



***DRAFT ENVIRONMENTAL ASSESSMENT***

***For Presentation at a Public Hearing***

**I-55 from the Copiah County Line South of Terry, MS  
to McDowell Road in Jackson, MS**

**Project Number: IM-0055-02 (218)**

**FMS Number: 106023**

**Hinds County**



**AUGUST 2012**

**Submitted to  
US Department of Transportation  
Federal Highway Administration**

**Submitted by  
Mississippi Department of Transportation**

**FEDERAL HIGHWAY ADMINISTRATION**

**PRELIMINARY ENVIRONMENTAL ASSESSMENT**

**FOR**

**Project Number: IM-0055-02 (218)/106023**

**Hinds County, Mississippi**

**I-55 from the Copiah County Line to McDowell Road**

**(For Presentation at Public Hearings)**

**Submitted pursuant to 42 U.S.C. 4321 et. Seq. (and where applicable, 49 U.S.C. 303) by the  
U.S. Department of Transportation, Federal Highway Administration, and the Mississippi  
Department of Transportation**

APPROVAL: \_\_\_\_\_

Date

\_\_\_\_\_  
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Division Administrator

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# MDOT Commitments to Environmental Excellence

Project No: IM-0055-02 (218)/ 106023

Highway: Interstate 55

Revision Date: 09-01-12

County: Hinds

Page 1 of 2

\*Value Engineering Study Recommended     Yes     No

Commitments/Requirements	Source of Commitment	Responsible Office	Place on Plans	Requires A Special Provision	Status of Commitment/Requirement
Access to businesses and residences will be maintained during construction, and traffic will be adequately and safely maintained.	Minimization of social/community impacts Section 4.3 – Community & Social Impacts	Construction	No	No	Construction
A public meeting will be held to present conceptual renderings of noise barriers, to discuss locations, and to allow public input	Minimization of noise impacts Section 4.10-Noise	Roadway Design Environmental	Yes	No	Pre-construction
Best Management Practices (BMPs) will be utilized to prevent soil erosion and control sediment-laden stormwater run-off.	Minimization of impacts to water quality and streams Section 4.11- Water Quality Section 4.12 - Streams Section 4.15 – Wildlife	Roadway Design Construction	Yes	No	Pre-construction Construction
Where possible, stream and floodplain crossings will be perpendicular. Appropriately sized bridges and embedded culverts will be used to accommodate unimpeded base and flood flows and passage of aquatic and terrestrial species.	Minimization of impacts to floodplains, aquatic & terrestrial habitat. Section 4.12 – Streams Section 4.16-Floodplains	Bridge Design Roadway Design	Yes	No	Pre-construction
Bridge hydraulic analyses will be conducted to certify that the proposed project will satisfy “no net-rise” in the associated floodplains.	Minimization of impacts to floodplains Section 4.16-Floodplains	Bridge Design Roadway Design	Yes	No	Pre-construction
Best Management Practices (BMPs) will be utilized to prevent soil erosion and control sediment-laden stormwater run-off	Minimization of impacts to threatened & endangered species Section 4.20-T&E Species	Roadway Design Construction	Yes	No	Pre-construction Construction

<p>If archaeological sites are found or are suspected during construction of the proposed project, (1) construction activities will immediately cease, (2) the suspected area will be protected from further disturbance, and (3) the MDOT Archaeologist will be contacted at (601) 359-1475 for further instruction.</p>	<p>Impacts to cultural resources Section 4.21 – Cultural Resources Section 5.3 – Native American Consultation</p>	<p>Construction</p>	<p>No</p>	<p>No</p>	<p>Construction</p>
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**All practical and standard procedures and measures, including Best Management practices will be implemented to avoid or minimize impacts.**

- These commitments should be carried throughout each phase of the project development including Design, Right of Way, Construction, and Maintenance.
- \*Value Engineering (VE) Studies are recommended for projects on the NHS System and/or an Intermodal Connector with an estimated project costs approaching \$25 Million

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- E- Flood Insurance Rate Map (FIRM)
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- G- UST/Hazardous Materials/Hazardous Wastes Documentation
- H- Regulatory & Government Agency Correspondence
- I- Summary of Public Outreach

## 1. INTRODUCTION

This Environmental Assessment (EA) was prepared pursuant to the National Environmental Policy Act (NEPA) of 1969; the Council on Environmental Quality Regulations implementing NEPA (40 CFR 1500-1508); the Federal Highway Administration's (FHWA) Environmental Impact and Related Procedures (23 CFR 771); and the FHWA Technical Advisory (T.6640.8a), Guidance for Preparing and Processing Environmental and Section 4(f) Documents. The purpose of this EA is to provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) for the project proposed by the Mississippi Department of Transportation (MDOT) and FHWA. This determination is based on the review of impacts to the social, ecological, and cultural environments by the proposed project. The Environmental Class of Action Determination document (ENV-160) for the proposed project is located in Appendix A.

### 1.1 Project Background

Interstate 55 (I-55) is the main north-south corridor for the state of Mississippi. The highway



links the major metropolitan areas of New Orleans, Louisiana and Memphis, Tennessee outside of the state with Jackson and small cities such as Grenada and McComb in Mississippi. A 17.1-mile stretch of I-55 between the Copiah County Line and McDowell Road in Hinds, County, Mississippi, is currently a four-lane, grass and/or asphalt median divided highway system. The interstate is served by frontage roads which provide access to commercial properties

immediately outside of the existing rights-of-way. The frontage roads parallel the interstate to the east and west and are striped, two-lane, bi-directional roadways.

The 17.1-mile stretch of I-55 between the Copiah County Line northward to McDowell Road in Hinds County, Mississippi is deteriorating and in need of repair. Within this stretch, a 6.6-mile section of the interstate between South Siwell Road in Byram, MS and McDowell Road in Jackson, MS becomes congested and is in need of an increase in capacity. According to data compiled by the MDOT-Location and Design Committee for the proposed project, the current Level of Service (LOS) for this stretch of I-55 was determined to be D-F for the Year 2011 and projections indicate the LOS at F for Year 2040. The proposed pavement replacement and capacity increase is to be accomplished within the existing rights-of-way. Constraining the

project to the existing rights-of-way (1) lessens the indirect impacts to residences and businesses, (2) alleviates any direct impacts under environmental justice regulations, (3) decreases the costs of impacts to utilities, and (4) decreases the overall amount of funding required to construct the subject project due to the unnecessary need to purchase property. The Location and Design Committee Report can be found in Appendix B.

## **1.2 Project Termini**

To ensure that regional mobility of the traffic is adequately addressed, this environmental assessment begins at the Copiah County Line south of Terry, MS and extends northerly to McDowell Road within the Jackson, Mississippi city limits. The length of the proposed project is 17.1 miles. The limits of the assessment are depicted in Figures 1 and 2.



Figure 1- Regional Location Map

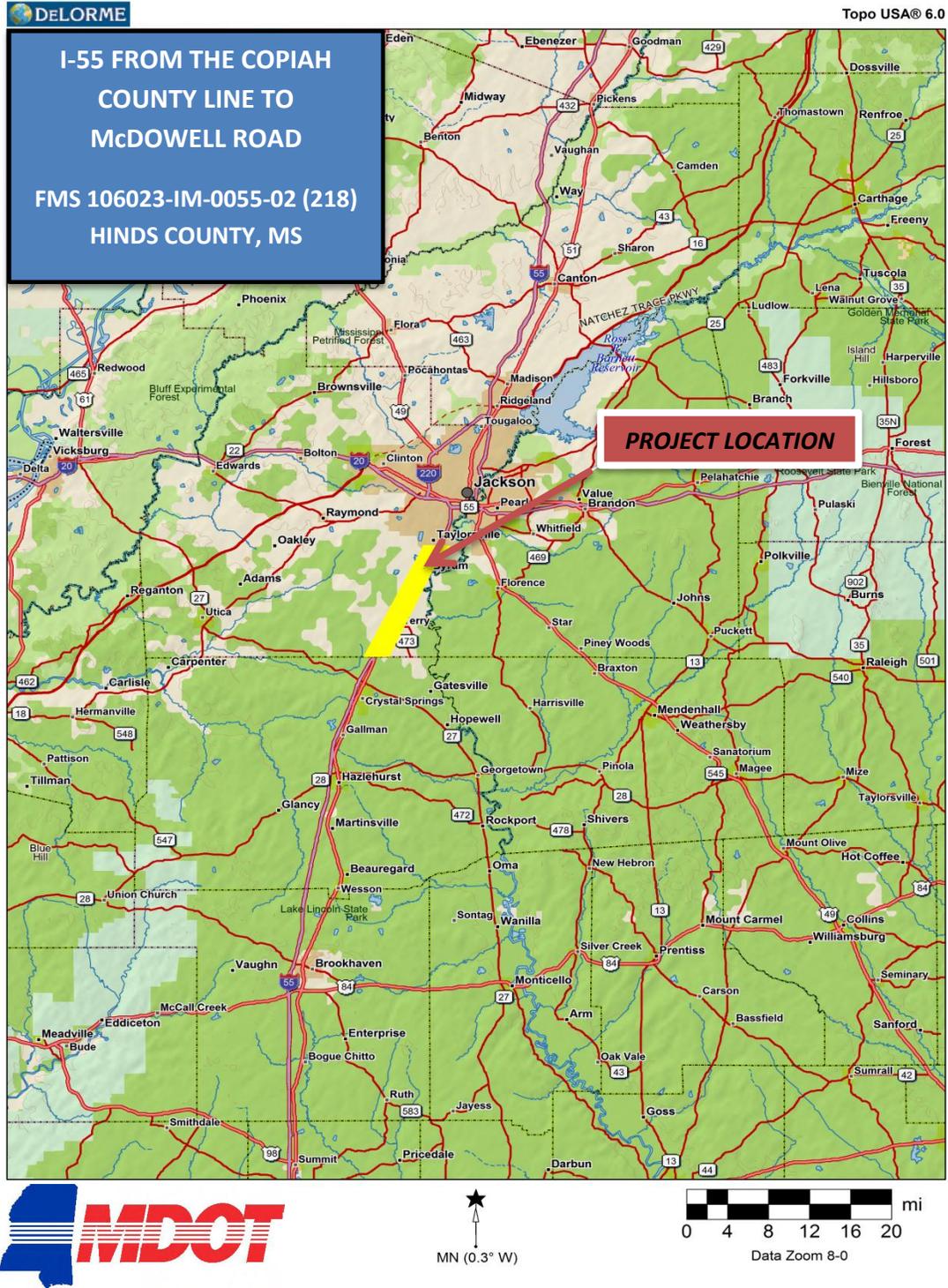
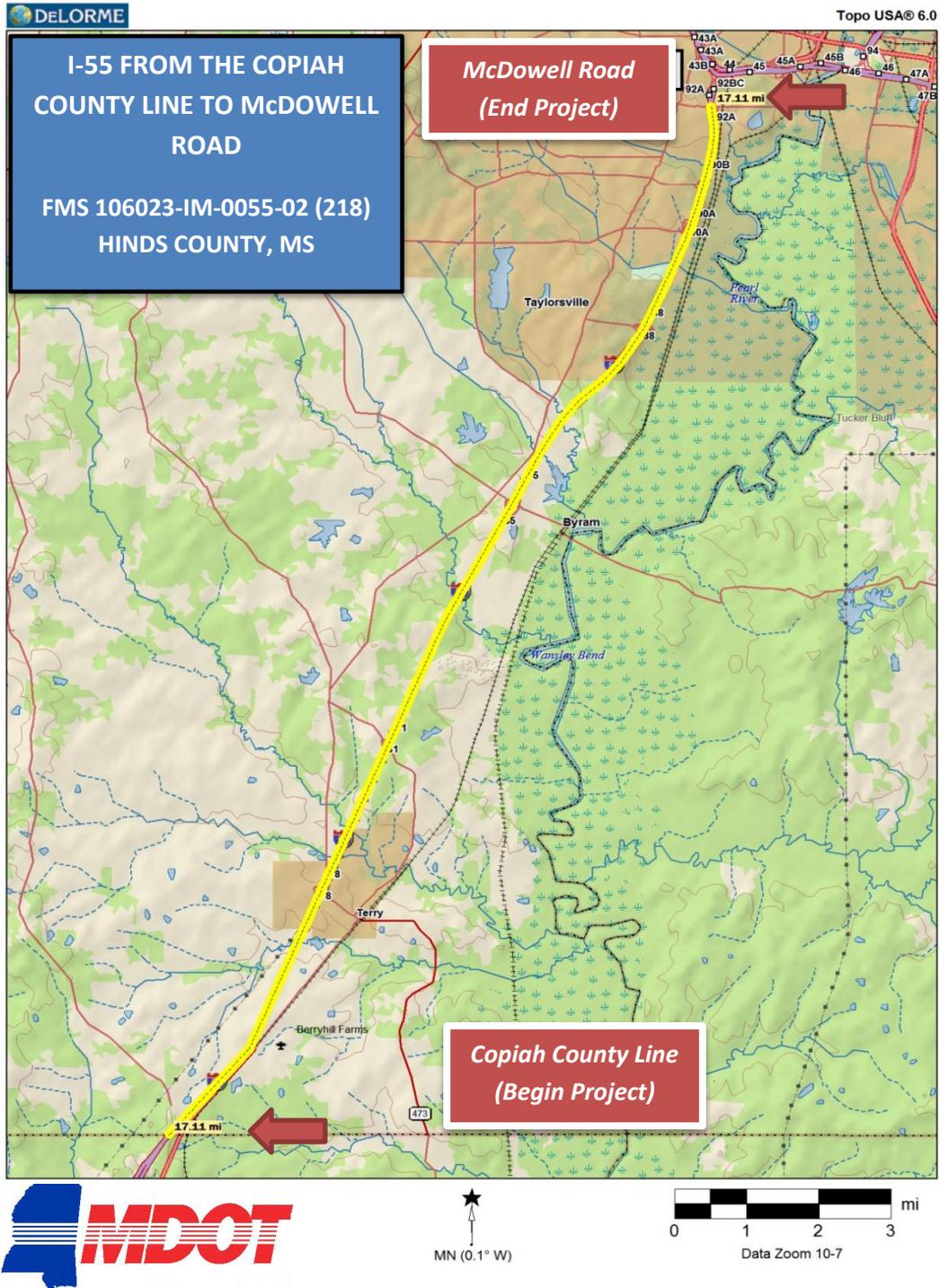


Figure 2- Termini Location Map



## 2. PURPOSE & NEED

### 2.1 Project Purpose

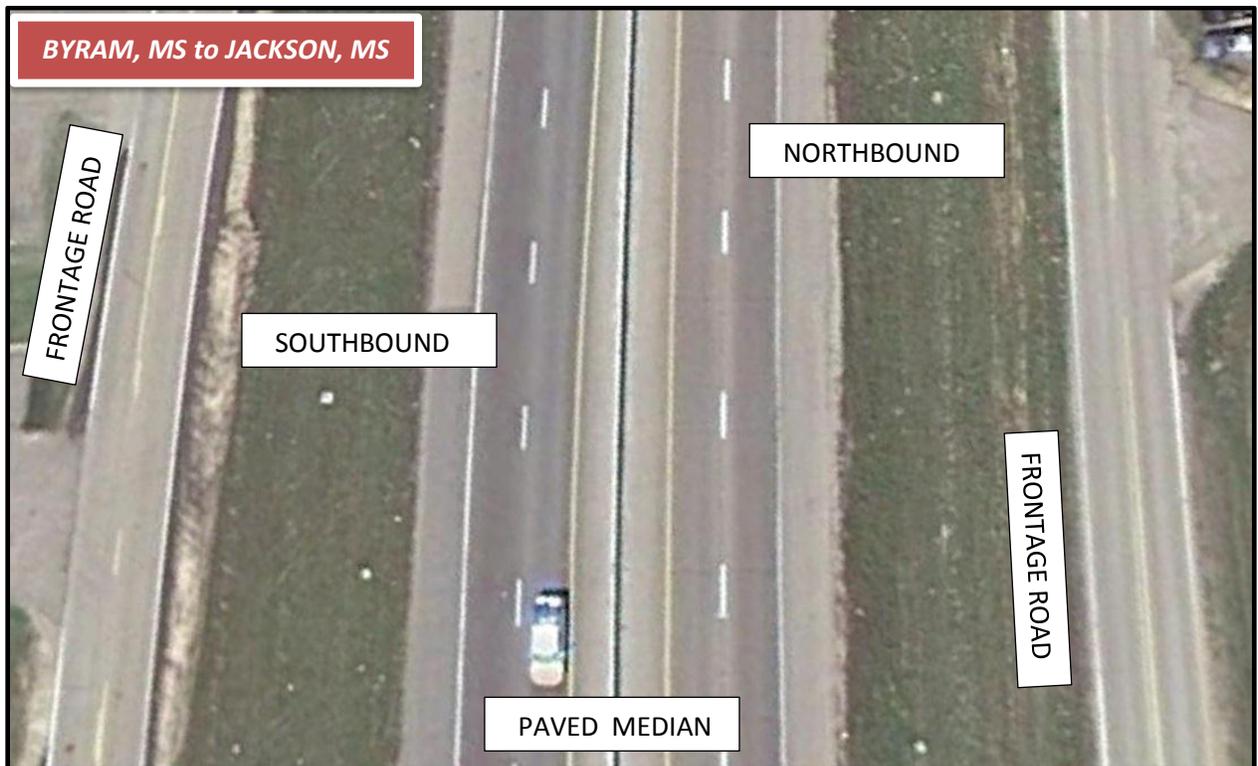
The purpose of this project is to (1) improve the physical roadway conditions of I-55 from the Covich County Line south of Terry, MS to McDowell Road in Jackson, MS (17.1 miles) within Hinds County and (2) provide additional capacity for I-55 from Green Gable Road/Cunningham Avenue in Terry, MS to McDowell Road in Jackson, MS (12.9 miles) in order to (a) relieve congestion of the interstate system and (b) provide fluid and safe traffic control during the pavement replacement. Any proposed alternatives will utilize existing rights-of-way if possible.



### 2.2 Project Need

The project is needed because (1) the portion of the interstate between the Covich County Line south of Terry, MS and McDowell Road in Jackson, MS has reached its surface life expectancy where maintenance of the existing surface will not adequately address the structural needs of the interstate, (2) a traffic count and capacity analysis between South Siwell Road in Byram, MS and McDowell Road in Jackson, MS compiled by the MDOT-Location and Design Committee indicates that the current Level of Service (LOS) for this stretch of I-55 was determined to be D-F for the Year 2011 and F for Year 2040, thereby warranting an immediate need for additional lanes for this section of I-55, and (3) the replacement of the existing roadway pavement for the 17.1-mile section of I-55 will cause an elevated level of disruption to traffic flows warranting additional travel lanes also between Green Gable Road/Cunningham Avenue in Terry, MS and South Siwell Road in Byram, MS. The additional capacity proposed for the project is to be constrained to the existing rights-of-way if possible. The Location and Design Committee Report can be found in Appendix B. Figure 3 depicts the current conditions for I-55.

**Figure 3- Current Conditions**



### **3. ALTERNATIVES**

This section describes the development and evaluation of alternatives that were considered for proposed improvements to I-55 between the Copiah County Line and McDowell Road in Hinds County, Mississippi. Three alternatives were considered for the proposed project. Alternative A is the No Build Alternative. Alternative B proposes to impact rights-of-way. Alternative C is contained within existing interstate and associated frontage road rights-of-way.

#### **3.1 No Build Alternative (Alternative A)**

Under the No Build Alternative (Alternative A), no action would be taken to the transportation facility. This alternative does not satisfy the purpose and need of the project to (1) improve the physical roadway conditions from the Copiah County Line south of Terry, MS to McDowell Road in Jackson, MS and (2) provide additional capacity for I-55 from Green Gable Road/Cunningham Avenue in Terry, MS to McDowell Road in Jackson, MS, in order to (a) relieve congestion of the interstate system and (b) provide fluid and safe traffic control during the pavement replacement; therefore, it is not considered a viable alternative.

#### **3.2 Build Alternative Considered but Dismissed (Alternative B)**

Alternative B proposes to impact rights-of-way not owned by the Mississippi Department of Transportation through the construction of additional lanes and/or associated frontage roads beyond existing property boundaries. The purpose and need for the proposed project specifically notes that the pavement replacement and capacity increase is to be accomplished within the existing rights-of-way if possible. If the project is not constrained to the existing rights-of-way, the following will most likely occur:

- displacement and relocation impacts to residences and businesses,
- impacts to the local community and social network,
- impacts under environmental justice regulations,
- probable impacts to cultural resources,
- elevated costs and delays due to impacts to utilities,
- elevated costs and delays due to the purchase of additional acreage, and
- substantial increases in both funding and time to construct the subject project.

Based on the minimization of impacts due to constraining the project within the existing rights-of-way, it has been determined that the acquisition of rights-of-way associated with Alternative B is not prudent.

### **3.3 Build Alternative (Alternative C)**

The Build Alternative (Alternative C) would replace 17.1 miles of existing pavement from the Copiah County Line south of Terry, MS to McDowell Road in Jackson, MS, and construct one lane in each direction after paving the existing grass median from Green Gable Road/Cunningham Avenue in Terry, MS to Siwell Road in Byram, MS (6.3 mi.). In addition, since the preferred traffic control plan recommended by the Location and Design Committee for the pavement replacement does not involve the utilization of frontage roads or long term lane closures but rather head-to-head traffic with median barrier, the project also proposes to add one lane in each direction utilizing the existing paved median from South Siwell Road in Byram, MS to McDowell Road in Jackson, MS (6.6 mi.) to reduce the disruption of traffic flow. Therefore, a total of 12.9 miles of additional lane would be constructed as part of the proposed project. The Location and Design Committee Report can be found in Appendix B.

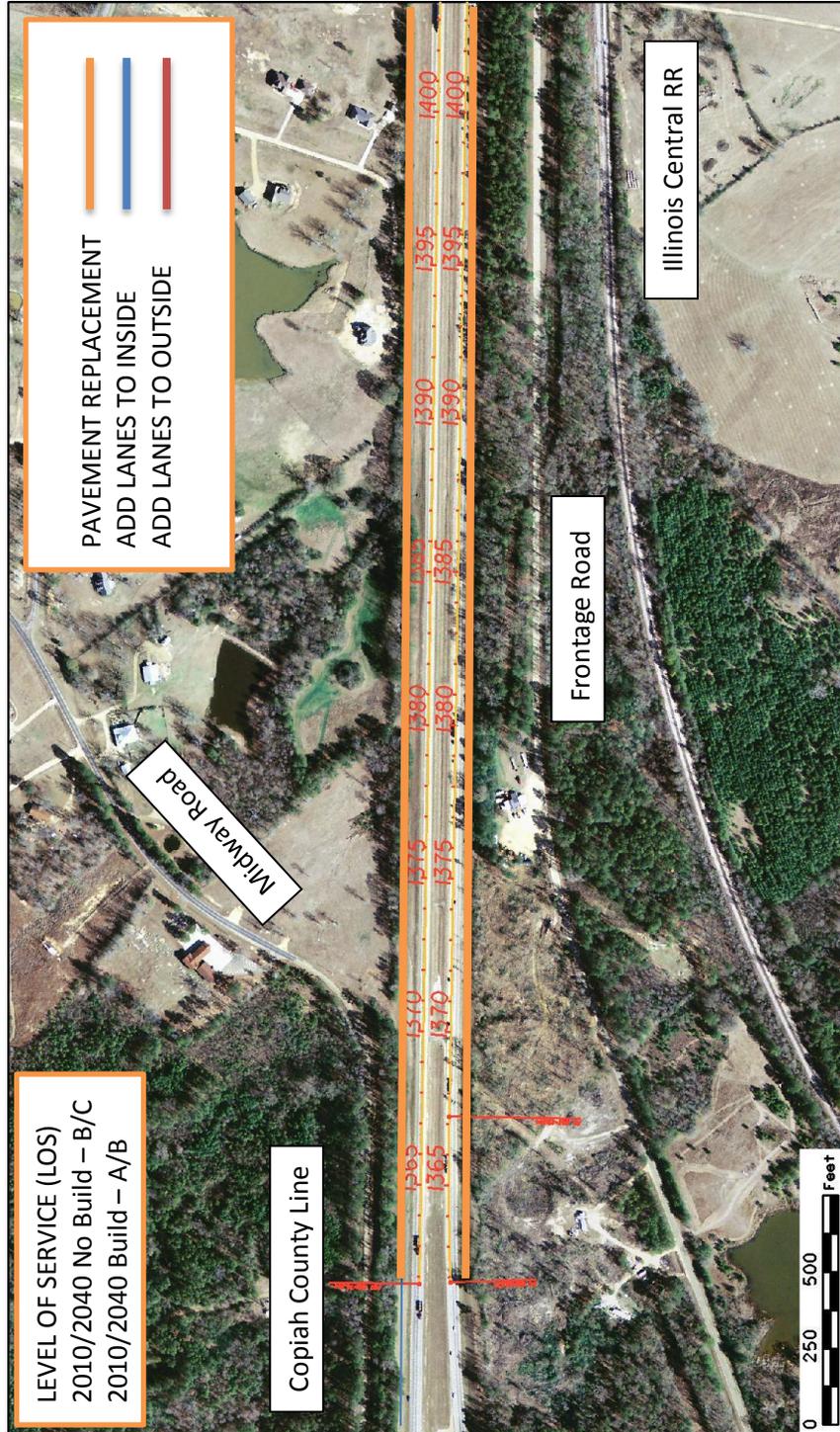
The proposed pavement replacement and capacity increase is to be accomplished within the existing rights-of-way if possible. Constraining the project to the existing rights-of-way accomplishes the following:

- lessens displacement and relocation impacts to residences and businesses,
- lessens impacts to the local community and social network,
- alleviates any direct impacts under environmental justice regulations,
- lessens the probability for impacts to cultural resources,
- decreases costs and delays due to impacts to utilities,
- alleviates the need for the purchase of additional acreage, and
- decreases the overall amount of funding required to construct the subject project.

Based on the minimization of impacts due to constraining the project within the existing rights-of-way, it has been determined that the acquisition of rights-of-way associated with any other alternative is not prudent.

Figure 4 depicts the Build Alternative (Alternative C) for the subject project. Immediately following Figure 4 is the detailed description of Build Alternative (Alternative C).

Figure 4- Build Alternative (Alternative C)

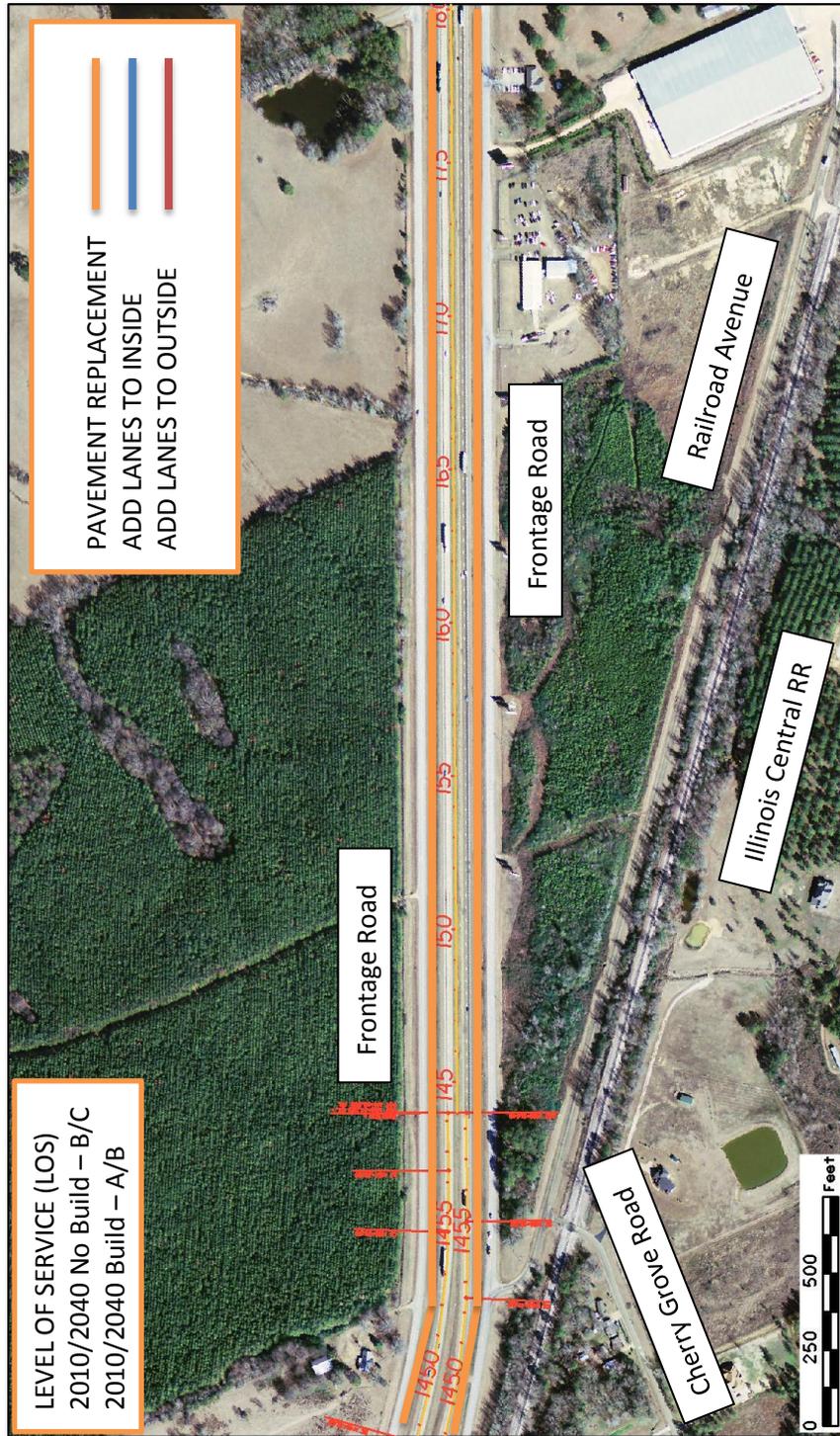


I-55 from the Copiah County Line  
to McDowell Road  
Hinds County, Mississippi  
Sheet 1



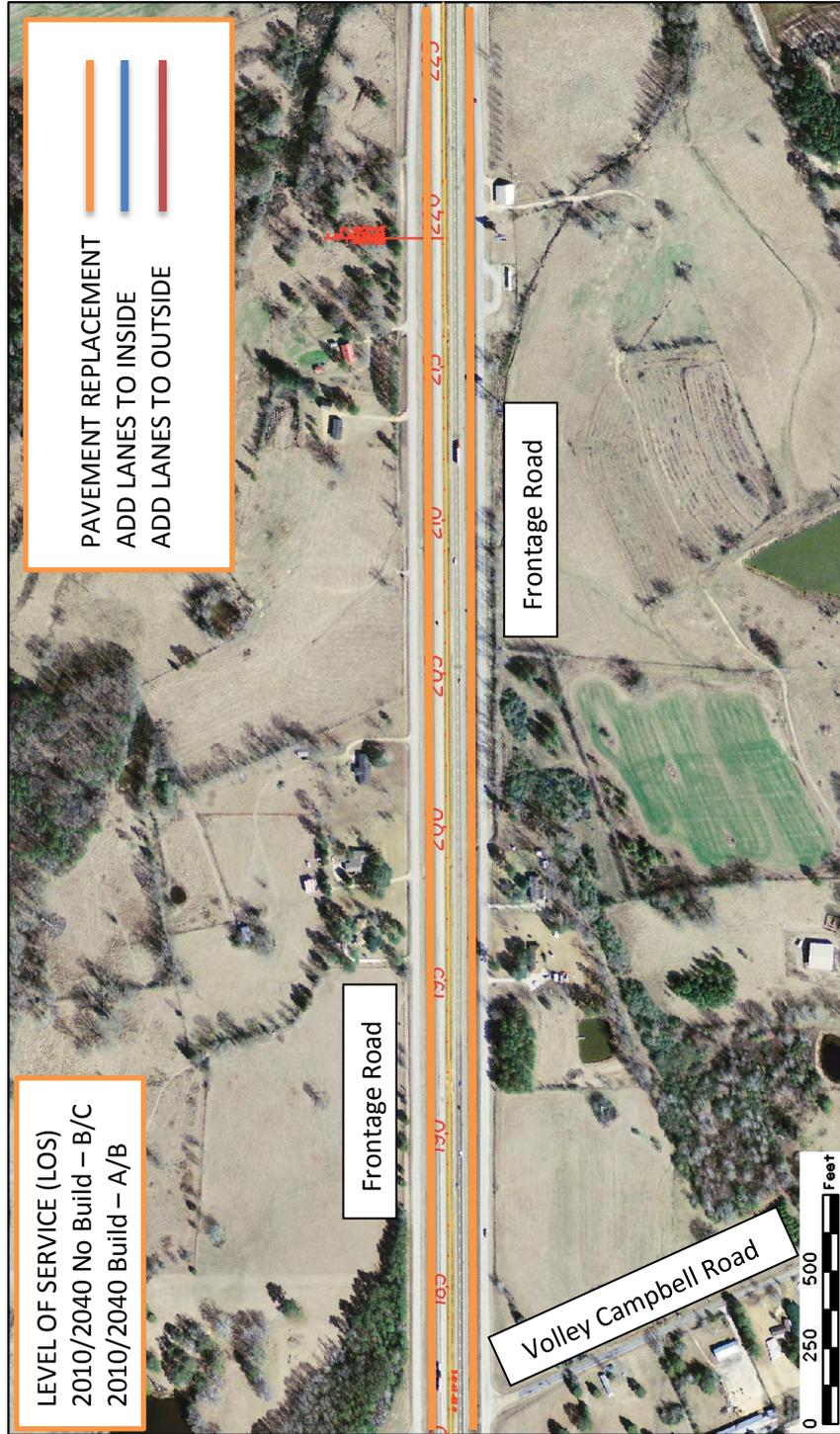
I-55 from the Copiah County Line  
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Hinds County, Mississippi  
Sheet 2





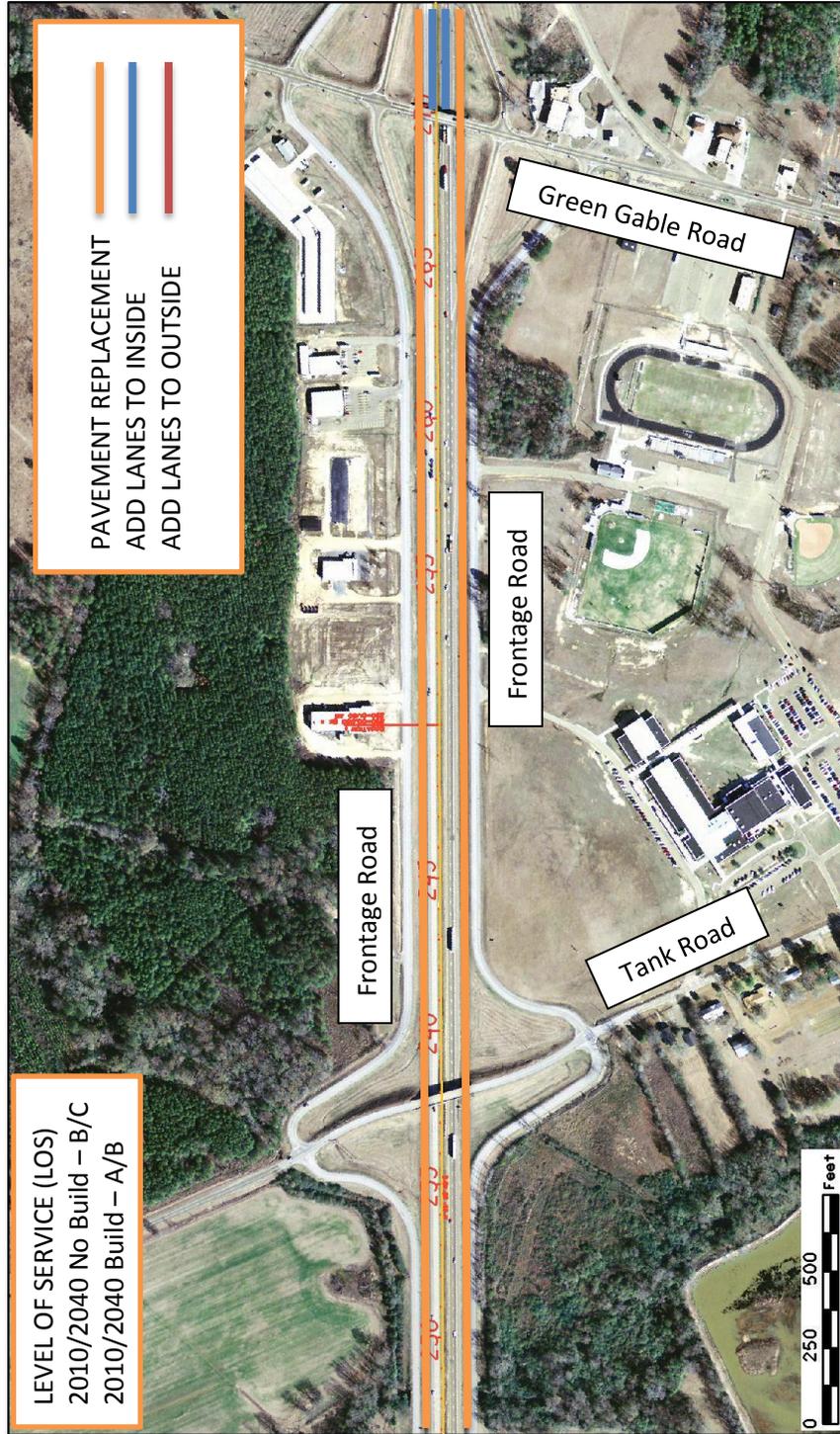
I-55 from the Copiah County Line to McDowell Road  
 Hinds County, Mississippi  
 Sheet 3





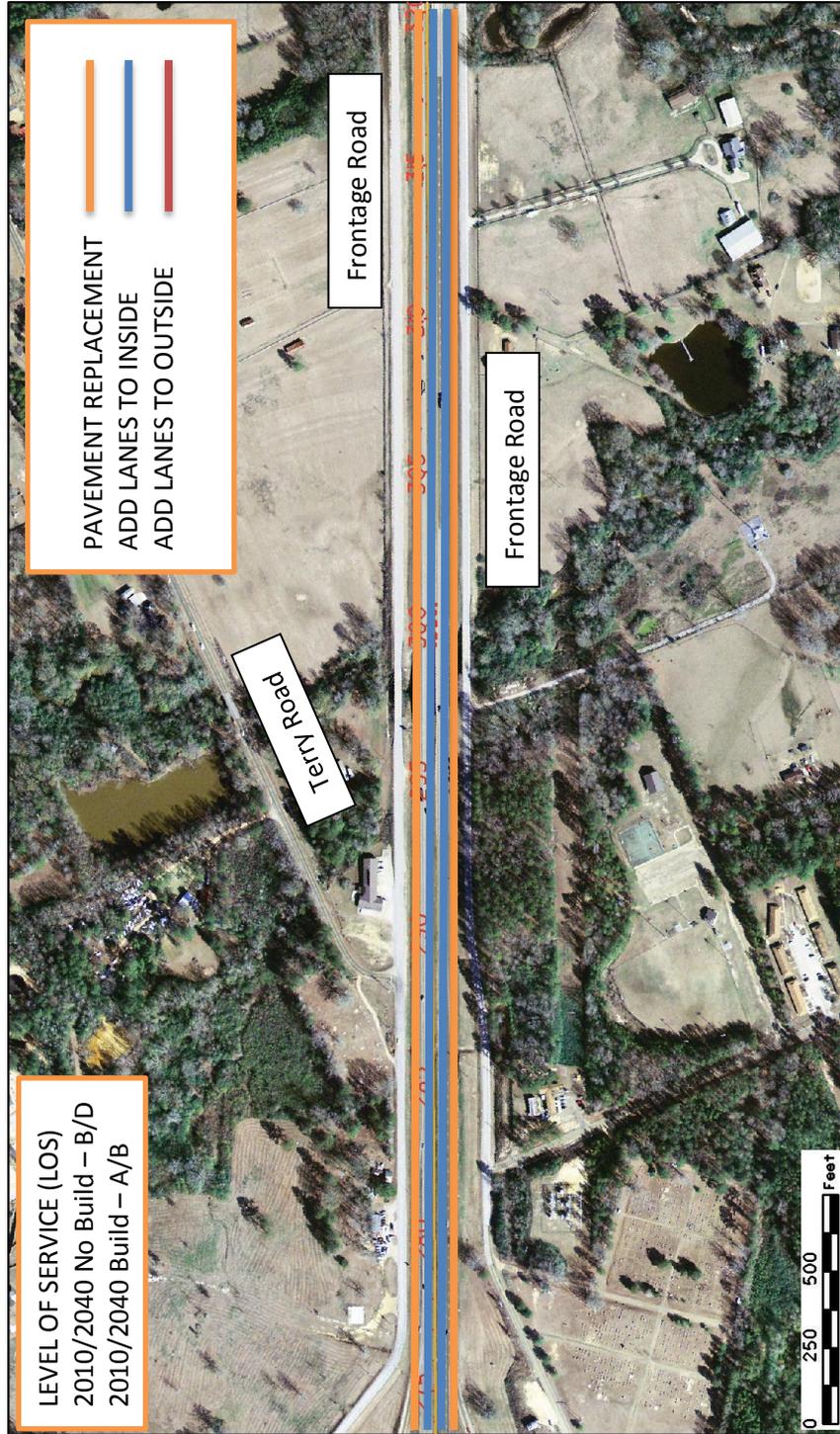
I-55 from the Copiah County Line  
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Hinds County, Mississippi  
Sheet 4



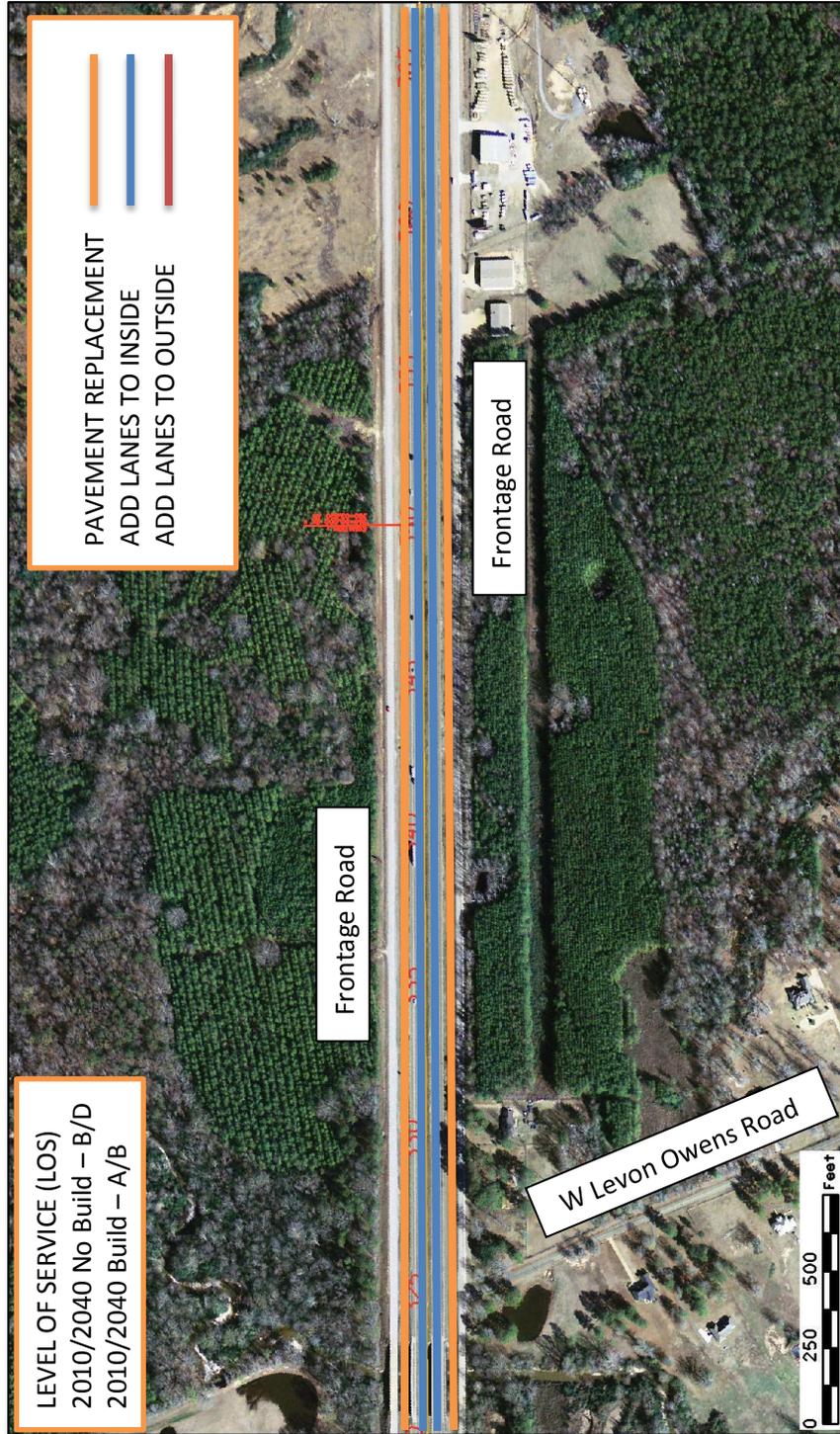


I-55 from the Copiah County Line  
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Hinds County, Mississippi  
Sheet 5



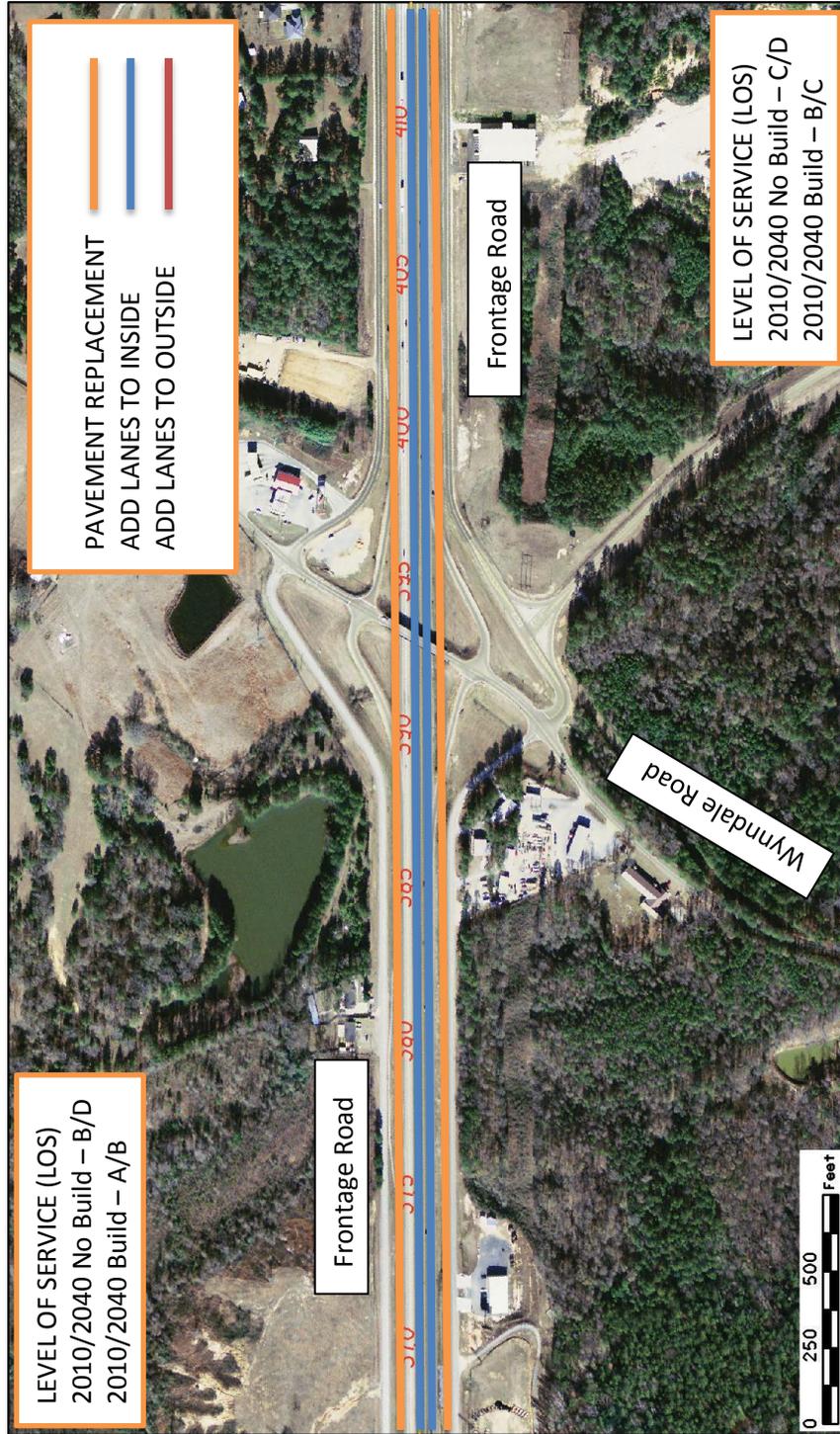


I-55 from the Copiah County Line  
to McDowell Road  
Hinds County, Mississippi  
Sheet 6



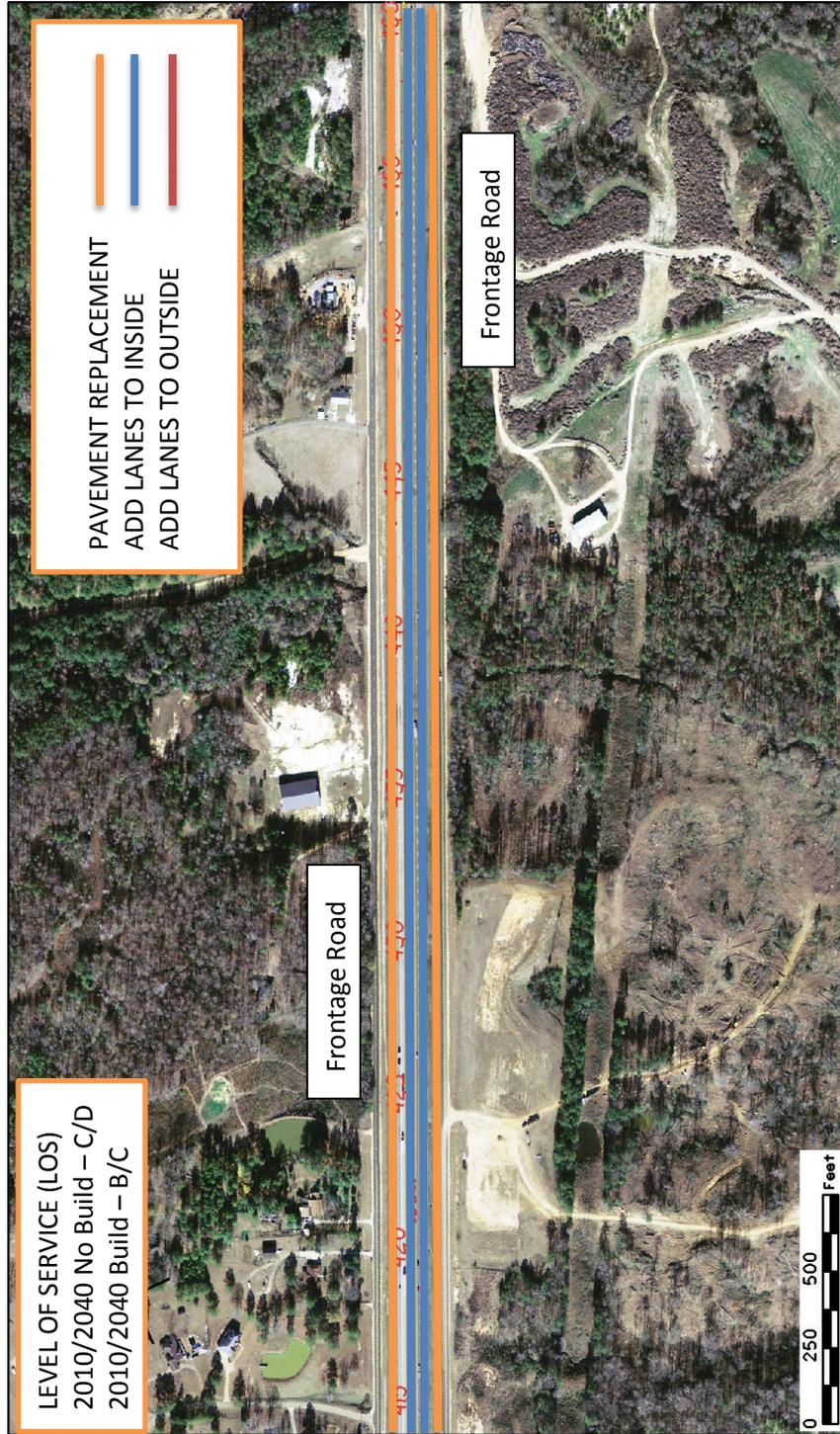
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Sheet 7





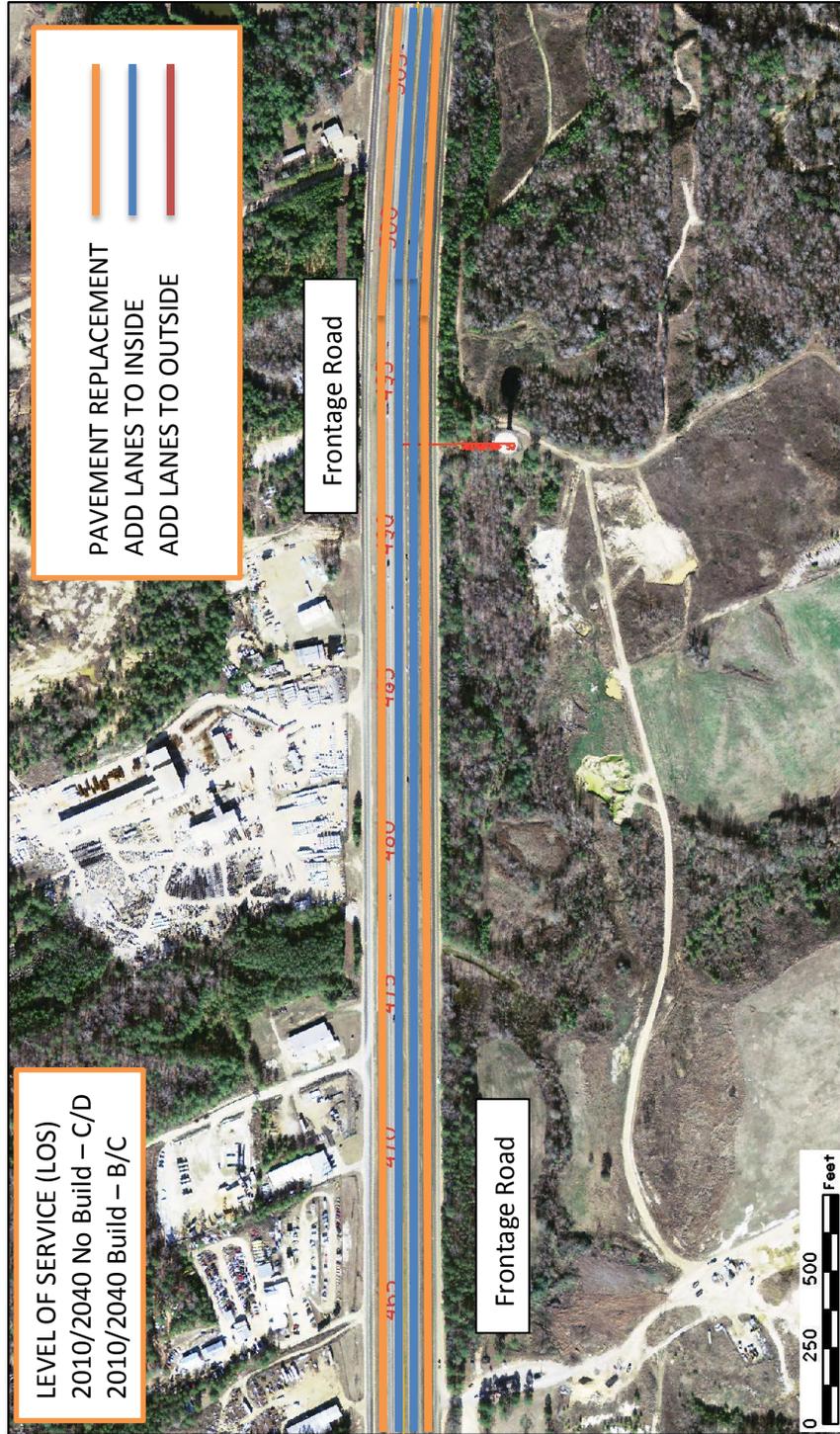
I-55 from the Copiah County Line  
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 Hinds County, Mississippi  
 Sheet 8





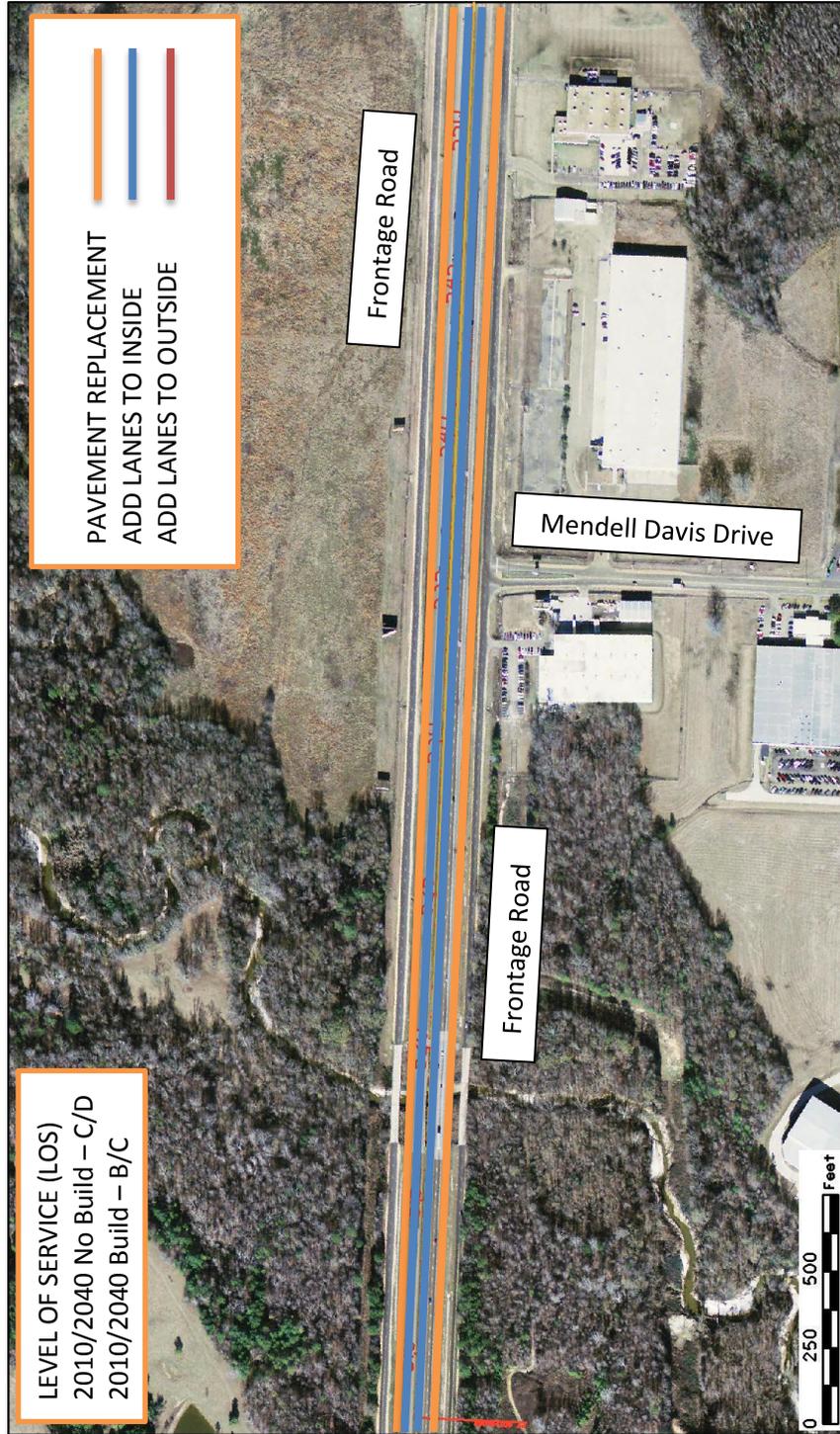
I-55 from the Copiah County Line  
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Sheet 9





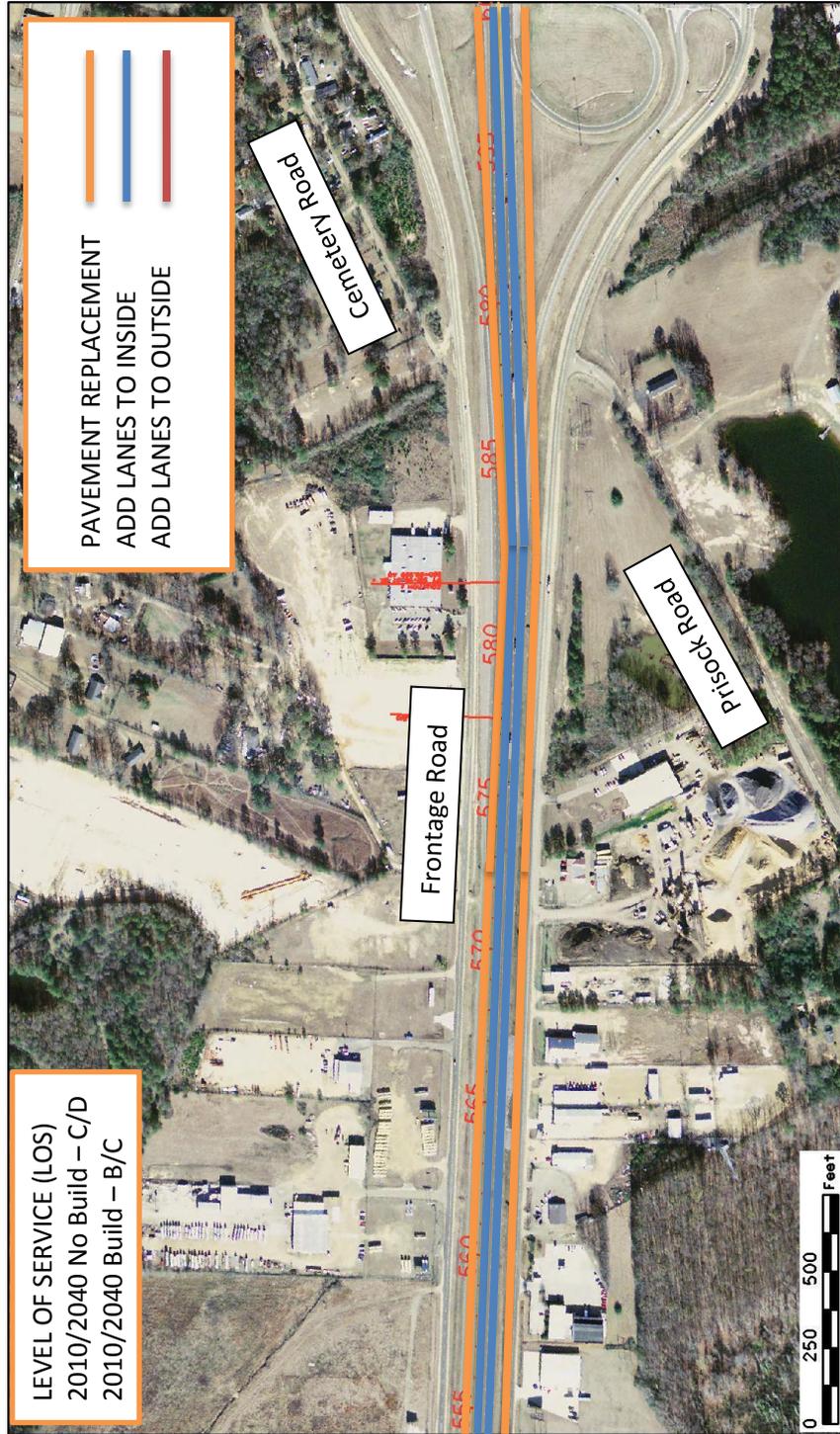
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Sheet 10





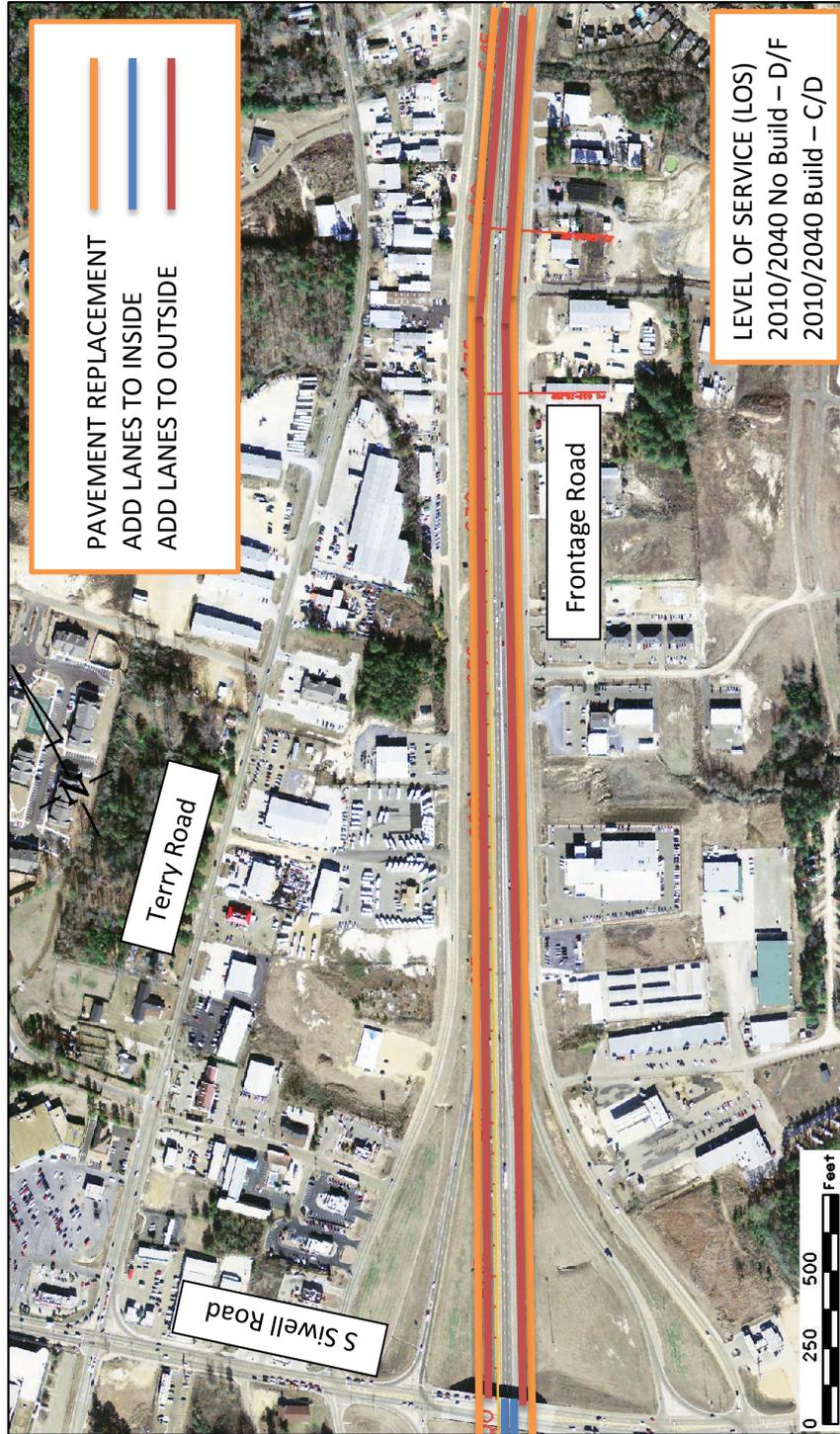
I-55 from the Copiah County Line  
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Sheet 11





I-55 from the Copiah County Line  
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Hinds County, Mississippi  
Sheet 12





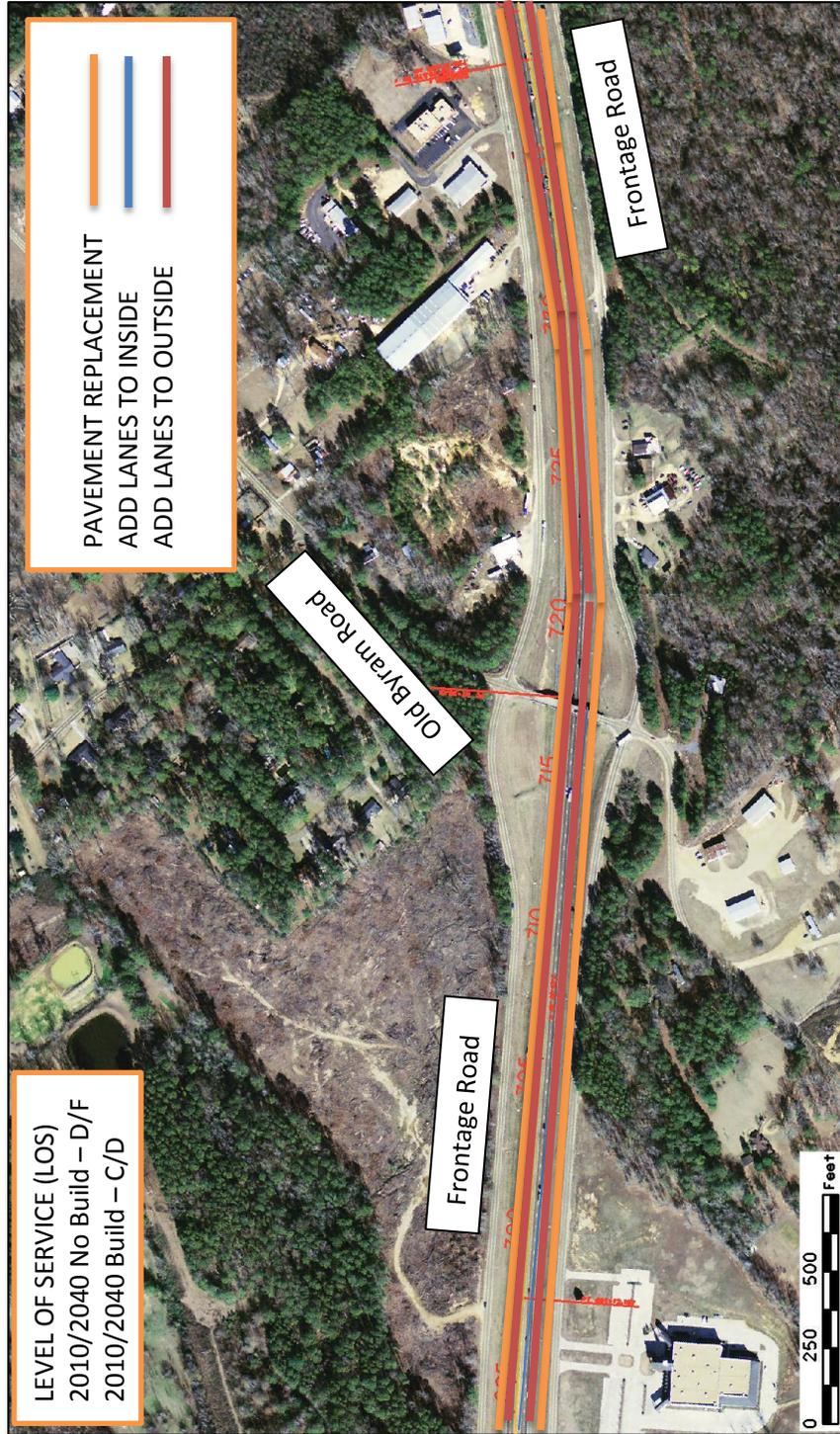
I-55 from the Copiah County Line  
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Sheet 13



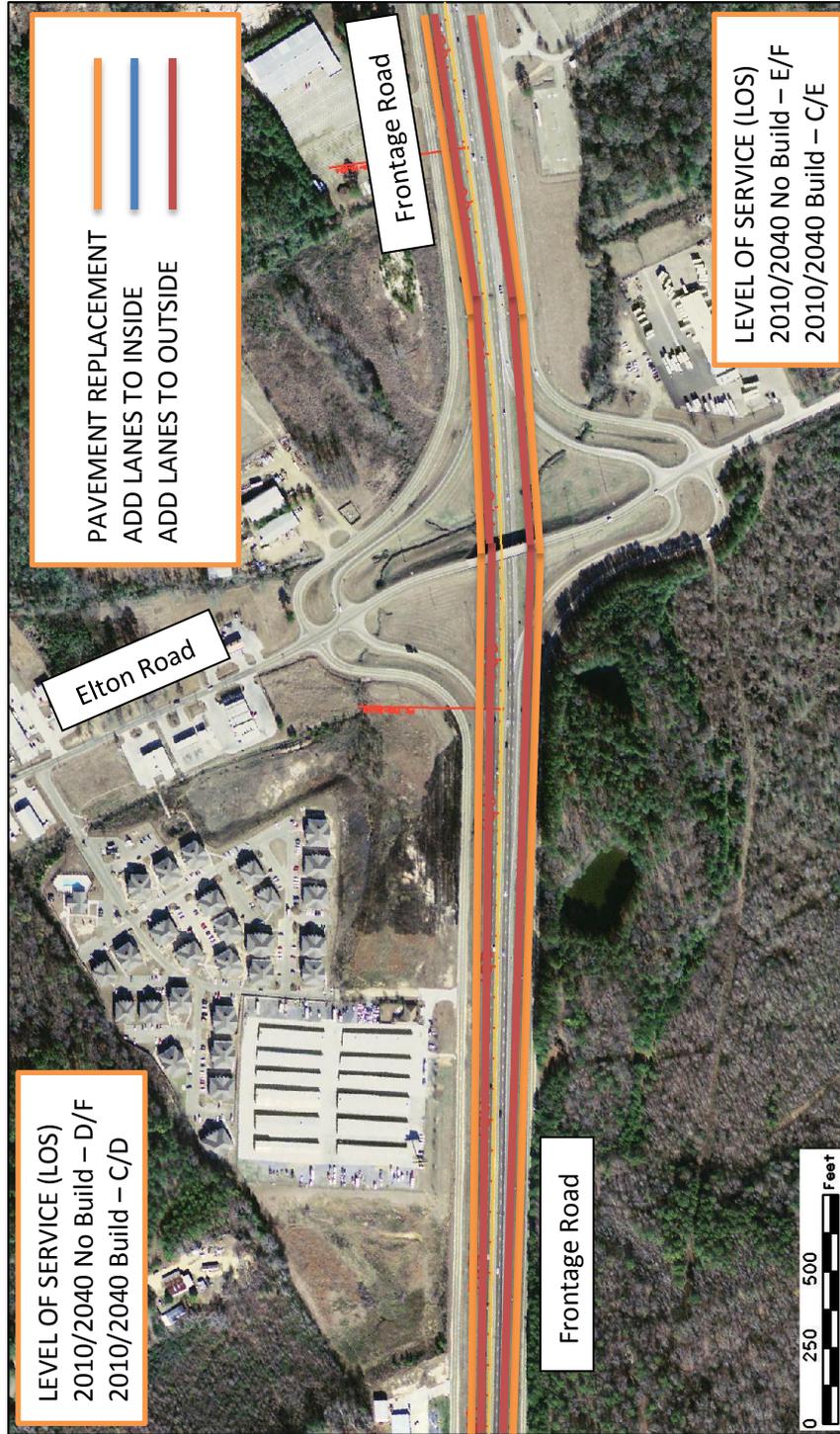


I-55 from the Copiah County Line  
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Sheet 14

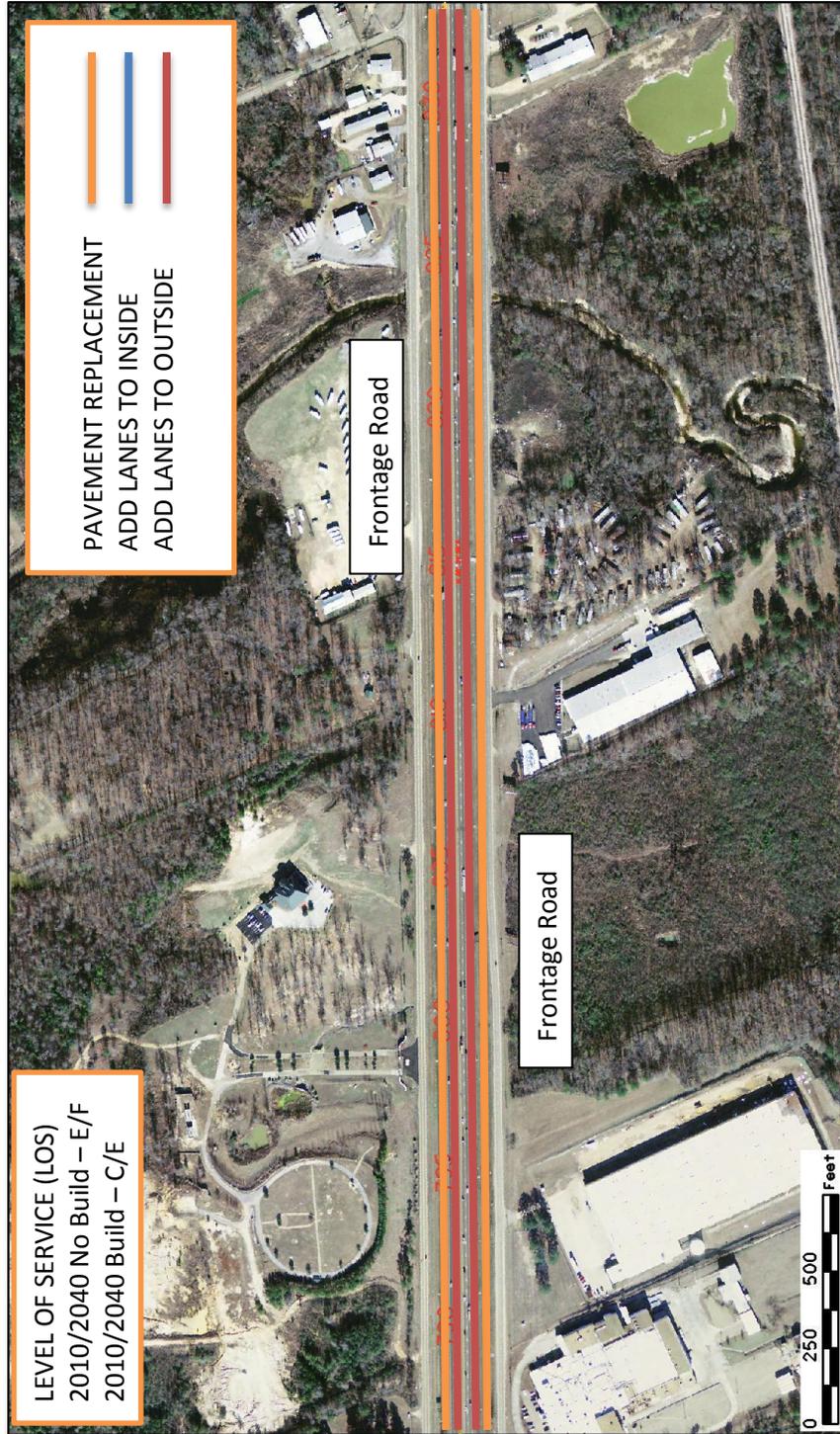




I-55 from the Copiah County Line  
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Hinds County, Mississippi  
Sheet 15

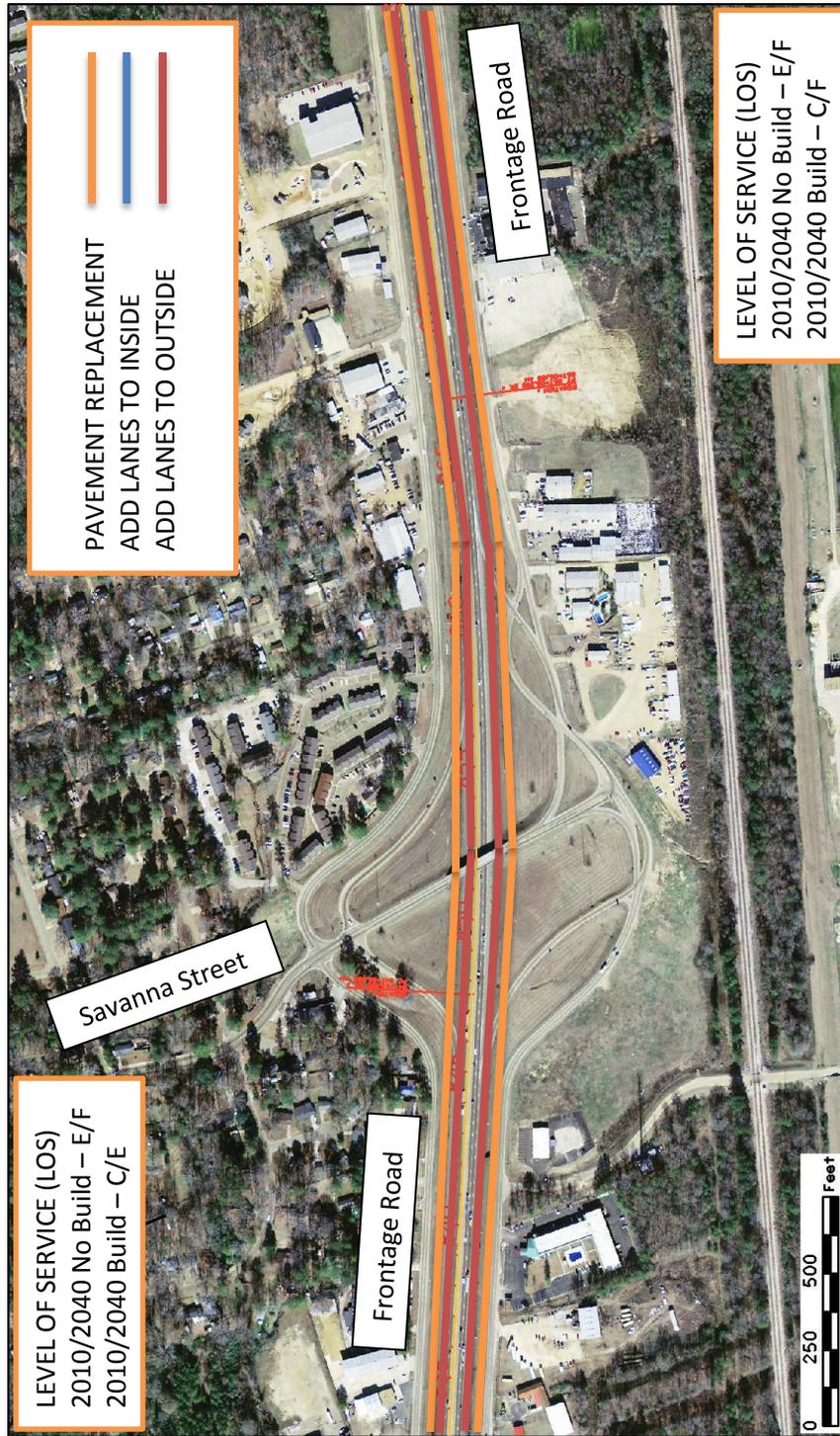


I-55 from the Copiah County Line  
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Sheet 16



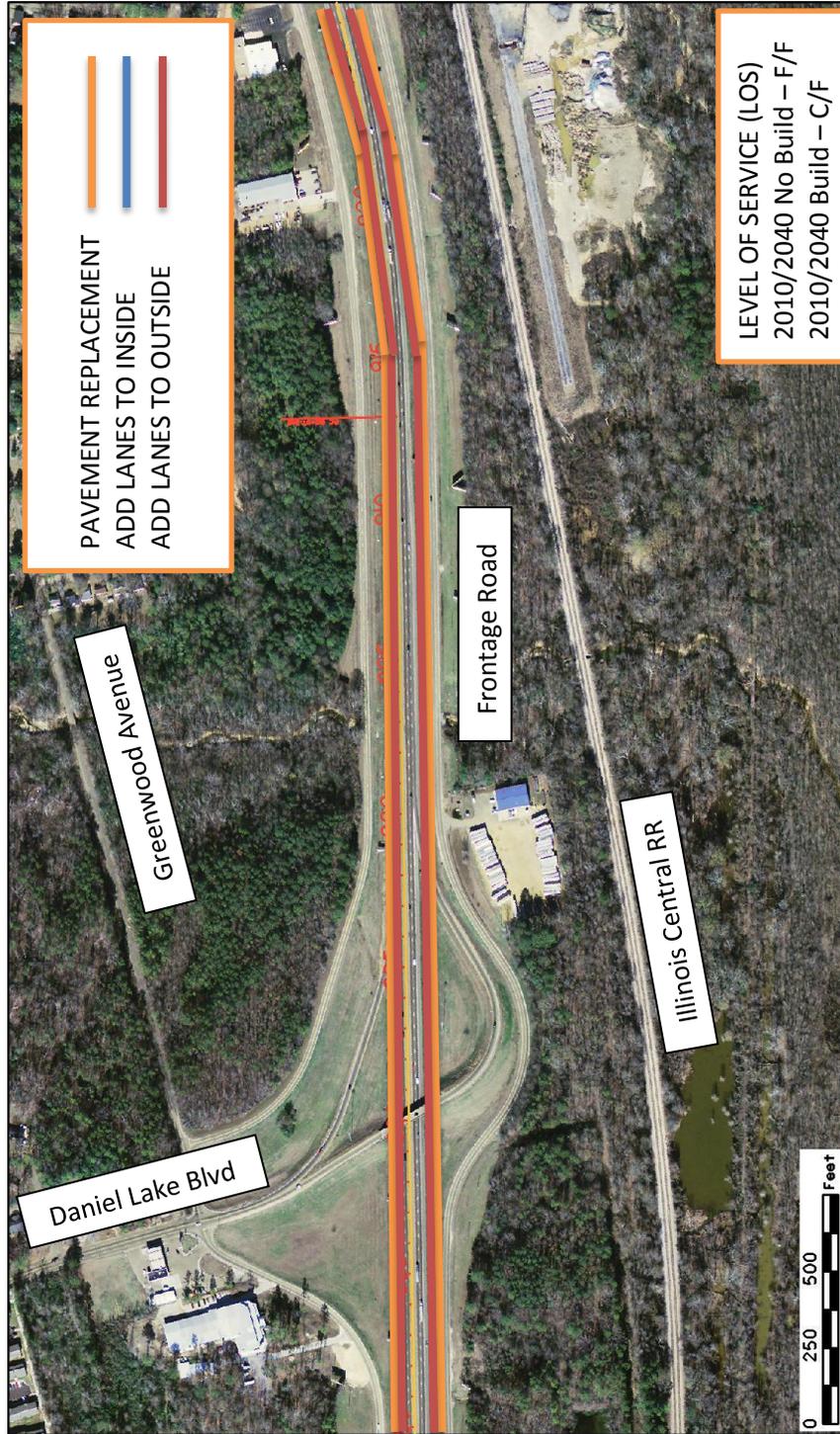
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Sheet 17



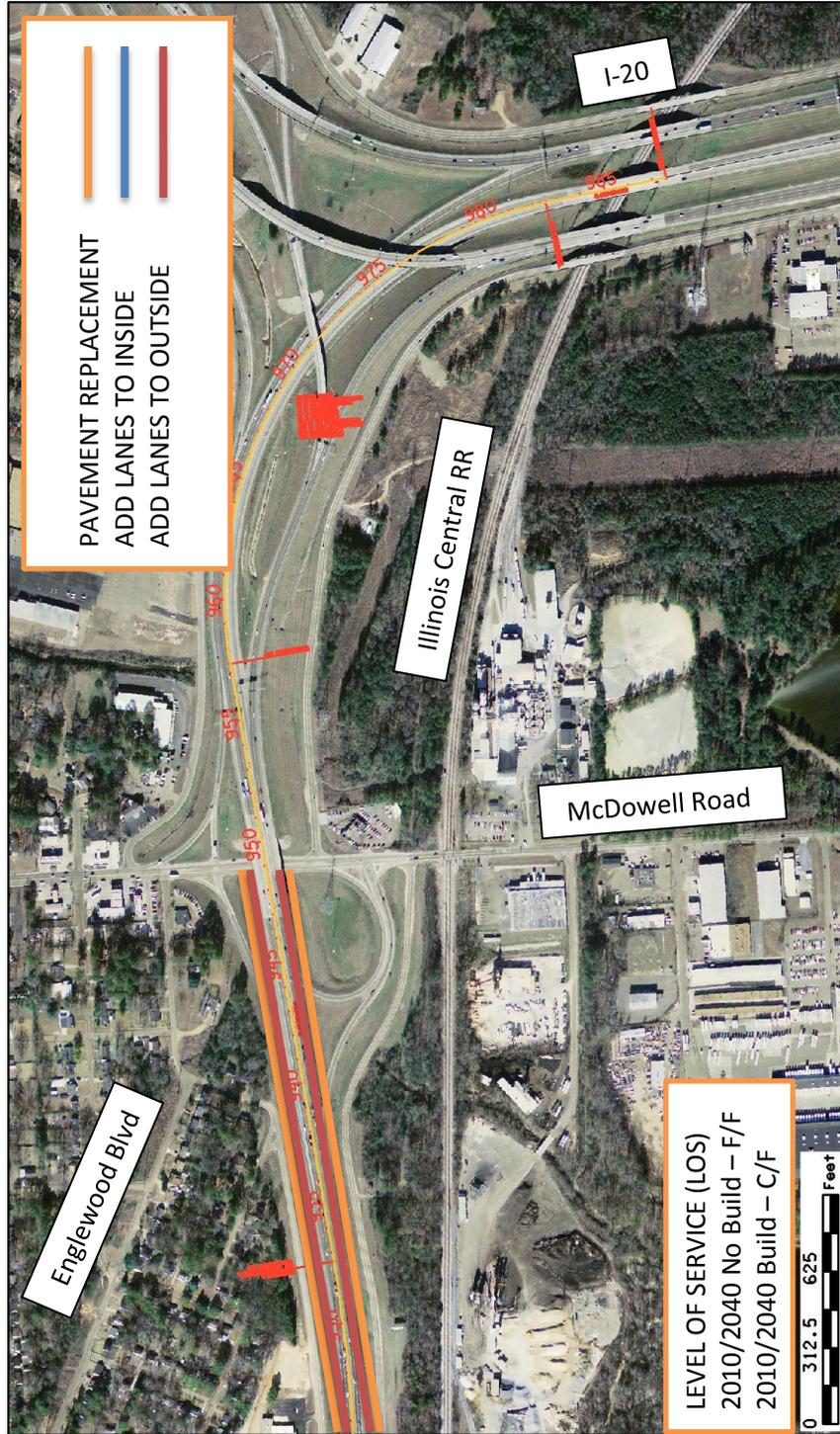


I-55 from the Copiah County Line  
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Hinds County, Mississippi  
Sheet 18

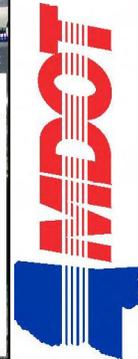




I-55 from the Copiah County Line  
to McDowell Road  
Hinds County, Mississippi  
Sheet 19



I-55 from the Copiah County Line  
 to McDowell Road  
 Hinds County, Mississippi  
 Sheet 20



Build Alternative (Alternative C) continued . . .

#### Pavement Removal & Replacement

The current pavement in the 17.1-mile stretch of I-55 consists mainly of composite pavement with sections of jointed reinforced concrete pavement (JRCP) that have not been overlaid with hot-mix asphalt (HMA). The largest of these sections begins at the Copiah County Line south of Terry, MS, and extends northward approximately 1.81 miles. There are other smaller sections of bare JRCP that are less than 0.25 miles each. The latest Roadway Condition Survey for the longest section of bare JRCP conducted in early 2010 indicates an average faulting of 0.20 inches at the joints. The majority of the remaining roadway is constructed of composite pavement. The HMA overlay is generally cracked and oxidized throughout the project in both directions of travel. Some areas are severely cracked, raveled and have begun to form potholes. There are also areas where the pavement is distorted and out of section due to possible high-volume changes (HVC) (expansive clay) soils. The 2010 Roadway Condition Survey for the composite pavement section indicates the average rutting ranges from 0.11 to 0.15 inches. Due to its age and condition, it is recommended that all of the existing pavement between the Copiah County Line and McDowell Road (17.1 miles) be removed and replaced.

#### Additional Lane Construction

The Highway Capacity Manual (HCM) defines the quality of traffic service provided by specific highway facilities under specific traffic demands by means of Level of Service (LOS). The LOS characterizes the operating conditions on a facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. A LOS can range from A (free-flow operations) to F (breakdowns in traffic flow). The general definitions and characteristics for the range of LOS are shown in Table 1 for freeways/interstates. The appropriate LOS for specified combinations of area and terrain type is shown in Table 2.

<b>TABLE 1- LEVEL OF SERVICE (LOS) – FREEWAYS/INTERSTATES</b>		
<b>LOS</b>	<b>General Operating Conditions</b>	<b>General Characteristics</b>
A	Free-flow operations. Vehicles are almost completely unimpeded in their ability to maneuver with the traffic system. The general level of physical and psychological comfort provided to the driver is high.	
B	Reasonably free flows. The ability to maneuver within the traffic system is only slightly restricted and the general level of physical and psychological comfort provided to the driver is still high. The effects of minor incidents are still easily absorbed.	
C	Flow with speeds at/near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension. Queues may form behind any significant blockage.	
D	Speeds decline with increasing flows. Freedom to maneuver within the traffic stream is more noticeably limited. The driver experiences reduced physical and psychological comfort levels. Minor incidents create queuing.	
E	At lower boundary, the facility is at capacity. Operations are volatile because there are virtually no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort. Any disruption causes queuing.	

<p>F</p>	<p>Breakdowns in traffic flow. The number of vehicles entering the highway section exceeds the capacity or ability of the highway to accommodate that number of vehicles. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort. Queues form behind breakdown points</p>	
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<p><b>TABLE 2- APPROPRIATE LEVELS OF SERVICE (LOS)</b></p>				
<p><b>Functional Class</b></p>	<p><b>Appropriate LOS</b></p>			
	<p><b>Rural Level</b></p>	<p><b>Rural Rolling</b></p>	<p><b>Rural mountainous</b></p>	<p><b>Urban and Suburban</b></p>
<p><b>Freeway (Interstate)</b></p>	<p><b>B</b></p>	<p><b>B</b></p>	<p><b>C</b></p>	<p><b>C</b></p>
<p>Arterial</p>	<p>B</p>	<p>B</p>	<p>C</p>	<p>C</p>
<p>Collector</p>	<p>C</p>	<p>C</p>	<p>D</p>	<p>D</p>
<p>Local</p>	<p>D</p>	<p>D</p>	<p>D</p>	<p>D</p>

A Capacity Analysis conducted by the Planning Division of the Mississippi Department of Transportation indicates that the section of I-55 between South Siwell Road in Byram, MS and McDowell Road in Jackson, MS, is currently operating at a Level of Service (LOS) of D to F. This LOS indicates an immediate need for additional lanes. Without additional lanes, the LOS will drop to F by the year 2040.

With the need to remove and replace the existing pavement between the Copiah County Line south of Terry, MS, and McDowell Road in Jackson, MS, three traffic control concepts were reviewed. The three traffic control concepts include: utilization of frontage roads, utilization of long term lane closures, and head-to-head traffic with median barrier.

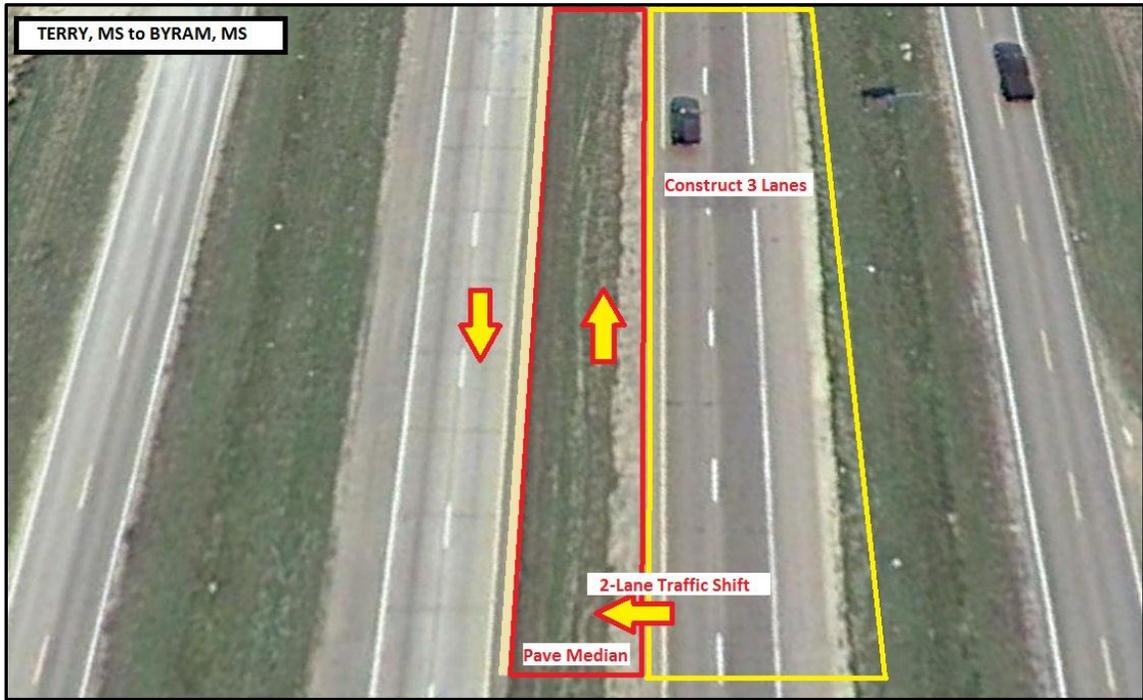
*Utilization of Frontage Roads:* The interstate is served by frontage roads which provide access to commercial properties immediately outside of the existing rights-of-way. The frontage roads parallel the interstate to the east and west and are striped, two-lane, bi-directional roadways. Utilization of the frontage roads for traffic control was considered but rejected due to the poor vertical geometry of the roadways, the lack of suitable shoulders, the numbers of businesses located on the frontage roads, and the presence of the interchanges.

*Utilization of Long Term Lane Closures:* An analysis was completed to determine if the pavement replacement project could be performed under long term lane closures by reducing I-55 to one through-lane during construction. The results of the analysis indicated that the proposed work could be accomplished from the Copiah County Line to Green Gable Road/Cunningham Avenue in Terry, MS, under long term lane closures without undue traffic backups. However, the analysis indicated that between Green Gable Road/Cunningham Avenue in Terry, MS and Wynndale Road (2.3 miles north of Terry, MS), traffic volumes will exceed capacity and backups up to 2.3 miles could be expected. From Wynndale Road to South Siwell Road in Byram, MS, the analysis indicated that backups could be expected to reach 4.1 miles. For these reasons, this method of traffic control was rejected for the proposed project.

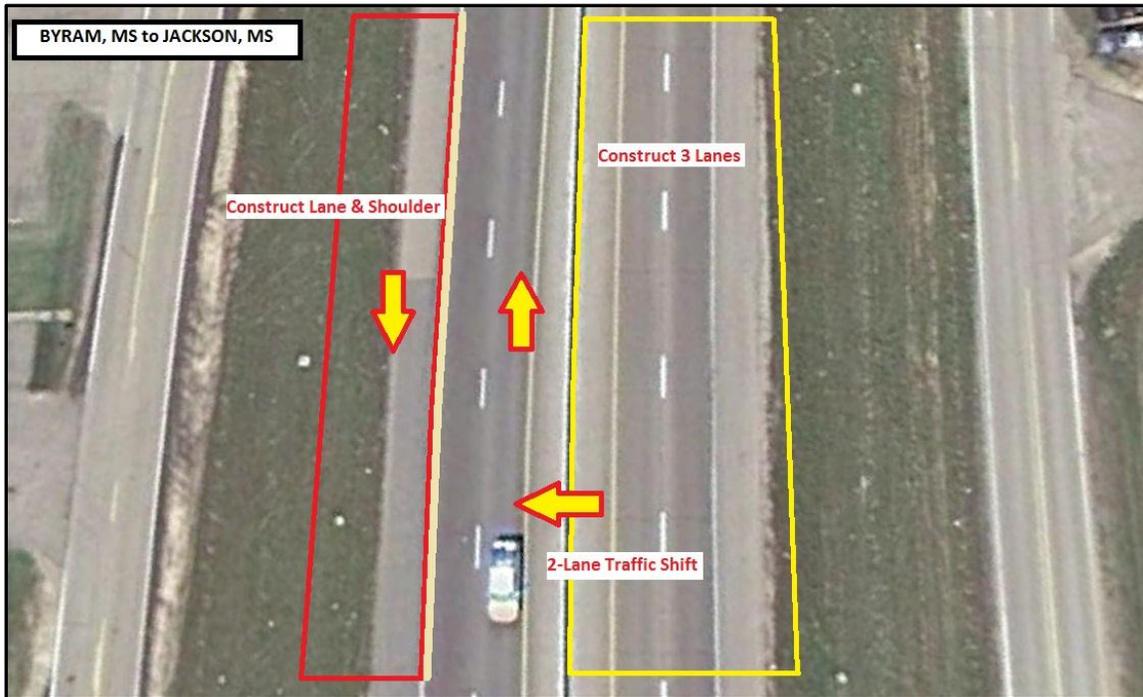
*Head-to-Head Traffic with Median Barrier:* From Green Gable Road/Cunningham Avenue in Terry, MS, to South Siwell Road in Byram, MS, the existing grass median will be paved to accommodate two lanes of traffic. One direction of travel (two lanes) will be moved into the paved median separated from the opposing traffic by a concrete median barrier while the ultimate three-lane section is constructed. The process will then be repeated on the opposite side of the interstate to allow construction of the remaining lanes. From South Siwell Road in Byram, MS, to McDowell Road in Jackson, MS, the southbound lanes will be widened by adding an outside lane and a 14-ft. outside shoulder. The four lanes will be head-to-head and separated by a concrete median barrier while the ultimate northbound three lanes with full depth shoulders are constructed. Once completed, all four lanes of traffic will be shifted to the completed northbound lanes while the remaining two lanes of the southbound lanes are removed and replaced.

It is recommended that the Head-to-Head with Median Barrier method of traffic control be utilized for the proposed project. Figures 5 and 6 depict the methods of traffic control and lane construction.

**Figure 5- Additional Lane Construction**



**Figure 6- Additional Lane Construction**



### Bridges

There are 8 overhead bridges, 6 mainline bridges, and 3 box culverts located within the proposed project limits. Many of the bridges do not currently have sufficient vertical clearance. The vertical clearance of each bridge was investigated during the design phase of the project in order to increase the clearance to a minimum of 17 feet where possible. The horizontal clearance underneath the overhead bridges was also verified during the design phase to ensure adequate space for traffic during the construction of the project. Widening of mainline bridges to accommodate the additional lanes and/or traffic control measures will be required with the proposed project.

### Frontage Roads

In general, no work will be performed on the frontage roads with the proposed project. However, due to the close proximity of the frontage roads and the differences in elevation between the frontage roads and the mainline (interstate), it may be necessary to adjust the profile of the frontage road to allow the additional lanes to be constructed. If the frontage road profile cannot be adjusted in these areas due to either the lack of right-of-way or right-of-way impacts, retaining walls will be utilized where practical.

### Signage

All signage will be replaced as part of the proposed project. Existing ground-mounted signage will be replaced with overhead signs within the limits of the proposed 6-lane facility.

### Roadside Safety

The following roadside safety tasks are proposed with the subject project:

- Removal and replacement of all guardrail and guardrail terminal end sections in accordance with current MDOT/FHWA safety requirements
- Installation of guardrail at drainage structures with openings  $\geq 48$  sq. ft. per the *Roadway Design Manual*, 2001 Edition
- Random clearing of vegetation for a minimum distance of 50 ft. from the edge of pavement or as directed by MDOT policy, whichever is greater
- Removal and replacement of delineators per current MDOT design standards
- Extension of interchange ramps to meet the current parallel acceleration/deceleration design configuration
- Adjustment of ditch plugs and authorized crossovers to current safety design standards

Table 3 compares the No Build Alternative (Alternative A) and the Build Alternative (Alternative C).

<b>TABLE 3- PROJECT DATA SUMMARY FOR IMPROVEMENTS TO I-55</b>		
<b>Category</b>	<b>No Build Alternative (A)</b>	<b>Build Alternative (C)</b>
<b>Facility Description</b>		
Functional Classification: <u>I-55</u> Copiah Co. Line to Green Gable Rd. (Terry, MS) Green Gable Rd. (Terry, MS) to Siwell Rd. (Byram, MS) Siwell Rd.(Byram, MS) to McDowell Rd. (Jackson, MS)	Freeway (rural) Freeway (urban) Freeway (urban)	Freeway (rural) Freeway (urban) Freeway (urban)
<u>Frontage Roads</u> Copiah Co. Line to Green Gable Rd. (Terry, MS) Green Gable Rd. (Terry, MS) to Siwell Rd. (Byram, MS) Siwell Rd.(Byram, MS) to McDowell Rd. (Jackson, MS)	Local Road (rural) Local Road (urban) Local Road (urban)	Local Road (rural) Local Road (urban) Local Road (urban)
Design Speed	70 mph	70 mph
Length (miles): Copiah Co. Line to Green Gable Rd. (Terry, MS) Green Gable Rd. (Terry, MS) to Siwell Rd. (Byram, MS) Siwell Rd.(Byram, MS) to McDowell Rd. (Jackson, MS)	4.2 6.3 6.6	4.2 6.3 6.6
Lane Descriptions: <u>I-55</u> Copiah Co. Line to Green Gable Rd. (Terry, MS)  Green Gable Rd. (Terry, MS) to Siwell Rd. (Byram, MS)  Siwell Rd.(Byram, MS) to McDowell Rd. (Jackson, MS)  <u>Frontage Roads</u> North of Copiah Co. Line to McDowell Rd. (Jackson, MS)	2@12 ft. both north & south, grass median divided 2@12 ft. both north & south, grass median divided 2@12 ft. both north & south, concrete median divided 2@12 ft. bi-directional, 81' left & right of I-55	2@12 ft. both north & south, grass median divided 3@12 ft. both north & south, concrete median divided 3@12 ft. both north & south, concrete median divided 2@12 ft. bi-directional, 81' left & right of I-55
<b>Facility Service Characteristics</b>		
Year 2012 ADT: Copiah Co. Line to Green Gable Rd. (Terry, MS) Green Gable Rd. (Terry, MS) to McDowell Rd. (Jackson, MS)	55,000 71,000	55,000 71,000
Year 2032 ADT: Copiah Co. Line to Green Gable Rd. (Terry, MS) Green Gable Rd. (Terry, MS) to McDowell Rd. (Jackson, MS)	75,000 96,000	75,000 96,000
Level of Service (LOS): Siwell Rd. (Byram, MS) to McDowell Rd. (Jackson, MS)	D-F (2010) F (2040)	----- F (2040)
Percent Trucks:	13%	13%
<b>Structural Components</b>		
Interchanges:	8	8
Structures:	8 overhead bridges 6 mainline bridges 3 box culverts	8 overhead bridges 6 mainline bridges 3 box culverts

<b>Social, Cultural &amp; Ecological Impacts</b>		
Estimated ROW Acquisition (acres):	0	0
Land Use	No impacts	No impacts
Farmland (acres)	No impacts	No impacts
Community & Social@	No impacts	Temporary impacts
Displacements/Relocations (residential/business/non-profit)	No impacts	No impacts
Environmental Justice	No impacts	No impacts
Economic	No impacts	Positive impacts
Joint Development	No impacts	No impacts
Bicycles & Pedestrians*	No impacts	No impacts
Air Quality**	No impacts	Temporary impacts
Noise***	No impacts	Barriers warranted
Water Quality#	No impacts	Minimal impacts
Streams (linear feet)##	No impacts	8,500 (potential)
Wetlands (acres)	No impacts	No impacts
Permits###	No impacts	State/Federal Permits
Water Body Modification/Wildlife####	No impacts	Minimal impacts
Floodplains^	No impacts	Minimal impacts
Wild & Scenic Rivers	No impacts	No impacts
Coastal Barriers	No impacts	No impacts
Coastal Zones	No impacts	No impacts
Threatened & Endangered Species^^	No impacts	No impacts
Historical/Archaeological Preservation (historic sites)^^^	No impacts	No impacts
Section 4(f) (properties)^^^	No impacts	No impacts
Section 6(f) (properties)	No impacts	No impacts
USTs/Hazardous Materials/Wastes (properties/sites)^^^	No impacts	No impacts
Visual	No impacts	No impacts
Energy	Long-term impacts	Temporary impacts
Construction	Maintenance impacts	Temporary impacts
<b>Associated Cost Estimates</b>		
Estimated Right-of-Way (ROW) Cost	\$ 0	\$ 0
Estimated Maintenance Cost (Pavement) (2011)	\$ 4.0 M	\$ 0
Estimated Utility Cost (Reimbursable)	\$ 0	\$ 0
Estimated Utility Cost (Non-reimbursable)	\$ 0	\$ 0
Estimated Engineering/Construction Cost (2011)	\$ 0	\$ 120 M
Total Estimated Project Cost (2011)	\$ 4.0 M	\$ 120 M
Total Estimated Project Cost (2016)	\$ 4.9 M	\$ 146 M

@Temporary traffic delays

\* MDOT prohibits the use of the interstate system and controlled access facilities by bicyclists and pedestrians.

\*\* Construction; Mississippi is in attainment for all national ambient air quality standards (NAAQS).

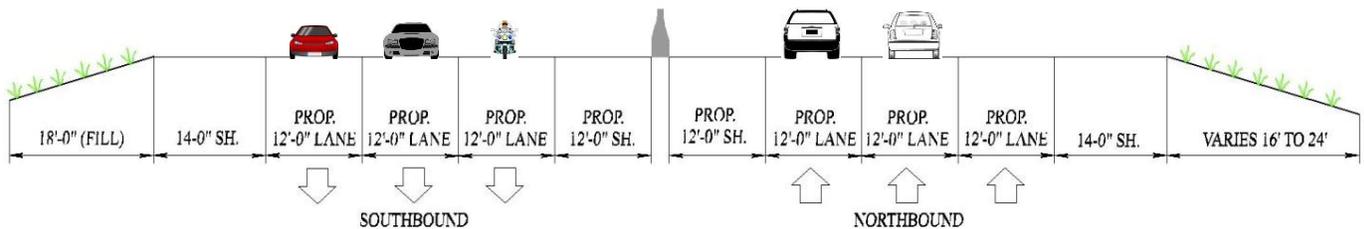
\*\*\* Based on conceptual design and noise modeling information, two and possibly three barriers meet MDOT's Highway Traffic Noise Policy criteria for being reasonable and feasible. During the design phase, after the exact location and design of the project have been determined, a public meeting will be held to provide detailed information on the design of the project and possible noise barriers. A survey will be conducted of the benefitted receivers to determine if they want a noise barrier.

- # Measures for preventing and abating pollution of streams and other water bodies will be implemented in accordance with Mississippi Department of Transportation’s (MDOT’s) Standard Specifications.
- ## Compensatory mitigation will be provided where unavoidable impacts to jurisdictional waters could not be minimized further. Stream lengths are for total intermittent/perennial resources within the interstate and frontage road rights-of-way.
- ### State and Federal Permits to alter streams and prevent erosion and control sediment will be applied for and obtained prior to construction.
- #### Any stream crossing requiring culverts will include embedded culverts to accommodate the passage of aquatic species via a continuous, natural stream bottom. The proposed bridge and culvert extensions will provide opportunities to offer wildlife benefits through design characteristics that enable wildlife to use bridges as safe corridors between tracts of terrestrial habitat.
- ^ A No-rise Certification supported by technical data and signed by a registered professional engineer will be completed prior to construction.
- ^^ The project likely poses no threat to listed species or their habitats if best management practices are implemented, monitored, and maintained (particularly measures to prevent, or at least, minimize negative impacts to water quality).
- ^^^The proposed project is constrained within existing rights-of-way (previously-disturbed areas) between the frontage roads paralleling the existing interstate. The original construction of the interstate lessens the likelihood of discoveries of cultural resources. The proposed project will “mimic” the existing interstate system both in form and function; therefore, it is unlikely that the new system will have any visual impacts on historic resources in its vicinity.
- ^^^^There are no underground storage tanks or hazardous materials/wastes sites within the project corridor (existing I-55 and frontage road rights-of-way).

### 3.4 Preferred Alternative

The preferred alternative for the proposed project is Build Alternative (Alternative C) since this alternative will satisfy the purpose and need of the project. The pavement replacement and additional lane construction will be within existing interstate and associated frontage road rights-of-way. Alternative C is estimated at \$ 120 M. Table 4 describes the design criteria for the proposed project. Figure 7 depicts the proposed typical cross-section of the project.

**Figure 7- Typical Cross-Section**



<b>TABLE 4- GEOMETRIC DESIGN CRITERIA (NEW CONSTRUCTION/RECONSTRUCTION)</b>			
<b>Design Element</b>	<b>Portion of Interstate 55</b>		
	Copiah County Line to Green Gable Rd./Cunningham Ave. (4.2 mi.)	Green Gable Rd./Cunningham Ave. to South Siwell Rd. (6.3 mi.)	South Siwell Rd. to McDowell Rd. (6.6 mi.)
<b>Functional Classification</b>	Rural freeway	Urban freeway	Urban freeway
<b>Design Forecast Year</b>	2040	2040	2040
<b>Design Speed</b>	70 mph	70 mph	70 mph
<b>Control of Access</b>	Full (Type 1)	Full (Type 1)	Full (Type 1)
<b>Level of Service (2010/2040)</b>	A/B	B/C	C/F
<b>Pavement (Typical Cross-section)</b>			
Hot-Mix Asphalt, HT, Polymer	1.50"	1.50"	1.50"
Hot-Mix Asphalt, HT, Polymer	2.00"	2.00"	2.00"
Hot-Mix Asphalt, HT	2.25" or 3.25"	2.25" or 3.25"	2.25" or 3.25"
Hot-Mix Asphalt, HT	3.50"	3.50"	3.50"
Hot-Mix Asphalt, ST	3.50"	3.50"	3.50"
Bituminous for Prime Coat	-----	-----	-----
Cement-treated base course	6.00"	6.00"	6.00"
Chemically-treated subgrade	6.00"	6.00"	6.00"
Undercut, backfilled w/B15 borrow	3'	3'	3'
<b>Bridge</b>			
New Bridge Structural Capacity	HS-20	HS-20	HS-20
New Bridge Minimum Width	T.W. +12 ft.(out)+6 ft.(med)	T.W. +12 ft.(out)+6 ft.(med)	T.W. +12 ft.(out)+6 ft.(med)
Existing Bridge Structural Capacity	HS-20	HS-20	HS-20
Existing Bridge Minimum Width	T.W. +12 ft.(out)+4 ft.(med)	T.W. +10 ft. (out)+4 ft. (med)	T.W. +10 ft.(out)+4 ft.(med)
<b>Travel Lane &amp; Shoulder</b>			
Lane Width	12 ft.	12 ft.	12 ft.
Outside Shoulder Width, usable	12 ft.	14 ft.	14 ft.
Outside Shoulder Width, surfaced	10 ft.	12 ft.	12 ft.
Median Shoulder Width, usable	8 ft.	12 ft.	12 ft.
Median Shoulder Width, surfaced	4 ft.	12 ft.	12 ft.
<b>Slopes</b>			
Travel Lane Cross Slope	2%	2%	2%
Shoulder Cross Slope	4%	4%	4%
Cut Foreslope	4:1 Max, 6:1 Desirable	4:1 Max, 6:1 Desirable	4:1 Max, 6:1 Desirable
Depth of Ditch	3 ft. Min, 4 ft. Desirable	3 ft. Min, 4 ft. Desirable	3 ft. Min, 4 ft. Desirable
Cut Backslope	3:1	3:1	3:1
Safety Slope (Within clear zone)	4:1 Max, 6:1 Desirable	4:1 Max, 6:1 Desirable	4:1 Max, 6:1 Desirable
Fill Slope (Outside clear zone)	3:1	3:1	3:1
<b>Safety</b>			
Roadside Clear Zone	30 ft.	30 ft.	30 ft.
Stopping Site Distance	730 ft.	730 ft.	730 ft.
Maximum Horizontal Curve	3 Deg. 30 Min.	3 Deg. 30 Min.	3 Deg. 30 Min.
Horizontal Site Distance	Based on design criteria	Based on design criteria	Based on design criteria
Maximum Grade	3% (Level Terrain)	3% (Level Terrain)	3% (Level Terrain)
Vertical Curve K Factor (Crest)	285	285	285
Vertical Curve K Factor (Sag)	181	181	181
Min. Vertical Clearance (New)	16.5 ft.	16.5 ft.	16.5 ft.
Min. Vertical Clearance (Existing)	16.0 ft.	16.0 ft.	16.0 ft.
Min. Vertical Clearance (Sign)	17.5 ft.	17.5 ft.	17.5 ft.

#### **4. ENVIRONMENTAL IMPACTS**

The purpose of this Environmental Assessment (EA) is to assess the project impacts on the social, ecological, and cultural environments to determine whether an Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI) is warranted. The following sections describe the impacts to the social, ecological, and cultural environments.

##### **4.1 Land Use**

The project area is I-55 within existing interstate and associated frontage road rights-of-way between the Copiah County Line south of Terry, MS and McDowell Road in Jackson, MS. The land use surrounding the project corridor consists of agricultural, commercial and residential properties. The proposed project will not conflict with the existing zoning or, existing or proposed land use plans. No changes to land use or density in the area is anticipated or expected to occur as a result of the proposed project since construction will be contained within existing rights-of-way if possible.

##### **4.2 Farmland**

The Farmland Protection Policy Act (FPPA) of 1981 is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance as defined by the US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Typically, a farmland conversion impact rating is calculated through the local USDA office to determine whether alternatives to a project are warranted based on the negative effects it will have on the local farming industry. Construction within existing rights-of-way that were purchased on or before August 4, 1984, are not subject to the FPPA. The stretch of I-55 where the subject project is proposed was constructed between 1953 and 1961 under a number of separate projects and the proposed project will be within existing rights-of-way; therefore, the FPPA does not apply to the subject project.

##### **4.3 Community & Social**

The proposed project is within the rights-of-way of I-55 and associated frontage roads. The project will extend from the Copiah County Line south of Terry, MS to McDowell Road in Jackson, MS for a distance of 17.1 miles. The city and town limits within the project area consist of Terry, Byram, and Jackson. According to the US Census Bureau, the 2010 populations for the three areas are: Terry (1,063), Byram (11,489), and Jackson (173,514). The City of Jackson, MS makes up 71% of the Hinds County population.

The proposed project should have minimal to no negative effect on the local communities or area neighborhoods as the proposed pavement replacement and additional roadway construction will occur within existing rights-of-way. Connectivity between communities will be maintained. Access to businesses and residences will be maintained during construction and traffic will be adequately and safely maintained. No community facilities or community services will be impacted by the project. Any travel delays and/or re-routing of traffic on Interstate 55, frontage roads, or I-55 interchanges will be temporary during construction of the proposed project.

#### **4.4 Displacements & Relocations**

The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 and US Department of Transportation (USDOT)/Federal Highway Administration (FHWA) regulations provide relocation assistance and relocation advisory services for decent, safe, and sanitary housing when projects displace residential homeowners and tenants.

There are no single-family residences, multi-family residences, or businesses located within the project corridor since the project will involve pavement replacement and additional roadway construction within existing rights-of-way; therefore, there will be no residential or business displacements and/or relocations expected with this project. The Uniform Act and USDOW/FHWA regulations for relocations do not apply to this project.

#### **4.5 Environmental Justice**

A 1994 Presidential Executive Order (EO 12898) directed every federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on minority populations and low-income populations. The three fundamental environmental justice principles are: (1) to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects on minority populations and low-income populations, (2) to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process, and (3) to prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

According to 2010 data compiled by the US Census Bureau, Hinds County is comprised of the following race/ethnic backgrounds: White (28.4%), Black (69.1%), Hispanic/Latino (1.5%), Asian (0.8%), and American Indian and Alaska Native (0.2%). The population percentage living below the poverty level is 23.3% (2009 data). There are no single-family residences, multi-family residences, or businesses located within the project footprint.

The proposed project is within existing interstate and associated frontage road rights-of-way; therefore, the project will comply with Executive Order 12898 since (1) there are no anticipated direct effects on minority or low-income populations other than temporary traffic delays/re-routes, (2) the benefits expected from the proposed project are available to all, and (3) the full and fair participation by the affected community will be made available through public meeting/s.

Indirect impacts to minority populations in the form of visual/aesthetic impacts may occur at three locations along the project corridor due to noise barrier utilization. A noise study was conducted for the subject project to predict the project's effect on the noise environment,



identify where noise impacts are likely to occur, determine if noise abatement is feasible to reduce noise impacts, and meet the requirements of 23 CFR Part 772. Noise barriers were modeled in seven noise sensitive areas which were designated Areas A to E. In Area E, along the east side of I-55, south of Savanna Street, a barrier 1,400 feet long and 12 feet high was considered and found reasonable to reduce the noise levels at 35 impacted receivers near Pine Ridge Park.

According to 2010 US Census data, the population in this area is 50% minority. In Area F, along the west side of the southbound on-ramp from Savanna Street, a barrier 1,035 feet long and 8-13 feet high was considered and found reasonable to reduce the noise levels at 13 impacted receivers near Oneida Avenue. According to 2010 US Census data, the population in this area is 80% minority. In Area G, along the west side of the southbound off-ramp for Savanna Street, a barrier 1,320 feet long and 12-16 feet high was considered and found reasonable to reduce the noise levels at 61 impacted receivers near Timber Ridge Drive. According to 2010 US Census data, the population in this area is 100% minority. A public meeting will be conducted of the benefitted receivers in Areas E, F and G to determine if they want a noise barrier. The noise study is described further in Section 4.10.

#### **4.6 Economic**

The proposed project should have a positive economic impact on the immediate area due to the sale of local goods and services during the construction process. The Build Alternative (Alternative C) for additional lanes in each direction on I-55 will produce a more safe and efficient transportation facility; thereby, (1) decreasing unproductive work time due to congestion, and (2) making the area more attractive to new commercial and industrial markets.

The proposed project should not have a negative economic impact since the pavement replacement and additional roadway construction will take place within the existing rights-of-way. No businesses will be displaced as a result of the proposed project.

#### **4.7 Joint Development**

Joint development is an effort by a public agency and a private developer to undertake a construction project. Joint developments are typically a voluntary joining of governmental entities with private for-profit organizations to undertake mutually beneficial development in connection with public infrastructure. The development agreement generally contains formal legally binding language between a public entity and a private individual. The proposed project does not include plans for joint development.

#### **4.8 Bicycles & Pedestrians**

On August 10, 2005, President Bush signed into law the Safe Accountable, Flexible, Efficient



Transportation Equity Act; a Legacy for Users (SAFETEA-LU). The legislation built upon the significant changes made to the Federal transportation policy and programs by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the 1998 Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21). The legislation had a number of provisions that related to improving conditions for bicycling and walking as well as

increasing the safety of the two modes. One of the provisions is that bicycle transportation facilities and pedestrian walkways should be considered, where appropriate, in conjunction with all new construction and reconstruction and transportation facilities, except where bicycle and pedestrian uses are not permitted. The US Department of Transportation (USDOT) provided a policy statement entitled *US DOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendation* on March 15, 2010. The policy states that (1) the design of well-connected walking and bicycling networks should be a part of Federal-aid project developments, (2) legislation and regulations exist that require inclusion of bicycle and pedestrian policies and projects into project plans and project development, and (3) transportation agencies should proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians.

There are currently 6 recognized bike routes in Mississippi as provided through the Mississippi Department of Transportation (MDOT); Mississippi Development Authority; Mississippi

Department of Wildlife, Fisheries, and Parks (MDWFP); and National Forests in Mississippi. The bike routes include: Mississippi River Trail, Natchez Trace, Longleaf Trace, Great Rivers, Southern Tier, and Underground Railroad. The USDOT has given state transportation agencies the authority to determine whether or not bicyclists and pedestrians are allowed to utilize the federal interstate system within their boundaries.

MDOT currently prohibits the use of the interstate system and controlled access facilities by bicyclists and pedestrians. The existing interstate facility and adjacent frontage roads within the project limits do not have bicycle lanes, bicycle paths, or sidewalks to accommodate bicyclists or pedestrians. There is no plan to include these uses with the proposed project.

#### **4.9 Air Quality**

Under the Clean Air Act of 1970, as amended, the US Environmental Protection Agency (USEPA) establishes primary air quality standards to protect public health, including the health of “sensitive populations such as people with asthma, children and older adults.” USEPA also sets secondary standards to protect public welfare. This includes protecting ecosystems, including plants and animals, from harm, as well as protecting against decreased visibility and damage to crops, vegetation, and buildings. USEPA has set national ambient air quality standards (NAAQS) for six principal air pollutants also called criteria pollutants: ground-level ozone (O<sub>3</sub>), particulate matter (PM), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), and lead (Pb). The Mississippi Department of Environmental Quality (MDEQ) monitors all of these pollutants except lead and carbon monoxide. Lead and carbon monoxide have been monitored in the past. Because the concentrations reported were so much lower than the air quality standard, it was determined by USEPA and MDEQ that those pollutants no longer needed to be monitored in Mississippi. In 2010, USEPA issued new standards for NO<sub>2</sub> and SO<sub>2</sub>.

Transportation projects contribute to four of the six criteria pollutants: ground-level ozone (O<sub>3</sub>), particulate matter (PM), nitrogen dioxide (NO<sub>2</sub>), and carbon monoxide (CO). Areas that do not meet the NAAQS are designated as non-attainment areas for the specific pollutants. Non-attainment areas have to demonstrate that proposed transportation plans and projects will not impact air quality, i.e. that the plans or projects are in conformity with the air quality goals established in the State Implementation Plan (SIP) as directed in the regulations governing transportation conformity in 40 CFR Parts 51 and 93. Mississippi is currently in attainment for all NAAQS and the SIP does not include any transportation control measures. Therefore, a transportation conformity determination is not required for this project.

The proposed project is not expected to have a significant adverse impact on air quality. Temporary air quality impacts may occur during construction due to the dust and fumes from

equipment, earthwork activities, and vehicles accessing the construction site. Air quality impacts may also occur from an increase of vehicle emissions from traffic delays due to construction activities. Construction activities could include staging of construction, delivery of equipment and materials, reduction of lanes, and/or re-routing traffic.

Construction methods will follow Mississippi Department of Transportation's (MDOT) Standard Specifications, and best management practices will be utilized during construction to minimize potential air quality impacts. These include covering earth-moving trucks to minimize dust levels, watering haul roads, and refraining from open-burning except as permitted through local regulations. Appropriate mitigation measures will be incorporated into the design plans and construction specifications to reduce, and possibly eliminate, the associated impacts.

#### **4.10 Noise**

Noise is defined as unwanted sound. Roadway vehicle noise (traffic noise) consists of three primary parts: tire noise, engine noise, and exhaust noise. Of these sources, tire noise is typically the most offensive at unimpeded travel speeds. The magnitude of noise is typically described by a ratio of its sound pressure to a reference sound pressure. Sound levels are expressed in units of decibels (dBA) for highway traffic noise studies.

The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC) and procedures to be used in the planning and design of highways described in 23 CFR Part 772.



The regulation, 23 CFR 772 *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, applies to highway construction projects where a State department of transportation has requested Federal funding for participation in the project. The regulation requires the highway agency to investigate traffic noise impacts in areas adjacent to federally-aided highways for (1) proposed construction of a highway on a new location, (2) reconstruction of an existing highway to either significantly change the

horizontal or vertical alignment, or (3) an increase in the number of through-traffic lanes. If the highway agency identifies impacts, it must consider abatement. The MDOT Highway Traffic Noise Policy, effective July 13, 2011, established official policy on highway noise. This sets policies and procedures for considering highway traffic noise and traffic noise abatement in the planning, design, and construction on highways. The two categories of traffic noise impacts are defined as (1) those that "approach" or exceed the FHWA Noise Abatement Criteria (NAC), and (2) those that substantially exceed the existing noise levels by 15 dBA or more. Since the

proposed project will increase the number of through-traffic lanes, an investigation of traffic noise impacts in areas adjacent to the project is required.

A noise study was conducted for the subject project to predict the project's effect on the noise environment, identify where noise impacts are likely to occur, determine if noise abatement is feasible to reduce noise impacts, and meet the requirements of 23 CFR Part 772. Site visits and field measurements were conducted on August 22-26, 2011. A total of 317 occupied facilities (receivers) in the vicinity of I-55 were evaluated for noise impacts. These include facilities with regular and temporary human use. Of these, 142 facilities have existing traffic noise levels that approach or exceed the 23 CFR Part 772 Noise Abatement Criteria (NAC) levels. At 155 occupied facilities, traffic noise impacts are expected to occur in the design year (2031) if the proposed project is not constructed. These represent 125 residential buildings, 22 institutions, places of worship, or recreation areas, and 8 business facilities.

FHWA and MDOT require that feasible and reasonable measures be considered to mitigate noise impacts at the impacted receptors. Noise abatement measures must be considered for all receptors that are predicted to experience a noise impact. The MDOT Traffic Noise Policy outlines the criteria for determining if a noise abatement measure is "feasible and reasonable." Feasibility deals with engineering considerations to assess whether a substantial noise reduction can be achieved given the specific site conditions. A noise barrier is not feasible if a noise reduction of at least 5 dBA cannot be achieved for at least one impacted receiver. A noise barrier is evaluated for its reasonableness based on the following factors:

- A majority of benefitted residents and property owners want a noise barrier
- The cost does not exceed \$ 30,000 per benefitted receiver
- A barrier must reduce the noise level by at least 7 dBA at 10% or more of the benefitted receivers
- The impacted receivers must have been constructed or had building permits issued before the date of public knowledge of the project
- More consideration will be given to impacted receivers that predated initial highway construction
- More consideration will be given to impacted receivers with larger increases over existing noise levels
- More consideration will be given to areas where larger changes in noise levels are expected to occur if the project is constructed
- More consideration will be given to benefitted receivers with future build noise levels at or above the Noise Abatement Criteria (NAC)

Noise barriers were modeled in seven noise sensitive areas. These areas are described as follows:

- Area A – West Side of I-55, North of Covich County Line
- Area B – West Side of I-55, North of Tank Road
- Area C – East Side of I-55, North of Siwell Road
- Area D – West Side of I-55, North of Siwell Road
- Area E – East Side of I-55, South of Savanna Street
- Area F – West Side of Southbound On-Ramp from Savanna Street
- Area G – West Side of Southbound Off-Ramp for Savanna Street

All preliminarily feasible noise wall alignments and configurations were examined in each noise sensitive area for the potential benefit of the future year predicted traffic noise impacts. Through a sound barrier reasonableness assessment, barriers in Areas E, F and G were determined to meet MDOT’s Highway Traffic Noise Policy criteria for being “reasonable and feasible.”

In Area E, along the east side of I-55, south of Savanna Street, a barrier 1,400 feet long and 12 feet high was considered to reduce the noise levels at 35 impacted receivers near Pine Ridge



Park. Barrier E is estimated to cost \$605,000 for materials, labor, drainage, and barrier protection. The barrier would provide at least a 5 dBA traffic noise level reduction at 40 receivers, including 35 predicted impacts. The \$15,125 cost per benefit is less than the maximum allowable of \$30,000 per benefitted receiver. The barrier is predicted to provide at least a 7 dBA noise level reduction for 10% of the impacted receivers and meets the criteria for being “reasonable.”

In Area F, along the west side of the southbound on-ramp from Savanna Street, a barrier 1,035 feet long and 8-13 feet high was considered to reduce the noise levels at 13 impacted receivers near Oneida Avenue. Barrier F is estimated to cost \$300,415 for materials, labor, drainage, and barrier protection. The barrier would provide at least a 5 dBA traffic noise level reduction at 11 receivers, including 10 predicted impacts.



The \$27,311 cost per benefit is less than the maximum allowable of \$30,000 per benefitted receiver. The barrier is predicted to provide at least a 7 dBA noise level reduction for 10% of the impacted receivers and meets the criteria for being “reasonable.”



In Area G, along the west side of the southbound off-ramp for Savanna Street, a barrier 1,320 feet long and 12-16 feet high was considered to reduce the noise levels at 61 impacted receivers near Timber Ridge Drive. Barrier G is estimated to cost \$639,965 for materials, labor, drainage, and barrier protection. The barrier would provide at least a 5 dBA traffic noise level reduction at 90 receivers, including 59 predicted impacts. The \$7,111 cost per benefit is less than the

maximum allowable of \$30,000 per benefitted receiver. The barrier is predicted to provide at least a 7 dBA noise level reduction for 10% of the impacted receivers and meets the criteria for being “reasonable.” Based on conceptual design and noise modeling information, Barriers E, F and G meet MDOT’s Highway Traffic Noise Policy criteria for being reasonable and feasible. A public meeting will be conducted of the benefitted receivers to determine if they want a noise barrier in Areas E, F and G. Figure 8 depicts noise barrier Areas E, F, and G.

**Figure 8- Noise Barrier Areas**



The traffic noise analysis report is included as Appendix C.

#### **4.11 Water Quality**

Potential water quality impacts resulting from construction and operation of the project have been evaluated. The Build Alternative (Alternative C) is located in Hydrologic Unit Code (HUC)



03180002 (Pearl River). The major stream in this watershed is the Pearl River which flows southward from near Jackson, Mississippi to the Gulf of Mexico. The named streams within the project area are Hardy Creek, Cany Creek, Trahon Creek, Big Creek, Rhodes Creek, Harris Creek, and Vaughn Creek. The water use classification for all of the water bodies within the Pearl River watershed is Fish and Wildlife Support. There are 24 water bodies in HUC 03180002 (Pearl River) that

are listed in the Mississippi 2010 Section 303(d) List as having not met the designated Fish and

Wildlife Use due to biological impairments (17), pathogens (5), or heavy metals (2). None of the 24 impaired streams are within the project area. The only listed stream within the Pearl River Basin and also in Hinds County is Lynch Creek located approximately 0.90 miles to the north-northeast of the subject project. Lynch Creek is the only impaired stream in Hinds County still requiring a Total Maximum Daily Load (TMDL). According to the US Environmental Protection Agency (USEPA) database, TMDLs have been established for Big Creek, Rhodes Creek, and Pearl River. These water bodies are impaired but they are not in the Section 303(d) List because TMDLs have been developed to address the impairments. Waste Load Allocations (WLA) for sediment will be required for Big Creek and Rhodes Creek.

The recommended Sediment Total Maximum Daily Load (TMDL) for water bodies within the proposed project area (Pearl River Basin-Level III Ecoregion 74) has been estimated to be 0.0033 to 0.0140 tons per acre per day (Mississippi Department of Environmental Quality, 2009). The estimated existing TMDL range for these water bodies is 0.298 to 1.856 tons per acre per day; therefore, the estimated existing range is larger than the recommended TMDL range. It is necessary that water bodies within the Pearl River Basin be considered a priority for streambank and riparian buffer zone restoration and any sediment reduction best management practices (BMPs), especially for road crossings, agricultural activities, and construction activities. The implementation of the BMP activities should reduce the sediment load to water bodies within the Pearl River Basin. The reduction of the sediment load to water bodies within the Pearl River Basin to equal that of a relatively stable stream will allow the streams to approach stable conditions. This will provide improved habitat for the support of aquatic life in the water bodies and will result in the attainment of the applicable water quality standards.

During the construction phase of the proposed project, provisions in the construction contract will require contractors to implement appropriate measures for preventing and abating pollution of streams and other water bodies in accordance with Mississippi Department of Transportation's (MDOT's) Standard Specifications. These measures are recognized as best management practices (BMPs) by MDEQ and include but are not limited to the following: early re-vegetation to minimize soil movement into streams; careful controls on the handling and disposal of fuels and other toxic substances; use of temporary erosion prevention and sediment control (EPSC) devices as part of construction plans; and the implementation of temporary water quality control measures such as berms, dikes, sediment basins, erosion blankets, mulches, check dams, slope drains, etc. to control the unwanted movement of sediment in stormwater run-off. The construction contracts will also include compliance with MDEQ's *Large Construction General Permit for Land Disturbing Activities of Five (5) or More Acres*. Any additional measures as required will be included in the plans and specifications for construction. Compliance with BMPs, permits, and other regulatory requirements will help

insure that the proposed project activities will not contribute to a significant deterioration of water quality in nearby streams.

There are 1,460 public water supply systems (active inventory) in the state that are managed by the Mississippi State Department of Health-Bureau of Public Water Supply. These systems are comprised of 1,211 community systems (towns, municipalities); 109 non-transient, non-community systems (schools, factories); and 140 transient, non-community systems (parks, rest stops). Three of the active public water systems are surface water intakes with the majority supplied by groundwater wells. A total of 28 public water systems serve Hinds County with the majority of the systems supplied by groundwater wells. Two surface water intakes (Pearl River) supply the City of Jackson public water system which serves a population of 175,930, the largest number of constituents in the County.

The proposed project is located within the Mississippi Embayment aquifer groundwater system. Within Hinds County, the majority of the drinking water supply is withdrawn from two main aquifers; the Cockfield Formation of Claiborne Group (CCKF) aquifer and the Sparta Sand aquifer (SPRT). Drinking water is provided by a number of public water supply systems including: Northeast Copiah Water Association, East Side Water Association, Hubbard Water Association, North Hinds Water Association, Mt. Olive Water Association, Reedtown Water Association, South Central Water Association, South Terry Water Association, St. Thomas Water Association, and the Kathryn Williams Water Association. According to the Mississippi Department of Environmental Quality – Office of Land and Water Resources, there are no public drinking water supply wells or known private drinking water wells located in the proposed project corridor (interstate and frontage road rights-of-way).

The proposed project is not expected to impact the local aquifer systems. The average depth of public water system wells in Mississippi is approximately 780 feet. Most public water systems operating in the state obtain their water from deep, confined aquifers. Confined aquifers have groundwater that is isolated by relatively impermeable confining layers and is subjected to pressures higher than atmospheric pressure which provides a “natural protection” from potential contaminants. For example, research of private water wells within a one-mile radius of I-55 at Big Creek indicated that the average well depth is 310 feet. Construction of the Build Alternative (Alternative C) is not expected to require deep excavation; therefore, penetration of the aquifers utilized for public and private drinking water supplies is unlikely. Information concerning public and private drinking water sources in the vicinity of the proposed project can be obtained from the Mississippi Department of Environmental Quality- Office of Land and Water Resources at (601) 961-5210.

#### 4.12 Streams

A hydrologic survey within the bounds of the proposed project was conducted on August 4-5, 2011 to determine potential impacts to jurisdictional streams, springs, wetlands, and sinkholes.



A total of 26 channelized resources were noted as a result of the hydrologic survey. The channelized resources included 9 perennial streams, 10 intermittent streams, and 7 ephemeral streams (wet weather conveyances). The 9 perennial streams that are crossed by I-55 within the project limits include: unnamed tributary to the Pearl River, Hardy Creek, Cany Creek, an unnamed tributary to Cany Creek, Trahon Creek, an unnamed tributary to Trahon Creek, Big Creek,

Rhodes Creek, and Harris Creek. The channelized resources found within the proposed project limits and the estimated impact lengths are summarized in Table 5. The resource locations are depicted in Figures 9-17 and documented in Appendix D.

**TABLE 5- CHANNELIZED RESOURCES**

No.	Latitude	Longitude	Impact (ft)*	Type	Name
1	32.08722	90.30928	140	intermittent	
2	32.09105	90.30825	355	Intermittent	Vaughn Creek
3	32.09243	90.30785	940	Intermittent	
4	32.09345	90.30852	30	Intermittent	
5	32.10770	90.29997	150	Intermittent	
6	32.10863	90.29937	395	Perennial	Harris Creek
7	32.11480	90.29622	340	Perennial	Rhodes Creek
8	32.14488	90.28088	440	Intermittent	
9	32.15338	90.27665	440	Intermittent	
10	32.16398	90.27043	345	Perennial	Big Creek
11	32.17140	90.26543	340	Intermittent	
12	32.18670	90.25657	720	Intermittent	
13	32.19032	90.25390	400	Intermittent	
14	32.19488	90.25090	340	Perennial	
15	32.20110	90.24655	75	Ephemeral	
16	32.20267	90.24512	1085	Perennial	Trahon Creek
17	32.20760	90.23962	70	Ephemeral	

18	32.21097	90.23522	500	Ephemeral	
19	32.21250	90.23353	230	Ephemeral	
20	32.21653	90.23022	440	Ephemeral	
21	32.22180	90.22670	1175	Perennial	
22	32.22625	90.22383	100	Ephemeral	
23	32.22942	90.22210	340	Ephemeral	
24	32.23528	90.21913	340	Perennial	Cany Creek
25	32.25595	90.21130	350	Perennial	Hardy Creek
26	32.26608	90.20898	175	Perennial	

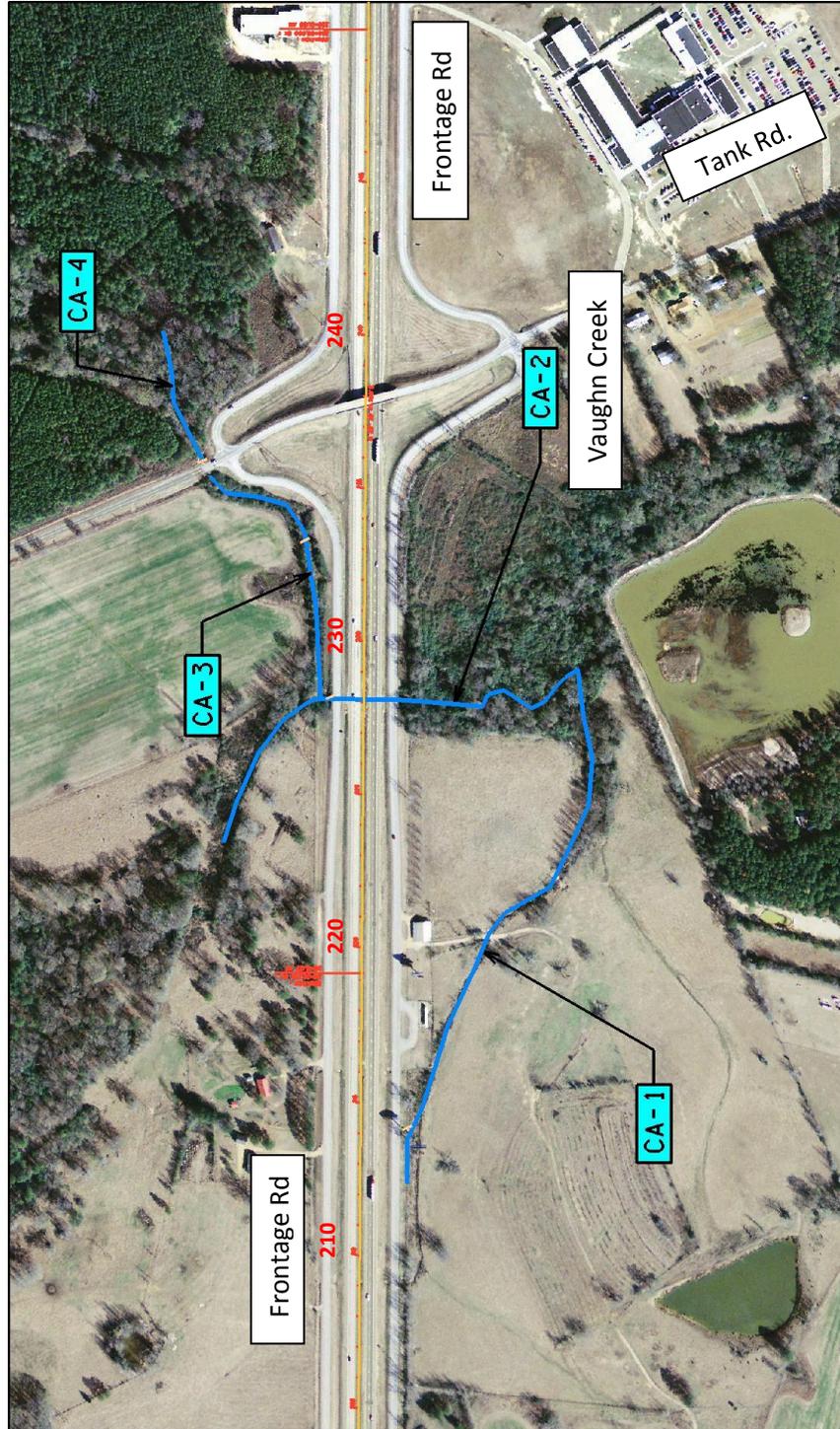
*\*lengths include pipes, culverts, and/or bridges within the interstate/frontage road rights-of-way*

Impacts to jurisdictional water resources were estimated using the boundaries identified during the hydrologic survey and the existing interstate and frontage roads rights-of-way. According to the hydrologic survey, the proposed project will result in the impacts to 4,545 linear feet of perennial streams, 3,955 linear feet of intermittent streams, and 1,755 linear feet of ephemeral streams. No wetlands, springs or sinkholes were noted within the bounds of the proposed project. These field determinations have not been confirmed by the Mississippi Department of Environmental Quality (MDEQ) or the US Army Corps of Engineers (USCOE). Stream alterations may include: bridge widening, culvert extensions, and/or pipe and culvert replacements. Stream impacts will be permitted through these state and federal environmental permitting authorities. Compensatory mitigation for stream impacts will be implemented if required by the acquired alteration permits.

Other Waters Assessment data forms have been completed indicating the physical characteristics of each resource. The forms are located in Appendix D and will be submitted to the Mississippi Department of Environmental Quality (MDEQ) and the US Corps of Engineers-Vicksburg District (USCOE) as part of the application consultation process during final design. If necessary, compensatory mitigation will be provided where unavoidable impacts to jurisdictional waters could not be minimize further. A compensatory mitigation plan will be developed with the concurrence from MDEQ and USCOE. Specific mitigation ratios and mitigation sites will be determined during the permitting process.

Stream and floodplain crossings will be perpendicular where possible. Appropriately sized bridges and embedded culverts will be used to accommodate unimpeded base and flood flows and the passage of aquatic and terrestrial species.

Figure 9- Channelized Resources Location Map

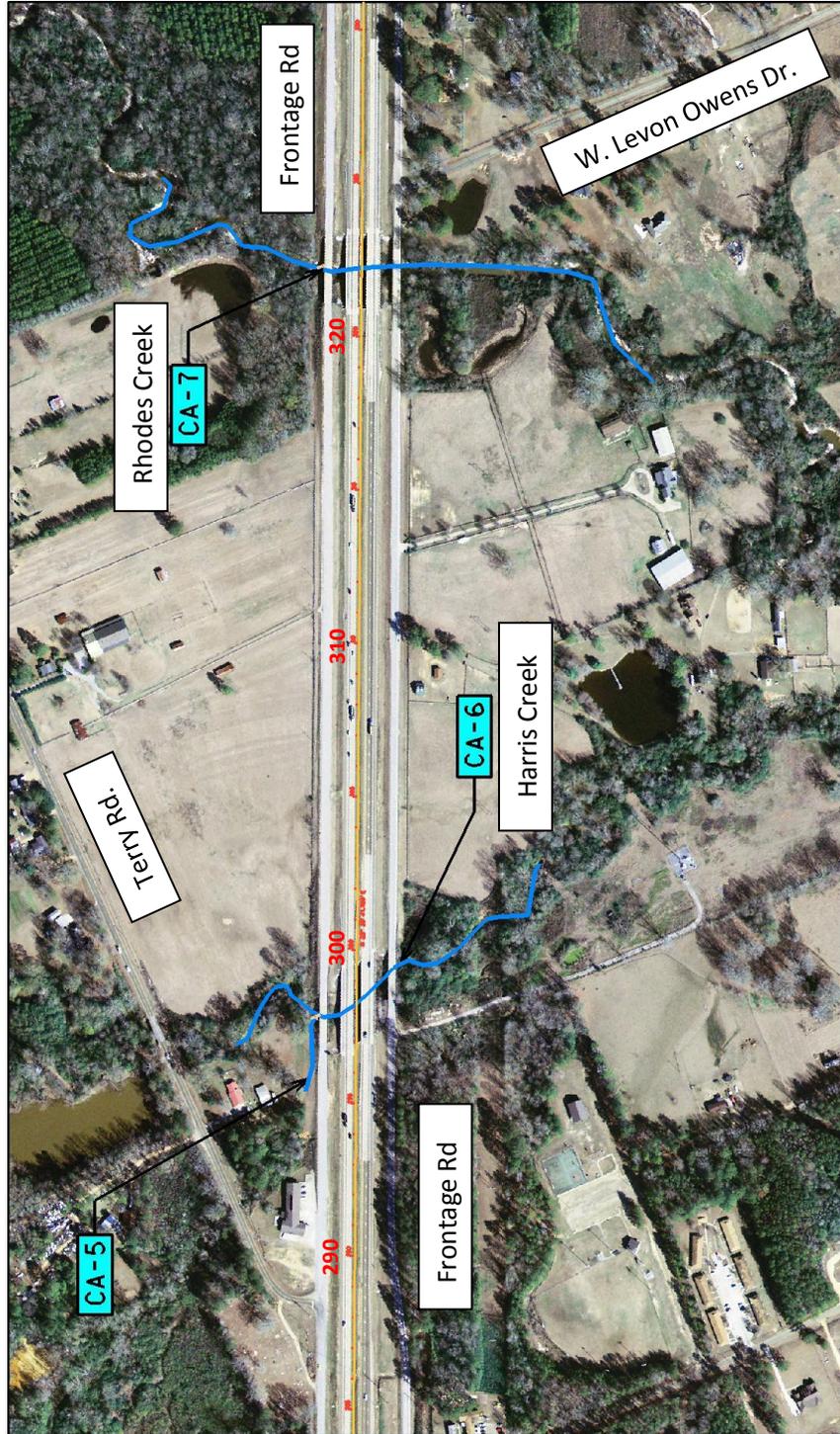


I-55 from the Copiah County Line to McDowell Rd  
Hinds County, Mississippi  
Site 1



CHANNELIZED RESOURCES  
FMS 106023-IM-0055-02 (218)

Figure 10- Channelized Resources Location Map



I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 2



**CHANNELIZED RESOURCES**  
FMS 106023-IM-0055-02 (218)

Figure 11- Channelized Resources Location Map



I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 3



CHANNELIZED RESOURCES  
FMS 106023-IM-0055-02 (218)

**Figure 12- Channelized Resources Location Map**



I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 4

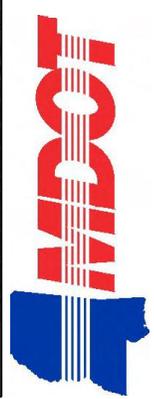


**CHANNELIZED RESOURCES**  
FMS 106023-IM-0055-02 (218)

Figure 13- Channelized Resources Location Map



I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 5

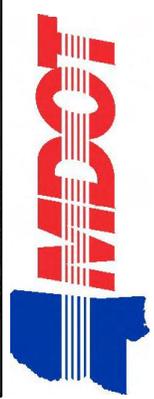


CHANNELIZED RESOURCES  
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**Figure 14- Channelized Resources Location Map**



I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 6



**CHANNELIZED RESOURCES**  
FMS 106023-IM-0055-02 (218)

**Figure 15- Channelized Resources Location Map**



I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 7



**CHANNELIZED RESOURCES**  
FMS 106023-IM-0055-02 (218)

Figure 16- Channelized Resources Location Map

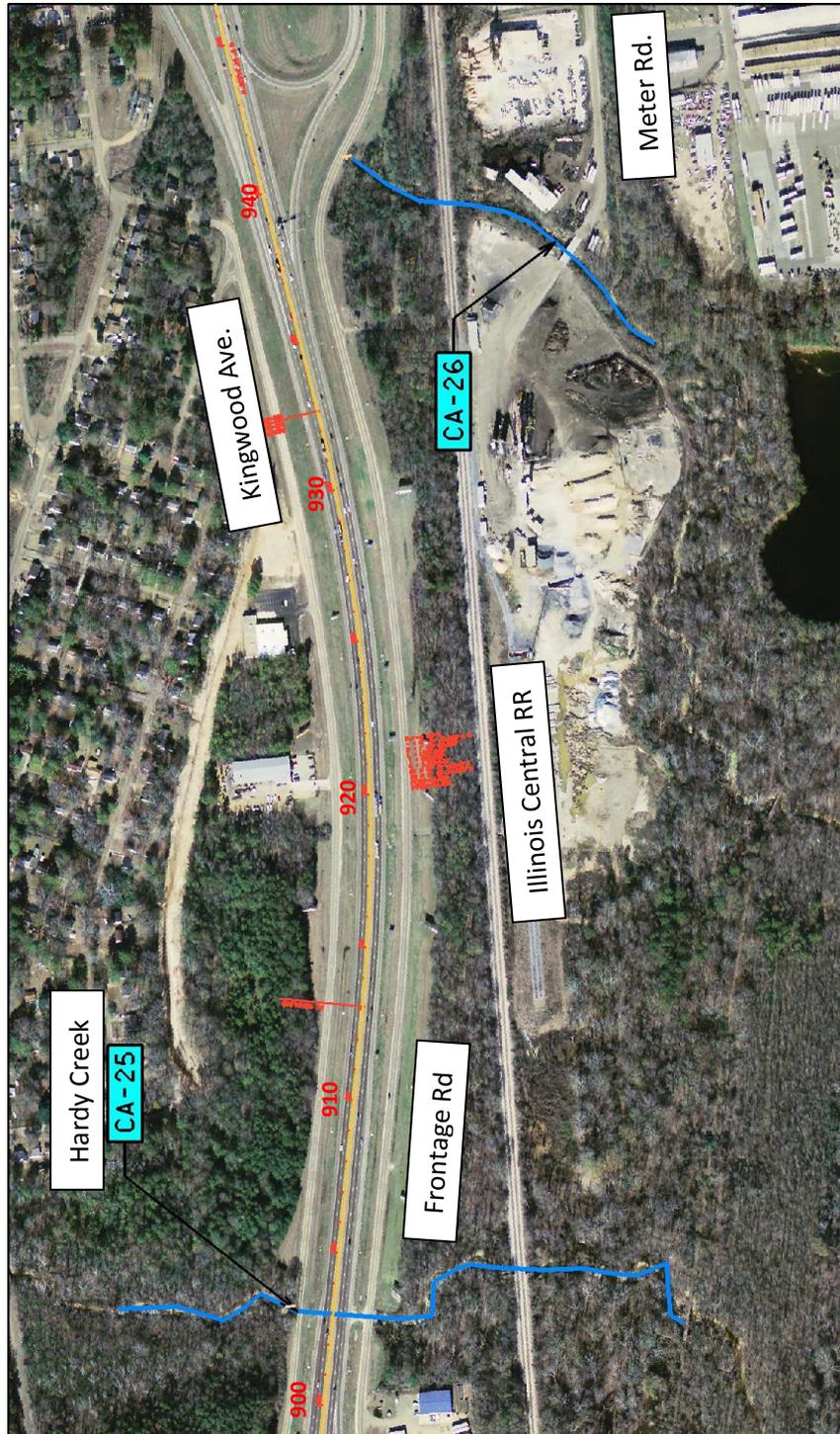


I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 8



CHANNELIZED RESOURCES  
FMS 106023-IM-0055-02 (218)

Figure 17- Channelized Resources Location Map



I-55 from the Copiah County Line to McDowell Road  
Hinds County, Mississippi  
Site 9



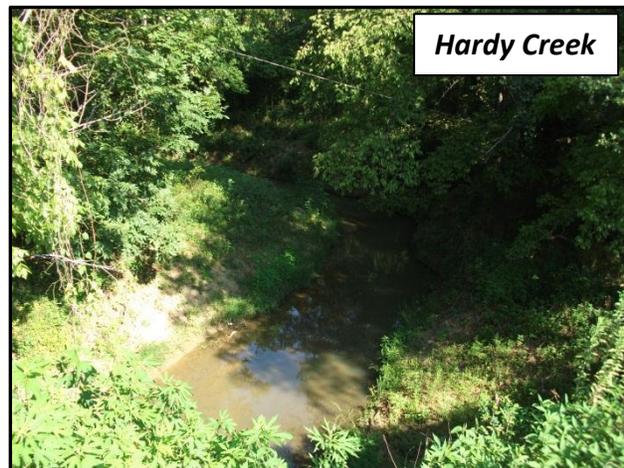
**CHANNELIZED RESOURCES**  
FMS 106023-IM-0055-02 (218)

#### 4.13 Wetlands

A hydrologic survey within the bounds of the proposed project was conducted on August 4-5, 2011 to determine potential impacts to jurisdictional streams, springs, wetlands, and sinkholes. No wetland areas within the proposed project limits were documented by the US Fish & Wildlife Service (USFWS) National Wetland Inventory. No wetlands were noted during the hydrologic survey; therefore, no impacts to wetlands are expected as a result of the proposed project.

#### 4.14 Permits

A hydrologic survey within the bounds of the proposed project was conducted on August 4-5, 2011 to determine potential impacts to jurisdictional streams, springs, wetlands, and sinkholes. A total of 26 channelized resources were noted and described as a result of the hydrologic survey. The survey notes 9 perennial streams, 10 intermittent streams, and 7 ephemeral streams within the I-55 and associated frontage road rights-of-way. Bridges, culverts, and pipes that transport jurisdictional streams either beneath or beside the roadways will be extended during the construction of the 12.9 miles of additional lanes between Green Gable Road/Cunningham Avenue in Terry, MS and McDowell Road in Jackson, MS. The associated alteration to jurisdictional streams will require permit application and coverage under Section 401 of the Clean Water Act issued by the Mississippi Department of Environmental Quality (MDEQ-Water Quality Certification Branch) and Section 404 of the Clean Water Act issued by the US Army Corps of Engineers (USCOE-Vicksburg District). If necessary, compensatory mitigation will be provided where unavoidable impacts to jurisdictional waters could not be minimize further. A compensatory mitigation plan will be developed with the concurrence from MDEQ and USCOE. Specific mitigation ratios and mitigation sites will be determined during the permitting process.



Other permits considered but found not to be required are: Section 9 of the Rivers & Harbors Act of 1899 (US Coast Guard), Section 10 of the Rivers & Harbors Act of 1899 (USCOE-Vicksburg District), and Section 26A of the Tennessee Valley Authority Act (Tennessee Valley Authority).

In addition to the Section 401 and Section 404 permit coverage requirements, a permit for stormwater associated with construction is required under Section 402 of the Clean Water Act. The *Large Construction General Permit for Land Disturbing Activities of Five (5) or More Acres* requires that a Stormwater Pollution Prevention Plan be developed to design, install, implement, and maintain effective pollution prevention measures to retain sediment on-site as well as to minimize the discharge of other pollutants in stormwater run-off.

#### **4.15 Water Body Modification & Wildlife**

A hydrologic survey within the bounds of the proposed project was conducted on August 4-5, 2011 to determine potential impacts to jurisdictional streams, springs, wetlands, and sinkholes.



A total of 26 channelized resources were noted and described as a result of the hydrologic survey. The survey notes 9 perennial streams, 10 intermittent streams, and 7 ephemeral streams within the I-55 and associated frontage road rights-of-way. Bridges, culverts, and pipes that transport jurisdictional streams either beneath or beside the roadways will be extended during the construction of the 12.9 miles of additional lanes between Green Gable

Road/Cunningham Avenue in Terry, MS and McDowell Road in Jackson, MS. The majority of the streams within the project corridor are perpendicular to the interstate. Any altered stream banks will be restored to a condition similar in elevation and shape to that which now exists to facilitate the natural regeneration of vegetation. Any stream crossing requiring culverts will include embedded culverts to accommodate the passage of aquatic species via a continuous, natural stream bottom. The proposed bridge and culvert extensions will provide opportunities to offer ecological benefits through design characteristics that enable wildlife to use bridges as safe corridors between tracts of terrestrial habitat.

Erosion prevention and sediment control (EPSC) best management practices (BMPs) will also be implemented during construction to minimize sediment releases to streams and potential impacts to aquatic life. Construction BMPs will be implemented in accordance with MDOT Standard Specifications to minimize water quality impacts. The *Large Construction General Permit for Land Disturbing Activities of Five (5) or More Acres* requires that a Stormwater Pollution Prevention Plan be developed to design, install, implement, and maintain effective pollution prevention measures to retain sediment on-site as well as to minimize the discharge of other pollutants in stormwater run-off.



The Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) reviewed the proposed project and concluded by letter on August 11, 2011 that there are 4 freshwater mussel species of concern that occur within 2 miles of the proposed project site. The species are described further in *Section 4.20 Threatened & Endangered Species*. Based on the information provided, the MDWFP concluded that if best management

practices are properly implemented, monitored, and maintained (particularly measures to prevent, or at least, minimize negative impacts to water quality), the proposed project likely poses no threat to listed species or their habitats.

#### 4.16 Floodplains

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps (FIRM) delineating both the special hazard areas and the risk premium zones applicable to a community. Specifically, the FIRM is used to (1) administer floodplain management regulations and to mitigate flood damage, (2) locate properties and buildings in flood insurance risk areas and mapped flood hazards, and (3) determine whether flood insurance is required when making loans or providing grants following a disaster for the purchase or construction of a building. Based

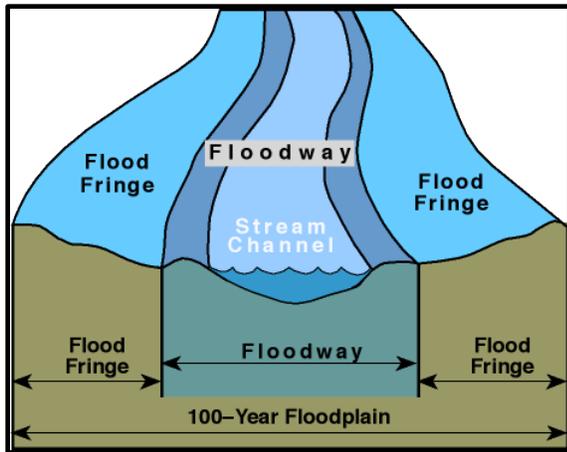


on the FIRMS reviewed for the proposed project area, the pavement replacement and additional roadway construction will cross areas as follows:

TABLE 6- FEMA DESIGNATED AREAS			
FIRM Map No.	Zone	Zone	Attribute
28049C0314H	AE – 100 yr. flood	-----	McDowell Rd.
28049C0314H	AE – 100 yr. flood	AE – 100 yr. floodway	Hardy Creek
28049C0455H	AE – 100 yr. flood	AE – 100 yr. floodway	Cany Creek
28049C0455H	AE – 100 yr. flood	AE – 100 yr. floodway	Trahon Creek
28049C0445H	AE – 100 yr. flood	AE – 100 yr. floodway	Big Creek

28049C0445H	AE – 100 yr. flood	-----	Pearl River trib.
28049C0560H	AE – 100 yr. flood	AE – 100 yr. floodway	Rhodes Creek
28049C0560H	AE – 100 yr. flood	AE – 100 yr. floodway	Harris Creek
28049C0560H	AE – 100 yr. flood	AE – 100 yr. floodway	Vaughn Creek

Zone AE-100 yr. flood is defined as special flood hazard areas subject to inundation by the 1% annual flood chance. Zone AE-100 yr. floodway is defined as the floodway in the channel of a



stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. The Flood Insurance Rate Map (FIRM) can be found in Appendix E. Any project located in a FEMA regulatory floodway must be reviewed to determine if the project will increase flood elevations or impact floodway widths. Any project located within Zone AE must be reviewed to determine if the cumulative effects of the

proposed project will increase the base flood elevations by more than one foot at any point within the community. An engineering analysis must be conducted before a permit can be issued. The community’s permit file must have a record of the results of this analysis. For a project involving a FEMA regulatory floodway, this record may be in the form of a No-rise Certification. The No-rise Certification must be supported by technical data and signed by a registered professional engineer. Commitments are made to “no net-rise” within the proposed project.

A bridge hydraulic study was conducted using Federal Emergency Management Agency (FEMA) data for the stretch of I-55 between South Siwell Road in Byram, MS to North of McDowell Road in Jackson, MS for a length of approximately 6.6 miles. It was determined that the proposed project will impact the road crossing of Trahon Creek. The road crossing at Trahon Creek currently consists of a 3-barrel, 14’x14’ box bridge that runs approximately 102 feet along the creek. Under the proposed roadway widening conditions, the box bridge will be extended 20 feet on both the inlet (upstream) and outlet (downstream) ends to a total of 145 feet in order to accommodate the roadway widening of I-55 along both the northbound and southbound lanes. Inspection of FIRM Map Number 28049C0455H (Effective Date November 18, 2009) indicates that a FEMA detailed study with encroachment widths established exists along Trahon Creek. Regulatory floodways are delineated on the FIRM and flood profiles have

been developed. There will be additional hydraulic studies conducted within the project corridor where it will necessary to widen bridge structures. The hydraulic studies will be completed with the ongoing design of the project.

The design of all drainage structures used within designated floodplains will be in accordance with Executive Order 11988, Floodplain Management (1977); Floodplain Management and Protection DOT Order 5650.3 (1979); 23 CFR 650A; and the Non-Regulatory Supplement Attachment on Participation Options for Limiting Flood Damage (1992) and will utilize MDOT's erosion prevention and sediment control (EPSC) best management practices (BMPs) in order to minimize impacts to the environment. Stream crossings will be bridged or will include appropriately designed culverts to accommodate unimpeded base and flood flows.

#### **4.17 Wild & Scenic Rivers**

The National Wild and Scenic Rivers Act was promulgated by Congress in 1968 to enhance the protection of important river resources. The only designated wild and scenic river within the State of Mississippi is Black Creek located in the DeSoto National Forest in Perry County, Mississippi, southeast of Hattiesburg. The proposed project will not affect any wild & scenic rivers as the proposed pavement replacement and additional lane construction will occur within existing rights-of-way and is located in Hinds County, Mississippi. The proposed project crosses both named and unnamed tributaries of the Pearl River.

The Mississippi Department of Environmental Quality currently does not have any waters within the State of Mississippi designated as "Outstanding National Resource Waters (ONRW)" or "Exceptional Waters".

#### **4.18 Coastal Barriers**

The Coastal Barriers Resources Act (CBRA) was signed into law on October 18, 1982. The Act was passed by Congress to minimize the loss of human life, the wasteful expenditure of Federal revenues, and damage to the natural and other resources of coastal barrier systems along the Atlantic and Gulf coasts. Accordingly, the statute identifies coastal areas which will be protected by placing restrictions on the expenditure of Federal funds for developmental activities. The agencies responsible for coordination and consultation under the Act are the Federal Emergency Management Agency (FEMA) and the US Fish & Wildlife Service (USFWS).

There are currently 7 areas (32,968 acres) designated as Coastal Barrier Resources System units on the Gulf Coast of Mississippi comprised of barrier islands and coastal lands. The proposed

project will not affect the listed areas since the proposed pavement replacement and additional roadway construction will occur within existing rights-of-way in Hinds County, Mississippi.

#### 4.19 Coastal Zones

The Coastal Zone Management Act was passed by Congress in 1972 to preserve, protect, develop, and where possible, restore and enhance resources of the coastal zone. The agencies responsible for coordination and consultation under the Act are the State Coastal Zone Management Agency, Department of Commerce, and the US Environmental Protection Agency (USEPA).

Mississippi's coastal zone includes the 3 counties adjacent to the coast (Hancock, Harrison, and Jackson), the adjacent coastal waters, and the barrier islands. The proposed project will not affect the Mississippi coastal zone since the proposed pavement replacement and additional roadway construction will occur within existing rights-of-way in Hinds County, Mississippi.

#### 4.20 Threatened & Endangered Species

The US Fish & Wildlife Service (USFWS) reviewed the proposed project and concluded by letter on August 18, 2011 that there are no federally listed threatened or endangered species or their critical habitat within the vicinity of the proposed project. No further consultation with USFWS is required unless there are changes in the scope or location of the proposed project.

The Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) reviewed the proposed project and concluded by letter on August 11, 2011 that there are 4 freshwater mussel species



*White Heelsplitter*

of concern that occur within 2 miles of the proposed project site. The species include: Tapered Pondhorn (*Unio merus declivis*), Deertoe (*Truncilla truncate*), White Heelsplitter (*Lasmigona complanata*), and Alabama Hickorynut (*Obovaria unicolor*). The Tapered Pondhorn is ranked as “imperiled in Mississippi due to rarity (S2).” The Deertoe and White Heelsplitter are ranked as “rare or uncommon in Mississippi (S3).” The Alabama Hickorynut is

ranked as “critically imperiled in Mississippi because of extreme rarity (S1).” None of the 4 species are state or federally threatened and/or endangered.

Based on the information provided, the MDWFP concluded that if best management practices are properly implemented, monitored, and maintained (particularly measures to prevent, or at least, minimize negative impacts to water quality), the proposed project likely poses no threat to listed species or their habitats.

#### **4.21 Cultural Resources**

Section 106 of the National Historic Preservation Act of 1966 as amended requires federal agencies to consider the effects of their actions on historic properties. Coordination with the Mississippi Department of Archives and History (MDAH) was conducted to identify and help predict the locations of any potential, significant archaeological and architectural resources in the vicinity of the proposed project. The MDAH is a comprehensive historical agency that collects, preserves, and provides access to the archival resources of the state, administers museums and historic sites, and oversees statewide programs for historic preservation, government records management, and publications.

MDAH reviewed the project description and determined that the project may have an effect on cultural resources. MDAH requested that an evaluation of the potential impact of the project to cultural resources be conducted and that they be allowed to comment on any archaeological and architectural survey work performed in association with the project.

A cultural resources evaluation was conducted for the proposed project on August 10-11, 2011 by Panamerican Consultants, Inc. The goal of the study was to identify all known cultural resources within the proposed project corridor that could impede its development. The study included a standard cultural resources literature and records search and the preparation of a brief report of findings for an area within a 3 km (1.86 mi.) radius around the proposed project. The Mississippi Department of Transportation (MDOT) requires a 1 mile Area of Potential Effect (APE) for historic resources.

#### Archaeological Resources

Review of the MDAH files revealed that there are no previously-recorded archaeological sites within the study corridor (existing interstate and frontage roads rights-of-way). Within the 3 km radius, there are 53 previously recorded archaeological sites but none of these are listed on the National Register of Historic Places (NRHP) or are potentially eligible for the NRHP. Only one of the 53 previously-recorded archaeological sites has been determined eligible for the NRHP. Within the 1 mile Area of Potential Effect (APE) required by MDOT, there are 35 previously-recorded archaeological sites; however, none of these sites are located within the proposed project corridor.

Since the construction of I-55 pre-dates the National Historic Preservation Act (NHPA) of 1966, no comprehensive archaeological survey of the existing I-55 corridor has been conducted. Three surveys have been conducted at small sections of I-55 as well as other archaeological investigations within a 1 mile radius of the study corridor. The most intensive archaeological work in the vicinity has been a cultural resources survey conducted for the US Army Corps of Engineers (USCOE) along both banks of the Pearl River in the Pearl River Basin Development District. As a result of this survey, 21 newly-recorded sites were located within 1 mile of the proposed project but no eligibility determinations have been made for these sites.

The cultural resources evaluation conducted by Panamerican Consultants, Inc., indicates that since portions of the proposed project corridor are undeveloped and located along the tributaries of the Pearl River, unrecorded archaeological sites could exist. The survey recommended an archaeological field assessment within the project corridor. However, since the proposed project is constrained within existing rights-of-way (previously disturbed areas) between the frontage roads paralleling the existing interstate, the original construction of the interstate minimizes the likelihood of discoveries of cultural resources as part of the project. After review of the cultural resource evaluation by MDOT Archaeology and their subsequent correspondence with the Mississippi Department of Archives and History (MDAH), MDAH concurred that no Phase I Cultural Resource Survey will be required for the subject project. The cultural resource evaluation and MDAH response is located in Appendix F.

### Architectural Resources

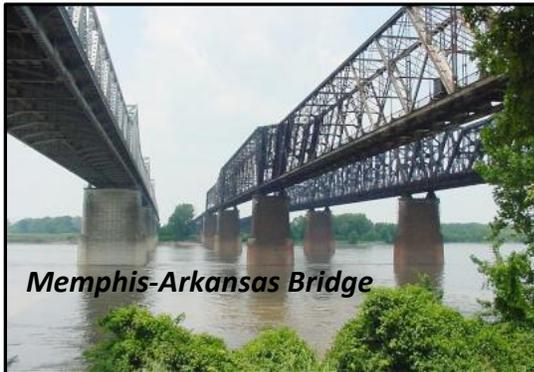
According to the records search at MDAH, 51 historic resources are recorded within a 1 mile radius of the proposed project corridor. There are 5 of these historic resources listed on the NRHP. Two other historic resources have been determined to be potentially eligible for listing on the NRHP. No historic resources are within the proposed project study corridor. The cultural resources survey recommended that since all of the historic resources are within a 1 mile radius of the proposed project study corridor, additional work is warranted to determine if any of these resources will be visually impacted by the proposed project. However, since the proposed project will “mimic” the existing interstate system in both form and function, it is unlikely that the new system will have any visual impacts on historic resources in its vicinity. After review of the cultural resource evaluation by MDOT Archaeology and their subsequent correspondence with the Mississippi Department of Archives and History (MDAH), MDAH concurred that no Phase I Cultural Resource Survey will be required for the subject project. The cultural resource evaluation and MDAH response is located in Appendix F.

On March 10, 2005, the Advisory Council on Historic Preservation (ACHP) approved and published an exemption regarding the historic review process for effects to the Interstate

Highway System in the *Federal Register (Notice- Vol. 70, No. 46, Pg. 11928)*. The exemption relieves Federal agencies from the requirement of taking into account the effects of their undertakings on the Interstate Highway System, except with regard to certain individual elements or structures that are part of the system as follows:

1. Elements that are at least 50 years old, possess national significance, and meet the National Register of Historic Places eligibility criteria;
2. Elements that are less than 50 years old, possess national significance, meet the National Register eligibility criteria, and are of exceptional importance; and
3. Elements that were listed in the National Register, or determined eligible for the National Register before the effective date of the exemption.

As a result of these exclusions, the Federal Highway Administration (FHWA) published a list of elements of the Interstate Highway System that are exceptional in some way or meet a national



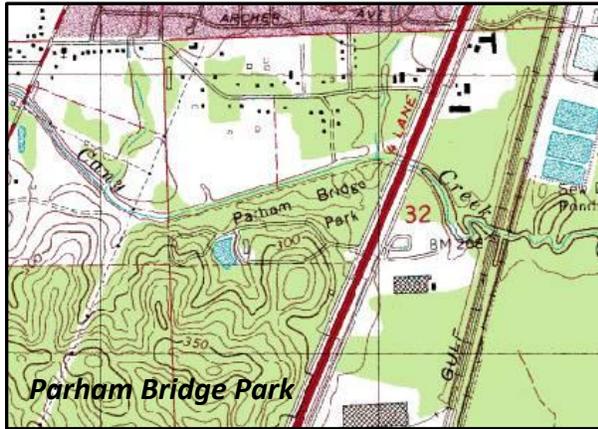
level of significance under the criteria for the National Register of Historic Places. The list identifies those elements that are not covered by the exemptions and therefore continue to be subject to consideration under Section 106 and Section 4(f) processes. The only element within the I-55 interstate facility is the Memphis and Arkansas Bridge which connects West Memphis, Arkansas with Memphis, TN and spans the Mississippi River.

The bridge was listed in the National Register in February 2001 for its engineering significance. There are no elements listed for any interstate system within the State of Mississippi.

According to the FHWA, the Interstate Highway System is commonly understood to be “the facilities within the rights-of-way of those highways carrying the official Interstate System shield, including but not limited to the road bed, engineering features, bridges, tunnels, rest stops, interchanges, off-ramps, and on-ramps.” Each Federal agency remains responsible for considering the effects of its undertakings on other historic properties that are not components of the Interstate Highway System such as adjacent historic properties or archaeological sites that may lie within undisturbed areas of the rights-of-way.

If archaeological sites are found or are suspected during construction of the proposed project, (1) construction activities will immediately cease, (2) the suspected area will be protected from further disturbance, and (3) the Mississippi Department of Transportation (MDOT) Archaeologist will be contacted at (601) 359-1475 for further instruction.

## 4.22 Section 4(f)



Section 4(f) of the US Department of Transportation (USDOT) Act of 1966, Section 6009, requires federal-aid projects to include special efforts to preserve the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Approval of projects that have the potential to impact any of these resources can be made only if (1) there is no feasible or prudent alternative to the use of land from the

property and (2) the action includes all possible planning to minimize harm to the property resulting from use.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) amended the existing Act legislation with Section 6009(a) in order to simplify the Section 4(f) process and approval of projects having a *de minimis* impact on a historic or recreational use. With respect to parks, recreation areas, or wildlife or waterfowl refuges, the USDOT Secretary may make a finding of *de minimis* impact only if the following conditions are met: (1) The Secretary has determined that after public notice and opportunity for public review and comment, that the transportation program or project will not adversely affect the activities, features, and attributes of the park, recreation area, or wildlife or waterfowl refuge eligible for protection under this section, and (2) the finding of the Secretary has received concurrence from the officials with jurisdiction over the park, recreation area, or wildlife or waterfowl refuge.



There are 8 national parks in Mississippi that are managed by the US National Park Service. None of these parks are located in Hinds County, MS. There are 25 state parks and 4 state golf courses in Mississippi that are managed by the Mississippi Department of Wildlife, Fisheries and Parks (MDWFP). One of these parks (Lafleurs Bluff) is located in Hinds County, MS north of Jackson but not within the proposed project corridor. There are

60 parks located in Hinds County, MS. None of the parks are located within the proposed project corridor. There are 55 city parks located within the City of Jackson. Parham Bridge Park, is located approximately 0.5 miles southwest of the I-55/Savanna Street interchange. According

to City of Jackson mapping, the park is situated along Cany Creek immediately west of the interstate. Since the proposed project is within the existing interstate and frontage roads rights-of-way, Parham Bridge Park will not be impacted. There is one park in the City of Byram located in the Lake Dockery subdivision. The park is approximately 0.3 miles northwest of the project corridor. There are 2 parks in the Town of Terry. Village Square Park is located on Cunningham Avenue approximately 0.3 miles east of the project corridor. County Park is located on Morgan Drive approximately 0.1 miles east of the project corridor. There are 14 national wildlife refuges in Mississippi that are managed by the US Fish and Wildlife Service. None of these refuges are in Hinds County, MS. There are 50 wildlife management areas in Mississippi that are managed by the MDWFP. None of these areas are located in Hinds County, MS.

There are no public parks, recreation lands, wildlife and waterfowl refuges, or historic sites within the I-55 and associated frontage road rights-of-way; therefore, Section 4(f) of the US Department of Transportation (USDOT) Act of 1966 does not apply to the proposed project.



The cultural resources evaluation indicates that since portions of the proposed project corridor are undeveloped and located along the tributaries of the Pearl River, unrecorded archaeological sites could exist. The survey recommended an archaeological field assessment within the project corridor. However, since the proposed project is constrained within existing rights-of-way (previously disturbed areas) between the frontage roads paralleling the existing interstate, the original construction of the interstate minimizes the likelihood of discoveries of cultural resources as part of the project. The cultural resources evaluation recommended that since all of the historic resources are within a 1 mile radius of the proposed project study corridor, additional work is warranted to determine if any of these resources will be visually impacted by the proposed project. However, since the proposed project will “mimic” the existing interstate system in both form and function, it is unlikely that the new system will have any visual impacts on historic resources in its vicinity. After review of the cultural resource evaluation by MDOT Archaeology and their subsequent correspondence with the Mississippi Department of Archives and History (MDAH), MDAH concurred that no Phase I Cultural Resource Survey will be required for the subject project. The cultural resource evaluation is located in Appendix F.

#### 4.23 Section 6(f)

Section 6(f) of the Land and Water Conservation Fund Act concerns transportation projects that



propose impacts, or the permanent conversion, of outdoor recreation property that was acquired or developed with grant assistance from the Land and Water Conservation Fund. Passed by Congress in 1965, the Act established a matching assistance program that provides grants which pay half the acquisition and development cost of outdoor recreation sites and facilities. Section 6(f) of the Act prohibits the conversion of property acquired or

developed with these grants to a non-recreational purpose without the approval of the Department of Interior's National Park Service.

According to the National Park Service, there have been 28 grants awarded in Hinds County, MS under the Land and Water Conservation Fund Act. Parham Bridge Park is a Section 6(f) property. Parham Bridge Park is located approximately 0.5 miles southwest of the I-55/Savanna Street interchange. Since the park is situated outside of the existing interstate and frontage road right-of-way, it will not be impacted.

#### 4.24 Underground Storage Tanks/Hazardous Materials/Wastes

Underground storage tanks (UST) are regulated on the federal level by the US Environmental Protection Agency (USEPA) under 40 CFR Part 280, Part 281, Part 282, and Part 302.4 and on



the state level by the Mississippi Department of Environmental Quality (MDEQ), Office of Pollution Control, Underground Storage Tank Branch under Mississippi Regulation UST-2 (40 CFR 280), amended October 1, 2008. The State of Mississippi became an Approved State Program for Underground Storage Tanks on May 23, 1997. Hazardous material/waste sites are regulated on the federal level by the USEPA under the Resource Conservation and Recovery Act

(RCRA), the Comprehensive Environmental Response, Compensation and Liability Act of 1980

(CERCLA), as amended, and the Superfund Amendments and Reauthorization Act of 1986 (SARA). Hazardous material/waste sites are regulated on the state level by MDEQ, Office of Pollution Control under Mississippi Regulation HW-1 (40 CFR 260), amended March 24, 2011.

A literature search, records review, and a site reconnaissance within the proposed project corridor (interstate and frontage road rights-of-way) were conducted to identify UST systems; and hazardous, toxic, and non-hazardous waste sites. According to the literature search and records review in the MDEQ, Office of Pollution Control, there are no USTs or hazardous materials/waste sites within the proposed project corridor. Site reconnaissance did not reveal any of these types of sites within the proposed project corridor. Records review indicated 30 UST systems in the vicinity of the proposed project. Table 7 lists the UST systems in the vicinity of the project but not within the corridor (interstate and frontage road rights-of-way.)

<b>ID #</b>	<b>Name</b>	<b>Address</b>	<b>City</b>	<b>Status</b>	<b>Tanks</b>	<b>Release</b>	<b>NFA Date</b>
1043	ABF Freight	4501 I-55 South	Jackson	Active	1	No	NA
2879	Jackson Project (MDOT)	2802 Kingwood Ave.	Jackson	Inactive	0	Yes	09-03-97
2921	Bounds Construction Co.	3801 I-55 South	Jackson	Inactive	0	No	NA
3100	Shell Store 55	455 Daniel Lake Blvd.	Jackson	Active	3	Yes	05-17-93
3623	Tannehill Auto Repair	I-55 W. Frontage Road	Terry	Inactive	0	No	NA
3655	BJ Food Mart	400 East McDowell	Jackson	Active	2	Yes	01-08-93
4232	McDowell Shell	411 East McDowell	Jackson	Active	4	Yes	07-06-95
5246	Easley & Easley Millwork	3850 I-55 South	Jackson	Inactive	0	Yes	08-09-02
5444	Expressway Amoco	418 Savannah St.	Jackson	Active	3	No	NA
5518	G&G Food Mart #2	375 East McDowell	Jackson	Active	2	Yes	04-15-10
5701	Standard Roofing	PO Box 6689	Jackson	Inactive	0	No	NA
6111	Controlled Air Comfort	5477 I-55 South	Jackson	Inactive	0	No	NA
6664	Gray's Truck Service	3840 I-55 South	Jackson	Inactive	0	No	NA
6711	Southwest Paving	6805 I-55 South	Jackson	Inactive	0	No	NA
7484	AF Staley Corn Syrup	I-55 S. Industrial Park	Jackson	Inactive	0	No	NA
8334	EZ Quick Mart	11559 I-55 South	Terry	Inactive	0	No	NA
8783	Adi Food Mart	380 East McDowell	Jackson	Active	2	Yes	08-12-03
8797	Terry Red Apple Texaco	511 W. Cunningham	Terry	Active	4	No	NA
9791	Pantry #3742 Kangaroo	7442 Siwell Road	Jackson	Active	4	Yes	12-08-10
10797	DP Holmes Trucking	6039 I-55 South	Jackson	Inactive	0	Yes	04-15-99
11433	Exxon of Elton	346 Elton Road	Jackson	Active	3	No	NA
11511	Shell Elton Road	335 Elton Road	Jackson	Active	3	No	NA
11578	Mac's Gas #11	109 Green Gable Road	Terry	Active	3	Yes	05-11-11
11599	Terry Food Mart	430 Cunningham St.	Terry	Active	3	No	NA
11624	Blue Bell Creameries	6050 I-55 South	Jackson	Active	2	No	NA
11753	MS Bureau Narcotics	6090 I-55 South	Jackson	Inactive	0	No	NA
11937	Blue Sky #602	5700 I-55 South	Jackson	Active	3	Yes	Open
12297	Cefco #544	4200 Wynnndale Road	Terry	Active	3	No	NA
12365	Swinging Bridge BP Store	5750 I-55 South	Jackson	Active	2	No	NA
12878	White Sands Inc.	I-55 W. Frontage Road	Jackson	Active	1	No	NA

Of the 30 underground storage tank (UST) systems in the vicinity of the proposed project, 18 sites are currently active. Eleven systems have reported releases to the Mississippi Department of Environmental Quality (MDEQ), Office of Pollution Control, Underground Storage Tank Branch. Of the 11 reported releases (8 active systems, 3 inactive systems), 10 have been investigated by MDEQ and determined that “no further action” (NFA) is warranted.

One reported petroleum release case remains open to date. The Blue Sky #602 UST system (Facility # 11937) is located at 5700 I-55 South, immediately northeast of the South Siwell Road/I-55 interchange near Byram, Mississippi. The facility currently has three underground storage tanks: 10,000-gallon gasoline; 8,000-gallon gasoline; and 15,000-gallon gasoline. In November 2007, the facility reported a petroleum release after an inspection of leak detection wells indicated approximately 2 inches of free petroleum product in well #5. The Mississippi Department of Environmental Quality (MDEQ)- Office of Pollution Control confirmed the release in December 2007 and required the facility to commence with a 10-day bailing program of leak detection well #5 until the free product was removed. MDEQ also confirmed that free product was contained in the underground storage tank pit. Subsequent inspections of the leak detection wells in 2008, 2009, and 2010 found no evidence of free product. Tank tightness test results have also been submitted to MDEQ with satisfactory results. MDEQ interview indicated that no petroleum release site assessment has been completed to date. MDEQ is currently determining UST fund eligibility for the facility. MDEQ indicated that groundwater flow direction appears to be to the east, away from the frontage road and interstate. The review of USGS mapping and field reconnaissance indicate that the topographic gradient is in the east-northeast direction. Based on this information, it appears that the petroleum release will not impact the proposed project. Additional information concerning the Blue Sky #602 facility can be obtained from MDEQ-Office of Pollution Control at (601) 961-5655.

None of the 30 UST systems pose an environmental impact on the proposed project based on one or more of the following: (1) they are located outside of the existing interstate and frontage roads rights-of-way, (2) MDEQ has determined that no further action is warranted, and/or (3) MDEQ records, USGS topographic mapping, and field reconnaissance indicate that the groundwater gradient appears to be moving away from the proposed project corridor.

Records review indicated 10 facilities in the vicinity of the proposed project that have been classified as hazardous material/waste sites as regulated under the Resource Conservation and Recovery Act (RCRA) and Mississippi Regulation HW-1 (40 CFR 260), amended March 24, 2011. The facilities/sites in Table 8 are listed as having generated, transported, stored, or disposed of hazardous material/wastes in the past.

**TABLE 8- RCRA SITES IN VICINITY OF PROPOSED PROJECT**

EPA ID #	Facility/Site Name	Address	City	Type*	Class**	Waste***	Status#
NA	Terminix	Frontage Rd. I-55 S.	Jackson	G	—	P037 (listed)	SNFA
MSD985971431	Exxon #50305	400 E. McDowell Road	Jackson	G	CESQG	D018 (toxicity)	NC
MSD982771289	Bartal Industries, Inc.	3540 Frontage Rd. I- 55 S.	Jackson	G,S	CESQG	D001 (ignitability)	OB, NC
MSD033340290	Honda of Jackson	3631 Highway 55 South	Jackson	G	SQG	D001 (ignitability)	NC
MSD985971563	Stegall Auto Body, Inc.	3631 I-55 South	Jackson	G	SQG	F005 (nonspecific)	NC
MS0000964130	Bumper Supply of MS, Inc.	3752 I-55 South	Jackson	G	CESQG	D035, D039 (toxicity)	NC
MSD982104309	Jackson Further Processing	4100 I-55 South	Jackson	G, S	CESQG	D001, D002 (ignitability)	NC
MSR000001396	Pinker Air Equipment	4881 I-55 South	Jackson	G	CESQG	D001 (ignitability)	NC
MSD072627151	ABF Freight Systems, Inc.	4501 I-55 South	Jackson	G	CESQG	F003, F005 (nonspecific)	NC
MSR000101832	Superior Asphalt, Inc.	6000 I-55 South	Jackson	T	—	D004-D043 (toxicity)	NC

\*Type: Generator (G), Transporter (T), Storage (S), Disposal (D)

\*\*Classification: Conditionally-Exempt Small Quantity Generator (CESQG)

≤ 100 kg/mo. hazardous waste

< 1 kg/mo. acutely hazardous waste

< 100 kg/mo. acute spill residue or soil

Small Quantity Generator (SQG)

> 100 kg/mo. but < 1,000 kg/mo. hazardous waste

Large Quantity Generator (LQG)

≥ 1,000 kg/mo. hazardous waste

> 1 kg/mo. acutely hazardous waste

> 100 kg/mo. acute spill residue or soil

\*\*\*Waste: Non-specific source (F-list); Source-specific (K-List); Discarded commercial products (P-List, U-List); Characteristic Wastes (D001-D043); Universal Wastes (batteries, pesticides, mercury-containing equipment, bulbs); Mixed Wastes (mixed)

#Status: State No Further Action (SNFA), Out of Business (OB), No Contamination on file (NC)

Based on the records review, none of the 10 RCRA sites pose an environmental impact on the proposed project since they are all located outside of the existing interstate and frontage roads rights-of-way.

According to the MDEQ, Office of Pollution Control, there are no files and/or records for any former or present hazardous material/waste sites and underground storage tanks within the proposed project corridor (interstate and frontage road rights-of-way); therefore, no further environmental site assessments are warranted for the proposed project. There are no negative cumulative or indirect impacts expected from underground storage tanks or hazardous materials/wastes associated with the proposed project.

The proposed project will be constructed on existing rights-of-way on land that has been disturbed by previous highway projects. If other previously, undiscovered waste sites are unearthed during construction, excavation activities in the area will immediately cease and the MDEQ, Office of Pollution Control will be contacted at (601) 961-5171. The Mississippi Department of Transportation (MDOT) and MDEQ will develop an acceptable plan to investigate the site and determine corrective action measures for the protection of the public health and the environment. Documentation in support of the discussed findings is located in Appendix G.

#### **4.25 Visual Impacts**

Visual perception is an important component of environmental quality that can be affected by transportation projects. The location, design, and/or maintenance of transportation facilities may adversely affect visual features of the landscape. In reviewing the visual impacts of transportation projects, two views are considered: the view from the facility and the view of the facility.

Indirect impacts in the form of visual/aesthetic impacts may occur at three locations along the project corridor due to noise barrier utilization. A noise study was conducted for the subject



project to predict the project's effect on the noise environment, identify where noise impacts are likely to occur, determine if noise abatement is feasible to reduce noise impacts, and meet the requirements of 23 CFR Part 772. Noise barriers were modeled in seven noise sensitive areas which were designated Areas A to E. In Area E, along the east side of I-55, south of Savanna Street, a

barrier 1,400 feet long and 12 feet high was considered and found reasonable to reduce the noise levels at In Area F, along the west side of the southbound on-ramp from Savanna Street, a barrier 1,035 feet long and 8-13 feet high was considered and found reasonable to reduce the noise levels at 13 impacted receivers near Oneida Avenue. In Area G, along the west side of the southbound off-ramp for Savanna Street, a barrier 1,320 feet long and 12-16 feet high was considered and found reasonable to reduce the noise levels at 61 impacted receivers near Timber Ridge Drive. A public meeting will be conducted of the benefitted receivers in Areas E, F and G to determine if they want a noise barrier. The noise study is detailed in Section 4.10.

In order to minimize any visual impacts, attempts will be made to design hardscape features (bridges, retaining walls, safety features) to blend with existing and proposed landscape

features to achieve a view that is aesthetically pleasing to both the transportation facility user as well as businesses and residents near the project area.

#### **4.26 Energy**

The No-Build Alternative (Alternative A) will not cause any immediate energy impacts but could possibly contribute to long term energy requirements due to inefficiencies of the existing facility. Construction of the preferred Build Alternative (Alternative C) will involve the commitment of energy resources both during the short-term construction period and throughout the long-term operation of the facility. Energy would be used for the manufacturing and transport of the construction components and by the heavy equipment utilized for roadway and bridge construction. The project would require routine maintenance that could result in energy use for the maintenance activities. Traffic delays could accompany the maintenance activities and could result in temporary increases in energy use. Once the proposed facility improvements are made, fluid traffic flow and reduced travel time could result in a decrease of existing energy use.

In summary, the proposed project is not expected to have adverse energy impact on the State or region. The construction of the project will require a considerable expenditure of energy resources. The completed project would provide a more efficient road network for the area, eliminate congestion, and provide for a stable flow of traffic; thereby, providing conservation of energy resources over the long-term.

#### **4.27 Construction**

A major construction project, public or private, will likely inconvenience residents, businesses and business customers. In the case of improvements to an existing highway, inconvenience to highway users also occurs. The maintenance of traffic and access to properties adjoining the road and utility relocations are particular construction-related impact issues that will be addressed with this project.

Without proper planning and implementation of controls, traffic disruption, loss of access and utility relocation could adversely affect the comfort and daily life of residents and disrupt the flow of customers, employees and material/supplies to and from businesses. Construction impact controls would be integrated into the project's contract specifications and traffic control plans. Access to businesses and residences will be maintained during construction to minimize impacts and traffic will be adequately and safely maintained. The Build Alternative (Alternative C) would have physical construction-related impacts, but with implementation of appropriate controls, no cumulative or secondary impacts are foreseeable.

All Mississippi Department of Transportation (MDOT) environmental documents include “MDOT Commitments to Environmental Excellence,” also known as the Gold Sheet. The Gold Sheet is located at the beginning of this document and it identifies measures to minimize project impacts that become commitments required throughout various phases of project development, including construction.

#### **4.28 Local Short-term Uses vs. Long-term Productivity**

The local short-term impacts of the proposed action will be limited to the pavement replacement and roadway construction phase. The impacts to natural and human resources will be confined to the proximity of these limits which are within existing interstate and frontage road rights-of-way. Mississippi Department of Transportation (MDOT) specifications address the natural resource impacts and are designed to minimize impacts for both the materials required and the actual pavement replacement and construction of the roadway. The long-term gains anticipated as a result of the proposed project include improved physical roadway conditions throughout the reach of the project and a reduction in traffic congestion, thereby providing a safer and more efficient driving environment.

#### **4.29 Indirect and Cumulative Impacts**



Indirect impacts are defined as those impacts which are caused by an action and are later in time and farther removed in distance, but are still reasonably foreseeable. They may include growth-induced effects and changes in patterns of land use and population densities. Cumulative impacts are defined as those impacts which result from the incremental impact of an action when added to other past, present, and reasonable foreseeable future actions. Cumulative

impacts can result from individually minor but collectively significant actions taking place over a period of time.

Potential indirect and cumulative impacts of the proposed project include growth and secondary development. One of the purposes of the project is to construct additional lanes between Green Gable Road/Cunningham Avenue in Terry, Mississippi and McDowell Road in Jackson, Mississippi. This construction will reduce congestion along this stretch of I-55. An indirect impact to this work is the potential for economic development and growth along the I-

55 corridor due to a more-efficient and viable access from southern to northern Mississippi. Although the work will be accomplished within existing rights-of-way and the interstate will remain as an access-controlled facility, development has the potential to grow at the various interchanges within the project corridor.

Indirect impacts in the form of visual/aesthetic impacts may occur at three locations along the project corridor due to noise barrier utilization. A noise study was conducted for the subject project to predict the project's effect on the noise environment, identify where



noise impacts are likely to occur, determine if noise abatement is feasible to reduce noise impacts, and meet the requirements of 23 CFR Part 772. Noise barriers were modeled in seven noise sensitive areas which were designated Areas A to E. In Area E, along the east side of I-55, south of Savanna Street, a barrier 1,400 feet long and 12 feet high was considered and found reasonable to reduce the noise levels at 35 impacted receivers near Pine Ridge Park. In Area F, along the west side of the southbound on-ramp from Savanna Street, a barrier 1,035 feet long and 8-13 feet high was considered and found reasonable to reduce the noise levels at 13 impacted receivers near Oneida Avenue. In Area G, along the west side of the southbound off-ramp for Savanna Street, a barrier 1,320 feet long and 12-16 feet high was considered and found reasonable to reduce the noise levels at 61 impacted receivers near Timber Ridge Drive. A public meeting will be conducted of the benefitted receivers in Areas E, F and G to determine if they want a noise barrier.

Beneficial indirect and cumulative impacts could include economic stimulation derived from construction-related jobs and associated commercial activities. The economic base of the area will be enhanced through increased economic development opportunities and improved access to developing businesses in the area. Development increases property values, tax revenues, and employment. The improved physical roadway conditions throughout the reach of the project and a reduction in traffic congestion will improve the safety of the traveling public.

#### **4.30 Irreversible/Irretrievable Commitments of Resources**

An analysis of irreversible and irretrievable commitments of resources was conducted for the proposed project. The No-Build Alternative (Alternative A) will not require any additional commitment of resources, other than the resources for the continued maintenance of the

existing roadway. An important long-term cost to consider for any highway investment is maintenance costs. Maintenance costs include major items such as resurfacing as well as routine maintenance which includes re-striping, mowing, the clearing of drainage structures, patching potholes, repairing signs and guardrails, and bridge maintenance. Over time, maintenance costs can be a major expense for any alternative under consideration, including the No-Build Alternative (Alternative A).

Implementing the Build Alternative (Alternative C) will require the commitment of natural, physical, human, and fiscal resources. Each of these categories is comprised of irreversible and irretrievable commitments of resources. These commitments are anticipated to have only minor impacts to the ecology and/or economy of the area. Considerable amounts of fossil fuels and construction materials, such as steel, cement, aggregate, and bituminous material, will be expended to construct the Build Alternative (Alternative C). These physical resources are generally in sufficient supply and their commitment to the project will not have an adverse effect on their continued availability. Improved traffic flows through the project area resulting from the proposed improvements will reduce long-term consumption of fossil fuels. Some biological resources such as habitat will be irreversibly and irretrievably lost with the construction of the proposed project. Mitigation measures will be proposed to minimize and/or compensate for the loss of biological resources. In terms of human resources, labor will be used in the preparation, fabrication, and construction of the project. Labor is typically not considered to be a resource in short supply and commitment to the project will not have an adverse effect on the continued availability of these resources. Construction of the Build Alternative (Alternative C) will require a substantial one-time commitment of both state and federal transportation funds. These funds are not retrievable. The Build Alternative (Alternative C) will require the commitment of an estimated \$ 120 M in construction costs. In the short term, the transportation investment for the construction will create a demand for construction workers and services, raw materials, and other goods and services. This demand would ripple through the economy, creating secondary effects/benefits within the region. The commitment of these resources is based upon the fact that local residents, traveling public, and commercial shipping will benefit from the improved transportation system. The improvements to the interstate system will result in improved accessibility, economic activity, and safety. Savings will be realized in both travel time and consumption of fuel from these improvements. These factors are anticipated to outweigh the commitment of resources required for the construction of the project. The proposed commitment of natural, physical, human, and fiscal resources is based on the fact that businesses, employees, and residents in the project area as well as the traveling public and commercial shipping will benefit from the improved quality of the interstate. These benefits will consist of a savings of time and convenience through improved mobility and safety. These benefits are anticipated to outweigh the commitment of resources.

## 5. COMMENTS & COORDINATION

### 5.1 Resource Agencies

The Mississippi Department of Transportation (MDOT) submitted letters of interest to federal, state, regional, and local agencies in August and September 2011 concerning the proposed project. The purpose of the correspondence is to notify the agencies of the location, nature, and description of the proposed project and to allow each agency to comment and/or provide professional opinions on impacts the project may have under the specific legislation under which they work. The agencies that were provided a letter of intent for the proposed project and their comments are as follows:

#### US Department of Agriculture- Natural Resource Conservation Service (NRCS)

The letter of interest was forwarded to the NRCS on September 1, 2011 requesting their relative interests under the Farmland Protection Policy Act (FPPA). There has been no response from NRCS to date.

#### US Fish & Wildlife Service (USFWS)

The letter of interest was forwarded to the USFWS on August 1, 2011 requesting their relative interests under the Endangered Species Act (ESA) of 1973. Based on the information provided, the USFWS concluded by letter dated August 18, 2011 that there are no federally-listed threatened or endangered species or their critical habitat within the vicinity of the proposed project. No further consultation is required with USFWS unless there are changes in the scope or location of the project.

#### Mississippi Department of Wildlife, Fisheries & Parks (MDWFP)

The letter of interest was forwarded to the MDWFP on August 1, 2011 requesting their relative interests under the Endangered Species Act (ESA) of 1973. Based on the information provided, the MDWFP concluded by letter dated August 11, 2011 that there are four state species of concern within 2 miles of the proposed project. The four freshwater mussel species include: Tapered Pondhorn (*Unio merus declivis*), Deertoe (*Truncilla truncate*), White Heelsplitter (*Lasmigona complanata*), and Alabama Hickorynut (*Obovaria unicolor*). The MDWFP concluded that if best management practices are properly implemented, monitored, and maintained (particularly measures to prevent, or at least, minimize negative impacts to water quality), the proposed project likely poses no threat to listed species or their habitats.

#### Mississippi Department of Archives & History (MDAH)

The letter of interest was forwarded to the MDAH on August 1, 2011 requesting their relative interests under Section 106 of the National Historic Preservation Act (NHPA) of 1966. Based on the information provided, the MDAH concluded by letter dated August 22, 2011 that the proposed project may have an effect on cultural resources. MDAH requested that an evaluation of the potential impact of the project on cultural resources be completed and submitted for their review and comment. A cultural resources evaluation was completed in August 2011 and submitted to MDAH for their review. After review of the cultural resource evaluation by MDOT Archaeology and their subsequent correspondence with the Mississippi Department of Archives and History (MDAH), MDAH concurred that no Phase I Cultural Resource Survey will be required for the subject project.

#### Mississippi Natural Heritage Program (MNHP)

The letter of interest was forwarded to the MNHP on August 1, 2011 requesting their relative interests under the Endangered Species Act (ESA) of 1973. Based on the information provided, the MNHP concluded by letter dated August 11, 2011 that there are four state species of concern within 2 miles of the proposed project. The four freshwater mussel species include: Tapered Pondhorn (*Uniomerus declivis*), Deertoe (*Truncilla truncate*), White Heelsplitter (*Lasmigona complanata*), and Alabama Hickorynut (*Obovaria unicolor*). The MNHP concluded that if best management practices are properly implemented, monitored, and maintained (particularly measures to prevent, or at least, minimize negative impacts to water quality), the proposed project likely poses no threat to listed species or their habitats.

#### Mississippi Department of Environmental Quality (MDEQ)

The letter of interest was forwarded to the MDEQ on August 1, 2011 requesting their relative interests under the various legislation under which they promulgate regulation, and specifically Section 401 of the Clean Water Act. There has been no response from MDEQ to date.

#### US Army Corps of Engineers- Vicksburg District (USCOE)

The letter of interest was forwarded to the USCOE on August 1, 2011 requesting their relative interests under Section 9 and Section 10 of the Rivers and Harbors Act of 1899 as well as Section 404 of the Clean Water Act. The USCOE responded via electronic mail on September 20, 2011. The USCOE indicated that they do not foresee any concerns with the proposed project nor will they require a site visit. If the construction design changes to include property outside of the existing rights-of-way, the USCOE requires that they be notified.

## **5.2 Municipal & County Government**

The Mississippi Department of Transportation (MDOT) submitted letters of interest to municipal and county government agencies in September 2011 concerning the proposed project. The purpose of the correspondence is to notify the agencies of the location, nature, and description of the proposed project and to allow each agency to comment on the project. The agencies that were provided a letter of intent for the proposed project and their comments are as follows:

### City of Jackson, Mississippi

The letter of interest was forwarded to Mayor Harvey Johnson, Jr. on September 9, 2011 requesting any relative comments and/or interests concerning the proposed project. There has been no response to date from the City of Jackson.

### City of Byram, Mississippi

The letter of interest was forwarded to Mayor Nick Tremonte on September 9, 2011 requesting any relative comments and/or interests concerning the proposed project. There has been no response to date from the City of Byram.

### Town of Terry, Mississippi

The letter of interest was forwarded to Mayor Roderick Nicholson on September 9, 2011 requesting any relative comments and/or interests concerning the proposed project. Mayor Nicholson responded by electronic mail to MDOT-Environmental on September 12, 2011. Mayor Nicholson posed questions concerning improvements to frontage roads south of the Green Gable Road/Cunningham Avenue interchange as well as specifics on interstate lighting within the corporate limits of Terry, MS.

### Hinds County, Mississippi

The letter of interest was forwarded to District 5 Supervisor, Mr. George Smith on September 9, 2011 requesting any relative comments and/or interests concerning the proposed project. There has been no response to date from Hinds County.

### Metropolitan Planning Organization (MPO)

The letter of interest was forwarded to Mr. Larry T. Smith, AICP, Planning Director, Central Mississippi Planning & Development District (CMPDD) on September 28, 2011 requesting any

relative comments and/or interests concerning the proposed project. There has been no response to date from the CMPDD.

Regulatory and Government Agency correspondence documentation is located in Appendix H.

### **5.3 Native American Consultation**

The Federal Highway Administration (FHWA) has a government-to-government relationship with Indian Tribes. Section 106 of the National Historic Preservation Act of 1966 requires that FHWA consult with Tribes for undertakings that may affect properties considered to have traditional religious and cultural significance. Since the proposed project is within previously disturbed rights-of-way and no new right-of-way is to be acquired, it is unlikely that cultural resources will be impacted. Therefore, formal Native American Consultation is not required for the subject project. After review of the cultural resource evaluation by MDOT Archaeology and their subsequent correspondence with the Mississippi Department of Archives and History (MDAH), MDAH concurred that no Phase I Cultural Resource Survey will be required for the subject project. If archaeological sites are found or are suspected during construction of the proposed project, (1) construction activities will immediately cease, (2) the suspected area will be protected from further disturbance, and (3) the Mississippi Department of Transportation (MDOT) Archaeologist will be contacted at (601) 359-1475 for further instruction.

## 6. PLANNING & PUBLIC INVOLVEMENT

Letters of interest describing the proposed project were submitted to local, state, and federal stakeholders. The stakeholders include: City of Jackson; City of Byram; Town of Terry; Hinds County; Central Mississippi Planning & Development District (CMPDD); Mississippi Department of Wildlife, Fisheries, & Parks (MDWFP); Mississippi Department of Archives & History (MDAH); Mississippi Natural Heritage Program (MNHP); Mississippi Department of Environmental Quality (MDEQ); US Army Corps of Engineers- Vicksburg District (USCOE); US Fish & Wildlife Service (USFWS); and US Department of Agriculture- Natural Resource Conservation Service (NRCS). A summary of this participation effort is provided in Appendix H.

Public meetings benefit citizens as well as MDOT. They allow for an exchange of opinions, ideas, information and suggestions before a final plan is made for highway design and construction. The meetings also give MDOT and FHWA personnel the opportunity to share information about the project and to hear citizens' comments, which are often helpful in determining the project's final design.

An advertised public meeting will be held concerning noise barriers within three areas of the subject project. The residents within the affected areas will be made aware of the meeting through a door-to-door notification process. The meeting will allow the public to view aerial photography as well as conceptual renderings and to voice opinions and/or concerns on feasible noise barriers associated within the proposed improvements.

An advertised public meeting will be held in the vicinity of the proposed project so that the local citizens can review the proposed project as a whole and make comments. The project corridor will be presented on visual displays for public review along with additional information as necessary to present the project.

All public comments that are received during the two meetings will be considered in the development of the proposed project. A summary of the public comments as well as copies of the meeting sign-in sheets will be made part of this Environmental Assessment (EA) document in Appendix I.

## **7. SUMMARY & CONCLUSIONS**

The selection of the Build Alternative (Alternative C) as the preferred alternative is based upon consideration of the degree to which an alternative satisfies the project purpose and need, the overall impacts and benefits, and input from the public and local, state, and federal agencies. Based on these factors, the Build Alternative (Alternative C) was identified as the preferred alternative for further evaluation in the Environmental Assessment.

The Environmental Assessment and supporting studies identified potential impacts to the social, ecological, and cultural environments as a result of Alternative C. While the No Build Alternative (Alternative A) would avoid the potential impacts to the environment, it fails to satisfy the project purpose and need and is not considered a viable alternative. Based on the minimization of impacts due to constraining the project within the existing rights-of-way, it has also been determined that the acquisition of rights-of-way associated with Alternative B is not prudent.

The potential impacts of Alternative C can be mitigated; therefore, the impacts are not considered “significant.”

Based on the finding of this Environmental Assessment, the Build Alternative (Alternative C) is selected as the preferred alternative for the pavement replacement and additional lane construction on I-55 between the Copiah County Line south of Terry, MS and McDowell Road in Jackson, MS.

## 8. LITERATURE CITED

American Association of State Highway and Transportation Officials (AASHTO)

2004            *A Policy on Geometric Design of Highways and Streets, 5<sup>th</sup> Edition (“Green Book”)*

Advisory Council on Historic Preservation (ACHP)

2005            “Section 106 Exemption Regarding Effects to the Interstate Highway System”

Mississippi Department of Environmental Quality (MDEQ)

2010            Proposed Final Version 2010 303(d) List

2009            “Total Maximum Daily Load Designated Streams in the Pearl River Basin”

2005            *Mississippi Stormwater Pollution Prevention Plan Guidance Manual for Construction Activities*

2005            *Field Manual for Erosion and Sediment Control on Construction Sites in Mississippi*

1994            *Planning and Design Manual for the Control of Erosion, Sediment & Stormwater*

Mississippi Department of Transportation (MDOT)

2010            I-55 Capacity Analysis (2010) (Planning Division)

2009            *NPDES Phase II Stormwater Management Plan*

2001            *Roadway Design Manual*

Transportation Research Board (TRB)

2000            *Highway Capacity Manual*

US Army Corps of Engineers (USACE)

2008            *USACE Wetland Delineation Manual (1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (2008).*

US Department of Transportation (USDOT)

2010            “USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations”