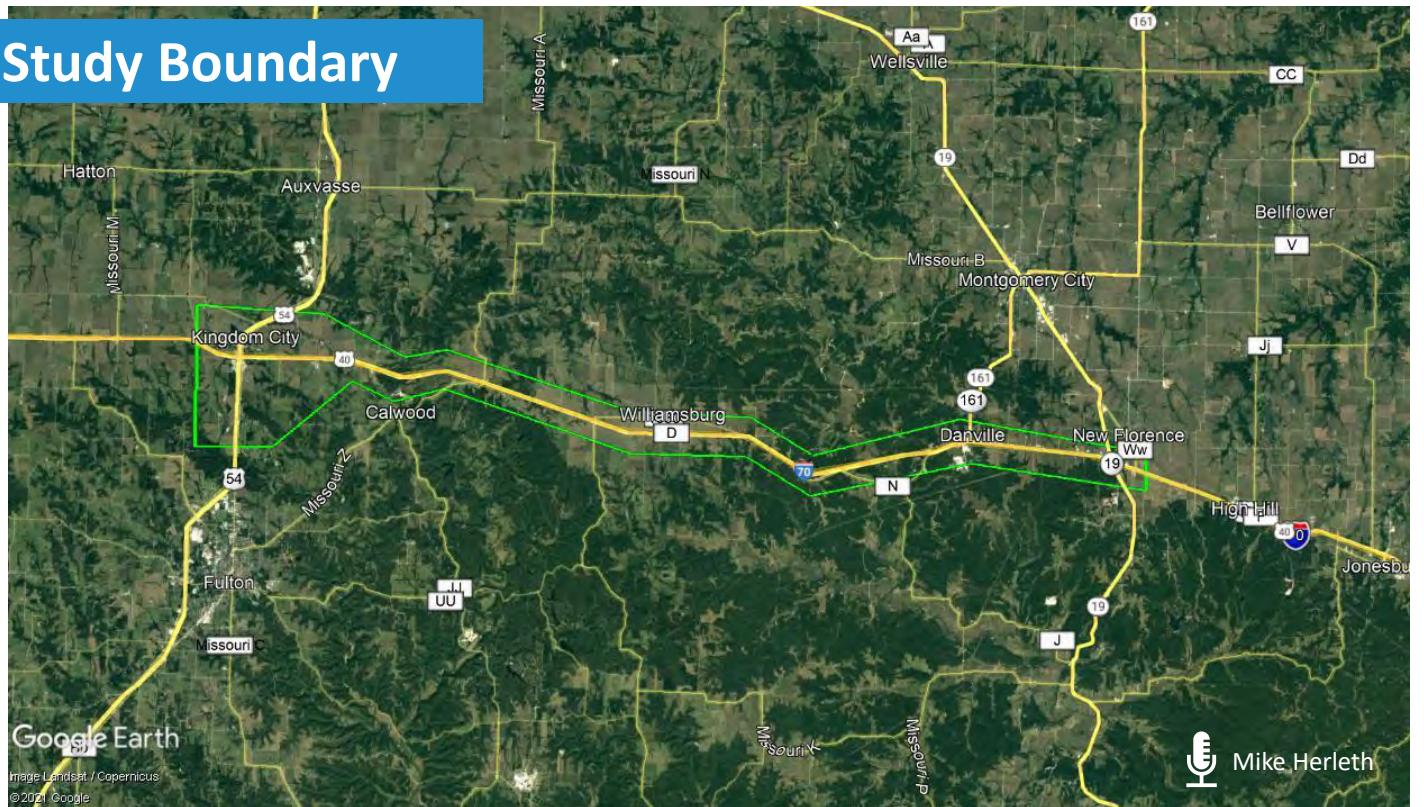
Corporal Cody Frame – Missouri State Highway Patrol
Linda Ellis – Callaway County Ambulance District
Charlie Anderson – Callaway County Ambulance District
Randy Kleindienst – East District Commissioner
Curtis Warfield – Kingdom City Administrator
Larry Doyle – Kingdom City Asst. City Manager
Doug Kee – North Callaway School District
Heath Haden – Ozark Valley Railroad
Jim Baker – Warrenton Oil Company
Adam Stanberry – Magic Wash
Sam Waheed – Motel 6 & Amerihost Inn & Suites
John Lummis – Callaway Carriers
Don Logan – FedEx (Topeka)
Brent Sims – FedEx Local Driver
Brandon Opie – Opies Transport Inc.
Kent Reed – Ozarkland



Lisa Kay



Study Boundary



Today's Discussion

1

Safety

2

Traffic and Congestion

3

Alternative evaluation

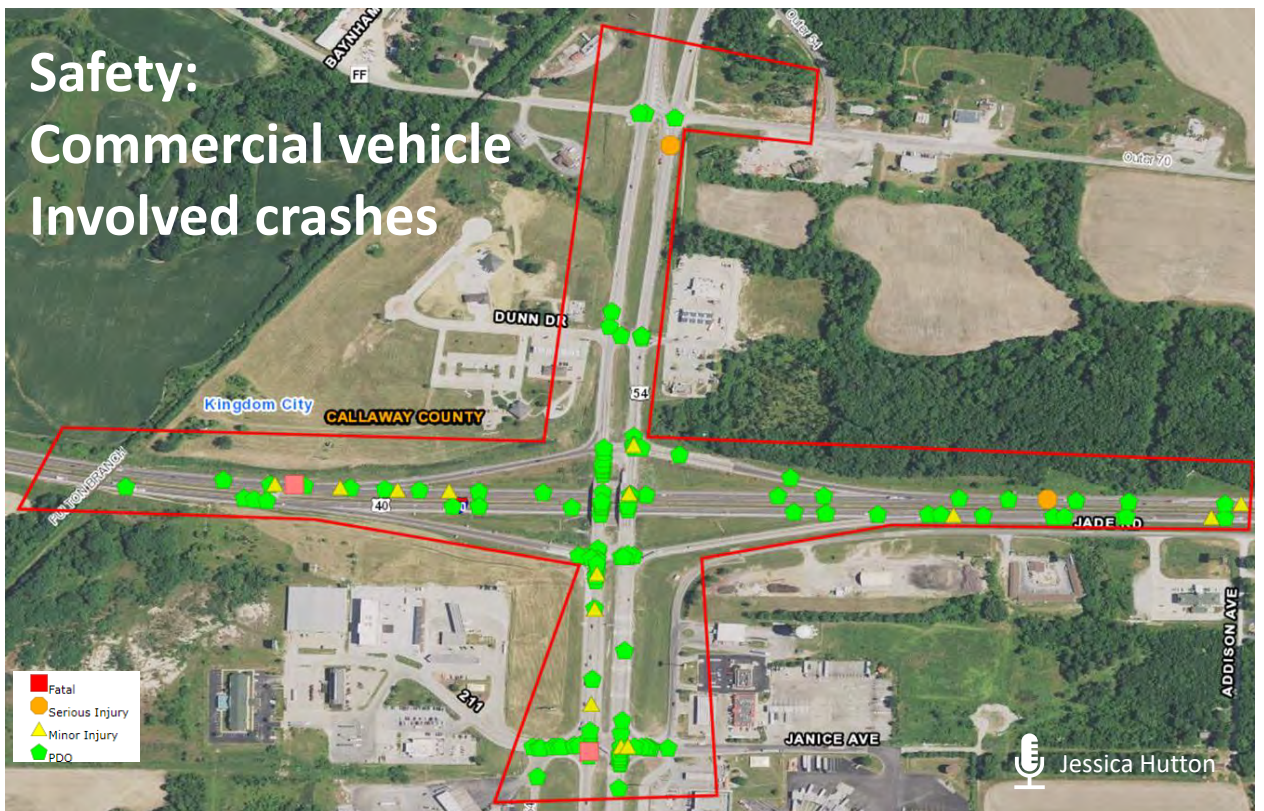
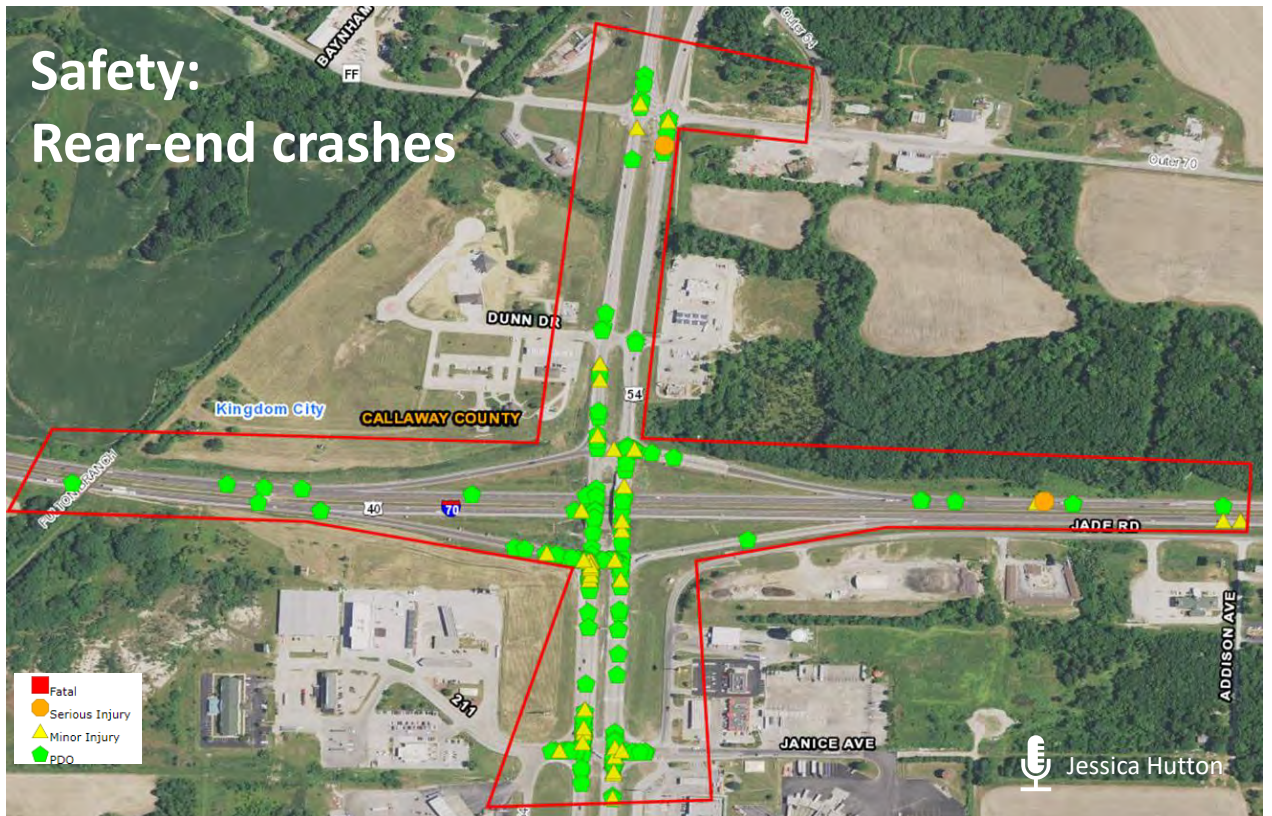


Mike to Jessica

Safety: Crash history



Jessica Hutton



54
AT I-70

Safety Survey



I-70/US 54 Interchange at Kingdom City Safety Survey

Please take a moment to share your experience traveling the I-70/US 54 interchange at Kingdom City, Missouri. Your input will be incorporated into a safety study currently being performed by MoDOT Central District.

OK



Jessica Hutton

54
AT I-70

Today's Discussion

1

Safety

2

Traffic and Congestion

3

Alternative evaluation



Meghan Jansen
Tim Cope

Traffic Congestion



 Tim Cope

Traffic backing onto I-70



 Tim Cope

Truck congestion at 54/Janice



 Tim Cope

Today's Discussion

- 1 Safety
- 2 Traffic and Congestion
- 3 Alternative Evaluation

 Meghan Jansen
Seth Gilliam

Alternative Evaluation: Overview

How will the alternatives be evaluated?

Four main criteria categories: 1. Roadway, 2. Traffic, 3. Safety, 4. Constraints

How will the final alternatives be chosen?

A holistic decision-making process will consider the purpose + need, engineering performance, environmental impacts, and public input for each alternative.

What types of interchange & intersection designs will be explored?

A variety of interchange & intersection designs will be considered and incorporated into the design alternatives.



Seth Gilliam

Alternative Evaluation: Roadway Criteria

ROADWAY				
Cost	Horizontal & Vertical Geometric Concerns	Access Management	Constructability Concerns	Consistency with Community Input

Horizontal & Vertical Geometric Concerns

Are there geometric irregularities or design exceptions required?

Consistency with Community Input

Does the alternative design reflect comments received from stakeholders and overall community input?



Seth Gilliam

Alternative Evaluation: Traffic Criteria

TRAFFIC					
Intersection Level of Service	Average Delay	Queue Lengths	Truck Operations	Traffic Resilience	Maintenance of Traffic

Queue Lengths

How much does traffic back up at the intersections?

Truck Operations

How well does alternative account for truck traffic?

Traffic Resilience

How well does alternative handle peak traffic events throughout the year?

Maintenance of Traffic

How is access and travel maintained during construction?



Seth Gilliam

Alternative Evaluation: Safety Criteria

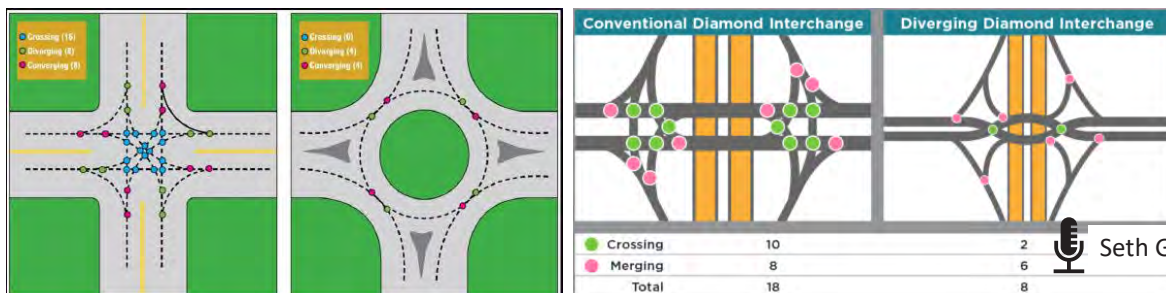
SAFETY			
Reductions in Total Crashes	Reductions in Fatal & Injury Crashes	Intersection Conflict Points	Driver Expectation

Reductions in Crashes

What will be the percent reduction/increase of crashes compared to today?

Intersection Conflict Points

How many intersection conflict points are there, compared to the existing design?



Seth Gilliam

Alternative Evaluation: Constraints

CONSTRAINTS			
Right of Way Acquisition	Utility Impacts	Drainage Impacts	Environmental Considerations

Right of Way Acquisition

How much new Right of Way will be required?

Utility & Drainage Impacts

How will utility & drainage impacts affect the overall cost & schedule of project?

Environmental Considerations

What are the physical and social environmental impacts?



Seth Gilliam

Alternative Evaluation: Summary

ROADWAY				
Cost	Horizontal & Vertical Geometric Concerns	Access Management	Constructability Concerns	Consistency with Community Input

TRAFFIC					
Intersection Level of Service	Average Delay	Queue Lengths	Truck Operations	Traffic Resilience	Maintenance of Traffic

SAFETY			
Reductions in Total Crashes	Reductions in Fatal & Injury Crashes	Intersection Conflict Points	Driver Expectation

CONSTRAINTS			
Right of Way Acquisition	Utility Impacts	Drainage Impacts	Environmental Considerations



Seth Gilliam

54
AT I-70

Next Steps



Take & Share the Survey
-employees, social media, fliers



Draft Alternatives & Response
(Meeting planned for Nov. 2021)



Preferred Alternative & Public Update
(Planned for Jan. 2022)



Meghan Jansen

Thank you!

54
AT I-70

**Open Discussion
Questions**

Welcome!



Interstate 70/U.S. Route 54 Interchange at Kingdom City

Stakeholder Advisory Committee Subgroup Meeting

October 25, 2021 from 3:00 – 4:00 p.m.

Online via Zoom



Mia Peters



Study Phases



**Discovery & Data
Collection** (current)



**Draft Alternatives &
Response** (Nov. 2021*)



**Preferred Alternative &
Public Update** (Jan. 2022*)

**Anticipated timing*



Mia Peters

Introductions

Mia Peters – MoDOT Project Manager
Kirsten Munck – MoDOT Area Engineer
Mike Herleth – Consultant Project Manager
Seth Gilliam – Consultant Alternative Analysis
Lisa Kay Hummel – Consultant Stakeholder Involvement
Buddy Desai – Consultant NEPA Re-evaluation

Randy Kleindienst – East District Commissioner
Curt Warfield – Kingdom City Administrator
Jim Baker – Warrenton Oil Company
Mark Mehle – McDonald's
Sam Waheed – Motel 6 & Amerihost Inn & Suites (*invited*)
George Eble – Westland Travel Center (*invited*)



Today's Discussion

1

Dunn Drive

2

Janice Avenue

3

Discussion and Questions



Early Design Concepts

Our team is in the early stages of exploring design alternatives.

The options we'll be discussing today are all DRAFTS and being presented for the purpose of gathering stakeholder input.



Mike Herleth



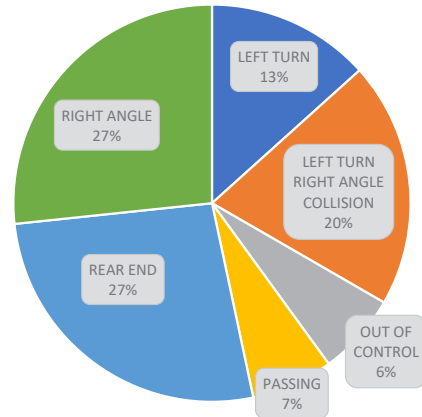
Factors influencing design considerations:

- Crash history
- Spacing



Mike Herleth

Dunn Drive (2015 through 2019)



Green pentagon: Property Damage Only crashes (11)

Yellow triangle: Minor Injury crashes (4)



Mike Herleth



Minimum spacing:

- 750 feet before a right turn is permitted
- 1320 feet before a left turn is permitted

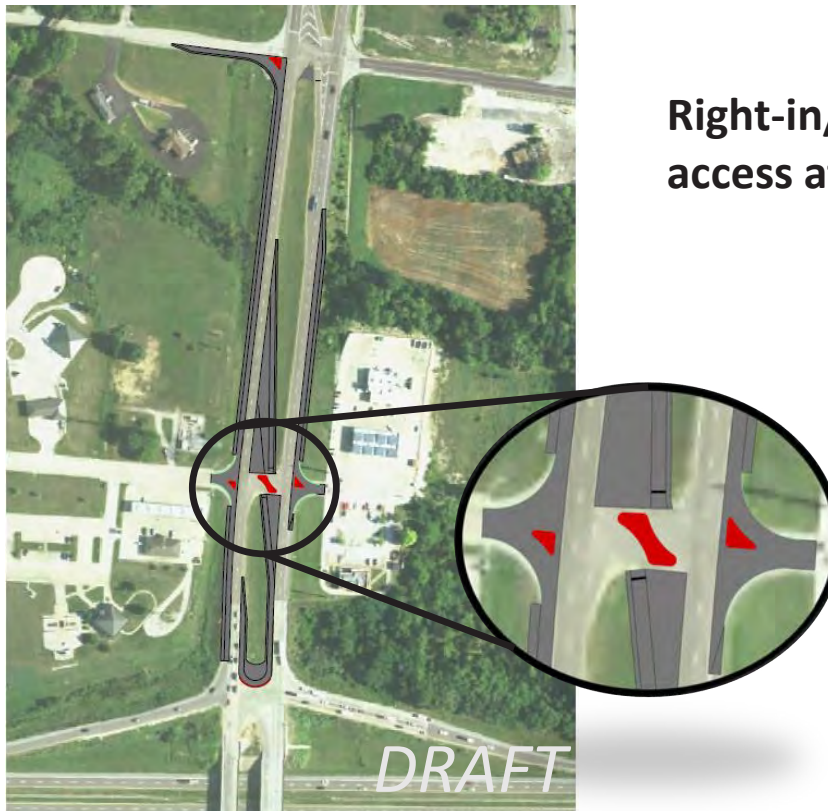


Mike Herleth



IDEAS CURRENTLY BEING CONSIDERED

 Mike Herleth



Right-in/Right-out/Left-in access at Dunn

- Accommodates 3 of 5 movements. Allows for left exits and through movements.
- Utilizes U-turns at adjacent traffic signals for exiting traffic to turn left.

 Seth Gilliam

Close Dunn Road Access and Connect with Backage Roads to Old-40



 Pavement Removal

- Consistent with 2005 recommendation
- Provides opportunity to **improve right turn movements** to and from the interchange ramps.
- Lots of improvements off the MoDOT highway system that would typically transfer to local agency.



Seth Gilliam

Today's Discussion

1

Dunn Drive

2

Janice Avenue

3

Discussion and Questions



Mike Herleth



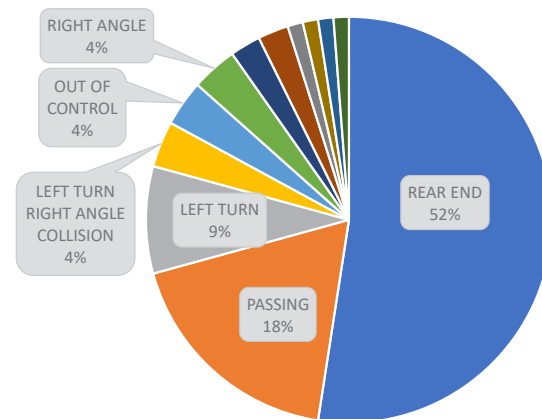
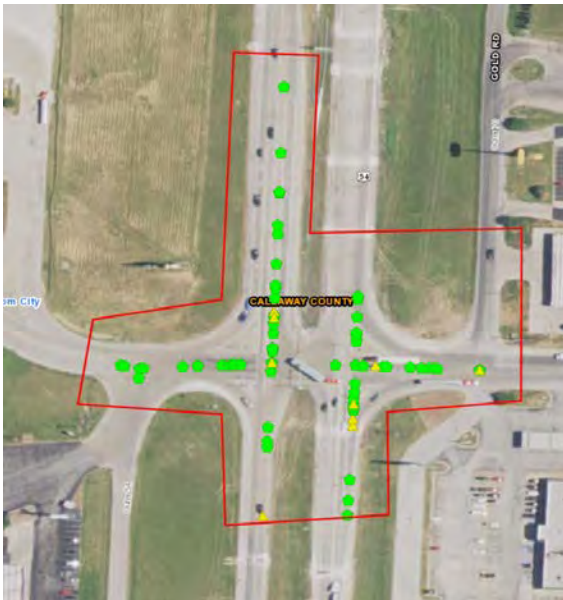
Factors influencing design considerations:

- Crash history
- Spacing
- Congested sideroad intersections



Mike Herleth

Janice Avenue (2015 through 2019)



Property Damage Only crashes (70)



Minor Injury crashes (12)



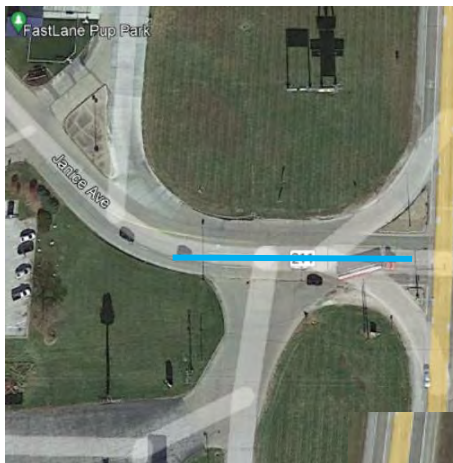
Mike Herleth



Minimum spacing:

- 750 Feet before a right turn is permitted
- 1320 Feet before a left turn is permitted

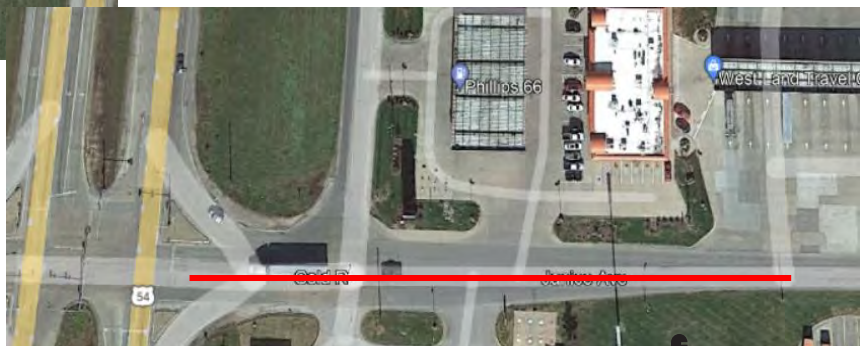
 Mike Herleth



Congested Sideroad Intersections

Janice Avenue traffic prevents turns onto County Road 211 – restricting intersection flow and creating backup onto Route 54.

Narrow receiving area and reduction to one lane eliminate benefit of dual left-turn lanes from US 54.



 Mike Herleth



**IDEAS
CURRENTLY
BEING
CONSIDERED**



Mike Herleth



Relocate Median Crossing – Remove all access at Janice

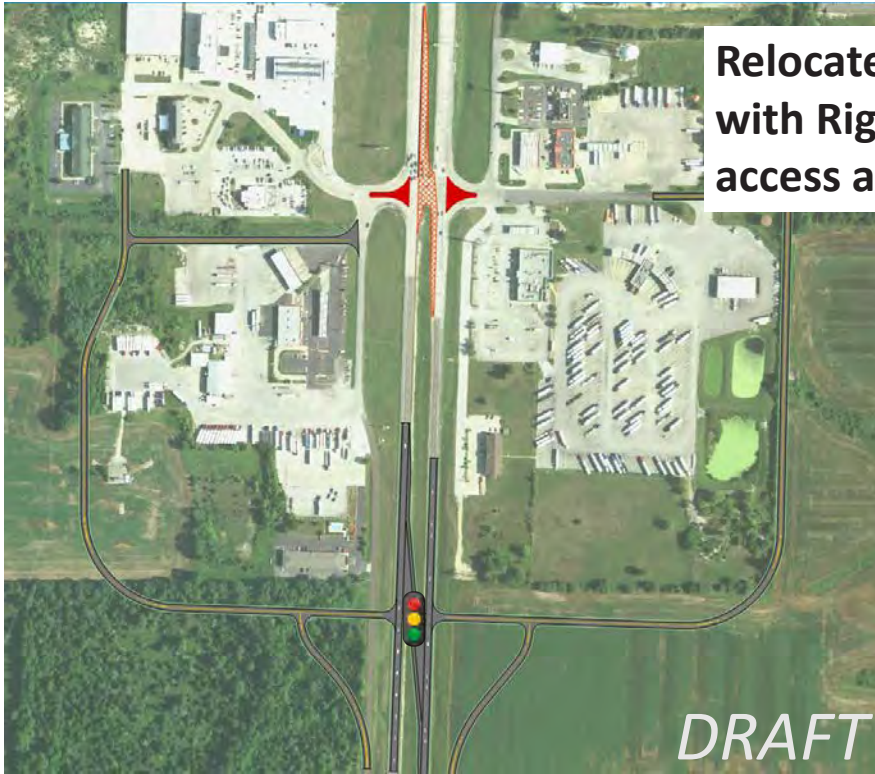
- Consistent with 2005 recommendation
- Provides nearly 2,600' separation from I-70
- Added opportunity to address high-volume lake traffic on weekends going EB on I-70
- Lots of improvements off the MoDOT highway system that would typically transfer to local agency.



Seth Gilliam

 Pavement Removal

54
AT I-70



 Pavement Removal

Relocate Median Crossing with Right-in/Right-out access at Janice

- Consistent with 2005 recommendation
- Provides nearly 2,600' separation from I-70
- Equitable solution for all businesses?
- Lots of improvements off the MoDOT highway system that would typically transfer to local agency.



Seth Gilliam

54
AT I-70



 Pavement Removal

Redesign Janice Avenue & County Road 211

- Retain current location of median break on 54
- Prioritize traffic exiting 54 to turn south onto County Road 211
- Widen Jasper east of Route 54 for 2-lane capacity eastbound
- Will require loss of parking spaces at DQ/Jaspers



Seth Gilliam

54
AT I-70

Today's Discussion

- 1 Dunn Drive
- 2 Janice Avenue
- 3 Discussion and Questions**

 Mike Herleth

54
AT I-70

Open Discussion & Questions

 Mike Herleth

Thank you!



Additional comments can be
provided to Kirsten Munck
Kirsten.munck@modot.mo.gov

**Please provide by Friday, Oct. 29*



Next Steps



Draft Alternatives & Response

Stakeholder Meeting #2 on Nov. 17th
(Online via Zoom)



Preferred Alternative & Public Update

(Planned for Jan. 2022)



Welcome!



Interstate 70/U.S. Route 54 Interchange at Kingdom City

Stakeholder Advisory Committee Meeting #2

November 17, 2021

1:00 – 2:30 p.m. via Zoom



Mia Peters



Study Team

MoDOT

Mia Peters – project manager

Kirsten Munck – area engineer

Machelle Watkins – district engineer

Randall Aulbur – assistant district engineer

Randall Glaser – design liaison

Adam Pulley – communications manager

Consultants

Mike Herleth – project manager

Jessica Hutton – safety

Tim Cope – traffic & congestion

Seth Gilliam – alternative analysis

Meghan Jansen – public involvement

Lisa Kay Hummel – public involvement

Buddy Desai – NEPA re-evaluation



Mia

54
AT 1-70

Study Phases



**Discovery & Data
Collection** (completed)



**Draft Concepts &
Response** (current)



**Preferred Alternative &
Public Update** (Jan. 2022*)

**Anticipated timing*



54
AT 1-70

Today's Goal:



Gather feedback on concepts to inform the selection of a preferred alternative to present for public comment in January.



Advisory Role



We value your time and input in this study.

As a project stakeholder who understands the community and travels through this interchange, your insight will help to deliver a preferred alternative informed by local needs.



Advisory Representatives

Corporal Cody Frame – Missouri State Highway Patrol
Linda Ellis – Callaway County Ambulance District
Charlie Anderson – Callaway County Ambulance District
Randy Kleindienst – East District Commissioner
Curtis Warfield – **Kingdom City Administrator**
Larry Doyle – Kingdom City Asst. City Manager
Doug Kee – North Callaway School District
Heath Haden – Ozark Valley Railroad
Jim Baker – Warrenton Oil Company
Adam Stanberry – Magic Wash
Sam Waheed – Motel 6 & Amerihost Inn & Suites
John Lummis – Callaway Carriers
Don Logan – FedEx (Topeka)
Brent Sims – FedEx Local Driver
Brandon Opie – Opies Transport Inc.
Kent Reed – Ozarkland
Mark Mehle – McDonald's
George Eble – West land Travel Center /Phillips 66
Linda Diluvio – Village of Kingdom City Trustee



Outline for Today



1. Concepts for Review by Section

- **Section 1: I-70 Ramps**
- Section 2: North Intersection
- Section 3: Interchange
- Section 4: South Intersection

2. Concept Evaluation

Mike Herleth

Safety

WB On Ramp Merge 2015-2019	Predicted	Observed
Total crashes	2.8	23
Fatal and injury crashes	0.9	6*
Crash frequency rate (crashes/million veh mi)	0.5	4.1
Fatal and injury crash frequency rate (crashes/million veh mi)	0.16	1.1

*includes two fatal crashes

EB On Ramp Merge 2015-2019	Predicted	Observed
Total crashes	2.1	12
Fatal and injury crashes	0.7	2
Crash frequency rate (crashes/million veh mi)	0.45	2.6
Fatal and injury crash frequency rate (crashes/million veh mi)	0.15	0.43

Crash Analysis:

- At the WB on ramp merge area, total crashes are **7 times higher** than what is predicted; fatal and injury crashes are **6 times higher** than predicted
- At the EB on ramp merge area, total crashes are 5 times higher than predicted; fatal and injury are nearly triple what is predicted

Safety Recommendations:

- Extend ramps and merge length substantially
- Mitigate safety risk of bridge pier on WB ramp traffic

Jessica Hutton

Traffic Operations

- High truck traffic
- Acceleration / Deceleration
- Holiday & Lake Traffic Peaks



RAMPS Existing Ramps



54

AT I-70

RAMPS

Ramp Extensions
with Railroad
Bridge Removal



	RAMP DESIGN COMPARISON							
	1. I-70 WB Entrance Ramp		2. I-70 EB Exit Ramp		3. I-70 WB Exit Ramp		4. I-70 EB Entrance Ramp	
	Existing Design	Proposed Design	Existing Design	Proposed Design	Existing Design	Proposed Design	Existing Design	Proposed Design
Acceleration/Deceleration Length	480'	1230'	0'	800'	0'	800'	480'	1230'

54

AT I-70

RAMPS

Ramp Extensions
with Railroad Bridge
In Place



	RAMP DESIGN COMPARISON							
	1. I-70 WB Entrance Ramp		2. I-70 EB Exit Ramp		3. I-70 WB Exit Ramp		4. I-70 EB Entrance Ramp	
	Existing Design	Proposed Design	Existing Design	Proposed Design	Existing Design	Proposed Design	Existing Design	Proposed Design
Acceleration/Deceleration Length	480'	2360'	0'	490'	0'	800'	480'	1230'

Evaluation Matrix: Ramps

CRITERIA	RAMPS		
	1.1	1.2	1.3
	Existing Ramps	Ramp Extension w/ RR Bridge Removal	Ramp Extension w/ RR Bridge In Place
Cost	3	1	2
Consistency with Community Input	1	3	3
Traffic Operations	1	3	3
Maintenance of Traffic During Construction	3	2	2
Safety	1	3	3
Driver Expectation	2	3	2
Right of Way Impacts	3	3	3

3 Good
2 Average
1 Poor

 Mike

Open Discussion Questions

 Meghan

Outline for Today



1. Concepts for Review by Section

- Section 1: I-70 Ramps
- **Section 2: North Intersection**
- Section 3: Interchange
- Section 4: South Intersection

2. Concept Evaluation



Safety

Old US 40 2015-2019	Predicted	Observed
Total crashes	26.2	24
Fatal and injury crashes	13.8	10
Crash frequency rate (crashes/million veh)	1.2	1.1
Fatal and injury crash frequency rate (crashes/million veh)	0.63	0.46

Dunn Drive 2015-2019	Predicted	Observed
Total crashes	11.3	15
Fatal and injury crashes	6.2	4
Crash frequency rate (crashes/million veh)	0.46	0.61
Fatal and injury crash frequency rate (crashes/million veh)	0.25	0.16

Crash Analysis:

- Intersection of Old US 40 and US 54 operates like what is predicted for an intersection with similar geometry and traffic volumes
- Intersection of Dunn Drive and US 54 experiences about 20% more crashes than predicted
- The fatal and injury crash rate is lower than predicted at both intersections

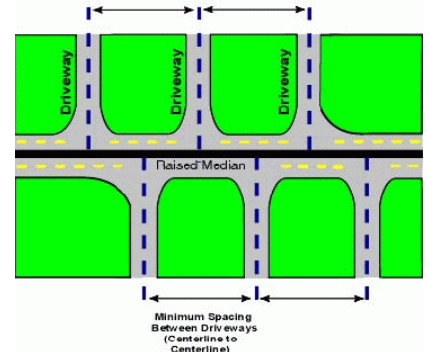
Safety Recommendations:

- Reduce the likelihood of angle and left-turning crashes to reduce crash risk



Traffic Operations

- Intersection Spacing
- Low side street volume
- Ability to maneuver
- Median spacing



Tim

**NORTH
INTERSECTION**
Existing Dunn Rd Intersection



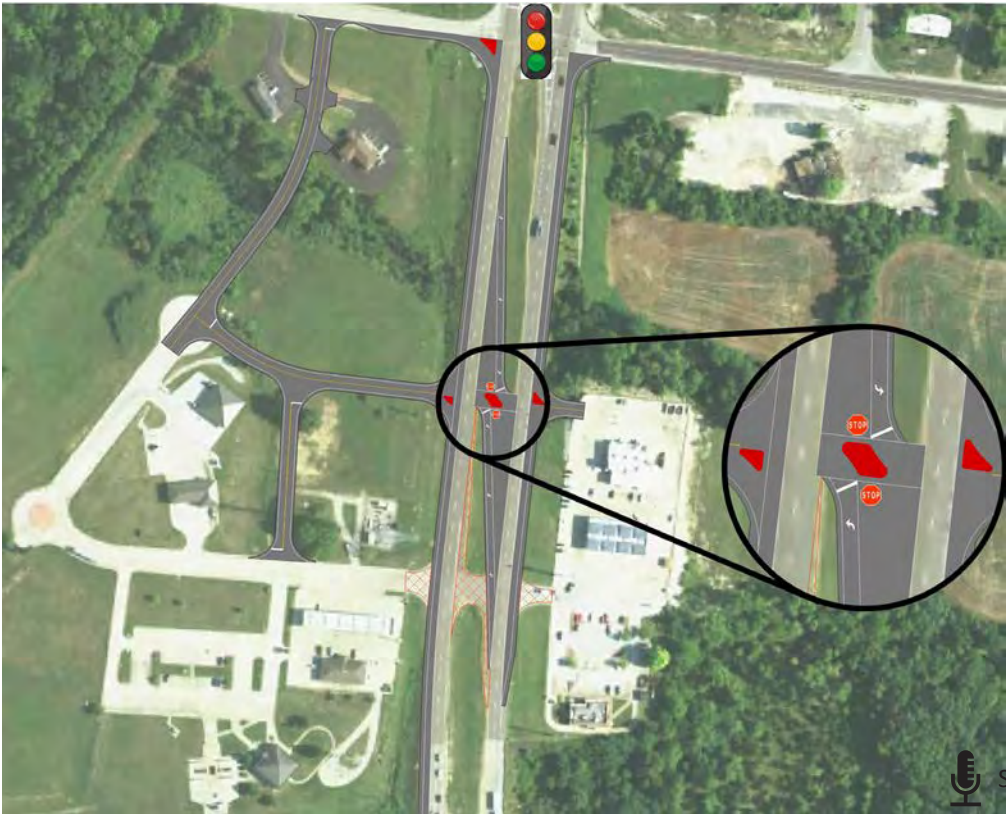
Seth

54

AT I-70

NORTH INTERSECTION Dunn Rd Relocation

 Pavement Removal



 Seth

54

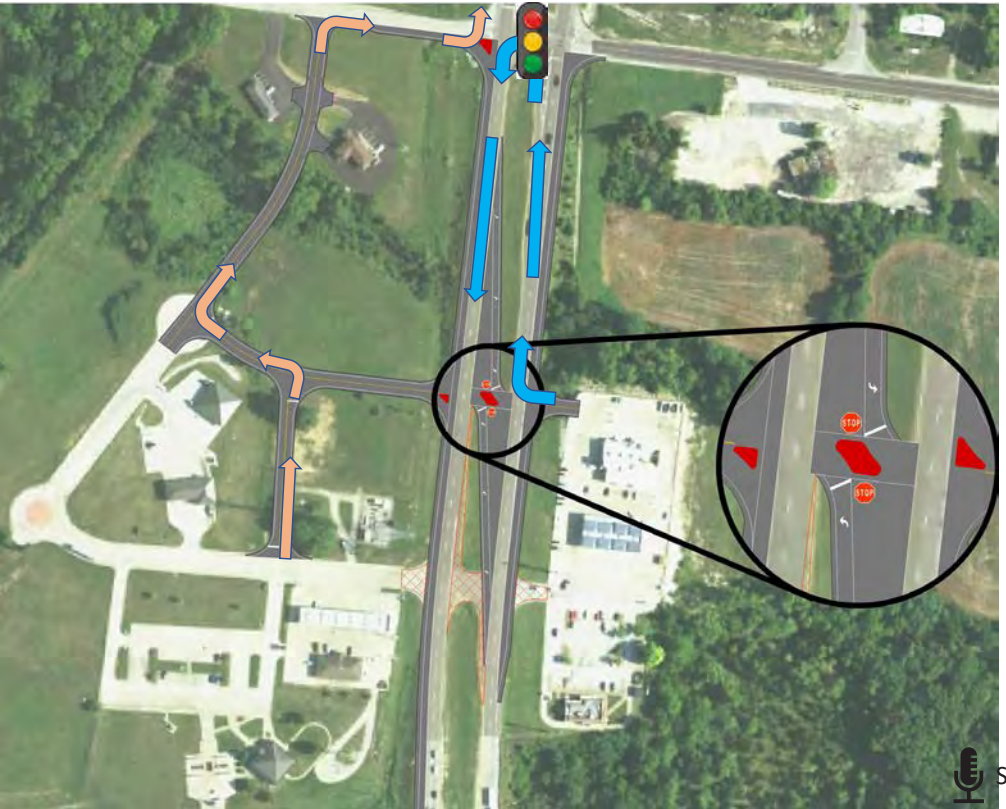
AT I-70

NORTH INTERSECTION Dunn Rd Relocation

 Eastbound Dunn Rd
Left-Out Access

 Westbound Dunn Rd
Left-Out Access

 Pavement Removal



 Seth

54
AT I-70

**NORTH
INTERSECTION**
Dunn Rd with Right-In,
Right-Out (RIRO) Access

 Pavement Removal



 Seth

54
AT I-70

**NORTH
INTERSECTION**
Dunn Rd with Right-In,
Right-Out (RIRO) Access

 US54 NB Left-In Access

 US54 SB Left-In Access

 Pavement Removal



 Seth

NORTH INTERSECTION

Dunn Rd with Right-In, Right-Out (RIRO) Access

- Eastbound Dunn Rd Left-Out Access
- Westbound Dunn Rd Left-Out Access

 Pavement Removal



 Seth

Evaluation Matrix: North Intersection

CRITERIA	NORTH INTERSECTION		
	2.1	2.2	2.3
	Existing Dunn Rd	Dunn Rd Relocation	Dunn Rd w/ Right-In, Right-Out (RIRO) Access
Cost	3	2	1
Business Access	3	2	2
Consistency with Community Input	3	3	1
Traffic Operations	2	3	3
Maintenance of Traffic During Construction	3	2	2
Safety	2	3	3
Driver Expectation	3	2	1
Right of Way Impacts	3	2	1

- 3 Good
- 2 Average
- 1 Poor

 Mike

54

AT I-70

NORTH
INTERSECTION

Open Discussion Questions



Meghan

54

AT I-70

Outline for Today



1. Concepts for Review by Section

- Section 1: I-70 Ramps
- Section 2: North Intersection
- **Section 3: Interchange**
- Section 4: South Intersection

2. Concept Evaluation



Mike

Safety

North Ramp Terminal (WB) 2015-2019	Predicted	Observed
Total crashes	38.9	44
Fatal and injury crashes	13.35	10
Crash frequency rate (crashes/million veh)	1.24	1.4
Fatal and injury crash frequency rate (crashes/million veh)	0.43	0.32

South Ramp Terminal (EB) 2015-2019	Predicted	Observed
Total crashes	41.9	123
Fatal and injury crashes	14.1	18
Crash frequency rate (crashes/million veh)	1.04	3.05
Fatal and injury crash frequency rate (crashes/million veh)	0.35	0.45

Crash Analysis:

- The westbound ramp terminal has about 13 percent more crashes than expected, but fewer fatal and injury crashes.
- The eastbound ramp terminal has 3 times the number of expected crashes, but a much smaller proportion of fatal and injury crashes than expected

Safety Recommendations:

- Increase capacity for better traffic progression
- Accommodate heavy trucks
- Provide clear pavement marking and signs



Traffic Operations

- Interchange capacity
- Number of stops
- Crossing movements



54

AT I-70

INTERCHANGE

Existing I-70/US54
Interchange



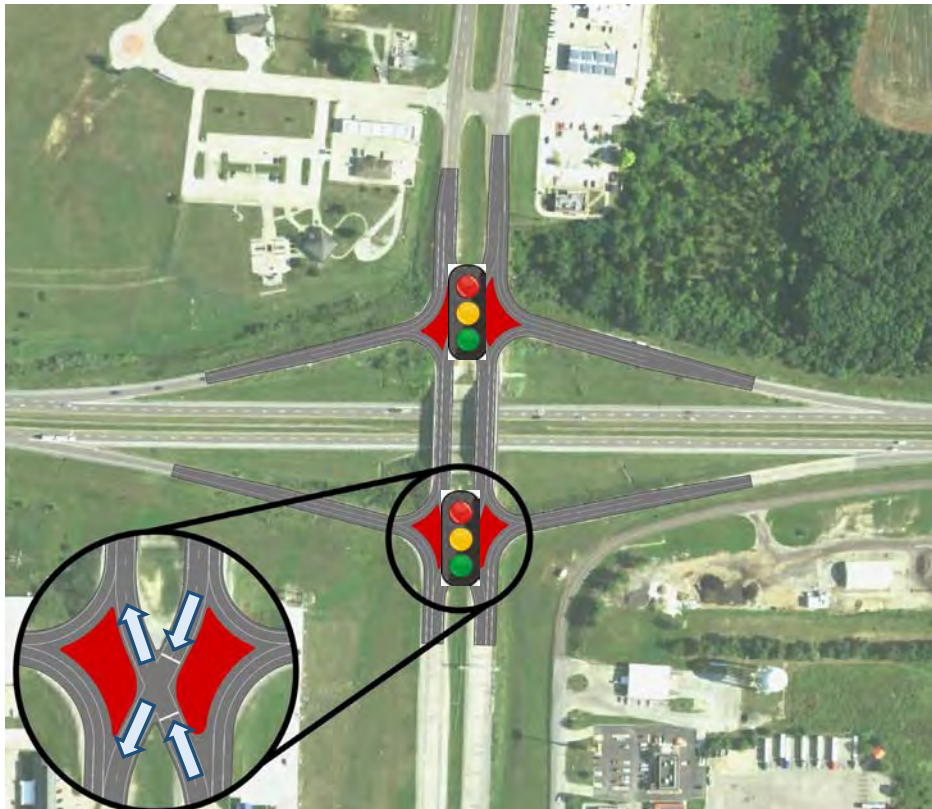
 Seth

54

AT I-70

INTERCHANGE

Diverging Diamond
(DDI) Interchange



 Seth

Evaluation Matrix: Interchange

CRITERIA	INTERCHANGE	
	3.1	3.2
	Existing Interchange	Diverging Diamond (DDI) Interchange
Cost	3	2
Business Access	3	3
Consistency with Community Input	1	3
Traffic Operations	1	3
Maintenance of Traffic During Construction	3	1
Safety	1	3
Driver Expectation	3	2
Right of Way Impacts	3	3

3 Good
2 Average
1 Poor

 Mike

Open Discussion Questions

 Meghan

Outline for Today



1. Concepts for Review by Section

- Section 1: I-70 Ramps
- Section 2: North Intersection
- Section 3: Interchange
- **Section 4: South Intersection**

2. Concept Evaluation



Safety

Janice Ave 2015-2019	Predicted	Observed
Total crashes	31.1	82
Fatal and injury crashes	16.2	12
Crash frequency rate (crashes/million veh)	1.01	2.66
Fatal and injury crash frequency rate (crashes/million veh)	0.53	0.39

Crash Analysis:

- The intersection at Janice Avenue experiences about 2.6 times as many crashes as predicted, but only about 75% as many fatal and injury crashes

Safety Recommendations:

- Separate conflicts as much as possible by shifting access points along Janice away from the intersection at US 54
- Consolidate access points where possible
- Increase capacity through the intersection, especially for trucks



Traffic Operations

- Intersection spacing
- Crossing movements



Tim

**SOUTH
INTERSECTION**
Existing Janice Ave.
Intersection



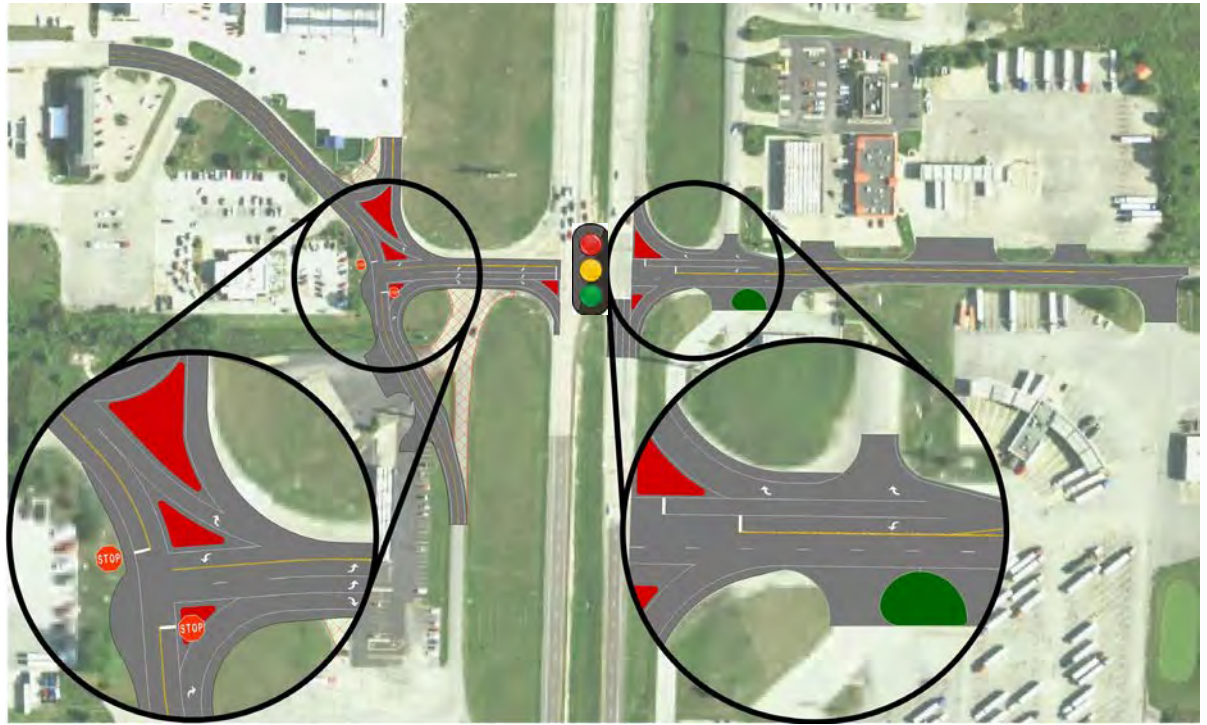
Seth

54

AT I-70

SOUTH INTERSECTION

Janice Ave. Local Intersection Modifications



 Pavement Removal

 Seth

54

AT I-70

4.3

SOUTH INTERSECTION

Janice Ave. Thoroughabout (Hamburger) Intersection with Local Intersection Improvements



 Pavement Removal

 Seth

54

AT I-70

SOUTH INTERSECTION

Janice Ave. Intersection Relocation with Right-In, Right-Out (RIRO) Access at Janice Ave.

4.4

 Pavement Removal



 Seth

54

AT I-70

Evaluation Matrix: South Intersection

CRITERIA	NORTH INTERSECTION			
	4.1	4.2	4.3	4.4
	Existing Janice Ave. Intersection	Janice Ave. Local Intersection Modifications	Janice Ave. Thoroughabout w/ Local Intersection Modifications	Janice Ave. Intersection Relocation w/ RIRO Access at Janice Ave.
Cost	3	2	2	1
Business Access	3	3	2	2
Consistency with Community Input	2	3	3	2
Traffic Operations	1	2	3	3
Maintenance of Traffic During Construction	3	2	1	3
Safety	1	2	3	3
Driver Expectation	3	3	2	3
Right of Way Impacts	3	2	2	1

3 Good
2 Average
1 Poor

 Mike

54

AT I-70

SOUTH
INTERSECTION

Open Discussion Questions



Meghan

54

AT I-70

Opportunities to Add Input

Email Project Team Your Comments

Kirsten.munck@modot.mo.gov

Lkhummel@burnsmcd.com

Project Team will reach out after Thanksgiving with an offer
to share input individually

(Concepts shown today will be distributed the meeting)



Meghan

Next Steps



Preferred Alternative & Public Update
(Planned for Jan. 2022)



Meghan



WELCOME

Interstate 70 /
U.S. Route 54 Interchange
at Kingdom City

*Study Update &
Preferred Alternative
February 15 – 28, 2022*



Interstate 70 / U.S. Route 54 Interchange
at Kingdom City



STUDY GOAL

*Identify a **preferred alternative** design for the interchange that **enhances safety** and **mobility** through the corridor, provides **access to nearby businesses** and promotes **economic growth** in Kingdom City.*



Study Process



Data Collection & Discovery

September – October 2021



Draft Concepts & Evaluation

November 2021 – January 2022



Preferred Alternative & Public Update

February 2022



Final Report & Recommendations

May 2022



Data Collection & Discovery





Discovery & Data Collection

400 people participated in a short **safety survey** in October of 2021. Nearly **70% of respondents** were **local residents**. Business owners and commercial truck drivers also weighed in.



More than 35% **feel this interchange is less safe** compared to others.



Nearly 75% believe that **high traffic volumes lead to crashes or near misses**.



Top safety concerns included:

- Difficulty **merging onto I-70**
- **Traffic backing up** at intersections
- Interactions between **heavy trucks** and passenger vehicles



Discovery & Data Collection

More than **20 nearby businesses and local representatives** participated in a **Stakeholder Advisory Committee**. Their thoughtful input **helped the team deliver a design informed by local needs**.

Thank you to those who shared their time!



Lots of **valuable insight** helped the design team **explore options** and **determine a preferred solution**.



Here are some of the things we heard:

- **Improving safety** is important **for families, employees and customers**.
- Maintaining **business access** is vital.
- **Construction phasing and timing** will be important.



Draft Concepts & Evaluation

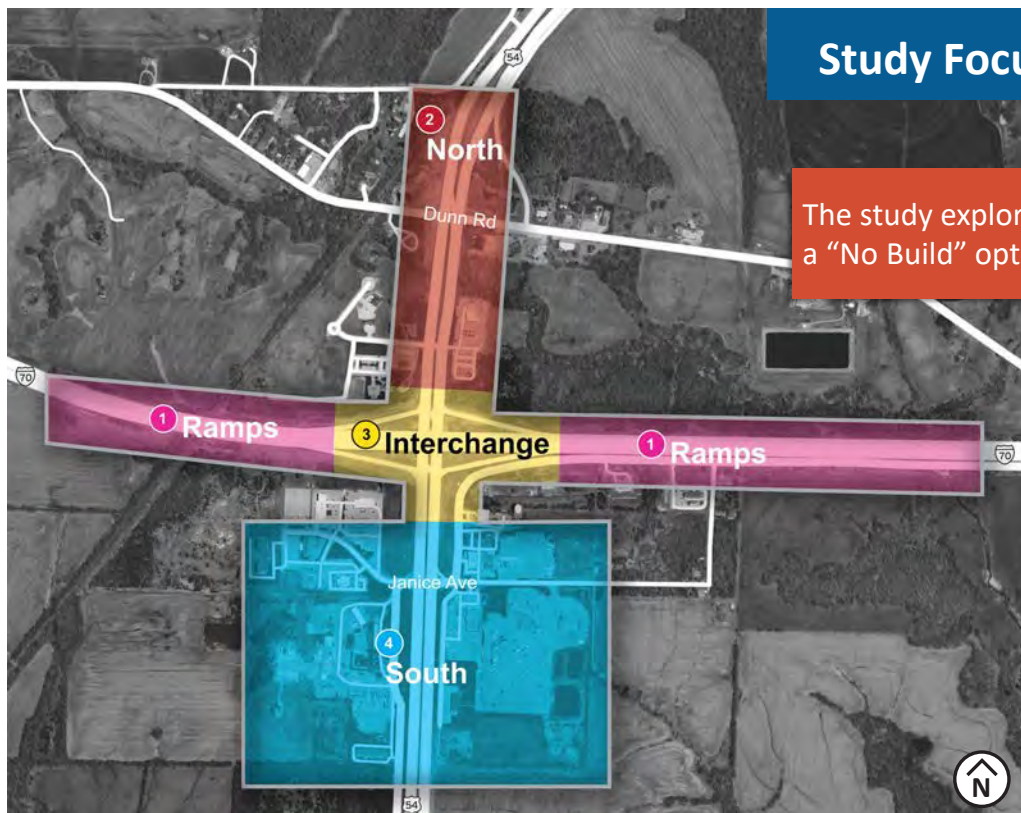


Study Focus Areas

The study explored improvements, including a “No Build” option, to **4 focus areas**:

- 1 I-70 Ramps
- 2 North/Dunn Rd.
- 3 I-70/U.S. 54 Interchange
- 4 South/Janice Ave.

In addition to the improvements presented on the following slides, MoDOT also considered the “No Build” alternative. Under the No Build alternative, no improvements would be made to the interchange. Only routine maintenance would continue.





1 I-70 Ramps: Current Conditions (No Build)



The existing I-70 on-ramps are short and do not meet current MoDOT standards.

This makes merging onto I-70 difficult and sometimes results in traffic backing onto the interstate.



1 I-70 Ramps: Exploration

Option #1: Increase Ramp Lengths & Remove Railroad Bridge



The team considered several solutions, including removing the existing railroad bridge and reconfiguring the ramps.

Option #2: Tabletop Ramps





1 I-70 Ramps: Preferred Alternative



The preferred solution significantly increases the length of on- and off-ramps with the existing railroad bridge left in place.



2 North/Dunn Rd.: Current Conditions (No Build)



Currently, the Dunn Rd. intersection is quite close to I-70. When congestion occurs, traffic can back up onto U.S. 54 – providing even less space for vehicles exiting I-70 to maneuver into the appropriate lane.

2 North/Dunn Rd.: Exploration



Option #1: Right-in/Right-out at Dunn Rd. and construct west & east backage roads



Option #2: Relocate Dunn Rd. and construct west backage road

The team explored several solutions, including **removing some turning movements** and the use of **backage roads**.

These options would be **costly** and were **not well received** by stakeholders.

2 North/Dunn Rd.: Preferred Alternative



The **preferred solution** keeps Dunn Rd. as-is, **maintaining existing business access** and allowing project funds to be spent in areas of greater need.

Dunn Rd. has much **less traffic volumes** and **substantially fewer crashes** than other areas of the study. This solution would also **allow for future improvements** to accommodate new **development** or **other local needs** as they emerge.



3

I-70/U.S. 54 Interchange: Current Conditions (No Build)



The existing interchange **does not** accommodate current and **projected** traffic volumes.



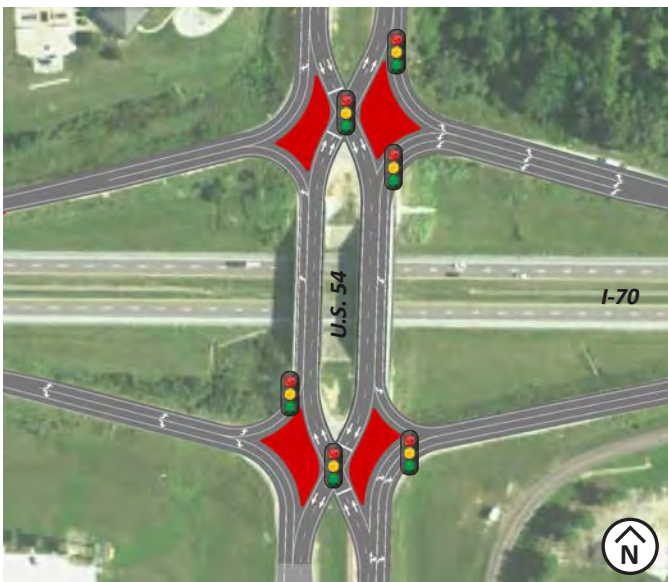
3

I-70/U.S. 54 Interchange: Exploration



The team explored several solutions, including a **double roundabout**.

3 I-70/U.S. 54 Interchange: Preferred Alternative



The preferred solution is a **Diverging Diamond Interchange (DDI)**. A DDI would:

- Provide substantial **safety benefits**.
- **Alleviate congestion** and long turning lines that back up onto I-70 exit ramps.
- Offer the **greatest cost/benefit value**.

This interchange would be *similar to* I-70 & Stadium Blvd. in Columbia, MO.

A video example of a DDI is available on MoDOT's YouTube page: [youtube.com/watch?v=kMq1hReQ6xs](https://www.youtube.com/watch?v=kMq1hReQ6xs)

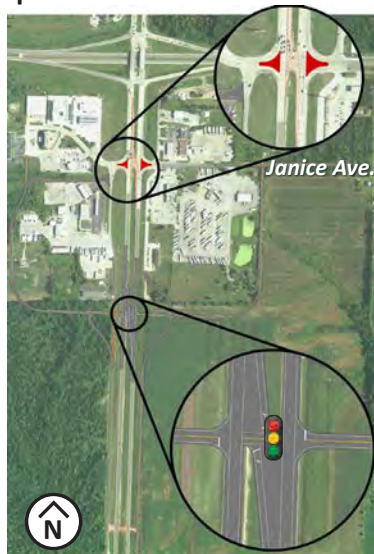
4 South/Janice Ave.: Current Conditions (No Build)



Currently, Janice Ave. experiences **heavy congestion** that can cause traffic to **back up onto U.S. 54**. In addition, the **turning lanes do not accommodate trucks well**, and this **slows traffic flow** through the intersection.

4 South/Janice Ave: Exploration

Option #1: Janice Ave. Intersection Relocation

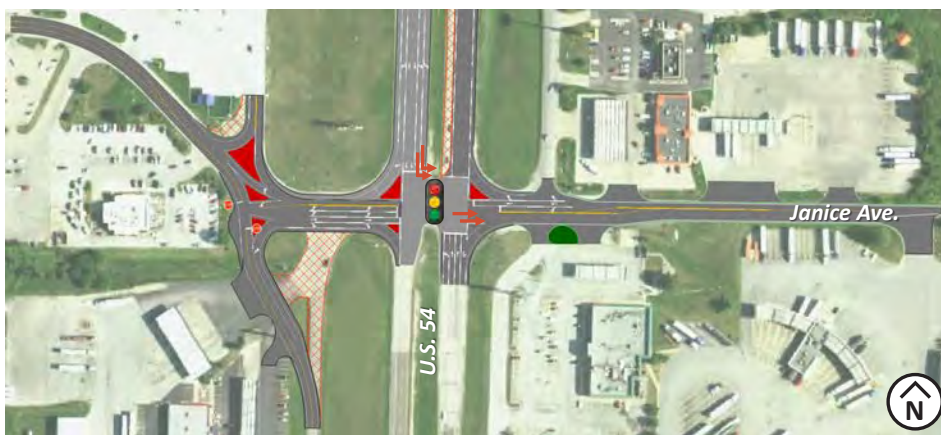


Option #2: Janice Ave. Throughabout Intersection



The team explored several solutions, including relocating the intersection and a throughabout.

4 South/Janice Ave: Preferred Alternative



The preferred solution includes **local road improvements** that would:

- Improve traffic flow and alleviate congestion.
- Better accommodate side-by-side southbound left turns for trucks.
- Offer the greatest cost/benefit value.

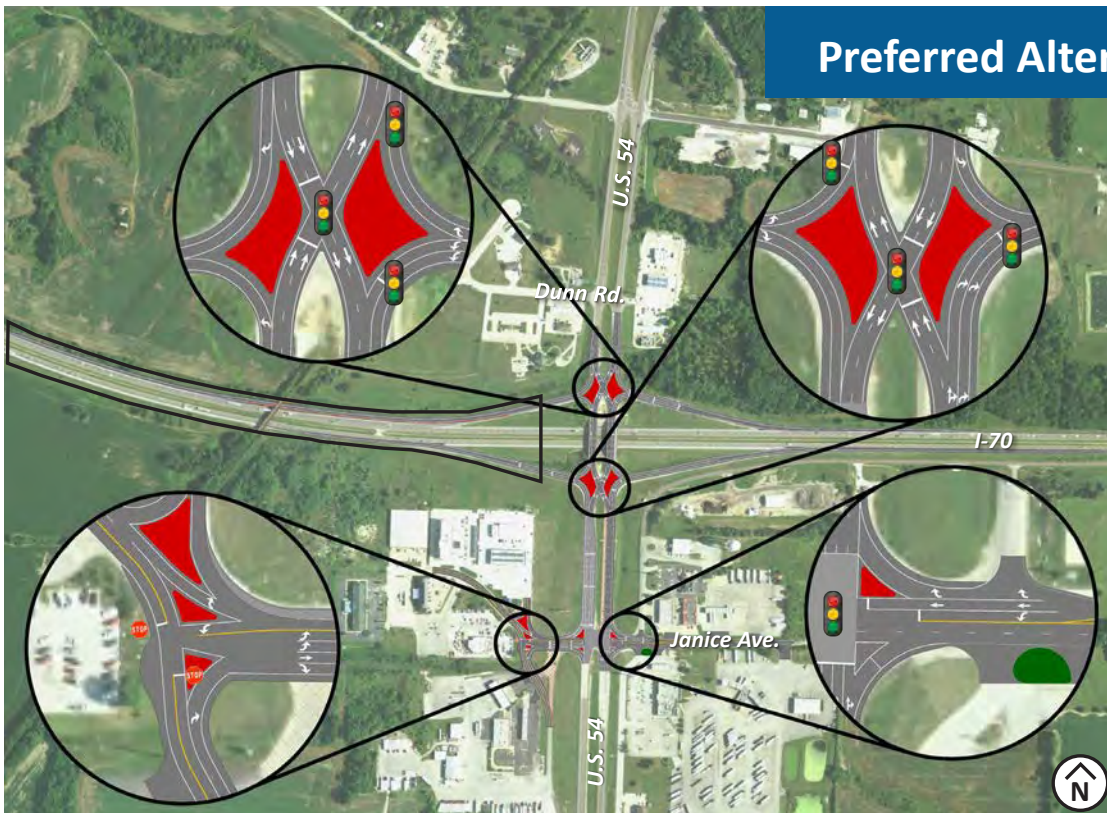


Preferred Alternative

Putting all the pieces together.



Preferred Alternative



No changes are currently planned at the Dunn Rd. intersection.



Anticipated Improvements

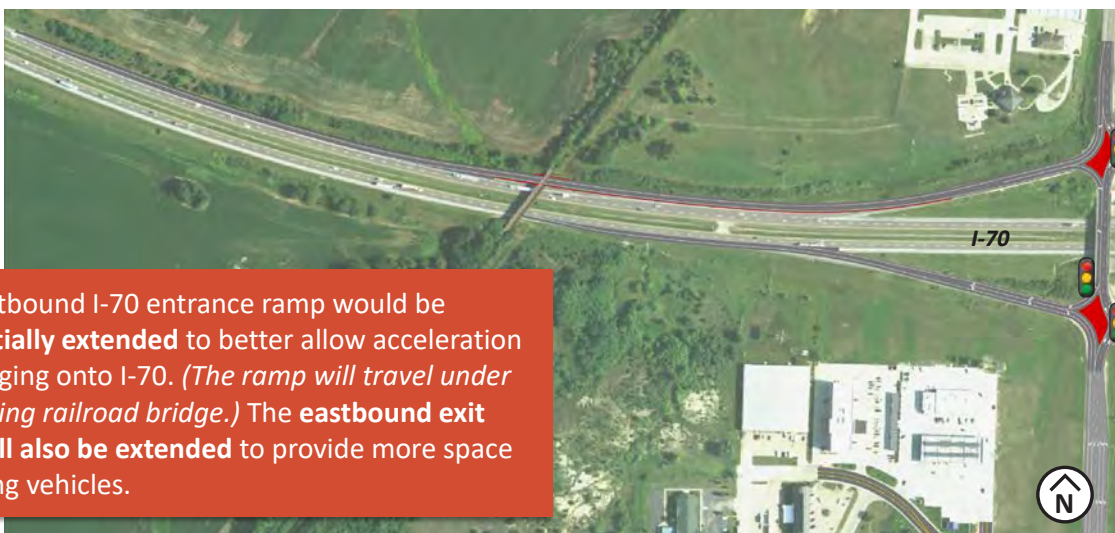
The Study's preferred alternative is anticipated to deliver the **following improvements**.

1. **Enhance safety** – through the **reduction of conflict points**
2. **Improve traffic flow** – keeping traffic on their way!
3. Opportunities for **less disruption to local businesses**
 - We understand **construction timing and phasing is important** – these details will be advanced in the next phase of the project.



1

Recommended Improvements to I-70 Ramps (on the west)



The westbound I-70 entrance ramp would be **substantially extended** to better allow acceleration and merging onto I-70. *(The ramp will travel under the existing railroad bridge.)* The **eastbound exit ramp will also be extended** to provide more space for exiting vehicles.

1

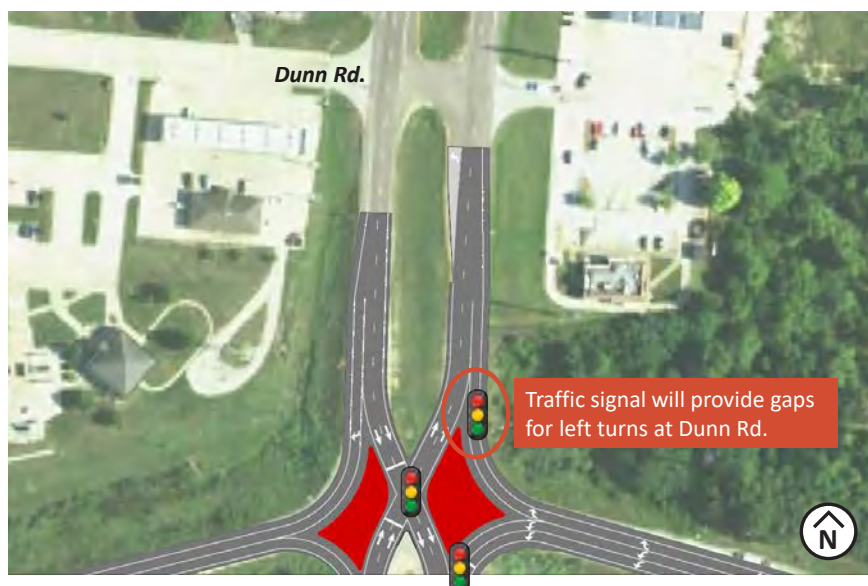
Recommended Improvements to Ramps (on the east)



The eastbound I-70 entrance ramp would be **substantially extended** to better allow acceleration and merging onto I-70. The **westbound exit ramp will also be extended** to provide more space for exiting vehicles.

2

North/Dunn Rd. – No Change



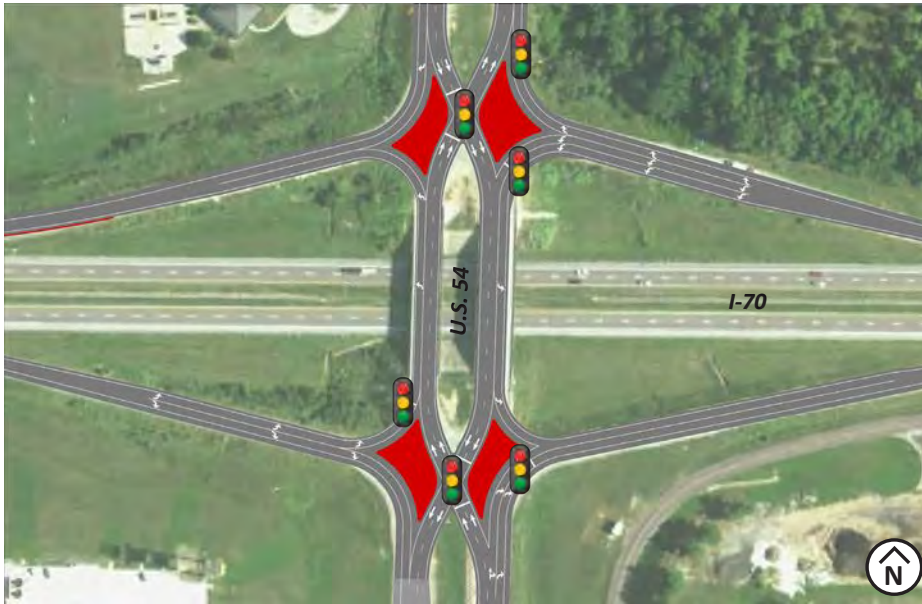
Traffic signal will provide gaps for left turns at Dunn Rd.

Dunn Rd. has significantly **less traffic volumes** than other areas of the study. No changes are currently planned. The addition of a **traffic signal for right turns** exiting from **westbound I-70** will provide **gaps for left turns** at Dunn Rd.



3

Recommended Improvements to I-70/U.S. 54 Interchange



A Diverging Diamond Interchange (DDI) would **reduce conflict points** by crossing the northbound and southbound lanes of U.S. 54 over I-70. This makes **left turns easier**, **accommodates more traffic** and **reduces the risk of crashes**.

4

Recommended Improvements to Janice Ave.



Moving the intersection of Janice Ave. and County Road 211 away from the traffic signal at U.S. 54 **adds more storage** and **provides priority for U.S. 54** traffic turning onto Janice Ave.

A third **northbound through lane** would **improve traffic flow** during peak seasons.



Next Steps



TELL US WHAT YOU THINK

*Comment via the online comment form:
www.modot.org/KingdomCityInterchange*

Comments received before March 1, 2022, will be factored into the final results of the study, which is expected to be complete later this spring.



*A hard copy display of the preferred alternative is available for viewing at Kingdom City Hall and MoDOT Central District Office in Jefferson City.
Call 1-888-ASK-MoDOT (275-6636) if you require another option to comment.*



THANK YOU

This project is being considered for addition to the Draft **2023-2027 Statewide Transportation Improvement Program (STIP)**.





Public Comments

Comment Matrix Letters

Comment	Response	Name	Contact Info.	Source
Hello, I am a scientist with the U.S. Department of Agriculture and I have research studies at the Tucker Prairie location that is near the proposed I-70/Route 54 interchange construction. This site is owned by the University of Missouri and is the largest native prairie left in the state (although it is quite small!). This site is very useful for agricultural science because it provides an example of water use and carbon storage dynamics from an 'end-member' site. As we try to create agricultural systems that maximize profit and sustainability, it is very useful to know how a site would function if it were fully focused on sustainability, which is what the prairie provides. An important aspect of this is monitoring water and carbon fluxes over the site. I hope that the proposed construction does not alter runoff into the prairie. I also hope that no heavy equipment or asphalt etc. is operating near the site. This could alter our measurements of carbon and/or water use in the prairie. I don't expect it to be a problem, but I wanted you guys to be aware of this site. Thank you for your consideration! Adam	Good morning and thank you for the comment regarding the Tucker Prairie Natural Area. The location of Tucker Prairie Natural Area is approximately 2.5 miles at the nearest point from the proposed road improvements at the US 54/I-70 interchange. Any changes at the US 54/I-70 proposed will not alter runoff onto the natural area and no equipment or heavy construction traffic should occur near the natural area. Also, all anticipated contractor operations such as asphalt or concrete paving will occur outside the area of the natural area. Contractors may determine a need to set up a mobile plant to produce asphalt or concrete to support project construction. Contractors will be notified of the location of the Tucker Prairie Natural Area and will be advised to avoid impacts to the property.	Adam Schreiner-McGraw	adampschreiner@gmail.com	email
Hello, I am a scientist with the U.S. Department of Agriculture and I have research studies at the Tucker Prairie location that is near the proposed I-70/Route 54 interchange construction. This site is owned by the University of Missouri and is the largest native prairie left in the state (although it is quite small!). This site is very useful for agricultural science because it provides an example of water use and carbon storage dynamics from an 'end-member' site. As we try to create agricultural systems that maximize profit and sustainability, it is very useful to know how a site would function if it were fully focused on sustainability, which is what the prairie provides. An important aspect of this is monitoring water and carbon fluxes over the site. I hope that the proposed construction does not alter runoff into the prairie. I also hope that no heavy equipment or asphalt etc. is operating near the site. This could alter our measurements of carbon and/or water use in the prairie. I don't expect it to be a problem, but I wanted you guys to be aware of this site. Thank you for your consideration! Adam	Good morning and thank you for the comment regarding the Tucker Prairie Natural Area. The location of Tucker Prairie Natural Area is approximately 2.5 miles at the nearest point from the proposed road improvements at the US 54/I-70 interchange. Any changes at the US 54/I-70 proposed will not alter runoff onto the natural area and no equipment or heavy construction traffic should occur near the natural area. Also, all anticipated contractor operations such as asphalt or concrete paving will occur outside the area of the natural area. Contractors may determine a need to set up a mobile plant to produce asphalt or concrete to support project construction. Contractors will be notified of the location of the Tucker Prairie Natural Area and will be advised to avoid impacts to the property.	Adam Schreiner-McGraw	adampschreiner@gmail.com	online web forum
I am so glad we are finally doing something about that intersection in kingdom city. It is way long over due. I am in favor of #4 if I looked at it correctly. Above all, I am just happy something is being done, especially the entrance going into gaspers/arbys..Arby's... looks like something stevie wonder and Ray Charles came up with. Makes no sense at all.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Allen Flood-Thompson	allenfloodthompson@yahoo.com	online web forum
Please don't change 54 interchange in kingdom city. When Columbia made changes like this and the roundabouts I stopped going to Columbia completely. Please don't screw up Kingdom city it is fine the way it is	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	JoeSommer	alpha102@hotmail.com	online web forum
I'm in favor of changing the intersection at US 54 and I-70. However, the proposed changes listed above will negatively impact the businesses at the Lake of the Ozarks. I think this information at the start "More than 35% feel this interchange is less safe compared to others" and "Nearly 75% believe that high traffic volumes lead to crashes or near misses" is slightly irrelevant. 35% is far below half which doesn't really solidify the idea as legitimate. additionally, 3/4 people believing an obvious statement seems redundant. it doesn't feel like these statistics are bringing a strong case for support. the plans however, make sense. traffic volume and interplay with semi trucks and recreational vehicles has been an issue for a long time I would like to see this marketed better though. I feel with more focus on the sheer volume of cars/trucks coming through each intersection this would be more widely accepted. as well as an explanation that your main concern is congestion and not pulling traffic away from KC as that is a reoccurring theme in posts I've read. again, I support the project and if you can accomplish all that with that budget, that's great! \$6.695M isn't a very steep price for all this to happen. I look forward to seeing it implemented!	Thank you for your comments. We value your input. The goal of the current study is to improve safety and mobility through the corridor by reducing crashes and peak period congestion. Additional considerations include cost effectiveness, right of way and utility impacts, roadway characteristics, and environmental factors. The traffic, safety and operations study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future 2045 conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Andrew Rehmer	andrew.rehmer2010@gmail.com	online web forum
	Thank you for your comments. We value your input and we appreciate the positive feedback. We also appreciate your suggestions for the project description and facts on the website.	Austin Johnson	anjohnsonowls@gmail.com	online web forum

Having lived near and drove through Kingdom City for my entire life, seeing the potential changes to Janice Ave are wonderful! That has always been a terrible area to maneuver and the additions in recent years have expedited the need for improvement. While the throughabout seems odd, the simple redesign of the current road in the other option seems like it would help the flow significantly. As for the ramps on and off 70, adding length if necessary seems fine. However, the Dunn Rd reconstruction seems unnecessary at this time and I agree with the statement to wait. But the redesign of the lights and the diamond pattern has me reeling. That intersection design is terrible just as it is terrible to try to drive through the one in Columbia. I think you will see more accidents and back up as a result of the crossings and add significant confusion to the many travelers and young drivers in the area. Again, having lived in the area my whole life I do see the significant traffic volume and I understand that it does occasionally get backed up on holiday weekends and the like, however I do not think this solves the problem and would be very frustrated as a tax payer to see this proposed intersection design implemented. Thank you.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: https://www.modot.org/diamond-type-interchanges	Bailey Abell	baykempster@hotmail.com	online web forum
As a local who travels this overpass on a very frequent basis, sometimes in a semi, I think the lengthening of the ramps would be the best alternative. I think the diamonds would be a total disaster. People in Columbia can't even figure them out, I can only imagine what the lake traffic coming from St. Louis is going to do with something like that. A lot of them can't even drive on normal roads and of course you have the football traffic that gets off at Kingdom City for a pit stop of which I have personally seen several inebriated driver's before they even get to the game, let alone on the way home. Thank you for allowing us to comment. Barb Brouster	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	BARBARA BROUSTER	bbrouster@ktis.net	online web forum
Hi, I was wondering if any other intersections designs were looked at by MODOT besides the Diverging Diamond design. Personally, I don't like it, seems like I am driving back in England driving on the left side of the road when I get off I-70 in Columbia to use the one at Stadium Blvd. It seems counter intuitive to drive on the left in the US. While I understand the need for some improvement due to the summer lake traffic mixing with all the truck traffic, I wonder if looking at this model was based more on what was affordable than easiest for drivers. Furthermore, if this model is adopted, MODOT will have to do a better job keeping up with painting the lanes and overhead signage since it is a confusing model for some drivers (especially those who have not driven to the other states/cities that use this model- even though Springfield area has more than one and MO had the first one in US built in Springfield in 2009 and other states are copying it. (wsdot.wa.gov/travel/traffic-safety-methods/diverging-diamond-interchange). As it is now, unless one knows the traffic lanes now, the paint is so worn on the turn lanes, hard to tell which lane to get into if going East from Gaspers crossing Highway 54 or turning left to go north on 54, made worse driving at night in the rain.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org) Thank you for your support of "Buckle UP, Phone DOWN". We at MoDOT also agree that cellphones in the hands of drivers are a major issue in our state. Please encourage your state legislature to pass a "Hands Free" law in Missouri.	Clndy Stevenson	benbarbtiffany@yahoo.com	online web forum
A less expensive method to help reduce crashes statewide would be for Missouri to have a hands free cellphone driving law. Too many traffic crashes and pedestrian fatalities are due to cell phone use. It is stupid to have a law that no one under 21 can text and drive when that should be the law for all drivers. Missouri is way behind other states in this area. Plus the penalty for texting and driving should be a costly one to act as a deterrent. Thank you.				
A diverging diamond is a great idea and I fully support and encourage it. The concept plan shows the westbound I-70 offramp has two left turn lanes with a traffic signal before vehicles would turn left onto the one-way road to the south. MoDOT should support a change in state law to allow left turns on red lights at one-way road intersections like this ramp terminus. Left turns from a one one-way road onto another one-way road to the left is already legal in Kansas City Missouri, every state that borders Missouri, and 47 states total. MoDOT should support allowing left turns at red traffic signals from a one-way ramp exit onto a one-way road of the diverging diamond.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Ben Ross	benlisaross@gmail.com	online web forum
The biggest problem with his inner change, after driving to the lake for 50 years now is coming north on 54 waiting in line to get onto 70 eastbound. It really need a fly over, versus a stoplight. Traffic gets backed up on normal weekends and a mile or more on holiday weekends. A fly over ramp would help. Those that want to stop and shop could also do it per your drawings. So glad this is in planning phase.	Thank you for your comments. We value your input. The goal of the current study is to improve safety and mobility through the corridor by reducing crashes and peak period congestion. Additional considerations include cost effectiveness, right of way and utility impacts, roadway characteristics, and environmental factors. Our study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Lee Larkin	birlarkin@gmail.com	online web forum
I worked on the I-70 studies for most of my career at MoDOT. I'm sure you know there is already a preferred alternative approved by FHWA for this location, which I assume needs a reevaluation. We worked for four years with a community advisory committee to come up with the preferred alternative. It was not easy. While I am a huge proponent of DDIs, I am not sure how it will work at this location. I'm quite confident that the heaviest movements here are from westbound I-70 to southbound US 54, and northbound 54 to eastbound I-70. With an in-balance of left-turn movements, I'm not sure the DDI is the best alternative. Plus, the heavy amount of trucks at this location seems problematic to me. Lengthening the ramps is a must, but a SPUJ might be a better choice at this location.	Thank you for your comments. We value your input. The consultant working on the study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future 2045 conditions. The SPUJ design that you suggest in your email would require a bridge replacement. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange.	Bob Brendel	bobbrendel53@gmail.com	online web forum
Definitely need a longer acceleration lane from US 54 onto WB 70. I have seen many near-misses because of the grade and short lane due to abandoned RR bridge. WB 70 to WB 54 fly-over would be a great addition as well. Miss all lights.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection.	Bryant Liddle	Bryant@blineengraving.com	online web forum

While I don't claim to be an expert, I find diamond exchanges to be confusing. The one in Kansas City at MO152 AND I-35 hasn't seemed to be successful at improving traffic flow. It simply causes people who wind up in the wrong lane to cut off other drivers in an attempt to exit where they want to. Thanks for the opportunity to comment.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Lora Young	bugman987@yahoo.com	online web forum
I have lived in this area my whole life, and worked in Kingdom city 33 years now, I have seen it grow and understand lake traffic is a problem in the summer. I feel like the proposed intersection such as at I 70 and stadium in Columbia would be a big mistake, to much confusion for today's traffic. I believe the roundabouts or some clover leaf exit rams are some better answers, clover leafs would also give some lengthy staging Lanes to get traffic off the interstate. Please take this into consideration.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Brian Knipp	cannonball@ktis.net	online web forum
I think that the proposed improvements to the interchange will significantly improve traffic flow and safety in the area. In particular during the heavy traffic times of holiday weekends.	Thank you for your comments on MoDOT Project J5P3417 Callaway 54/70 Interchange Improvements. We value your input!	Jacob Ray	cardsfan1994@hotmail.com	online web forum
Diverging diamonds' not double roundabouts. There are too many large trucks and people who don't know how to drive in roundabouts, which will make traffic worse.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	CarliAnne Behr Huffman	caribehr@gmail.com	online web forum
Spending over 6.5million dollars just to rearrange some traffic lights?? This plan is not going to create any large improvement in the current traffic flow. The big delays caused by left turning trucks into and off of US54 at Janice lane is still a HUGE impedinent to traffic flow. And the ongoing maintenance costs of numerous traffic lights is unneeded. Create a large "racetrack" roundabout that has its U-turns south of Janice and north of Dunn. Traffic will continue to move, access times to local businesses will only be modestly increased at worst, there will be absolutely NO crossing traffic and throughput & safety will go up exponentially! All while on-going costs go to essentially nothing beyond road surface maintenance. Intersections like this have been in place in Europe for years and they work exceptionally well!	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Carl Behr	cbehr84@gmail.com	online web forum
Thanks for your time and effort on this project; there is a substantial amount of information. I have used the DI in Columbia and feel comfortable with it. My suggestion is consult and teach those in the county (my age) and who are unfamiliar and afraid to use the Columbia DI, ie. a public service on TV stations - video being inside a traveling vehicle maneuvering the different scenarios and options. My second suggestion is to ask you to re-evaluate whether only one northbound lane dedicated to the westbound entrance ramp. As someone who worked in Columbia for a decade ending in 2013, one lane was often not enough. Love the longer entrance/exit ramps!!!! Love the notion of not vying with southbound traffic not stopping at red traffic lights to take the westbound entrance ramp!!!!	Thank you for your comments. We value your input on public information/education and movements to the westbound 70 ramp and will use it while considering options as this important project develops.	Catherine Goser	cmgoser@yahoo.com	online web forum
the on and off ramps need to be longer, incredibly unsafe there	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Cory Nobis	CNOBIS68@GMAIL.COM	online web forum
We really appreciate for inviting us to the discussion about the I 70 and Hwy 54 traffic improvement. I am very thankful for not closing the Janice Avenue. Because that would of cause devastation to the both side of Janice Avenue businesses. One of my suggestion is to make another traffic lane on both sides of highway 54 near the Janice Avenue that will help ease the traffic in summer time. The only time I see the traffic there is when in summer people are coming from the lake area usually at the end of the weekend. If there is an extra lane on both sides it will help ease the traffic.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	sam waheed Motel 6 and Amerihost Inn & Suites kingdomcity	coearthfulton@hotmail.com	online web forum
This project is a waste of tax dollars. MoDOT has waited decades to improve Kingdom City and its "solution" is to double down on stoplights, which are the root of the traffic problems in Kingdom City. It is a complete failure of planning to reinvest in multiple stoplights slowing traffic turning between national, 4-lane highways. A directional interchange or bypass would be a much better solution, but MoDOT wouldn't even study that possibility.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Cole Bradbury	cole.d.bradbury@gmail.com	online web forum
I agree the Diverging Diamond Interchange seems like the best option for the I-70 / Hwy 54 interchange at Kingdom City and the preferred alternative for Janice Ave. I would not remove the railroad bridge and have no opinion on the ramp extensions.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Joanne Schrader	crazyhorse1876@gmail.com	online web forum
DDI's are dangerous as many Missourians are unfamiliar with the abnormal pattern of traffic flow. This is especially true of rural-area drivers, of older drivers and among drivers from other states. The cross-over pattern is contrary to the way people have been taught to drive in this country--on the right side of the road. I would confidently say that most drivers from outside the STL and COMO areas have never encountered DDI's which makes them unsafe. I have seen at least two(2) wrong-way drivers blow through the I-70/Stadium DDI interchange this past year; I am in COMO infrequently, so that statement is saying something. Go back to the drawing board. Clay	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Clay Logan	cslogan@sbcbglobal.net	online web forum
I have driven the DDI at I-70/Stadium in Columbia several times. And yet when the lines on the road get faded, I still have a hard time figuring out where I am supposed to be. I find it hard to believe this type of interchange reduces accidents. Maybe it is because everyone is on the "wrong side of the road", and without normal road rules in place, the free-for-all allows for more creative driving. I am a Kingdom City/Fulton local, and thankfully I know how to avoid that area. But I still hate to see this as an option.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Carmen Tiffany	ctiffany21@hotmail.com	online web forum
After careful review of your plans for the Kingdom City/Hwy 54 plan, I can't say I agree with this plan. I too work for Mo-DOT and I was assigned to Stadium in Columbia to snowplow. I found the diverging diamond to be very confusing to someone that is new to it. I felt as if at least the one in Columbia the signal lights are too close to one another for lanes to be crossing the way that they do. Snowplowing the diamond can be challenging when there is anywhere to push the snow coming off the diamond like the one in Columbia. I'm not opposed to a diverging diamond as long as it isn't converting into multiple lanes like the one in Columbia. It causes Mo-DOT worker's jobs to be more difficult with traffic more congested and more risks of accidents as well.	We appreciate all you do for MODOT and the travelling public! Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Tonya D. Smith	cucus4@gmail.com	online web forum

The proposed interchange project is like the I-70 and Stadium interchange in Columbia. There are numerous wrecks that happen on the interchange because it is so confusing. The most common area of confusion for drivers at the Kingdoms city interchange is drivers coming off I-70 then driving to Fulton. Those individuals have a yield sign so they miss traffic coming at them. A stop light at that intersection would be an easy and much cheaper fix. The other area at the interchange are drivers coming from St. Louis into Kingdom city and turning toward Fulton. People upon occasion turn into traffic so they are going head on toward drivers heading toward Mexico as opposed to crossing over those lanes of traffic and turning left to head toward Fulton. I am not certain of the signage posted there so I can not tell you what fix would be appropriate. However, I would imagine something simple could be done at this intersection as well. If these two issues are resolved then that leaves the off ramps not being long enough and this could be taken care of without having to change the existing layout. The main issue is that the proposed construction will make that interchange more dangerous because it is too confusing. Myself and all other Missourians I have talked to about the Stadium and I-70 interchange have all said the same thing. It is very confusing and terrifying to navigate. Please find another solution to the few issues we have at this interchange.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Dawn O'Connor	Dawn.O'Connor@dmh.mo.gov	online web forum
The preferred alternative appears to be a very good choice. However, I think the study was weakened by not considering backage road(s) crossing over I-70. The area opened for development alone would justify the expense, but it also allows traffic from some quadrants the opportunity for returning to I-70 making right turns only, which should take some pressure off at Janice Avenue. Also, in the short term, they provide excellent detour routes for exiting left turn traffic while work is underway in the area of the existing bridge.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Dean Fry	ddfryccc@gmail.com	online web forum
My concern is that the change would make it very difficult or impossible to use this interchange for OVERSIZE LOADS which utilize it daily. I would vote NO for this project at this location. Thanks for the opportunity to comment.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	James Lammers	diversetransit@yahoo.com	online web forum
The Kingdom City overpass has been an ongoing problem for years. MODOT is constantly having to update the concrete because it settles and makes things very rough going over the overpasses and using the turn lanes. Whatever improvements are made, improvements to the deck of the overpasses need to be taken into consideration.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Doyle Swiney	djpes1986@gmail.com	online web forum
First and foremost, I support your proposal for this intersection. Safety and traffic flow are certainly key factors to this improvement. I am a former County Commissioner for Callaway County for 12 years (2005-2016) and this intersection has been a safety concern for many years. I am also a board member of the Missouri Firefighters Memorial Foundation located on the northwest corner of the intersection right next to Kingdom City City Hall. Alternative proposals and studies over the years to relocate the intersection and by-pas the businesses were never well received because of the negative impact on local businesses. A proposed cloverleaf interchange was also not well received because of limited space and several businesses (including the firefighter memorial built in 2000) would have to be relocated. After reviewing this proposal, it seems very reasonable and well thought out creating less disruptions to existing businesses. Although I have never fully understood all the advantages of the diamond interchange, it seems a sensible solution for this intersection. (I am very familiar with the intersection in Columbia at Stadium Blvd and I-70) I believe the extensions of the on/off ramps of I-70 in both east and west directions will also be very beneficial to holding more cars and especially big trucks will be helpful and not create the backlog now experienced. The railroad bridge over I-70 should probably be removed as I do not see this ever being used again, but I suspect the current owner has a problem with that. As long as the ramps can be extended under this bridge, I see no problem with leaving it. The curve coming from the west on I-70 is also another limiting factor but there is room for the ramp extension as it is. Thank you for your diligent work on this study and careful consideration to multiple options. This appears to be the best solution.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Donald 'Doc' Kritzer	doc_kritzer@yahoo.com	online web forum
This will make traffic flow on 54 through area worse and more dependent on stoplights. Please consider a Double Crossover Merging Interchange (DCMI) for better, non traffic light dependent flow. Thank you.	Thank you for your comments. We value your input. In reference to the DCMI interchange design, the DCMI type of interchange would require the construction of 2 additional bridges and much more additional pavement approaching these bridges. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Philip Tweedy	doctweedy@mail.com	online web forum
I honestly think it is a waste. That money could be better used towards the I-70 /63 interchange in Columbia that is honestly ALOT worse than the kingdom city interchange. I've seen more accidents, traffics, and back up at the 63 interchange than the kingdom city interchange.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Breanna Yelvington	durrett14@gmail.com	online web forum

I think implementing the preferred solution will improve the situation. I use the ramps to of from the East probably 20 times a year and never have had a real problem with them, though I sometimes have had to sit through two or more light changes when exiting the interstate before I could make a left turn at the top of the ramp.				
You cannot fix the most frequent problem I have encountered and that is being behind a driver entering the Interstate who does not understand that the purpose of the entrance ramp is to gain speed so that at the bottom of the ramp, you can enter the Interstate at the appropriate speed so as to avoid stopping at the bottom of the ramp, or pulling on to the Interstate at a much slower rate of speed than the Interstate traffic you are pulling in front of. Let me know when you figure out how to make sure every driver entering the Interstate understand how to properly use the entrance ramp. Perhaps the longer ramps will help some, but I'm betting I'll still encounter ignorance from some drivers (almost always passenger car drivers, not truck drivers).	Thank you for your comments. We value your input and appreciate the positive feedback.	E. C. Walker	ealker@aol.com	online web forum
Opposed. Diverging Diamond has it's benefit, however, this design is confusing. I have encountered in Columbia and Springfield and dislike them. Kingdom City being on the interstate has travelers from all parts of the country as you know, some who may have never seen this design...hope they are not the first car in the lineup at the stop light.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Elaine Meller	ecmeller@gmail.com	online web forum
I think this will improve the kingdom city interchange and make it much safer!! Great job!!	Thank you for your comments. We value your input and appreciate the positive feedback.	Julie Edwards	edwardsjuliekay@yahoo.com	online web forum
The changes at Janice Ave. will not improve the function of that intersection greatly. Even if two Southbound trucks could go side by side, they won't do it. Their destinations are all on the left once making the turn, and so that would be a waste. The usage of the lanes will be unbalanced still even if the turning radius are improved. The access points on Janice need to be reduced or controlled better to allow the southbound traffic to properly enter Janice Ave. The additional northbound through lane will help as long as there is advanced notice of how to use the lanes. This project has been needed for a while, and I am glad to see that it is potentially moving forward.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Richard	elakers17@yahoo.com	online web forum
I think this is a horrible idea and is going to make everything 10x worse than they already are. Maybe invest the money into fixing the roads not making upgrades to the overpasses.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Taylor Fields	Fieldstreeservicemo@gmail.com	online web forum
I would like to weigh in on two things that are most important to me since I use 54 on average 2.5 times a month since I go to St. Louis:	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Colleen Foster	foster65102@gmail.com	online web forum
I approve and support MoDOT's I-70/ROUTE 54 KINGDOM CITY INTERCHANGE Project. The aspect that I love about MoDOT's I-70/Route 54 Kingdom City Interchange Project is that the existing I-70/US 54 Interchange will be replaced with a Diverging Diamond Interchange (DDI) which will improve safety, reduce congestion, and reduce the number of intersection conflict points.	Thank you for your comments. We value your input and appreciate the positive feedback.	Jackson Hurst	ghostlightmater@yahoo.com	online web forum
Looks good but I use these off ramps for my breaks and my 10 hr rest when the truck stops are full. I run oversized and over weight you can't go straight through to get back on 70. It's getting harder and harder to find a spot wide enough to fit in when you want to run your full hours. Thanks for listening	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Homer Moore	homermore68@yahoo.com	online web forum
Looks very well thought out and likely to improve traffic flow, especially for professionals and locals who become accustomed to it. I like these designs where I have encountered them, at Festus and Farmington. However, first encounters for older drivers like me may be slightly challenging. I suggest some very simple 'you are here' type graphical guide signage could be deployed to help. Also, urge that turning lanes be unconstrained by curbs as much as possible, ie flatten arcs and set inside curbs back. There are so many new trucks, many it seems have much difficulty navigating spaces that may be (barely)adequate; eg the double circles on m13 at Warrensburg. All in all, appears to be a very good strategy and this design will help.	Thank you for your comments. We value your input on the signage and curb placement and will use it while considering options as this important project develops.	Joseph Hughes	hughes1948@protonmail.com	online web forum
I believe that the Kingdom City interchange flows well and is not in need of change as some other interchanges. I would like to see funds focused towards the US63 - I70 interchange in Columbia.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	John Gaines	j_andrew_gaines@yahoo.com	online web forum
I think this is a great idea. If I could offer 1 suggestion. Make the lanes wide enough for the Semi's to comfortably navigate. At exit 28, the diamond there often has truck drivers at or over the lines, particularly Southbound from I-70.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Jack Beard	JBeardJr@gmail.com	online web forum
I believe I understand most all the concerns, thoughts and issues here, including the cost element of such a project. I believe the proposed alternative will help, but it will not alleviate the problem. With all the stop lights and the slower speed of the heavy trucks starting and stopping, and the coordination of all the lights at these various intersections, I think we will see negligible results. Frankly, for 2 intersecting major interstate highways with the traffic they carry, this seems like all we are trying to do is put a band-aid on a major problem. Even the intersection at I-70 and Hwy 65 keeps traffic moving, yet we fail to address the critical problem at this major intersection. This solution is nothing better than that recently constructed at the intersection of South I-55 at Cape Girardeau's Kings Highway.	Thank you for your comments. We value your input. The goal of the current study is to improve safety and mobility through the corridor by reducing crashes and peak period congestion. Additional considerations include cost effectiveness, right of way and utility impacts, roadway characteristics, and environmental factors. Our study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Jeff Green	jeff@cgblaw.net	online web forum
I am not sure that the two lanes of traffic going across the bridge are going to be enough. Especially if the growth at the lake continues.	Thank you for your comments. We value your input. Our traffic study found that the Diverging Diamond Interchange and additional intersection/ramp enhancements will provide significant improvements for current and future conditions. The improved traffic flow due to the DDI layout will ensure that the existing bridge widths will be sufficient now and in the future 2045 design year.	Jennifer Beckman	jenpp917@startmail.com	online web forum
I actually came here planning to recommend the DDI approach to the interchange (it's worked to splendid effect at the I-70/Stadium interchange in Columbia), and was both surprised and happy to see that it's already the preferred option. :)	Thank you for your comments. We value your input and appreciate the positive feedback.	Jessica Orsini	jessilaurn@gmail.com	online web forum

I seen the video with the proposed changes to the 70/54 interchange and I do not see how it speeds up at all folks trying to come from St. Louis to the Lake of the Ozarks. You might as well leave the interchange the way that it is with no changes and save the money. I proposed an over pass that would divert interested traffic going from 70 west bound to 54 south bound, so you would not have to be stopped at all at this interchange. The same thing would happen going 54 north to the interchange and taking hwy 70 East. This would make things much safer and eliminate the bottle neck of this interchange.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Jim Luley	jim.luley@gmail.com	online web forum
I seen the video with the proposed changes to the 70/54 interchange and I do not see how it speeds up at all folks trying to come from St. Louis to the Lake of the Ozarks. You might as well leave the interchange the way that it is with no changes and save the money. I proposed an over pass that would divert interested traffic going from 70 west bound to 54 south bound, so you would not have to be stopped at all at this interchange. The same thing would happen going 54 north to the interchange and taking hwy 70 East. This would make things much safer and eliminate the bottle neck of this interchange.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Kathleen Luley	Jim.luley@gmail.com	online web forum
The diverging diamond would be great. I drive this route 2 times a day.	Thank you for your comments. We value your input and appreciate the positive feedback.	Jeff Kline	jklinephd@gmail.com	online web forum
MODOT's preferred project is acceptable to me.	Thank you for your comments. We value your input and we appreciate the positive feedback.	Joseph A Roeger	joeroeger@firsttitleinsurance.com	online web forum
Both Concepts are horrible ideas. I would like to take the engineers and have them drive an 18 wheeler through the intersections at 63 and Rt H in Boone County or the intersection at 740 and Rt E/N Stadium in Columbia, at 7:30am, noon and 4:30pm of a weekday. I understand that you've modeled this on a computer, but in a practical application it is truly bad. At 54/70 you cannot get a round about large enough for the volume of trucks. The diverging concept only delays the inevitable. You did it right in Springfield at 65/44, THANK YOU! Let's get it right here, start now before the area grows too much. We complain because what you do doesn't really solve the problem or allow for future expansion, and I know money is short. The public would trust MoDot more if you would get it right, would support your plans more, FUND more projects if you just start getting problems solved in that common sense way that hard headed Missourians believe in. Don't do this, go back, take a breath, suck it up and do what needs to be done.	Thank you for your comments. We value your input. The goal of the current study is to improve safety and mobility through the corridor by reducing crashes and peak period congestion. Additional considerations include cost effectiveness, right of way and utility impacts, roadway characteristics, and environmental factors. Our study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future 2045 conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Jerry Rosslan	jrosslan@hotmail.com	online web forum
The proposals for Janice and Dunn Streets are very disappointing because the continued existence of traffic lights means continued delays and dangerous intersections. It would seem to me that the addition of relatively short sections of outer roads with exit ramps for right turns into business areas would enable much of the traffic into those areas, bypassing the stop lights and reducing traffic light time and delays at the lights. It might cost more, but it would be a better, perhaps safer solution for drivers. The proposed solution, if I understand the very limited description offered, does not seem to do this. I understand the need to meet cost-benefit, but as can be seen by those of us who drive US 50 where it intersects highway 5 near Syracuse, MO, the MODOT improvement may have been cost-beneficial and improved the intersection some, but it still has a great deal of visual blockage as you approach the intersection, especially from the west. A little more funding to remove the hump in the approach to the intersection while the upgrade was underway, especially from the west going east, would have made a tremendous safety difference to what now continues to be a highly dangerous intersection. Hope you will consider Janice and Dunn streets a bit more. Thank you!	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Stevens Scrivner	jrscrivner@outlook.com	online web forum
The double diverging lanes work well, I am in favor.	Thank you for your comments. We value your input and appreciate the positive feedback.	Jeffrey T Shaw	jtshaw220@yahoo.com	online web forum
I seen the video with the proposed changes to the 70/54 interchange and I do not see how it speeds up at all folks trying to come from St. Louis to the Lake of the Ozarks. You might as well leave the interchange the way that it is with no changes and save the money. I proposed an over pass that would divert interested traffic going from 70 west bound to 54 south bound, so you would not have to be stopped at all at this interchange. The same thing would happen going 54 north to the interchange and taking hwy 70 East. This would make things much safer and eliminate the bottle neck of this interchange.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Kathleen Luley	Kathleen.luley@gmail.com	online web forum
I hate this whole area and luckily don't have to use it often. I can see where this kind of intersection would work better, but do enough drivers know what to expect with these? I remember encountering the one in Springfield, had never heard of this kind of thing and it was really disorienting. Luckily I wasn't driving, because I probably would have been so confused I would have made a mistake, thinking I had misunderstood the signage.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Kathy	kathyhill70@icloud.com	online web forum
As someone who uses the 70/54 intersection every day I would be glad if some improvements were made there. It would seem to me that a design for better traffic flow would be having two exits on both the West and East bound lanes. Exit 148A and Exit 148B. That way traffic could yield/merge without traffic lights. I, of course, don't know what a project like that would cost or if it would work...that's just things you think about when sitting in a long line of traffic waiting for the light to turn green :) It would at least be nice to see it as an option on the PDF presentation.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Kevin Schrock	kevin@kingdombuildingsupply.com	online web forum

Thank you for allowing public comment on the proposed solutions to 54/70 at Kingdom City. Kingdom City is an integral part of the economic vibrancy of Callaway County, so it's important to make improvements to traffic arteries that a) preserve existing businesses, b) enable future business development, and c) improve safety for all travelers, whether local or travelers passing through. Because of the traffic flow and high volumes in today's configuration, people divert to other routes which are not designed for higher traffic counts and are less efficient. As a leader in our community through my position as President/CEO of The Callaway Bank headquartered in Callaway County, and through my service on the boards of the Fulton Area Development Foundation and the Callaway Chamber of Commerce, I have the unique opportunity to engage in economic development considerations and possibilities in our region. I recognize and endorse the importance of Kingdom City, and I feel its challenges every day. Kingdom City is poised to contribute to our State's economic health, but its traffic flow is holding it back. I appreciate the thought that was put into choosing the Preferred Options, and I agree with them. As a frequent user of the interchange, I do have a few observations: 1) the westbound ramp from I-70 onto 54 is not long enough. I very much appreciate lengthening all the ramps, but this ramp in particular needs to be longer to accommodate St Louis traffic to the Lake of the Ozarks. It's very dangerous if any exiting traffic cannot move over into an exit lane, and I've observed traffic backed up further than the proposed ramp. 2) the intersection of County Road 211 with 54 is also very dangerous and should receive attention. A. slightly lengthen the left turn lane for northbound traffic on 54 turning left onto 211, to allow turning traffic to get out of traffic flow and slow more gradually. B. construct a short entry lane for traffic turning from 211 onto southbound 54. Because of the topology, traffic entering 54 from 211 cannot see very far over the hill to the north, so you end up pulling out in front of oncoming traffic inadvertently. C. An alternative would be to relocate the intersection to the top of the hill a little ways to the north for better visibility. Thank you for listening to our input. We truly appreciate the possibility of improvements -- almost anything would be better than the current status quo! Road improvements would allow Kingdom City to expand housing and attract other economic development, and I believe the economic impact of expanded business, sales tax, and property taxes would return the cost of this investment to the State of Missouri many times over. It just makes sense.				Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Kimberly Barnes	kim.barnes@callawaybank.com	online web forum
The diverging diamond interchange at Kingdom City is not a good idea. Hundreds of large trucks use this intersection daily. Many are foreigners and this will confuse them. It is already a high accident area and this will not help that fact. Better synchronization of the existing signal lights would be the best option. Please reconsider this proposal. Thank you, Marc Catalina				Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Marc Catalina	kmbentlage@yahoo.com	online web forum
If y'all are going to do this please for the love of god make the corners big enough for semis. And not just regular fleet trucks. Oversize trucks and longer wheelbase trucks. Thanks!				Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Keith	kspinar@gmail.com	online web forum
Please reconsider the preferred modifications to the I70 and 54 interchange. I would prefer the double roundabouts because I hate the diamond configuration at Stadium in Columbia. Very confusing. Especially to newcomers to the area. Doesn't seem to have solved any traffic issues at Stadium.				Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	LEOLA LYNNETTE BAILEY	leolabailey123@gmail.com	online web forum
Please no!! These are so complicated, just my opinion. Everything works fine the way it is and traffic flows accordingly. I can't tell you how many times I've seen these almost cause more accidents				Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Misty Lynn	lrmisty89@gmail.com	online web forum
Myself and my company (Twisted Farms LLC) highly disagree with the plan for a diamond interchange in Kingdom City. The diamonds elsewhere are a mess. The interchange is perfectly fine how it is. This project is not worth the money they are wanting to spend on it. Definitely against modifying the interchange.				Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Maria Kingsbury	maria.twistedfarms@gmail.com	online web forum
Is there any thought around expanding Janice Ave into the outer road connecting over to HH? Making that a REAL outer road? Please? Additional thoughts: * Janice Ave on the west side is where a LOT of trucks park & eat - and tends to be a MESS, particularly the road that runs back and later connects to that cross-over on 54 - I've seen more than a few accidents or NEAR accidents there. * I wonder if that outer road on the west side of 70 should be part of the consideration/change? E.g. moving Janice road & the lights down there, allowing more long term improvement of the area? * There are a number of new electric charging stations. Expansion of access to these would probably be super useful in the long term. (Currently behind a gas station) * A challenge is that turning onto west Janice, there are equal amounts of traffic to the two gas stations and the McDonalds. IF the 18-wheelers could handle it, what about a round-about vs. stop sign there? Ideally it'd be nice if Janice ave extended farther back to allow more business growth (aka this area seems ripe for additional growth of things like a Dollar General or similar store.)				Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Jason McIntosh	mcintoshj@gmail.com	online web forum
I used to be the general manager of the McDonald's in kingdom city. I worked there over 12 years. I think the proposed changes to the Janice road area are definitely a must. Cars and trucks cannot turn into or out of McDonald's, Gaspers or fast lane and it backs up to ozark lane. The Diamond interchange will be great, but not going to solve the traffic issues by itself.				Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Ryan Lynn	mclynnr@gmail.com	online web forum

I hate roundabouts and feel diamond interchanges are more confusing then helpful, especially when exiting the highway. Longer on ramps would be helpful. Widening the intersection and better lane markings at the truck stops would go a long way in improving traffic flow. I've never found this intersection to be dangerous. It's only weekends in the summer that causes huge backups due to all the Lake traffic headed back to St Louis. Maybe lowering the speed between Fulton and Kingdom City would help too.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Michele Krueger	micheleleann@hotmail.com	online web forum
Good morning, This isn't a bad idea, but it would be very nice to somehow add a flyover lane for WB70 to SB54 to avoid the 3 lights right there. That would make a constant traffic flow for St. Louis people going to the lake. I know that would bring a great deal more expense, but more people than ever are going down there, and it will only get worse in the years to come. Thank you very much.	Thank you for your comments. We value your input. You were asking about placing a directional interchange design at this location. This type of interchange with fly-over ramps would require construction of 2 additional bridges and much more additional pavement approaching these bridges. The project would have a much higher construction cost and increased amount of right of way acquisition. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Mike Malone	micher17@yahoo.com	online web forum
I feel like the major part of the congestion are the cars and especially trucks using services located in Kingdom City. I think a dedicated ramps from 70 to southbound 54 and dedicated ramps from northbound 54 to East and Westbound 70 without any stoplights would be a huge improvement. These lanes could easily be added before or after the current 54 interchange. Yes, this would probably have a negative impact on the businesses in Kingdom City, but so did the highway 54 improvements in Lake Ozark through Camdenton. These are two very busy highways, any intersections connecting the two should not have any turn signals. Thanks for your time.	Thank you for your comments. We value your input. The goal of the current study is to improve safety and mobility through the corridor by reducing crashes and peak period congestion. Additional considerations include cost effectiveness, right of way and utility impacts, roadway characteristics, and environmental factors. Our study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future 2045 conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Mike Heiligenstein	mjstein1969@gmail.com	online web forum
Awesome way to utilize the movement of crossover traffic with minimum distractions, BUT why not just 2 fly over for st louis southbound traffic and 1 going north to Mexico	Thank you for your comments. We value your input. I would like to address your suggestion for "fly-over" ramps in a full or partial directional type interchange at this location. That option was not considered due to its much higher construction/right of way costs compared to the alternatives studied. The traffic, safety and operations study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future 2045 conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	mike	MIhaake@hotmail.com	online web forum
Each preferred proposal looks so much safer. My family basically lives at this interchange & I love these new proposals to make it safer.	Thank you for your comments. We value your input and appreciate the positive feedback.	Monique Cole	moniquedcole@aol.com	online web forum
If your going to do anything at this interchange, you need to do something about the volume of traffic through kingdom city. During holiday weekends or summer weekends there is not enough flow of traffic to accommodate the volume of vehicles. The ramps into kc need to have more access and the intersection is not the issue.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Matt	mrhuyser@gmail.com	online web forum
I think extending the on and off ramps is a must. Exit 8 on I-44 in Joplin is a good example of traffic flow compared to what it was before the interchange improvements. It is close to example 3 of the study	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	michael wright	mwright@cei-hwli.com	online web forum
While I wholeheartedly agree that the Kingdom City interchange needs improvement and safely updates, I urge you to do something other than the diverging diamond. I can't tell you the number of people who refuse to use the interchange at I-70 and Stadium in Columbia because they feel they are going against the flow of traffic and are extremely uncomfortable with that feeling. I'm sure the people who use that interchange daily have become comfortable with it, but people who only come to Columbia on a limited basis, hate it and will either avoid it or have simply refused to go to the Columbia Mall or other places on Stadium. Isn't there some other alternative??	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Nancy Lewis	nancyklew13@gmail.com	online web forum

I drive this interchange twice a day, 5 days a week, and I do not support changing this interchange to a diverging diamond. I have never seen this intersection have major traffic issues even on high travel weeks like memorial day weekend. The costs needed to change this interchange do not seem justified. There are many other projects much more urgent that could use the money that would be devoted to this project.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Patricia Carr	patriciacarr0145@gmail.com	online web forum
We travel frequently on 54 West through the interchange 70 and I am in agreement to the proposal of the alternative improved interchange. I believe this will be very beneficial for future traffic and safety.	Thank you for your comments. We value your input and appreciate the positive feedback.	Peggy Cooney	queentute@aol.com	online web forum
Leave the intersection alone, it works pretty well as it is. I have been in the trucking business for nearly 50 years made many stops at this intersection. Please spend our money where it is needed the most, like surface work on I70 many places are terrible if my equipment was in as bad shape as I70 is in places I would be fined and put out of service!	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	James Colvin	rafterjackranch@gmail.com	online web forum
The DDI the best. Could still have backup entering Gaspers and Fastlane.	Thank you for your comments. We value your input and appreciate the positive feedback.	Ron Atkinson	ratkinson@ktis.net	online web forum
I am a business owner at lake of the Ozarks and often use this interchange. I think the proposed interchange redesign is acceptable. Thank you for working on this.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Mark Dickey	redbuddevelopment@gmail.com	online web forum
I am a local farmer and move farm machinery through Kingdom City regularly. We used to be able to avoid the railroad bridge next to the post office by crossing 54 at McCredie. Now that you removed the ability to cross 54 at McCredie we are forced to travel from McCredie west on 54 to the stop light at old US40 to continue east. When we do this we have to change lanes with over width equipment that we can't see behind and traffic is usually travelling at a high rate of speed coming down the hill on a blind curve. The rail line has been out of service for over 10 years. The tracks are asphalted over in Auxvasse and Fulton. The rail line needs to be removed including the two bridges in Kingdom City. I think there is a law that requires abandoned tracks to be removed after a certain period of time. Removing the bridges would make the new on and off I70 ramp projects a lot cheaper and safer. Also, the bridge is a safety issue for tractor-trailers when there is an accident on the interstate. Numerous times semi's have hit the bridge or caused a road block due to the 13'1" clearance.	Thank you for your comments. We value your input. We have been in contact with the owner of the railroad line and we are working to negotiate for an easement in order to build the ramp extension under the existing railroad bridge. This current project does not have the budget needed to remove the bridge. If the interstate is improved in the future, MoDOT will take that opportunity to negotiate with the railroad owner to remove the bridge.	Brian Rhoades	rhoadesag@gmail.com	online web forum
Out of the proposed options I think the ddi would be the most effective. They're a little different and take some getting used to. But the safety advantages and better traffic flow is beyond worth it. My family was in a really bad car accident at this intersection years ago that I shouldn't have survived. I am really excited to see it being renovated.	Thank you for your comments. We value your input and we appreciate the positive feedback.	Patrick	rivercats498@gmail.com	online web forum
I travel Highway 54 5 days a week to go to work in Fulton. (I commute from Mexico.) I know that something needs to be done with the I-70/US54 interchange but I personally am not convinced that a diverging diamond will make traffic flow better on US54. I've driven the one in Columbia and to me it's one of the most difficult interchanges to navigate. Fortunately, I have the luxury of being able to avoid that one. I will not have this luxury on my work commute. It seems like all the attention is being paid to what is best for I-70 with little to any concern for how these changes will affect drivers on the highways that will be affected by these design changes.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Rebecca Morgan	rmorgan_06@hotmail.com	online web forum
I generally drive through this interchange on US 54. When I'm heading south/west to the Lake from Hannibal I'm almost always stopped at all 3 signals. Sometimes heading north/east, I can make it through two of the signals on green. Please consider progression of the mainline traffic along with the ramp traffic. Thank you!	Thank you for your comments. We value your input concerning the signal timing and will use it while considering options as this important project develops.	Rob Frese	robfrese@hotmail.com	online web forum
Roundabout would be a nightmare. The other proposals wouldn't help the traffic over 10%. Extending the ramps on the west side with the railroad bridge would be an issue. If the existing lights were synced properly it would do just as well as spending millions to do very little. The money would be better spent on repairing roads and bridges which are in dire need of repair. With the cost estimate of this project all I see is excessive spending with little quality results. It will end up as bad as I-70 and 63 which is now one of the worst interchanges in the state. Government projects like this are never well thought out or implemented well. They look to spend money and not see a more practical way of doing things.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Richard Henage	rth@pm.me	online web forum
Hello, I'm a fellow MoDOT employee who just stumbled across this page (looking for one of our districts' I-70 pages via google search). I was curious the findings since I'm a little familiar with this interchange. I know it's early in the process but from laying out a few DDI, a few details of the proposed geometry caught my eye as things you may be able to improve relatively cheaply. I'm not sure how the capacity was checked, but I wonder if 3 bridge lanes in each direction are really needed. I ask since the picture shows 2 NBT / SBT entering the interchange. Based on the other DDIs we've done, I'd suggest either building 2 bridge lanes each way or extending your left turn lanes upstream of the first intersection (rather than the off-ramp left turn). This would spread your incoming queue across 3 lanes, shortening the required split. (We're currently studying I-70 @ Stadium in CoMo that has this same shortcoming) Also please consider the off-ramp right turns: do you want drivers to treat this as an additional lane or a yield? WBR is shown as signalized, so I don't know why that would need an accel lane. EBR turns into a weave south to Janice - I doubt you want vehicles weaving in this short length (especially heavy trucks).	Thanks for sending in your comments on the project. The consultant has probably already reached out to you about your ideas but they plan to see if they can incorporate some of your ideas in the project layout. Thanks for your interest in the project.	Ryan Hale	ryan.hale@modot.mo.gov	online web forum
I really like the idea of extending the ramp on and off I-70. I think this will help a lot epically on people trying to exit onto 54. I also like the Janice road Idea of taking the current entrance to Shell out and moving it back. This should help a lot with people getting in and out of the parking lot. I notice this is an area that causes a lot of confusion for motorist. I am not sure about the diamond idea, but I will learn and it is much better than the roundabout idea. My question to you is will you be widening the actual overpass to accommodate this? One of the issues currently is that the overpass is not wide enough and if you get farm equipment or an oversized load it is hard to get around them.	Thank you for your comments. We value your input and will use your suggestion about lane widths while considering options as this important project develops. We understand the Diverging Diamond Interchange (DDI) layout is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the DDI at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Mary Rohrbach	s217462mary@yahoo.com	online web forum
Like the plans. About the best that can be done with businesses that close to highway. Will need to do the same with Hwy 13/I-70 interchange.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	David Salyer	saldb@ctcis.net	online web forum
Looks like a great idea, my concern would be having enough room for 16' wide oversized loads to travel through the interchange safely.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Anthony Martin	sales@iilbarns.com	online web forum

Tucker Prairie is located due west of the proposed construction area. Tucker Prairie is a 146-acre tract of virgin tall grass prairie. It has never been plowed, and thus represents one of the few instances of non-cultivated prairie left in the Midwest. It is estimated that less than 1% of the original tall grass prairie that once covered the central United States remains, thus making this ecosystem both rare and fragile. The prairie was designated a National Natural Landmark in 1978 and a State Natural Area in 1998. It is managed and maintained as a research and teaching prairie by the Division of Biological Sciences at the University of Missouri, with help from the Missouri Department of Conservation.				
The prairie is the site of a long-term fire-ecology study; it is the longest continuous fire ecology study of its kind and is currently in its 64th year.				
The rich, virgin soil of Tucker Prairie supports more than 250 species of plants adapted to this region over thousands of years, including about 70 families and 150 genera. Research suggests that the soil matrix is key to this diversity and is thus a reference plot for studies within Missouri and across the United States.	Good morning and thank you for the comment regarding the Tucker Prairie Natural Area. The location of Tucker Prairie Natural Area is approximately 2.5 miles at the nearest point from the proposed road improvements at the US 54/I-70 interchange. Any changes at the US 54/I-70 proposed will not alter runoff onto the natural area and no equipment or heavy construction traffic should occur near the natural area. Also, all anticipated contractor operations such as asphalt or concrete paving will occur outside the area of the natural area. Contractors may determine a need to set up a mobile plant to produce asphalt or concrete to support project construction. Contractors will be notified of the location of the Tucker Prairie Natural Area and will be advised to avoid impacts to the property.	Dr. David Schulz	schulzd@missouri.edu	online web forum
The proposed project can disturb the prairie in terms of run-off and equipment use. Furthermore, if traffic is diverted in a way that would impact the area, this could be impactful to resident animal and plant species. Before making a final decision on the parameters of the project, we ask that you seek whatever information you may need from the Division of Biological Sciences and perform an impact study to ensure that this unique resource is maximally protected.				
Thank you for your comments. We value your input. You were asking about a cloverleaf interchange design. The goal of the study was to identify a preferred alternative design for the interchange that improves safety and mobility through the corridor, provides access to nearby businesses and promotes economic growth in Kingdom City. We did not consider this design as an alternative because the cloverleaf ramp locations would need to be in 2 to 4 corners of the interchange which would overlap with existing businesses in those locations. Therefore this was not a reasonable alternative.				
Why is a cloverleaf design not being considered if you are interested in moving traffic through efficiently and effectively? I see no impact to local businesses caused by this type of design. I sit at those lights at least 5-10 minutes every work day.	We understand the Diverging Diamond Interchange (DDI) design is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the DDI at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Sue Bethmann	sebethmann@gmail.com	online web forum
I feel the diverging diamond is the better of the 2 options listed. Roundabouts and semi's don't usually work well and with all the truck stops in the area it is frequently used for large trucks. Many people don't understand or use a roundabout correctly which causes more confusion and accidents. the diverging diamond is closer to a normal interchange and from the appearance of what you have set up will provide the best flow keeping traffic moving instead of backing up causing other delays	Thank you for your many years of service to Missouri and the travelling public.	Shavon Barnett	shavonmb73@hotmail.com	online web forum
I agree that the proposed Diverging Diamond Interchange (DDI) would reduce accidents. I would like to add that I agree with this as long as traffic signals are kept for left turning vehicles when traffic is merging from the right. For example: The interchange at Mid Rivers Mall Drive (exiting in the east direction) currently faces a semi-truck at an angle to the left at the yield sign and puts the traffic the semi-truck would be merging into at a right sided (behind) position in the blind spot of the semi-truck (sleeper cab in particular). Since there is not a traffic light, this makes the turn more dangerous than having a protected left turn for a semi-truck. The truckstop is on the north side of the intersection so adding a traffic light here would make turning safer. Roundabouts are difficult for semi-trucks to navigate especially because cars do not understand that a semi-truck has off-tracking that must be accounted for in the turns around the roundabout. Depending on where the tandems are placed changes the space needed to make the curves safely without running over the curbs in the center. Cars frequently try to pass semi-trucks in roundabouts because they do not understand the area needed to make the turns and do this in the blind spots of semi-trucks. I would vote for the diverging diamond interchange with stoplights.				
Thank you for your comments. We value your input and will use it while considering options as this important project develops.				
Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)				
I do not want a Diverging Diamond or Roundabout. I absolute dislike both ideas. Extend the entrance/exit lanes.		Sherry S Jenkins	sherrysue@ktis.net	online web forum
1. I appreciate and respect the time, effort, and expertise that went into your conclusions and recommendations.				
2. I'm not being argumentative, but I disagree with 3 of the stoplights you show. I'm on the fence about a fourth; the east 70 to north 54 stoplight. I understand your logic that you tell in the presentation but question the validity. I think that you are less confident in travelers' ability to merge than I am. I believe that the only necessary stoplights are the two where the north and south traffic cross each other.				
3. Another point I'd like to bring up is that there are two existing east 70 to south 54 lanes which are insufficient already. I'm sure that no one wants to spend the money to make it happen, but a flyover in that direction would alleviate a great deal of the congestion at this intersection. OR a third left turn lane.				
Thank you for your comments. We value your input and will use it while considering options as this important project develops.				

The diverging diamond interchange can look confusing. I imagine if you follow the signs, you can get where you are going.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. Please follow this link for more information about a DDI interchange: Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Corey	smithcorey029@gmail.com	online web forum
Was a single point urban interchange considered here? Example in St. Louis area being Lindbergh and I-55. With the amount of truck traffic that goes thru this interchange, the diverging diamond provides for a lot of tight turns. The one in Columbia at the 70/ Stadium interchange is excellent, but doesn't have anything close to the Tractor-Trailer traffic this interchange does. A diverging diamond can be a confusing interchange, especially with a lot of out of state truck traffic. This solution could make this interchange even more dangerous for passenger vehicles than it already is.	Thank you for your comments and we value your input. To answer your question, when narrowing down alternatives for interchange types at this location, the single-point type interchange was removed from possible alternatives because of the existing bridge which has 20-30 years of bridge life before it will need to be replaced. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. Our study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future conditions. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Bruce S.	sniderbd@yahoo.com	online web forum
Seems like a ton of money to help a city that barely exists. Is traffic that bad?	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Greg Rowoldt	st_gregory217@hotmail.com	online web forum
I really like the idea of extending the ramp on and off I-70. I think this will help a lot epically on people trying to exit onto 54 . I also like the Janice road Idea of taking the current entrance to Shell out and moving it back. This should help a lot with people getting in and out of the parking lot. I notice this is an area that causes a lot of confusion for motorist. I am not sure about the diamond Idea, but I will learn and it is much better than the roundabout idea. My question to you is will you be widening the actual overpass to accommodate this? One of the issues currently is that the overpass is not wide enough and if you get farm equipment or an oversize load it is hard to get around them.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Stacie Smithee	staciesmithee@yahoo.com	online web forum
This proposal does not seem as though it will enhance the travel through kingdom city. I believe it would help travelers coming and going from interstate 70. As someone who takes 54 through kingdom city daily I would like to see improvements made to help passing through along 54 aswell. Something similar to the intersection of I-44 and 65 would benefit everyone. Something as simple as timing the stoplights to allow for traffic to flow from one end of town to the other without stopping at every light would greatly impact the daily commute. It can almost be guaranteed that if you catch one red light in kingdom city every light will be red the rest of the way through.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	steven morris	steven.morris333@hotmail.com	online web forum
Learn from what other areas and countries have done. Use a single, multilane roundabout. My family have traveled and seen these ideas work far better than using any traffic signals. The Stadium interchange is a prime example of what not to do. Very confusing to anyone not familiar with the area or the entity which created the now defunct 'tri-level' in Jefferson City, which by the way needs replacement due to the large number of accidents there.	Thank you for your comments. We value your input. We understand this is a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection.	robert carr	tech@ciltech.com	online web forum
Diamonds and roundabouts should not be used. A better solution should be used, IE the proposed extended ramps	Thank you for your comments. We value your input. We do plan to extend the ramps as part of the project. We also understand the DDI will be a significant change and it will take time for many to adjust to the new traffic format. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org) .	Jason Schlesinger	tjschlesinger@centurytel.net	online web forum
Please reconsider this proposed solution to the traffic problem both now and in the future. The current proposal may work elsewhere, but with the number of tractor trailers mixed with the lake traffic going through this intersection, traffic will still back up and it will not properly resolve the long term issues. I would rather see you take the time to create a high speed exit/entrance system that would allow the traffic to flow freely yet still have the opportunity to exit if necessary to patronize the businesses.	Thank you for your comments. We value your input. You were asking about placing a directional interchange design at this location. This type of interchange with fly-over ramps would require construction of 2 additional bridges and much more additional pavement approaching these bridges. The project would have a much higher construction cost and increased amount of right of way acquisition. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Tom Slater	tjslater51@gmail.com	online web forum
What ever you do, please don't incorporate small roundabouts as they do nothing but slow down traffic during busy times. The only one that works is the Halls Ferry Circle in Baden, Mo because it's large enough to accommodate heavy traffic flow. I believe the best way to decrease traffic congestion is the old fashioned clover-leaf design. I know they take up a lot more room ;but they work.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Terry Phillips	tlp96@msn.com	online web forum

You still have 2 major highways congested with signal lights on Hwy 54. Don't spend any money on this location as it would be adequate for the vehicles that want to use this interchange if you move the flow-thru traffic away from the interchange that don't want to be there. That is, use the funds towards the proper flow of traffic by building a flowing interchange east of the present with no get offs. North of I-70 at the Auxvasse Creek/River, take Hwy 54 south to a flowing interchange with I-70 and extend Hwy 54 south thru farmland and connect to Hwy 54 at the Business 54 underpass, southside of Fulton. At the new interchange, have flowing ramps for all 4 directions, PLUS, this would eliminate the dangerous curve over Business 54 on the northbound lanes of 54 south of Fulton. Yes, more expensive but your proposal is only putting a band aide on an open sever wound. We will still have 2 mile back ups on Sunday afternoon/night from summer lake traffic with your proposal. Use these funds of your proposal towards a real fix!!!! (Seriously-Hwy 54 is a too important major highway intersecting with I-70 to have it bogged down with signal lights!!!!) Tom Kolb, Jefferson City (Midland Transports)	Thank you for your comments. We value your input. The goal of the current study is to improve safety and mobility through the corridor by reducing crashes and peak period congestion. Additional considerations include cost effectiveness, right of way and utility impacts, roadway characteristics, and environmental factors. Our study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Tom Kolb	tom.kolb@midlandjc.com	online web forum
Thank you for this we will get it out to our membership for comments. Question I've always had, and I saw the Columbia at I-70 & Stadium is the model for this DDI, why the stop for the left turns off the I-70 west group? The back ups in Columbia are dangerous and at times get back onto I-70. Why isn't the Springfield DDI at Hwy 13 & i-44 the model of choice? It was the first one, and the traffic exiting the interstates only has to yield. The volume of traffic headed south on Hwy 13 was way more of an issue than the southbound traffic on Stadium north of i-70 was/has been. Basically I don't understand the left turn stop lights on these subsequent DDI designs when the original is highly proclaimed and used as an example and doesn't have them? My personal experience and daily wife's commute with the Columbia one tells of near accidents every day with the stops as they exist there in Columbia. The lake traffic at times would seem to be more likely to cause back ups onto I-70 for traffic waiting to turn left onto south Hwy 54.	Tom, thank you for the comment on the I-70/U.S. 54 Interchange Study and your assistance in sharing the information. As you noted, the I-44/Route 13 interchange has an unsignalized (yield) left-turn movement from the I-44 ramp onto Route 13. There are a few differences to point out: 1. The ramps from I-44 to Route 13 provide a single left-turn lane. The proposed improvements to the ramp from I-70 westbound to U.S. 54 westbound (heading south), provides for two leftturn lanes. 2. The unsignalized left-turn movement for I-44 onto Route 13 merges into a through traffic lane and does not require traffic to switch lanes to continue the through movement. If a traffic signal was not proposed at the Kingdom City interchange, the outside left-turn lane from I-70 to U.S. 54 would have to merge unprotected into U.S. 54 through traffic. This would introduce an additional point of conflict within the interchange and decrease the level of safety for that turning movement. As you indicated, the I-70 westbound off-ramp to U.S. 54 carries a high volume of traffic, particularly truck traffic. Providing a signalized left-turn allows for trucks to accelerate and navigate the turning movement during a protected signal phase. We have completed modeling of traffic at this location, specifically reviewing the peak traffic periods during the summer months when Lake of the Ozarks traffic is heavy. The proposed conversion of the interchange to a DDI provides better capacity than the current configuration and will aid in reducing the potential of traffic queues from the off-ramp backing up onto I-70 through lanes.	Tom Crawford	tom@motrucking.org	email
I tried to view the environmental study with the above link but it was not working, so apologize if it was covered (I couldn't remember) - was any research into using flyovers for the larger volume left onto west I-70 and US 54 looked into similar to the US 65 and I-44 and US 60 and US 65 models in Springfield? I would think a nice flyover for traffic headed from St Louis to JC/Lake of Ozarks would GREATLY benefit from a no stop option, but still give local access for folks looking/needng to make a stop. Obviously the headed north, turning left/west on I-70 is less traffic, but that is another flyover option would benefit and cut down on the backups that occur there as well. Volumes may not justify the turning west onto I-70 flyover, but would definitely be advantageous for the traffic headed to JC/Lake of Ozarks. Depending on the other construction going on as well, the OS/OW would still be covered and have an option to keep commerce flowing. I've already commented on the use of the Columbia model (FLAWED) as opposed to the Springfield (HWY 13 & I-44) model which is much preferred. The Columbia model is a ticking time bomb for accidents with the confusion on lanes (3 left turns and a light) and the volume at times (events & rush hours) that backs stopped traffic into the interstate. This is my wife's daily commute, and her office is on the SW corner of that intersection so she experiences and sees the problems and accidents and near accidents that occur on an almost daily basis, particularly during events. Most of her staff have adjusted and have adopted "an avoidance" approach to that redesign. They simply try to avoid using that route during those times. Throw in the Columbia mall confusion/back ups and traffic gets quite clustered around her office since the redesign. I can't imagine Kingdom City will be better for the traffic volumes in the summer if the Columbia model is chosen. The Springfield model has alleviated the 3-5 mile back ups that were occurring on Hwy 13 and solved the Ozark Empire Fair issues for the most part, at least from my experience and what I understand from locals in the area. Not so for Columbia. Just my 2.5 cents.	Thank you for your comments. We value your input. You were asking about placing a directional interchange design at this location. This type of interchange with fly-over ramps would require construction of 2 additional bridges and much more additional pavement approaching these bridges. The project would have a much higher construction cost and increased amount of right of way acquisition. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Tom Crawford	tom@motrucking.org	online web forum
I travel on this portion of the highway several times a month. This proposal to improve by changing to a cross over is not with concern. I think this money should be used to improve and repair the highways by fixing the current roadways. To include pot holes and deterating roadways.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	John Loveless	trainingofficer407@gmail.com	online web forum
With all the semis that travel through this area we do not feel this will be safer than what we have! My wife already won't drive in the area of stadium and I 70. We hope you will leave the intersection as is. Thank you.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Tom McDowell	trtt04@gmail.com	online web forum

	Thank you for your comments. We value your input. The goal of the current study is to improve safety and mobility through the corridor by reducing crashes and peak period congestion. Additional considerations include cost effectiveness, right of way and utility impacts, roadway characteristics, and environmental factors. Our study found that the Diverging Diamond Interchange (DDI) and additional intersection/ramp enhancements will provide significant improvements for current and future conditions. One important consideration of this project is cost effectiveness. We chose to examine solutions that did not require major impacts to the bridge or a total bridge replacement, to provide for the most economical solution that addresses the congestion and safety concerns at the interchange. While we understand the desire to do more and make more substantial changes, we have to consider the financial realities that we face as the seventh largest state system in the nation. Our transportation needs far outweigh available transportation funding, so in each project that we develop, we're focused to provide cost effective solutions.	Tom McDowell	trtt04@gmail.com	online web forum
We are not in favor of the new changes proposed for the intersection.				
I like the proposed changes as outlined. I travel thru this interchange often coming from the north on 54 entering / exiting onto I-70. The only area I'm uncertain / concerned about is the intersection w/ Janice. There is a tremendous amount of semi traffic entering and exiting from / onto 54 from both the north and the south. I hope the turns are made wide enough for them to stay in their lanes when turning w/o hopping curbing, etc. I've seen another busy intersection of Hwys 54 and 79 in Louisiana where the recommended MoDOT plan was implemented to make the intersection wide enough for semis but the end product still have turning trucks hopping curbs.	Thank you for your comments. We value your input and will use it while considering options as this important project develops.	Walter Logan	waltercl2@att.net	online web forum
There is nothing wrong with this intersection. If it ain't broke, Don't fix it. I did read where one truck driver said that turning west was hard because there was not enough room to turn. Fixing this would not and should not entail a complete intersection overhaul. NO Roundabouts. NO diverging diamonds. NO dog bones. None! Nada!! The roundabouts in Columbia are horrible. Some of them are even to small for our car at alone when we have the truck with a trailer hauling our UTV to get repaired/serviced. The diverging diamond is so confusing and Heaven forbid if you get caught in traffic and cannot change lanes. You drive for blocks before you can circle around and get back to where you need to go. Ditto for the dog bones. I think there are plenty of other more urgent intersections and highway improvements that need done before a perfectly working intersection is ruined. One of those much needed improvements would be on and off ramps at the Callaway Stockyards intersection. Of course in my area, I could name several highway improvements that I am sure MODOT would say they do not have the money for.	Thank you for your comments. We value your input. The traffic study has analyzed the current and future 2045 traffic and the study has shown that the Diverging Diamond Interchange (DDI) and additional ramp/intersections enhancements will provide significant improvements for current and future 2045 conditions. We have seen success with the Diverging Diamond Interchange (DDI) at other locations across the state and expect the same results at this intersection. If you are interested to learn more about a DDI interchange, please follow this link. Diamond-Type Interchanges Missouri Department of Transportation (modot.org)	Margie Anglen	weanglen@socket.net	online web forum
I am curious why the concern about keeping the unused railroad bridge over Interstate 70, and also the bridge over Old Hwy 40? The line has not been used in years, and will in all probability never be used again for rail because of the cost of rebuilding the Auxvasse wooden trestle. Any traffic improvements in the Kingdom City area should include a discussion about the removal of the old unused railroad bridge over Hwy 40, northwest of the I-70 and 54 interchange. The low height limit of that bridge, at 13ft, 1 inch is a hazard whenever there is a blockage on surrounding roads. Truck traffic attempts to use Old Hwy 40 to bypass the area, only to be blocked with the low railroad bridge. Also, does the plan for improving and lengthening the on and off ramps on the west side of the I-70 and 54 interchange include the possibility of widening Interstate 70 to additional lanes in the future? Will the railroad bridge over I-70 need to be removed for that? Thank you for keeping us informed of the plans for this area.	Thank you for your comments. We value your input. We have been in contact with the owner of the railroad line and we are working to negotiate for an easement in order to build the ramp extension under the existing railroad bridge. This current project does not have the budget needed to remove the bridge. If the interstate is improved in the future, MoDOT will take that opportunity to negotiate with the railroad owner to remove the bridge.	David Backer - Wise Bros Inc	wisebrothersequipment@gmail.com	online web forum
It seems as though this is a solid plan for addressing challenges with respect to traffic congestion and safety. I would ask that due consideration be given to ensuring that construction activities do not impact the Tucker Prairie Natural Area, which is located adjacent to I-70 on the south side of the highway (about 3 miles west of the Kingdom City interchange). Tucker Prairie is the largest remnant prairie in Mid-Missouri and an exceptional natural resource. From the plan presented, it seems like Tucker Prairie is far enough away that it will not be impacted by the proposed activities, but I'm not sure of how far along I-70 (to the west of Kingdom City) the ramp extension construction will affect the highway and adjacent lands and would thus ask that due consideration be given to ensuring activities will not impact Tucker Prairie.	Good morning and thank you for the comment regarding the Tucker Prairie Natural Area. The location of Tucker Prairie Natural Area is approximately 2.5 miles at the nearest point from the proposed road improvements at the US 54/I-70 interchange. Any changes at the US 54/I-70 proposed will not alter runoff onto the natural area and no equipment or heavy construction traffic should occur near the natural area. Also, all anticipated contractor operations such as asphalt or concrete paving will occur outside the area of the natural area. Contractors may determine a need to set up a mobile plant to produce asphalt or concrete to support project construction. Contractors will be notified of the location of the Tucker Prairie Natural Area and will be advised to avoid impacts to the property.	Jeffrey Wood	woodjd@missouri.edu	email
It seems as though this is a solid plan for addressing challenges with respect to traffic congestion and safety. I would ask that due consideration be given to ensuring that construction activities do not impact the Tucker Prairie Natural Area, which is located adjacent to I-70 on the south side of the highway (about 3 miles west of the Kingdom City interchange). Tucker Prairie is the largest remnant prairie in Mid-Missouri and an exceptional natural resource. From the plan presented, it seems like Tucker Prairie is far enough away that it will not be impacted by the proposed activities, but I'm not sure of how far along I-70 (to the west of Kingdom City) the ramp extension construction will affect the highway and adjacent lands and would thus ask that due consideration be given to ensuring activities will not impact Tucker Prairie.	Good morning and thank you for the comment regarding the Tucker Prairie Natural Area. The location of Tucker Prairie Natural Area is approximately 2.5 miles at the nearest point from the proposed road improvements at the US 54/I-70 interchange. Any changes at the US 54/I-70 proposed will not alter runoff onto the natural area and no equipment or heavy construction traffic should occur near the natural area. Also, all anticipated contractor operations such as asphalt or concrete paving will occur outside the area of the natural area. Contractors may determine a need to set up a mobile plant to produce asphalt or concrete to support project construction. Contractors will be notified of the location of the Tucker Prairie Natural Area and will be advised to avoid impacts to the property.	Jeffrey Wood	woodjd@missouri.edu	online web forum



March 1, 2022

Mr. Patrick McKenna
Missouri Highways and Transportation Commission
P.O. Box 270
Jefferson City, MO 65102
Via email: Patrick.McKenna@modot.mo.gov

Director McKenna:

The Lake Area Chamber of Commerce is made up of over 600 member businesses around Lake of the Ozarks. We are writing to express our great disappointment in the Missouri Department of Transportation's "Preferred Alternative" for the I-70/US-54 interchange in Kingdom City and the process used to select that alternative.

Kingdom City represents a vital link between our communities and their visitors, suppliers, and customers. Yet for decades, the traffic flow there has deteriorated as longer and longer backups occur at the interchange's traffic lights. On summer Sundays, traffic on eastbound US 54 can back up as far as the northernmost Fulton exit, and backups on Friday night extend well into the westbound I-70 mainline for a mile or more. All of these backups on the St. Louis/Lake movement pattern occur at the interchange's stoplights, which bring traffic to a halt up to three times on a route that is otherwise 70mph. Large trucks are a major part of the congestion because they accelerate so slowly from a stop, and the current design forces them to stop repeatedly to navigate in and out of Kingdom City's businesses while car traffic attempts to pass through on its way to the Lake and other mid-Missouri destinations.

MoDOT's preferred alternative proposes to rebuild and maintain each of these stoplights. Although the new "DDI" design may be more efficient than the old one, no amount of innovative design can make trucks accelerate more quickly from a stop. Traffic travelling from the east to our communities will still have to pass through three stoplights to switch between national four-lane highways, and traffic heading in the reverse direction will still pass through two. The stoplight at the southern truck stops will remain in place exactly where it currently causes traffic to back up for miles. And the lengthened off-ramp for westbound I-70 seems to acknowledge that travelers will continue to back up at the off-ramp stoplight, and that more space is needed to fit all of the stopped vehicles. The new layout will therefore suffer the same problems as the present design.

Last fall, we specifically asked to be included in the consideration of this project. MoDOT ignored that request, and instead convened a Stakeholder Advisory Committee made up of "[m]ore than 20 nearby businesses and local representatives." You also commissioned a survey for the public, nearly 70% of the answers to which were from "local residents." Once the preferred alternative was announced, we were told our omission was an accident. We find that hard to believe, as we contacted MoDOT several times in

December and January for updates and were not told about the stakeholder group or included at any point. After we complained, your project manager offered us a presentation on the project and told us we could comment, but she made clear that our input would not make a difference and that MoDOT had already made its final decision without hearing from us.

We have also learned that the study was fundamentally flawed in several ways:

- MoDOT specifically set the parameters of the study to require the use of a diamond design, and no free-flowing alternatives were considered at this system interchange between national, four-lane, 70mph highways;
- MoDOT measured traffic in the interchange on Wednesday, August 25 and Friday, August 27, 2021, after most kids have started school and traffic to the Lake has decreased;
- MoDOT then used those slower dates to estimate traffic on Labor Day weekend, instead of taking actual traffic counts for the very condition this project was supposedly designed to address;
- MoDOT did not take traffic counts on any Sunday, and did not take any counts south of the truck-stop stoplight, where traffic returning from the Lake backs up on Sunday mornings.

These details convince us that MoDOT did not adequately consider the needs of those passing through Kingdom City. Any conclusions drawn from this flawed study will lead to flawed recommendations.

Your website identifies three goals for this project. The preferred alternative certainly "provides access to nearby businesses and promotes economic growth in Kingdom City," and your presentation makes several mentions of those priorities. However, the preferred alternative does not meaningfully improve "mobility through the corridor." To the contrary, this proposal does little to change the interchange for motorists trying to travel through Kingdom City to or from our communities, and it will continue to cause long backups once completed (not to mention construction delays). With those goals in mind, this project's estimated cost of \$6,695,000 cannot justify such minimal benefit.

It is apparent from your process and the selected design that the concerns of local businesses and residents were paramount over the regional traffic impact of this project, and that the interests of travelers moving *through* the interchange were not seriously considered. We respectfully request you reconsider this design and solicit input from *all* stakeholders, not just those adjacent to the interchange. The I-70/US-54 interchange impacts much more than Kingdom City, and the priorities of the traveling public would be better served by a freer-flowing design.

Sincerely,

/s/ Cole D. Bradbury

Cole D. Bradbury
Board President

CC: Missouri Highways and Transportation Commission
Ms. Mia Peters
Mayor Dennis Newberry
Mayor John Olivarri
Rep. Don Mayhew
Rep. Lisa Thomas



City of Lake Ozark

At Bagnell Dam - Lake of the Ozarks



Dennis Newberry

Mayor

newberry@cityoflakeozark.net

February 28, 2022

Ms. Mia Peters, Project Manager
MoDOT Central District
1511 Missouri Blvd.
Jefferson City, MO 65102

Dear Ms. Peters:

It has recently come to our attention that the Missouri Department of Transportation is about to conclude the comment period regarding MoDOT's preferred alternative for the I-70/US-54 interchange in Kingdom City.

Unfortunately, we have not had an opportunity to review the proposed solution before now. Therefore, we respectfully request a thirty day extension to the comment period.

Given that the proposed construction of the new interchange will not take place until 2025 or 2026, extending the comment period thirty days should not adversely affect the project.

Thank you for considering our request.

Respectfully,

Dennis Newberry
Mayor



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181



In Reply Refer To:

May 18, 2022

Project code: 2022-0016475

Project Name: 5P3417, Callaway 54, Intersection Improvements at I-70

Subject: Concurrence verification letter for the '5P3417, Callaway 54, Intersection Improvements at I-70' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated May 18, 2022 to verify that the **5P3417, Callaway 54, Intersection Improvements at I-70** (Proposed Action) may rely on the concurrence provided in the February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and may affect, but is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*). Consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required.

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances,

Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities: If your initial bridge/culvert or structure assessments failed to detect Indiana bats, but you later detect bats prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or Northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

The following species may occur in your project area and **are not** covered by this determination:

- Gray Bat *Myotis grisescens* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

5P3417, Callaway 54, Intersection Improvements at I-70

Description

Scoping for intersection improvements at I-70 in Kingdom City.

Capacity improvements to US 54, I-70 on ramp acceleration lanes, and possible interchange redevelopment.

Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the threatened Northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

Qualification Interview

1. Is the project within the range of the Indiana bat^[1]?

[1] See [Indiana bat species profile](#)

Automatically answered

Yes

2. Is the project within the range of the Northern long-eared bat^[1]?

[1] See [Northern long-eared bat species profile](#)

Automatically answered

Yes

3. Which Federal Agency is the lead for the action?

A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction^[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

[1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces^[1]?

[1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum^[1]?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

No

7. Is the project located **within** a karst area?

No

8. Is there *any* suitable^[1] summer habitat for Indiana Bat or NLEB **within** the project action area^[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the [User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat](#).

Yes

9. Will the project remove *any* suitable summer habitat^[1] and/or remove/trim any existing trees **within** suitable summer habitat?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

Yes

10. Will the project clear more than 20 acres of suitable habitat per 5-mile section of road/rail?

No

11. Have presence/probable absence (P/A) summer surveys^{[1][2]} been conducted^{[3][4]} **within** the suitable habitat located within your project action area?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] Presence/probable absence summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum (contact local Service Field Office for appropriate distance from hibernacula) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

[3] For projects within the range of either the Indiana bat or NLEB in which suitable habitat is present, and no bat surveys have been conducted, the transportation agency will assume presence of the appropriate species. This assumption of presence should be based upon the presence of suitable habitat and the capability of bats to occupy it because of their mobility.

[4] Negative presence/probable absence survey results obtained using the [summer survey guidance](#) are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

No

12. Does the project include activities **within documented Indiana bat habitat**^{[1][2]}?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

No

13. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors?

Yes

14. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors occur^[1]?

[1] Coordinate with the local Service Field Office for appropriate dates.

B) During the inactive season

15. Does the project include activities **within documented NLEB habitat**^{[1][2]}?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

No

16. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors?

Yes

17. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors occur?

B) During the inactive season

18. Will *any* tree trimming or removal occur **within** 100 feet of existing road/rail surfaces?

Yes

19. Will *any* tree trimming or removal occur **between** 100-300 feet of existing road/rail surfaces?

No

20. Are *all* trees that are being removed clearly demarcated?
Yes
21. Will the removal of habitat or the removal/trimming of trees include installing new or replacing existing **permanent** lighting?
No
22. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?
No
23. Does the project include slash pile burning?
No
24. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?
No
25. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)
No
26. Will the project involve the use of **temporary** lighting *during* the active season?
Yes
27. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **temporary** lighting will be used?
Yes
28. Will the project install new or replace existing **permanent** lighting?
No
29. Does the project include percussives or other activities (**not including tree removal/trimming or bridge/structure work**) that will increase noise levels above existing traffic/background levels?
No
30. Are *all* project activities that are **not associated with** habitat removal, tree removal/trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.
Yes
31. Will the project raise the road profile **above the tree canopy**?
No
-

32. Are the project activities that are not associated with habitat removal, tree removal/trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives consistent with a No Effect determination in this key?

Automatically answered

Yes, other project activities are limited to actions that DO NOT cause any additional stressors to the bat species as described in the BA/BO

33. Is the habitat removal portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

Automatically answered

Yes, because the tree removal/trimming that occurs outside of the Indiana bat's active season occurs greater than 0.5 miles from the nearest hibernaculum, is less than 100 feet from the existing road/rail surface, includes clear demarcation of the trees that are to be removed, and does not alter documented roosts and/or surrounding summer habitat within 0.25 miles of a documented roost.

34. Is the habitat removal portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

Automatically answered

Yes, because the tree removal/trimming that occurs outside of the NLEB's active season occurs greater than 0.5 miles from the nearest hibernaculum, is less than 100 feet from the existing road/rail surface, includes clear demarcation of the trees that are to be removed, and does not alter documented roosts and/or surrounding summer habitat within 0.25 miles of a documented roost.

35. **General AMM 1**

Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

Yes

36. **Tree Removal AMM 1**

Can *all* phases/aspects of the project (e.g., temporary work areas, alignments) be modified, to the extent practicable, to avoid tree removal^[1] in excess of what is required to implement the project safely?

Note: Tree Removal AMM 1 is a minimization measure, the full implementation of which may not always be practicable. Projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented and LAA as long as Tree Removal AMMs 3, 5, 6, and 7 are implemented.

[1] The word "trees" as used in the AMMs refers to trees that are suitable habitat for each species within their range. See the USFWS' current summer survey guidance for our latest definitions of suitable habitat.

Yes

37. **Tree Removal AMM 3**

Can tree removal be limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits)?

Yes

38. **Tree Removal AMM 4**

Can the project avoid cutting down/removal of *all* (1) **documented**^[1] Indiana bat or NLEB roosts^[2] (that are still suitable for roosting), (2) trees **within** 0.25 miles of roosts, and (3) documented foraging habitat any time of year?

[1] The word documented means habitat where bats have actually been captured and/or tracked.

[2] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry triangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

Yes

39. **Lighting AMM 1**

Will *all* **temporary** lighting be directed away from suitable habitat during the active season?

Yes

Project Questionnaire

1. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

Yes

2. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

No

3. How many acres^[1] of trees are proposed for removal between 0-100 feet of the existing road/rail surface?

[1] If described as number of trees, multiply by 0.09 to convert to acreage and enter that number.

0.87

Avoidance And Minimization Measures (AMMs)

This determination key result includes the commitment to implement the following Avoidance and Minimization Measures (AMMs):

TREE REMOVAL AMM 1

Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal.

LIGHTING AMM 1

Direct temporary lighting away from suitable habitat during the active season.

TREE REMOVAL AMM 2

Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and **outside of documented** roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed.

TREE REMOVAL AMM 3

Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).

TREE REMOVAL AMM 4

Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or **documented** foraging habitat any time of year.

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on April 28, 2022. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

IPaC User Contact Information

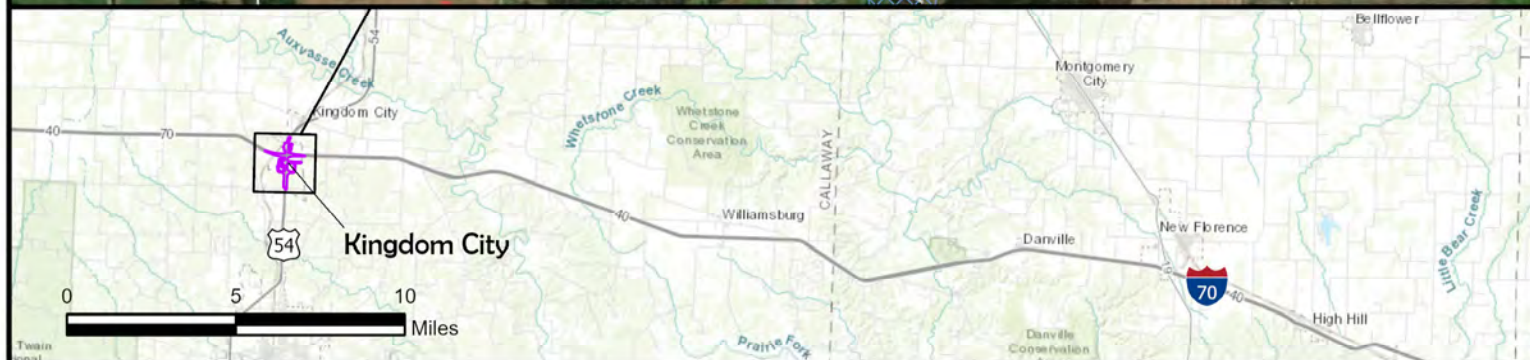
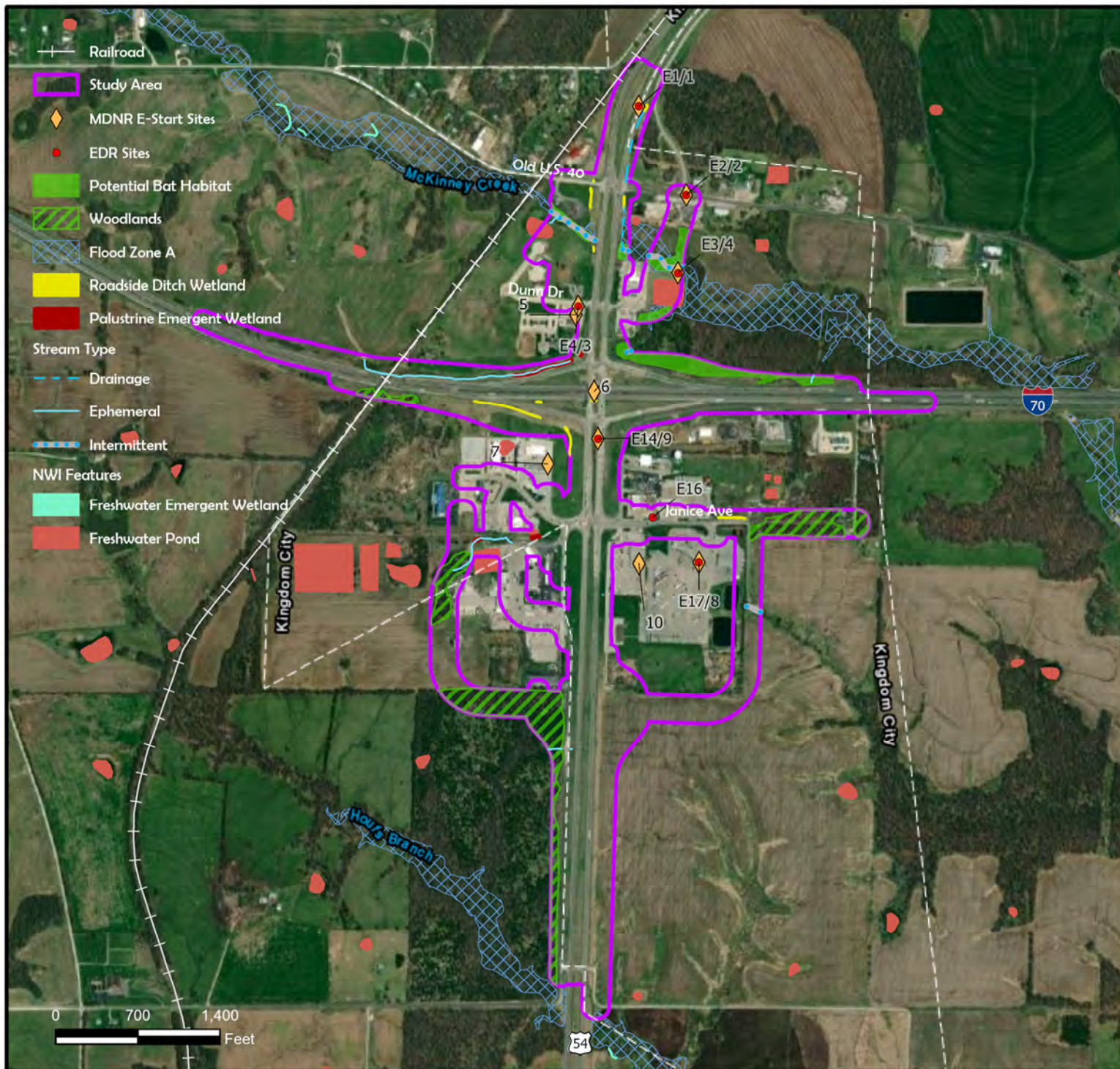
Agency: Missouri Department of Transportation
Name: MoDOT Environmental Staff
Address: 601 W. Main
City: Jefferson City
State: MO
Zip: 65102
Email: ipac@modot.mo.gov
Phone: 5735264778

Lead Agency Contact Information

Lead Agency: Federal Highway Administration

Appendix C

Map of Environmental Resources



Study Area



I-70
SIU 6 EA Re-Evaluation
Kingdom City Interchange
Environmental Constraints

Appendix D
Wetland and Other Waters of the U.S. for Project J5P3417
Tech Memo

Interchange Improvements at the US 54/I-70 interchange in Kingdom City Waters of U.S. Delineation

Callaway County, MO

MoDOT Job Number: J5P3417

December 16, 2021



Contents

Section	Page
1.0 Introduction.....	1
2.0 Methodology	1
3.0 Existing Data.....	1
3.1 USGS 7.5-Minute Topographic Map, Fulton, Missouri, Quadrangle	2
3.2 National Wetlands Inventory	2
3.3 Web Soil Survey.....	2
3.4 Aerial Imagery	3
4.0 Potential Jurisdictional Results	3
4.1 Streams and Tributaries.....	3
4.1.1 Traditionally Navigable Waters	4
4.1.2 Relatively Permanent Waters.....	4
4.1.3 Non-Relatively Permanent Waters.....	5
4.1.4 Swales, Ditches, and Erosional Drainage Features.....	6
4.1.5 Open Waters.....	6
4.1.6 Wetlands.....	7
5.0 Conclusion.....	8
6.0 References	10
Appendix A: Site Vicinity Map USGS Topographic/National Wetlands Inventory/Soil Survey Map Waters of the U.S. Map	
Appendix B: Photo Location Map Site Photo Log	
Appendix C: Data Sheets	

1.0 Introduction

Hg Consult Inc. (Hg) conducted a wetland and stream delineation in November 2021. The purpose of this wetland investigation was to identify the location and extent of jurisdictional waters of the U.S. (WOUS), including wetlands, as regulated under Sections 401 and 404 of the Clean Water Act within the NEPA re-evaluation study area.

The study area is located in Sections 8, 9, 16, and 17 of Township 48N and Range 9W, at the US 54 and I-70 Interchange in Kingdom City, in Callaway County, Missouri as shown in Figure 1 in Appendix A.

Prior to the field investigation a review of published literature and records search provided some baseline data about the study area. Several existing maps and sources of land use information were also collected and reviewed to assist with the onsite investigation.

Jurisdictional WOUS, including wetlands, identified within the study area are demarcated on Figure 3. Findings of the field investigation are summarized in this report. The methods used to identify jurisdictional WOUS, including wetlands, were those set forth in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (Y-87-I) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (2010). Figures are provided in Appendix A. A photolog and photo location map is provided in Appendix B. Data sheets are provided in Appendix C.

The USACE has jurisdiction over all WOUS and is the regulatory authority for decisions regarding the occurrence of wetlands and other WOUS within the study area. The findings of this report are not valid without written concurrence from the USACE Regulatory Branch. Discharges of dredged or fill materials into WOUS, including wetlands, require prior authorization from the USACE under Section 404 of the Clean Water Act (33 USC 1344).

2.0 Methodology

A desktop review of existing data and resource maps was completed prior to the project site visit. The desktop review was performed to better understand the topography, hydrology, soils, and natural resources within the study area. A field survey was conducted to identify and map wetlands and other WOUS. Photographs were taken (locations are shown on Figure 4) and are included in the Site Photo Log in Appendix B. Tributaries were identified by observing the presence of a defined bed and bank, as well as a discernible ordinary high water mark (OHWM). The wetland delineation methodology also included a delineation of wetlands and identified other WOUS including ponds, lakes, mudflats, sandflats, streams, rivers, and sloughs. The wetland delineation was conducted according to the 1987 USACE Wetland Delineation Manual and the 2010 Midwest Region Regional Supplement. A wetland data sheet was completed at any National Wetland Indicator location or any area where wetland vegetation or hydrology was apparent or suspected. If a wetland data sheet indicated the presence of a wetland (the in-point), then another wetland data sheet (the out-point) was completed just outside of the wetland area. All data points and wetland areas were delineated with a real-time meter accurate (sub-meter accurate post processing) GNSS receiver. The 2020 (v3.5) National Wetland Plant List was used to complete the wetland data sheets. The wetland data sheets are included in Appendix C.

3.0 Existing Data

A summary of the resources used as reference material for this investigation is provided below.

- U.S. Geologic Survey (USGS): 7.5-Minute Topographic Map (Figure 1 and 2)
- U.S. Fish and Wildlife Service: National Wetlands Inventory (NWI) Map (Figure 2)

- Natural Resources and Conservation Service; Web Soil Survey (Figure 2)
- Aerial Photography (Figure 3)

3.1 USGS 7.5-Minute Topographic Map, Fulton, Missouri, Quadrangle

Review of the topographic map, as shown on Figure 2, depicts that the study area transects McKinney Creek (dashed blue line) north of the US 54 and I-70 interchange. It transects an unnamed tributary (dashed blue line) southeast of the interchange. The topographic map shows that the majority of the study area has been developed by transportation projects as well as other buildings and impoundments around the interchange. Terrain in the study area consists of rolling hills. The lowest elevation, near McKinney Creek is approximately 800 feet, National Geodetic Vertical Datum (NGVD) with the highest elevation being just south of the interchange is approximately 860 feet NGVD.

3.2 National Wetlands Inventory

The NWI map shows five NWI features present within the study area (Figure 2) as follows:

- There are four PUBGx (palustrine, unconsolidated bottom, intermittently exposed, excavated) features within the study area. It appears that many of them are no longer present due to development around the interchange.
- An R4SBC (riverine, intermittent, streambed, seasonally flooded) feature is present southeast of the US 54 and I-70 interchange. This feature coincides with a dashed blue line on the topographic map.

3.3 Web Soil Survey

Seven soil map units occur within the study area (Figure 2). Site soils are described in detail below. Soil map units and inclusions listed as hydric soils are noted, if applicable.

30039—Armstrong loam, 9 to 14 percent slopes, eroded: The parent material consists of loess over red palesol and underlying subglacial till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during April and October. This soil does not meet hydric criteria.

36085—Landes loam, 1 to 3 percent slopes, frequently flooded: The Landes component makes up 90 percent of the map unit. Slopes are 1 to 3 percent. This component is on drainageways, till plains. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, April, May, November, and December. **This soil meets hydric criteria.**

50001—Armstrong loam, 5 to 9 percent slopes, eroded: The parent material consists of loess over red palesol and underlying subglacial till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during April and October. This soil does not meet hydric criteria.

50008—Keswick silt loam, 5 to 9 percent slopes, eroded: The parent material consists of pedisegment over till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60

inches (or restricted depth) is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. This soil does not meet hydric criteria.

50059—Mexico silt loam, 1 to 4 percent slopes, eroded: The parent material consists of loess over pedisegment. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, and December. **This soil meets hydric criteria.**

67035—Haymond silt loam, 1 to 3 percent slopes, frequently flooded: The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. This soil is frequently flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

70009—Goss gravelly silt loam, 8 to 15 percent slopes: The parent material consists of slope alluvium over residuum weathered from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

3.4 Aerial Imagery

Recent aerial photography shows the US 54 and I-70 interchange study area as being mostly developed with transportation facilities, gas stations, hotels, truck stops, fast food restaurants, and other various buildings. Near the northern terminus there is a wooded riparian area that transects the study area. This riparian area corresponds to McKinney Creek from the topographic map. There is a large, wooded area to the northeast of the interchange, and another large, wooded area to the west of the southern terminus. There appears to be water treatment ponds east of a large truck parking area southeast of the interchange which drain to a riparian area that corresponds to the unnamed tributary from the topographic map. No other water features are apparent from the aerial.

4.0 Potential Jurisdictional Results

On November 12, 2021, Hg staff conducted pedestrian surveys of the study area to identify jurisdictional wetlands and other WOUS. Descriptions of the resources identified on the project site are presented in the following subsections.

4.1 Streams and Tributaries

Linear water features include all tributaries, streams, and drainages on the site that have ephemeral, intermittent, or perennial flows. They are characterized as being traditional navigable waters, relatively permanent waters (RPWs), non-relatively permanent waters (Non-RPWs), swales and ditches, and erosional drainage features. The tributaries found within the project site are discussed below and summarized in Table 1.

1

2 **Table 1: Streams**

ID	Name	Type	OHWM width (ft)	Length (ft)	Direction from Interchange	Potentially Jurisdictional
T5	Unnamed	Intermittent, RPW	15	38	Northeast	Yes
T6	McKinney Creek	Intermittent, RPW	15	850	North	Yes
Intermittent RPW Subtotal				888		
T3	Unnamed depicted on topographic map	Intermittent, Non-RPW	5	132	Southeast	Yes
Intermittent Non-RPW Subtotal				132		
T1	Unnamed	Ephemeral, Non-RPW	1	704	Southwest	Yes
T2	Unnamed	Ephemeral, Non-RPW	4	136	Southwest	Yes
T4	Unnamed	Ephemeral, Non-RPW	3	57	Northeast	Yes
T7	Unnamed	Ephemeral, Non-RPW	3	1,879	Northwest	Yes
T8	Unnamed	Ephemeral, Non-RPW	4	93	Northwest	Yes
Ephemeral Non-RPW Subtotal				2,869		
Total				3,889		

3

4 **4.1.1 Traditionally Navigable Waters**

5 Traditionally Navigable Waters are all tidal waters and waters that have been, could be, or are used in
6 interstate or foreign commerce. Traditionally Navigable Waters (TNW) are jurisdictional and any tributary
7 that continually flows directly or indirectly, at least seasonally, into a TNW is also jurisdictional.

8 There are no TNWs within the study area.

9 **4.1.2 Relatively Permanent Waters**

10 Relatively permanent waters (natural, man-altered, or man-made water bodies) have continuous flow, at least
11 seasonally. A tributary that flows for at least three months of the year would typically be considered an RPW.
12 This type of tributary can include unnamed intermittent and perennial tributaries not mapped on 7.5' USGS
13 topographic maps.

14 Potential intermittent RPWs identified include T5 and T6 (McKinney Creek) listed in Table 1 above. The
15 total length of potential intermittent RPWs identified in the study area was 888 ft. (see Figure 3) . These
16 features are described below:

17 **Tributary 5 (T5):** T5 is an unnamed intermittent tributary (not depicted on the topographic map) to the
18 northeast of the interchange. It drains into McKinney Creek outside of the study area. It exhibits a defined
19 bed and bank and an OHWM. In general, at this location, it flows from west to east. The average OHWM
20 width is 15 feet and the average OHWM depth is 5 feet. The width of the top of bank is approximately 40
21 feet and the depth is 15 feet. The tributary is bordered by a forested riparian buffer.

22 **Tributary 6 (T6):** T6 is McKinney Creek. It transects the study area near the northern terminus. It exhibits a
23 defined bed and bank and an OHWM. In general, at this location, it flows from west to southeast. The
24 average OHWM width is 15 feet and the average OHWM depth is 5 feet. The width of the top of bank is
25 approximately 50 feet and the depth is 20 feet. The tributary is bordered by a forested and herbaceous
26 riparian buffer.

4.1.3 Non-Relatively Permanent Waters

Non-relatively permanent waters are not typically influenced by seasonal flow. Rainfall runoff is a primary source of hydrology in these systems. Ephemeral tributaries and upper reaches of intermittent tributaries are examples of non-RPWs. This type of tributary can include unnamed intermittent tributaries not mapped on 7.5' USGS topographic maps. Non-RPWs have a defined bed and bank and an OHWM and may be jurisdictional waters of the U.S.

The potential intermittent non-RPWs include T3. The total length of potentially intermittent non-RPWs identified within study area was 132 ft. (see Figure 3). It is described below:

Tributary 3 (T3): T3 is an unnamed intermittent tributary (as depicted on the topographic map) to the southeast of the interchange. It drains into McKinney Creek outside of the study area. It exhibits a defined bed and bank and an OHWM. In general, at this location, it flows from west to east. The average OHWM width is 5 feet and the average OHWM depth is 3 feet. The width of the top of bank is approximately 25 feet and the depth is 5 feet. The tributary is bordered by a forested and herbaceous riparian buffer.

The potential ephemeral non-RPWs include T1, T2, T4, T7, and T8. The total length of potentially intermittent non-RPWs identified within the study area was 2,869 ft. (see Figure 3). They are described below:

Tributary 1 (T1): T1 is an unnamed ephemeral tributary (not depicted on the topographic map) to the southwest of the interchange. It drains into a culvert under a parking lot. It exhibits a defined bed and bank and an OHWM. In general, at this location, it flows from west to east. The average OHWM width is 1 foot and the average OHWM depth is 1 foot. The width of the top of bank is approximately 3 feet and the depth is 2 feet. The tributary is bordered by an herbaceous riparian buffer.

Tributary 2 (T2): T2 is an unnamed ephemeral tributary (not depicted on the topographic map) to the southwest of the interchange. It drains off the study area to the west. It exhibits a defined bed and bank and an OHWM. In general, at this location, it flows from east to west. The average OHWM width is 4 feet and the average OHWM depth is 1 foot. The width of the top of bank is approximately 12 feet and the depth is 4 feet. The tributary is bordered by a forested riparian buffer.

Tributary 4 (T4): T4 is an unnamed ephemeral tributary (not depicted on the topographic map) to the east of the interchange. It flows under I-70 through a culvert and drains into T3 to the north of the study area. It exhibits a defined bed and bank and an OHWM. In general, at this location, it flows from south to north. The average OHWM width is 3 feet and the average OHWM depth is 1 foot. The width of the top of bank is approximately 20 feet and the depth is 5 feet. The tributary is bordered by forested riparian buffer.

Tributary 7 (T7): T7 is an unnamed ephemeral tributary (not depicted on the topographic map) to the northwest of the interchange. It originates in an out-of-study-area swale, flows into the study area and along the northern edge of I-70. It drains into a culvert that goes under US 54. On the east side US 54 the tributary daylights as T5, possibly due to the connection of multiple culverts under US 54 and roadside/developed area drainage. This is delineated as a potentially jurisdictional tributary because it originates offsite and was likely present (though manipulated) before the development of the area. It exhibits a defined bed and bank and an OHWM. In general, at this location, it flows from west to east. The average OHWM width is 3 feet and the average OHWM depth is 2 feet. The width of the top of bank is approximately 5 feet and the depth is 3 feet. The tributary is bordered by an herbaceous and shrubby riparian buffer.

Tributary 8 (T8): T8 is an unnamed ephemeral tributary (not depicted on the topographic map) to the northwest of the interchange. It drains into McKinney Creek. It exhibits a defined bed and bank and an OHWM. In general, at this location, it flows from southwest to northeast. The average OHWM width is 4 feet

and the average OHWM depth is 3 feet. The width of the top of bank is approximately 6 feet and the depth is 4 feet. The tributary is bordered by a forested riparian buffer.

4.1.4 Swales, Ditches, and Erosional Drainage Features

Swales are generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on nearly flat slopes and typically have grass or other low-lying vegetation throughout. Swales are generally not waters of the U.S. because either they are not tributaries, or they do not have a significant nexus to a traditional navigable water. Even though a swale may not be a WOUS the swale may still contribute to a surface hydrologic connection between an adjacent wetland and a traditional navigable water.

Ditches (including roadside ditches), excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water, are generally not WOUS because either they are not tributaries, or they do not have a significant nexus to a traditional navigable water. If a ditch has relatively permanent flow into WOUS or between (two or more) WOUS, the ditch is jurisdictional. Even though a ditch may not be a WOUS, the ditch may still contribute to a surface hydrologic connection between an adjacent wetland and a traditional navigable water.

Erosional drainage features, including gullies, are generally not WOUS because either they are not tributaries, or they do not have a significant nexus to a traditional navigable water. Erosional features are formed where surface runoff becomes concentrated; they generally dissipate when slopes flatten or when soils and/or ground cover transition to an area with greater resistance to erosion.

Due to the hilly terrain next to the roads, roadside ditches were common. Four erosional drainage features/ditches were identified in the study area. These features lack an OHWM, bed and bank, have vegetation growing in the drainageway, were formed wholly in and draining only uplands, do not carry a relatively permanent flow of water, do not originate offsite, or were likely not present prior to development of the area.

4.1.5 Open Waters

Open waters are unvegetated bodies of water such as ponds and lakes. These features may be jurisdictional if connected (i.e., they have a significant nexus) to jurisdictional water.

There are two open water areas within the study area Open Water (OW) 1 and OW2. These are both water treatment/sedimentation basins for a large truck parking area. OW1 is approximately 0.17 acre and OW2 is approximately 0.09 acre, for a total of 0.26 acre. The OWs within the study area are described in Table 2 below.

Table 2: Open Waters

ID	Potentially Jurisdictional	Type	Direction from Interchange	Area (ac.)	Notes
OW1	Yes	Open Water	Southeast	0.17	Water treatment/sedimentation basins for parking lot
OW2	Yes	Open Water	Southeast	0.09	Water treatment/sedimentation basins for parking lot
Total				0.26	

4.1.6 Wetlands

Wetlands are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands may or may not be jurisdictional, depending upon whether they have a significant nexus to a traditional navigable water.

This delineation identified four potentially jurisdictional palustrine emergent (PEM) wetland areas totaling 0.14 acres. Details of the features are included in Table 3 and shown on Figure 3. The wetlands are described below:

Wetland 1 (W1): W1 is a PEM wetland located adjacent to T1 and at a PUBGx NWI feature. The wetland is located southwest of the interchange in between two parking lots. Wetland features observed in the field are documented by Data Sheet W1-1.

Wetland 2 (W2): W2 is a PEM wetland abutting T1. The wetland is located southwest of the interchange to the west of a parking lot. Wetland features observed in the field are documented by Data Sheet W2-1.

Wetland 3 (W3): W3 is a small PEM wetland abutting T7. The wetland is located northwest of the interchange where T7 enters a culvert under US 54. Wetland features observed in the field are documented by Data Sheet W3-1.

Wetland 4 (W4): W4 is a PEM wetland abutting T7. The wetland is located along I-70 northwest of the interchange. Wetland features observed in the field are documented by Data Sheet W4-1.

Non-jurisdictional Roadside Ditch Wetlands (RDWs). There are ten RDWs within the study area. RDWs are wetlands that have formed wholly in ditches that drain only uplands and that do not carry a relatively permanent flow of water, are generally not WOUS because either they are not tributaries, or they do not have a significant nexus to a traditional navigable water. The RDWs would not be present except for the development of roadways where water pools in non-jurisdictional roadside ditches. The RDWs have similar vegetation consisting of nearly 100% cover of cattail (*typha latifolia*) or are sparsely vegetated; they have a similar wetland soil indicator (Reduced Dark Surface); and have similar hydrology indicators (surface water of approximately 1 to 3 inches, saturation, drainage patterns, and FAC-neutral test). A typical photo is included in Appendix B and a typical data form is included in Appendix C. Together, the RDWs total approximately 0.23 acre.

Table 3: Wetlands

ID	Potentially Jurisdictional	Type	Direction from Interchange	Area (ac.)	Notes
W1	Yes	PEM	Southwest	0.02	Adjacent to T1
W2	Yes	PEM	Southwest	0.02	Abutting T1
W3	Yes	PEM	Northwest	0.01	Abutting T7
W4	Yes	PEM	Northwest	0.09	Abutting T7
Total				0.14	

5.0 Conclusion

As part of this study Hg conducted a wetland and stream delineation on November 12, 2021. The purpose of this wetland investigation was to identify the location and extent of jurisdictional waters of the U.S. (WOUS), including wetlands, as regulated under Sections 401 and 404 of the Clean Water Act within the study area. Figures are provided in Appendix A. A photolog and photo location map is provided in Appendix B. Data sheets are provided in Appendix C.

The USACE has jurisdiction over all WOUS and is the regulatory authority for decisions regarding the occurrence of wetlands and other WOUS within the study area. The findings of this report are not valid without written concurrence from the USACE Regulatory Branch. Discharges of dredged or fill materials in WOUS, including wetlands, require prior authorization from the USACE under Section 404 of the Clean Water Act (33 USC 1344).

There are no TNWs within the study area.

Potential intermittent RPWs include T5 and T6 (McKinney Creek). The total length of potential intermittent RPWs identified in the study area was 888 ft.

Potential intermittent non-RPWs include T3. The total length of potentially intermittent non-RPWs identified within study area was 132 ft.

Potential ephemeral non-RPWs include T1, T2, T4, T7, and T8. The total length of potentially intermittent non-RPWs identified within study area was 2,869 ft.

There are two open water areas within the study area OW1 and OW2. These are both water treatment/sedimentation basins for a large truck parking area. OW1 is approximately 0.17 acre and OW2 is approximately 0.09 acre, for a total of 0.26 acre.

This delineation identified four potentially jurisdictional PEM wetland areas totaling 0.14 acres. A summary of these water resources is shown below in Table 4.

1 Table 4: Summary

Stream Summary						
ID	Name	Type	OHWM width (ft)	Length (ft)	Direction from Interchange	Potentially Jurisdictional
T5	Unnamed	Intermittent, RPW	15	38	Northeast	Yes
T6	McKinney Creek	Intermittent, RPW	15	850	North	Yes
Intermittent RPW Subtotal				888		
T3	Unnamed depicted on topographic map	Intermittent, Non-RPW	5	132	Southeast	Yes
Intermittent Non-RPW Subtotal				132		
T1	Unnamed	Ephemeral, Non-RPW	1	704	Southwest	Yes
T2	Unnamed	Ephemeral, Non-RPW	4	136	Southwest	Yes
T4	Unnamed	Ephemeral, Non-RPW	3	57	Northeast	Yes
T7	Unnamed	Ephemeral, Non-RPW	3	1,879	Northwest	Yes
T8	Unnamed	Ephemeral, Non-RPW	4	93	Northwest	Yes
Ephemeral Non-RPW Subtotal				2,869		
Total				3,889		
Open Water Summary						
ID	Potentially Jurisdictional	Type	Direction from Interchange	Area (ac.)	Notes	
OW1	Yes	Open Water	Southeast	0.17	Water treatment/sedimentation basins for parking lot	
OW2	Yes	Open Water	Southeast	0.09	Water treatment/sedimentation basins for parking lot	
Total				0.26		
Wetland Summary						
ID	Potentially Jurisdictional	Type	Direction from Interchange	Area (ac.)	Notes	
W1	Yes	PEM	Southwest	0.02	Adjacent to T1	
W2	Yes	PEM	Southwest	0.02	Abutting T1	
W3	Yes	PEM	Northwest	0.01	Abutting T7	
W4	Yes	PEM	Northwest	0.09	Abutting T7	
Total Wetlands				1.04		

2

6.0 References

- Cowardin, L.M., V. Carter, F.G. Golet, and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31, Washington, DC.
- Kollmorgen Instruments Corporation, 2000. Munsell Soil Color Charts. New York
- Natural Resources Conservation Service. 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. United States Department of Agriculture Handbook 29
- U.S. Geological Survey. 2021. Fulton, Missouri, Quadrangle. TopoView. 7.5-Minute Topographic Series. Accessed on December 9. <https://ngmdb.usgs.gov/topoview/viewer/#12/38.8781/-91.8879>
- U. S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Waterways Experiment Station, Vicksburg, MS.
- USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0). ERDC/EL TR-10-16U.S. Army Engineer Research and Development Center. August.
- U.S. Department of Agriculture (USDA). 2021. Web Soil Survey. Accessed on November 20. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- USDA. 2021a. Hydric Soil List. Natural Resource Conservation Service. November 20. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html
- USDA. 2021b. 2020 Wetland Indicator Status List, Version 3.5. PLANTS Database. Natural Resource Conservation Service. Accessed on November 18. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html
- U.S. Fish and Wildlife Service. 2021. National Wetlands Inventory Online Mapper. Accessed on December 1. <https://www.fws.gov/wetlands/data/mapper.html>.

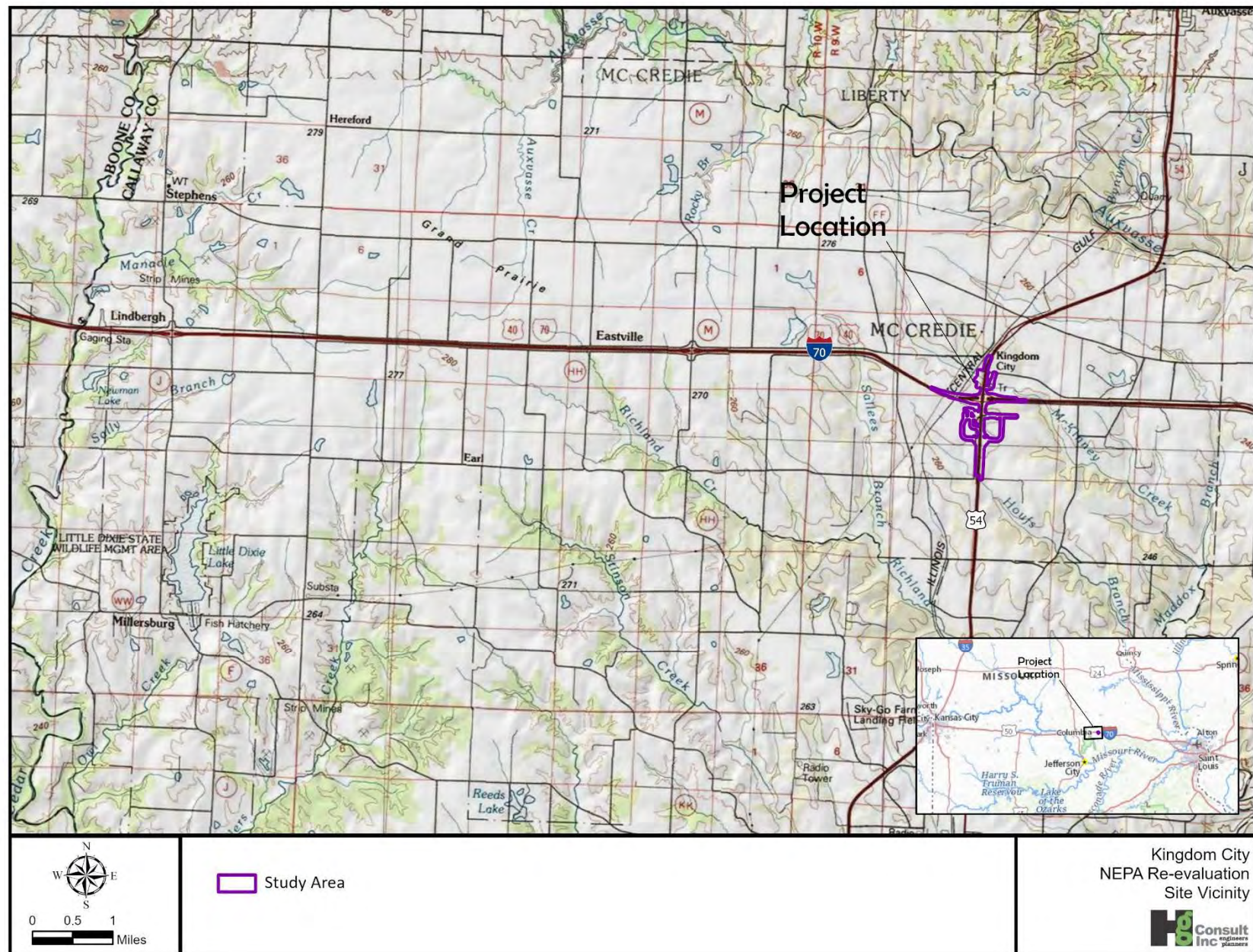
APPENDIX A

Site Vicinity Map

USGS Topographic/National Wetlands Inventory/Soil Survey Map

Waters of the U.S. Map

Figure 1: Site Vicinity Map



Kingdom City
NEPA Re-evaluation
Site Vicinity



Figure 2: USGS Topographic/National Wetlands Inventory/Soil Survey Map

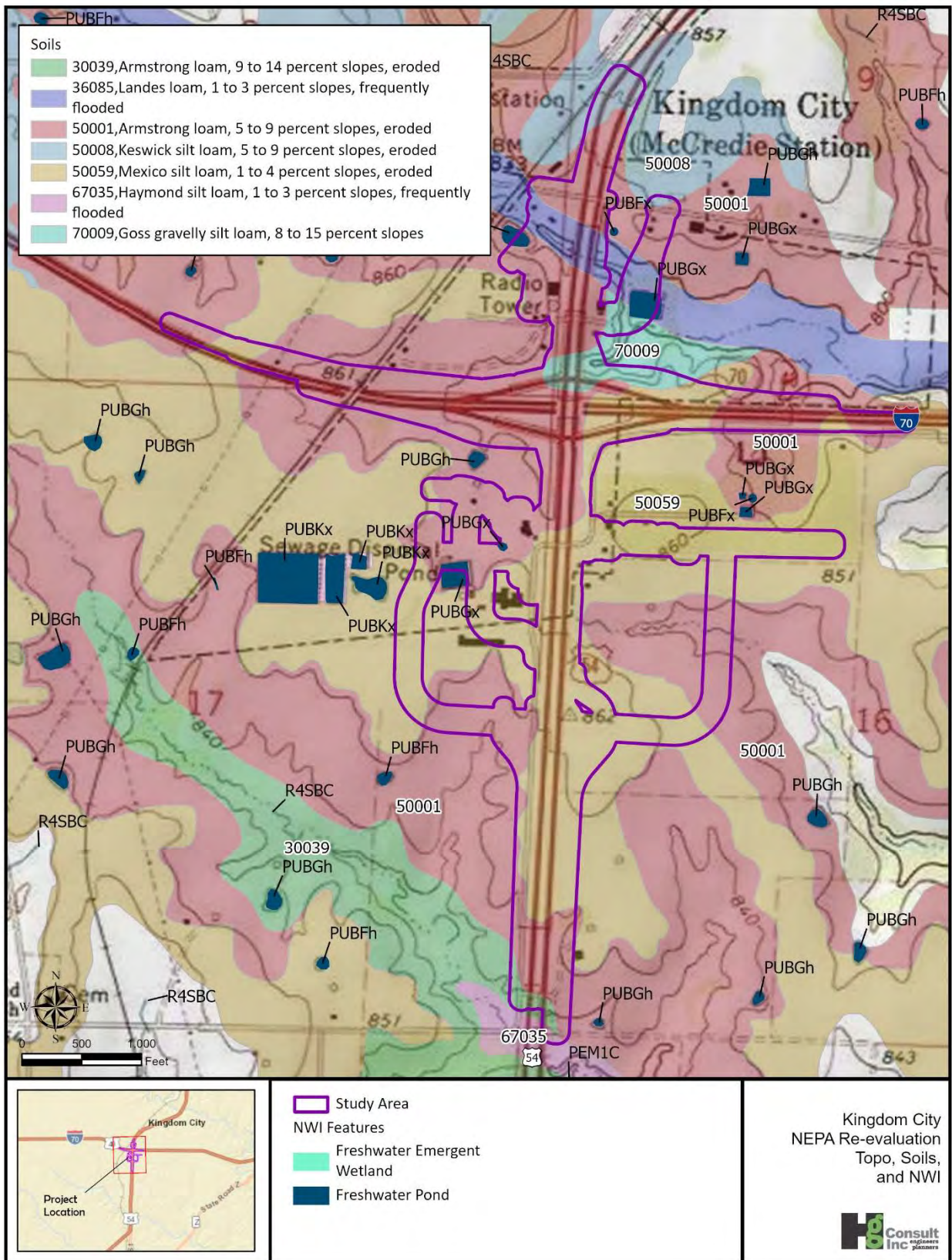


Figure 3, Page 1 of 4: Waters of the U.S. Map

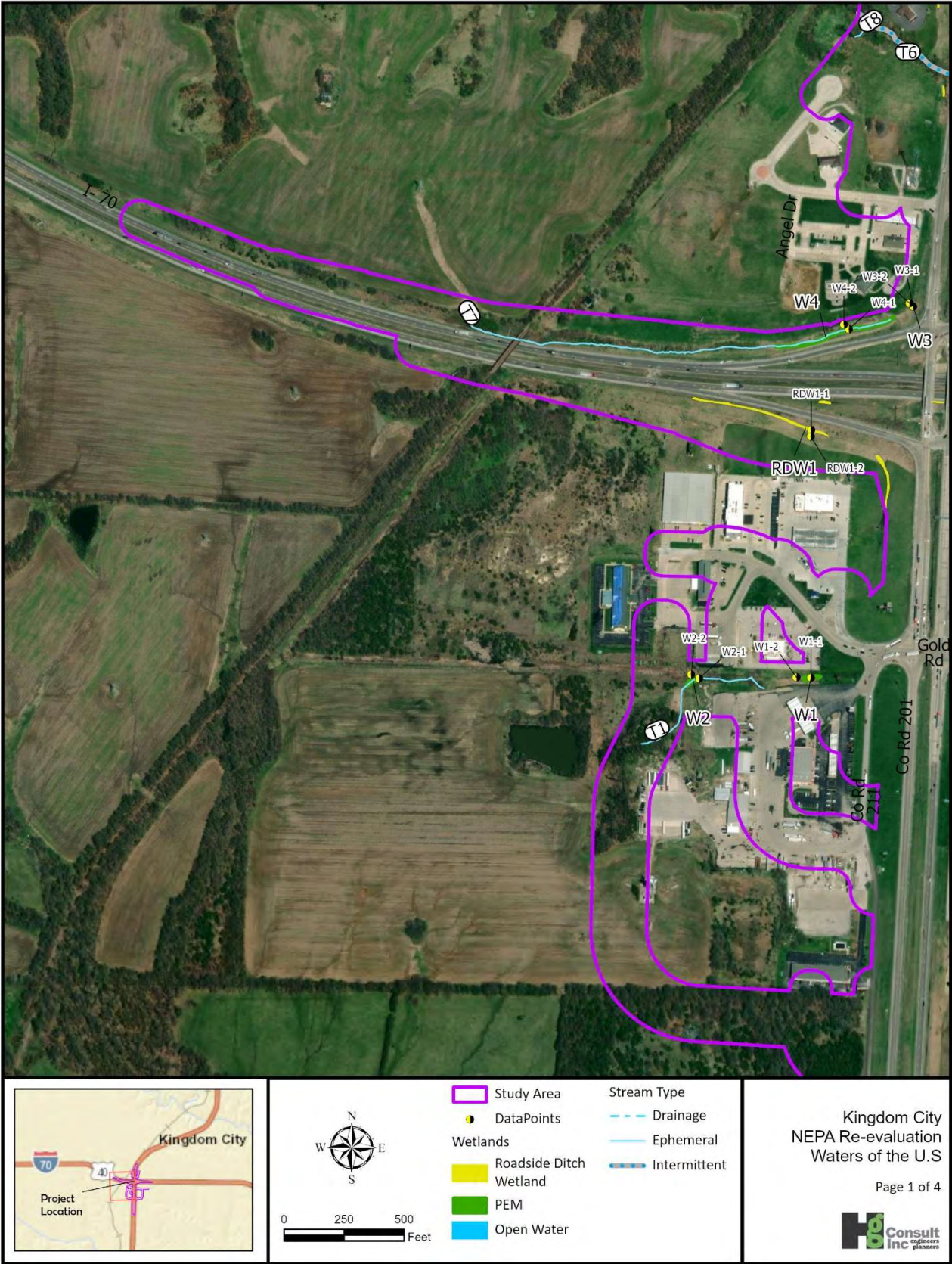


Figure 3, Page 2 of 4: Waters of the U.S. Map

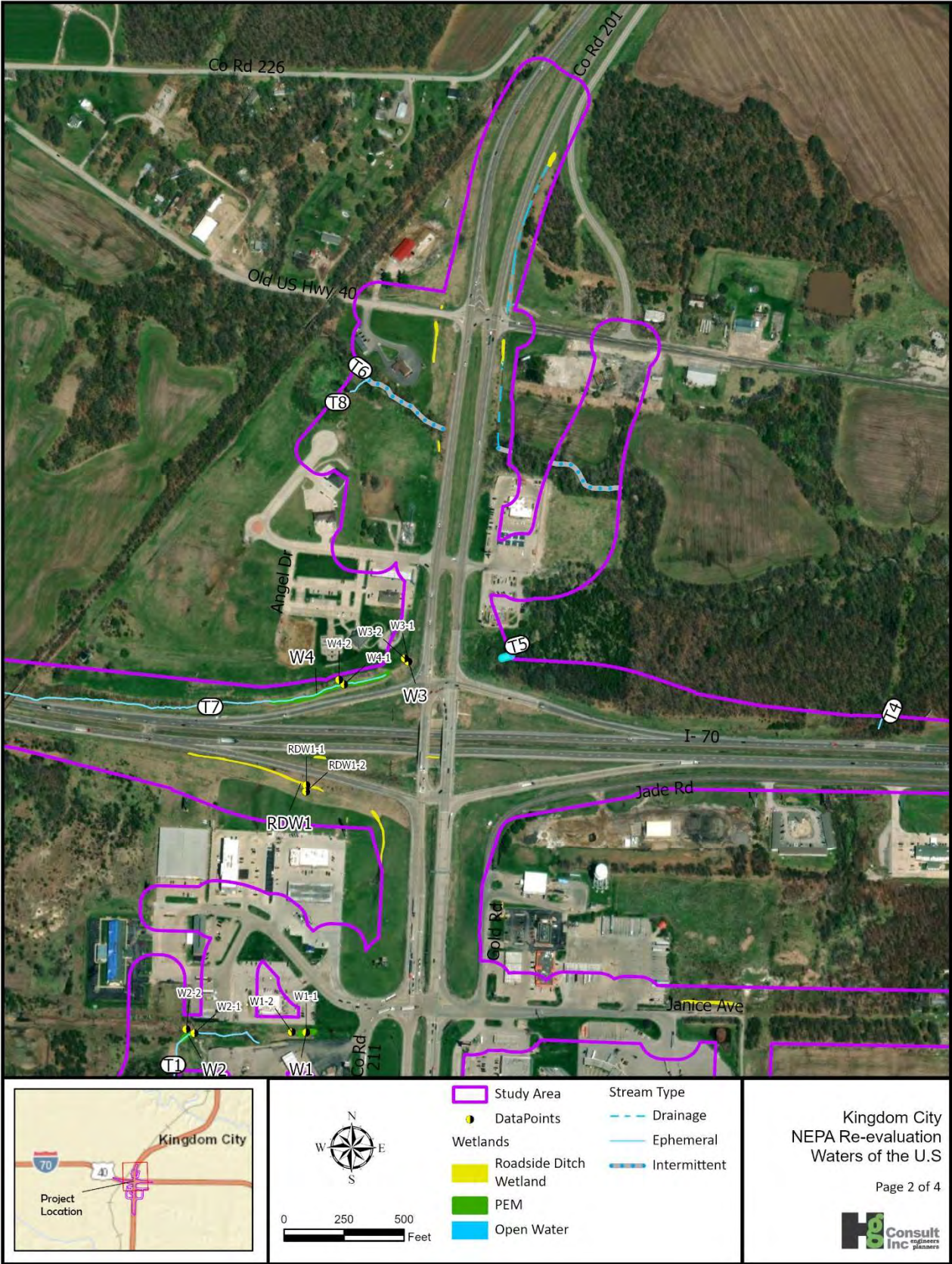


Figure 3, Page 3 of 4: Waters of the U.S. Map

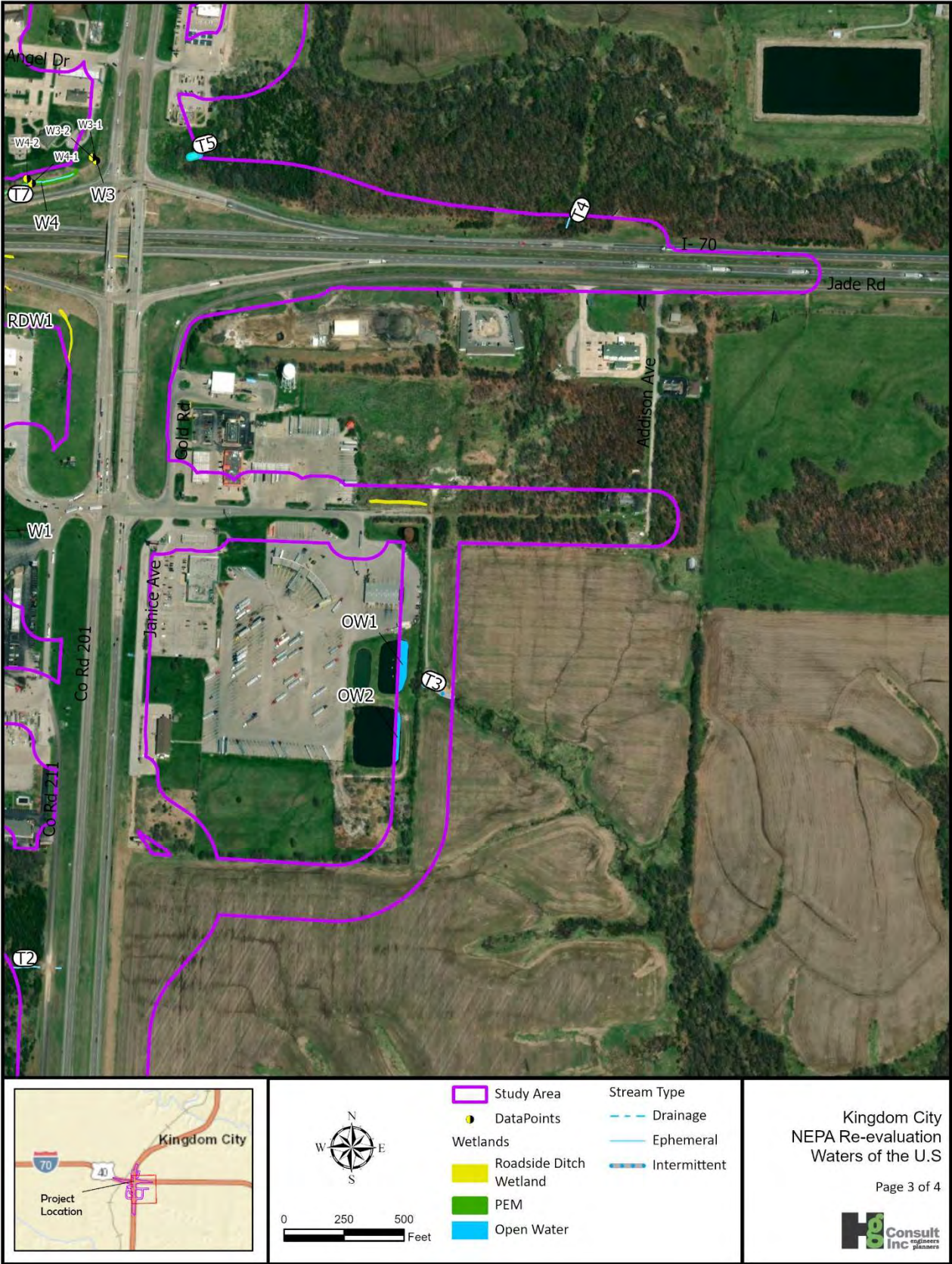


Figure 3, Page 4 of 4: Waters of the U.S. Map

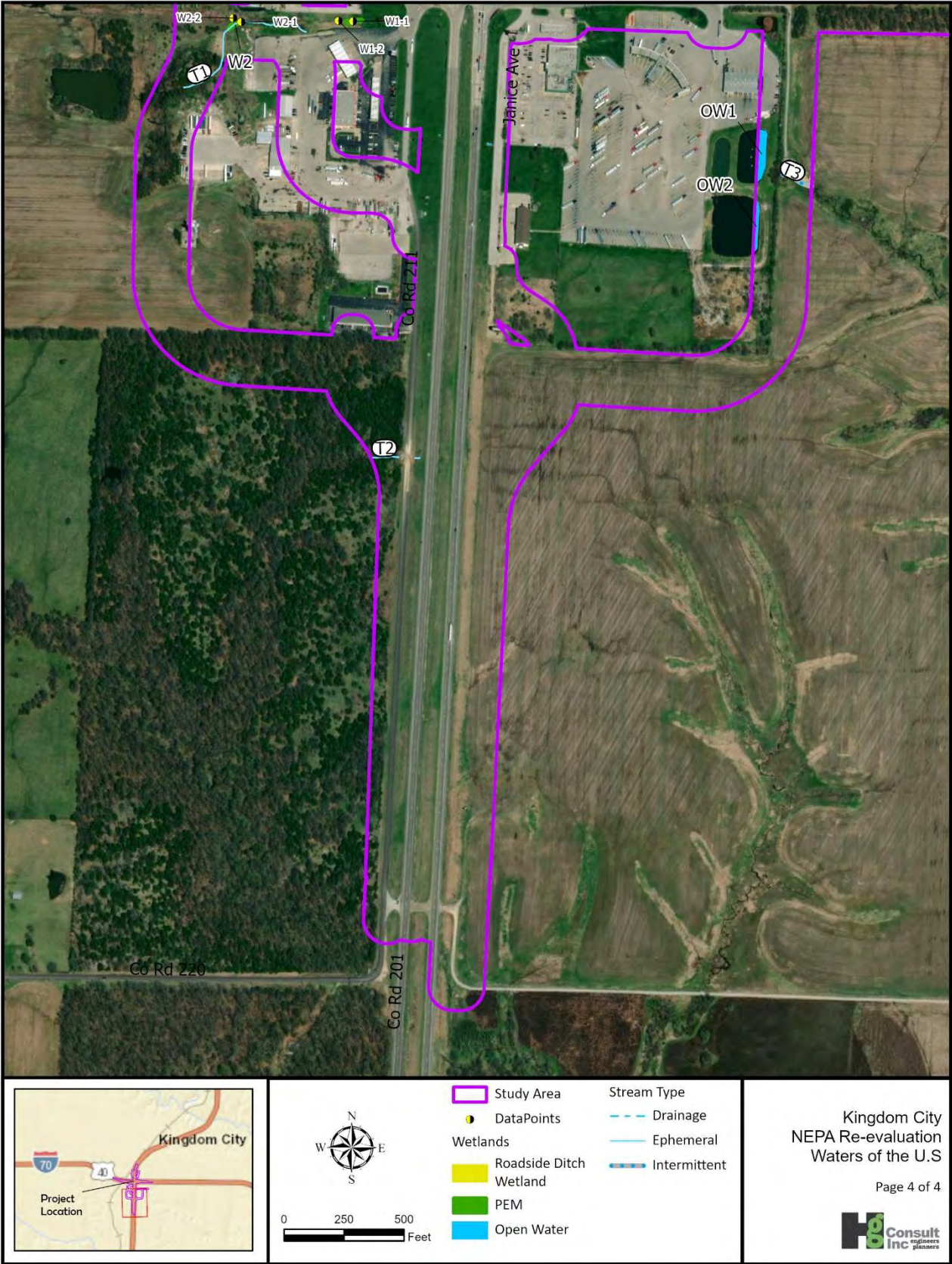
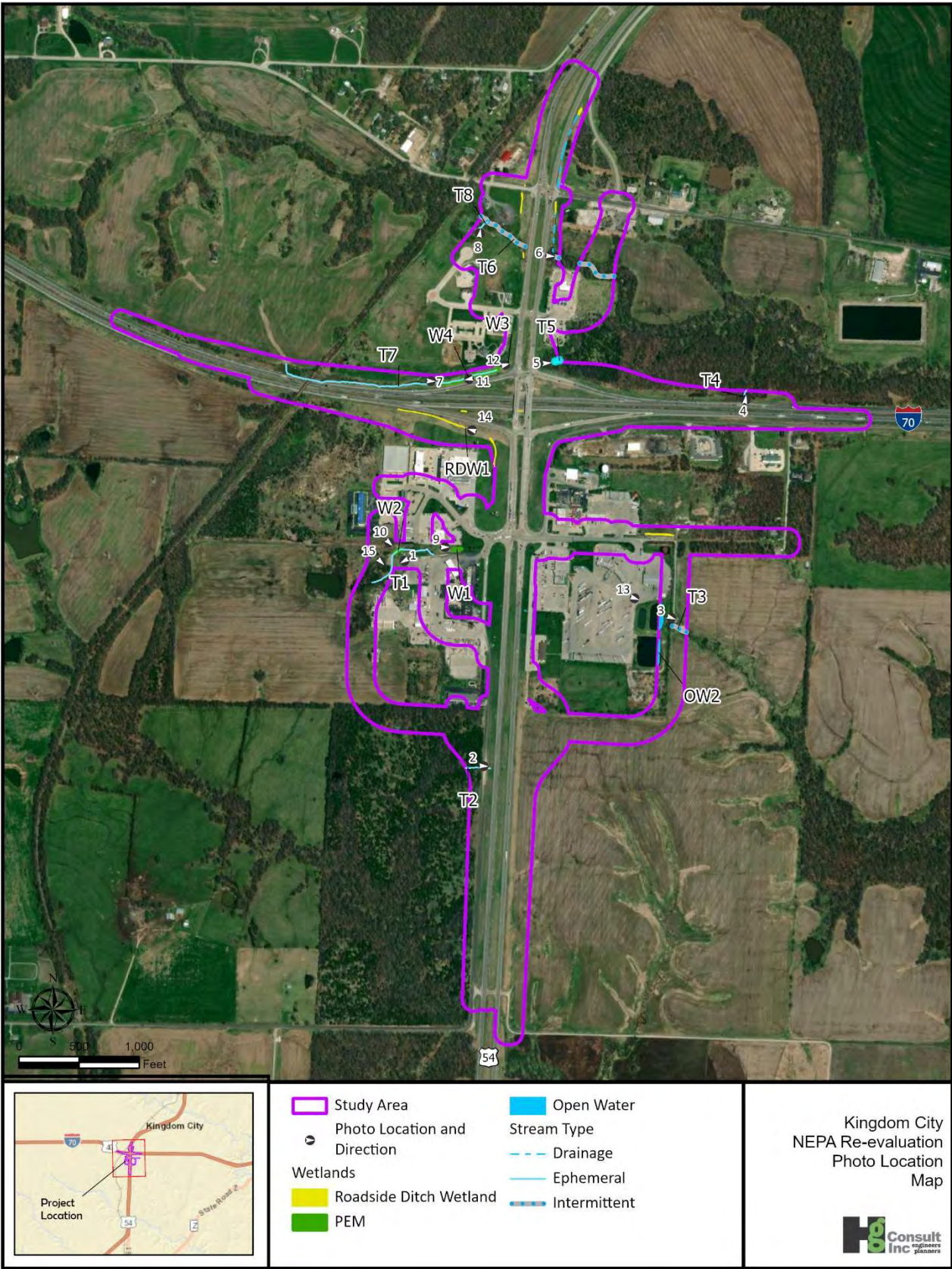


Figure 4: Photo Location Map





Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T1	Photo #: 1
	NOTES	T1 is an unnamed potential ephemeral non-RPW tributary to the southwest of the interchange.	Direction: SW



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T2	Photo #: 2
	NOTES	T2 is an unnamed potential ephemeral non-RPW tributary to the southwest of the interchange.	Direction: E



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T3	Photo #: 3
	NOTES	T3 is an unnamed potential intermittent non-RPW tributary to the southeast of the interchange.	Direction: W



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T4	Photo #: 4
	NOTES	T4 is an unnamed potential ephemeral non-RPW tributary to the east of the interchange.	Direction: S



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T5	Photo #: 5
	NOTES	T5 is an unnamed potential intermittent RPW tributary to the northeast of the interchange.	Direction: E



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T6	Photo #: 6
	NOTES	T6 is McKinney Creek. It is an intermittent RPW tributary to the north of the interchange.	Direction: W



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T7	Photo #: 7
	NOTES	T7 is an unnamed potential ephemeral non-RPW tributary to the northwest of the interchange.	Direction: E



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	T8	Photo #: 8
	NOTES	T8 is an unnamed potential ephemeral non-RPW tributary to the northwest of the interchange. T8 is located at one of the four PUBGx NWI features. The area did not exhibit wetland characteristics.	Direction: NW



Interchange Improvements at the US 54/I-70 interchange in Kingdom City Waters of the U.S. Delineation Date: November 12, 2021	FEATURE	W1	Photo #: 9
	NOTES	W1 is a PEM wetland located adjacent to T1 and at an PUBGx NWI feature. It is located southwest of the interchange in between two parking lots.	Direction: NE



Interchange Improvements at the US 54/I-70 interchange in Kingdom City Waters of the U.S. Delineation Date: November 12, 2021	FEATURE	W2	Photo #: 10
	NOTES	W2 is a PEM wetland abutting T1. It is located southwest of the interchange to the west of a parking lot.	Direction: SW



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	W3	Photo #: 11
	NOTES	W3 is a small PEM wetland abutting T7. The wetland is located northwest of the interchange where T7 enters a culvert under US 54.	Direction: E



Interchange Improvements at the US 54/I-70 interchange in Kingdom City <i>Waters of the U.S. Delineation</i> Date: November 12, 2021	FEATURE	W4	Photo #: 12
	NOTES	W4 is a PEM wetland abutting T7. It is located along I-70 northwest of the interchange.	Direction: W



Interchange Improvements at the US 54/I-70 interchange in Kingdom City Waters of the U.S. Delineation Date: November 12, 2021	FEATURE	OW 1	Photo #: 13
	NOTES	OW1 is an open water area. OW2 was inaccessible for a photo. This photo represents a typical open water feature in the study area.	Direction: SE



Interchange Improvements at the US 54/I-70 interchange in Kingdom City Waters of the U.S. Delineation Date: November 12, 2021	FEATURE	Roadside Ditch Wetland (RDW)	Photo #: 14
	NOTES	There are ten RDWs within the study area. The RDWs would not be present except for the development of roadways where water pools in non-jurisdictional roadside ditches. The RDWs have similar vegetation consisting of nearly 100% cover of cattail (<i>Typha latifolia</i>) or are sparsely vegetated.	Direction: W



Interchange Improvements at the US 54/I-70 interchange in Kingdom City Waters of the U.S. Delineation Date: November 12, 2021	FEATURE	NWI area near W2	Photo #: 15
	NOTES	This photo shows one of the four PUBGx NWI features. Most of the area has been converted to parking lot. The area did not exhibit wetland characteristics.	Direction: SW



Interchange Improvements at the US 54/I-70 interchange in Kingdom City Waters of the U.S. Delineation Date: November 12, 2021	FEATURE	NWI Area near gas station	Photo #: 16
	NOTES	This photo shows one of the four PUBGx NWI features. The area did not exhibit wetland characteristics.	Direction: E

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W1-1
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS17
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave
 Slope (%): 3 Lat: 38.940955 Long: -91.942969 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: PUBGx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Hydric Soil Present? Yes ☒ No ☐	Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Data form is for the in-point for W1.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover: 0 %			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
Total Cover: 0 %			
Herb Stratum (Plot size: 5' radius)			
1. <i>Typha latifolia</i>	75	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 75 %			
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
Total Cover: 0 %			
% Bare Ground in Herb Stratum 25 %			
Remarks: Vegetation is hydrophytic.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	75	x 1 = 75
FACW species		x 2 = 0
FAC species		x 3 = 0
FACU species		x 4 = 0
UPL species		x 5 = 0
Column Totals:	75 (A)	75 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: W1-1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR3/1	100					SiCL	
2-12	10YR3/1	90	10YR4/6	10	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- | |
|---|
| ☐ Coast Prairie Redox (A16) |
| ☐ Dark Surface (S7) |
| ☐ Iron Manganese Masses (F12) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soils are hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|---|---|
| ☒ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☒ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☒ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- | |
|--|
| ☐ Soil Surface Cracks (B6) |
| ☒ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Crayfish Burrows (C8) |
| ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Stunted or Stressed Plants (D1) |
| ☐ Geomorphic Position (D2) |
| ☒ FAC-Neutral Test (D5) |

Field ObservationsSurface Water Present? Yes ☒ No ☐ Depth (inches): 3Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☒ No ☐ Depth (inches): 12
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W1-2
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS17
 Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): none
 Slope (%): 4 Lat: 38.940958 Long: -91.943182 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Hydric Soil Present? Yes ☐ No ☒	Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Data form is for the out-point for W1.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0 %		
Sapling/Shrub Stratum (Plot size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
Total Cover:	0 %		
Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Schedonorus arundinaceus</i>	80	Yes	FACU
2. <i>Dipsacus fullonum</i>	20	No	FACU
3. <i>Sorghum halepense</i>	10	No	FACU
4. <i>Trifolium pratense</i>	5	No	FACU
5.			
6.			
7.			
8.			
Total Cover:	115 %		
Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
Total Cover:	0 %		
% Bare Ground in Herb Stratum	0 %		
Remarks: Vegetation is not hydrophytic.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	0
FAC species	x 3 =	0
FACU species	x 4 =	460
UPL species	x 5 =	0
Column Totals:		115 (A) 460 (B)
Prevalence Index = B/A =		4.00

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

SOIL

Sampling Point: W1-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR3/1	100					SiCL	
6-20	10YR3/2	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- ☐
- Coast Prairie Redox (A16)
-
- ☐
- Dark Surface (S7)
-
- ☐
- Iron Manganese Masses (F12)
-
- ☐
- Very Shallow Dark Surface (TF12)
-
- ☐
- Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soils are not hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☐ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐
- Soil Surface Cracks (B6)
-
- ☐
- Drainage Patterns (B10)
-
- ☐
- Dry-Season Water Table (C2)
-
- ☐
- Crayfish Burrows (C8)
-
- ☐
- Saturation Visible on Aerial Imagery (C9)
-
- ☐
- Stunted or Stressed Plants (D1)
-
- ☐
- Geomorphic Position (D2)
-
- ☐
- FAC-Neutral Test (D5)

Field ObservationsSurface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W2-1
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS17
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave
 Slope (%): 3 Lat: 38.940955 Long: -91.942969 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: PUBGx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Hydric Soil Present? Yes ☒ No ☐	Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Data form is for the in-point for W2.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover: 0 %			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
Total Cover: 0 %			
Herb Stratum (Plot size: 5' radius)			
1. <i>Typha latifolia</i>	85	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 85 %			
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
Total Cover: 0 %			
% Bare Ground in Herb Stratum 15 %			
Remarks: Vegetation is hydrophytic.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	85	x 1 = 85
FACW species		x 2 = 0
FAC species		x 3 = 0
FACU species		x 4 = 0
UPL species		x 5 = 0
Column Totals:	85 (A)	85 (B)
Prevalence Index = B/A =		1.00

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: W2-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR3/1	100					SiCL	
2-12	10YR3/1	90	10YR4/6	10	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soils are hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|--|---|
| ☒ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☒ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Soil Surface Cracks (B6)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field ObservationsSurface Water Present? Yes ☒ No ☐ Depth (inches): 3Water Table Present? Yes ☐ No ☒ Depth (inches):Saturation Present? Yes ☒ No ☐ Depth (inches): 12
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W2-2
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS17
 Landform (hillslope, terrace, etc.): parking lot edge Local relief (concave, convex, none): none
 Slope (%): 4 Lat: 38.940971 Long: -91.944724 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Hydric Soil Present? Yes ☐ No ☒	Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Data form is for the out-point for W2.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0 %		
Sapling/Shrub Stratum (Plot size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
Total Cover:	0 %		
Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Schedonorus arundinaceus</i>	75	Yes	FACU
2. <i>Dipsacus fullonum</i>	25	Yes	FACU
3. <i>Sorghum halepense</i>	10	No	FACU
4. <i>Trifolium pratense</i>	5	No	FACU
5.			
6.			
7.			
8.			
Total Cover:	115 %		
Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
Total Cover:	0 %		
% Bare Ground in Herb Stratum	0 %		
Remarks: Vegetation is not hydrophytic.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	0
FAC species	x 3 =	0
FACU species	x 4 =	460
UPL species	x 5 =	0
Column Totals:		115 (A) 460 (B)
Prevalence Index = B/A =		4.00

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

SOIL

Sampling Point: W2-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR3/1	100					SiCL	
4-20	10YR3/2	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- | |
|---|
| ☐ Coast Prairie Redox (A16) |
| ☐ Dark Surface (S7) |
| ☐ Iron Manganese Masses (F12) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soils are not hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☐ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- | |
|--|
| ☐ Soil Surface Cracks (B6) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Crayfish Burrows (C8) |
| ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Stunted or Stressed Plants (D1) |
| ☐ Geomorphic Position (D2) |
| ☐ FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W3-1
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS08
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave
 Slope (%): 3 Lat: 38.945219 Long: -91.941557 Datum: WGS 84
 Soil Map Unit Name: Goss gravelly silt loam, 8 to 15 percent slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Hydric Soil Present? Yes ☒ No ☐	Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Data form is for the in-point for W3.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1.				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)			
2.				Total Number of Dominant Species Across All Strata: <u>1</u> (B)			
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00%</u> (A/B)			
4.							
Total Cover: <u>0</u> %							
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:			
1.				Total % Cover of: Multiply by:			
2.				OBL species	<u>100</u>	x 1 =	<u>100</u>
3.				FACW species		x 2 =	<u>0</u>
4.				FAC species		x 3 =	<u>0</u>
5.				FACU species		x 4 =	<u>0</u>
Total Cover: <u>0</u> %				UPL species		x 5 =	<u>0</u>
				Column Totals:	<u>100</u>	(A)	<u>100</u> (B)
				Prevalence Index = B/A = <u>1.00</u>			
Herb Stratum (Plot size: 5' radius)				Hydrophytic Vegetation Indicators:			
1. <u>Typha latifolia</u>	<u>100</u>	<u>Yes</u>	<u>OBL</u>	☒ Dominance Test is >50%			
2.				☒ Prevalence Index is ≤3.0 ¹			
3.				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
4.				☐ Problematic Hydrophytic Vegetation ¹ (Explain)			
5.							
6.							
7.							
8.							
Total Cover: <u>100</u> %				¹ Indicators of hydric soil and wetland hydrology must be present.			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Present? Yes ☒ No ☐			
1.							
2.							
Total Cover: <u>0</u> %							
% Bare Ground in Herb Stratum <u>0</u> %							
Remarks: Vegetation is hydrophytic.							

SOIL

Sampling Point: W3-1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR3/1	100					SiCL	
3-12	10YR3/1	90	10YR5/6	10	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- ☐
- Coast Prairie Redox (A16)
-
- ☐
- Dark Surface (S7)
-
- ☐
- Iron Manganese Masses (F12)
-
- ☐
- Very Shallow Dark Surface (TF12)
-
- ☐
- Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soils are hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|--|---|
| ☒ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☒ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐
- Soil Surface Cracks (B6)
-
- ☒
- Drainage Patterns (B10)
-
- ☐
- Dry-Season Water Table (C2)
-
- ☐
- Crayfish Burrows (C8)
-
- ☐
- Saturation Visible on Aerial Imagery (C9)
-
- ☐
- Stunted or Stressed Plants (D1)
-
- ☐
- Geomorphic Position (D2)
-
- ☒
- FAC-Neutral Test (D5)

Field ObservationsSurface Water Present? Yes ☒ No ☐ Depth (inches): 3Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☒ No ☐ Depth (inches): 12
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W3-2
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS08
 Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): none
 Slope (%): 8 Lat: 38.945256 Long: -91.94161 Datum: WGS 84
 Soil Map Unit Name: Goss gravelly silt loam, 8 to 15 percent slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Hydric Soil Present? Yes ☐ No ☒	Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Data form is for the out-point for W3.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> % (A/B)																								
1.																												
2.																												
3.																												
4.																												
Total Cover: <u>0</u> %				Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td>x 1 =</td><td><u>0</u></td></tr> <tr><td>FACW species</td><td>x 2 =</td><td><u>0</u></td></tr> <tr><td>FAC species</td><td>x 3 =</td><td><u>0</u></td></tr> <tr><td>FACU species</td><td>x 4 =</td><td><u>400</u></td></tr> <tr><td>UPL species</td><td>x 5 =</td><td><u>0</u></td></tr> <tr><td>Column Totals:</td><td><u>100</u> (A)</td><td><u>400</u> (B)</td></tr> <tr><td colspan="2">Prevalence Index = B/A =</td><td><u>4.00</u></td></tr> </tbody> </table>	Total % Cover of:	Multiply by:		OBL species	x 1 =	<u>0</u>	FACW species	x 2 =	<u>0</u>	FAC species	x 3 =	<u>0</u>	FACU species	x 4 =	<u>400</u>	UPL species	x 5 =	<u>0</u>	Column Totals:	<u>100</u> (A)	<u>400</u> (B)	Prevalence Index = B/A =		<u>4.00</u>
Total % Cover of:	Multiply by:																											
OBL species	x 1 =	<u>0</u>																										
FACW species	x 2 =	<u>0</u>																										
FAC species	x 3 =	<u>0</u>																										
FACU species	x 4 =	<u>400</u>																										
UPL species	x 5 =	<u>0</u>																										
Column Totals:	<u>100</u> (A)	<u>400</u> (B)																										
Prevalence Index = B/A =		<u>4.00</u>																										
Sapling/Shrub Stratum (Plot size: 15' radius)																												
1.																												
2.																												
3.																												
4.																												
5.																												
Total Cover: <u>0</u> %																												
Herb Stratum (Plot size: 5' radius)				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.																								
1. <u>Schedonorus arundinaceus</u>	<u>100</u>	<u>Yes</u>	<u>FACU</u>																									
2.																												
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
Total Cover: <u>100</u> %																												
Woody Vine Stratum (Plot size: 30' radius)																												
1.																												
2.																												
Total Cover: <u>0</u> %																												
% Bare Ground in Herb Stratum <u>0</u> %																												

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: Vegetation is not hydrophytic. Maintained/mowed roadside area

SOIL

Sampling Point: W3-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR3/1	100					SiCL	
4-20	10YR3/2	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- ☐
- Coast Prairie Redox (A16)
-
- ☐
- Dark Surface (S7)
-
- ☐
- Iron Manganese Masses (F12)
-
- ☐
- Very Shallow Dark Surface (TF12)
-
- ☐
- Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soils are not hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☐ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐
- Soil Surface Cracks (B6)
-
- ☐
- Drainage Patterns (B10)
-
- ☐
- Dry-Season Water Table (C2)
-
- ☐
- Crayfish Burrows (C8)
-
- ☐
- Saturation Visible on Aerial Imagery (C9)
-
- ☐
- Stunted or Stressed Plants (D1)
-
- ☐
- Geomorphic Position (D2)
-
- ☐
- FAC-Neutral Test (D5)

Field ObservationsSurface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W4-1
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS08
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave
 Slope (%): 4 Lat: 38.944948 Long: -91.942493 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Hydric Soil Present? Yes ☒ No ☐	Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Data form is for the in-point for W4.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover: 0 %			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
Total Cover: 0 %			
Herb Stratum (Plot size: 5' radius)			
1. <i>Typha latifolia</i>	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 100%			
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
Total Cover: 0 %			
% Bare Ground in Herb Stratum 0 %			
Remarks: Vegetation is hydrophytic.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 100	x 1 = 100
FACW species	x 2 = 0
FAC species	x 3 = 0
FACU species	x 4 = 0
UPL species	x 5 = 0
Column Totals: 100	(A) 100 (B)
Prevalence Index = B/A = 1.00	

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: W4-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR3/1	100					SiCL	
3-12	10YR3/2	90	10YR5/6	10	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soils are hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|--|---|
| ☒ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☒ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Soil Surface Cracks (B6)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)

Field ObservationsSurface Water Present? Yes ☒ No ☐ Depth (inches): 2Water Table Present? Yes ☐ No ☒ Depth (inches):Saturation Present? Yes ☒ No ☐ Depth (inches): 12

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: W4-2
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS08
 Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): none
 Slope (%): 8 Lat: 38.944999 Long: -91.942566 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: <u>Data form is for the out-point for W4.</u>	

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> % (A/B)																								
1.																												
2.																												
3.																												
4.																												
Total Cover: <u>0</u> %				Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td>x 1 =</td><td><u>0</u></td></tr> <tr><td>FACW species</td><td>x 2 =</td><td><u>0</u></td></tr> <tr><td>FAC species</td><td>x 3 =</td><td><u>0</u></td></tr> <tr><td>FACU species</td><td>x 4 =</td><td><u>400</u></td></tr> <tr><td>UPL species</td><td>x 5 =</td><td><u>0</u></td></tr> <tr><td>Column Totals:</td><td><u>100</u> (A)</td><td><u>400</u> (B)</td></tr> <tr><td colspan="2">Prevalence Index = B/A =</td><td><u>4.00</u></td></tr> </tbody> </table>	Total % Cover of:	Multiply by:		OBL species	x 1 =	<u>0</u>	FACW species	x 2 =	<u>0</u>	FAC species	x 3 =	<u>0</u>	FACU species	x 4 =	<u>400</u>	UPL species	x 5 =	<u>0</u>	Column Totals:	<u>100</u> (A)	<u>400</u> (B)	Prevalence Index = B/A =		<u>4.00</u>
Total % Cover of:	Multiply by:																											
OBL species	x 1 =	<u>0</u>																										
FACW species	x 2 =	<u>0</u>																										
FAC species	x 3 =	<u>0</u>																										
FACU species	x 4 =	<u>400</u>																										
UPL species	x 5 =	<u>0</u>																										
Column Totals:	<u>100</u> (A)	<u>400</u> (B)																										
Prevalence Index = B/A =		<u>4.00</u>																										
<u>Sapling/Shrub Stratum</u> (Plot size: 15' radius)																												
1.																												
2.																												
3.																												
4.																												
5.																												
Total Cover: <u>0</u> %																												
<u>Herb Stratum</u> (Plot size: 5' radius)				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.																								
1. <u>Schedonorus arundinaceus</u>	<u>100</u>	<u>Yes</u>	<u>FACU</u>																									
2.																												
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
Total Cover: <u>100</u> %																												
<u>Woody Vine Stratum</u> (Plot size: 30' radius)																												
1.																												
2.																												
Total Cover: <u>0</u> %																												
% Bare Ground in Herb Stratum <u>0</u> %				Hydrophytic Vegetation Present? Yes ☐ No ☒																								

Remarks: Vegetation is not hydrophytic. Maintained/mowed roadside area

SOIL

Sampling Point: W4-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR3/1	100					SiCL	
2-20	10YR3/2	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- | |
|---|
| ☐ Coast Prairie Redox (A16) |
| ☐ Dark Surface (S7) |
| ☐ Iron Manganese Masses (F12) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soils are not hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☐ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- | |
|--|
| ☐ Soil Surface Cracks (B6) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Crayfish Burrows (C8) |
| ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Stunted or Stressed Plants (D1) |
| ☐ Geomorphic Position (D2) |
| ☐ FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: NWI1
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS17
 Landform (hillslope, terrace, etc.): parking lot edge Local relief (concave, convex, none): none
 Slope (%): 3 Lat: 38.940614 Long: -91.944755 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Hydric Soil Present? Yes ☐ No ☒	Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Data form is for NWI1. The area does not have any wetland indicators.			

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0 %		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0 %		
Herb Stratum (Plot size: 5' radius)			
1. <i>Schedonorus arundinaceus</i>	55	Yes	FACU
2. <i>Dipsacus fullonum</i>	20	No	FACU
3. <i>Sorghum halepense</i>	20	Yes	FACU
4. <i>Trifolium pratense</i>	5	No	FACU
5.			
6.			
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
Total Cover:	0 %		
% Bare Ground in Herb Stratum	0 %		
Remarks: Vegetation is not hydrophytic.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	0
FAC species	x 3 =	0
FACU species	x 4 =	400
UPL species	x 5 =	0
Column Totals:		100 (A) 400 (B)
Prevalence Index = B/A =		4.00

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

SOIL

Sampling Point: NW11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR3/1	100					SiCL	
6-20	10YR3/2	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- ☐
- Coast Prairie Redox (A16)
-
- ☐
- Dark Surface (S7)
-
- ☐
- Iron Manganese Masses (F12)
-
- ☐
- Very Shallow Dark Surface (TF12)
-
- ☐
- Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soils are not hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☐ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐
- Soil Surface Cracks (B6)
-
- ☐
- Drainage Patterns (B10)
-
- ☐
- Dry-Season Water Table (C2)
-
- ☐
- Crayfish Burrows (C8)
-
- ☐
- Saturation Visible on Aerial Imagery (C9)
-
- ☐
- Stunted or Stressed Plants (D1)
-
- ☐
- Geomorphic Position (D2)
-
- ☐
- FAC-Neutral Test (D5)

Field ObservationsSurface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: NWI2
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS09
 Landform (hillslope, terrace, etc.): field Local relief (concave, convex, none): none
 Slope (%): 1 Lat: 38.946510 Long: -91.939364 Datum: WGS 84
 Soil Map Unit Name: Goss gravelly silt loam, 8 to 15 percent slopes NWI classification: PUBGx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area within a Wetland?	Yes ☐	No ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			
Remarks: Data form is for NWI2. The area does not have any wetland indicators.					

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.				Number of Dominant Species That Are OBL, FACW, or FAC:	0 (A)
2.				Total Number of Dominant Species Across All Strata:	2 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC:	0.00 % (A/B)
4.					
Total Cover: 0 %					
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1.				Total % Cover of:	Multiply by:
2.				OBL species	x 1 = 0
3.				FACW species	x 2 = 0
4.				FAC species	x 3 = 0
5.				FACU species	105 x 4 = 420
Total Cover: 0 %				UPL species	x 5 = 0
				Column Totals:	105 (A) 420 (B)
				Prevalence Index = B/A = 4.00	
Herb Stratum (Plot size: 5' radius)				Hydrophytic Vegetation Indicators:	
1. <i>Schedonorus arundinaceus</i>	55	Yes	FACU	☒ Dominance Test is >50%	
2. <i>Dipsacus fullonum</i>	20	No	FACU	☒ Prevalence Index is ≤3.0 ¹	
3. <i>Sorghum halepense</i>	10	No	FACU	☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4. <i>Trifolium pratense</i>	5	No	FACU	☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
5. <i>Setaria pumila</i>	15	No	FAC	¹ Indicators of hydric soil and wetland hydrology must be present.	
6.					
7.					
8.					
Total Cover: 105 %					
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Present?	
1.				Yes ☐	No ☒
2.					
Total Cover: 0 %					
% Bare Ground in Herb Stratum 0 %					
Remarks: Vegetation is not hydrophytic.					

SOIL

Sampling Point: NW12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR3/1	100					SiCL	
2-20	10YR3/2	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- | |
|---|
| ☐ Coast Prairie Redox (A16) |
| ☐ Dark Surface (S7) |
| ☐ Iron Manganese Masses (F12) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soils are not hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☐ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- | |
|--|
| ☐ Soil Surface Cracks (B6) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Crayfish Burrows (C8) |
| ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Stunted or Stressed Plants (D1) |
| ☐ Geomorphic Position (D2) |
| ☐ FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-70/54 Kingdom City NEPA Re-evaluation City/County: Kingdom City, Callaway Sampling Date: 11/12/21
 Applicant/Owner: MoDOT State: MO Sampling Point: RDW1
 Investigator(s): C. Thomas PWS Section, Township, Range: T48NR09WS17
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave
 Slope (%): 2 Lat: 38.943787 Long: -91.943022 Datum: WGS 84
 Soil Map Unit Name: Armstrong loam, 5 to 9 percent slopes, eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland?	Yes ☒	No ☐
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			
Remarks: RDW1 is a roadside ditch wetland. Roadside ditches are wholly in and draining only uplands and do not carry a relatively permanent flow of water. These ditches and wetlands generally are not jurisdictional under the CWA, because they are not tributaries or do not have a significant nexus to TNWs. This data form represents the typical conditions of all roadside ditch wetlands in the area.					

VEGETATION

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1.				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)			
2.				Total Number of Dominant Species Across All Strata: <u>1</u> (B)			
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00%</u> (A/B)			
4.							
Total Cover: <u>0</u> %							
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:			
1.				Total % Cover of: Multiply by:			
2.				OBL species	<u>100</u>	x 1 =	<u>100</u>
3.				FACW species		x 2 =	<u>0</u>
4.				FAC species		x 3 =	<u>0</u>
5.				FACU species		x 4 =	<u>0</u>
Total Cover: <u>0</u> %				UPL species		x 5 =	<u>0</u>
				Column Totals:	<u>100</u>	(A)	<u>100</u> (B)
				Prevalence Index = B/A = <u>1.00</u>			
Herb Stratum (Plot size: 5' radius)				Hydrophytic Vegetation Indicators:			
1. <u>Typha latifolia</u>	<u>100</u>	<u>Yes</u>	<u>OBL</u>	☒ Dominance Test is >50%			
2.				☒ Prevalence Index is ≤3.0 ¹			
3.				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
4.				☐ Problematic Hydrophytic Vegetation ¹ (Explain)			
5.							
6.							
7.							
8.							
Total Cover: <u>100%</u>							
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Present?			
1.				Yes ☒ No ☐			
2.							
Total Cover: <u>0</u> %							
% Bare Ground in Herb Stratum <u>0</u> %							

Remarks: Vegetation is hydrophytic.

SOIL

Sampling Point: RDW1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc ²	Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-12	10YR3/1	90	5YR5/6	10	C	M	SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Gleyed Matrix (S4) |
| ☐ Histic Epipedon (A2) | ☐ Sandy Redox (S5) |
| ☐ Black Histic (A3) | ☐ Stripped Matrix (S6) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ 2 cm Muck (A10) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ 5cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:⁴

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soils are hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

- | | |
|--|---|
| ☒ Surface Water (A1) | ☐ Water Stained Leaves (B9) |
| ☐ High Water Table (A2) | ☐ Aquatic Fauna (B13) |
| ☒ Saturation (A3) | ☐ True Aquatic Plants (B14) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres on Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Thin Muck Surface (C7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Gauge or Well Data (D9) |
| ☐ Sparsely Vegetated Concave Surface (B8) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Soil Surface Cracks (B6)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)

Field ObservationsSurface Water Present? Yes ☒ No ☐Depth (inches): 1Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☒ No ☐
(includes capillary fringe)Depth (inches): 12Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland hydrology is present.

Appendix E

State Historic Preservation Office Concurrence Letter

CULTURAL RESOURCE COMMENTS
Section 106 Review

CONTACT PERSON/ADDRESS:

Michael Meinkoth
Historic Preservation Manager
Missouri Department of Transportation
P.O. Box 270
Jefferson City, Missouri 65102

COPIED:

Raegan Ball, FHWA
Michael Meyer, MoDOT
Taylor Peters, FHWA

PROJECT:

Phase I Cultural Resources Survey of Intersection Improvements on Route 54, MoDOT Job No. J5P3417

FEDERAL AGENCY:

FHWA

COUNTY:

Callaway

The Missouri State Historic Preservation Office (SHPO) has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:

☐

Adequate documentation has been provided as outlined in 36 CFR Section 800.11. After review of the initial submission, the project area has no known historic properties present and a low potential for the occurrence of cultural resources. SHPO concurs with your determination of **No Historic Properties Affected**.

☐

An adequate cultural resource survey of the project area has been previously conducted; therefore, SHPO concurs with your determination of **No Historic Properties Affected**.

☒

An adequate cultural resource survey has been conducted for this project titled *Cultural Resources Survey: Callaway County, Route 54, MoDOT Job No. J5P3417* by Thomas Collins and Tyler Holladay. Based on this survey and its negative findings, SHPO concurs with your determination of **No Historic Properties Affected**.

PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK CHANGES, SUCH AS A BORROW AREA BEING ADDED, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of consultation with SHPO under Section 106 of the National Historic Preservation Act, as amended. SHPO concurrence does not complete the Section 106 process as federal agencies will need to conduct consultation with all interested parties.

By:

Toni M. Prawl

Toni M. Prawl, Ph.D., Deputy State Historic Preservation Officer

June 15, 2022

Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176, Jefferson City, Missouri 65102

If you have any questions, please respond to Jeffrey.Alvey@dnr.mo.gov, or call (573) 751-7862.

Please be sure to refer to the project number: **002-MLT-20**