

Federal Highway Administration
Finding of No Significant Impact
for

Kansas Expressway Extension Project
Greene County, Missouri

Federal Aid No. 5909(802)

The Federal Highway Administration (FHWA) has determined that the Kansas Expressway Extension will not have any significant impact on the human environment. This finding of no significant impact is based on the environmental assessment referenced above and subsequent agency and public involvement that is summarized in the attached supporting documentation. This information has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues and impacts of the proposed project and appropriate mitigation measures.

8/24/17
Date of Approval


Responsible Official

Program Development Team Leader
Title

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Finding of No Significant Impact

23 CFR 771.121

**Missouri Department of Transportation
Federal Highway Administration**

FHWA Division	Federal Aid Number	Project Title Environmental Document Type
Missouri	5909(802)	Kansas Expressway Extension Project Environmental Assessment Greene County, Missouri

DECISION

The Federal Highway Administration (FHWA) approved the *Kansas Expressway Extension Project: Environmental Assessment*, Greene County, Missouri, Federal Aid Number 5909(802), Environmental Assessment (EA) on March 2, 2017. Notice of the EA's availability was sent to agencies and the document was made available for public review on March 7, 2017. The EA was available at seven locations (Greene County Courthouse; City of Springfield City Hall; MoDOT District Office in Springfield, Missouri; The Library Center in Springfield, Missouri; Springfield City Utilities; Christian County Courthouse; and City of Nixa City Hall) and also was posted on the Greene County website at https://greenecountymo.gov/highway/future_projects.php.

Upon further review by FHWA, MoDOT, and Greene County, the following corrections to the EA are noted as part of this Finding of No Significant Impact (FONSI)¹:

1. *Section 3.3.2, Page 3-20.* REPLACE "One of the impacted properties in leased to Greene County and is on the northeast corner of Kansas Ave (Farm Road 145), and Weaver Road is a month-to-month lease." WITH "One of the impacted properties is owned and leased out by Greene County and is on the northeast corner of Kansas Ave (Farm Road 145), and Weaver Road. The property is leased month-to-month."
2. *Section 3.6.2, Page 3-28.* REPLACE "The noise wall is likely to be located between stations 108+00 and 112+40..." WITH "The noise wall is likely to be located between stations 108+00 and 126+00..."
3. *Section 3.8.7.1, Page 3-39.* REPLACE "One bridge would be constructed for a perennial stream, Ward Branch (S-4), and one box culvert would be constructed for a perennial stream, Workman Branch (S-6), within the Study Corridor." WITH "One span style bridge structure would be constructed for a perennial stream crossing over Ward Branch (S-4). The crossing of Workman Branch (S-6), a perennial stream, would be constructed as a box culvert, however, a span style bridge may be considered to potentially reduce streambed impacts or provide added value."
4. *Section 3.11.1, Page 3-53.* ADD "The sedimentary rock sequence in the Springfield Plateau area also contains limestone and shale units." AFTER "The sedimentary rock sequence in the

¹ Errata in the list above include both grammatical edits that did not significantly change the determinations and/or findings of the EA, as well as additional information obtained from agencies and edits that provide more details or clarity regarding the Project. Numbers 1, 2, 3, 7, and 8 are discussed in Section 2 of this FONSI.

Springfield Plateau general consists of dolomitic units ranging in thickness from approximately 100 to 400 feet with intermixed sandstone layers that range in thickness from 5 to 200 feet.”

5. *Section 3.11.1, Page 3-53.* REPLACE “Mississippian-age units, which crop out across southwestern Missouri, include the Cotter Formation, the Compton Formation, the Sedalia Formation, the Northview Formation, the Pierson Limestone, the Reeds Spring Formation, the Elsey Formation, and the Burlington-Keokuk Limestone.” WITH “Mississippian-age units, which crop out across southwestern Missouri, include the Compton Formation, the Sedalia Formation, the Northview Formation, the Pierson Limestone, the Reeds Spring Formation, the Elsey Formation, and the Burlington-Keokuk Limestone.”
6. *Section 3.16.2.9, Page 3-73.* REPLACE “In order to ensure compliance with applicable state laws the MoDOT Construction Inspector or Resident Engineer cannot release remains or artifacts...” WITH “In order to ensure compliance with applicable state laws the Greene County Construction Inspector or Chief Engineer cannot release remains or artifacts...”
7. *Section 3.16.2.9, Page 3-73.* ADD sub-heading “Cultural Resources” AFTER “Approval of borrow or waste sites is also contingent upon receiving appropriate wildlife and/or archaeological clearances.”
8. *Section 4.1, Page 4-1.* REPLACE “A noise wall would also be likely to be located between stations 108+00 and 112+40...” WITH “A noise wall would also be likely to be located between stations 108+00 and 126+00...”

The Selected Alternative, the Kansas Expressway Extension, shown on maps included in Appendix A, will address the lack of existing north-south connections between southern Greene County and northern Christian County, Missouri. The Selected Alternative would shift more traffic from the Cox Road corridor, provide a newer and safer relief route for existing and future traffic, provide a better transportation network to accommodate existing and projected growth, and provide improved linkages to the area trail networks. The Selected Alternative provides for construction of a new initial two-lane extension of the Kansas Expressway and eventually a four-lane facility as traffic conditions warrant. The Kansas Expressway Extension would include a multi-use trail on one side of the roadway and a sidewalk on the other, which would improve both bicycle and pedestrian connectivity, especially to the existing Ward Branch Trail.

The Selected Alternative was identified through an assessment of socioeconomic and environmental consequences, existing and future traffic service, and consideration of public and agency input. Greene County conducted a public hearing in accordance with established MoDOT procedures. FHWA, Greene County, and MoDOT have considered possible social, economic, and environmental effects of the proposed improvements in making the selection of the proposed course of action. Greene County will implement the commitments in Section 3 of this FONSI during the course of the Project.

The Project is consistent with local planning goals and objectives, and there are no potential conflicts of interest on this Project. FHWA and Greene County have committed funds toward the design and construction of the new expressway.

1.0 PUBLIC AND AGENCY REVIEW/COMMENTS ON EA

1.1 INDIVIDUAL PUBLIC COMMENTS

A public hearing was held March 23, 2017, at the Wanda Gray Elementary School, Springfield, Missouri from 6:00 p.m. to 8:00 p.m. Appendix B includes the EA Notice of Availability and distribution list. A total of 126 people attended the hearing. Comment cards were available for attendees to provide written feedback. Also, a stenographer was available to take verbal comments. The public could also submit online comments via the Project website. The public hearing materials (EA document and public hearing displays) were also available for viewing at https://greencountymo.gov/highway/future_projects.php, by those not able to attend the public hearing in person. The public hearing materials are included in Appendix C of this document. The public comment period for the EA was originally scheduled to conclude on April 7, 2017. The public comment period was extended at the request of Mr. Thomas N. George of Spencer Fane LLP on behalf of the Timberbrook Property Owners Association, and concluded on April 22, 2017. Thirty-seven written comments were received from the public and local stakeholders (Appendix D): 24 comment cards were submitted during the public hearing, 2 comment cards were received by mail, 1 comment letter was received by mail, 2 comments were received through email, and 8 comments were submitted via the online comment card. Additionally, four verbal comments were provided to the stenographer at the public hearing. In addition to providing general support for the Project, most comments were made in the twelve following areas:

Connectivity – Eight commenters questioned why the Preferred Alternative stops at Farm Road 190.

RESPONSE – *The southern terminus of the study was stopped at Farm Road 190 for the following reasons.*

- A) *Stopping at Farm Road (FR) 190 extends the Kansas Expressway within Greene County and makes use of suitable existing infrastructure (connection to FR 141) to facilitate movement north and south. Without a connection to FR 141 at FR 190, additional infrastructure, and the associated cost and impacts, would be required as part of this Project. As discussed below, connection to FR 141 at FR 190 provides sufficient capacity for the vehicle levels modeled for the Project, meeting the purpose and need for the Project.*

The Project is one of several identified in the OTO's Long Range Plan necessary to provide north south connectivity between Christian and Greene Counties and Springfield and Nixa. As discussed in detail in the EA, the Project is intended to be developed in phases, first as a two-lane facility with upgrade to a four-lane full build out as required in the future. Should other plans and projects proposed as part of the OTO's Long Range Plan not occur or be delayed, the initially constructed two-lane facility will be able to carry approximately 15,000 vehicles a day at an acceptable Level of Service. With 2040 projections peaking at 18,920 modeled vehicles per day for the proposed four-lane facility, constructing the Preferred Alternative as an initial two-lane facility is projected to meet travel demand at an acceptable Level of Service through 2037.

Under these levels of modeled traffic volumes, and assuming no infrastructure changes to FR 141 (Cox Road), FR 141 provides sufficient infrastructure for traffic moving to and from the Project, connecting north and south. Three components were modeled to characterize the Preferred Alternatives traffic considerations. These include the intersection of the Preferred Alternative, FR 141 north of the intersection, and FR 141 south of the intersection.

The projected traffic volumes modeled for the proposed four-lane facility in 2040 at the intersection of the Preferred Alternative and Farm Road 190 include 4754 vehicles per day on Farm Road 141 approaching from the south and 4206 vehicles per day on the Preferred Alternative approaching from the east. Conservatively, an estimated 12 percent of the traffic in each direction arrives during the peak travel period, or 570 vehicles heading north and 504 vehicles heading east. These figures are well below 1,000 vehicles per direction per hour which is the assumed standard capacity for a single lane roadway intersection. Under these traffic volumes, constructing the Preferred Alternative as an initial two-lane facility will enable intersection design options, including a roundabout or signalized traffic control, to satisfactorily address the anticipated traffic volumes through 2040.

FR 141 south of FR 190 (Nichols Road) is a two-lane roadway with minimal shoulders and currently carries 4500 vehicles per day. By 2040, FR 141 is anticipated to carry 7270 vehicles per day assuming no other improvements are made to the transportation system. The addition of the Preferred Alternative would increase the daily traffic volume on FR 141 south of FR 190 by 1990 vehicles (to a total of 9,260 AADT). Two-lane roadways will provide an acceptable level of service with minor congestion most typically associated with stop controlled intersections, for daily traffic volumes up to 10,000 vehicles. While it is likely congestion and travel delay will be increased along FR 141 south of FR 190, any congestion and delay would be within acceptable service levels.

Traffic volumes on FR 141 north of FR 190 (Cox Road) will reduce substantially from a projected 7270 vehicles per day to 3,290 vehicles per day in 2040 as a result of the Project. Farm Road 190 west of FR 141 is not a through roadway and no traffic volume increase would result from adding the Preferred Alternative.

Overall, termination of the Project using the intersection of FR 141 and FR 190 reduces the need for additional infrastructure, while meeting the purpose and need for the Project with minimal if any impact on traffic service to existing infrastructure.

- B) Transportation infrastructure is developed as a network of roadways and associated facilities of various levels of services. Such networks are under continual study and evaluation to address the every-changing transportation demands of a region. Greene County is in the process of studying an extension of Farm Road 190 easterly, connecting with Campbell Avenue. Ending the Preferred Alternative at Farm Road 190 provides a*

logical terminus and will provide for future flexibility in the development of additional infrastructure to serve travel in all directions for enhancing regional mobility.

Connectivity – Eight commenters questioned when Greene County is planning to extend Farm Road 190 easterly and connect with Campbell Avenue.

RESPONSE – *Greene County has begun the process of studying alignment opportunities and assessing environmental constraints for an extension of Farm Road 190 to the east and connecting with Campbell Avenue. The extension of Farm Road 190 is included in the region's Long Range Transportation Plan.*

Campbell Avenue and Extending Route FF are better options – Eight commenters stated a belief that other options such as adding capacity to Campbell Avenue or improving and extending Route FF to the southeast would provide a better long-term solution for the region.

RESPONSE – *The traffic impacts of improving other corridors and addressing regional travel demand were analyzed as part of the Ozark Transportation Organization's (OTO) Base 2012 Travel Demand Model published in December 2014.*

The OTO as part of their planning responsibilities has modeled regional travel demand based upon anticipated growth in the population and assumed land use. The regional travel demand model, completed in 2014, modeled congestion on the roadway network varying improvement scenarios based upon the region's adopted Long Range Transportation Plan. <http://www.ozarkstransportation.org/Documents/TravelDemandModel2012.pdf>. Models generated include existing conditions, existing conditions plus projects committed in the transportation improvement plan (TIP) or funded with local resources, existing conditions plus committed projects and priority projects including:

- Expanding Route 160 (Campbell Ave) to six lanes to Highway 14 in Nixa with intersection improvements at Aldersgate, Northview, and Tracker
- Construct four-lane Kansas Extension from Republic Road to Highway 14

An additional model was generated to include existing conditions, committed projects, priority projects, and added regionally significant projects in the Southwestern portion of the OTO region including:

- Expanding Route 160 (Campbell Ave) to six lanes to Highway 14 in Nixa with intersection improvements at Aldersgate, Northview, and Tracker
- Widen the West Bypass through Battlefield then continue south as an Expressway to Rosedale (south of Highway 14), in Nixa
- Construct four-lane Kansas Extension from Republic Road to Highway 14

Volume to capacity (v/c) ratios were analyzed for each modeled scenario based upon projected 2040 traffic volumes. V/c ratios are used by traffic engineers to assess level of service for a roadway segment. A v/c ratio of 77 percent or less indicates a good level of service, from 78 to 85 percent indicates an acceptable level, and a ratio exceeding 86 percent indicates a poor level of service.

The modeled scenarios for the existing conditions plus committed projects show many locations in the study area having a poor level of service. Conditions will improve and congestion lessen when priority projects including widening Route 160 and adding the Preferred Alternative (Kansas Extension) are included, but will not obtain the region's v/c goals. Beyond completing the widening of Route 160 and adding the Preferred Alternative (Kansas Extension), widening the West Bypass through Battlefield and continuing the West Bypass south as an expressway to Rosedale in Nixa, will be required to meet the region's v/c goals.

Commercial Development – Three commenters had concerns that the proposed action would add commercial development to what is currently a residential area.

RESPONSE – *The Preferred Alternative is designated as a Primary Arterial by the OTO roadway classification system. Primary Arterial routes are desired to serve larger volumes of traffic at higher speeds and direct access to the roadway is restricted and allowed at intersecting roadways. Maintaining restricted access to the Preferred Alternative will serve as a disincentive to commercial development.*

Noise – Six commenters raised questions on the noise study completed for the EA and validity of findings on where proposed sound wall locations are both reasonable and feasible. Two commenters are concerned with noise levels associated with stopping/starting traffic adjacent to their property and one commenter noted the Preferred Alternative is partially in a valley and noise will echo, which was not addressed as part of the study. Another comment letter from several homeowners stated that the EA did not adequately assess or provide mitigating options for Project noise impacts to the Study Area. The letter stated that if impacts cannot be mitigated, they may be significant which would necessitate the preparation of an EIS.

RESPONSE – *The study was performed in accordance with FHWA and MoDOT guidance. The four-lane alignment was modeled with the expected traffic volumes for each of the 5 vehicle classifications (automobile, medium truck, heavy truck, bus, motorcycle). It was assumed that the operational speed of the Preferred Alternative would be 50 mph and that was used in the future sound level predictions. Signals were included at each of the intersections to predict noise from vehicle acceleration and deceleration at traffic signals. Terrain contours were used to replicate the changes in elevation in the areas surrounding the proposed alignment. A representative receptor was placed in each subdivision along the alignment corridor. The future predicted sound levels at each of the representative receptors were compared to the noise abatement criteria (NAC) levels, as set by the FHWA and adopted by MoDOT and the existing sound levels measured in the area to determine the expected sound level increases from the Project. Any area that was deemed to be impacted (experienced expected increases of 15 dBA or more OR approached or exceed the NAC—where approach is defined as within 1 dBA of the NAC), were further analyzed for a barrier sound wall. The barrier design was compared to the MoDOT definitions of feasible and reasonable, which sets up parameters to determine when a barrier wall should be constructed based on noise reduction goals, cost analyses, and public involvement. When the design is finalized, the traffic noise study will be updated with changes made to the alignment and design of the road to determine what, if any, changes to the noise study conclusions will occur based on changes to the design of the Project.*

Wildlife – Three commenters noted the study area is now mostly wooded and construction of the roadway will disrupt the natural patterns of the local wildlife population. Commenters also noted they don't believe the construction will avoid impact to the species that live in the caves and other underground habitat present.

RESPONSE – Section 3.9 of the EA addressed biological resources and potential impacts to wildlife in the Project area. Temporary displacement of bird, mammal, and other wildlife common to the area would occur during construction. Approximately 3.9 acres of riparian forest and approximately 40.4 acres of upland forest habitat would be removed if the entire corridor were cleared. Similar adjacent and unaffected habitats in the study area would be available for displaced wildlife. The Project team determined the Project may affect but is not likely to adversely affect cave species including the Indiana bat, northern long-eared bat, gray bat, and Ozark cavefish. The USFWS concurred with the Project team's determination that the Project may affect, but would not likely adversely affect the Indiana bat, gray bat, northern long-eared bat, and Ozark cavefish. To minimize impacts to protected bat species, Greene County and its contractor will remove identified suitable roosting trees during the period between November 1 and March 31 to avoid possible direct impacts to Indiana bats and northern long-eared bats during the summer maternity season. Disturbed areas will be revegetated after construction. During future geotechnical and other investigations necessary for final design and construction, any karst features identified will be investigated by Greene County and a qualified biologist for the presence or potential use by protected bat species. Known caves in proximity to the Study Corridor (0.5 mile) that could be indirectly disturbed or affected by construction activity, as well as potentially suitable karst features identified within the Study Corridor, will be investigated by Greene County and a qualified biologist for the presence of protected bats. This investigation and corresponding consultation with USFWS (based on the results of the investigation) will be completed and any mitigation measures resulting from that consultation will be incorporated into the Project prior to receiving a federal construction authorization for the Project.

Construction Staging – Two commenters were concerned that the potential staging of construction and possibility of an initial section of roadway opened from Republic Road to Weaver Road will increase congestion and accident exposure on Weaver Road.

RESPONSE – The staging of construction work for the Preferred Alternative is unknown at this time. Factors including the availability of local and federal funds, permitting, and acquiring the needed right of way will be considered when determining how construction of the Preferred Alternative may be phased. Greene County will assess, as part of the construction scheduling and traffic management plan, the addition and implementation of temporary or permanent traffic control measures and roadway design enhancements to promote safe and efficient traffic flow determined to be warranted. Greene County and its engineer will develop a Traffic Management Plan as part of the final design activities during Project design. A Traffic Management Plan defines a set of coordinated traffic management alternatives to manage the work zone impacts.

Inadequacy of Weaver Road – Two commenters stated that Weaver Road is currently congested and added traffic will increase the number of accidents occurring along the roadway between the Preferred Alternative and Campbell Avenue.

RESPONSE – A large contributor to the congestion occurring along Weaver Road is the three way stop controlled intersection at the junction of Weaver Road and Farm Road 145 (South Kansas Avenue). When designed and constructed, the proposed Preferred Alternative will cross Weaver Road at the same location as the current Farm Road 145 intersection, however, a revised intersection type will be constructed that will enhance traffic flow for Weaver Road at this location, addressing recurring congestion.

Final Design – Intersection Layout – Two commenters requested traffic signals be included, one at the junction of the Preferred Alternative and Cox Road, the other at a new entrance to be proposed at the Veterans Clinic located on Republic Road, as part of any construction project.

RESPONSE – Intersection design, including the type of intersection layout and control, will be evaluated as part of the preliminary and final design process in accordance with the purpose and need for the Project. The use of a stop light (signal control) will be reviewed as one option. Any stoplight considered must meet signal control warrant criteria established by the Manual on Uniform Control Devices (MUTCD).

Final Design – Tree Removal – Two commenters requested existing trees be retained to the maximum extent possible during the construction process.

RESPONSE – Greene County will include as part of any contract documents that tree removal be limited to areas that are necessary for the future 4-lane roadway construction, and that are deemed necessary for safe traffic operations along the roadway corridor. Trees located on Greene County property outside the required construction limits will remain in-place. A commitment has been added addressing this request.

Final Design – Fencing – One commenter requested Greene County include security fencing as part of any construction project.

RESPONSE – Greene County constructs fencing on roadway projects only when an existing fence is required to be relocated as part of construction activities. No added fencing is anticipated to be constructed.

Road Alignment Adjustments – Two commenters requested Greene County consider adjusting the proposed roadway alignment near Lennox Place to the west. Greene County owns property that could be used for the roadway and shifting the alignment could avoid the need, at least in part, for sound walls.

RESPONSE – Greene County will review the proposed alignment adjacent to Lennox Place and assess options to shift the roadway and minimize or possibly eliminate, the need for sound walls. Any identified adjustments that are deemed as viable will require consultation with FHWA and MoDOT along with outside federal agencies who may have permitting jurisdiction if adjustments are outside the area studied as part of the EA. A commitment has been added addressing this request.

Drainage – One commenter is concerned that the addition of a roadway in the region will add to increasing flooding on his property.

RESPONSE – *Greene County will include a complete hydraulic analysis of the Project during the preliminary and final design process. A portion of the hydraulic analysis will evaluate changes in water surface elevation and drainage characteristics. The Project will comply with the National Flood Insurance Requirements which require no rise in the backwater surface elevation for a 1 percent rain event.*

Intersection with Farm Road 145 – One commenter thought Farm Road 145 should not be connected to the Preferred Alternative and should be converted to a dead-end street and serve local traffic only.

RESPONSE – *Farm Road 145 is currently a through route and connects with Republic Road on the north and Weaver Road on the south. Maintaining the opportunity for traffic to move both the north and south is desired by Greene County to serve both local traffic and provide multiple means of access for emergency response.*

1.2 GROUP PUBLIC COMMENTS

Comments on the EA were submitted by Jason C. Smith and Thomas N. George of Spencer Fane LLP on April 21, 2017, on behalf of Brent Brown, Doug Pitt, Justin French, and Michael Sutton. The following section outlines the group’s comments for the EA and responses to each comment.

Purpose and Need Summary – The EA and the Preferred Alternative fail to meet the stated purpose and need for the proposed action because neither the EA nor the Preferred Alternative consider or include improvements or enhancements to Campbell Avenue (Highway 160), to the east-west connections between Campbell Avenue and the Project, or beyond the southern terminus of the Project.

RESPONSE – *The purpose and need for the study was identified in the EA as improving the functionality of Cox Road, improving the regional transportation network by adding an additional north-south corridor, improving system-wide travel times, reducing travel delay, and provided needed transportation network improvements to accommodate existing and projected growth. The Preferred Alternative has been determined to meet the specified purpose and need for this project.*

Alternatives Considered Summary – The EA does not fully, fairly, or adequately consider all alternatives because the EA and Cooperating Agencies exhibited a clear bias for the Preferred Alternative and against the No Action Alternative.

RESPONSE – *Greene County, through documentation and consultation, demonstrated a well-defined screening process was utilized to assess a wide range of considered alternatives. The screening process and alternatives considered are documented in Appendix A of the EA – History of Alternatives in the EA.*

Land Use Summary, Socioeconomics and Environmental Justice, and Right of Way Acquisition –

- The EA does not correctly characterize the Study Area or adequately recognize the intrinsic value of the Study Area as undeveloped wooded open space. As a result, the EA does not adequately consider the direct impacts the Project and Preferred Alternative would have on Land Use in the Study Area. And;

- The EA does not adequately analyze the Project's potential socioeconomic and environmental justice impacts because the EA mischaracterizes the Study Area and fails to recognize the intrinsic value of the Study Area to the community as undeveloped open space. And;
- This section of the EA fails to adequately recognize the value of the Study Area to the community as undeveloped, wooded open space. As a result, the EA does not adequately analyze the impacts associated with removing approximately 45 acres of trees and drastically altering the character of the Study Area as proposed by the Project.

RESPONSE – The EA identified the land use for the study as outlined by the Greene County Planning and Zoning Commission. The Planning and Zoning Commission has identified the study area and adjacent property as being suburban residential and in some locations, designated as a PAD (Plot Assignment District). The designation of a location as a PAD allows the landowner to submit a more flexible or creative plan than would be permitted under the pre-defined zoning classifications. For example, a developer may incorporate private streets or gated access points for a residential development which would otherwise require variances from the standard R-1 zoning. Each of the PADs in the Study Area, except for the PAD south of Farm Road 186 (Figure 1), include residential development. Zoning and re-zoning of any property type in Greene County utilize a typical public hearing process which includes presentation at the planning and zoning board followed by presentation at the county commission. No portions of the study area contain other designations by planning and zoning. The EA also clearly indicates the study corridor contains a mix of wooded and other undeveloped habitats.

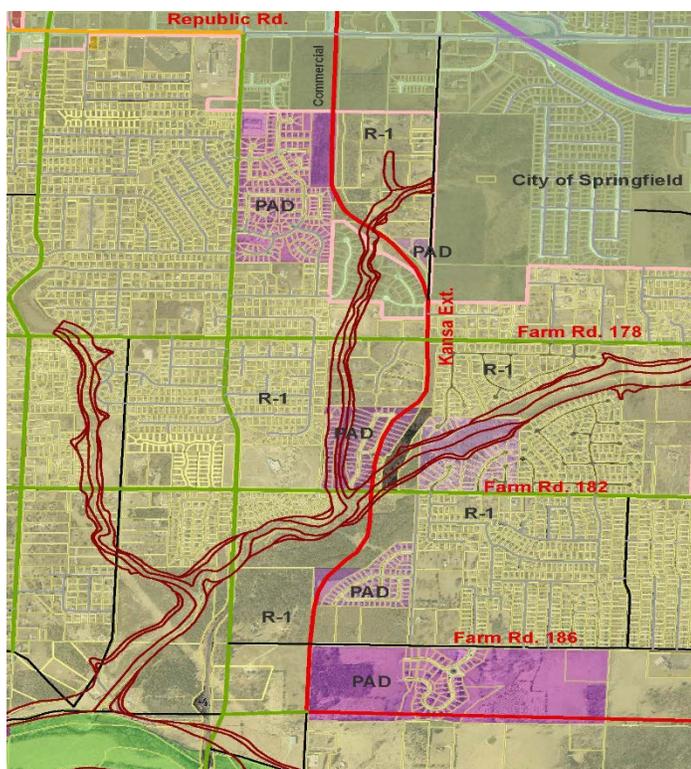


Figure 1. Plot Assignment Districts near the Project

The EA also provides an evaluation of the existing socioeconomic conditions in the area and the Project-related impacts to them. Overall, the Project would provide for positive effects to socioeconomic factors. No environmental justice populations were identified that would be adversely affected by the Project. Therefore, no additional analysis to environmental justice populations is required.

The right of way discussion is intended to provide information on the requirements for land acquisition necessary for Project construction. It acknowledges that additional lands are needed for Project construction, although much of the right of way has already been acquired by the county. Other sections throughout the EA provide more detailed discussion about the impacts to vegetation that would result from the Project.

Air Quality – The EA identifies the potential for increased air pollution in “a few localized areas,” but fails to recognize that the majority of the Study Area is undeveloped, wooded open space, and as proposed the Project will require the removal of approximately 45 acres of trees within a tranquil residential area to replace it with the proposed four lane roadway. As a result, the EA does not adequately identify or assess potential Project impacts to air quality in the Study Area.

RESPONSE – *The EA studied air quality impacts in accordance with The Clean Air Act and the required expanded analysis adopted in 2007. MoDOT is responsible for implementing conformity with the NAAQS and other air quality objectives established in the State Implementation Plan. The City of Springfield, Greene County and the Springfield Metropolitan Area are currently designated as an attainment area for air quality, and as such a conformity analysis does not apply to the Project. Based on guidance documents from the FHWA, a quantitative mobile source air toxic (MSAT) analysis does not need to be performed since the annual average daily traffic for the Project is below 140,000 vehicles. Traffic analyses for NAAQS pollutants, MSAT’s, and GHGs use emission factors based on vehicle-miles travelled (VMT). A qualitative analysis was performed for the future build and no-build scenarios using VMT data. VMT for the future no-build scenario was expected to be larger than the build scenario, which suggests that commutes in the area will be shorter with the proposed road. The Kansas Extension is expected to reduce congestion and idling times of vehicles in the area, reducing the amount of NAAQS, MSATs, and GHGs released.*

Climate Change – The EA does not provide an adequate assessment of potential impacts to climate change because the EA considers only vehicle emissions. The EA fails to address any aspects of the human environment that may be impacted by the proposed action.

RESPONSE – *FHWA, as the lead federal agency for the EA, applied its discretion and guidance on how climate change should be addressed. The Final Guidance published by the Council on Environmental Quality (CEQ) is not a regulation and presents CEQ’s interpretation of what is appropriate under NEPA. The guidance notes Agency discretion is an integral aspect of NEPA implementation and this guidance offers an approach to agencies on how to exercise that discretion. As such FHWA has determined the climate change assessment in the EA is adequate and appropriate for this Project.*

Noise – The EA does not adequately assess or provide mitigating options for Project noise impacts to the Study Area. The EA identifies potentially significant impacts of noise on the human environment, but it falls short of identifying methods to mitigate those impacts. This analysis is inadequate and incomplete.

Further, if the impacts cannot be mitigated, they may be significant impacts which necessitate the preparation of an EIS.

RESPONSE – *MoDOT's Noise Policy (EPG 127.13) was used for completing the noise study. MoDOT's procedures meet the requirements of the FHWA Traffic Noise Analysis and Abatement Policy and Guidance (Title 23, Article 722, Code of Federal Regulations, June 2013) and noise-related NEPA requirements.*

Two barriers meet the MoDOT feasibility criteria and two of the three reasonableness criteria for the future full four-lane build out. A noise wall will likely be located between stations 75+00 and 91+00 and should average 10 feet in height. The noise wall would attenuate noise on the east side of the highway. A noise wall would also be likely to be located between stations 108+00 and 126+00, with an average height of 13 feet, and would attenuate noise on the east side of the highway. The locations of these barriers can be seen in Figure 3-11, in Section 3.6 of the EA. After the model and analysis is updated, the viewpoints of the property owners in these two areas will need to be obtained to meet the third requirement for reasonability. Should all three requirements be met, Greene County will prepare and have incorporated the construction of appropriate barriers in these locations. The mitigation measures proposed in the EA and committed to by Greene County satisfy the results of the noise study. Implementation of the mitigation measures will be included in future activities including design and construction.

Water Resources and Aquatic Resources –

- The EA's assessment of potential impacts to water resources is inadequate and incomplete because it fails to assess the long term impacts associated with construction activities over the full duration of the proposed Project or the lasting impacts of the proposed Project's impermeable roadway. And;
- The EA concludes that under the Build Alternative, construction of the roadway would result in temporary impacts to two ephemeral stream and two perennial streams that cross the Study Corridor. This conclusion is inadequate because it fails to recognize as described elsewhere in the EA that the proposed Project contemplates a long term, phased project that would take place over 15 to 20 years. The potential impacts to aquatic resources should be assess over the entire span of the proposed Project construction timeline.

RESPONSE – *All activities impacting water resources and water quality will be conducted in conformance with the Missouri State Operating Permit. Greene County will require the contractor to implement Best Management Practices (BMP's) to reduce erosion and provide sediment and stormwater management during construction. A Project specific Stormwater Pollution and Prevention Plan (SWPPP) will be implemented as part of any construction activities. The implementation of a Project specific SWPPP is included as a commitment in the EA. As discussed in the EA, with the implementation of BMPs, following completion of construction and restoration of the area, further, long-term impacts to waterways and aquatic resources would not be expected.*

Biological Resources and Threatened and Endangered Species – The EA's assessment of the potential impacts to biological resources and threatened and endangered species is inadequate, incomplete, and insufficient to meet the requirements of NEPA. If the Project were to proceed on the basis of the EA, the Homeowners are concerned the Project may violate NEPA and the Endangered Species Act.

RESPONSE – *Greene County in conjunction with MoDOT as the agency designated by FHWA to conduct consultations with the USFWS (the agency responsible for implementation of the Endangered Species Act), completed a request for informal consultation and effects determination on January 10, 2017 (Consultation Code Missouri: 03E14000-2016-SLI-0920). The USFWS service concurred that the proposed Project may affect, but is not likely to adversely affect the Indiana bat, gray bat, northern long-eared bat, or Ozark Cavefish. FHWA commits Greene County to conduct additional impact analysis and present findings to MoDOT and USFWS and implement actions as may be required by USFWS to prevent adverse effects to endangered and threatened species and obtain final concurrence from USFWS based on verification of effects determined at that time. The complete consultation conducted by MoDOT can be found in Appendix E of the EA.*

Geology and Soils – The EA’s assessment of potential impacts to geology and soils is inadequate, incomplete, and insufficient to meet the requirements of NEPA. It is inappropriate and inadequate pursuant to the requirements of NEPA for the EA to identify potential impacts and hazards but fail to investigate or analyze them.

RESPONSE – *The EA includes an appropriate assessment of potential impacts to geology and soils. Geology and soils within the study corridor were investigated, described, discussed and the Project impacts to them analyzed and presented. Based on this investigation and analysis, FHWA has stipulated a number of commitments and permits related to potential geologic and soil concerns, as discussed in Chapter 4 of the EA, that Greene County must adhere to as part of ensuing Project activities.*

Architectural, Archaeological, Cultural, and Historic Resources – The EA’s assessment of Architectural, Archaeological, Cultural and Historic Resources is incomplete and inadequate because, as stated in the EA, “due to property access issues, the archaeological survey and any related site evaluation or mitigation will be completed at a later date but prior to Project construction.

RESPONSE – *Greene County will address any historical or archaeological impacts according to the stipulations outlined in the Programmatic Agreement Among the Federal Highway Administration, the Missouri Highway and Transportation Commission, the Advisory Council on Historic Preservation, and the Missouri State Historic Preservation Office for the Phased Identification and Evaluation of Historic Properties (Phased Section 106 PA - see Appendix H of the EA).*

Visual Impacts – The EA mischaracterizes the Study Area and the scope of the Project and as a result, does not adequately assess the potential impacts to visual resources in the Study Area. For example, the EA opines that “the visual landscape is typical of a high density suburban area.” This characterization of the Study Area, and in particular that portion of the Study Area where the proposed Project would be constructed, mischaracterizes the existing undeveloped, wooded open space.

RESPONSE – *The EA clearly states the visual landscape in the study corridor is undeveloped with woodlands and open space. It goes on to discuss the corridor being crossed by roadways and utilities and surrounded by residential and other urban type developments. This landscape is characterized as “typical of a high density suburban area.”*

Construction Impacts – On the whole, the impacts of the proposed construction activities are neither temporary nor inconsequential. Further, because the proposed construction activities will take place

over a period of 20 years or more, even minimal impacts – such as impacts to air quality, water quality, and protected habitat, should be assessed over the span of the proposed Project construction timeline. The potential impacts in this regard merit further analysis and explanation.

RESPONSE – *The commenters incorrectly characterize construction as occurring over a 20-year period. While it may be 20 years before full Project implementation of the 4-lane build out, construction of the initial 2-lanes, which may include constructing major drainage structures and minimal additional grading to balance borrow and fill requirements along the 4-lane build out, will occur over a shorter period. The right of way would then be restored and construction related impacts would cease. Additional impacts associated with the 4-lane build out would not occur until that phase of the Project would be constructed in the future. As with the 2-lane phase, impacts during construction of the additional 2 lanes for the 4-lane build out would be limited to the period of construction and restoration. After restoration has been completed, construction related impacts would again cease. Numerous commitments have been placed on Greene County by FHWA regarding any future construction activities. These commitments would be applied during construction of both the 2 and 4-lane buildouts and are included below in Section 3.0.*

Indirect and Cumulative Impacts – The EA’s indirect and cumulative impacts are inadequate for a number of reasons. (Paraphrasing) – The Study Area does not include Weaver and Plainview Roads between the Project and Campbell and does not include a meaningful portion of connecting roads beyond the southern terminus. The EA fails to adequately assess the potential direct, indirect and cumulative impacts.

RESPONSE – *The EA, throughout Chapter 3, provides a detailed discussion and analysis of the direct impacts of the Project to a variety of social and natural resources within the study area and immediate vicinity. The EA also provides an appropriate analysis of indirect effects (future economic development and activity associated with construction activities and the presence of a new roadway). Reasonably foreseeable additional projects in the area that would combine with the Project, contributing to the cumulative impacts of actions within the Project area and vicinity are identified and discussed.*

While the potential indirect or cumulative impacts of the Project specifically to Weaver and Plainview roads are not included in the indirect and cumulative impacts sections of the EA, the Project-related impacts to these roadways were modeled, the results of which are presented and discussed in the EA in Chapter 1. The transportation model used for computing traffic volume projections contained in the study were prepared by the Ozark Transportation Organization. Specific modeling efforts were conducted to determine projected traffic volumes resulting from adding the Kansas Extension as proposed to the regional transportation network including on both Plainview and Weaver Roads.

1.3 AGENCY COMMENTS

Four agency comments were received by the Project team for the EA (Appendix E). The following section outlines the agency’s comments for the EA and the Project team’s response to each comment.

U.S. Department of Housing and Urban Development (HUD) – Samuel Gieryn, Field Environmental Office for HUD, sent an email to Adam Humphrey on March 7, 2017, which stated that he had reviewed applicable HUD databases and did not identify any HUD-assisted projects in the study

area. The email stated that it was encouraging to see the incorporation of a proposed recreational trail in the preliminary design. Mr. Gieryn also stated that they did not feel it was necessary for HUD to participate in the public hearing.

RESPONSE – *Comment noted.*

Missouri Department of Natural Resources (MDNR) – *In their letter dated April 5, 2017, the MDNR listed comments for consideration:*

(1) Project location information. MDNR listed the Project’s geographic coordinates; Public Land Survey System Townships, Ranges, and Sections; the 8-digit hydrologic unit code (James, 11010002); and that the ecological drainage unit is the Ozark/White unit.

RESPONSE – *Comment noted.*

(2) Solid waste. MDNR gave the website for their technical bulletin, “Managing Construction and Demolition Waste,” which was developed to assist project planners. MDNR also provided the website for their technical bulletin, “Managing Solid Waste Encountered during Excavation Activities,” in the event that solid waste was discovered during excavation, if required. Lastly, the website for the technical bulletin, “Management of Scrap Tires,” was provided in case scrap tires were discovered during the Project.

RESPONSE – *Comment and website locations noted. These resources will be reviewed and considered as part of Project design and construction contracting requirements.*

(3) Water protection.

Geospatial data. MDNR provided the websites for geospatial data related to designated uses, sensitive waters, geology, and other watershed information.

RESPONSE – *Website location noted.*

Permitting Obligations. MDNR noted that any project that has the potential to result in the discharge of fill or dredged material into a jurisdictional water of the United States may require Clean Water Act Section 404 Permit Authorization from the U.S. Army Corps of Engineers (USACE) and 401 Water Quality Certification from MDNR. MDNR provided website URLs for more information for each permit. MDNR stated that the Greene County Highway Department or its contractors should contact the USACE Little Rock District office and MDNR’s Operating Permits Section if discharge into a water occurs or will occur, and provided contact information for both the USACE Little Rock District Office and MDNRs Operating Permits Section.

RESPONSE – *Greene County will continue to coordinate with the USACE to obtain the necessary Section 404 permit and with MDNR for the necessary 401 permit.*

Mitigation. MDNR stated that an alternatives analysis would need to be submitted prior to any impacts to jurisdictional waters as part of the avoidance and minimization measures that precede mitigation for unavoidable impacts. Mitigation for wetlands should be in conformance with the State of Missouri Aquatic Resources Mitigation Guidelines and mitigation for streams should be in conformance with the Missouri Stream Mitigation Method. MDNR provided website URLs for the guidelines. MDNR also stated that any mitigation plans must be in conformance with the Compensatory Mitigation for Losses of Aquatic Resources and stated that

the applicant should receive mitigation plan approval from the department prior to certification. A URL for more information was provided for the Compensatory Mitigation for Losses of Aquatic Resources publication as well.

RESPONSE – *Greene County will work with MDNR during mitigation planning, if necessary.*

Land Disturbance. MDNR noted that any work disturbing an area of one acre or more requires issuance of a land disturbance permit prior to any earth work. Disturbance to valuable resource waters may require additional conditions or site-specific permits. MDNR provided a website URL for information and an application for a land disturbance permit.

RESPONSE – *Greene County will obtain a Section 401 permit and Section 402 permit and comply with all permit conditions.*

Best Management Practices. MDNR states that Best Management Practices (BMPs) should be utilized during Project activities to limit the amount of sediment and other pollutants entering waters of the state, and to protect the water's chemical, physical, and biological characteristics. MDNR mentioned several BMPs, and encouraged the preservation of existing riparian or buffer areas around water resources. MDNR stated that any stream banks, riparian corridors, lake shores, or wetlands denuded of vegetation should be stabilized and re-vegetated as soon as is practicable.

RESPONSE – *Greene County will prepare a Project-specific SWPPP to describe the BMPs to be implemented during construction for the Project. A number of commitments reflecting BMPs for roadway construction are attached to FHWA approval of this Project.*

Designated Uses. MDNR provided names of waterbodies that have been assigned specific designated uses according to the State of Missouri Water Quality regulations, as well as the numeric water quality criteria by which the waters are protected. MDNR noted that the Project area is contained within the Workman Branch, Ward Branch, and James River watersheds, which drain into Table Rock Lake. Three streams (Workman Branch, a tributary to Workman Branch, and a potentially impacted stream designated WBID 3960) are Class C streams, which are defined as streams that may cease flow in dry periods but maintain permanent pools which support aquatic life. Two streams (Ward Branch and James River) are Class P streams, which are defined as streams that maintain permanent flow even in drought periods. Class C and Class P streams have assigned specific designated uses, which MDNR provided in their response.

MDNR noted that waterbodies that are not assigned specific designated uses are still protected at all times by general water quality criteria and are subject to certain acute toxicity criteria as well as whole effluent toxicity conditions. MDNR stated that two tributaries could potentially be impacted by the Project that do not have specific designated uses. MDNR noted that several ponds, freshwater emergent wetlands, and forested/shrub wetland could potentially be impacted by the Project. MDNR stated that the alternatives analysis should attempt to avoid such impacts before compensatory mitigation is considered, and requested that water quality be protected even if water features are not directly impacted but are near land disturbance.

MDNR stated that there are no known waters designated for Cold Water Habitat, no known Outstanding National Resource Waters, no known Outstanding State Resource Waters, no known Metropolitan No Discharge Streams, no known biocriteria reference locations, no known

losing streams, and no known 303(d) Impaired or 305(d) Threatened Waters within the Project area. MDNR requested that the Project team contact the Missouri Geological Survey for more information related to losing streams and to determine if the Project will cross or impact any losing streams. If a losing stream is located in the Project area, additional precautions and BMPs should be put in place to protect sensitive water resources.

The James River has an approved Total Maximum Daily Load (TMDL) for nutrients. MDNR requests that care be taken to ensure that the impairments are not made worse by the Project. Extra protections during permitting or certification for the Project may be required in order to comply with TMDL load and wasteload allocations.

RESPONSE – *Greene County will prepare a Project-specific SWPPP to describe the BMPs to be implemented during construction for the Project. Greene County will obtain jurisdictional determinations for wetlands/waters of the U.S. through coordination with the USACE prior to initiating final design. Greene County and its engineer will consider avoidance and minimization of the identified wetlands and streams in the Project area during Project design. This information will be used by Greene County to obtain a Section 404 Permit prior to beginning any construction activities on the Project. Sediment, surface water/construction fluids, and road runoff could be introduced to the Springfield Plateau aquifer. Sinkholes and other karst features (e.g., vanishing streams) may act as a direct conduit for surface water to enter groundwater. As a result, these features will be properly identified and accounted for by Greene County and its engineer during the design phase and managed by the contractor throughout construction and grading activities. The presence of sinkholes and soil voids will be determined by Greene County and its engineer during geotechnical investigation and taken into account during the design and grading phase. A number of commitments reflecting BMPs for roadway construction are attached to FHWA approval of this Project.*

Watershed Conditions. MDNR noted springs, a sink hole, and potential caves may be affected by the Project, and requested that extra precaution be taken to minimize disturbance of land in or around these features and introduction of pollutants to sensitive groundwater resources be avoided.

MDNR states that seven wells could potentially be impacted by the Project. Four of these wells are abandoned and three are domestic water wells. MDNR stated that abandoned wells should be plugged prior to any land disturbance and care should be taken to utilize appropriate BMPs to protect any currently operating wells. MDNR provided a website URL for its Wellhead Protection Section.

MDNR requested that all work associated with the Project consider the protection of both surface and groundwater public drinking supplies and that appropriate BMPs be implemented as necessary. If there is the potential for public drinking water sources or infrastructure to be impacted, the owners or operators of the affected drinking water system should be notified prior to the onset of work.

MDNR stated that there are no known Conservation Opportunity Areas in or adjacent to the Project area. There are also no known designated Natural Areas in or near the Project area.

RESPONSE – *Greene County will prepare a Project-specific SWPPP to describe the BMPs to be implemented during construction for the Project. Sediment, surface water/construction fluids, and road runoff could be introduced to the Springfield Plateau aquifer. Sinkholes and other karst features (e.g., vanishing streams) may act as a direct conduit for surface water to enter groundwater. As a result, these features will be properly identified and accounted for by Greene County and its engineer during the design phase and managed by the contractor throughout construction and grading activities. Greene County will require its contractor to use BMPs during construction in areas where karst features have been identified. Any water wells encountered during construction will be appropriately abandoned in accordance with Missouri Well Construction Rules Section 10 CSR 23-3.110 by Greene County and its contractors. A number of commitments reflecting BMPs for roadway construction are attached to FHWA approval of this Project.*

(4) Geological Survey. MDNR noted that the Project is not within a former mining district and that there are no recorded mines within the study area. Due to this, MDNR stated there is no likely collapse potential. MDNR also stated that there are no recorded geological structures identified near the Project area.

MDNR noted that the sedimentary rock sequence in the Springfield Plateau area also contains limestone and shale units. MDNR also noted that the Cotter Formation is not a Mississippian-age unit.

MDNR agreed with the EA's statement that other unidentified karst features may be encountered during construction of the Project. MDNR stated that portions of the road and right of way that are placed on top of karst features could result in structural instabilities.

RESPONSE – *FHWA, MoDOT, and Greene County has updated the Geology and Soils section to include the additional information submitted by MDNR. Other comments noted. Sediment, surface water/construction fluids, and road runoff could be introduced to the Springfield Plateau aquifer. Sinkholes and other karst features (e.g., vanishing streams) may act as a direct conduit for surface water to enter groundwater. As a result, these features will be properly identified and accounted for by Greene County and its engineer during the design phase and managed by the contractor throughout construction and grading activities. Greene County will require its contractor to use BMPs during construction in areas where karst features have been identified. A number of commitments reflecting BMPs for roadway construction are attached to FHWA approval of this Project.*

1.4 TRIBAL NATION COMMENTS

Copies of the EA were sent to the following tribes in March 2017: Cherokee Nation, Delaware Tribe of Indians, Delaware Nation, Eastern Shawnee Tribe of Oklahoma, Kickapoo Tribe of Kansas, Miami Tribe of Oklahoma, Osage Nation, and the United Keetoowah Band of Cherokee Indians in Oklahoma. Also, FHWA initiated Section 106 correspondence with the aforementioned tribes in September 2016, as well as the Kickapoo Tribe of Oklahoma.

Delaware Nation – In an email sent to Adam Humphrey on April 11, 2017, Kim Penrod, Director of Cultural Resources/106, Archives, Library and Museum for the Delaware Nation, stated they concurred with the information submitted in the proposed plan. The response also asked that the Delaware Nation

be kept informed of Project progress and be contacted immediately if any discoveries were made during the Project.

RESPONSE – FHWA acknowledges Delaware Nation’s comment, and will continue to coordinate with the Delaware Nation, as appropriate, as Project design and construction progresses.

Cherokee Nation – In a letter dated April 20, 2017, Elizabeth Toombs, Special Projects Officer at the Cherokee Nation Tribal Historic Preservation Office, stated the Cherokee Nation’s Historic Preservation Office had cross referenced the Project’s legal description against the Cherokee Nation’s databases. She wrote that no instances had been found where the Project intersected or adjoined resources in their databases. Ms. Toombs stated that the Cherokee Nation did not foresee the Project imparting impacts to Cherokee cultural resources, and asked that the Cherokee Nation be contacted if any items of cultural significance are discovered during the Project. The letter ended with a request to inquire with other pertinent Tribal and Historic Preservation Offices regarding historic and prehistoric resources not included in the Cherokee Nation databases or records.

RESPONSE – FHWA acknowledges the comment and will continue to coordinate with the Cherokee Nation, as appropriate, as the project progresses.

2.0 SUMMARY OF REVISIONS TO IMPACTED RESOURCES

The following is a summary of revisions identified to the impact sections of the various resources studied in the EA. These revisions include clarifications or corrections to these sections. The sections for the following resources associated with the Selected Alternative have not changed since the EA was approved and are not included in the following discussion:

- Land use
- Socioeconomics and environmental justice
- Air quality
- Climate change
- Water resources
- Biological resources and threatened and endangered species
- Farmland
- Geology and soils
- Hazardous wastes
- Architectural, archaeological, cultural, and historic resources
- Section 4(f) and Section 6(f) resources
- Visual resources
- Construction impacts sections:
 - Traffic Control/Detours
 - Air quality
 - Noise
 - Protected habitat
 - Water quality
 - Impacts to floodplains/floodways
 - Visual effects
 - Utilities
- Indirect impacts
- Cumulative impacts

The following sections provide clarifications and corrections to resource impact sections studied in the EA.

2.1 RIGHT-OF-WAY ACQUISITION

Property from ten parcels would be needed to construct the Project, resulting in approximately 19 acres of additional ROW being acquired. These parcels are all currently vacant. It is not anticipated that any additional residences or businesses would need to be acquired. One of the impacted properties is leased by Greene County and is on the northeast corner of Kansas Ave (Farm Road 145), and Weaver Road. The property is leased month-to-month. The lease specifies that the County will give 90 days prior to the

need to vacate the property for construction. The lessee is fully aware of the Project, and that the property is within ROW acquired for the roadway.

It is estimated that less than 0.3 acres of additional, temporary easement will be required for the construction of this Project. On parcels that require right of way acquisition, right of way limits will be defined so that they encompass all construction activities and the need for temporary construction easement will likely not be required.

2.2 NOISE

Based on the modeling results in the EA, as well as the MoDOT Noise Policy, it was determined that 4 of the 16 representative receptors are expected to experience increases of 15 dBA or more or approach, meet, or exceed the Noise Abatement Criteria (NAC) due to the Selected Alternative. A noise abatement analysis was performed for each of these four receptors that are predicted to be impacted. Based on this analysis, a noise wall that would likely be feasible and reasonable would be located between stations 75+00 and 91+00 and should average 10 feet in height. The noise walls would attenuate noise on the east side of the highway. A noise wall would also likely be located between stations 108+00 and 126+00, with an average height of 13 feet, and would attenuate noise on the east side of the highway. Final recommendations would be made after final design and public involvement are complete.

2.3 AQUATIC RESOURCES

Under the Build Alternative, construction of the roadway would result in temporary impacts to two ephemeral streams and two perennial streams that cross the Study Corridor. Culverts would be placed in ephemeral streams intersecting the corridor. One span style bridge structure would be constructed for a perennial stream crossing over Ward Branch. The crossing of Workman Branch, a perennial stream, would be constructed as a box culvert, however, a span style bridge may be considered to potentially reduce streambed impacts or provide added value. Additionally, a palustrine forested wetland (PFO) is 75 feet west of the Study Corridor, and two ephemeral streams are 23 feet west of the Study Corridor. Section 404 permitting would be completed for all stream and wetland impacts. Avoidance of streams and wetlands would be taken into consideration when designing access roadways. If access roadways do not avoid impacts to these areas, further Section 404 permitting would be required, and mitigation may be necessary.

The Selected Alternative would have limited impact on the existing floodplain and floodways. Implementation of the Project may require construction of bridge piers, abutments, or other improvements within the 100-year floodplains mapped along the Ward Branch and the Workman Branch. Greene County would conduct a hydraulic analysis during final design to document that the new roadway would result in “no rise” in the flow within the regulatory floodway. Greene County would also obtain required floodplain development permits prior to initiating construction. During construction, the size and duration of temporary obstructions within the floodplains and floodway would be limited by effective construction sequencing and construction methodology.

2.4 CONSTRUCTION IMPACTS

Borrow and Waste Sites

Suitable materials removed during excavation would be used as practicable in the formation of bridge and roadway embankments, subgrade, shoulders, and other locations requiring fill, as directed on the construction plans. No excavated materials would be wasted without permission, and when such material is to be wasted, it would be so placed that it would present a neat appearance and not be injurious to abutting property. The construction plans may designate certain materials to be excavated and stockpiled for a specific purpose or for future use. It is the contractor's responsibility to make use of available suitable excavation material within the limits of the Project.

Waste and borrow areas would be identified by the Contractor. The use of borrow pits or waste areas, other than those shown on the construction plans or designated by a field engineer, may be approved, provided the material and area is satisfactory. The contractor would furnish the field engineer a copy of the agreement with the landowner for use of the property as a borrow or waste area. The agreement would contain stipulations about temporary seeding and water pollution control to be implemented during construction. Approval of borrow or waste sites is also contingent upon receiving appropriate wildlife and/or archaeological clearances.

Cultural Resources

In the event the contractor's excavation operation encounters the remains of a prehistoric site or artifacts of historical and/or archaeological significance, all construction activities would be temporarily discontinued. The field engineer will contact the MoDOT Historic Preservation section to allow inspection of the site to determine if further investigation is necessary before construction activities can continue. In order for compliance with applicable state laws the Greene County Construction Inspector or Chief Engineer cannot release remains or artifacts, or allow the contractor to disturb the area within the 50-foot buffer space around these discovered items until after consultation with MoDOT Historic Preservation staff and until after all applicable requirements from FHWA or SHPO have been addressed.

In the case of archaeological artifacts, MoDOT Historic Preservation staff will contact the appropriate staff at the FHWA and SHPO to report the discovery after a preliminary evaluation of the artifacts is made and reasonable efforts are undertaken to see if the findings represent an archaeological site that can be avoided. If MoDOT determines the site/artifacts are significant and will be adversely affected by the contract work, MoDOT Historic Preservation staff will immediately notify the FHWA and SHPO of this finding and provide recommendations to minimize and/or mitigate the adverse effect.

In the event human remains are encountered, MoDOT Historic Preservation staff will notify the local law enforcement and the SHPO as per state law. If the contractor is unable to contact appropriate MoDOT staff, the contractor shall initiate this involvement by local law enforcement and the SHPO. In this instance, a description of the contractor's actions shall be promptly made to MoDOT.

3.0 COMMITMENTS

The following is a compiled list of Project commitments. The following commitments are based on the proposed action as disclosed and evaluated in the EA and subsequently selected with this FONSI documentation. Greene County will implement all Project and regulatory commitments. If the Project scope and limits change at any time, the FHWA, MoDOT, and Greene County will need to reevaluate the NEPA analysis to verify it is still valid. Changes to these commitments cannot occur without FHWA approval.

- Two barriers meet the MoDOT feasibility criteria and two of the three reasonableness criteria for the future full four-lane build out. A noise wall will likely be located between stations 75+00 and 91+00 and should average 10 feet in height. The noise wall would attenuate noise on the east side of the highway. A noise wall would also be likely to be located between stations 108+00 and 126+00, with an average height of 13 feet, and would attenuate noise on the east side of the highway. The locations of these barriers can be seen in Figure 3-11, in Section 3.6 of the EA. After the model and analysis is updated, the viewpoints of the property owners in these two areas will need to be obtained to meet the third requirement for reasonability. Should all three requirements be met, Greene County will prepare and have incorporated the construction of appropriate barriers in these locations.
- Greene County will include special provisions in the construction contract requiring 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 to reduce impacts of construction noise.
- Greene County will prepare a Project-specific SWPPP to describe the BMPs to be implemented during construction for the Project. The SWPPP will include MDNR-approved components to reduce suspended solids, turbidity, and downstream sedimentation that may degrade water quality and adversely impact aquatic life.
- Greene County will obtain jurisdictional determinations for wetlands/waters of the U.S. through coordination with the USACE prior to initiating final design. Greene County and its engineer will consider avoidance of W-1, S-1, and S-2 (Figure 3-12) in Project design. This information will be used by Greene County to obtain a Section 404 Permit prior to beginning any construction activities on the Project.
- Greene County and its engineer will conduct a hydraulic analysis during final design to document that the new roadway will result in “no rise” in the flow within the regulatory floodway. During construction, Greene County and its contractor will minimize the size and duration of temporary obstructions within the floodplains by effective construction sequencing and construction methodology.
- Prior to beginning any construction activities on the Project, Greene County will obtain necessary floodplain permits from SEMA for the Project.
- Sediment, surface water/construction fluids, and road runoff could be introduced to the Springfield Plateau aquifer. Sinkholes and other karst features (e.g., vanishing streams) may act as a direct conduit for surface water to enter groundwater. As a result, these features will be properly identified and accounted for by Greene County and its engineer during the

design phase and managed by the contractor throughout construction and grading activities.

- The presence of sinkholes and soil voids will be determined by Greene County and its engineer during geotechnical investigation and taken into account during the design and grading phase.
- Greene County will require its contractor to inspect and clean all equipment used during construction of the Project before moving into the Study Corridor.
- Greene County will require its contractor to use BMPs during construction in areas where karst features have been identified that will include:
 - Conducting a geologic subsurface evaluation of the Study Corridor using exploratory borings, electrical resistivity, seismic, or ground penetrating radar
 - Contacting geotechnical specialists if new karst features are found during construction
 - Where permissible, plugging karst features using reverse grade filters, compaction grouting, and cap grouting
 - Installing stormwater control measures to provide positive drainage away from karst features
 - Monitoring sediment/erosion control measures throughout the construction process and after rain events
 - Using additional erosional control techniques, such as two rows of silt fencing, where water flows into karst features
 - Positioning of staging areas at least 200 feet away from waterbodies and karst features
 - Refueling of equipment at least 200 feet away from waterbodies and karst features
 - Applying fertilizers, herbicides, or other chemicals at least 200 feet away from waterbodies and karst features
 - Maintaining natural waterbody features
 - Minimizing removal of riparian vegetation
 - Re-vegetating disturbed areas after construction activities
- Any water wells encountered during construction will be appropriately abandoned in accordance with Missouri Well Construction Rules Section 10 CSR 23-3.110 by Greene County and its contractors.
- Greene County and its contractor will remove trade material, demolition materials, or refuse generated during construction from the Project site and supervise the disposal of by a licensed contractor at a construction landfill. Tree trunks, limbs, and vegetation resulting from clearing and grubbing operations may be disposed of by open burning after obtaining required burning permits from the appropriate city or county office. Open burning in incorporated areas will be permitted only under a permit or waiver from MDNR.
- Greene County will require that contractors control fugitive dust to keep it from leaving the Project limits. Watering the ground or using dust-retarding chemicals and washing vehicles

prior to leaving the construction site may be used to reduce the generation and transport of fugitive dust. All methods must comply with applicable Federal, state, and local laws and regulations.

- Any previously unknown hazardous waste sites that are found during Project construction will be handled by Greene County and its contractor in accordance with state and Federal laws and regulations.
- Any historical or archaeological impacts will be addressed according to the stipulations outlined in the Phased Section 106 PA included in Appendix H of the EA.
- Greene County and its engineer will develop a Traffic Management Plan as part of the final design activities during Project design. A Traffic Management Plan defines a set of coordinated traffic management alternatives to manage the work zone impacts.
- Greene County and its contractor will remove identified suitable roosting trees during the period between November 1 and March 31 to avoid possible direct impacts to Indiana bats and northern long-eared bats during the summer maternity season.
- During future geotechnical and other investigations necessary for final design and construction, any karst features identified will be investigated by Greene County and a qualified biologist for the presence or potential use by protected bat species. Known caves in proximity to the Study Corridor (0.5 mile) that could be indirectly disturbed or affected by construction activity, as well as potentially suitable karst features identified within the Study Corridor, will be investigated by Greene County and a qualified biologist for the presence of protected bats. This investigation and corresponding consultation with USFWS (based on the results of the investigation) will be completed and any mitigation measures resulting from that consultation will be incorporated into the Project prior to receiving a federal construction authorization for the Project.
- The contractor will identify all borrow and waste sites prior to initiating construction. The contractor shall be responsible for obtaining all necessary environmental clearances, approvals and permits for use of all borrow and/or waste sites.
- The section of the Ward Branch Trail that would be spanned by the Study Corridor is not currently constructed. In the event that portion of the Ward Branch Trail is constructed before the Project, access to the Ward Branch Trail will be maintained by Greene County and its contractors during construction of the Project. Greene County and its engineer will consider the location of the planned trail during Project development so that continuity of the future trail will not be impacted.
- If changes in the Project footprint or scope occur that were not evaluated in the EA, FHWA, MoDOT, and Greene County shall re-evaluate the NEPA document to verify the determinations remain valid.
- Greene County will review the proposed alignment adjacent to Lennox Place and assess options to shift the roadway and minimize or possibly eliminate, the need for sound walls. Any identified adjustments that are deemed as viable will require consultation with FHWA and MoDOT along with outside federal agencies who may have permitting jurisdiction if outside the area studied as part of the EA.

- Greene County will include as part of any contract documents that tree removal be limited to areas that are necessary for the future 4-lane roadway construction, and that are deemed necessary for safe traffic operations along the roadway corridor.

4.0 REQUIRED PERMITS

The following permits and approvals will be required for construction of the Selected Alternative:

- Section 404 Permit and Section 401 Water Quality Certification under the Clean Water Act
- Section 402 of the Clean Water Act
- Floodplain Development Permit
- USFWS Section 7 Consultation
- Section 106 Compliance

APPENDICES

APPENDIX A – Selected Alternative

APPENDIX B – EA Notice of Availability and Distribution

APPENDIX C – Public Hearing Summary and Meeting Materials

Appendix D – Public Comments

Appendix E – Agency Comments