MDOT Job No. 109496/104100 & 105100

US 11 WIDENING

Environmental Assessment



November 2026

U.S. Department of Transportation
Federal Highway Administration

Mississippi Department of Transportation

US 11 Widening

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Environmental Assessment

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For Jeffrey A. Schmidt, P.E.
Division Administrator
Federal Highway Administration

Submitted pursuant to:
The National Environmental Policy Act (NEPA)
42 U.S.C. §4322(2)(c) and 23 C.F.R. §771

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Submitted by:

FEDERAL HIGHWAY ADMINISTRATION

and

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

U.S. Department of Transportation
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In compliance with the National Environmental Policy Act, this Environmental Assessment describes the No Build Alternative and the Preferred Alternative to add additional travel lanes to US 11 between the Interstate 59 interchange and Old Okahola School Road to accommodate future traffic demand in a safe and efficient manner. No significant adverse environmental effects were identified with either of the alternatives.

This Environmental Assessment is also available for review online at:

http://www.mdot.ms.gov
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Chapter 1: Introduction

This chapter describes the the proposed project, current project area conditions, and the project's lead agency roles.

1.1. What is the US 11 Widening Project?

The Mississippi Department of Transportation (MDOT) is proposing to enhance safety along US 11 and provide improved access to the Eagle One Mega Site (EOMS). The safety improvements include realigning where Old Okahola School Road and White Chapel Road intersect US 11 and adding shoulders to the two-lane section. Lanes will be added to US Highway 11 (US 11) in Forrest and Lamar counties from southern extent of the EOMS north to 0.6 miles south of the US 11/ Interstate 59 interchange to improve access to the EOMS. Figure 1 shows the project location. Further information on the proposed improvements is discussed further in Section 2.3.

The EOMS is a large industrial business project under development approximately two miles south of the I 59/US 11 interchange (**Figure 1**). The development is marketed by both the Forest Lamar Area Development Partnership (FLADP) and by the Mississippi Development Authority (MDA). This site will provide infrastructure for large industrial complexes and substantial manufacturing facilities with approximately 2,155 acres available for development.

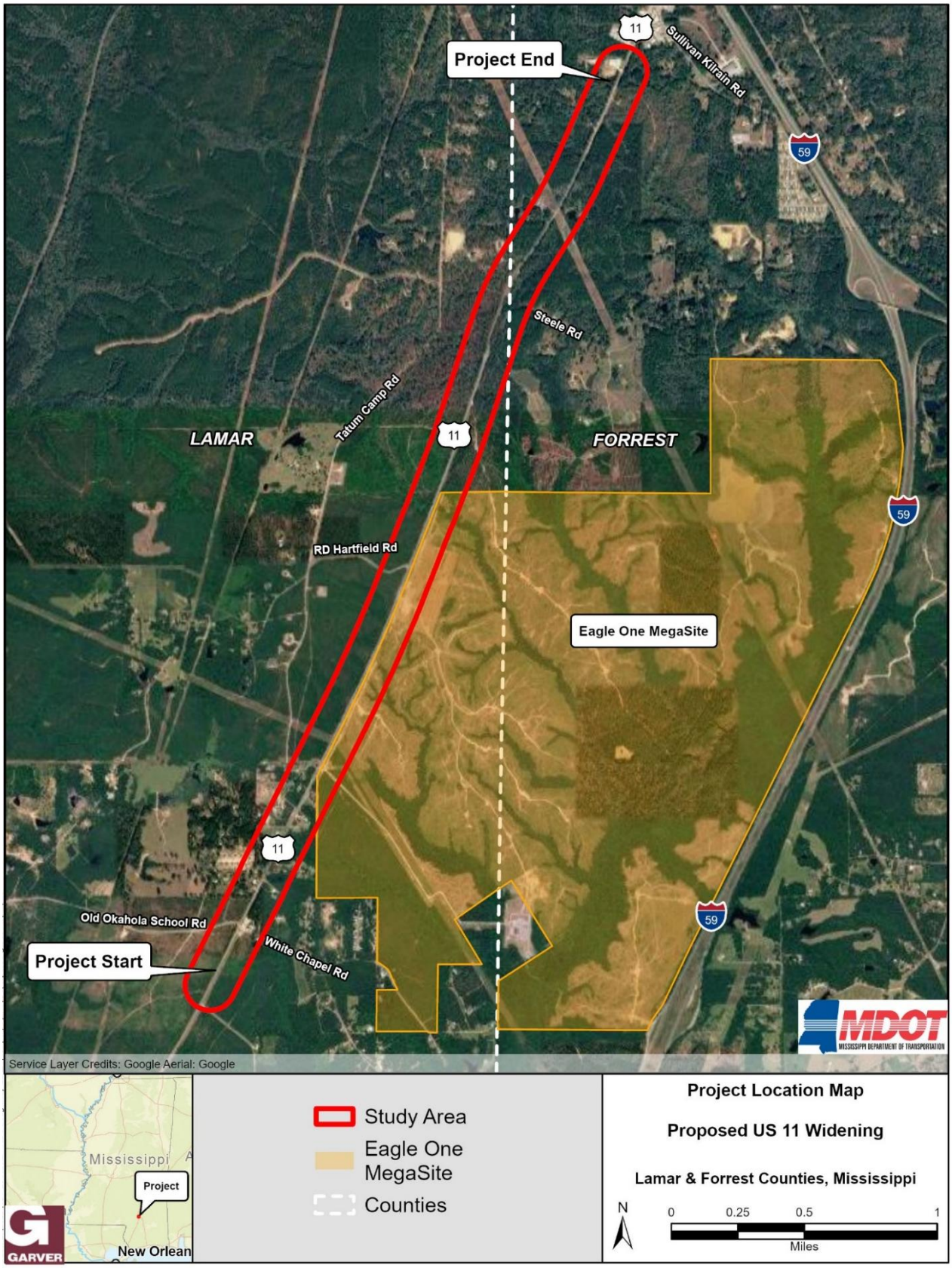
The MDA received a 9.9-million-dollar grant in 2023 to increase the competitiveness of this site so that it is ready to meet prospective company's needs (https://www.hubcityspokes.com/local-content/eagle-one-mega-site-receives-99m-mda-grant-funding) and the Mississippi legislature set aside 1.25 million dollars partly to assist with the preconstruction costs of widening US 11 to improve access to the EOMS (https://billstatus.ls.state.ms.us/documents/2024/html/SB/3000-3099/SB3069IN.htm). In addition to the funding noted above, federal earmark funds legislatively committed to the EOMS roadway improvements have been appropriated and a portion of those funds are being used for this environmental study (Highway Infrastructure Programs Projects designated in Division F of the Consolidated Appropriations Act, 2024 Allocation of Y603 Funds [CFDA No. 20.205]).

1.2. What are the project limits and how were they chosen?

The project limits, also called logical termini, for the proposed project are dictated by the project's purpose and need. Improvements to US 11 are proposed from approximately 1,000 feet south of Old Okahola School Road to the southern terminus of the I 59/US 11 interchange in Forrest and Lamar Counties, Mississippi, approximately 3.5 miles in length. The northern terminus ties directly into separate proposed improvements to the north (I 59/US11 Interchange Improvements, MDOT project numbers SP-0059-01(135)/109496-101000, 102000, 103000). The southern terminus was established to ensure the widening improvements for US 11 extend to the southern extent of the EOMS and including safety improvements to the Old Okahola School Road and White Chapel Road intersection.

The logical termini do not restrict the consideration of alternatives for other reasonably foreseeable transportation improvements, meet the purpose and need without requiring other projects to be built, and provide for a reasonable area for the review of the environmental impacts.

Figure 1: Project Location Map



1.3. What are the current conditions in the project area?

1.3.1. Built Environment

Within the project area, US 11 is a Type 3 two-lane major collector federal highway with no control of access and a posted speed limit of 55 mph. There are four minor arterial county roads that intersect US 11 within the project limits.

Type 3 highways permit vehicular ingress and egress from abutting properties directly to and from through traffic lanes.

The project area is rural and mostly undeveloped with 12 residential homes, one cemetery monument business, an autism facility, and one home-based business. Most of these homes and businesses are located in the southern portion of the project within 3,600 feet of Old Okahola School Road

The approximately 2,155-acre EOMS previously described in Section 1.1 will include approximately three miles of frontage on I 59 and one mile of frontage on US 11. At the time of this study, the EMOS is mostly undeveloped but has been cleared and grubbed with the expectation of future development. A construction staging area has been developed within the EOMS directly east of US 11.

1.3.2. Natural Setting

The project is in the Southern Pine Plains and Hills of the Southeastern Plains ecoregion. The adjacent land to US 11 likely to be directly impacted by the project is moderately undulating with a mix of upland longleaf (*Pinus palustris*) and loblolly (*Pinus taeda*) pine plantations, mixed forests, cleared areas, and wetlands. The project area lies in Hydrologic Unit Code 03170007 (Black Creek Sub-basin) and does not involve Federal Emergency Management Agency (FEMA) mapped floodplains. US 11 crosses 12 potentially jurisdictional streams (four perennial and eight intermittent) and 15 likely non-jurisdictional minor ephemeral streams within the study area. The observed channels generally flow southeast into Black Tom Creek then south into Black Creek. There are no designated special habitats or natural areas requiring protection within or nearby the project area.

1.3.3. Landforms and Geology

The project is also located in the Southern Pine Hills physiographic province of Mississippi. This region consists of southward-sloping, dissected and irregular plains. There are low, rolling hills, broad, gently-sloping ridgetops, a few steeper side-slopes where cut by streams, and broad, flat bottomlands along low-to-moderate gradient streams with sand and clay bottoms. This region is underlain by sediments with variable textures, ranging from clay, through fine sands to coarse sands, and some gravely sands; in the east, there is also some limestone. This region was originally covered mostly in open forest of longleaf pine, with southern mixed forest on the moister, richer sites. The forests have been almost completely cleared, and mostly replaced by monoculture pine plantations, mostly of slash pine and loblolly pine. These plantations lack the biodiversity of wild forests, and this conversion has thus resulted in many species dependent on the original forests becoming endangered or threatened. In addition to the pine plantations, there is a small amount of hay and cattle ranching, and in recent years, increasing amounts of poultry farming. In the east, there is also some cropland on the flatter uplands,

and the region produces soybeans, wheat, peanuts, cotton, corn, pecans, sweet potatoes, and tomatoes.

In the project area, the Citronelle and Pascagoula geological formations are exposed at the surface. The sediments forming the Citronelle Formation occur as a nearly continuous blanket along the southern margin of the Coastal Plain and can be traced from Texas across the Gulf Coast into peninsular Florida. The lack of fossil evidence, however, has made this formation the subject of a heated age controversy since it was first described in 1916. At present, its age is given by various investigators as late Miocene, Pliocene, Plio-Pleistocene or Pleistocene. The Pascagoula Formation, primarily located in Mississippi and Alabama, is a substantial geological formation dating back to the Late Cretaceous period, approximately 100 million years ago. It is pivotal for understanding the paleoenvironment of the Gulf Coast, characterized by its rich fossil record that includes marine life such as mollusks and echinoderms . Additionally, the formation has economic importance due to its potential hydrocarbon reserves, making it a focus for oil and gas exploration (Forrest and Lamar County Geology Bulletins).

1.3.4 Demographics

A portion of the northern end of project area near I 59 is included within the Hattiesburg-Petal-Forrest-Lamar (HPFL) Metropolitan Planning Organization (MPO) area. The entire study area is within the HPFL-MPO's Planning Area (2045 Metropolitan Transportation Plan for the HPFL-MPO). The HPFL-MPO projects moderate growth for both population and employment as outlined in the 2045 Metropolitan Transportation Plan. Forrest County and Lamar County have estimated populations of 78,435 and 66,734 persons, respectively. Forrest County has an estimated labor force of 39,848 individuals and an unemployment rate of 5.2%. Lamar County has an estimated labor force of 33,949 individuals and an unemployment rate of 2.0% (U.S. Census Bureau, 2024 American Community Survey Estimates).

1.4. Why was this Environmental Assessment completed?

This Environmental Assessment (EA) is required under the National Environmental Policy Act (NEPA) with the following goals:

- Evaluate the environmental, social, and economic effects of the project alternatives.
- Inform and incorporate feedback from the public and decision makers about the environmental, social, and economic effects of the project alternatives.
- Determine whether effects are significant and require an Environmental Impact Statement, or if the project effects sufficiently documented through this EA supports a Finding of No Significant Impact (FONSI) determination.

The **National Environmental Policy Act** requires federal agencies to consider the potential environmental consequences of their actions, document the analysis, and provide a public involvement process prior to project implementation.

1.5. Who is leading this project?

This project is led by a partnership between the Federal Highway Administration (FHWA) and MDOT. The NEPA studies and highway design for the US 11 widening project are begin paid for via federal (80%) and state earmarks supporting EOMS (20%). MDOT is responsible for administering and maintaining the state highway system, which includes US 11. FHWA has the primary responsibility for the content and accuracy of this NEPA document.

Chapter 2: Purpose and Need

This chapter explains the proposed project's purpose and why improvements are needed.

2.1. What is the purpose of the project?

The purpose of the proposed project is to comply with State and Federal legislation and upgrade US 11 in the project area to improve access to the EOMS and improve safety for US 11 users in the project area.

2.2. Why is the project needed?

The proposed project is needed to meet the legislative funding commitment to support the EOMS development and roadway improvements. The EOMS development would result in increased traffic volumes and would require improved roadway accessibility in the area. In addition, the proposed project is needed to provide safety improvements to reduce crash risks at the intersection of US 11 and Old Okahola School Road.

2.2.1. Safety and Traffic

Future traffic generation based on known and potential developments is part of the traffic study and influences the typical section and other improvements of the proposed alternatives. A safety analysis and a traffic study were completed to identify safety concerns, document the existing traffic conditions, and evaluate future traffic operations with and without improvements to help identify project needs and assist in developing recommendations. The traffic study was conducted following Highway Capacity Manual (HCM) methodology. Important information from the safety and traffic analysis is presented below, and the full report can be viewed in **Appendix A**.

2.2.1.1. Safety Analysis

MDOT provided crash data from 2020 to 2024 (the most recent five complete years of available data) which was evaluated to identify crash patterns and determine segment crash rates. White Chapel Road is just 175 feet south of Old Okahola School Road, and crashes related to the intersection with Old Okahola School Road likely overlap with crashes related to the intersection with White Chapel Road. Therefore, crashes occurring at White Chapel Road were included in the safety analysis of the study area which extends from Old Okahola School Road to 0.6 miles south of I 59.

Table 1 below shows the results of the safety analysis divided into three distinct segments of US 11 within the project limits. The average daily traffic (ADT) volume for each segment was estimated based on traffic counts from MDOT Traffic Counter website. A critical index value above 1.0 indicates a segment crash rate that is higher than the average crash rate for similar facility types.

Table 1: Segment Crash Rates

From	To	Length (miles)	ADT (vpd)	Total Crashes	Crash Rate (per MVM)	MS Avg Crash Rate	Critical Crash Rate	Critical Index
White Chapel Rd	Hartfield Rd	1.50	5,900	23	1.42	0.96	1.50	0.95
Hartfield Rd	Steele Rd	1.00	5,900	16	1.49	0.96	1.50	0.99
Steele Rd	End of Project	1.00	6,900	7	0.56	0.96	1.45	0.38

The segment crash rates per million vehicle miles (MVM) were compared to the Mississippi statewide average crash rate for rural two-lane facilities. Although crash rates for all segments were below the critical crash rate, two segments (White Chapel Road and Hartfield Road and Hartfield Road and Steele Road) are higher than the Mississippi statewide average crash rate. Furthermore, these segments are approaching 1.0 for their critical index. In other words, their crash rate is approaching levels higher than other similar facility types. Based on this data, improvements are needed to improve safety within the corridor.

2.2.1.2. Existing Traffic Conditions

The US 11 corridor is currently a two-lane highway with intermittent passing permitted, as shown in **Figure 2** below. For the two-lane highway analysis, this highway is considered a higher speed highway with posted speed limit of 55 mph. The Level of Service (LOS) descriptors were used to measure roadway performance and compare traffic operations along the corridor. **Table 2** shows the LOS thresholds for a two-lane highway and **Table 3** shows the existing project area LOS results using the latest Highway Capacity Manual (HCM) methodology.

Figure 2: Existing Configuration of US 11

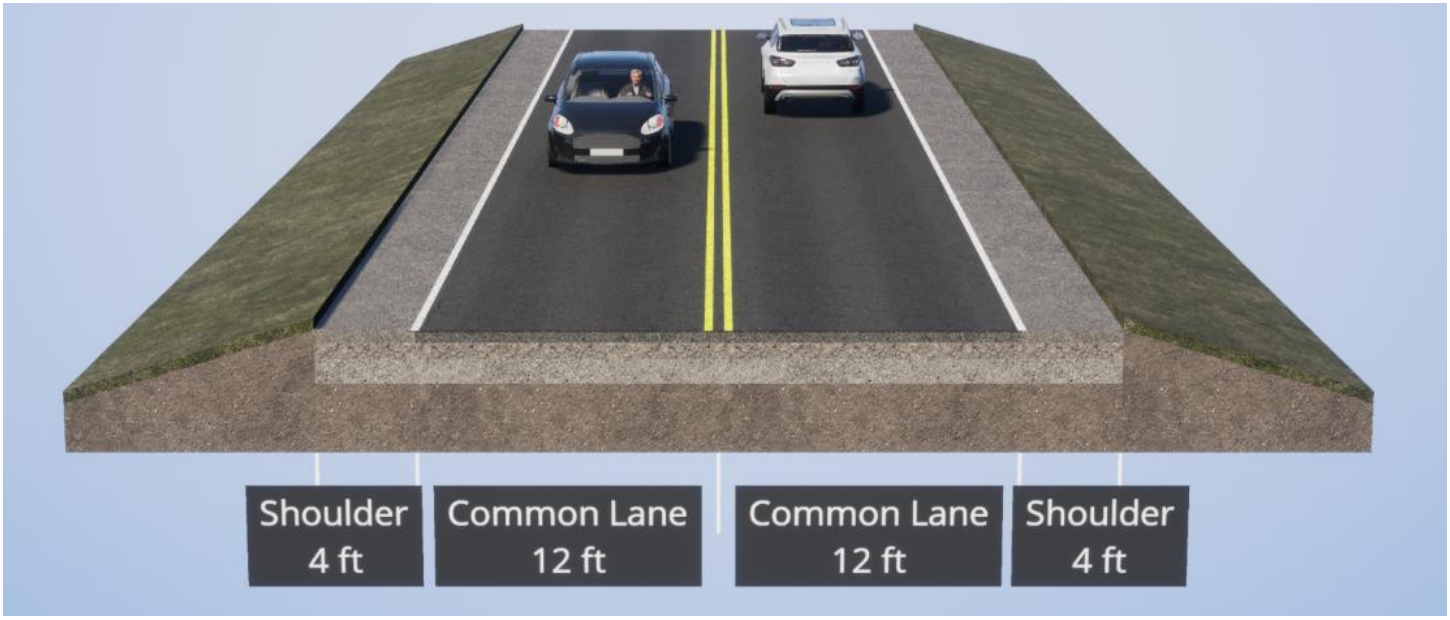


Table 2: Two-Lane Highway LOS Thresholds (HCM 7 Exhibit 15-6)

LOS	Follower Density (followers/mi/ln)	
	Higher-Speed Highways Posted Speed Limit ≥ 50 mi/h	Lower-Speed Highways Posted Speed Limit < 50 mi/h
A	≤ 2.0	≤ 2.5
B	> 2.0 – 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	

The performance along the existing US 11 corridor is shown in **Table 3**. These results show that both directions of travel along the US 11 corridor currently operate at LOS C or better throughout the study area.

Table 3: Corridor LOS – 2025 Existing Conditions

US 11 Segment	Time Period	MOE	NB	SB
Old Okahola Rd toHartfield Rd	AM	Follower Density	5.0	1.3
		LOS	C	A
	PM	Follower Density	1.5	4.9
		LOS	A	C
Hartfield Rd to Steele Rd	AM	Follower Density	5.1	1.3
		LOS	C	A
	PM	Follower Density	1.5	5.4
		LOS	A	C
Steele Rd to End of Project	AM	Follower Density	5.3	1.4
		LOS	C	A
	PM	Follower Density	1.5	5.6
		LOS	A	C

2.2.1.3. Future No Build Traffic Conditions

The future No Build scenarios were evaluated along the US 11 corridor. **Tables 4 to 6** show the LOS in 2030 and in 2050. In 2030, projected LOS show an LOS C or better throughout the study area; however, in 2050, the corridor shows a decline in LOS, with LOS E at portions of the corridor (with or without the US 98 extension project).

2030 No Build Conditions

The performance along the US 11 corridor in 2030 No Build conditions is shown in **Table 4**. This scenario assumes the same configuration along the study area as 2025 Existing.

Table 4: Corridor LOS – 2030 No Build Conditions

US 11 Segment	Time Period	MOE	NB	SB
Old Okahola Rd to Hartfield Rd	AM	Follower Density	5.9	1.6
		LOS	C	A
	PM	Follower Density	1.8	5.9
		LOS	A	C
Hartfield Rd to Steele Rd	AM	Follower Density	6.1	1.6
		LOS	C	A
	PM	Follower Density	1.8	6.4
		LOS	A	C
Steele Rd to End of Project	AM	Follower Density	6.3	1.6
		LOS	C	A
	PM	Follower Density	1.9	6.6
		LOS	A	C

2050 No Build Conditions

The performance along the US 11 corridor in 2050 No Build conditions is shown in **Table 5**. This scenario assumes the same configuration along the study area as 2025 Existing. The volumes account for background growth plus the completed EOMS and DDI interchange. **Table 6** shows the 2050 No Build conditions with the US 98 extension.

The results for the 2050 No Build without the US 98 extension show that the northbound direction will fail during the AM peak with LOS E conditions from Hartfield Road to the northern end of the study area. The southbound direction will mirror this failure during the PM peak with LOS E conditions from the northern end of the study area to Hartfield Road. The results for 2050 No Build with the US 98 extension are similar with LOS E conditions between Steele Road and the US 98 Extension. These modeled future conditions demonstrate the need for widening to accommodate the anticipated future volumes.

Table 5: Corridor LOS – 2050 No Build Conditions without US 98 Extension

US 11 Segment	Time Period	MOE	NB	SB
Old Okahola Rd to Hartfield Rd	AM	Follower Density	11.8	3.5
		LOS	D	B
	PM	Follower Density	3.9	11.8
		LOS	B	D
Hartfield Rd to Steele Rd	AM	Follower Density	12.1	3.4
		LOS	E	B
	PM	Follower Density	3.9	12.6
		LOS	B	E
Steele Rd to End of Project	AM	Follower Density	12.4	3.4
		LOS	E	B
	PM	Follower Density	3.9	13.0
		LOS	B	E

Table 6: Corridor LOS – 2050 No Build Conditions with US 98 Extension

US 11 Segment	Time Period	MOE	NB	SB
Old Okahola Rd to Hartfield Rd	AM	Follower Density	11.8	3.5
		LOS	D	B
	PM	Follower Density	3.9	11.8
		LOS	B	D
Hartfield Rd to Steele Rd	AM	Follower Density	12.1	3.4
		LOS	E	B
	PM	Follower Density	3.9	12.6
		LOS	B	E
Steele Rd to US 98 Extension	AM	Follower Density	12.7	3.5
		LOS	E	B
	PM	Follower Density	3.9	13.2
		LOS	B	E
US 98 Extension to End of Project	AM	Follower Density	6.2	1.6
		LOS	C	A
	PM	Follower Density	1.8	6.5
		LOS	A	C

2.2.1.4. Future Build Traffic Conditions

Under the Build Conditions, US 11 will be widened to a four-lane divided typical section from approximately 0.6 miles north of Old Okahola Road to approximately 0.6 miles south of I 59. The section south of the four-lane improvements will remain a two-lane roadway to minimize impacts to residential properties adjacent US 11. The performance along the US 11 corridor in 2050 with widening is shown in **Table 7**. The volumes account for background growth plus the completed mega site and DDI interchange.

Table 7: Corridor LOS – 2050 Build Conditions without US 98 Extension

US 11 Segment	Time Period	MOE	NB	SB
Old Okahola Rd to Begin 4-Lane	AM	Follower Density	11.7	3.3
		LOS	D	B
	PM	Follower Density	3.3	11.7
		LOS	B	D
Begin 4-Lane to Hartfield Rd	AM	Density	8.0	3.5
		LOS	A	A
	PM	Density	3.7	8.0
		LOS	A	A
Hartfield Rd to Steele Rd	AM	Density	8.3	3.4
		LOS	A	A
	PM	Density	3.8	8.2
		LOS	A	A
Steele Rd to End of Project	AM	Density	8.3	3.3
		LOS	A	A
	PM	Density	3.7	8.3
		LOS	A	A

Table 8 below shows the 2050 Build conditions with the US 98 extension and diverted volumes. These results show that the widened US 11 corridor will perform well with LOS A conditions in both directions during both peaks throughout the study area with and without the US 98 extension. The section of US 11 that remains two-lanes will perform adequately with LOS D conditions in the peak direction and LOS B conditions in the off-peak direction.

Table 8: Corridor LOS – 2050 Build Conditions with US 98 Extension

US 11 Segment	Time Period	MOE	NB	SB
Old Okahola Rd to Begin 4-Lane	AM	Follower Density	11.7	3.3
		LOS	D	B
	PM	Follower Density	3.3	11.7
		LOS	B	D
Begin 4-Lane to Hartfield Rd	AM	Density	8.0	3.5
		LOS	A	A
	PM	Density	3.7	8.0
		LOS	A	A
Hartfield Rd to Steele Rd	AM	Density	8.3	3.4
		LOS	A	A
	PM	Density	3.8	8.2
		LOS	A	A
Steele Rd to US 98 Extension	AM	Density	8.3	3.3
		LOS	A	A
	PM	Density	3.7	8.3
		LOS	A	A
US 98 Extension to End of Project	AM	Density	4.9	2.1
		LOS	A	A
	PM	Density	2.2	5.1
		LOS	A	A

Chapter 3: Alternative Development

This chapter explains how project alternatives were developed and describes the alternatives evaluated in this EA.

Preparation of an EA under NEPA involves the identification of a reasonable range of alternatives to address a proposed action. A reasonable range of alternatives are those that meet the study's purpose and need and are practical or feasible from an environmental, technical, and economic standpoint.

For NEPA studies, the preliminary alternatives are evaluated foremost on their ability to address the project's purpose and need, and then on how well they meet other goals such as, but not limited to, minimizing negative impacts to human and natural environments, their constructability, and cost.

3.1. What alternatives were initially considered?

3.1.1. Range of Alternatives

As discussed in Chapter 1, the purpose of the proposed project is to comply with State and Federal legislation to improve access to the EOMS and accommodate future traffic demand in a safe and efficient manner by adding capacity to US 11. Future traffic generation based on known and potential developments is part of the traffic study and influences the typical section and other improvements included in the proposed alternatives.

NEPA requires a "No Build" alternative in every EA to provide a baseline against which "Build" alternatives can be compared. Under the No Build Alternative (Alternative A), no improvements would be constructed on US 11 within the study area. The No Build Alternative would have no impact to the environment or the surrounding community but would not fulfill the purpose and need of the project.

Two build alternatives were initially proposed and considered. The proposed improvements consisted of adding two lanes to the existing US 11 from Old Okahola School Road to the south terminus of the US 98 and US 11 interchange. Both build alternatives retain the existing two lanes and add two additional lanes on one side or the other through the entire project. The alternative adding lanes to the west of the existing US 11 was named Alternative B and the alternative adding lanes to the east side was named Alternative C.

Based on the traffic studies, that were completed following the development of the two build alternatives and public meeting, additional capacity was not required south of the EOMS. During the early conceptual design effort, the proposed improvements were revised to keep the existing two-lane typical section and only provide safety improvements south of the EOMS. This design modification minimizes the impacts to residential properties that would result from a four-lane typical section.

Other proposed improvements for minor road intersections and median concepts were adjusted due to the results of the traffic study and through continuous coordination with the MDOT Planning Division. More detailed discussions on these improvements are provided in Section 3.2.

3.2. What additional improvements were developed?

3.2.1. Railroad Overpass

A railroad overpass was included for consideration based on a planned spur railroad near the EOMS southern limits. The proposed rail spur is associated with the EOMS development and will be completed as a separate project. The railroad bridge location was evaluated on new alignment as well as along existing US 11. The least impactful option was to construct the proposed bridge along existing US 11 because constructing the proposed bridge on a new horizontal alignment while maintaining traffic on US 11 had more impact to adjacent property. The revised design associated with the railroad bridge for Alternative B include a temporary detour west of existing US 11, and Alternative C included a temporary detour east of existing US 11.

3.2.2. Construction Detour

To improve safety for motorists entering US 11 from Old Okahola School Road and White Chapel Road, the roadway profile of US 11 will be raised to provide the required stopping and intersection sight distance. Because the proposed profile increase is approximately five feet, maintaining traffic with alternating lane closures is not feasible, therefore, a detour will be required during construction. The detour route, as shown in **Figure 3**, was placed on the east side of US 11 to minimize impacts to residential properties located west of the highway. This detour would be proposed for both Alternatives B and C.

Figure 3: Proposed Construction Detour on US 11



3.2.3. Old Okahola School Road / White Chapel Rd Intersection

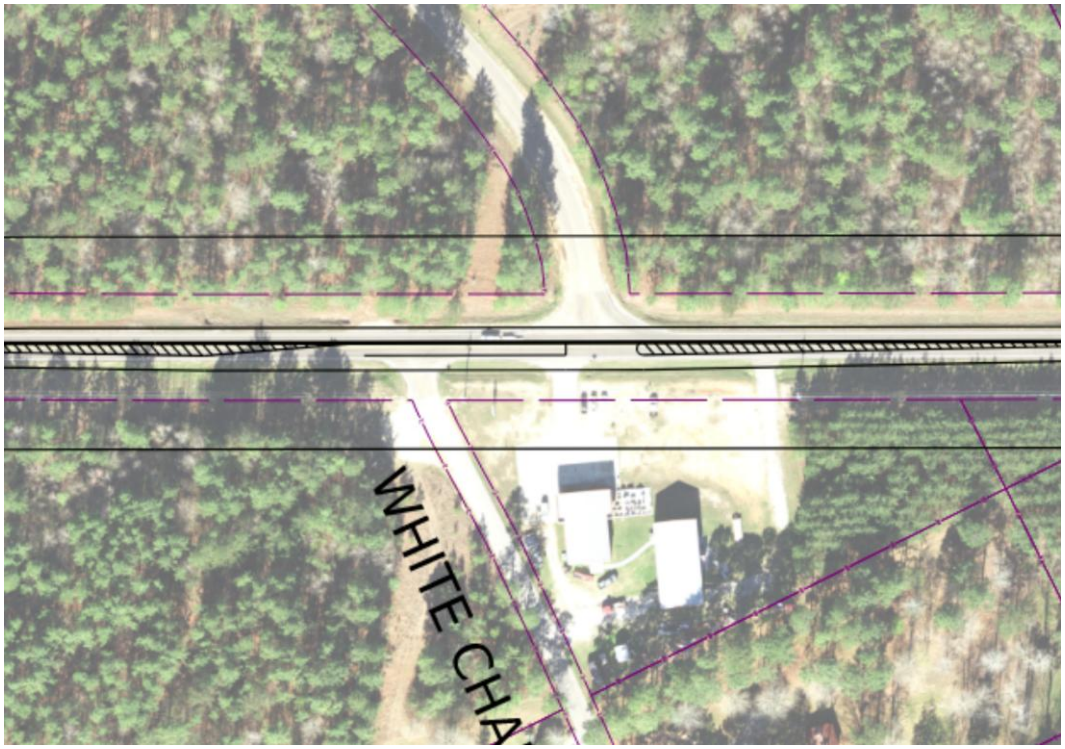
Due to public input and safety concerns identified in the Traffic and Safety report, intersection improvement options were also evaluated for the Old Okahola School Road and White Chapel Road intersection. Various intersection improvements were studied that included maintaining the existing geometry on US 11 and realignment of the intersection.

Option 1

Option 1, which was presented during the public meeting, maintains the existing geometry of Old Okahola School Road and White Chapel Road at their intersections with US 11. As shown in **Figure 4**, a dedicated left-turn lane is proposed for vehicles turning onto Old Okahola School Road to address operational and safety concerns in the area. To accommodate the additional lane, roadway widening would occur on the east side of US 11, avoiding reconstruction of the Old Okahola School Road intersection.

Under this alternative, the intersections would continue to function as an offset T-intersection configuration, which is generally less desirable from a safety perspective. In addition, White Chapel Road intersects US 11 at an angle of approximately 25 degrees, which does not meet the preferred criteria outlined in the MDOT Roadway Design Manual.

Figure 4: Option 1 Intersection Improvements



Option 2

As shown in **Figure 5**, Option 2 realigns White Chapel Road to intersect Old Okahola School Road, creating a single T-intersection with US 11. Access to both local roads would be provided through a two-way left-turn lane along US 11.

Figure 5: Option 2 Intersection Improvements



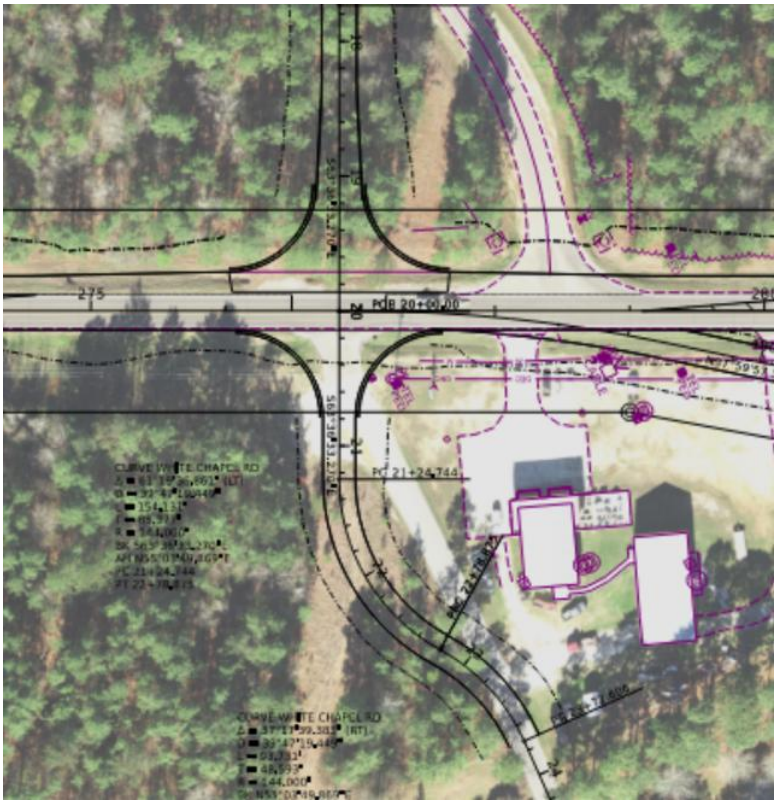
This alternative would improve traffic operations and intersection safety; however, it would result in the greatest property impacts as the proposed alignment would pass directly through an existing business property.

Option 3

As shown in **Figure 6**, Option 3 realigns both Old Okahola School Road and White Chapel Road so that they intersect US 11 at a common location south of the existing business. Because the Old Okahola School Road intersection would be reconstructed, the widening required for the proposed left-turn lanes would occur on the west side of US 11.

To achieve an intersection angle near 90 degrees while avoiding impacts to the residence located west of the roadway, White Chapel Road would require a sharp S-curve. This roadway geometry introduces concerns related to superelevation transition and overall operational performance.

Figure 6: Option 3 Intersection Improvements

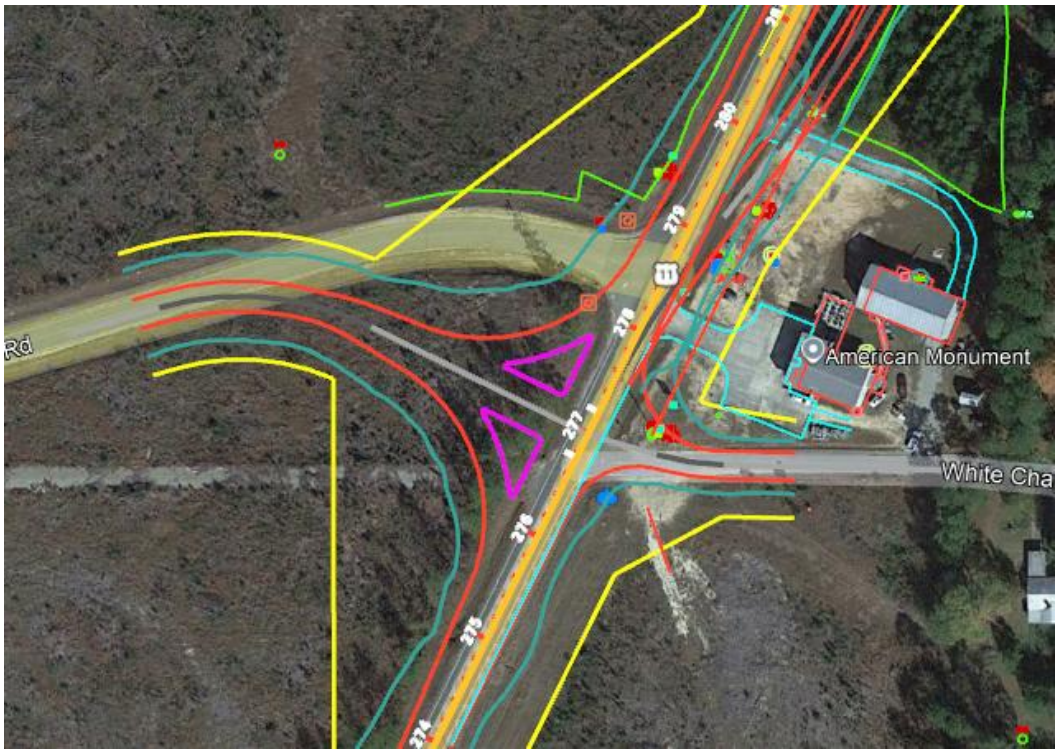


Option 4

Similar to Option 3, the proposed intersection design consolidates the two local road intersections into a T-intersection configuration, improving safety and reducing conflict points along US 11.

As shown in **Figure 7**, rather than incorporating the sharp S-curve required under Option 3, Option 4 shifts the intersection slightly north and introduces a minor intersection skew of less than 10 degrees for White Chapel Road. This configuration allows the roadway to tie back into the existing alignment more quickly, minimizing roadway curvature, reducing the overall project footprint and geometric concerns.

Figure 7: Option 4 Intersection Improvements



3.3. How was the Preferred Alternative determined?

Both Build Alternatives were developed to meet future traffic needs and were included as part of an initial analysis and provided to the public and stakeholders for comment (**Appendix B**). Input received from the public meeting was considered as part of the evaluation of the alternatives being considered for the proposed project. In addition to reviewing public and stakeholder comments after the public meeting, the evaluation design process included discussions between MDOT, FHWA, and EOMS to ensure all stakeholder considerations were addressed to the extent practical. This important collaboration resulted in reduced right of way (ROW), fewer environmental impacts, and lower overall project costs.

Based on this collaboration, public and stakeholder input, and further review of impacts, Alternative B was identified as the preferred alternative. Option 4 for the Old Okahola School Road intersection is included as part of the Alternative B design. Alternative B best meets the purpose and need of the project while providing the least impact to the human and natural environment. The Preferred Alternative is shown in **Figures 8 through 13**.

The Preferred Alternative consists of widening to the west side of the existing US 11 to a four-lane divided section beginning approximately 1.1 miles north of the US 11 and Old Okahola School Road intersection and extends north approximately 3.5 miles to the undivided four-lane typical section that matches the I 59/US 11 interchange improvement project. The Preferred Alternative realigns Old Okahola School Road to intersect US 11 near the existing White Chapel Road intersection. In addition, the US 11 vertical profile north of the intersection would be raised to improve sight distance for vehicles at the intersection. White Chapel Road would also be realigned to reduce the intersection skew and improve overall traffic operations and safety. Left-turn lanes were added along US 11 at the Old Okahola Road/White Chapel Road intersection to remove turning vehicles from the through-travel lanes and improve traffic operations. A temporary detour is required around the US 11 vertical profile improvements to maintain traffic during construction. This temporary detour is located on the east side of existing US 11. A bridge is included in the Preferred Alternative to span the proposed railroad spur that would access the EOMS. A temporary detour is required to maintain traffic while constructing the proposed bridge as the bridge is located along the existing US 11. The four-lane divided section consists of restricted crossing u-turn (RCUT) median openings with adjacent median u-turn (MUT) median openings. These RCUT median openings enhance safety by prohibiting vehicles entering US 11 from side roads from making direct left turns or crossing the highway. Instead, drivers must turn right onto US 11 and proceed to a downstream MUT location to complete a U-turn.

Figure 8: Preferred Alternative

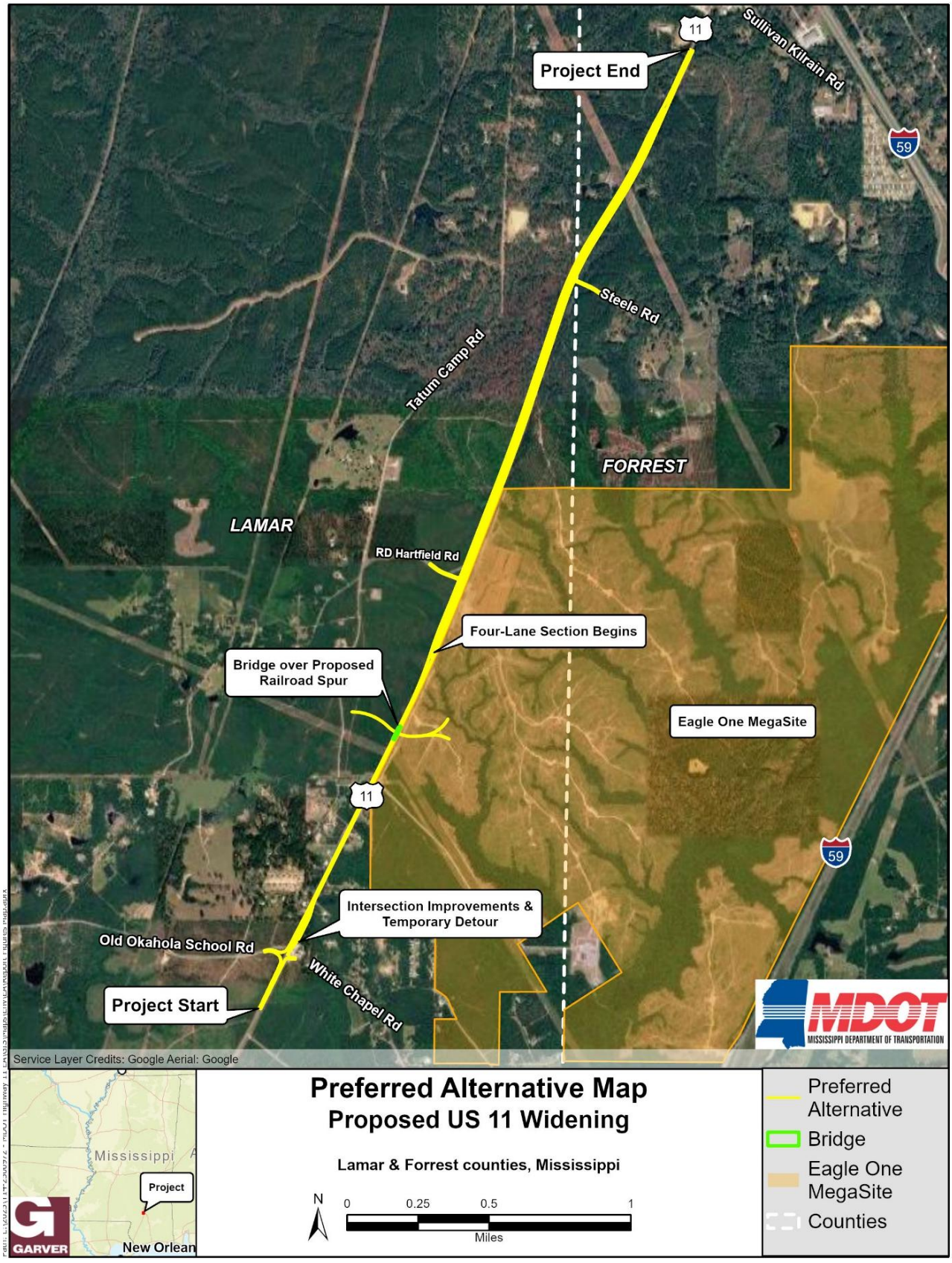


Figure 9: Preferred Alternative Detailed Map 1

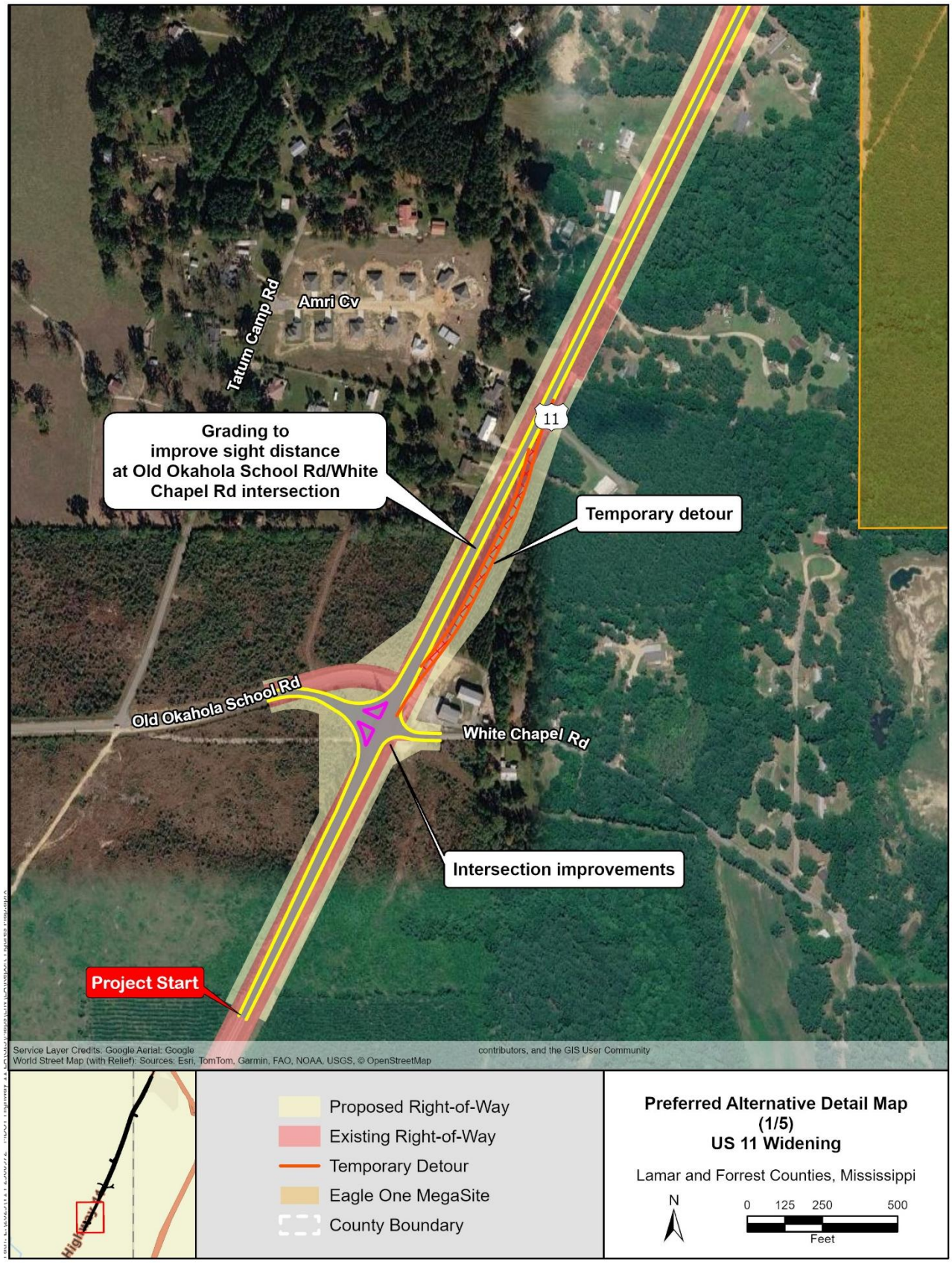


Figure 10: Preferred Alternative Detailed Map 2

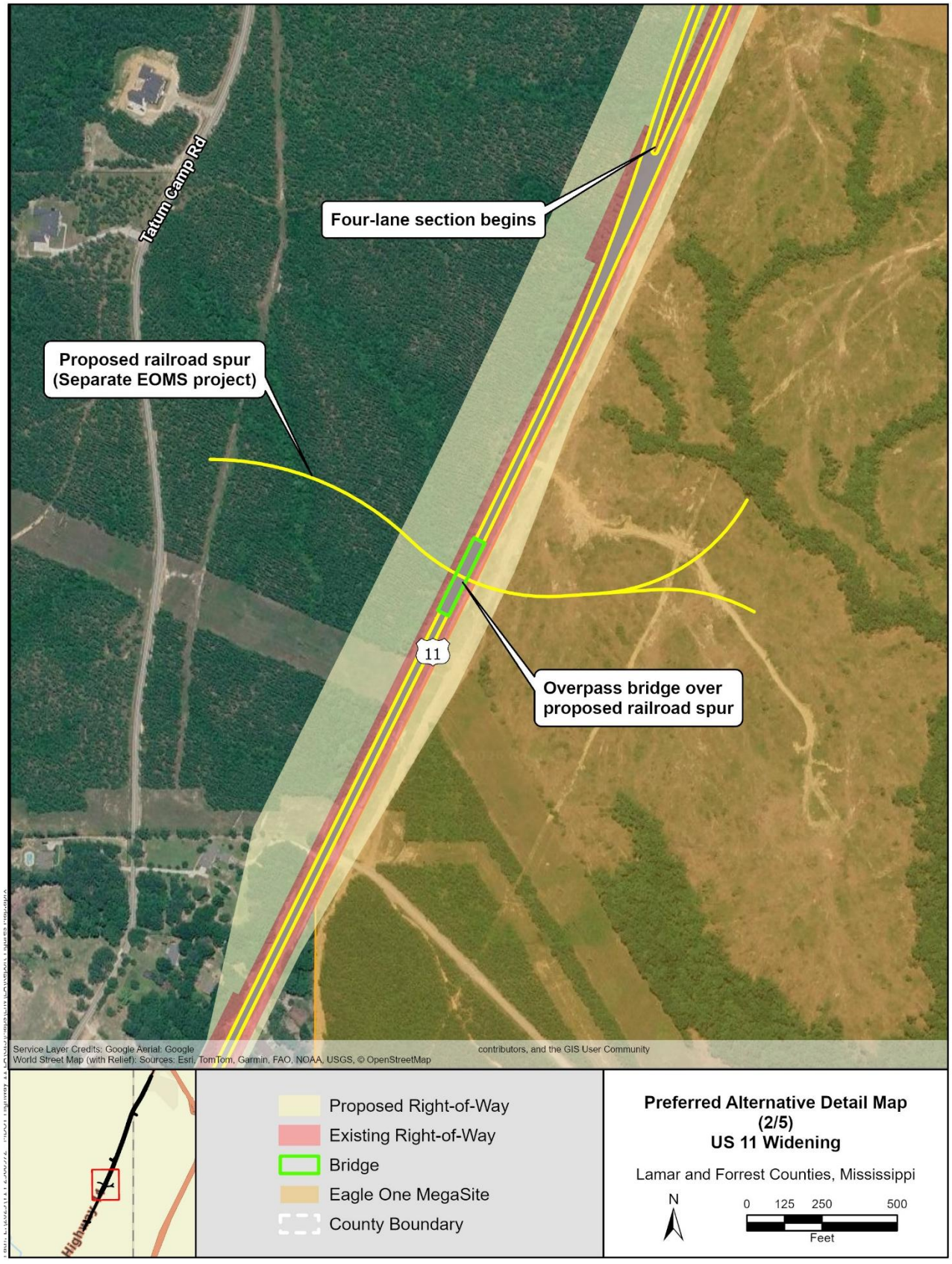


Figure 11: Preferred Alternative Detailed Map 3

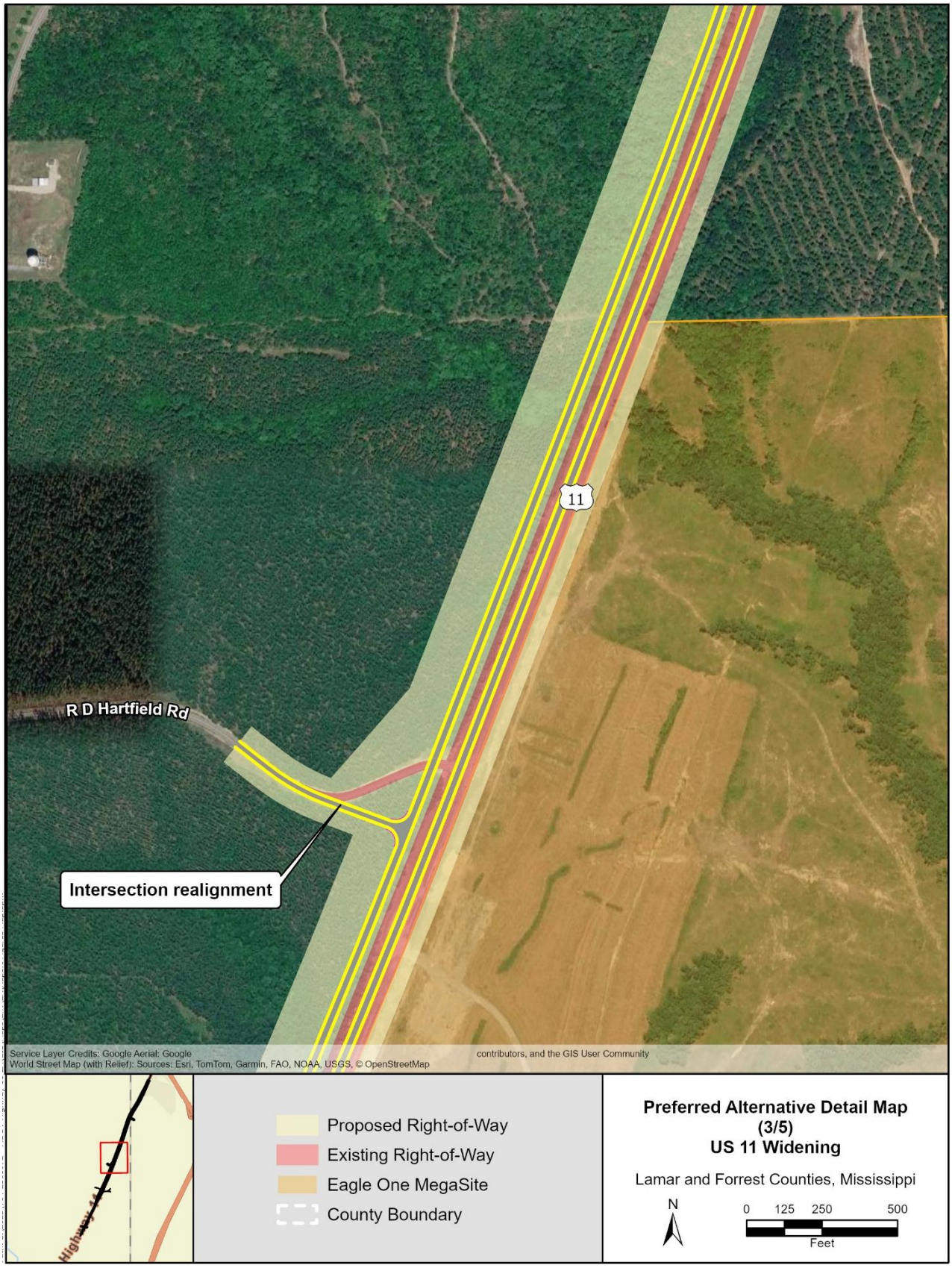


Figure 12: Preferred Alternative Detailed Map 4

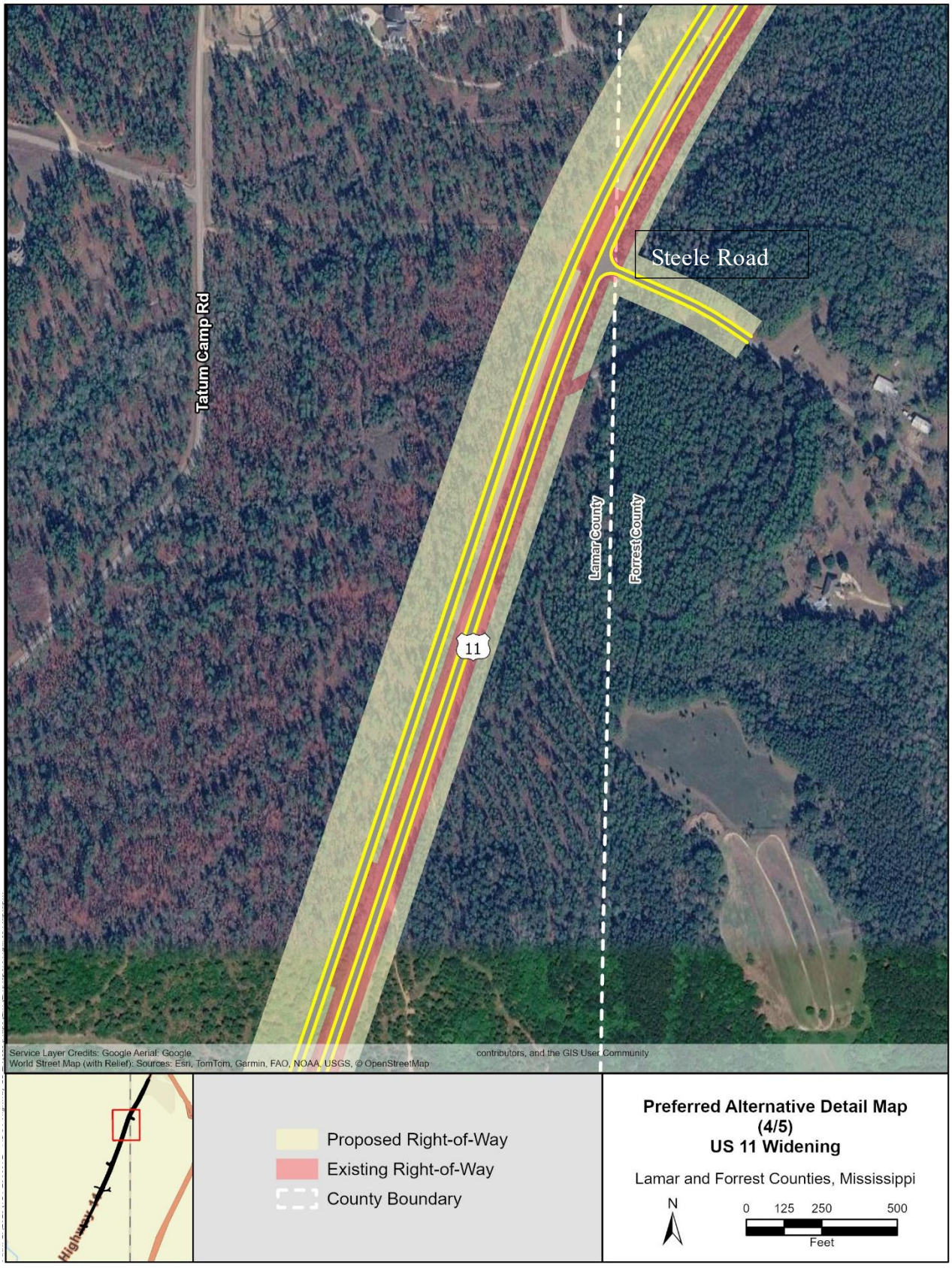
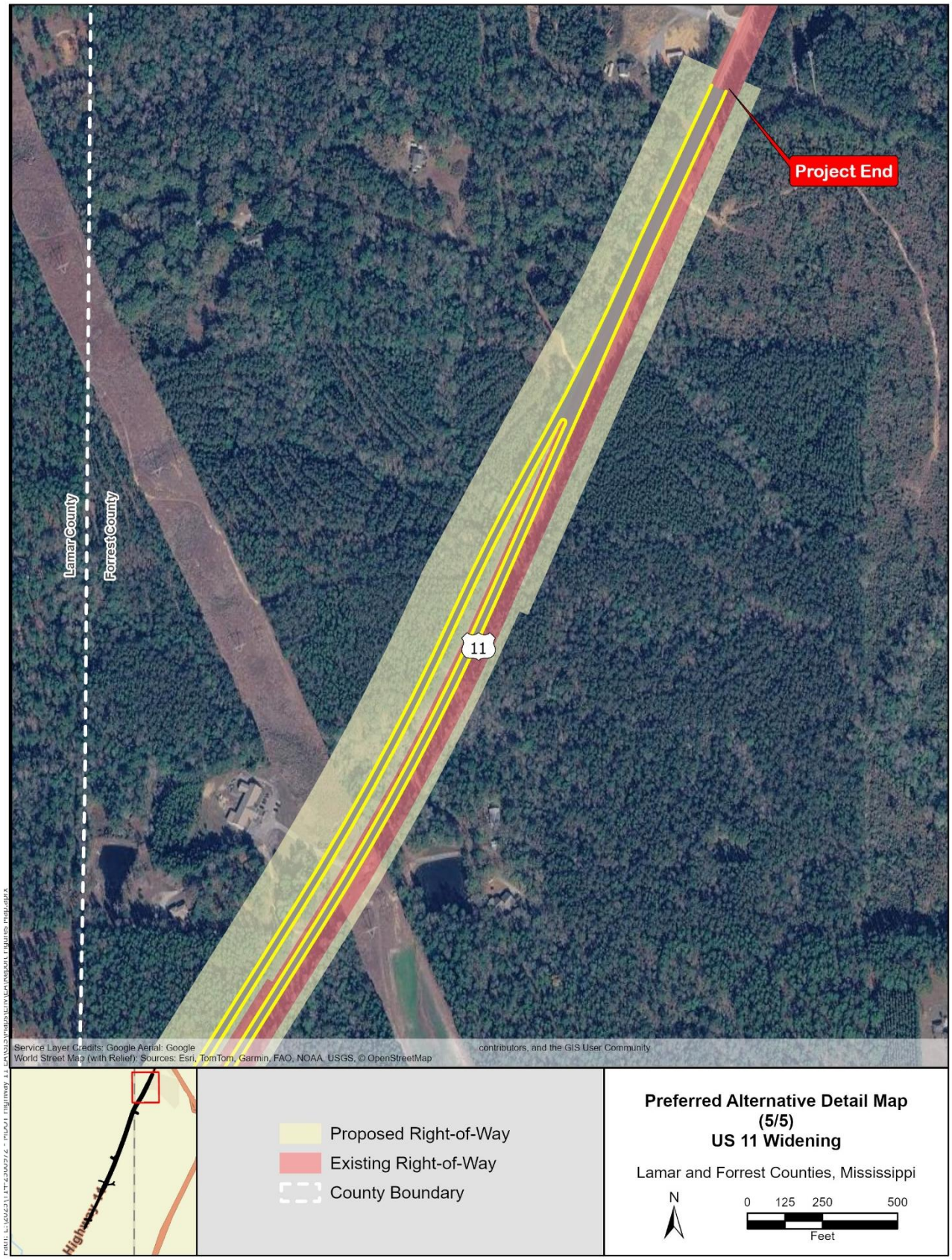


Figure 13: Preferred Alternative Detailed Map 5



3.4. How has the public been involved?

A public meeting was held at the Okahola Community Center on January 20, 2026. The two conceptual alternatives described in Section 3.1 were presented to the public along with other important project information. MDOT and the project team staff were in attendance along with County officials to provide information and answer questions. Comments were accepted by mail, email, and online during the public comment period of January 20 through February 4, 2026. Input received from the public meeting was considered as part of the evaluation of the alternatives being considered for the proposed project.

An open forum public hearing will be held at the Okahola Community Center in December 2026. The Preferred Alternative and Preliminary Environmental Assessment will be presented where the public and other stakeholders are allowed an opportunity to comment on the project. MDOT, FHWA, and the project team staff will attend along with County officials to provide information and answer questions. Comments will be accepted by mail, email, and online during the public comment period of no less than 30 days. Input received from the public hearing will be considered as part of the evaluation of the Preferred Alternative for the proposed project. A summary of the public involvement efforts will be included in the FONSI if the Preferred Alternative is moved forward as the Selected Alternative. All public input will be included in **Appendix C**.

3.5. How have resource agencies been involved?

The following resource agencies were provided a project information letter and study area map to provide the opportunity to comment on the project and to discuss issues of concern: MDOT, FHWA, US Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP), US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Mississippi Department of Environmental Quality (MDEQ), and the Mississippi Department of Archives and History (MDAH) State Historic Preservation Officer (SHPO). The following agencies responded: EPA, USFWS, USACE, MDAH SHPO, and the MDWFP. SHPO requested a cultural resources survey and an architectural resources survey be conducted and USFWS requested a threatened and endangered species survey be conducted (see Chapters 4.6 and 4.9 for details of these surveys). See **Appendix D** for agency coordination letters.

3.6. How were tribal nations involved?

FHWA consulted with federally recognized Native American Tribes and provided the opportunity for their review of the cultural resource survey report (see Section 4.6) and feedback on the project. Correspondence was sent on April 29, 2026 to the Mississippi Band of Choctaw Nation, Choctaw Nation of Oklahoma, Chickasaw Nation, and Alabama-Coushatta Tribe of Texas. Two responses were received. The Choctaw Nation of Oklahoma responded on May 14, 2026, and concurred with the findings of the survey report and the finding of “no effect”. Per correspondence dated on May 8, 2026, the Chickasaw Nation provided no objection to the undertaking and did not request further consultation as the proposed project is outside their area of interest. See **Appendix D** for tribal correspondence.

Chapter 4: Project Impacts and Mitigation

This chapter summarizes potential project impacts on people and the environment.

4.1. How were potential impacts evaluated?

The Preferred Alternative and its proposed improvements were studied for potential impacts using the latest available data. If not otherwise noted in the specific sections below, impacts were based on a study area as shown in **Figure 1**. Evaluations of impacts are in accordance with NEPA and applicable federal, state, and local guidelines.

In each of the following sections, specific resources are addressed with qualitative and, where applicable, quantitative information to concisely describe the nature and characteristics of the resource that the Preferred Alternative may affect. Detailed resource information is further described in each section below as needed to understand the impacts.

The No Build Alternative is used as a baseline to compare impacts against the Preferred Alternative. Throughout Chapter 4 the Preferred Alternative is referred to as the Build Alternative for comparison to the No Build Alternative.

4.2. How would the project affect properties and land use?

"Land use" is the term used to describe the human use of land. It represents the economic and cultural activities (e.g., agricultural, residential, industrial, and recreational uses) that are practiced at a given place. Potential land use impacts are discussed below.

No Build Alternative

The No Build Alternative does not involve any construction through the study area; therefore, no relocations, land use changes, acquisitions, or property impacts would result.

Build Alternative

The Build Alternative would require approximately 96.6 acres of new permanent ROW. The Build Alternative would partially impact 46 residential and commercial properties through ROW acquisition, but no relocations are anticipated. The driveways of two businesses and 13 residences would be directly impacted, but none would lose any accessibility to their properties. Estimated property impacts and proposed ROW based on conceptual design can be found in **Table 9**. Any temporary construction easements would be determined during final design after the Preferred Alternative is approved.

The ROW acquisition process and relocation program will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970, as amended. A ROW acquisition officer will be assigned to the project. Each affected person will be contacted individually and informed of rights and benefits that may be available. The officer will contact the owners and/or tenants, with ample time prior to the impact, to allow negotiations to obtain property needed for ROW. All other benefits under the Uniform Act will be carefully explained to the individual.

This will include fair market value for the acquired property in addition to equitable compensation normally associated with ROW acquisition.

The Build Alternative would cross two major power line easements; one near the southern end of the EOMS and a second approximately 2,800 feet south of the proposed end of the project. Design and alternative selection minimized impacts to these major transmission lines. In addition, there are approximately 40 smaller power poles and approximately 12,000 linear feet (LF) of power lines parallel to US 11 that cross over the highway in multiple locations. No permanent impacts to these lines or their poles are anticipated. Any utility infrastructure impacted by the project would be relocated prior to construction. Utility customers should not be impacted by the proposed project.

Land use changes for the Build Alternative would largely be limited to the conversion of undeveloped, forested areas to roadway and maintained ROW. There will also be minor conversions of previously developed land into ROW.

Table 9: ROW and Property Impacts

Alternative	Relocations	Number of Landowners Impacted	Number of Parcels Impacted	Proposed ROW Required (Acres)
No Action	None	None	None	None
Build	None	36	46	96.6

4.3. How would the project affect the community?

Community impact assessment is an iterative process to evaluate the effects of a transportation action on a community and its quality of life. The assessment process is an integral part of transportation planning and project development that shapes the outcome of transportation decisions. It involves understanding the needs of communities and documenting the existing and anticipated social environment of a community with and without the proposed action.

The project limits primarily pass through undeveloped areas but also occurs adjacent to commercial and residential properties. Community facilities and emergency services within the study area include one medical service facility that specializes in autism care and access will be maintained throughout construction so these services will not be impacted. There are no cemeteries or places of worship located within the study area. The Hattiesburg Botanical Garden is located on Steele Road, approximately 0.5 miles east of the study area.

The EOMS is expected to bring substantial development that will create numerous jobs both during construction of facilities and operations. The EOMS is also expected to bring increased traffic and a need for better access to the site. Potential impacts of the Preferred Alternative are summarized below.

No Build Alternative

The No Build Alternative does not involve construction within the study area; therefore, no negative impacts to community facilities and community cohesion would occur.

Build Alternative

No residences or businesses would be displaced or relocated as a result of the proposed project. The Build Alternative would not result in the displacement of any community facilities. Portions of several private properties will be required to construct the Preferred Alternative, mostly affecting driveways entering US 11. One of these driveways belongs to a medical facility, but the facility's access to US 11 would be maintained. All land acquisitions would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act.

The Build Alternative is anticipated to benefit the community by providing a safer and more efficient travel route. This route and the EOMS will benefit the local community through improved economic opportunities. The Build Alternative would not separate or further divide any existing communities or neighborhoods or impact emergency services.

Project design would minimize the need for ROW acquisition to the extent practical. MDOT would continue throughout the design and construction phases to be responsive to the concerns of residents and business owners regarding driveway configurations and other specific property concerns.

4.4. Would traffic noise levels change?

The proposed project meets FHWA noise regulation criteria for projects requiring a noise study. A screening level noise analysis was therefore completed using FHWA's Traffic Noise Model 2.5. As part of the screening level noise analysis, noise sensitive receptors are identified for the potential to experience traffic noise impacts. The screening level noise analysis determines changes in noise levels and possible noise impacts to these identified noise sensitive receptors in the study area. **Appendix E** provides more detailed information on the screening level noise analysis.

Noise sensitive receptors include residences and public places that have a special sensitivity to noise, such as schools, churches, and parks.

No Build Alternative

The No Build Alternative will allow for the continued ambient noise levels to coincide with the increase in traffic on surrounding roadways as influenced by development in the area.

Build Alternative

A total of 28 modeled receptors representing 25 single family dwellings, two duplexes, and one medical facility were identified in the study area. The noise level increases under the Build Alternative are predicted to range from 2.5 dB(A) up to 5.8 dB(A), which are categorized as minor to moderate. This change would

Traffic noise is measured in **decibels (dB)**. The amplification or attenuation of different frequencies of sound to correspond to the way the human ear hears these frequencies is referred to as "A-weighting." The A-weighted sound level in decibels is expressed as **dB(A)**.

not constitute a substantial increase in noise impacts. One receptor (representing two residential dwelling units) will experience noise impacts and is identified as R-21 in **Appendix E**. Driveway access is required to be maintained for this receptor and as a result, any traffic noise abatement would be considered infeasible.

Project construction operations typically increase noise levels. These increases would be temporary, of limited duration, and have minor adverse effects on any sensitive receptors in the project area.

4.5. Would the project impact Important Farmland?

Important Farmland is land suited to food, feed, forage, fiber, and oilseed crops. **Prime Farmland** is a subset of Important Farmland with the best combination of characteristics for crop production.

Important Farmland, specifically Prime Farmland, is present in the study area. Based on coordination with the USDA NRCS, approximately 61.9 acres of Prime Farmland was identified in the study area. NRCS coordination is provided in **Appendix D**.

No Build Alternative

The No Build Alternative does not involve any construction through the study area; therefore, no impacts to Important Farmland would occur.

Build Alternative

A Farmland Conversion Impact Rating for Corridor Type Projects (CPA-106) was completed for the Build Alternative and submitted to NRCS. The Build Alternative would directly or indirectly impact/convert approximately 33 acres of prime farmland soils. Based on the results of the CPA-106 assessment, the total impact score is 122. This score is below the maximum score of 160 and indicates that no further evaluation of Important Farmland is necessary.

4.6. How would the project affect cultural resources?

Cultural resources include elements of the built environment (buildings, structures, or objects) or evidence of past human activity (archeological sites). Those that are eligible for inclusion in the National Register of Historic Places are defined as **historic properties**.

Section 106 of the National Historic Preservation Act requires agencies to consider the effects of federal actions on cultural resources. In compliance with Section 106 requirements, MDOT cultural resource specialists consulted with the SHPO and the federally recognized Native American Tribes in Mississippi. See **Appendix D** for tribal correspondence.

Preliminary records reviews with the MDAH, as well as early maps of the study area, were checked for known archeological sites or historic structures. This preliminary archeological assessment indicated a total of five previously identified sites within the study area. The five previously identified sites were all classified as light density, ineligible sites.

A Phase I cultural resources survey that included shovel tests was conducted for the project study area from February 17 to February 26, 2026. The fieldwork resulted in revisits to two previously recorded sites (22LM744 and 22LM745) and one isolated prehistoric find (FS-1) being newly recorded. No other types of historic properties were identified. No evidence for 22LM744 was found during the field

investigation. 22LM745 was determined to be a low-density Late Archaic and Woodland lithic scatter associated with a briefly occupied camp and failed to produce any artifacts from sub-surface contexts. Isolated find FS-1 consists of two pieces of debitage recovered from the surface of a fire break. 22LM745 and FS-1 are recommended as not eligible for listing by MDAH or the National Register of Historic Places (NRHP).

No Build Alternative

The No Build Alternative does not involve any construction through the study area; therefore, no impacts to cultural resources would occur.

Build Alternative

As there are no cultural resources within the study area that are listed or eligible for the NRHP, the Build Alternative will have no adverse impact on cultural resources. SHPO concurrence is provided in **Appendix F**.

4.7. How would visual quality be affected?

Visual quality impacts are determined by predicting viewer responses to changes in the project area's visual resources.

The visual character of the study area is primarily rural, consisting of undeveloped woodlands, residential and commercial properties, and the existing US 11 and several local roads.

No Build Alternative

The No Build Alternative does not involve any construction through the study area and therefore would not alter views in the study area.

Build Alternative

The Build Alternative is anticipated to consist of a similar roadway type, aesthetic look, configuration, and roadway features as the existing roadways in the study area (US 11 and I 59). The Build Alternative would include modern design features that will enhance the aesthetics of the existing US 11 within the study area. A vegetated center median between the travel lanes would be added to the viewshed for the four-lane section of the Build Alternative and only a few residents would have additional, minor new roadway features within their viewshed in this section and no perceivable visual changes occur on the two-lane section. Traffic levels are anticipated to increase with the development of the EOMS, including more heavy truck traffic. This traffic increase could impact the visual quality of the study area.

Temporary impacts would include the presence of heavy equipment, materials, and construction vehicles during construction, temporarily altering the area's visual character.

Visual resources include vegetation, existing structures, roadway features, and construction materials.

Project visual resources would not substantially change or detract from the area's overall existing visual character for the local residents that currently look at the roadway features or the roadway users looking at the natural and

manmade environment adjacent to the roadway. For these reasons, overall visual quality impacts are likely to be generally neutral.

4.8. How would water resources, wetlands, and floodplains be affected?

The water resources within the project area were evaluated for potential effects. These resources encompass lakes, streams, ground water, coastal waters, wetlands, and other waters; their associated ecosystems and floodplains, and the human uses they support. The extent of water resources (their amount and distribution) and their condition (physical, chemical, and biological attributes) are critical to ecosystems, human uses, and the overall function and sustainability of the hydrologic cycle.

4.8.1. Source Waters

Source water refers to sources of water (such as rivers, streams, lakes, reservoirs, springs, groundwater, and sole source aquifers) that provide water to public drinking water supplies and private wells. Source water protection includes a wide variety of actions and activities aimed at safeguarding, maintaining or improving the quality and/or quantity of sources of drinking water and their contributing areas. A review of the MDEQ public water supply database identified no surface water intakes or wellheads in the study area.

No Build Alternative

The No Build Alternative would not require any construction within the study area; therefore, the No Build Alternative would not affect any water resources.

Build Alternative

Water quality standards would be complied with by each individual contractor involved with the proposed project. MDOT's Standards and Plans contain provisions for preventing and abating pollution of streams and water bodies. These measures are recognized as best management practices by the MDEQ and have been developed from the following set of regulations: Wastewater Regulations for National Pollutant Discharge Elimination System (NPDES) Permits, Underground Injection Control (UIC) Permits, State Permits, Water Quality Based Effluent Limitations and Water Quality Certification.

The construction contracts will require compliance with the MDEQ's General NPDES Permit process for Construction Storm Water Discharge for projects on which one of more acres are disturbed by construction activities. Given the anticipated limits of disturbance will exceed five or more acres, contractors will be required to furnish both a Small Construction Notice of Intent and a Large Construction Notice of Intent certification, and, where applicable, a Mining Notice of Intent in compliance with the provisions of the Clean Water Act and the regulations and standards adopted and promulgated thereunder; and under authority granted pursuant to Section 402(b) of the Clean Water Act. In areas requiring permits under Section 404 of the Clean Water Act, the highway activities are subjected to a special review by the MDEQ for certification as it pertains to water quality.

Any additional requirements placed by the MDEQ will be included in the plans and specifications for the work. Compliance with the best management practices, permits, and requirements placed by the MDEQ will help ensure the proposed project activities will not contribute to a significant deterioration of water quality.

None of the streams within the study area are listed in Mississippi's 2024 Section 303(d) List of Impaired Water Bodies. Temporary impacts to project area water quality (streams and surface flows) have the potential to occur during the construction phase of the project due to increased soil disturbance and associated runoff. Upon project completion and vegetation regrowth, water quality should return to pre-construction levels. Section 401 Water Quality Certification and NPDES permit and associated Stormwater Pollution Prevention Plan for soil disturbance would be required from the MDEQ. Sediment and erosion control best practices would be used to minimize erosion and help prevent sediment from leaving the construction site and entering streams.

Due to the implementation of stormwater best management practices during construction, adverse impacts to water resources are not anticipated.

4.8.2. Wetlands and Streams

Wetlands are areas that can support vegetation adapted for life in wet soil conditions. Wetlands are protected under the Clean Water Act because they provide flood control, aid in water quality, and provide wildlife habitat.

Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergent, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity is below 0.5 parts per thousand.

Wetlands are areas where water covers the soil or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. The functions of a wetland and the values of these functions to human society depend on a complex set of relationships between the wetland and the other ecosystems in the watershed.

A review of wetlands and streams within the study area and an onsite wetland and other waters delineation revealed the presence of 17 wetlands (6.21 acres), 26 streams (11,914 LF), and two ponds (0.80 acres). The field investigation was conducted on January 29-30, 2026, and February 10, 2026. The wetlands identified were classified as palustrine emergent (PEM) and palustrine forested (PFO). The streams identified within the study area flow southeast towards Black Tom Creek. These areas should be considered potentially jurisdictional until concurrence is given by a representative of the USACE. Jurisdictional wetlands are considered Waters of the United States and are subject to Clean Water Act Section 404 regulations. The Wetland and Stream Assessment report is provided in **Appendix G**.

No Build Alternative

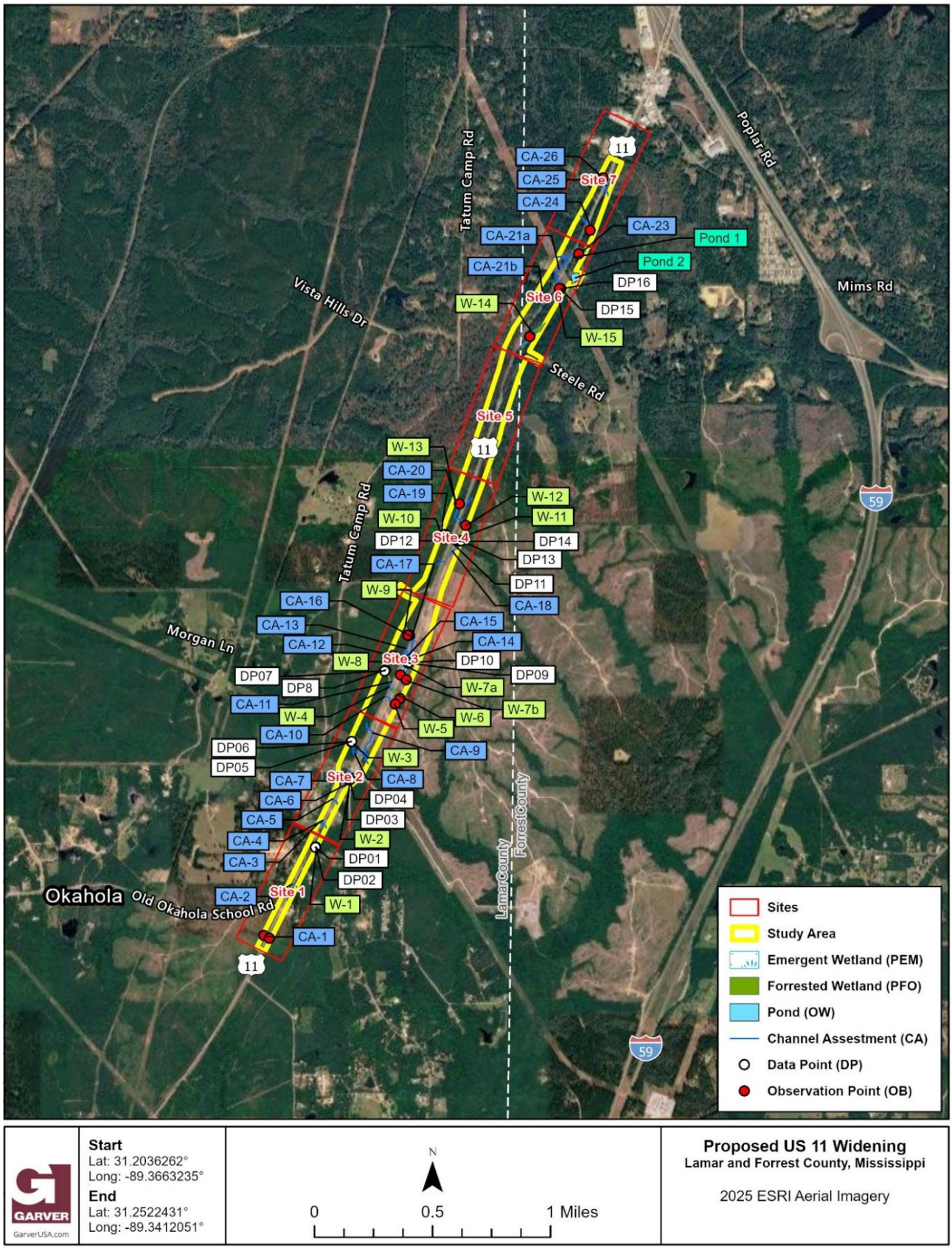
The No Build Alternative would not affect any wetlands, streams, or other waters within the study area.

Build Alternative

The Build Alternative would impact an estimated 5,130 LF of streams. Of these impacted streams, approximately 4,577 LF are considered to be potentially jurisdictional by the USACE. The Build

Alternative would also impact approximately 0.48 acres of PEM wetlands (W-2, W-3, W-6a, and W-7a) and approximately 1.39 acres of PFO wetlands (W-1, W-4, W-8, W-9, W-10, W-11, W-13, W-14, and W-15) within study area. No additional water resources would be impacted by the Build Alternative. A map of the delineated aquatic features within the study area is shown in **Figure 14**.

Figure 14: Potential Jurisdictional Features



The Build Alternative would require a USACE Section 404 Permit for the permanent wetland and stream impacts. The permit type and stream and/or wetland mitigation, if required, will be determined once final design is complete. Efforts will be made to further reduce wetland and stream impacts during the final design phase of the project.

Mitigation measures are used to offset unavoidable impacts to natural resources such as streams and wetlands. Restoring, establishing, enhancing, or preserving streams and wetlands may be legally required under the Clean Water Act, depending on the severity of the impacts.

4.8.3. Floodplains

The project was reviewed to identify any encroachments into special flood hazard areas, also known as the 100-year floodplain, as shown on the Flood Insurance Rate Maps issued by the FEMA. The study area does not contain any special flood hazard areas or floodways.

No Build Alternative

The No Build Alternative would not require any construction within the study area and therefore would have no effect on floodplains.

Build Alternative

As there are no special flood hazard areas or floodplain within the study area, the Build Alternative would have no impacts to floodplains or floodways.

Floodplains are areas that become flooded by water in a flood event. Special flood hazard areas, also known as 100-year floodplains, are areas that would be covered by a 100-year flood event. This is the floodplain commonly used for insurance and regulatory purposes.

4.9. Would any protected species and their habitats be affected by the project?

The study area primarily consists of undeveloped forested areas, pine plantations, and low-density residential and commercial development along US 11. The surrounding area has seen increased commercial and industrial development in recent years, and that trend is expected to continue with the development of the EOMS. Additional information on protected species and their habitats is provided in **Appendix H**.

The USFWS lists a total of seven threatened, endangered, or proposed species as having the potential to occur in the study area (**Appendix H**). These species are listed in **Table 10**.

Endangered species are in danger of extinction throughout all or a considerable portion of their ranges. **Threatened species** are likely to become endangered in the near future. Both threatened and endangered species receive federal protection under the Endangered Species Act.

During the spring, summer, and fall, tricolored bats (*Perimyotis subflavus*) are found in forested habitats where they roost in trees, primarily among leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss, pine trees, and occasionally human structures. During the winter, tricolored bats are often found in caves and abandoned mines, although in the southern United States, where caves are sparse, tricolored bats are often found roosting in road-associated culverts where they exhibit shorter torpor bouts and forage during warm nights. Based on the habitat observed in the study area, suitable roosting habitat is available for tricolored bats within the forested habitat

of the study area. However, the observed habitat is mostly pine and likely low-quality for these bat species. There are also several culverts crossing beneath US 11 that could provide winter habitat for this species. No bats or signs of bat habitation was observed during the habitat assessment performed on site.

Table 10: Possible Threatened and Endangered Species in the Study Area

Common Name	Scientific Name	Federal Status
Tricolored bat	*Perimyotis subflavus*	Proposed Endangered
Alligator snapping turtle	*Macrochelys temminckii*	Proposed Threatened
Black pinesnake	*Pituophis melanoleucus lodingi*	Threatened
Gopher tortoise	*Gopherus polyphemus*	Threatened
Dusky gopher frog	*Rana sevosa*	Endangered
Monarch butterfly	*Danaus plexippus*	Proposed Threatened
Louisiana quillwort	*Isoetes louisianensis*	Endangered

The alligator snapping turtle (*Macrochelys temminckii*) typically prefers large, slow-moving, and deep bodies of water. This species is usually found in watercourses much larger than the streams within the study area. Suitable habitat may be available in the study area within streams and man-made ponds but due to the distance from any major rivers or waterbodies, their presence is unlikely.

The black pinesnake (*Pituophis melanoleucus lodingi*) is endemic to the longleaf pine savannas of southern Mississippi and southwestern Alabama. The optimal habitat consists of sandy, well-drained soils with an open-canopied overstory of longleaf pine, a reduced shrub layer, and a dense herbaceous ground cover. The black pinesnake is threatened primarily due to habitat loss, degradation, and fragmentation of habitat due to silviculture, urbanization, fire suppression, and road mortality. Habitat loss is primarily due to conversion of habitat to incompatible uses, like commercial forestry, agriculture, and urban development.

The gopher tortoise (*Gopherus polyphemus*) is a large burrowing tortoise that occurs in upland pine forests of the southeastern United States. Typical gopher tortoise habitat consists of an open canopy with a diverse array of groundcover vegetation occurring on well-drained, sandy soils with widely spaced trees and shrubs. The gopher tortoise is generally associated with southern pine tree species including longleaf pine, loblolly pine, and slash pine. Gopher tortoises are considered keystone species due to the importance of their burrows. Reaching up to 40 feet in length, these burrows provide shelter for not only the gopher tortoise, but a variety of other species as well.

Keystone species are species that have a disproportionately large effect on their ecosystem relative to their abundance. These species are critical for maintaining the structure and function of their environment, influencing the types and numbers of other species present within an ecosystem.

Dusky gopher frog (*Rana sevosa*) habitat includes both upland, sandy areas covered with open longleaf pine forest with abundant ground cover; and isolated, temporary, wetland breeding sites within the forested landscape. Adult frogs spend most of their lives in or near underground refuges in uplands. They often use both active and abandoned gopher tortoise burrows; they also use abandoned mammal burrows, stump and root holes, and possibly crayfish burrows. Breeding sites are isolated, grassy ponds that dry out completely at certain times of the year; their seasonal nature prevents establishment of a fish population, which would endanger tadpoles. Adult frogs move to breeding sites in association with heavy rains during winter and spring (December to April).

Monarch butterflies (*Danaus plexippus*) require the presence of milkweed (*Asclepias spp.*), flowering or potentially flowering nectar plants and additional native habitat such as meadows, prairies, and grasslands. It is reasonable to assume seasonal presence of the monarch butterfly in habitats with native wildflowers within the study area. However, because much of the open areas are planted, mowed, or otherwise maintained for right-of-way purposes, the sustained presence of this species is not likely.

Louisiana quillwort (*Isoetes louisianensis*) is a small, grass-like aquatic plant with a highly restrictive geographic range. Found only in eastern Louisiana, southern Mississippi, and south-central Alabama, the species is thought to be one of the rarest quillworts in North America. This species occurs predominately on sand and gravel bars, overflow channels, and areas in or near shallow, blackwater streams in riparian woodland and bayhead forests of pine flatwoods and upland pine forests. They are regularly inundated following rains and can live for periods completely submerged.

Bald eagles (*Haliaeetus leucocephalus*) are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. According to the USFWS, there are documented cases of eagles being present within the study area. Suitable nesting habitat was observed within the study area for the Bald Eagle within large tracts of managed pine and mature mixed forests. Other migratory bird species, such as the American kestrel (*Falco sparverius paulus*), brown-headed nuthatch (*Sitta pusilla*), chimney swift (*Chaetura pelagica*), coastal (wayne's) black-throated green warbler (*Setophaga virens waynei*), grasshopper sparrow (*Ammodramus savannarum perpallidus*), Kentucky warbler (*Geothlypis formosa*), prairie warbler (*Setophaga discolor*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), and wood thrush (*Hylocichla mustelina*) could occur within the study area during certain times of the year.

The MDWFP was also contacted for comment on the proposed project. In a letter dated April 15, 2026, MDWFP stated that they currently have 21 species of concern (rare, threatened, or endangered species or communities) within a 2-mile radius of the proposed project. Further, the letter states that "Gopher Tortoises have been observed within 2-miles of the proposed project. Per the USDA soil survey website, soil types that make for suitable Gopher Tortoise habitat occur near the proposed project area, including Benndale fine sandy loam, Heidel sandy loam, and McLaurin loamy sand, McLaurin fine sandy loam, and McLaurin-Lucy association. Due to the presence of suitable soil habitat within the area, it is required that Gopher Tortoise burrow surveys are conducted within the proposed project area, within an

additional 20-ft buffer of the proposed project site perimeter, and within any potential staging and parking sites (particularly in well-drained sandy substrates). A copy of the species list and correspondence with USFWS and MDWFP is included in **Appendix H** and **Appendix D**, respectively.

No Build Alternative

The No Build Alternative would not involve any construction or tree-clearing activities that may impact any threatened or endangered species.

Build Alternative

A gopher tortoise burrow survey was conducted on January 29-30, 2026 and February 10, 2026. Suitable habitat for this species is present within the study area. However, no gopher tortoises or their burrows were observed during the gopher tortoise survey. Therefore, the proposed project is not likely to adversely affect the gopher tortoise. Details of the gopher tortoise survey and habitat assessment can be found in **Appendix H**.

Managed longleaf pine habitat is present within the study area and therefore the presence of black pinesnakes cannot be ruled out. However, no black pinesnakes or signs of their activity were observed during the habitat assessment or gopher tortoise survey. Therefore, the proposed project is not likely to adversely affect the black pinesnake.

An assessment of potential tricolored bat habitat was performed during the habitat assessment. There is suitable roosting habitat in the contiguously forested areas within the study area. In addition, concrete box culverts were visually inspected for signs of tricolored bat roosting and no bat activity was documented. The study area is located in an area where tricolored bats have the potential to roost in trees year-round. Due to the required tree removal and/or trimming, the proposed project is likely to adversely affect the tricolored bat. Therefore, consultation with the USFWS is required, and further surveys may be requested. However, according to the USFWS determination key for FHWA projects involving the tricolored bat, the proposed project may rely on the conclusion and Incidental Take Statement provided in the USFWS's Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana bat, northern long-eared bat, and tricolored bat. A copy of the USFWS determination key is included in **Appendix H**.

Approximately 5,130 LF of streams will be impacted by the proposed project. However, most streams within the study area are shallow, headwater channels. These streams are not likely suitable habitat for the alligator snapping turtle that prefers large, slow-moving bodies of water. Therefore, the project may affect but is not likely to adversely affect the alligator snapping turtle.

The USFWS Information for Planning and Consultation (IPaC) Mississippi Determination Key (D Key) indicated that the proposed project may affect the dusky gopher frog. However, in a October 22, 2026 email the USFWS indicated that the study area does not contain suitable habitat and that the proposed project is not likely to adversely affect the dusky gopher frog. A copy of the USFWS IPaC Mississippi D Key and email correspondence with the USFWS is included in **Appendix H.**

While the potential presence of suitable monarch butterfly habitat (flowering milkweed) cannot be ruled out, much of the study area is regularly mowed, maintained, and lacks plant diversity and would not provide suitable habitat for this species. The monarch butterfly is a proposed threatened species and based on these observations, the proposed project will not jeopardize the continued existence of the monarch butterfly.

No Louisiana quillwort was observed during the habitat assessment. The IPaC Mississippi D Key indicated that the proposed project may affect the Louisiana quillwort. However, correspondence with the USFWS indicated that the study area does not contain suitable Louisiana quillwort habitat. Due to the lack of suitable habitat in the study area the proposed project is not likely to adversely affect the Louisiana quillwort. A copy of the IPaC Mississippi D Key and email correspondence with the USFWS is included in **Appendix H**.

In an email dated October 22, 2026, the USFWS stated “Due to the surveys that you conducted and unsuitable habitat, we do not anticipate negative impacts to any federally listed species including the dusky gopher frog, Louisiana quillwort, gopher tortoise, and black pinesnake. Further consultation with our office is not required for this project unless there are changes to the project scope or location.” A copy of the USFWS email correspondence is included in **Appendix H**.

4.10. Does the project impact air quality?

The EPA and MDEQ regulate air quality in the state of Mississippi. The Clean Air Act (CAA) requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. National primary ambient air quality standards define levels of air quality necessary to protect public health. Secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. NAAQS are established by EPA for six pollutants, also known as ‘criteria pollutants’: sulfur dioxide (SO_2), large particulate matter (PM10), small particulate matter (PM2.5), ozone (O_3), nitrogen dioxide (NO_2), and lead (Pb). EPA designates areas that meet NAAQS for criteria pollutants as being in attainment. Areas that do not meet NAAQS for criteria pollutants are designated by EPA as being in nonattainment for each pollutant that does not meet the criteria’s standard.

The proposed project is located in Forrest and Lamar Counties, Mississippi. Both of these counties are considered to be in an attainment by the EPA; therefore, conformity rules do not apply and would not require further coordination.

<u>No Build Alternative</u>

The No Build Alternative would not result in any new roadway development within the study area and therefore not have a temporary negative impact on air quality during construction. Traffic volumes are projected to increase with the completion of the EOMS and with no roadway improvements it is likely that congestion would increase on local area roadways and possibly have a negative impact on air quality.

Build Alternative

Traffic volumes were projected for the future Build conditions for the new roadway connections. Based on the Traffic Analysis Report (**Appendix A**), traffic projections for the Build Alternative is approximately 11,600 vehicles per day. The annual average daily traffic (AADT) projections for the project do not exceed 140,000 vehicles per day; therefore, a Traffic Air Quality Analysis is not required.

The purpose of this project is to improve safety, provide access and accommodate projected traffic volumes by adding lanes to US 11. This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxic (MSAT) concerns. As such, this project will not result in substantial changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause a meaningful increase in MSAT impacts of the project from that of the no-build alternative.

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

4.11. Does the project have any reasonably foreseeable impacts?

Reasonably foreseeable impacts result from the total effects of a proposed project when added to other past, present, and reasonably foreseeable future projects or actions. Reasonably foreseeable impacts include the direct and indirect impacts of a project together with the reasonably foreseeable future actions of others: e.g., other federal, state, and local governments, non-governmental organizations, and private entities. The direct impacts that result from an action may be undetectable, but when added to other disturbances, can eventually lead to a measurable environmental change. Reasonably foreseeable impacts are studied so that the public, decision makers, and project proponents take the time to consider the "big picture" effects a project could have on the community and environment. For any given resource, a reasonably foreseeable impact would only potentially exist if the resource were also directly or indirectly impacted by the proposed project.

No Build Alternative

The No Build Alternative would not involve any construction and would not address the need for increased capacity due to EOMS development. It is reasonably foreseeable that traffic volumes, traffic delays, and crashes could increase.

Build Alternative

The Build Alternative is proposed to improve safety and access to support planned growth associated with the EOMS. The proposed project would increase the capacity of a portion of the existing roadway.

Future growth could result in further land use changes that may impact the local environment. No other reasonably foreseeable actions were identified in the study area.

Potential induced growth areas within the study area, especially near the EOMS, would likely occur near US 11 as access to areas both north and south of the existing roadway would be improved. The EOMS is planned for future commercial and industrial developments. Any induced growth would not result in substantial impacts to natural resources. The environmental resources potentially impacted by any future development would be wetlands, streams, and wildlife habitat. Any habitat and aquatic features impacts would be required to be coordinated between developers and federal, state, and local agencies to evaluate, minimize, and mitigate any negative impacts. The EOMS is currently completing mitigation measures with the USACE and USFWS for habitat impacts on the EOMS site.

4.12. What permits and authorizations are required?

No Build Alternative

The No Build Alternative would not involve any construction or alterations within the study area and therefore would not require any permits or authorizations.

Build Alternative

The discharge of fill material in Waters of the United States, including wetlands, requires a permit from the USACE under Section 404 of the Clean Water Act. The Build Alternative would require a Section 404 permit from the USACE for the unavoidable stream impacts anticipated. The determination of the appropriate permit level would be made once the amount, type, and location of fill is determined during design and prior to construction. Section 401 Water Quality Certification and a Section 402 NPDES Permit through the MDEQ will be required for potential discharges into waters of the United States. Construction projects larger than five acres are also required to obtain a Large Construction General Permit (LCGP) from the MDEQ to authorize storm water discharges from construction activities. There are no known USACE works within the study area; therefore, Section 408 permitting will not be required.

4.13. What other resource areas were examined but not impacted?

4.13.1. Landforms and Geological Resources

The landforms and geological resources of the study area would not be impacted by the proposed project.

4.13.2. Hazardous Waste

A desktop assessment and database search were conducted to determine if any hazardous materials were located in the study area. No known hazardous materials or hazardous waste sites were found during the database search. In addition, the study area was surveyed on foot for the presence of any potentially hazardous materials. No hazardous wastes or materials were observed during the site survey. Any impacts to hazardous materials discovered during construction would be the responsibility of MDOT and remediated in accordance with the governing regulations of the MDEQ, the EPA, and the Occupational Safety and Health Administration (OSHA).

Hazardous material/waste discoveries may adversely impact the timely completion of a project. Potential areas of contamination are therefore assessed during the early stages of project development.

4.13.3. Section 4(f)/Section 6(f) Sites

No publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites were identified within the study area that would be eligible for Section 4(f) or 6(f) protections.

4.13.4. Pedestrian and Bicycle

There are no existing pedestrian or bicycle paths within the study area, and pedestrian traffic is rare. The Hattiesburg-Petal-Forrest-Lamar MPO have no planned pedestrian and bicycle paths anywhere near the project area. The Build Alternative is designed to move vehicular traffic, including large trucks, to and from the EOMS. Allowing pedestrian and bicycle access would be unsafe for these travelers. Therefore, the Build Alternative would not hinder any existing or future facilities for pedestrians or bicycles.

4.13.5. Wild and Scenic Rivers

There are no Wild and Scenic Rivers within the project area; therefore, no Wild and Scenic Rivers would be impacted by the proposed project.

Chapter 5: Results and Commitments

This chapter summarizes environmental analysis results and commitments.

5.1. What are the results of this EA?

Based on careful consideration of environmental studies, the safety and traffic analyses, and input from the public, local community, elected officials, FHWA, MDOT's 6th District and various divisions within MDOT, it was determined that the Build Alternative best meets the purpose and need of this project without restricting planned growth while avoiding, minimizing, and mitigating the impacts to both the human and natural environments as is discussed by the documentation in this study.

The environmental analysis of the proposed project did not identify any significant impacts to the natural, cultural, or social environment from the construction and implementation of the Build Alternative. A summary of the impacts associated with the Build Alternative is provided in **Table 11**.

Table 11: Alternative Impact Comparison

	No Build Alternative	Preferred (Build) Alternative
ROW Acquisition	None	96.6 acres
Estimated Construction Costs	None	$60,000,000
Relocation Impacts	None	None
Important Farmland Soils	None	61.9 acres
NHRP Sites	None	None
Visual Impacts	None	Minor
Wetland Impacts	None	1.87 acres
Stream Impacts	None	5,130 LF
Noise Receptor Impacts (Existing and Future)	None	1
Air Quality	Minor	Minor

5.2. Is the NEPA process finished?

This EA was signed by the FHWA and approved for public dissemination, a public hearing and 30-day comment period were offered as described in Section 3.4. After a review of comments received from citizens, public officials, and public agencies on the Preferred Alternative, a FONSI may be issued by FHWA or the project would be recommended for an Environmental Impact Statement study if significant, unmitigable impacts are identified. If the FHWA issues a FONSI that would conclude the NEPA process.

Chapter 6: Acronyms

AADT	Annual Average Daily Traffic
ACHP	Advisory Council of Historic Preservation
ADA	Americans with Disabilities Act
CEQ	Council on Environmental Quality
CO2E	Carbon Dioxide Equivalent
DHHS	Department of Health and Human Services
EA	Environmental Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impacts
IPaC	Information for Planning and Consultation
LCGP	Large Construction General Permit
LEP	Limited English Proficiency
LF	Linear Feet
MDAH	Mississippi Department of Archives and History
MDEQ	Mississippi Department of Environmental Quality
MDOT	Mississippi Department of Transportation
MDWFP	Mississippi Department of Wildlife, Fisheries, and Parks
MOA	Memorandum of Agreement
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places

OSHA	Occupational Safety and Health Administration
SHPO	State Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service