

ENVIRONMENTAL
ASSESSMENT

Memphis Regional Intermodal Facility

Rossville, Fayette County, Tennessee

Submitted Pursuant to the
National Environmental Policy Act of 1969

42 U.S.C. 4332(2)(C)

Lead Agencies:

U.S. Department of Transportation
Federal Railroad Administration

Tennessee Department of Transportation

Cooperating Agencies:

Federal Highway Administration
U.S. Army Corps of Engineers
Mississippi Department of Transportation

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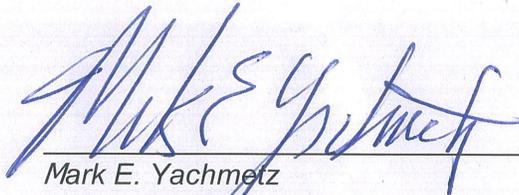
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By the U.S. Department of Transportation,
Federal Railroad Administration
And
The Tennessee Department of Transportation

In cooperation with
Federal Highway Administration
U.S. Army Corps of Engineers
Mississippi Department of Transportation

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SUMMARY

The Norfolk Southern Railway Company (NSR) proposes to construct, own, and operate a new intermodal facility (IMF) known as the Memphis Regional Intermodal Facility (Memphis Regional IMF) to serve the Memphis Metropolitan area. The purpose of the proposed project is to increase freight transportation capacity in the Memphis, Tennessee region and to meet current and future demands for freight transportation to and from the Northeast U.S. As part of the national transportation system, IMFs play a key role in meeting the challenges of freight transport now and in the future. An IMF is a facility where freight is transferred from one transportation mode to another, in this case, between trains and trucks, to speed the delivery of freight over long distances.

With intermodal transportation, domestic and worldwide freight moves in sealed containers or trailers directly from shippers to warehouses, retail stores, plants, and other businesses. IMFs are where containers and trailers are transferred between rail and highway. Trains, each of which is capable of carrying the equivalent of 280 truckloads of freight,¹ provide the long-haul while trucks provide the local delivery and pick-up (short-haul). A ton of freight transported by rail travels an average of 457 miles on one gallon of fuel, while a ton of freight transported by a truck requires approximately three and a half times as much fuel to travel the same distance.² In addition to providing an efficient freight transportation alternative to long-haul trucks, the proposed Memphis Regional IMF would provide supplemental benefits in terms of reducing highway congestion and vehicle miles traveled, improving highway safety, and providing energy-efficient and environmentally-friendly freight transportation.

Based on an economic benefits study, the Memphis Regional IMF would contribute to a projected cumulative economic impact to the Memphis, Tennessee region of \$2.7 billion by 2020 and a projected 6,186 new or benefited jobs in the same period.³ Additional annual benefits attributable to the Memphis Regional IMF are expected to include reduced costs for pavement maintenance (\$16.1 million); reduced costs for highway delays (\$81.4 million); reduced costs from fuel consumption and emissions (\$20.9 million); and reduced costs for highway crashes and fatalities (\$20.7 million).⁴

In February 2010, Tennessee was selected to receive funds to support the development of this project from the U.S. Department of Transportation (DOT), Transportation Investment Generating Economic Recovery (TIGER) Program as part of the American Recovery and Reinvestment Act (ARRA) of 2009. As a result of this Federal funding, the proposed Memphis IMF project is subject to the requirements of the National Environmental Policy Act of 1969 (NEPA). This document has been prepared to meet those NEPA requirements.⁵ The DOT Federal Railroad Administration (FRA) and Tennessee Department of Transportation (TDOT) are the lead agencies for the proposed project. The DOT Federal Highway Administration (FHWA), Mississippi Department of Transportation, and U.S. Army Corps of Engineers (USACE) are Cooperating Agencies.

¹ AAR, Freight Rail Works 280 Fact Sheet, 2009, <http://www.freightrailworks.org/280.html>.

² AAR, "Rail Intermodal Keeps America Moving," November 2009. <http://www.aar.org/Economy/~media/AAR/BackgroundPapers/Intermodal%20Nov%202009.ashx>.

³ *Proposed Intermodal Facilities, Fayette County, TN, Twelve-Year Impact Analysis: Analysis of Economic, Employment and Tax Revenue Impacts 2009-02020*, Insight Research Corporation, May 27, 2009.

⁴ *Analysis of Truck to Rail Diversion Benefits – Memphis*, Cambridge Systematics, Inc., January 20, 2010.

⁵ See FRA NEPA requirements at 64 Fed. Reg. 28545 (May 26, 1999); see also FHWA NEPA requirements at 23 C.F.R. 771 (2009), 65 Fed. Reg. 33960 (May 25, 2000).

Purpose and Need

The Memphis Regional IMF would be built to improve freight transportation capacity in the Memphis, Tennessee region. The additional capacity is required to meet the growing freight demand. Anticipated benefits of the project include reducing highway and interstate congestion and providing energy efficient alternatives for current and future freight transportation.

To meet operational requirements, the main components needed for the IMF are:

- Tracks connecting the Memphis Regional IMF site to the NSR mainline;
- Six 4,050 foot long pad tracks to handle train engines and cargo to optimize transportation efficiency and maximize fuel savings and emissions reductions;
- Support yard with 34,500 feet of track in parallel strips to allow longer trains to be separated until they can be loaded/unloaded;
- Paved areas for parking approximately 2,200 trailers and containers on chassis necessary for daily operations at the IMF;
- Several small administration, maintenance, and operations buildings located on the support yard pad necessary for transportation operations, security, and maintenance; and
- Equipment maintenance pad with spill control and stormwater management features and other related facilities.

Alternatives

A suitable location is a critical requirement to satisfy the Memphis Regional IMF purpose and need. NSR used the following critical evaluation factors to consider a site viable:

- Sufficient Land. Sufficient land, properly configured, is necessary to develop a facility, which can meet intermodal demand and support the IMF operating requirements.
- Proximity to Rail Infrastructure. The project must be located near the NSR mainline.
- Proximity to Highway Infrastructure. The proposed site must be located in proximity to adequate highway infrastructure.
- Location. The proposed IMF must be located near potential customers in an area convenient for industrial and commercial economic activities.

Six alternative locations were evaluated for the Memphis Regional IMF project. Two of the alternatives were within Shelby County. The remaining four alternatives were in Fayette County and each proposed construction of a new IMF.

All but one of the proposed build alternatives were eliminated from further consideration because they failed to meet one or more of the critical evaluation factors or were considered to be inferior to Build Alternative 1 due to impacts on traffic, cultural, and/or aquatic resources. The NSR prefers Build Alternative 1 and Tennessee Department of Transportation (TDOT) and FRA concurred that Build Alternative 1 is the only reasonable action alternative, and considered this alternative along with the No-Build Alternative (no-action) in this EA.

Build Alternative 1 consists of constructing and operating a new IMF in southern Fayette County, Tennessee, approximately 25 miles east of Memphis. The Memphis Regional IMF would be located approximately 1.5 miles south of State Route (SR) 57 and 0.5 mile west of Knox Road in the City of Rossville. The facility would occupy about 380 acres on a 650-acre parcel. The facility would include lead tracks from the NSR mainline, a loop track, container and trailer transfer and storage yard, SR-57 overpass and an access road. The overpass would create a grade separation between the lead tracks and SR-57. The loop track at the south end of the facility would allow trains to reverse direction to return to the mainline. Industrial Road, the access road to the IMF, would connect the facility to U.S. Highway (US Hwy) 72. Industrial Road is being built by the adjacent property owner (Developer) to not only provide vehicle and truck access to the Memphis Regional IMF from US Hwy 72, but facilitate industrial and commercial development in the immediate area of the road. While Industrial Road is being developed with non-Federal funds, the direct, indirect and cumulative impacts of Industrial Road are evaluated as part of this EA.

As part of the conceptual design process, several adjustments to the IMF were considered. The design was modified where possible to avoid, and in all cases minimize, impacts to natural resources while balancing engineering restrictions. These adjustments to Build Alternative 1 evaluated measures to avoid impacts to the environment, to minimize impacts, or to enhance the environmental resources. For example, the conceptual layout of the facility was shifted to avoid a wetland and enhance the local environment through a commitment to preserve the stream's meanders.

Environmental Impacts

The primary potential impacts of the recommended action are outlined in Table S-1 in accordance the National Environmental Policy Act, its regulations and other applicable law.

Table S-1: Potential Impacts of Build Alternative 1

IMPACT CATEGORY	POTENTIAL IMPACTS
<i>Project Features</i>	
Estimated Area	Property – 650 acres with 440 acres disturbed Facility – 380 acres with 233 paved, 76 acres tracks, and 71 acres open (green space)
Estimated Cost	\$129 million
<i>Farmland</i>	
Prime and Unique	330 total acres 311 acres

Table S-1: Potential Impacts of Build Alternative 1

IMPACT CATEGORY	POTENTIAL IMPACTS
<i>Transportation</i>	Improved efficiency in transporting freight. Reduced long-haul truck traffic and associated congestion and emissions
<i>Social and Economic</i>	
<i>Residential Relocations and Business Displacements</i>	No Relocations or Displacements
<i>Economic</i>	Approximately 140 new full-time jobs plus temporary construction jobs; economic impact of \$2.7 billion by 2020, and growth of 6,186 new or benefited jobs
<i>Energy</i>	23.8 million gallons of fuel estimated saved on annual basis
<i>Air Quality</i>	No Adverse Effects
<i>Noise</i>	No Adverse Effects
<i>Cultural Resources</i>	
Architectural/Historic Resources	0 sites
Archaeological Sites	0 sites
<i>Section 4(f) Resources</i>	None
<i>Natural Resources</i>	
Stream	5,352 linear feet
Wetlands	7.3 acres
Aquifer/Groundwater	No Adverse Effects
Floodplain	Zone A – 1 acre impacted
Threatened and Endangered Species (Federal and State)	No Adverse Effects
Invasive Species	No Adverse Effects
<i>Visual</i>	No Adverse Effect
<i>Hazardous Materials</i>	No Adverse Effects

Areas of Controversy and Unresolved Issues

There are no major areas of controversy or any substantial unresolved issues related to the proposed Memphis Regional IMF project. The public and agencies have provided comments on several issues including impacts to air, water, and land resources, and impacts on traffic and noise, including cumulative impacts. The EA includes in-depth discussion to address these concerns.

There are three highway projects in the general vicinity of the proposed Memphis Regional IMF including:

- Widening US Hwy 72 in Mississippi,
- Connecting SR-385 to I-40 in Tennessee and

- Construction of I-69 / I-269.

Industrial Road would connect the facility to US Hwy 72 in Mississippi, which is still two-lanes. Mississippi Department of Transportation (MDOT) is programming this portion of US Hwy 72 to be widened to four-lanes.⁶ The stretch of US Hwy 72 in Tennessee, which connects to SR-385, is a four-lane highway. TDOT is programming SR-385 to be four-lanes from US Hwy 72 north to Interstate 40 (I-40), which would allow for truck traffic from I-40 to effectively bypass Germantown and Collierville. These improvements being completed on SR-385 would tie into I-69 including the I-269 outer loop. I-69/I-269 road project would allow for improved truck traffic flow around the Memphis area.

Other Required Federal and State Actions

The following Federal and State permits would be required from the US Army Corps of Engineers (USACE) and the Tennessee Department of Environment and Conservation (TDEC) for implementation of the proposed project:

- USACE Individual or Nationwide Permit for Impacts to Waters of the U.S. (including wetlands and aquatic resources)
- TDEC Aquatic Resource Alteration Permits (ARAPs) Individual or General Permit for Construction and Removal of Minor Road Crossings.
- TDEC Aquatic Resource Alteration Permits (ARAPs) Individual or General Permit for Minor Alterations to Wetlands.
- TN National Pollutant Discharge Elimination System (NPDES) Individual Stormwater Permit for Construction
- TN NPDES Construction General Permit (if needed).

SAFETEA-LU Statute of Limitations

A Federal agency may publish a notice in the Federal Register, pursuant to 23 U.S.C. 139(l), indicating that one or more Federal agencies have taken final actions on permits, licenses or approvals for a transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 180 days after the date of publication of the notice, or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.

Conclusion

NSR proposes to construct and operate the Memphis Regional IMF. The purpose is to improve freight transportation capacity in the Memphis, Tennessee region to meet the growing freight transportation demand. Anticipated benefits of the project include economic and employment benefits as well as a reduction of long-haul truck traffic on congested highways between the Memphis region and the Northeast U.S. Less long-haul truck traffic should reduce damage to highways from heavy trucks, decrease traffic

⁶ Mississippi DOT 2010-2013 STIP, US72 from FR302 to Tennessee State Line, NEED ID 4752.

accidents, and improve air quality through the use of energy efficient transportation alternatives.

In accordance with NEPA, the assessment of impacts of Build Alternative 1 and any adverse effects, including indirect and cumulative effects, was performed in consultation with other Federal and State agencies that have jurisdiction by law or special expertise regarding particular resource areas and impacts. Primary impacts relate to construction of Build Alternative 1 and those that would remain following avoidance and minimization measures are addressed through mitigation, in accordance with applicable Federal and State legal provisions. Site design, construction, and facility operation alternatives are proposed to lessen environmental effects. Additional environmental enhancement measures are proposed to minimize remaining effects as discussed in the EA sections 3.3 Traffic, 3.8 Noise, 3.12 Natural Resources, 3.14 Visual, and 3.15 Energy. Build Alternative 1 is among several alternative sites reviewed and was chosen following evaluation of purpose and need and other criteria.



LIST OF ACRONYMS

ATRA	Air Toxics Risk Assessment
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AGS	Automated Gate System
AMEC	AMEC Earth & Environmental, Inc.
amsl	Above Mean Sea Level
APE	Area of Potential Effect
ARAP	Aquatic Resource Alteration Permit
AST	Aboveground Storage Tank
ATA	American Trucking Association
BMP	Best Management Practices
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAFE	Corporate Average Fuel Economy
CAFO	Concentrated Animal Feeding Operation
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
CH	High Plasticity Clay
CL	Low Plasticity Clay
CMAQ	Congestion Mitigation and Air Quality
CN	Canadian National Railway
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COSA	Cost of Community Services Analysis
CWA	Clean Water Act
dBA	Decibel (A-Weight)
DOC	(U.S.) Department of Commerce
DOI	(U.S.) Department of Interior
DOT	(U.S.) Department of Transportation
DPM	Diesel Particulate Matter
EA	Environmental Assessment

EFO	Environmental Field Office
EIS	Environmental Impact Statement
E. Coli	<i>Escherichia coli</i>
EO	Executive Order
EPA	(U.S.) Environmental Protection Agency
ESA	Endangered Species Act
ETW	Exceptional Tennessee Waters
FAA	Federal Aviation Administration
FAF	Freight Analysis Framework
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FRA	Federal Railroad Administration
FRSA	Federal Railway Safety Act of 1970
FTA	Federal Transit Administration
FWS	(U.S.) Fish and Wildlife Service
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GWI	Ground Water Institute, University of Memphis
HAPs	Hazardous Air Pollutants
HCM	Highway Capacity Manual
HOP	Highway Occupancy Permit
HUC	Hydrologic Unit Code
ICC	Interstate Commerce Commission
ICCTA	Interstate Commerce Commission Termination Act
IMF	Intermodal Facility
IRIS	Integrated Risk Information System
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
LEED	Leadership In Energy And Environmental Design
L _{eq}	Energy-Equivalent Sound Level
L _{dn}	Day-Night Sound Level
LOS	Level Of Service

LWCF	Land And Water Conservation Fund
MCIDA	Marshall County Industrial Development Authority
MDAH	Mississippi Department Of Archives And History
MDES	Mississippi Department of Employment Security
MDEQ	Mississippi Department of Environmental Quality
MDOT	Mississippi Department of Transportation
MDWFP	Mississippi Department of Wildlife, Fisheries, and Parks
mph	Miles Per Hour
MPO	Metropolitan Planning Organization
MRP	Major Road Plan
MS4	Municipal Separate Storm Sewer System
MSATs	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	Noise Control Act
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organizations
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Services
NRHP	National Register of Historic Places
NHTSA	National Highway Traffic Safety Administration
NSR	Norfolk Southern Railway
NWSRS	National Wild and Scenic River System
O ₃	Ozone
ONRW	Outstanding National Resource Waters
Pb	Lead
PM ₁₀	Particulate matter less than or equal to 10 micrometers
PM _{2.5}	Particulate matter less than or equal to 2.5 micrometers

PHMSA	Pipeline and Hazardous Materials Safety Administration
PND	Pond
POM	Polycyclic Organic Matter
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-way
RPO	Regional Planning Organization
RSPA	Research and Special Projects Administration
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SARA	Superfund Amendments and Reauthorization Act
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SR	State Route
SPCC	Spill Prevention Control and Countermeasure
STB	Surface Transportation Board
STR	Stream
STIP	State Transportation Improvement Plan
STP	Sewage Treatment Plant
SWPPP	Storm Water Pollution Prevention Plan
TACIR	Tennessee Advisory Committee on Intergovernmental Relations
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TDOT ED	TDOT Environmental Division
TESA	Tennessee Environmental Streamlining Agreement
THC	Tennessee Historical Commission
TIH	Toxic Inhalation Hazards
TIP	Transportation Improvement Program
TMC	Turning Movement Counts
TMDL	Total Maximum Daily Load
TMSP	Tennessee Multi-Sector General Permit for the Discharge of Storm Water from an Industrial Activity
TNM	Traffic Noise Model
TRANSCAER	Transportation Community Awareness and Emergency Response

TEA-21	Transportation Equity Act for the 21 st Century
TPR	Transportation Planning Report
tpy	Tons per Year
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
UGB	Urban Growth Boundary
UIC	Underground Injection Control
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
US Hwy	U.S. Highway
UST	Underground Storage Tank
VMT	Vehicle-Miles Traveled
vpd	Vehicles per Day
VOC	Volatile Organic Compound
WIN	Workforce Investment Network
WTL	Wetland
WWC	Wet Weather Conveyance
WWTF	Wastewater Treatment Facility



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ENVIRONMENTAL COMMITMENTS

The project will be developed in accordance with all applicable laws and the Tennessee Department of Transportation's (TDOT's) *Standard Specifications for Road and Bridge Construction* and Norfolk Southern Railway Company (NSR) *Standard Specifications for Roadbed, Track and Structures*. TDOT specifications address sediment and erosion control and siltation; channelization; floodplains; construction impacts; utility relocation; and traffic maintenance and detours. Best Management Practices (BMP) will be stringently implemented throughout the construction period.

If the project is approved, NSR will utilize the following measures to avoid, minimize, and/or mitigate impacts to the human and natural environment associated with construction and implementation of Build Alternative 1.

- **Wetlands** – NSR will avoid wetlands where possible and minimize impacts to the extent practicable. However, wetlands within the footprint of the facility (7.31 acres) may be impacted by the proposed project. Unavoidable impacts to wetlands will be mitigated as required by permitting agencies. As on-site mitigation is impractical, NSR proposes to purchase wetland mitigation credits from the Wolf River Mitigation Bank at a 2:1 ratio.
- **Streams** – NSR will avoid streams where possible and minimize impacts to streams to the extent practicable. Streams within the footprint of the facility may be impacted by the proposed project. Based on the current design, 5,352 linear feet of stream channel may be impacted. Potential water quality impacts will be minimized through the implementation of BMP during both construction and operation of the facility. The unavoidable loss of stream channel will be offset through compensatory mitigation. NSR proposes to mitigate through Tennessee's stream mitigation in-lieu-fee program, which will ensure that appropriate stream mitigation is accomplished within the same watershed.
- **Floodplain** – NSR will incorporate the construction and maintenance practices outlined in the local floodplain practices, to the extent practicable, and do not anticipate floodplain impacts. For this project, NSR has adopted all construction and maintenance practices in Fayette County's floodplain management regulations.
- **Stormwater** - NSR will construct and implement a stormwater detention system that will provide adequate storage and treatment of stormwater runoff. Detention basins will be of adequate size and discharge pipes will include control valves to serve as spill prevention and protection devices in the unlikely event that a spill leaves the concrete pad area. The detention basins will be lined with at least a 12-inch thick layer compacted clayey soil to reduce infiltration. Appropriate BMP will be followed to minimize erosion, turbidity, and/or other potential impacts to streams. Degradation of waters will be avoided through the implementation of BMP and a site-specific Storm Water Pollution Prevention Plan (SWPPP).
- **Permits** – NSR will comply with all permitting requirements with respect to impacts to wetlands and streams, and as required by Sections 401, 402, and 404 of the Clean Water Act (CWA) as well as Tennessee's Aquatic Resource Alteration Permit (ARAP) program. Applicable permits include:

-
- USACE Individual or Nationwide Permit for Impacts to Waters of the U.S. (including wetlands and aquatic resources).
 - TDEC Aquatic Resource Alteration Permits (ARAPs) Individual or General Permit for Construction and Removal of Minor Road Crossings.
 - TDEC Aquatic Resource Alteration Permits (ARAPs) Individual or General Permit for Minor Alterations to Wetlands.
 - TN National Pollutant Discharge Elimination System (NPDES) Individual Stormwater Permit for Construction.
 - TN NPDES Construction General Permit (if needed).
- **Air** - To reduce potential air impacts of the facility to near-by residents, NSR will use ultra low-sulfur transportation grade diesel fuel (0.0015 percent sulfur) for NSR container and trailer handling equipment. NSR will use Tier 4 technology⁷ for the overhead lift cranes.
 - **Noise and Visual** – To reduce potential noise and visual impacts of the facility to near-by residents, NSR will to construct earthen berms along portions of the eastern and western sides of the facility as well as along portions of the western side of the lead track. Along the western edge of the proposed lead adjacent to the residences along Neville Road, NSR will construct a landscape berm where the top of the berm will be approximately 15-foot higher than the adjacent top of rail. Additional visual impacts will be controlled by using non-standard 70-foot tall light poles in areas requiring illumination with downward directed fixtures to reduce off-site impacts. To reduce potential construction impacts, NSR will implement standard noise and light controls and related BMP.
 - **Archaeological** – To reduce impacts if an unidentified archaeological site is found during construction, NSR will cease all construction activities in the immediate area where archaeological material is discovered. NSR will not restart construction activities in this area until appropriate clearances have been obtained. The Tennessee Division of Archaeology and any Native American tribes with interests in the area will be immediately contacted so that representatives may have the opportunity to examine and evaluate the archaeological material.
 - **Operational Measures** – To reduce operational impacts, equipment will be maintained and serviced only in the designated maintenance pad area and appropriate treatment systems and controls will be in-place and operational in accordance with applicable permit requirements. The facility will also be secured by fencing and close circuit monitoring to prevent vandalism and unauthorized site access. Facility staff will be properly trained on appropriate emergency response actions and protocols in the unlikely event of a hazardous materials spill and will have readily available the necessary contact information for Local,

⁷ The primary focus of the Tier 4 program is the transfer of catalyst based emission control technologies developed for on-highway diesel engines to nonroad engines. EPA Clean Air Nonroad Diesel - Tier 4 Final Rule, June 29, 2004.

State, and Federal emergency responders as well as emergency response contractor resources. Facility employees, working with NSR environmental staff and Local authorities, will have around the clock access to these emergency response resources. NSR will shift some of their domestic intermodal capacity from the Forrest IMF to the Memphis Regional IMF.



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1 PURPOSE AND NEED FOR ACTION

1.1. Introduction

The Norfolk Southern Railway Company (NSR) proposes to construct, own, and operate the Memphis Regional Intermodal Facility (Memphis Regional IMF) to improve freight transportation capacity in the Memphis, Tennessee region. The additional capacity is needed to meet growing freight demand. Anticipated benefits of the project include reducing highway congestion, improving highway safety, and providing energy efficient alternatives for current and future freight transportation.



In February 2010, Tennessee was awarded funds to support the development of this project from the U.S. Department of Transportation, Transportation Investment Generating Economic Recovery (TIGER) Program as part of the American Recovery and Reinvestment Act (ARRA) of 2009. This project is subject to the requirements of the National Environmental Policy Act of 1969 (NEPA) as a result of this funding.⁸ The U.S. Department of Transportation (DOT), Federal Railroad Administration (FRA) and Tennessee Department of Transportation (TDOT) are the lead agencies for the proposed project. The DOT Federal Highway Administration (FHWA), Mississippi Department of Transportation, and U.S. Army Corps of Engineers (USACE) are Cooperating Agencies. This Environmental Assessment (EA) was prepared to comply with NEPA requirements.⁹ NEPA requires that projects receiving Federal funding or requiring Federal actions (e.g., permits) undergo an environmental review process. An EA is prepared if it is unknown whether a project has the potential to significantly impact environmental resources. If the EA identifies potentially significant impacts, then an Environmental Impact Statement (EIS) must be prepared.

An EA identifies alternatives that meet the project's purpose and need, which may include identifying a preferred alternative; may provides an assessment of effects both positive and negative on the natural and built environment of the alternatives selected to move forward in NEPA; and identifies measures to avoid, minimize, or mitigate negative effects.

⁸ 42 United States Code (U.S.C.) Sections 4321-4347.

⁹ Council on Environmental Quality (CEQ), *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, 40 Code of Federal Regulations (C.F.R.) Parts 1500-1508; TDOT, Tennessee Environmental Procedures Manual: Guidelines for Preparing Environmental Documentation for Federally Funded and State Funded Transportation Projects, April 2007.

The purpose of the EA is to disclose the effects of a project at a stage in the development process when decision-making can still be shaped by the environmental analysis and by the comments of agencies and public reviewers. If it is determined the proposed project would not have a significantly adverse effect on the environment, then each involved Federal agency taking an action regarding the project would issue a Finding of No Significant Impact (FONSI).

NEPA requires that one or more Federal agencies (lead agencies) take responsibility for overseeing the environmental review process. For the preparation of the EA for the Memphis Regional IMF project, the FRA is serving as the lead Federal agency. TDOT serves as the lead State agency.

1.2. Project Background

Intermodal freight transportation is a method of moving freight from origin to final destination using two or more transportation modes. Intermodal improves transportation efficiency by allowing for the most efficient mode of transport for each segment of a shipment of goods in a trailer or container.¹⁰ For the proposed project, freight shipments would use rail for long distances and highway for local pick-ups and deliveries.

An intermodal facility (IMF) is a terminal for transferring freight from one transportation mode to another, in this case between trains and trucks, without handling of the freight itself when changing modes. Figure 1-1 illustrates the basic freight transportation process via intermodal methods.

The FHWA Freight Analysis Framework (FAF) forecasts that the tons of freight transported will likely almost double by 2035 from its 2006 level.¹¹ The FAF identified primary drivers of this growth as economic activity, population, and international shipments.

During the 1980 to 2005 period, gross domestic product (GDP) doubled and foreign trade quadrupled reflecting an unprecedented growth in global interconnectivity. The U.S. population grew by 30% from 1980 to 2005.¹² In particular, population in the Southern region of the U.S.



¹⁰ John Frittelli, "Intermodal Connectors: A Method for Improving Transportation Efficiency?," (Washington D.C.: Congressional Research Service, 2003).

¹¹ FHWA, "Freight Analysis Framework, Version 2.2", 2002 http://ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm

¹² U.S. Census Bureau, "The 2010 Statistical Abstract, The National Data Book," 14 Dec 2009, <http://www.census.gov/compendia/statab/>

grew by 45%.

Figure 1-1: Intermodal Facility Operations



According to FHWA analysis, intermodal transportation would grow at a faster rate than other transportation methods, except for air.¹³ Intermodal growth is also driven by factors such as highway congestion, fuel prices, and labor pool, as well as improvements in shipping services and efficiencies between different transportation modes.

With the current economic downturn, the transport of trailers or containers by rail in the first 49 weeks of 2009 was down nationally approximately 15% from 2008.¹⁴ In the Memphis area, the existing NSR Forrest IMF operational data indicate only an 11% decrease for the same approximate time frame. In addition, the Association of American Railroads (AAR) continues to predict that intermodal freight transport will see growth in the years ahead.¹⁵



1.3. The Need for the Proposed Action

Existing infrastructure is not adequate to serve future transportation capacity needs in the Memphis region. Figure 1-2 depicts the density of highway freight movement

¹³ FHWA, Office of Freight Management and Administration, "Freight Facts and Figures 2007," (Washington D.C.: FHWA).

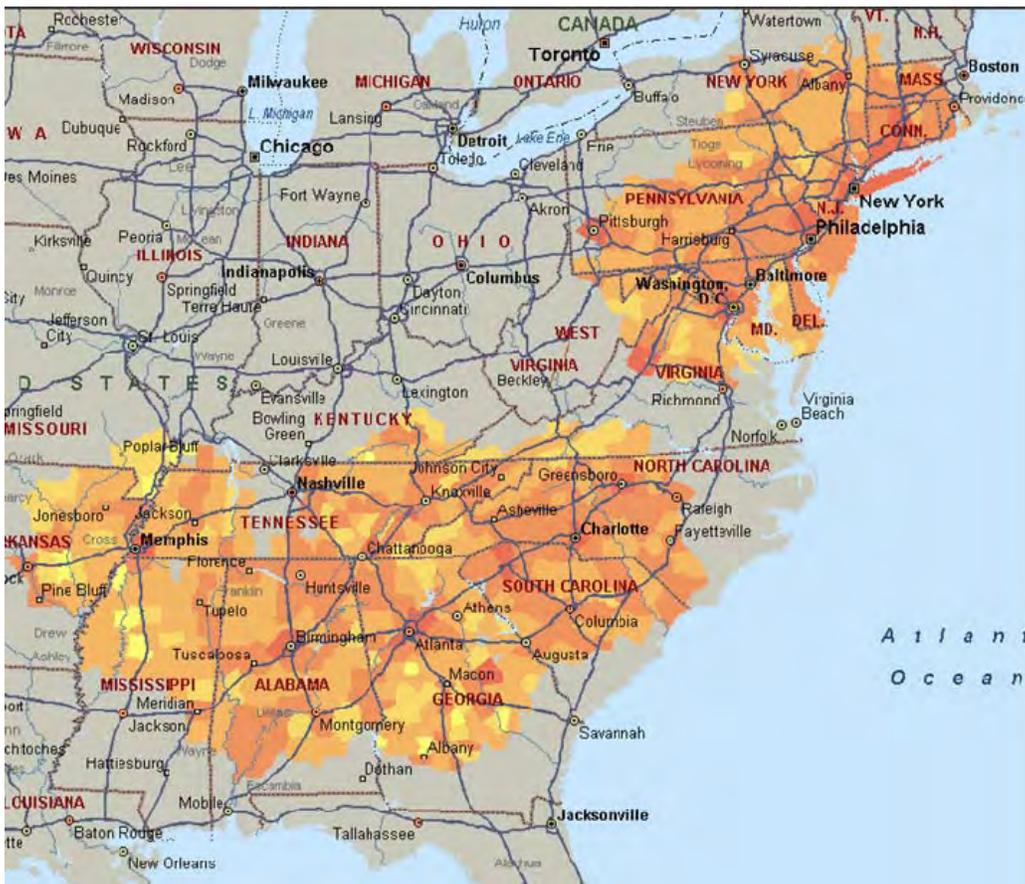
¹⁴ AAR, "AAR Reports Weekly U.S. Rail Freight Traffic Remains Down," 17 Dec 2009 http://www.aar.org/NewsAndEvents/PressReleases/2009/12_WTR/121709_RailTraffic.aspx.

¹⁵ AAR, November 2009.

between the central southeast and the northeast. The darker sections show areas of higher density of freight movements.¹⁶ As indicated, a freight transportation bottleneck exists between the Memphis region and the Northeast U.S. The Memphis Regional IMF would help alleviate this bottleneck with its increased intermodal service capacity. To meet the increased demand for capacity, NSR estimates a need for a new facility that can perform 327,000 annual lifts of containers and trailers between trucks and trains.¹⁷



Figure 1-2: Density of Highway Freight Movement



The estimated number of required annual lifts for the Memphis Regional IMF is based on the following NSR annual projections:

- To convert 187,000 truckloads from highway to rail, consisting of 54,000 truckloads coming to the Memphis area from the Northeast U.S. and 133,000 truckloads going to the Northeast U.S.

¹⁶ NSR, "Form: 8-K," 12 Jun. 2007, http://google.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?SessionID=Ya3uWJ3XXzYY1uh&ID=5241016.

¹⁷ In this context, a "lift" is a trailer or container loaded to a rail car or unloaded from a rail car.

from the Memphis area.¹⁸

- To handle 79,000 annual empty trailer and container movements from the eastern and Northeastern U.S. in the Memphis area.¹⁹

The new 266,000 trailers and containers identified above, combined with some existing rail traffic volume creates the 327,000 lift capacity requirement. This projected requirement is approximately 2-½ times the capacity of the current NSR Forrest Intermodal Facility (Forrest IMF) located in Memphis.

Based on a regional economic benefits study, the freight transportation demand in the area and the Memphis Regional IMF can contribute to a cumulative economic impact of \$2.7 billion by 2020, and to employment growth of 6,186 new or benefited jobs in the same period.²⁰ New or benefited jobs are estimated based on employment data from existing NSR IMFs in other locations. Figure 1-3 illustrates potential economic impacts based on the IMF being located in Fayette County.²¹

In analyzing economic benefits:

- **“At Risk”** means that without intermodal service, a type of business is not likely to remain competitive in the Fayette County / Marshall County area. Such a business is not likely to remain or locate in the first place in the region without the competitive advantage that specialized rail logistics can provide.

- **“Benefited Business” or “Benefited Industrial Expansion”** means that intermodal service may be an option for these types of companies that can allow them to grow or be more profitable than they would be otherwise.

Figure 1-3: Economic Impacts – Fayette County Intermodal Facility

KEY FINDINGS - NSR FAYETTE COUNTY INTERMODAL ACTIVITY			
Annual Economic Impact at 2020			
NSR Fayette Co. Intermodal Only			\$66.7 Million
At Risk and Benefited Industrial Expansions			<u>\$247.9 Million</u>
Total			\$314.6 Million
Cumulative Economic Impact 2009-2020			
Intermodal Facility Only			\$0.86 Billion
At Risk and Benefited Industrial Expansions			<u>\$1.85 Billion</u>
Total			\$2.71 Billion
Employment Impact of NSR Intermodal at 2020			
	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>
Proposed Intermodal	429	497	926
At Risk and Benefited Industrial	<u>2,413</u>	<u>2,847</u>	<u>5,260</u>
Total	2,842	3,344	6,186
Annual Payroll by 2020			
Intermodal Facility Only			\$21.6 Million
At Risk and Benefited Industrial Expansions			<u>\$72.4 Million</u>
Total			\$94.0 Million
Copyright 2009, Insight Research Corporation, 9441 LBJ Freeway, Lock Box 20, Dallas, TX 75243			

¹⁸ NS Technical Memo, Subject Memphis Regional Intermodal Facility –Traffic Growth Forecast dated January 15, 2010.

¹⁹ NS Technical Memo, Subject Memphis Regional Intermodal Facility –Traffic Growth Forecast dated January 15, 2010.

²⁰ Insight, May 2009.

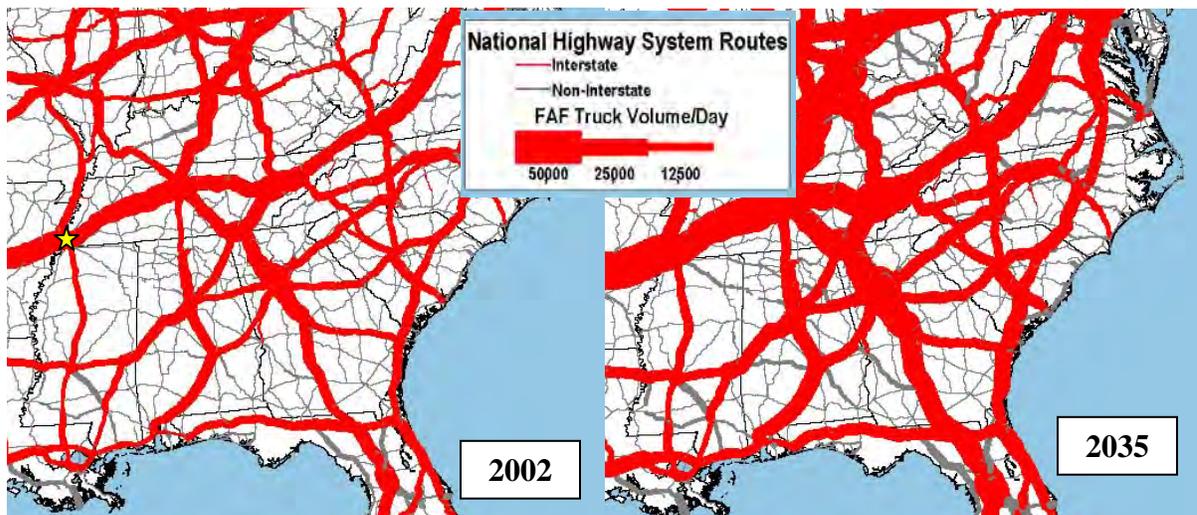
²¹ Insight, May 2009.

Diverting cargo transport from highway to rail would reduce future truck traffic by an estimated 186 million loaded truck vehicle miles per year on highways between Memphis and the Northeast, which is anticipated to contribute to improved public safety and air quality through reduced highway congestion.²² Reduction in highway congestion is a key factor in increasing safety on roads. A quarter of congestion problems are caused by traffic incidents such as crashes, stalled vehicles, and debris on the road.²³ The AAR estimates that on average, moving freight by rail as compared with moving freight by truck reduces greenhouse gas (GHG) emissions by 75%. Therefore, if just 10% of the long-distance freight moving by truck transferred to rail, annual GHG emissions would decline by more than 12 million tons.²⁴



As illustrated in Figure 1-4, FHWA predicts increases in daily long-haul truck traffic on the I-40 and U.S. Highway 78 corridors across Tennessee and Mississippi from 2002 to 2035.²⁵

Figure 1-4: Average Daily Long-Haul Truck Traffic on National Highway System



The long-haul truck productivity has decreased since 2002 due to a number of factors including congestion, fuel costs and regulation changes.²⁶ The Memphis Regional IMF would transfer highway cargo to rail cargo at an estimated rate of 327,000 lifts annually, reducing the number of required long-haul trucks. A train loaded with containerize

²² *Analysis of Truck to Rail Diversion Benefits – Memphis*, Cambridge Systematics, Inc., January 20, 2010..

²³ FHWA, “Describing the Congestion Problem,” 8 Jun, 2009 http://www.fhwa.dot.gov/congestion/describing_problem.htm.

²⁴ AAR, November 2009.

²⁵ FHWA, CMQ and Intermodal Freight Transportation, Oct 2005, <http://www.fhwa.dot.gov/environment/cmaqpgs/intermodal/index.htm>.

²⁶ ATA, “Truck Weights and Lengths: Assessing the Impacts of Existing Laws and Regulations,” 9 Jul 2008.

freight can carry equivalent to about 280 trucks loaded with freight. This estimated annual lifts would be equivalent to 1,167 trains annually. The Memphis Regional IMF would reduce the rate of increase in long-haul truck traffic on congested highways, thus reducing damage to highways from heavy trucks and improving air quality.²⁷

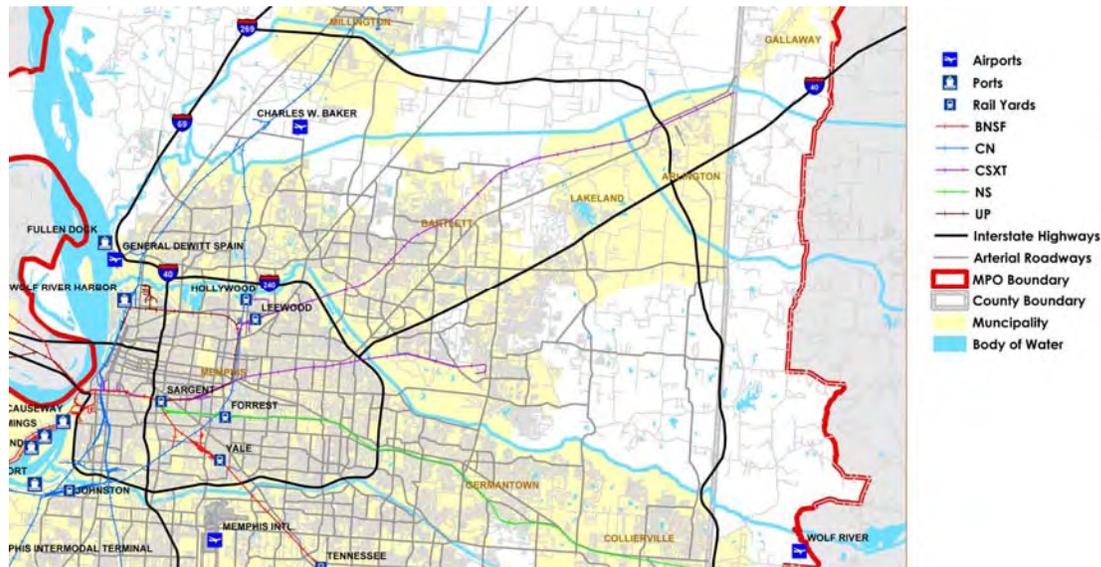
1.4. Project Purpose

The primary purpose of the proposed Memphis Regional IMF project is to meet current and future demand for intermodal (rail/truck) transportation in the Memphis region through available expanded capacity. NSR would build, own, and operate the Memphis Regional IMF. Its location relative to projected future growth in the Memphis area is a critical component to satisfy the project's purpose.

1.5. Consistency with Plans

Figure 1-5 provides an overview of the freight transportation infrastructure components in the Memphis area.²⁸

Figure 1-5: Memphis Area Freight Transportation Components



The *Memphis Urban Area 2030 Long-Range Transportation Plan* indicates that the NSR Memphis rail line is a rail traffic congestion bottleneck in the NSR network providing justification for the proposed facility in the Memphis region. “Bottleneck” in this context is an area

²⁷ FHWA, “CMQ and Intermodal Freight Transportation,” Oct 2005, <http://www.fhwa.dot.gov/environment/cmaggps/intermodal/index.htm>.

²⁸ Memphis and Shelby County Department of Regional Services, “Memphis MPO Transportation Plans, Data and Maps,” 23 Dec 2009 [http://www.dpdgov.com/\(3wxqzd55akajl435hhijn55\)/RS/RS_content.aspx?id=305](http://www.dpdgov.com/(3wxqzd55akajl435hhijn55)/RS/RS_content.aspx?id=305).

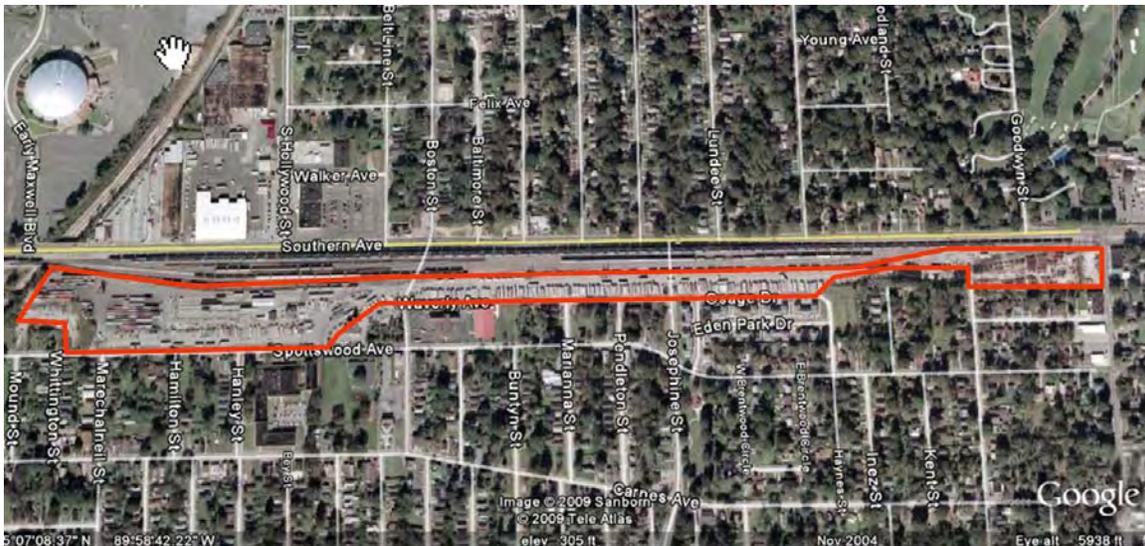
of rail traffic congestion caused by a restriction in capacity. National congestion estimates indicate that bottlenecks account for 40% of traffic congestion.²⁹

The TDOT I-40/I-81 Corridor Feasibility Study dated April 2008 discusses how freight movement and intermodal facilities could reduce congestion in this corridor.³⁰ NSR proposes to construct the Memphis Regional IMF to address the projected future freight transportation needs in the Memphis region. This project is consistent with State, regional, and local planning efforts.

The existing NSR Forrest IMF located within the Memphis city limits, is operating at or over its design capacity. The Forrest IMF performed 130,198 intermodal lifts in 2008, approximately twice its 1998 volume. The lack of capacity has prevented NSR from pursuing additional freight haulage opportunities. Physical space limitations prevent expansion of the Forrest IMF and thus restrict any further increase in volume. Expansion of the Forrest IMF is not feasible because the site is bounded by Spottswood Avenue on the south and the NSR mainline and a city street on the north, Figure 1-6.³¹ The entire area is within an urban setting.



Figure 1-6: Existing NSR Forrest Yard IMF Aerial



For efficiency, intermodal operations prefer to lift a container or trailer from a railcar and place it directly on a trailer chassis. The container or trailer is then parked in

²⁹ Cambridge Systematics, Inc., "Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation, prepared for the Federal Highway Administration," 1 Sept 2005.

³⁰ TDOT I-40/I-81 Corridor Feasibility Study Task 3.0 Multi-Modal Solutions, Technical Memorandum, April 2008.

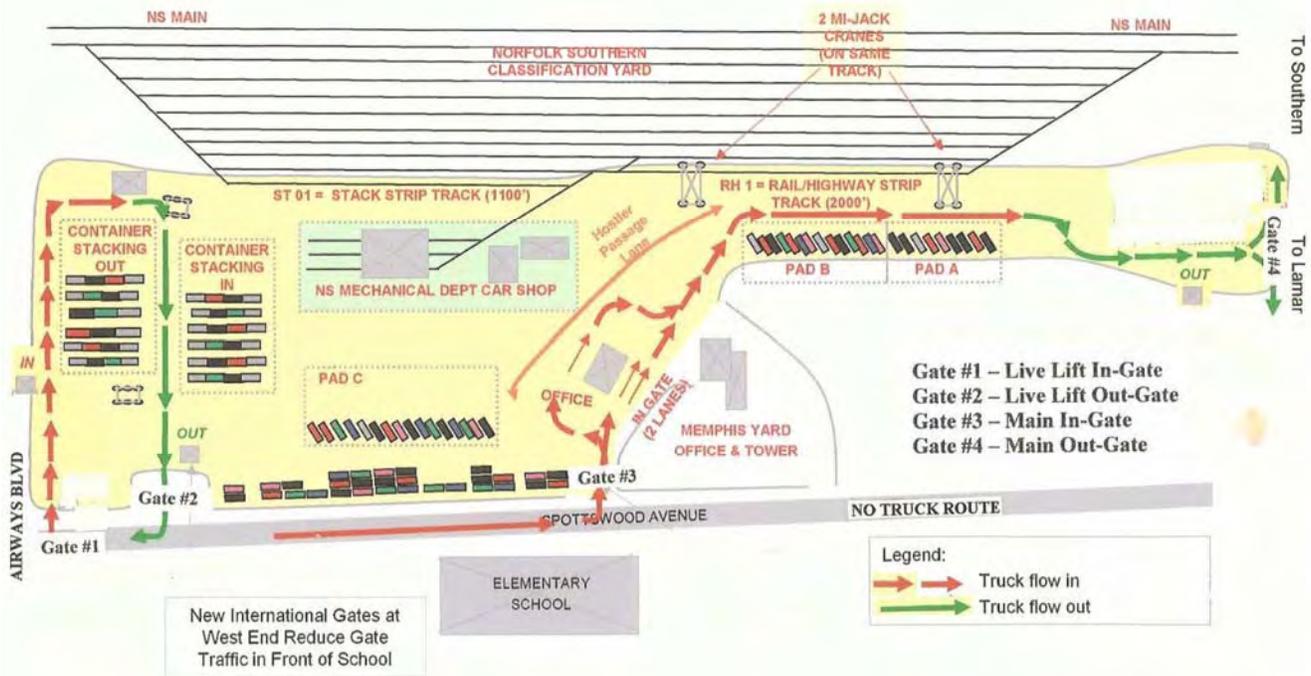
³¹ Base map from Google Earth, 8 Jul 2008, <http://earth.google.com/>.

the adjacent terminal parking lot awaiting truck pick-up. In reverse, when a container or trailer is delivered by truck, the preferred operation is to lift the trailer or the container from the trailer chassis and place it directly on the train. The trucks retrieving or delivering containers or trailers to the IMF can arrive at any time of the day.



At the Forrest IMF (Figure 1-7), the current freight volume has been achieved through various expensive and inefficient maneuvers including:

Figure 1-7: Forrest IMF Work Layout



- **Stacking Containers.** Containers are unloaded and then stacked on the ground up to three high until they are lifted again to be placed on chassis so they can leave the facility. Stacking containers increases the number of containers which can be stored in an area, but increases the energy consumption, time, and cost by requiring containers to be handled multiple times when moving them.
- **Off-site Parking.** In 2008, a total of 14,600 containers and trailers were unloaded from rail cars, placed on chassis and immediately moved 2.5 miles via city streets to a 7.3-acre satellite parking lot (1516 Rozelle Street) where they were held until customer pickup, as shown in Figure 1-8.³² This



³² Address from NSR Intermodal. Base map from Google Earth, 8 Jul 2008 <http://earth.google.com/>.

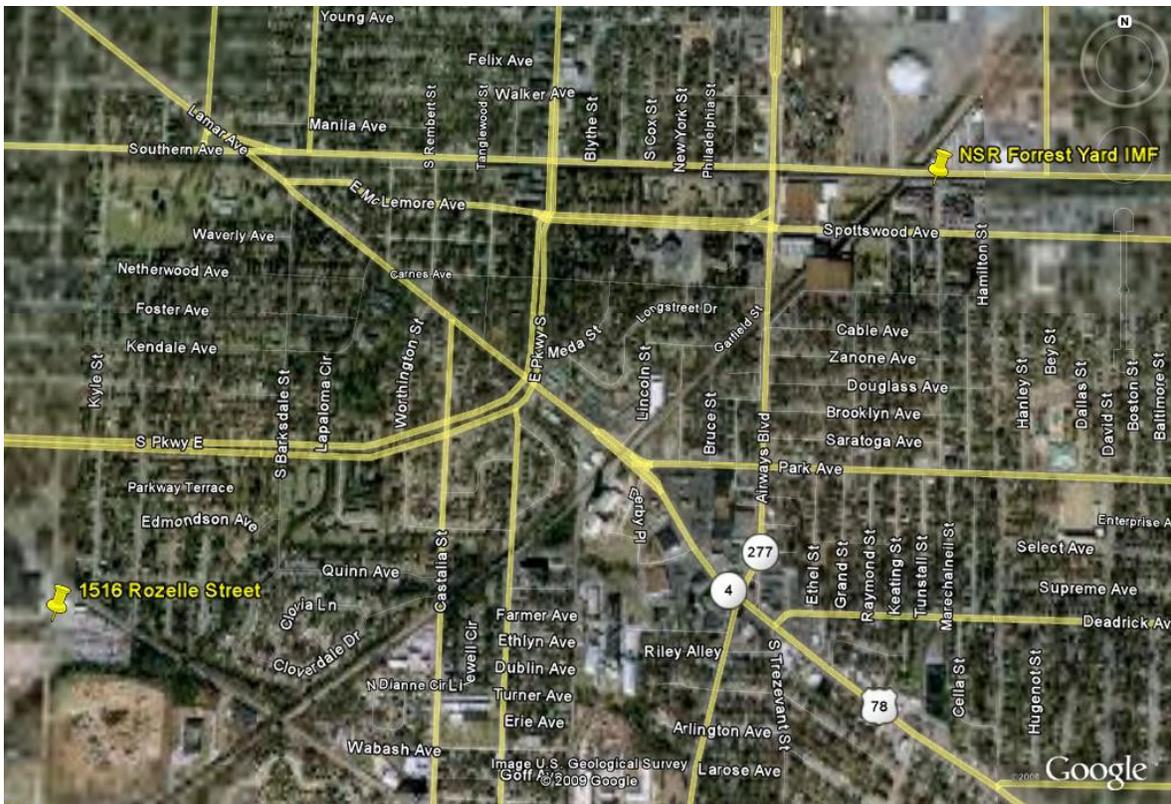
increases the container and trailer storage area, and increases operational costs due to transport to the off-site parking lot and due to having to own, operate, and maintain the satellite parking lot. Transferring these trailers and containers to off-site parking along city streets also results in increased safety and congestion problems surrounding the facility.

- **Off-site Rail Car Storage.** Empty rail cars to be loaded at Forrest IMF are stored on a weekly basis in various sidings 110 to 125 miles away awaiting loading later in the week at the Forrest IMF. This lack of track capacity at Forrest IMF increases energy consumption and cost since additional car handling and train movements are required to store the cars at a distant location.



The above constraints and inefficiencies prompted NSR to begin developing plans for a new IMF in the Memphis region to meet capacity demand. The target area for locating the new IMF has been in Fayette County, Tennessee, southeast of Memphis.

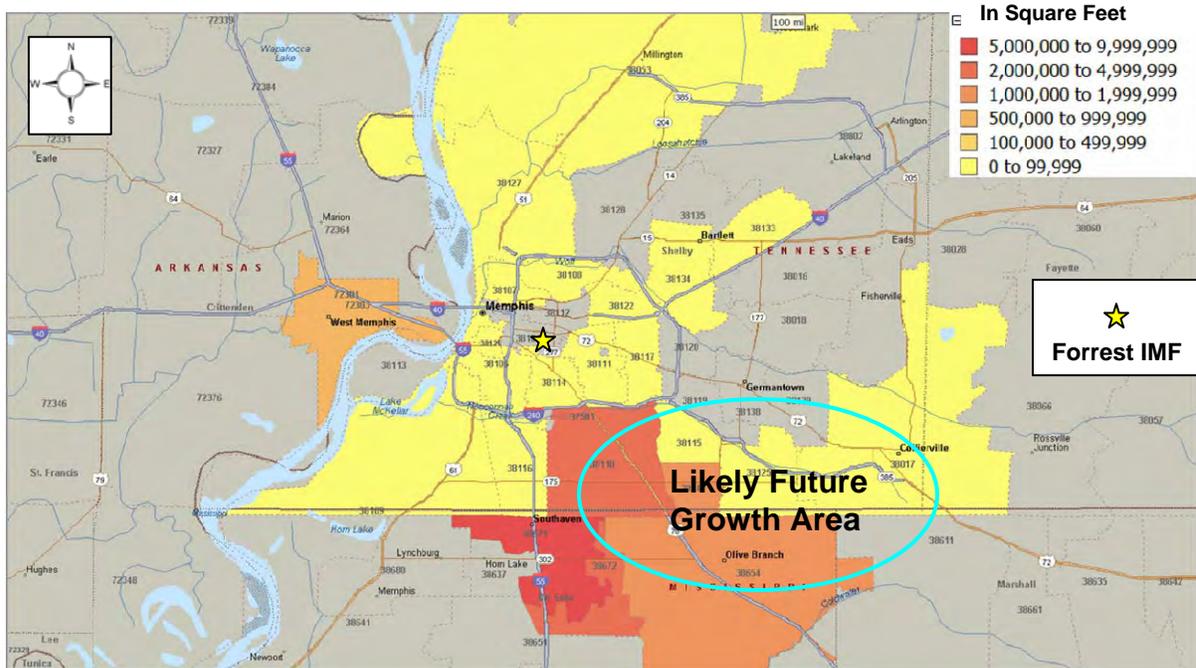
Figure 1-8: Location of Satellite Parking Lot near Forrest IMF



The existing NSR mainline traverses southern Fayette County. This rail line is NSR’s only route in the Memphis region. Figure 1-9 shows warehouse development trends in the region since 2002, illustrating growth in development south and east of Memphis.³³

Locating the Memphis Regional IMF near the areas of projected warehouse and industrial growth is essential for developing an efficient rail intermodal freight service alternative to highway freight transport and is therefore a critical component to satisfy the project’s purpose.

Figure 1-9: Warehouse Square Footage Constructed Since 2002 by Zip Code



1.6. Purpose and Need Conclusion

With existing limitations on freight transportation capacity and the projected doubling of intermodal traffic in the Memphis area, larger and more efficient intermodal facilities need to be constructed. The Memphis Regional IMF would allow for the efficient movement of goods to and from the Northeastern U.S. by creating additional IMF capacity in the Memphis region. An additional benefit of the conversion of truck traffic to rail is the reduction of highway congestion, wear and tear on roads, carbon emissions, and traffic accidents.

³³ Modalgistics using data from CB Richard Ellis.

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2 ALTERNATIVES

A number of potential build alternative locations were studied for the Memphis Regional IMF. This section summarizes the process used to select the build alternative locations to bring forward in the EA. As required by NEPA and applicable regulations, reasonable alternatives must be reviewed and a Build Alternative(s) and a No-Build (or No Action) Alternative must be fully evaluated in the EA. In addition, alternatives that were identified and considered, but did not meet the Purpose and Need for the project and/or resulted in potential impacts that were substantially greater than other build alternatives are briefly discussed.

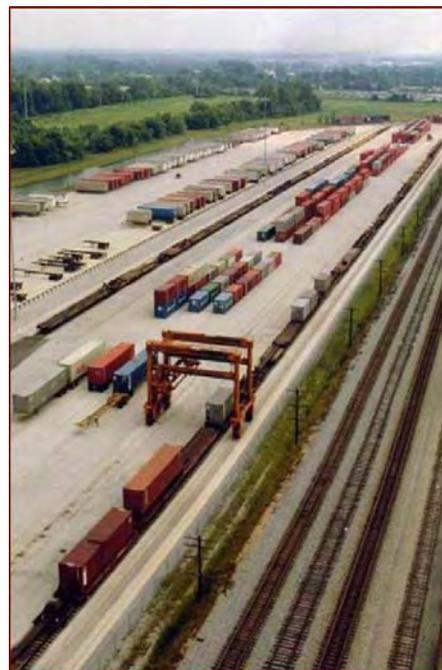
2.1 Proposed Action

NSR would build, own, and operate the Memphis Regional IMF. To meet the operational requirements, the following main components needed are:

- Tracks connecting the Memphis Regional IMF site to the NSR mainline;
- Six-4,050 foot long pad tracks;
- Support yard with 34,500 feet of track;
- Paved areas for parking approximately 2,200 trailers and containers on chassis;
- Administration, maintenance, and operations buildings; and
- Equipment maintenance pad and other related facilities.

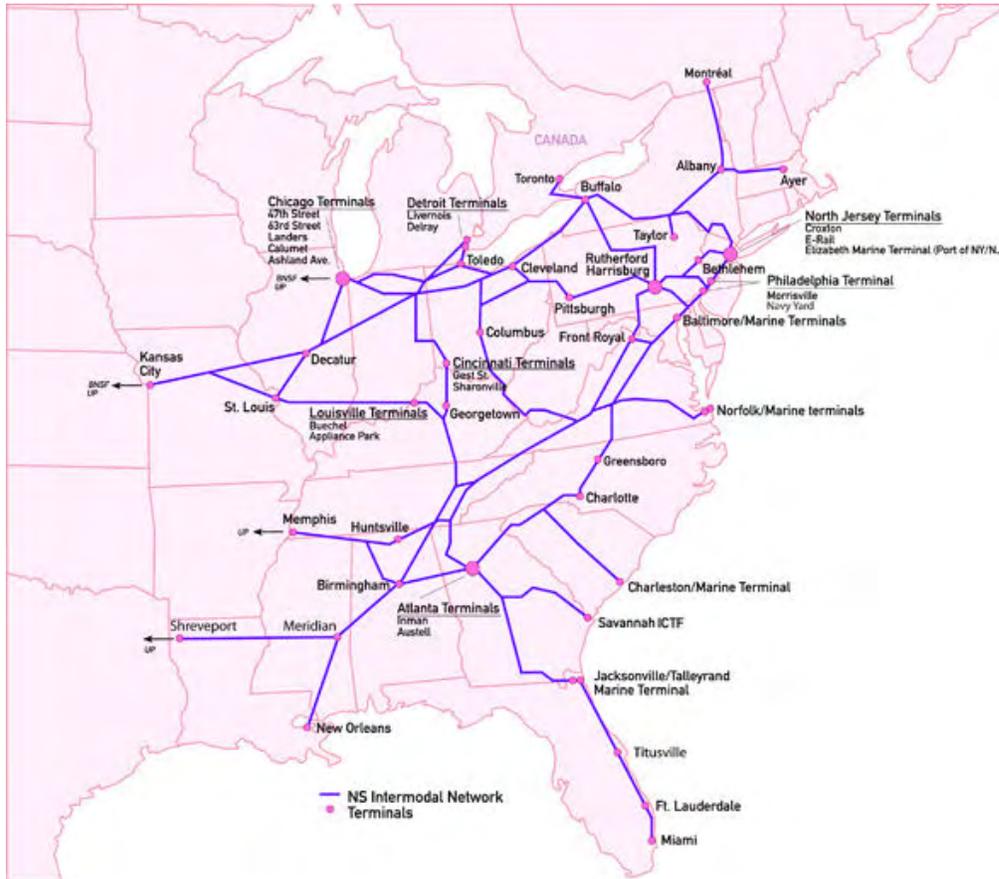
A suitable location is a critical requirement to satisfy the Memphis Regional IMF purpose and need. In locating potential facility site in the Memphis region in the Memphis region, NSR reviewed the freight volumes (Figure 1-2), the warehouse growth areas (Figure 1-9), and the existing NSR rail system (Figure 2-1³⁴).

The area reflecting this growth and potential demand for improved intermodal facilities was found to be south and east of Memphis as reflected in the primary area of interest, as shown in Figure 2-2.



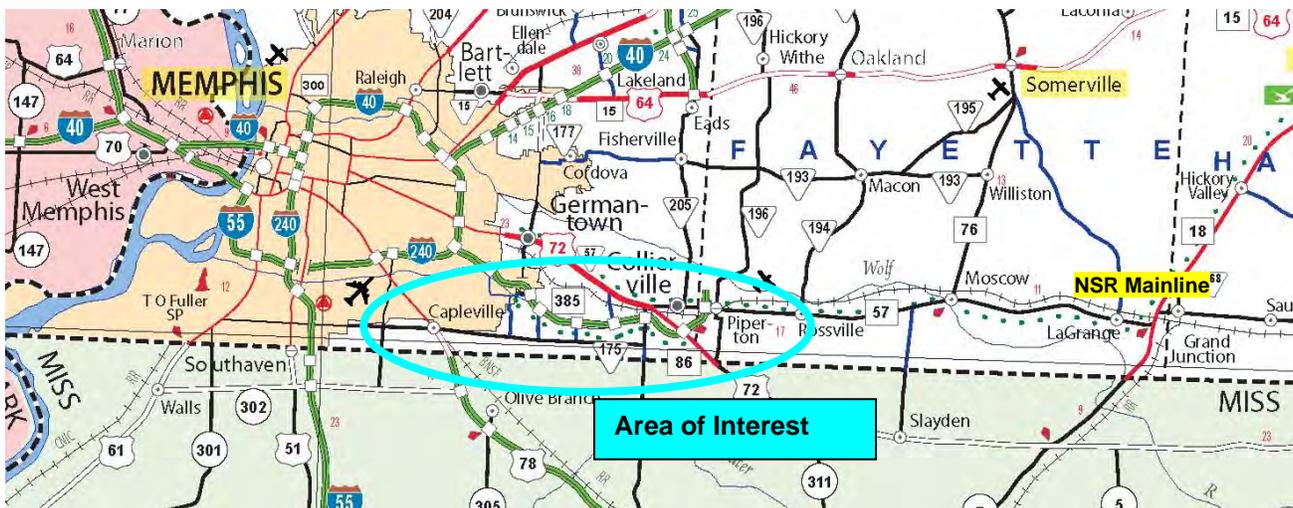
³⁴ NSR, "Intermodal System Map," http://www.nscorp.com/nscintermodal/Intermodal/System_Info/Terminals/.

Figure 2-1: NSR Intermodal System



Within this area of interest, NSR conducted a more detailed analysis for locations that would meet these market demands and were sufficiently close to the existing NSR mainline.

Figure 2-2: Area of Interest



Ultimately, NSR focused on the area shown in Figure 2-3. The review also considered other criteria important to a safe, environmentally sound, and efficient operation. Such criteria included avoidance or minimization of impacts to natural resources, sufficient land, proximity to NSR mainline and highway infrastructure, and other efficiency factors. These criteria are outlined below and applied to each alternative in Section 2.3.

Figure 2-3: Focus Area



- **Sufficient Land.** Sufficient land is necessary to develop a facility, which can meet intermodal demand and support the infrastructure, operations, and storage requirements. The site needs to be a rectangular tract consisting of approximately 380 useable acres (approximately 7,000 feet long by 2,400 feet wide).
- **Proximity to Rail Infrastructure.** The project must be located near the NSR mainline, as shown on Figures 2-2 and 2-3.³⁵ The proposed location on the southeast side of Memphis would reduce rail transit time along the NSR's mainline into the Memphis.
- **Proximity to Highway Infrastructure.** The proposed site must be located in proximity to adequate highway infrastructure. In Tennessee, the NSR rail line parallels State Route (SR) 57 (Figures 2-2 and 2-3). SR-57 is designated as a rural minor arterial. The closest U.S. Highway or Interstate to the



³⁵ Base map for Figure 2-2 and 2-3 from TDOT, Official Tennessee Transportation Map.

planned project is U.S. Highway (US Hwy) 72, which is designated as a rural principle arterial. This roadway, combined with completion of SR-385³⁶ and the potential for I-69/I-269³⁷ around Memphis, provides favorable highway routes for the Fayette County location.

- **Location.** The proposed IMF must be located in an area convenient for industrial and commercial economic activities. The facility's projected customer base is generally moving eastward and southward from the Memphis metropolitan area. Locating the new facility southeast of Memphis matches this growth pattern. Specific areas reviewed fall within the Rossville Urban Growth Boundary (UGB) (Figure 2-4).³⁸



By using the above criteria, the IMF should be able to realize the goals of efficiency and transportation optimization.³⁹ To narrow the alternative locations for the Memphis Regional IMF, NSR developed criteria against which to review the alternatives. Table 2-1 summarizes these screening criteria and the rationale used to rank the various alternatives. For an alternative to be considered viable, the first four criteria must be met. The remaining criteria affect the evaluation of each alternative based on the relative impact they impose compared to other alternatives.

The table lists the primary distinguishing criteria based upon information available for each alternative to date. As appropriate pursuant to the NEPA, a full analysis will be addressed in subsequent sections of this document.



³⁶ TDOT SR-385 website, <http://www.tdot.state.tn.us/sr385/>.

³⁷ TDOT, "Newsletter #7 Alignment Selected For I-69, Section 9 From Hernando, MS To Millington, TN," December 2004 <http://www.tdot.state.tn.us/i69/segment9/newsletters/1204.pdf>.

³⁸ Fayette County Tennessee, "Fayette County Growth Plan Map," August 2003, <http://www.fayettetn.us/FC%20Growth%20Plan%202.htm>.

³⁹ DOT, NHS Intermodal Freight Connectors; A Report to Congress, December 2000.

Figure 2-4: Fayette County Growth Plan

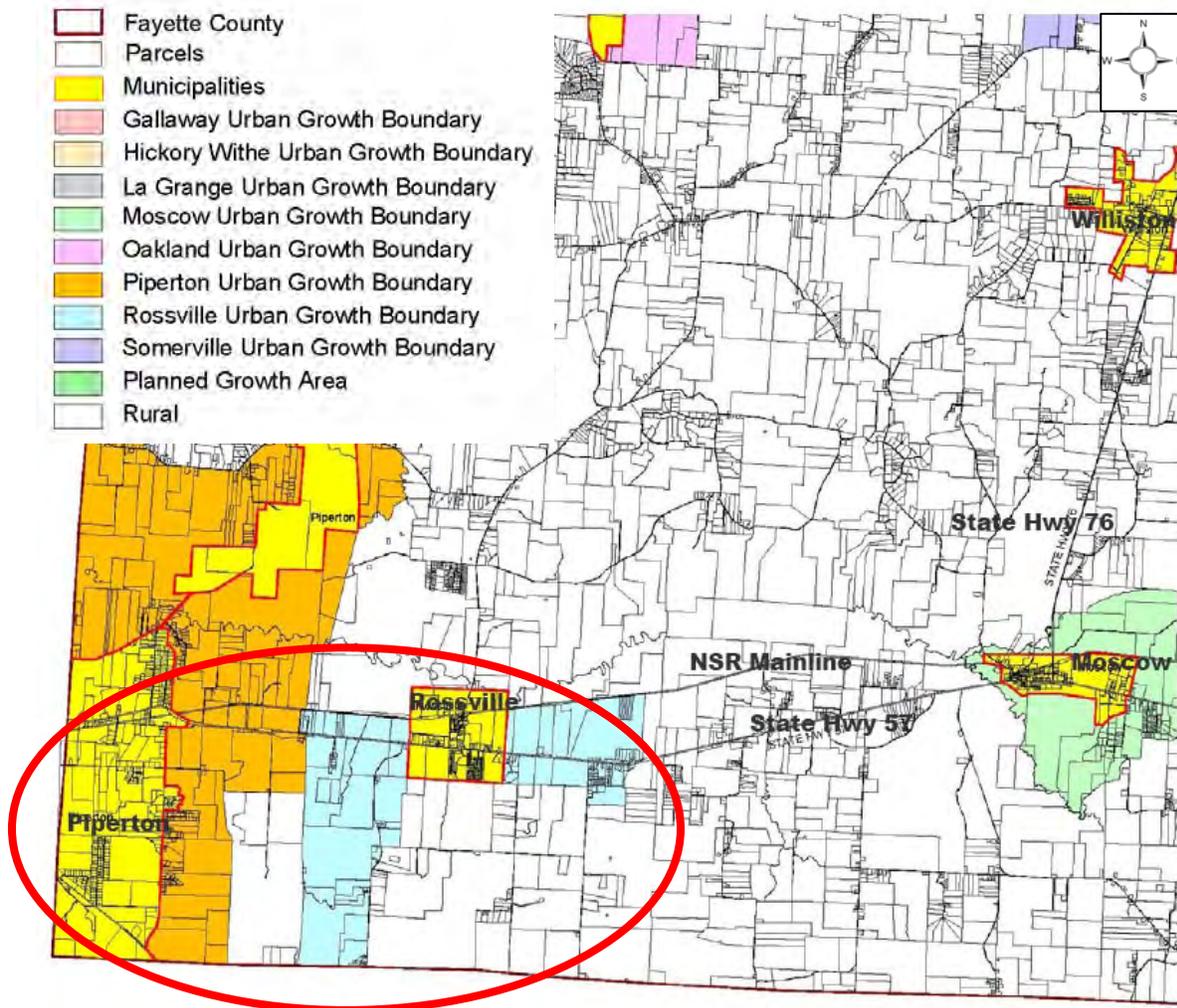


Table 2-1: Site Selection Screening Criteria

1*	Sufficient Land: Alternative must have sufficient land to allow for construction of suitably-sized facility with appropriate shape and configuration.
2*	Proximity to NSR Rail Infrastructure: Alternative must be located near NSR mainline to facilitate efficient rail access.
3*	Proximity to Highway Infrastructure: Alternative must be located in proximity to an adequate highway network. Sites must have adequate infrastructure and be able to accommodate expected IMF traffic.

Table 2-1: Site Selection Screening Criteria

4*	Location: Alternative must be a location that can efficiently serve industrial and commercial growth and be compatible with existing or proposed land use in the area.
5	Natural Resources Impacts: Alternative should avoid and/or minimize impacts to natural resources. Sites that have adverse impacts that cannot be mitigated would be considered less desirable.
6	Cultural, Historic, and Social Resource Impacts: Alternative should avoid and/or minimize impacts to cultural, historical, and socioeconomic resources. Sites that have impacts that cannot be mitigated would be considered less desirable.

* Denotes criteria that must be clearly met for an alternative to be considered viable.

2.2 No-Build Alternative

The No-Build Alternative represents future conditions in the project area without increasing intermodal capacity. The No-Build Alternative serves as the benchmark against which the proposed Build Alternatives are compared. Adopting the No-Build Alternative means NSR would have to continue to use the existing Forrest IMF in Memphis without modification or expansion. Growth in the freight market would be met by increased highway truck traffic rather than increased rail-truck intermodal service. Without adequate rail-truck intermodal service, some industries would be less likely to locate in the area thus hampering overall economic growth. Intermodal operations can increase transportation efficiency, reduce emissions including Greenhouse Gas (GHG) emissions, and improve energy efficiency as freight transport by rail is approximately three and a half times more fuel efficient than transport by trucks.⁴⁰ With the No-Build Alternative, no increase in these benefits from a larger and more efficient IMF would be realized.

The No-Build Alternative would not cause any immediate direct impacts to the human or natural environment in the project area. However, the No-Build Alternative would fail to satisfy the demand for much needed additional IMF capacity within the Memphis region. A NSR regional truck demand study⁴¹ identified a substantial demand for increased intermodal service between the Memphis region and the Northeast. Using the existing Forrest Yard IMF and/or other existing IMFs in other regions would not

⁴⁰ AAR 2009, November 2009.

⁴¹ NS Technical Memo, Subject Memphis Regional Intermodal Facility –Traffic Growth Forecast dated January 15, 2010.

adequately support the Memphis market.⁴² Therefore, the No-Build Alternative does not meet the Purpose and Need of the undertaking.

2.3 Build Alternatives Considered in the Planning Process

Between 2003 and 2009, six alternatives were evaluated for the Memphis Regional IMF project:

- Alternative 1 – Memphis Regional IMF (Build Alternative 1)
- Alternative 2 – East Rossville IMF (Windyke Property)
- Alternative 3 – Expand Forrest IMF
- Alternative 4 – IMF on Vulcan Property
- Alternative 5 – IMF on Pictsweet Property
- Alternative 6 – Intermodal Gateway at Memphis Pidgeon Park



Figure 2-5 shows the location of alternatives that were considered. Alternatives 3 and 6 are within Shelby County, inside Memphis. The remaining four alternatives are in Fayette County as shown in Figure 2-6. All of the build alternatives considered would require construction of a new intermodal facility of a similar size and design, capable of meeting the operational requirements detailed in Section 2.1. A more detailed description of these alternatives is provided in the following sections.

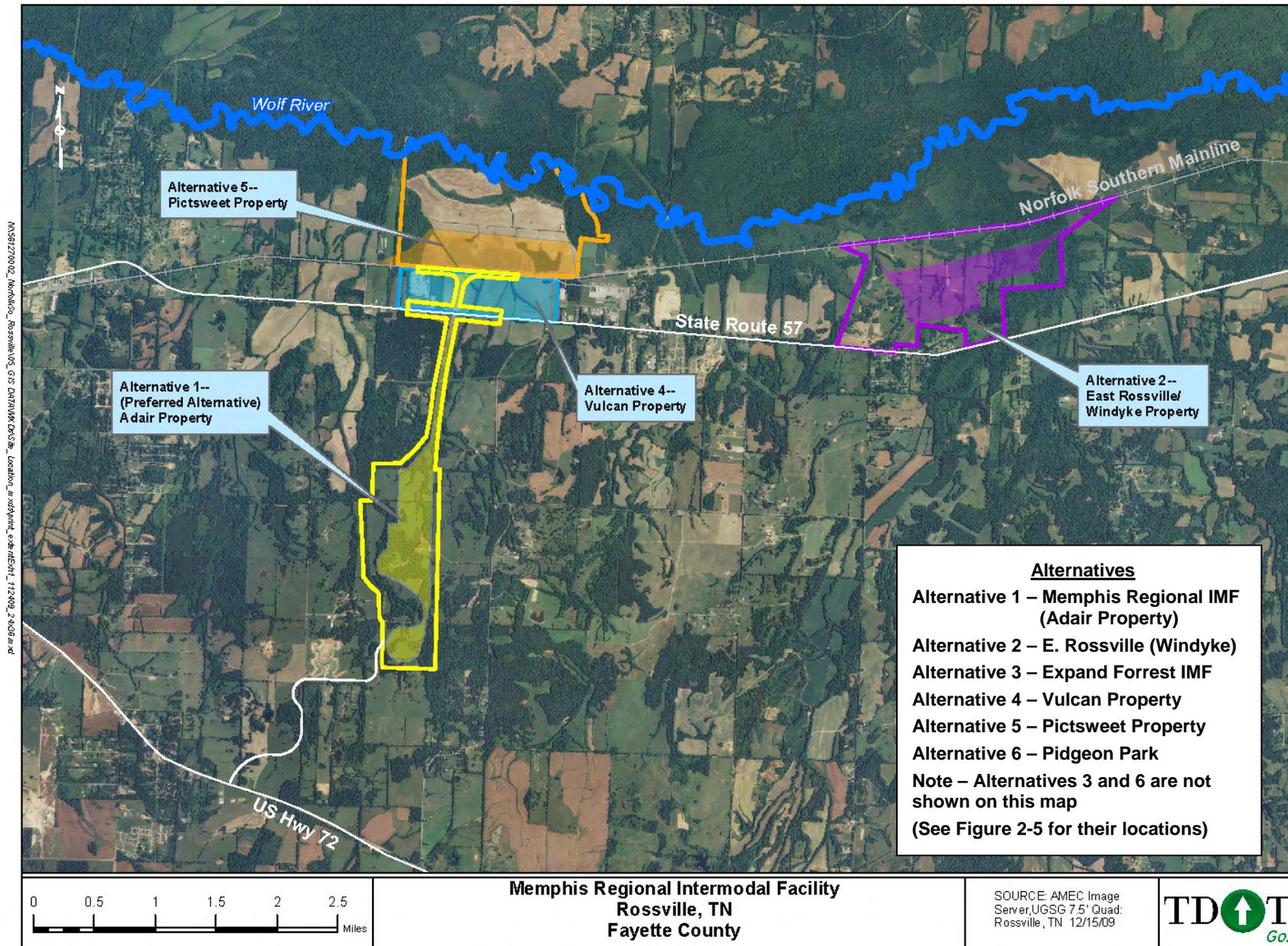


⁴² IHS Global Insight data, modified with proprietary data shared by four large NSR domestic truckload customers.

Figure 2-5: Proposed Alternatives with Location Criteria



Figure 2-6: Alternatives Studied in Fayette County



2.3.1 Alternatives Reviewed But Eliminated From Further Consideration

As discussed below, Alternatives 2, 3, 4, 5, and 6 were evaluated using the Table 2-1 criteria and eliminated from further consideration because they:

- Failed to meet one or more of the critical evaluation factors which must be met for a project to be considered viable, or
- Were judged inferior to Build Alternative 1 with respect to potential impacts to natural resources and cultural resources, or have undesirable operating costs or inefficiencies.

2.3.1.1 Alternative 2: East Rossville IMF (Windyke Property)

Alternative 2 (approximately 795-acre site) would include constructing an IMF along the south side of the mainline tracks on the east side of Rossville (Figure 2-6), just north of SR-57. This location satisfies the railroad's needs for adequate acreage and facility layout. Due to its proximity to NSR mainline tracks, East Rossville is a suitable location to meet rail transit requirements. However, use of the East Rossville IMF would increase highway traffic volume for the 7-mile section of SR-57 to SR-385, which would involve routing truck traffic through the City of Rossville. There has been strong opposition to increasing traffic along SR-57 from the local community and other stakeholders. Also, this site is located at the maximum distance from Memphis that is considered efficient for truck-train transfer to occur within the Memphis market.

For the East Rossville site, the lead tracks to the development would be located within the Wolf River floodplain. Overall, the site topography is such that the northern portion of the property would need to be filled while a substantial cut would be needed along the south side of the property to bring the site to the required grade. The overall site elevation should result in good sub-grade conditions compared to the other low-lying sites (Alternatives 4 and 5) adjacent to SR-57. Environmental impacts would include several streams and wetlands and potentially impacting a known Civil War earthwork. This site would be up-stream of the William Clark Conservation Area and between sections of the Wolf River designated

as Exceptional Tennessee Waters (ETW).⁴³ The potential wetland impacts for this location are less than the impacts for Alternative 4, Vulcan Property, and Alternative 5, Pictsweet Property.

Alternative 2 appears to be a viable alternative since it meets the first four criteria in Table 2-1 in supporting the Purpose and Need for the project. However, given the potential environmental impacts on area wetlands, the William Clark Conservation Area and sections of the Wolf River designated as ETW, Alternative 2 has been eliminated from consideration as the potential environmental impacts are more substantial than those of Alternative 1.

2.3.1.2 Alternative 3: Expansion of Existing Facility (Forrest IMF)

Alternative 3 would expand the existing Forrest IMF to create additional intermodal capacity. NSR currently operates the Forrest IMF five miles east of downtown Memphis (Figure 2-5). The IMF shares Forrest Yard with other non-intermodal NSR railroad operations, including train interchanges with the four other Class I railroads in the Memphis area. The Forrest IMF encompasses approximately 50 acres owned by NSR. The facility is currently operating at or near its capacity. As shown in Figure 1-6, industrial development, sports arenas, the NSR mainline and residential housing are located to the north of the Forrest site thus preventing expansion in that direction. The southern boundary of the Forrest IMF facility aligns next to Spottswood Avenue. This area includes a fully developed community thus preventing any expansion to the south.

Consequently, opportunities for capacity expansion at the Forrest IMF do not exist due to its urban location. Since Alternative 3 cannot meet the required criteria of sufficient land identified in the Purpose and Need for the project, Alternative 3 is not viable and has been eliminated from further consideration.

2.3.1.3 Alternative 4: IMF on Vulcan Property

For Alternative 4, the IMF would be constructed along the south side of the mainline tracks in Rossville (Figure 2-6). This layout encompasses a tract of land owned by Vulcan Materials; therefore, the site is called the Vulcan property. This alternative is located about one mile west of Rossville

⁴³ TDEC, "From Hwy 194 (RM 44.4) to RM 56 (1.5 miles downstream of Hwy 57 at Moscow), The Known Exceptional Tennessee Waters and Outstanding National Resource Waters," 7 Nov 2005 http://environment-online.state.tn.us:7654/pls/enf_reports/f?p=9034:34304:2214091869367932.

between the NSR mainline and SR-57. Alternative 4 presents a feasible location with respect to rail operations; however, it includes only 300 acres and would require the relocation of existing businesses including a rail served stone distribution yard (Vulcan) and a planned-permitted asphalt operation. This alternative would increase traffic volume along SR-57 for the 3.5 miles between the IMF and SR-385. Additional environmental considerations include construction in a floodplain and impacts to streams and wetlands.

Alternative 4 is too small of a site and would not allow for the construction of an adequate facility layout necessary for the traffic volumes and service levels, Alternative 4 cannot meet the required criteria of sufficient land identified in the Purpose and Need for the project. Therefore, Alternative 4 is not viable and has been eliminated from further consideration.

2.3.1.4 Alternative 5: IMF on Pictsweet Property

Alternative 5 (approximately 884-acre site) would include constructing an IMF along the north side of the mainline tracks west of Rossville on the Pictsweet Property (Figure 2-6). This alternative would be located between the NSR mainline and the Wolf River. Although this location has adequate acreage, site development is constrained by the Wolf River floodway and floodplain. The majority of the facility would be located within the floodplain and grading work would require considerable site preparation and filling costs. Environmental considerations include impacts to several streams and wetlands. In addition, the U.S. Environmental Protection Agency (EPA), in agreement with other cooperating agencies, would need to remove a deed restriction on approximately 20 acres of land in a 65 acre restricted area on the west-side of the site to build the IMF.⁴⁴ This restriction was put in place as part of a 1993 Consent Order due to unauthorized construction in the area.⁴⁵ Avoiding these restricted acres would require a smaller, less efficient facility. Construction of Alternative 5 would also increase traffic on SR-57 for about three miles prior to its connection with SR-385 to the west. SR-57 is a two-lane road which is considered a rural minor arterial. The access road would require construction of an overpass over the NSR mainline track to access to the site.

While Alternative 5 is a viable alternative, meeting the first four criteria identified in the Purpose and Need for the

⁴⁴ Fayette County, TN, Fayette County Register, "Deed Book 389, page 79, Exhibit 5," 1993.

⁴⁵ EPA, "Docket No. 404-90-08," Signed December 8, 1993.

project, the cost of developing this site, as well as the potential natural resources impacts, the potential difficulty of environmental permitting, and potential land use restrictions in comparison to Alternative 1, resulted in Alternative 5 being eliminated from further consideration.

2.3.1.5 Alternative 6: Intermodal Gateway at Memphis Pidgeon Park

Alternative 6 would require expansion of the Intermodal Gateway at Memphis in Pidgeon Park on the Canadian National Railway (CN) southwest of Memphis (Figure 2-5). Sufficient land is available for the development; however, to gain rail access, an expensive rail connection to the CN would be required. This would require that a deep trench be constructed from below the west end of Forrest Yard to the CN track. This trench would further reduce the capability of the Forrest rail yard. More importantly, the 12 to 13-mile CN route from Forrest Yard to Pidgeon Park passes through the busiest section of the CN Memphis terminal. Without extra route investments on the CN line beyond the above-mentioned connection, this route is incapable of handling the additional NSR trains in a timely manner. Without consistent train performance and truck competitive train schedules, Alternative 6 could not serve the projected demand for freight transportation, thus negating the purpose. This location would add approximately 39 additional rail miles for traffic to and from Memphis relative to the Fayette County sites. This alternative would also add extra operating costs. With the area's industrial development moving east and south of Memphis, the Pidgeon Park Alternative southwest of Memphis would increase drayage miles. Drayage is the cost associated with a vehicle hauling an item. These additional drayage miles would increase drayage costs.

Route deficiencies requiring exorbitant investment and extra rail transit time, operating cost issues and the fact that this alternative is unable to meet the required criteria of proximity to NSR rail infrastructure identified in the Purpose and Need for the project makes Alternative 6 a non-viable alternative. Alternative 6 has been eliminated from further consideration.

2.3.2 *Build Alternative*

2.3.2.1 Refinement of Alternative

Build Alternative 1 was developed in a manner that took into account engineering, social, and environmental considerations. A Local government briefing and a public meeting were held in 2009 to gather input on the project's

purpose and need. Previously studied alternatives were presented, including all of the alternatives described above. During these meetings, participants had the opportunity to discuss project needs and provide suggestions for possible alignments on a map of the study area.

It is recommended that this alternative, along with the No-Build Alternative, be carried forward in the NEPA process.

2.3.2.2 Description of Build Alternative

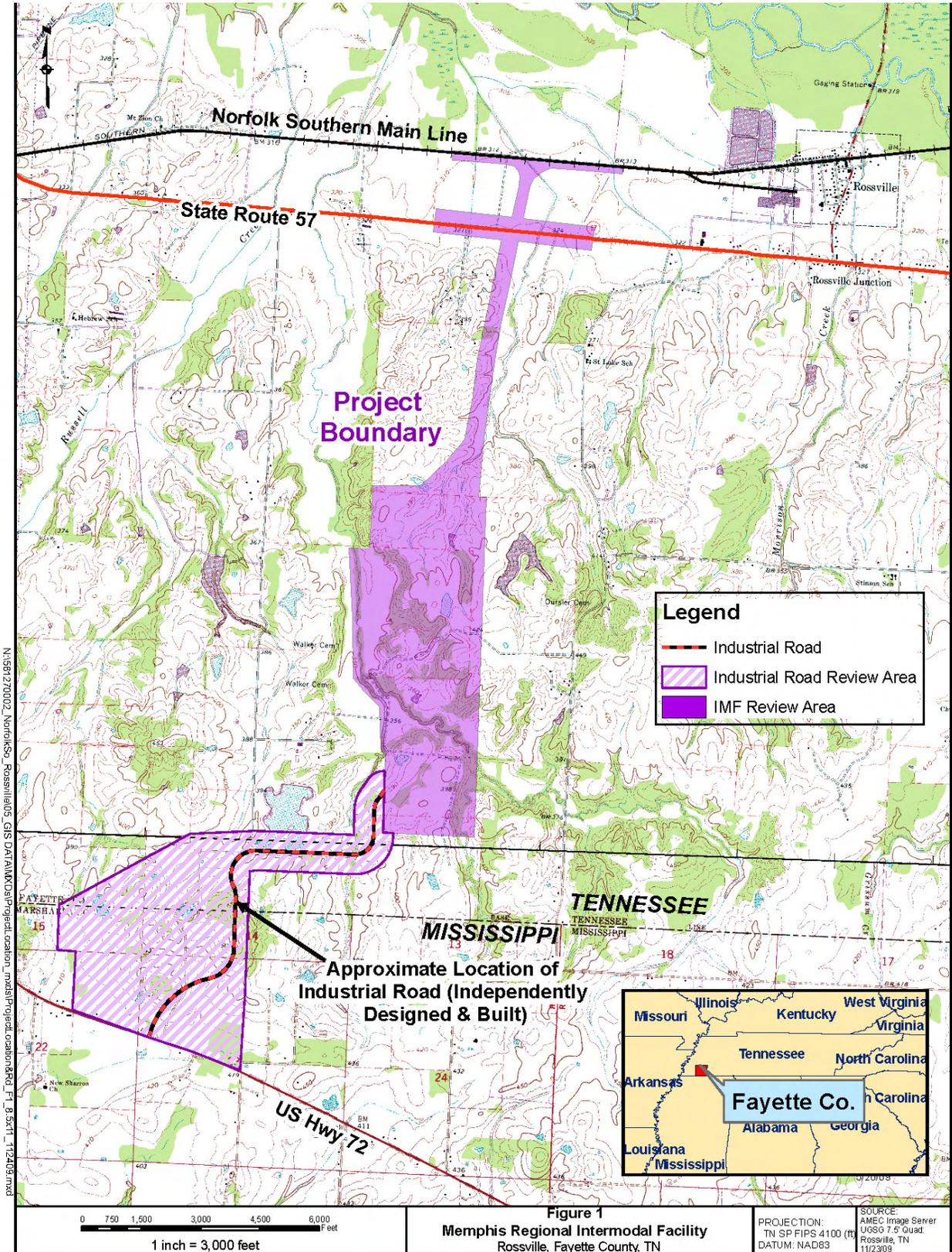
Build Alternative 1 would consist of constructing and operating a new Memphis Regional IMF in southern Fayette County, Tennessee, approximately 25 miles east of Memphis. It would be designed to handle trailers and containerized freight. The IMF would be located approximately 1.5 miles south of SR-57 and 0.5 mile west of Knox Road in the city of Rossville (Figure 2-7). The facility would occupy about 380 acres on a 650-acre parcel of land.

The property would include an approximately 1.6-mile long, 200 to 350-foot wide right-of-way for connection (lead) tracks between the facility and the NSR mainline. The facility would include a loop track at the south end of the facility for trains to reverse direction to return to the mainline.

It would also include right-of-way (ROW) approximately 2,000-feet long by 400-feet wide along SR-57 to construct a highway overpass across the connection tracks. The overpass establishes a grade separation with SR-57.

Access to the IMF would be available from an approximately two mile-long, two-lane road southwest of the project area (referenced herein as "Industrial Road"), Figure 2-7. The road lanes and shoulder widths would be 12-feet wide. The Industrial Road is being designed and built by a private developer ('Developer') is engaged in designing and building Industrial Road. This road, which would run between the project area and US Hwy 72 in Mississippi, would not only provide vehicle and truck access to the Memphis Regional IMF from US Hwy 72, but facilitate industrial and commercial development in the immediate area of the road. Industrial Road is being developed with non-Federal funds. Industrial Road is a stand-alone utility. The direct, indirect and cumulative impacts of the Industrial Road are evaluated as part of this EA.

Figure 2-7: Build Alternative 1



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Between the Tennessee–Mississippi State Line and Mississippi Highway (MS) 302, north of Mount Pleasant, Mississippi, there is an approximately 6-mile section of US Hwy 72 that is still a two-lane road. US Hwy 72 is four-lanes on both sides of this two-lane section. Industrial Road would initially connect to this two-lane section of US Hwy 72. Under the MDOT permit application process, the Developer may be required to construct a four-lane section of US Hwy 72 to facilitate tying Industrial Road into US Hwy 72. As funding and prioritization allows, US Hwy 72 will be a four-lane highway for its length in Mississippi in accordance with MDOT Vision 21.⁴⁶

The stretch of US Hwy 72 in Tennessee, which connects to SR-385, Bill Morris Parkway, is already a four-lane highway. In addition, the TDOT is programming SR-385 to be four-lane from US Hwy 72 to Interstate 40.⁴⁷ In Build Alternative 1, US Hwy 72 is used for truck access. Figure 2-8 illustrates the above described roadway network.

Community and governmental entities in this part of Fayette County, Tennessee, have expressed a desire for the facility to access US Hwy 72 instead of SR-57 due to the differences in their functional classification, design capacity, and long-range plans. Under Build Alternative 1, truck and employee vehicle traffic would enter and exit the IMF using the Industrial Road connecting to US Hwy 72. The Memphis Regional IMF would not be directly accessible from SR-57, except for limited access by emergency vehicles. The site for Build Alternative 1 was annexed and zoned by the Town of Rossville with the traffic access limited to US Hwy 72.

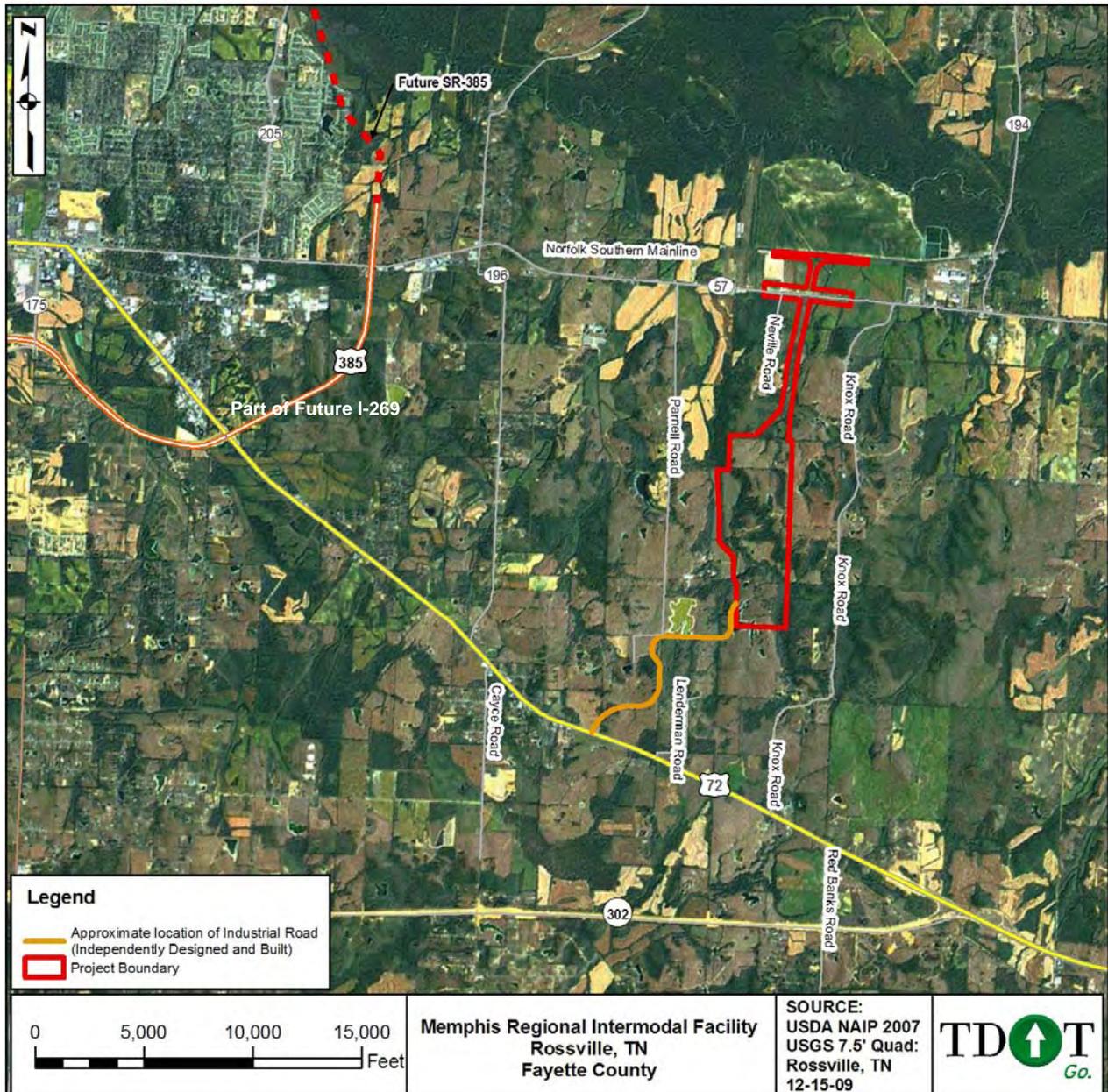
As with any project of this magnitude, the conceptual planning phase is critical to meet the shared objectives of economic and operational feasibility as well as the accepted standards for human and environmental protection. This process is typically iterative and plans that are developed to meet engineering needs are simultaneously reviewed to balance any consequences of the proposed action on the environment or the public, including impacts from construction and operation. As the conceptual planning for the Memphis Regional IMF has proceeded, there have been several opportunities for the public, governmental agencies and Non-Governmental Organizations (NGO) to review and comment on the

⁴⁶ MDOT Planning Division, "Vision 21 map," 2002
<http://www.gomdot.com/Divisions/IntermodalPlanning/Resources/Maps/pdf/Vision21.pdf>.

⁴⁷ TDOT, "State Transportation Improvement Program," October 2007
http://www.tdot.state.tn.us/programdev/docs/STIP2008_2011.pdf.

proposed project. The following issues are of particular interest and have been specifically evaluated for potential adjustments to further avoid, minimize or mitigate impact: Wetlands and Streams, Sensitive Habitats, Stormwater Management and Water Quality, Aquifer, Traffic, Visual and Lights, Noise, and Energy.

Figure 2-8: Roads around Build Alternative 1, Memphis Regional IMF



As part of the conceptual design process, several track alignments and facility adjustments are being evaluated and modified to balance engineering restrictions and

resource conservation. Where possible, the design modifications avoided, and in all cases minimized impacts to natural resources while balancing engineering restrictions.⁴⁸ Some changes in the alignment are often not practicable due to railroad and intermodal design requirements, for example, the need for straight and flat tracks of sufficient size to handle incoming train traffic and allow for efficient building of outgoing trains. The IMF would be designed to work as efficiently as possible within the smallest footprint possible.

2.3.3 Comparison of Alternatives

Table 2-2 summarizes the assessment of each alternative as evaluated against the previously described screening criteria.



⁴⁸ Norfolk Southern's Standard Specifications for Materials and Construction.

Table 2-2: Summary of Alternatives

Considerations	Build Alternative (Alternative 1) Memphis Region IMF	Alternative 2 East Rossville (Windyke Property)	Alternative 3 Expanded Forrest IMF	Alternative 4 Vulcan Property	Alternative 5 Pictsweet Property	Alternative 6 Pidgeon Park
1* – Sufficient Land	Yes.	Yes.	No - impractical to assemble a suitable amount of land.	No - requires difficult or impossible relocation of existing and planned businesses.	Yes - but EPA deed restriction on area needed for track connections to mainline must be removed to avoid shortening tracks beyond a reasonable and necessary level.	Yes.
2* – Proximity to NSR Rail Infrastructure	Yes - within 2 miles of NSR mainline.	Yes - adjacent to NSR mainline.	Yes - adjacent to NSR mainline.	Yes - adjacent to NSR mainline.	Yes - adjacent to NSR mainline.	No - deficient route on CN to access terminal. Additional route miles and transit time.
3* – Proximity to Highway Infrastructure	Yes - US Hwy 72 (Rural Principle Arterial), combination 2- and 4-lane sections (programmed for 4)	Yes - but SR-57 (Rural Minor Arterial), 2-lane road.	Yes - urban collector to SR-277.	Yes - but SR-57 (Rural Minor Arterial), 2-lane road.	Yes - but SR-57 (Rural Minor Arterial), 2-lane road.	Yes - adequate industrial access road to Interstate.
4* – Location	Yes.	Yes.	Yes.	Yes.	Yes.	Yes - but additional drayage miles would add cost and reduce rail efficiency and rail optimization.
5 – Impact to Natural Resources	Moderate impacts to natural resources: <ul style="list-style-type: none"> Affect ~ 3 to 8 acres of wetlands. Impact ~ 5,000 linear feet of stream. Potential impact to Zone A within unnamed tributary to Wolf River floodplain. Attainment for air quality 	Potential serious impacts to natural resources: <ul style="list-style-type: none"> Affect ~ 4 to 6 acres of wetlands. Impact ~ 5,000 linear feet of stream. Portions of lead tracks to IMF would be within Wolf River floodplain. Potential run-off to Exceptional Tennessee Water (ETW). Attainment for air quality 	Low impact to natural resources as site is within an urban area. <ul style="list-style-type: none"> Non-Attainment for air quality 	Moderate impacts to natural resources: <ul style="list-style-type: none"> Affect ~ 10-15 acres of wetlands. Impact ~ 1,500 linear feet of stream. Connections to NSR mainline within Wolf River floodplain. Attainment for air quality 	Potential serious impacts to natural resources: <ul style="list-style-type: none"> EPA consent order deed restricted land within project footprint. Affect ~ 15 acres of wetlands. Impact ~ 1,500 linear feet of stream with springs on site. Site within Wolf River floodplain. Attainment for air quality 	Moderate impacts to natural resources: <ul style="list-style-type: none"> Potentially affect unknown acres of wetlands. Impact unknown linear feet of stream. Non-Attainment for air quality
6 – Impact to Cultural, Historical, and Social Resources	<ul style="list-style-type: none"> No eligible or listed archaeological sites within project boundary. No disproportionate or adverse effect to minority or low-income populations 	<ul style="list-style-type: none"> Potential adverse effect on a 1.2-acre Civil War earthwork. Nearby minority population on Mt. Pleasant Road. 	<ul style="list-style-type: none"> No previously identified archaeological sites within project boundary. Nearby minority populations. 	<ul style="list-style-type: none"> No previously identified archaeological sites within project boundary. Nearby low-income population on Morrison Road. 	<ul style="list-style-type: none"> No previously identified archaeological sites within project boundary. Nearby adverse effect on low-income population on Morrison Road. 	<ul style="list-style-type: none"> No previously identified archaeological sites within project boundary. Nearby minority populations.

* Denotes criterion that must be clearly met for an alternative to be considered viable.

2.4 Identification of Build Alternative

Based upon the information to date and the assessments above, NSR preferred Alternative 1 and TDOT and FRA concurred that only Build Alternative 1 is a reasonable based on the following considerations:

- Sufficient land is available to develop the facility, meet intermodal demand, and support the infrastructure, operations, and storage requirements. The rectangular 650-acre property has adequate width and length for facility layout and provides suitable land for effective intermodal operations.
- The site is located a reasonable distance (approximately 2 miles) from the NSR mainline and can be accessed via connection (lead) tracks under SR-57.
- The proposed site is located near adequate highway infrastructure with connection to US Hwy 72 provided by Industrial Road. From US Hwy 72, the Memphis Regional IMF truck traffic would have connectivity to a four-lane road, SR-385. Both of these roads have available capacity and would allow trucks to make easy trips between the facility and customers throughout the Memphis metropolitan area.
- The facility's customer base is generally moving eastward and southward in the Memphis metropolitan area. Locating the Memphis Regional IMF east of Memphis matches the region's industrial and commercial area for economic activity.
- While some impacts are expected to streams and wetlands on the property, these impacts would be avoided, minimized, or mitigated.
- Build Alternative 1 would have no impacts on cultural or historical resources that are listed or eligible for listing on the National Register of Historic Places (NRHP).

3 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

This chapter focuses on the potential impacts to the natural and human environment due to Build Alternative 1. Build Alternative 1 would be located approximately 1.5 miles south of SR-57 and 0.5 mile west of Knox Road in the City of Rossville, Tennessee.

NEPA requires that Federal agencies incorporate environmental considerations in their planning and decision-making process. In order to understand the project area and sufficiently evaluate the potential for environmental impacts associated with constructing and operating the Memphis Regional IMF, the following studies were conducted:

- Air Quality Technical Report,
- Archaeological Survey,
- Architectural and Historic Survey,
- Ecology Report,
- Geotechnical Investigations,
- Hazardous Materials Report,
- Noise Analysis Technical Report,
- Traffic Impact Study,
- Traffic Impact Study – Intersection SR-57 and Neville Road, and
- Analysis of Projected Traffic and Impacts - Vicinity of Intersection of US Highway 72 and Industrial Road.

This environmental document identifies which aspects of the proposed action have potential for social, economic, or environmental impact based upon the studies listed above, an assessment of resources, and input from the public, governmental agencies, NGO, and other sources.⁴⁹ This chapter identifies the existing conditions for each resource area and details potential environmental impacts of Build Alternative 1. Before discussing Build Alternative 1; it is worth noting that the No-Build Alternative would not disturb the project site nor result in any of the immediate impacts



⁴⁹ 23 C.F.R. 771.

that the Build Alternative would generate. However, the No-Build Alternative would not generate the many benefits that Build Alternative 1 would generate or fit the Purpose and Need for the project.

This section also identifies Local, State, and Federal requirements applicable to the project.



3.1. Land Use

3.1.1 Existing Land Uses

The proposed Memphis Regional IMF and SR-57 overpass would be located southeast of Memphis near Rossville in Fayette County, Tennessee (Figure 2-7). Industrial Road is located in southwestern Fayette County, Tennessee, and northern Marshall County, Mississippi. Somerville is the Fayette County seat and Holly Spring is the Marshall County seat.

The majority of Fayette and Marshall Counties are rural in nature. Fayette County is home to ten towns and municipalities. The project area (including lead tracks, loop track, facility and SR-57 overpass) is located between the towns of Piperton and Rossville. The site lies within the Rossville UGB.⁵⁰ Industrial Road would be located within the rural area of the Fayette County Growth Plan and an un-designated area of Marshall County. Although the counties are predominantly agricultural, they are expected to continue to grow in population and commercial/industrial development.



In April 2010, Marshall County changed the zoning of the property along Industrial Road and directly across US Hwy 72 from Industrial Road from A-R (Agricultural-Residential) and R-E (Residential-Estate) to C-2 (Commercial) and I-1 (Industrial).⁵¹

Current Fayette County property attributes are depicted in Figure 3-1.⁵² Build Alternative 1 would be located in an area attributed as industrial (IH) use. The adjacent land uses are rural residential, which includes single, duplex, and manufactured/trailer residences (R1 and R2 with the only difference being that R2 includes complying with a grass ordinance).

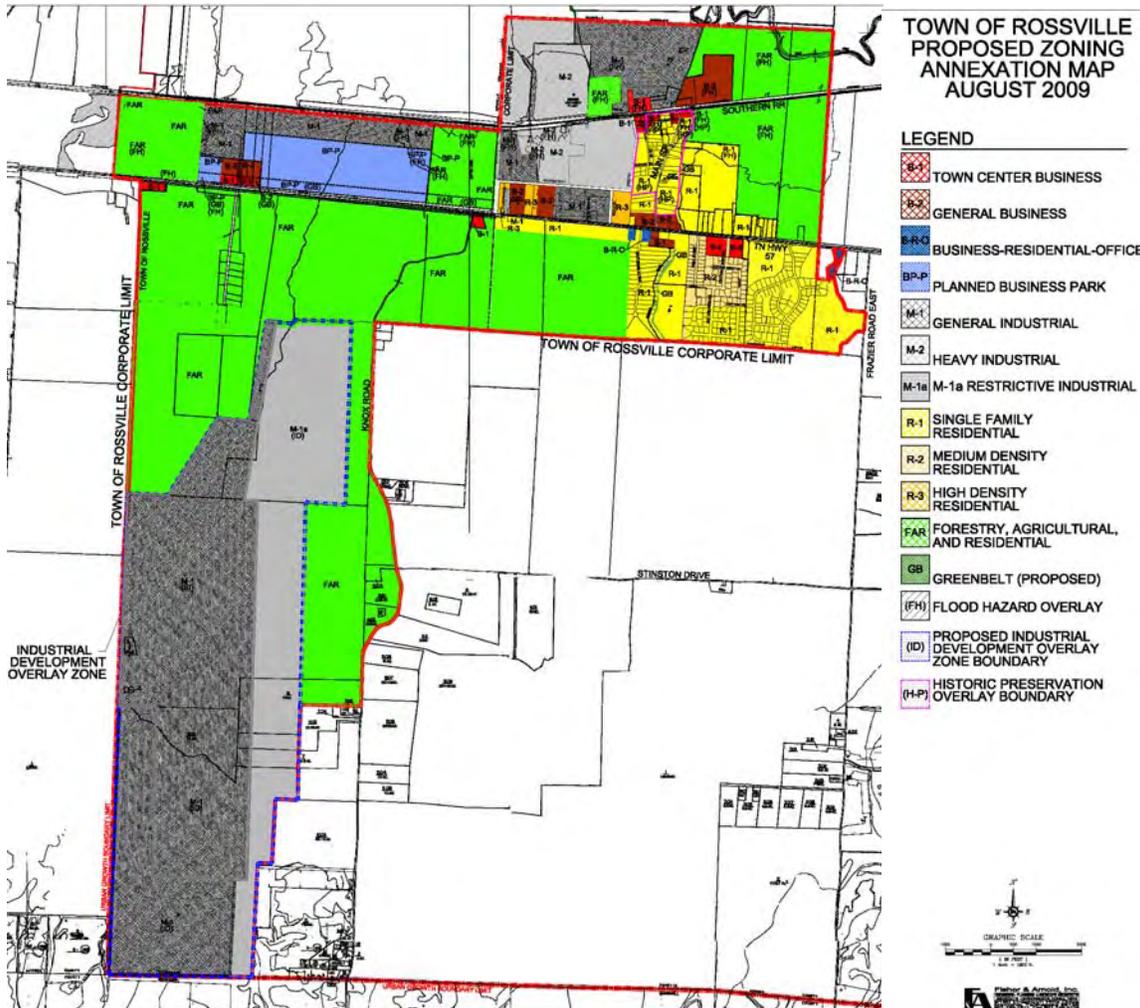
⁵⁰ Fayette County Growth Plan Map, August 2003, <http://www.fayettetn.us/FC%20Growth%20Plan%202.htm>.

⁵¹ Marshall County Planning Commission, April 8, 2010 Planning Commission Meeting Minutes.

⁵² Property Attribute map created October 2009 by Fayette County Planning and Development Office.

zoning map to reflect the recently approved zoning revisions.⁵⁵

Figure 3-2: Town of Rossville Proposed Zoning Annexations Map



Most of the land within the project boundary was previously disturbed over the last century primarily for agricultural purposes and some tree clearing. It currently consists of both forested (mixed hardwood) and non-forested (hay fields) areas. The property was purchased in 2007 by a private developer with plans to develop the property for investment purposes.⁵⁶ The site consists of rolling hills and varies in elevation from approximately 310-450 feet above mean sea level (amsl).

⁵⁵ On 21 Jun 2010, Esther Sykes Woods, Fayette County Planning and Development, confirmed that there were not any changes from the proposed rezoning figure to the final rezoning figure.

⁵⁶ TN Comptroller of the Treasury, Real Estate Assessment Data, [http://www.assessment.state.tn.us/SelectCounty.asp?map=true&SelectCounty=.](http://www.assessment.state.tn.us/SelectCounty.asp?map=true&SelectCounty=)

As noted in Section 1.5, warehouse square footage development since 2002 has increased in the project vicinity (Figure 1-9) and industrial development is anticipated to increase south and east of Memphis, sprawling from the city to the project vicinity.⁵⁷ This growth in warehouse and industrial development is due to a number of factors including proximity to highway infrastructure, developable land, and the Memphis area's role in transportation, shipping and freight.

3.1.2 Land Use Impacts

Fayette County completed its 20-year regional land use growth plan in August 2003 (2003 Fayette County Growth Plan). The plan identifies the project site as part of the Rossville UGB. An urban growth area is a regional boundary, set in an attempt to control urban sprawl by encouraging the area inside the boundary be used for higher density urban development and the area outside be used for lower density development. Rossville is in the process of developing a comprehensive land use plan.



Two of the land use goals and objectives of the Fayette County Growth Plan are to:

- Encourage a pattern of compact and contiguous high density development to be guided into urban areas or planned growth areas and
- Promote the adequate provision of employment opportunities and the economic health of the region.⁵⁸

The Fayette County Growth Plan identifies areas where the Town of Rossville believes it can supply water, sewer and other infrastructure within the next 20 years. The Memphis Regional IMF development is consistent with both of these Fayette County Growth Plan goals and objectives.

Fayette County contains an estimated 227,434 acres used for agricultural purposes (approximately 50% of the county). Approximately 309 acres of the project property would be directly converted from agricultural use to commercial use by the Memphis Regional IMF. The project would directly impact approximately 164 acres of forested areas and 145 acres of pasture. Less than 0.2% of agricultural land in the county would be affected by the



⁵⁷ Greater Memphis Chamber of Commerce, "Map Gallery," <http://welcome.memphischamber.com/Economic-Development/Map-Gallery.aspx>.

⁵⁸ Fayette County Tennessee, "The Formation of the: Growth Plan Coordination Committee of Fayette County," 2004 <http://www.fayettetn.us/FC%20Growth%20Plan%202.htm>.

project. Commercial uses include approximately 76 acres for the lead tracks; 232 acres for concrete pavement for buildings, onsite roads, and trailer parking; and 1 acre for pervious pavement for employee parking areas.

Marshall County contains an estimated 364,175 acres used for agricultural purposes (approximately 82% of the county). Industrial Road would affect approximately 11.1 acres of agricultural land in Marshall County (less than 0.003% of total agricultural land in Marshall County). Industrial Road would directly convert approximately 10 acres of pasture and 1.1 acres of forested areas to paved roadway.

Land use surrounding the project area is presently categorized as agricultural, forested, and rural residential (Photos 3-1 and 3-2). Over 70% of the immediately surrounding area consists of agricultural and pasture lands.⁵⁹ Forested areas, which cover less than 30% of the surrounding area, are sporadic and primarily occur along drainages.⁶⁰ Residential development is relatively sparse; approximately 55 residences are located within 1/2 mile of the project area. At one time, the project site was part of a larger ranch known as Twin Hill Ranch.⁶¹ Cattle and horses were raised on the ranch. While the ranch was active, four lakes were created on the property including Big Lake southwest of the IMF footprint.

Land use is changing primarily along the existing main roadways. Commercial and residential developments exist along SR-57 in the project area with new residential areas occurring or expanding along SR-57 between Rossville and Collierville. In Mississippi, commercial development is expanding along US Hwy 72. An example is the Chickasaw Trail Industrial Park, which is at the intersection of Cayce Road and US Hwy 72. The Chickasaw Trail Industrial Park (Photo 3-3) (a Marshall County supported development) is located along and southwest of Industrial Road. Commercial and residential development is planned for the areas south of the project site along Industrial Road and along the southern side of US Hwy 72.

The project area shows signs of transition from a primarily rural residential and agricultural area to a mixture of urban and industrial areas. The Memphis Regional IMF is part of this transition.

Photo 3-1: Overview of pond and field within the IMF footprint



Photo 3-2: View of wooded area within the IMF footprint



Photo 3-3: Chickasaw Trail Industrial Park Development off US Hwy 72 in Marshall Co, MS



⁵⁹ Visual estimates based on 2009 Imagery from Google Maps.

⁶⁰ Visual estimates based on 2009 Imagery from Google Maps. Supported by FWS, November 2007, Forest Inventory & Analysis Factsheet Tennessee 2004.

⁶¹ Mid-South Horse Review, "How Green Was Long Green Valley: A Tribute to Twin Hill Ranch," 2009 (Somerville, TN: Mid-South Horse Review).

As noted in Section 3.1.1, even without the Memphis Regional IMF, the area has experienced growth in warehouse square footage and industrial development south and east of Memphis. The increase and growth is due to a number of factors including infrastructure and long-standing regional development trends. Build Alternative 1 is consistent with these trends and would therefore not have substantial impact on land use in the area. The Town of Rossville re-zoned the area around the proposed location as an Industrial Development Overlay District in 2009. The intermodal facility has a zoning designation of M-1, which allows placement of an IMF with access limited to US Hwy 72.⁶²



No land use impacts are anticipated from the No-Build Alternative. The land would remain zoned for industrial use.

3.2 Farmland Impacts

Even though a large percentage of land in Fayette County is classified as agricultural, it is in a transitional period as suburban growth spreads from Memphis. The 2003 Fayette County Growth Plan in Figure 3-3 shows the project boundary within Rossville's UGB.

Industrial Road is partially located in the designated rural section of the Fayette County Growth Plan and partially in a rural section of Marshall County, Mississippi. Marshall County does not have a growth plan. Marshall County recently changed the zoning of the property along Industrial Road and directly across US Hwy 72 to Highway Commercial District and Light Industrial and accordingly these properties are no longer contemplated to result in future farm use.



The Memphis Regional IMF, including the SR-57 overpass, would encompass approximately 590 acres with 309 acres being directly converted and 281 acres being indirectly converted from farmland. Land would be directly converted from farmland in areas of facility buildings, tracks, container and trailer storage areas, and paved areas or roads. Land would be considered indirectly converted if it would no longer be capable of being farmed

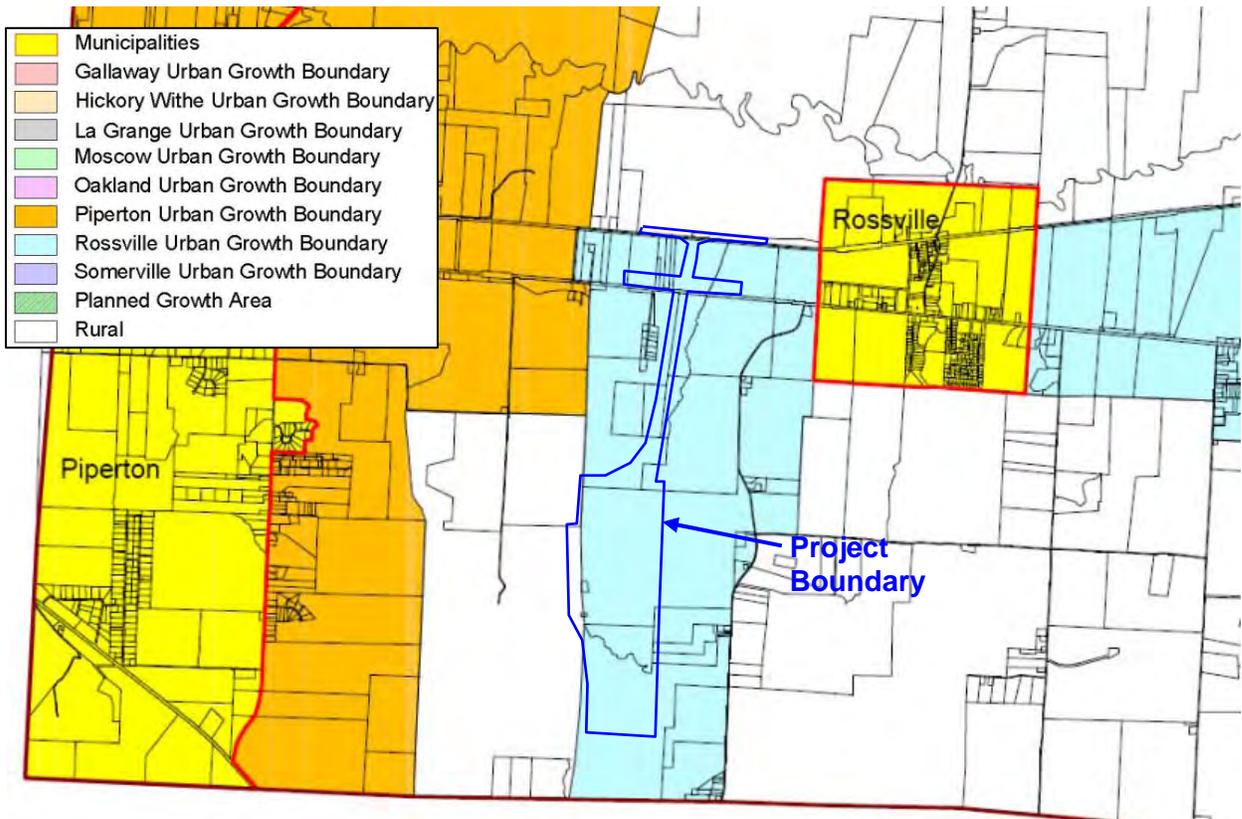
⁶² In recognition of the importance of rail transportation in interstate commerce, Congress has enacted legislation providing that federally regulated railroads operating in interstate commerce are not subject to otherwise applicable local and state laws. See Interstate Commerce Commission Termination Act of 1995 ("ICCTA"), 49 U.S.C. § 10501 and the Federal Railway Safety Act of 1970 ("FRSA"), 49 U.S.C. § 20101 et seq. In accordance with these and other similar federal laws, most state and local regulation of railroads is preempted in order to ensure barriers to interstate commerce are not created. This includes local planning, zoning and similar laws and ordinances. However, for this project, zoning regulations and authorizations, to the extent applicable to rail, have been complied with and obtained.

for the duration of the existence of the facility because access would be restricted. Based on the Natural Resources Conservation Service (NRCS) completed Farmland Form, approximately 311 acres of farmland within the project site is rated as prime and unique.⁶³

3.2.1 Existing Farmland Uses

In 2002 in Fayette County, Tennessee, 273,817 acres of land were in farms (approximately 61% of Fayette County's 451,839 acres). Farmland acreage decreased over the next five years to 227,434 acres (approximately 50%).⁶⁴ The Fayette County Cooperative Extension Service anticipates that the 2010 census would identify a continued decrease in the farmland acreage as farmland is converted to residential, commercial and industrial use.⁶⁵

Figure 3-3: Project Area on Fayette County Growth Plan



In 2009, farmland in Marshall County, Mississippi, included 364,175 acres (approximately 82% of Marshall County's 443,520 acres).⁶⁶ Based on information from the Marshall

⁶³ NRCS Letter Dated 16 October 2009 from Charles L Davis, Resource Soil Scientist.

⁶⁴ USDA, "2007 Census of Agriculture," December 2009.

⁶⁵ Personal communication with Fayette County Cooperative Extension Service, October 2009.

⁶⁶ Personal communication with Marshall County Cooperative Extension Service, October 2009.

County Industrial Development Authority, the amount of farmland in the county over the last 10 years has only had a slight decrease due to conversion of farmland to residential, commercial and industrial use.⁶⁷

3.2.2 Farmland Impacts

In accordance with Farmland Protection Policy Act (FPPA) regulations⁶⁸, soil and site assessment criteria were applied to determine effects to farmland. The site assessment criteria are designed to assess important factors other than the agricultural value of the land to protect farmland.

Each factor is assigned a score relative to its importance on a Farmland Conversion Impact Rating Form (AD-1006). Sites that receive a total site assessment score of 160 points or less are given a minimal level of consideration for protection. Sites with a total site assessment score of 160 points or more require the consideration of alternative project alignments that would still serve the proposed purpose but would convert either fewer acres of farmland or otherwise impact farmland that has a relative lower value.

With assistance from the NRCS, it was determined that Build Alternative 1 including lead tracks, facilities, and SR-57 overpass would have a site assessment score of 151 points. Since the point total is below 160 points, an examination of additional alternatives is not necessary. The completed NRCS-AD-1006 Form is included in Appendix A

Based on site information and coordination with the NRCS, the proposed project would not have a substantial impact to farmland.

No farmland impacts are anticipated under the No-Build Alternative. Currently, the site is not being farmed except for hay cutting. The property is zoned for industrial use and is within the Rossville UGB.

3.3 Transportation Impacts

3.3.1 Freight Transportation

Freight operations are the practical work of moving goods from a shipper to a receiver. In the U.S., the private sector is responsible for most freight operations. The public sector also has a role in freight operations through its



What is the National Farmland Protection Policy Act (FPPA)?

The aim of the National Farmland Protection Policy Act (FPPA) is to minimize Federal Programs (including technical or financial assistance) contribution to the conversion of important farmland to non-agricultural uses. The act seeks to encourage alternatives, if possible, that would lessen the adverse effects to important farmlands. Important farmlands are lands with soils that are identified as prime and unique or of statewide and local importance.

⁶⁷ Personal communication with Fayette County Cooperative Extension Service, October 2009.

⁶⁸ 7 C.F.R. Part 658

ownership and management of the Nation's highway system, ports, and inland waterways, and its regulation and taxation of freight movement.⁶⁹

Build Alternative 1 would combine rail and truck freight movements to improve transportation capacity in the Memphis region and provide an energy efficient alternative for current and future freight transportation. It would also improve operational efficiency, volume and speed of delivery.⁷⁰ The additional capacity of Build Alternative 1 is required to meet growing freight demand as shown previously in Figure 1-2. The facility would annually handle an estimated 187,000 loaded trailers or containers moving between the Memphis Region and the Northeast in addition to freight moving in other, lower volume corridors.

At this time, traffic along the NSR mainline in the Rossville area includes about 18 trains per 24 hour period (about nine trains each direction). About four of those trains (2 each direction) are intermodal trains. When the Memphis Regional IMF becomes fully operational, NSR expects the new intermodal traffic to be approximately four westbound trains terminating and four eastbound trains originating each day (eight intermodal trains movements). Two of these intermodal train movements would have previously traveled to the Forrest IMF in Memphis. The net result would be an increase of a predicted 6-7 intermodal trains on the NSR mainline east of the proposed IMF and a reduction of 1-2 intermodal trains on the mainline west of the IMF each day. A typical NSR intermodal train length is 8,000 feet. Trains would access the Memphis Regional IMF via a pair of tracks (lead tracks) extending between it and the NSR mainline.



To minimize the impact on highway traffic from trains entering or exiting the facility via the lead tracks, a grade separation would be established at SR-57. The grade separation would route the highway over the lead tracks. With the proposed overpass, no long-term impact on SR-57 is anticipated. Truckers and workers would access the Memphis Regional IMF from US Hwy 72, not SR-57.

Several potential facility access routes were considered in the design, and as previously noted; access was one of the critical evaluation criteria for assessment of various locational alternatives. NSR has proposed to use a facility

⁶⁹ FHWA, "Freight Management and Operations, Key Freight Transportation Challenges, http://ops.fhwa.dot.gov/freight/publications/fhwa_3004/operate.htm.

⁷⁰ FHWA 2005. FHWA and federal agencies, including the USEPA promote the development of intermodal facilities and transportation to provide reduced energy consumption and air emissions. <http://www.fhwa.dot.gov/environment/cmaqpgs/intermodal/index.htm>.

entrance that would result in all vehicles entering and exiting the Memphis Regional IMF via Industrial Road and US Hwy 72 in Mississippi.⁷¹ The widening of US Hwy 72 is scheduled to start in 2012. In order to minimize traffic impacts, NSR proposes that there would be no commercial access to the facility from SR-57 or Knox Road. Emergency vehicle access to the IMF would be from SR-57. These proposals are based on traffic studies that have been completed in association with this project.

3.3.2 Traffic Analysis

Traffic on US Hwy 72 was analyzed at three different years. The first year was 2009 or the existing traffic conditions and level of service comparisons. The second year was 2015 or the horizon year. The third year was 2032 or the 20-year projection. Year 2032 was the design year requested by Mississippi Department of Transportation (MDOT).⁷²

For more information:

The *Traffic Impact Report* is available for review at TDOT Environmental Division and MDOT District 2 Office

The 2009 November Traffic Impact Study (on file with TDOT and the MDOT) was performed to assess the potential traffic impacts due to the proposed Memphis Regional IMF on US 72 and its intersections with SR 196, Cayce Road, Red Banks Road, Knox Road and Industrial Road.⁷³ The traffic analysis followed the MDOT Design Guidelines.⁷⁴ Traffic volumes on US Hwy 72 in the vicinity of the project site have decreased at a rate of approximately 1% per year over the past 5 years.⁷⁵ For the November 2009 Traffic Impact Study, the existing traffic volumes at the study intersections were increased by 1% per year to represent current trends in background growth. The Traffic Impact Study concluded that acceptable Level of Service (LOS) would be anticipated under Build Alternative 1 along US Hwy 72 and Industrial Road. Since the entrance to the Memphis Regional IMF via Industrial Road and US Hwy 72 would exist in Mississippi and not in Tennessee, traffic analysis in this impact study was limited to impacts along US Hwy 72.

In response to comments from the October 22, 2009, public meeting, a separate traffic impact analysis was conducted for the intersection of SR-57 and Neville Road.⁷⁶ This analysis evaluated whether a left turn lane

⁷¹ AECOM, "Memphis Intermodal Facility, Traffic Impact Study" November 2009 Revision, On file with TDOT and MDOT (Nashville, TN: AECOM).

⁷² MDOT's comments to September 2009 Draft Traffic Impact Report.

⁷³ AECOM, Traffic Impact Study, 2009.

⁷⁴ MDOT, "Roadway Design," <http://www.gomdot.com/Divisions/Highways/Resources.aspx?div=RoadwayDesign>.

⁷⁵ November 2009 AECOM Traffic Study and AADT volumes from two TDOT and two MDOT count stations (referenced in Traffic Impact Study).

⁷⁶ AECOM, "Memphis Intermodal Facility, Traffic Impact Study-Neville Road" November 2009 (Nashville, TN: AECOM).

on SR-57 was warranted based on current traffic volumes. The peak hour volume counts at the intersection of SR-57 and Neville Road indicate the northbound approach on Neville Road carries less than ten vehicles during the AM and PM peak hours. These volumes are well below the minor street approach threshold for traffic signal warrants. Therefore, a full signal warrant analysis was not conducted. The analysis also evaluated whether the intersection of Neville Road and SR-57 is within a safe sight distance of the overpass. A safe sight distance is the length of roadway visible to a driver which provides for sufficient lengths on the intersecting roadway to allow a driver to anticipate and avoid potential collisions. Based on the current traffic volumes, a westbound left turn lane is not warranted at the intersection of SR-57 and Neville Road. For the design speed of 55 mph, at least 610 feet of intersection sight distance for vehicles turning left from Neville Road onto SR-57 and 495 feet of stopping distance is required. The proposed profile provides approximately 1150 feet of sight distance from the intersection to the crest of the bridge over the lead tracks.

Based on the request of MDOT⁷⁷, the May 2010 Analysis of Projected Traffic and Impacts in the Vicinity of the Intersection of US Highway 72 and Industrial Road (on file with TDOT and MDOT) was performed to assess the potential traffic impacts due to the proposed Memphis Regional IMF using the following parameters: ⁷⁸

- A 2.5% per year increase in existing traffic volumes to represent the background traffic along US Hwy 72 (instead of the 1% increase developed based on historical growth trends),
- US Hwy 72 as four-lane rural principal arterial with a design speed of 70 mph (instead of the 65 mph originally provided), and
- LOS C being the acceptable level of service (instead of LOS D used for original analysis⁷⁹).

3.3.3 Traffic Impact Evaluation

In the vicinity of the project site between SR-196 to MS-302, US Hwy 72 is a two-lane roadway, traveling in a northwest-southeast direction. US Hwy 72 presently carries approximately 11,225 vehicles per day (vpd) near



⁷⁷ Conference call with TDOT, MDOT, TN FHWA, NSR Consultants on Monday, April 12, 2010.

⁷⁸ Phone call between AMEC and MDOT on April 13, 2010; MDOT ED (Kim Thurman) defined these parameters.

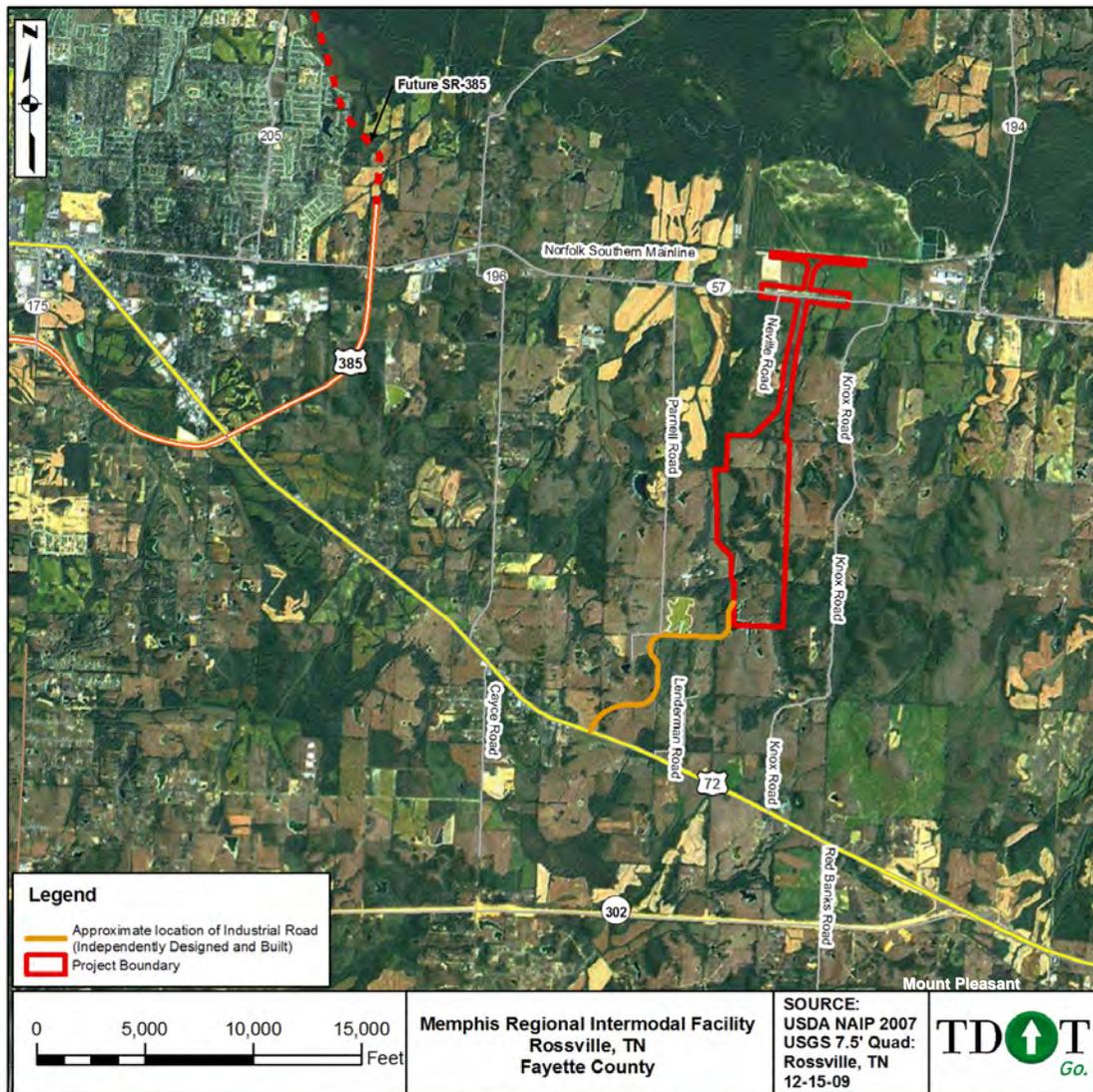
⁷⁹ Highway Capacity Manual (HCM) states "most design or planning efforts typically use service flow rates at LOS C or D to ensure an acceptable operating service for facility users." Although HCM uses LOS D in most of their examples, it gives each jurisdiction the flexibility to determine what is the minimum acceptable LOS for their roadway network.

the proposed intersection with Industrial Road. The capacity at which congestion would become apparent on this roadway is 14,000 vpd.

Turning Movement Counts (TMCs) were conducted at the intersections listed below. Figure 3-4 illustrates the location of the area roads. The results indicated that the peak hours of traffic on US Hwy 72 occur between 6:15 and 7:15 AM and 4:30 and 5:30 PM.

- US Hwy 72 and SR-196
- US Hwy 72 and Cayce Road
- US Hwy 72 and Red Banks Road
- US Hwy 72 and Knox Road

Figure 3-4: Road Network around Build Alternative



3.3.3.1 Existing Conditions

To determine how efficiently US Hwy 72 serves the existing traffic conditions, a LOS analysis was conducted. The LOS is a qualitative measure that is used to gauge the operational performance of an intersection. There are six levels ranging from “A” to “F” with “F” being the worst. Each level represents a range of operating conditions. Table 3-1 defines the traffic flow conditions and approximate driver comfort at each level of service. The 2009 November Traffic Impact Study prepared for the Memphis Regional IMF, utilizes LOS D as the minimum acceptable level of service. Based on further guidance from MDOT, the minimal acceptable level of service for the analysis was changed to LOS C.⁸⁰

Table 3-1: Level of Service (LOS) Index

LOS	Traffic Flow Conditions	Delay (seconds) Signalized Intersections	Delay (seconds) Unsignalized Intersections
A	Progression is extremely favorable and most vehicles do not stop at all.	0-10	0-10
B	Good progression, some delay.	10-20	10-15
C	Fair progression, higher delay.	20-35	15-25
D	Unfavorable progression, congestion becomes apparent.	35-55	25-35
E	Poor progression, substantial delay.	55-80	35-50
F	Poor progression, extreme delay.	>80	>50

As indicated in Table 3-2 under the existing traffic conditions (2009), the northbound approach of Red Banks Road at US Hwy 72 (approximately 1.6 miles east on US 72 from the intersection of US 72 and the proposed Industrial Road) currently operates at LOS D during the PM peak hour.

Under existing traffic conditions, the northbound approach of Red Banks Road at US Hwy 72 is operating at unacceptable levels of service.

⁸⁰ MDOT comments to Draft EA on March 19, 2010.

Table 3-2: Level of Service – Existing Conditions (2009)

Intersection	Control	Movement	LOS	
			AM	PM
US 72 @ SR-196	2-way Stop	EB Left Turn	B	A
		SB Left/Right Turn	C	C
US 72 @ Cayce Road	Signalized	Overall Intersection	B	B
US 72 @ Knox Road	2-way Stop	EB Left Turn	A	A
		SB Left/Right Turn	B	C
US 72 @ Red Banks Road	2-way Stop	EB Left Turn	A	A
		WB Left Turn	A	A
		NB Left/Thru Right	C	D
EB – Eastbound, SB – Southbound, WB – Westbound, NB – Northbound				

3.3.3.2 Background Conditions

Traffic volumes on US Hwy 72 (Photo 3-4) are expected to change between 2009, 2015 (horizon year) and 2032 (MDOT requested design year), even if the proposed development is not completed. Traffic volumes on US Hwy 72 in the vicinity of the project site have decreased at a rate of approximately 1% per year over the past 5 years. Nevertheless, the existing traffic volumes at the study intersections were increased initially by 1% per year to simulate the background growth.⁸¹ The rate of increase was changed to 2.5% per year growth (as requested by MDOT).⁸²

Photo 3-4: US Hwy 72 looking north



Results of LOS analyses for background traffic volumes indicate that all the turning movements and signalized intersections are expected to operate at LOS C or better during both peak hours in 2015, except northbound movement at the intersection of US Hwy 72 and Red Banks Road. This intersection would operate between LOS D to LOS E during the PM peak hour depending on the rate of growth of background traffic along US Hwy 72. In 2032, four movements rated at LOS D or below. First is northbound movement at the intersection of US Hwy 72 and Red Banks Road, which would operate between LOS D during AM peak hour and LOS E during PM Peak hour. Additionally, southbound movement at the intersection of US Hwy 72 and SR-196 would operate from a LOS C to LOS E at both AM and PM peak hour depending on the

⁸¹ November 2009 AECOM Traffic Study and AADT volumes from two TDOT and two MDOT count stations (referenced in Report).

⁸² During a phone call between AMEC and MDOT on April 13, 2010, MDOT said their normal planning growth rate for NEPA studies was 2.5% growth compounded annually.

growth rate used. The other turning movements and signalized intersections are expected to operate at LOS C or better during both peak hours in 2032.

Table 3-3 shows the level of service provided at the reviewed intersections based on the predicted traffic along US Hwy 72 without any traffic from the IMF. The first level of service column per analysis in Table 3-3 was based on a 1% per year background growth (utilized in the November 2009 Traffic Impact Study) with US Hwy 72 as a two-lane road. The second level of service column per analysis in Table 3-3 was based on a 2.5% per year background growth (utilized in the May 2010 Analysis of Projected Traffic completed at MDOT's direction) with US Hwy 72 as a two-lane road in 2015 and a four-lane road in 2032.

Table 3-3: Level of Service – Background Conditions (2015 and 2032)

Intersection	Control	Movement	LOS (2015)				LOS (2032)			
			AM		PM		AM		PM	
% Background Growth Rate (per year)			1	2.5	1	2.5	1	2.5	1	2.5
US 72 @ SR-196	2-way Stop	EB Left Turn	B	B	A	A	B	B	A	A
		SB Left & Right Turn	C	C	C	C	C	E	C	E
US 72 @ Cayce Rd	Signalized	Overall Intersection	B	B	B	B	B	B	C	B
US 72 @ Knox Rd	2-way Stop	EB Left Turn	A	A	A	A	A	B	A	A
		SB Left & Right Turn	B	C	C	C	C	C	C	B
US 72 @ Red Banks Rd	2-way Stop	EB Left Turn	A	A	A	A	A	B	A	A
		WB Left Turn	A	A	A	A	A	A	B	B
		NB Left/Thru Right	C	C	D	E	D	C	E	E
<p>NOTE: The LOS is shown as a range with: The first LOS column per analysis was determined using a 1% growth rate (based on historical growth in the area) to existing US Hwy 72 traffic with US Hwy 72 analyzed as a two-lane road. The second LOS column per analysis was determined using a 2.5% growth rate (based on MDOT's direction) to existing US Hwy 72 traffic with US Hwy 72 analyzed as a two lanes in 2015 and as four lanes in 2032 (shaded columns).</p>										

Under background traffic conditions, incorporating standard growth, the northbound approach of Red Banks Road at US Hwy 72 would operate at unacceptable levels of service in both 2015 and 2032. The southbound intersection of SR-196 at US Hwy 72 would operate at an unacceptable level of service in 2032 as a result of background conditions without the Memphis Regional IMF.

3.3.3.3 Future Conditions

Future traffic volumes were obtained by adding the assigned projected trip generation numbers, also called the site generated traffic numbers, with the background traffic volumes for the years 2015 and 2032 respectively.

Trips generated by the proposed Memphis Regional IMF were developed based on an expected 327,000 annual lifts (transfers of containers/trailers between train and truck) in 2015, as well as an anticipated 140 employees, 65% of whom would be shift workers. Table 3-4 shows the daily traffic and AM and PM trips generated by the proposed Memphis Regional IMF in 2015 and 2032.

Table 3-4: Trips Generated Directly By IMF (2015 and 2032)

	Daily Traffic		AM Peak Hour				PM Peak Hour			
			Enter		Exit		Enter		Exit	
	2015	2032	2015	2032	2015	2032	2015	2032	2015	2032
Trucks	1,668	1,974	53	63	53	63	46	55	46	55
Passenger Vehicles	278	334	31	37	40	48	4	5	4	5
Total	1,946	2,308	84	100	93	111	50	60	50	60

Projected trip generation for the proposed facility includes 1,668 trucks and 278 vehicles per day in 2015. This includes 106 trucks and 71 passenger cars entering/exiting in the AM peak hour and 92 trucks and 8 passenger cars entering/exiting in the PM peak hour. In 2032, daily trips are expected to grow to 1,974 trucks and 334 passenger cars. Approximately 31% of the Daily Truck Traffic is “bobtails”. “Bobtails” are tractors not pulling trailers, containers or bare chassis.

Table 3-5 shows the level of service provided at the reviewed intersections with the predicted traffic along US Hwy 72 including the predicted traffic from the IMF. As noted, the first level of service column per analysis in Table 3-5 was based on a 1% per year background growth with US Hwy 72 as a two-lane road. The second level of service column per analysis in Table 3-5 was based on a 2.5% per year background growth with US Hwy 72 as a two-lane road in 2015 and a four-lane road in 2032. For 2015 under projected conditions, only two approaches would operate at LOS D, E, or F. The first is the northbound approach of Red Banks Road at US Hwy 72, which is also anticipated to operate at unacceptable level of service without predicted traffic from the IMF. The second is the left turns from Industrial Road at US Hwy 72.

The other turning movements and signalized intersections are expected to operate at LOS C or better. For 2032 under projected conditions, three approaches would operate at LOS D, E, or F. The first two are the same approaches as 2015. The third approach is southbound approach of SR-196 at US Hwy 72, which is also anticipated to operate at unacceptable level of service without predicted traffic from the IMF. The other turning movements and signalized intersections are expected to operate at LOS C or better under future conditions. Though not warranted by the projected traffic, if a signal was installed at the intersection of US Hwy 72 and Industrial Road, the level of service would be LOS B during the AM Peak and LOS A during the PM Peak in both 2015 and 2032.

Table 3-5: Level of Service – Future Conditions (2015 and 2032)

Intersection	Control	Movement	LOS (2015)				LOS (2032)			
			AM		PM		AM		PM	
% Growth Rate (per year)			1	2.5	1	2.5	1	2.5	1	2.5
US 72 @ SR-196	2-way Stop	EB Left Turn	B	B	A	A	B	C	A	A
		SB Left & Right Turn	C	C	C	C	C	E	C	E
US 72 @ Cayce Rd	Signalized	Overall Intersection	B	B	B	B	C	C	C	C
US 72 @ Industrial Rd*	2-way Stop	EB Left Turn	B	B	A	A	B	C	B	B
		SB Left Turn**	D	E	E	F	E	C	F	E
		SB Right Turn	C	C	B	B	C	C	B	B
US 72 @ Knox Rd	2-way Stop	EB Left Turn	A	A	A	A	A	B	A	A
		SB Left & right Turn	C	C	C	C	C	C	C	B
US 72 @ Red Banks Rd	2-way Stop	EB Left Turn	A	A	A	A	A	B	A	A
		WB Left Turn	A	A	A	A	A	A	B	B
		NB Left/Thru Right	C	D	D	E	D	C	E	E
<p>* US Hwy 72 with one eastbound left turn lane, one westbound right turn lane and Industrial road with separate southbound right and left turn lanes.</p> <p>** Though not warranted by the projected traffic, if a signal was installed, the level of service would be LOS B during the AM Peak and LOS A during the PM Peak in both 2015 and 2032.</p> <p>NOTE: The LOS is shown as a range with: The first LOS column per analysis was determined using a 1% growth rate (based on historical growth in the area) to existing US Hwy 72 traffic with US Hwy 72 analyzed as a two-lane road. The second LOS column per analysis was determined using a 2.5% growth rate (based on MDOT's request) to existing US Hwy 72 traffic with US Hwy 72 analyzed as a two lanes in 2015 and as four lanes in 2032 (shaded columns).</p>										

Though the southbound left turning movements onto US Hwy 72 from Industrial Road are predicted to be LOS D to LOS F, the expected number of left turning vehicles during the peak hour is 18 vehicles or less. Therefore, the

warrants necessary to justify a signal are not meet for this intersection. Though not warranted based on the predicted traffic volumes, if the intersection of US Hwy 72 and Industrial Road were signalized, the overall intersection would be expected to operate at LOS B or better.

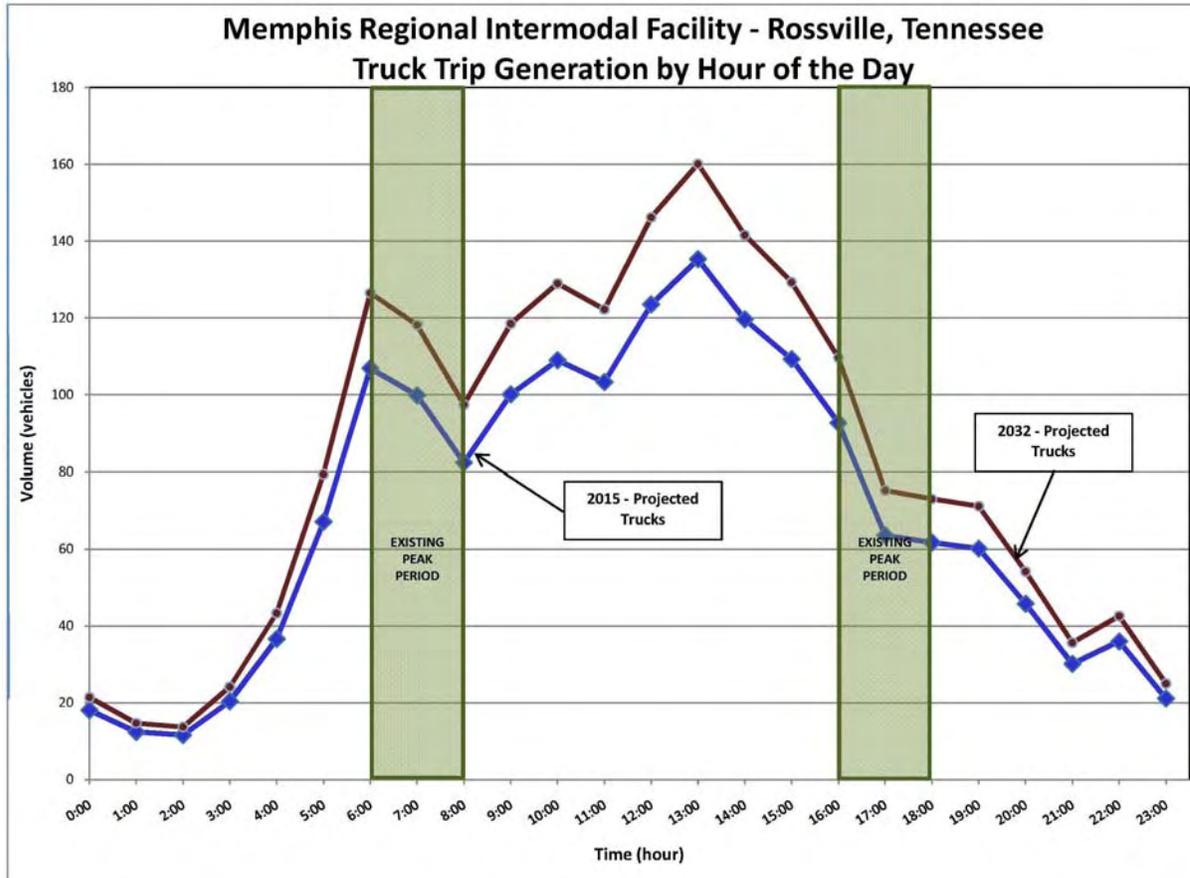
A two-lane segment of US Hwy 72 is expected to operate at LOS D in 2032 with or without traffic generated by the Memphis Regional IMF. With the 2.5% background growth and the traffic generated by the Memphis Regional IMF, the two-lane section of US Hwy 72 is expected to operate at LOS D in 2015. As a four-lane facility (which is programmed to be constructed), US Hwy 72 would operate at LOS C or better in 2015 and 2032.

US Hwy 72 is expected to carry between 13,900 vpd and 15,000 vpd depending on growth rate⁸³ in 2015 near Industrial Road, including site generated traffic. From 2015 to 2032 traffic volume is expected to increase between 16,500 vpd and 22,200 vpd depending on growth rate, including site generated traffic. Within the 2015 and 2032 expected traffic volume, the IMF traffic is 14% of the total. Figure 3-5 shows the hourly distribution of truck trips expected to be generated by the facility in 2015 and 2032.



⁸³ The 13,900 vpd and 16,500 vpd based on 1% per year growth rate for existing (background) traffic on US Hwy 72. The 15,000 vpd and 22,200 vpd is based on 2.5% per year growth rate.

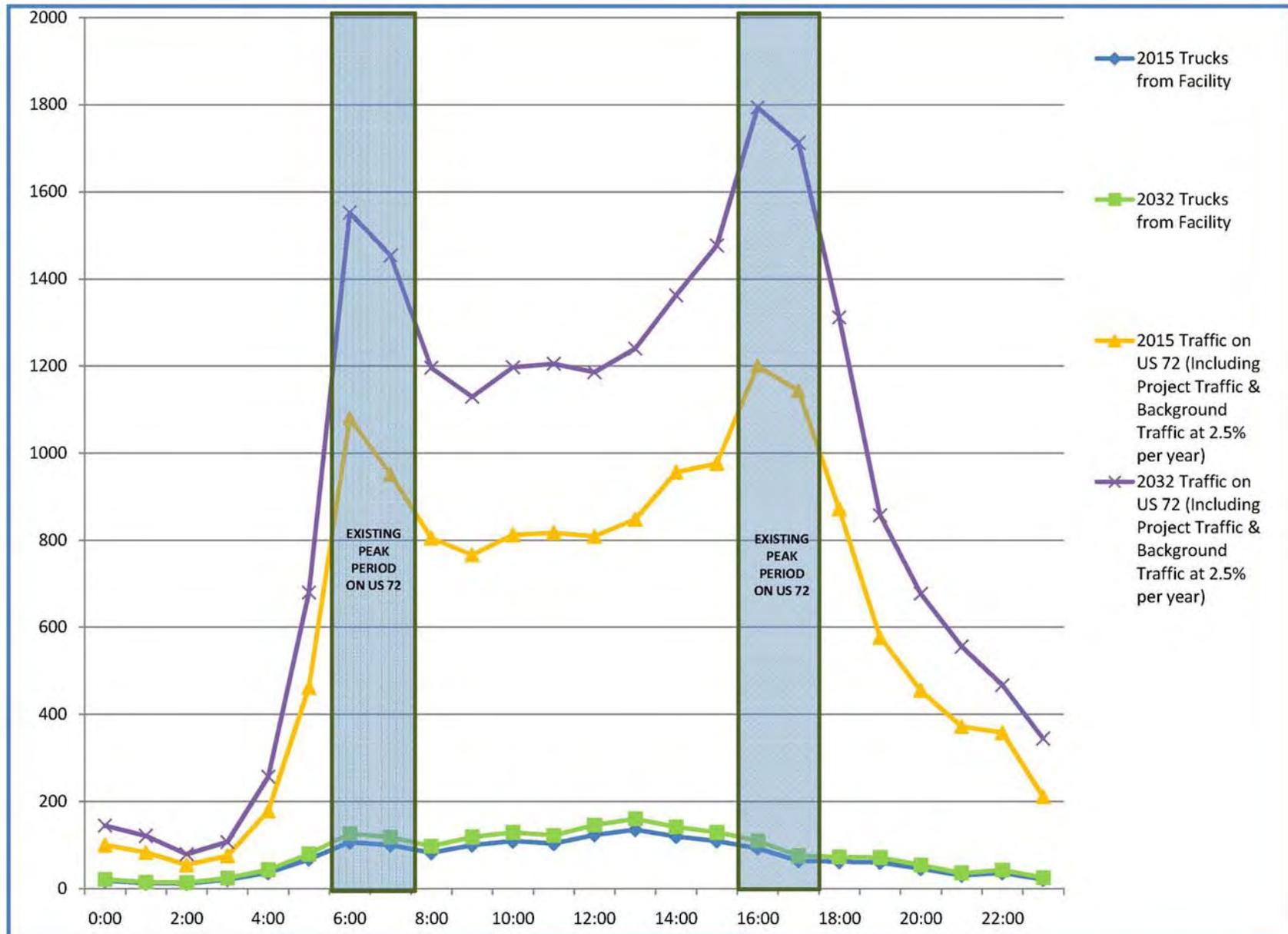
Figure 3-5: Memphis Regional IMF Hourly Distribution of Trips on US Hwy 72



Using the same predicted traffic volumes for the IMF traffic as shown in Figure 3-5, Figure 3-6 shows the hourly distribution of truck trips expected to be generated by the facility and projected traffic on US Hwy 72 near Industrial Road in 2015 and 2032.

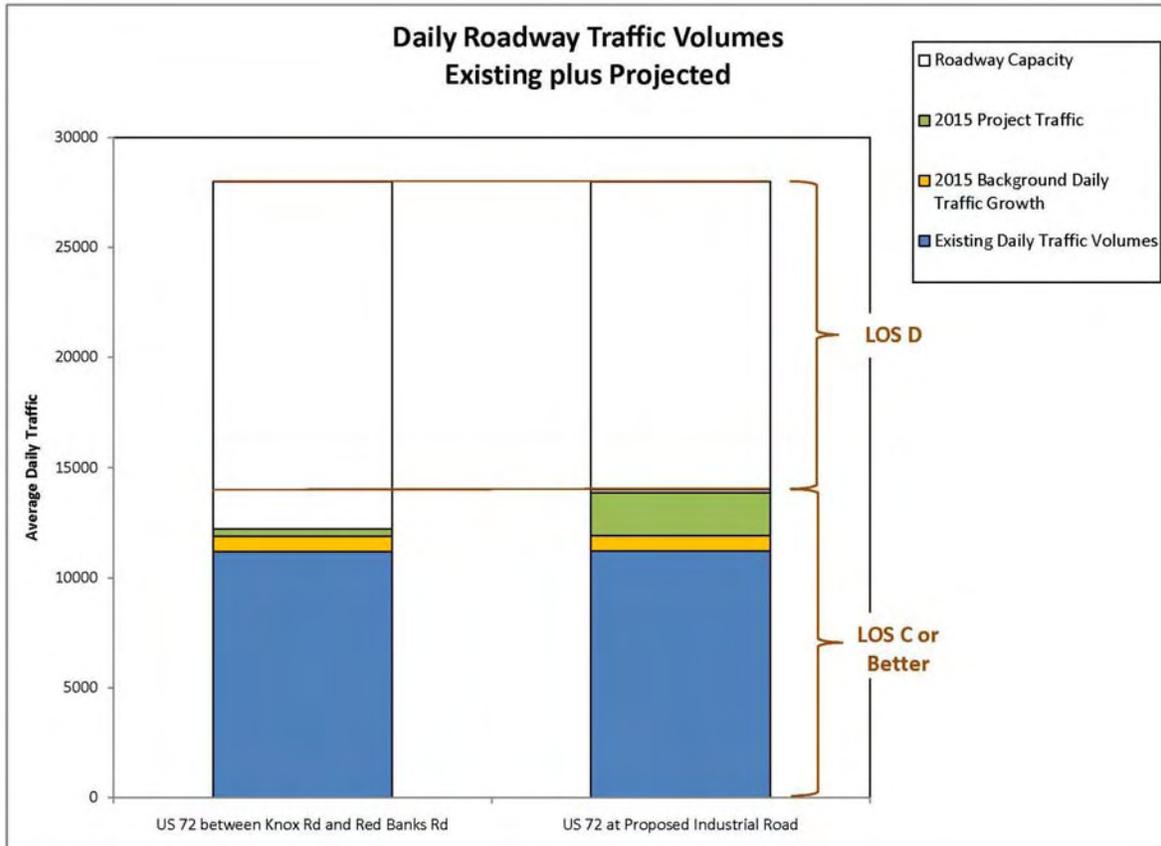


Figure 3-6: Projected Traffic on US Highway 72 near Industrial Road



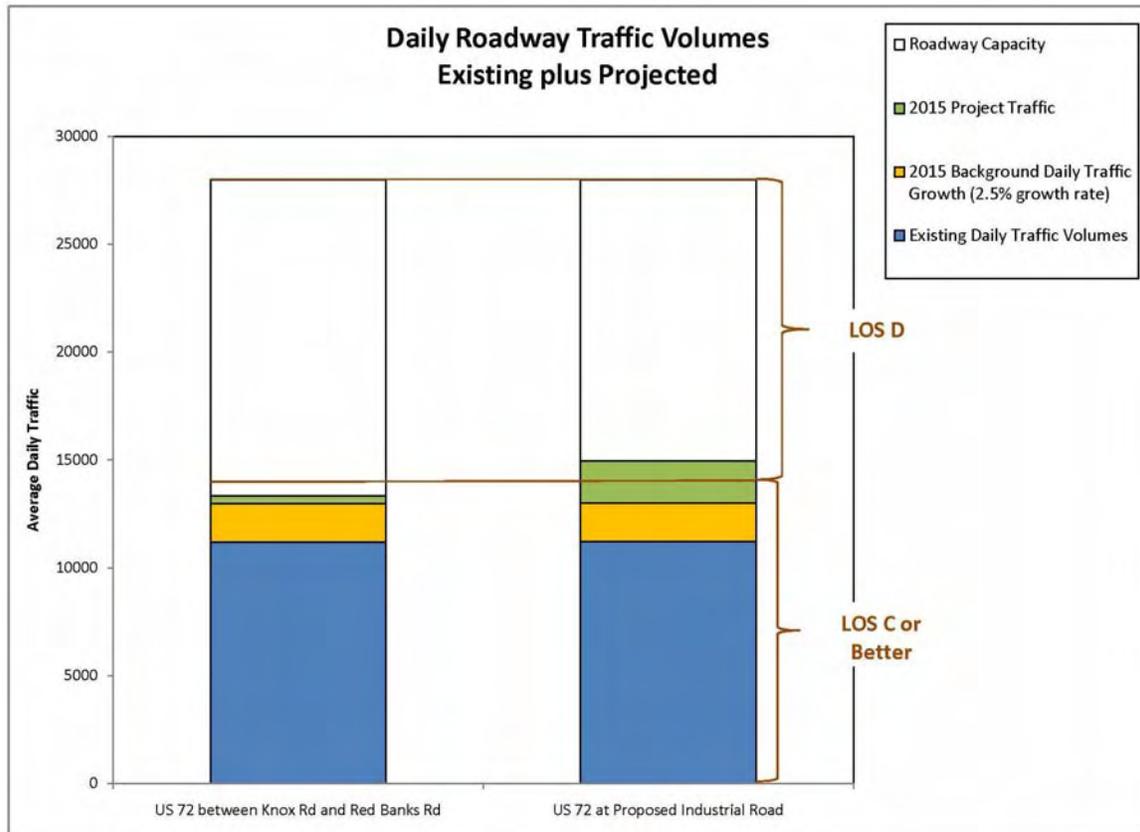
As shown in Figure 3-7, in 2015 the existing two-lane configuration on US Hwy 72 would accommodate the 2015 volume without apparent congestion. Figure 3-7 represents the approximate 13,900 vpd that US Hwy 72 is expected to carry in 2015 with the 1% per year growth rate, including the projected trip generation for the proposed facility of 1,668 trucks and 278 passenger vehicles per day.

Figure 3-7: 2015 Roadway Volumes Two-Lane Segment US Hwy 72 (1% Growth)



As shown in Figure 3-8, in 2015 the existing two-lane configuration on US Hwy 72 would accommodate the 2015 volume with some congestion with the 2.5% per year growth in existing traffic along US Hwy 72. The traffic projected to be generated directly from the IMF is the same volume in both Figures 3-7 and 3-8. Figure 3-8 represents the approximate 15,000 vpd that US Hwy 72 is expected to carry in 2015 with the 2.5% per year growth rate, including the projected trip generation for the proposed facility of 1,668 trucks and 278 passenger vehicles per day.

Figure 3-8: 2015 Roadway Volumes Two-Lane Segment US Hwy 72 (2.5% Growth)



Results of left turn lane warrant analyses for AM and PM 2015 peak hour volumes indicate that traffic volumes at Industrial Road warrant an eastbound left turn lane during both peak hours. While traffic volumes do not warrant a right turn lane on US Hwy 72 at Industrial Road, a westbound deceleration lane is required to reduce the potential for rear-end collisions and maintain a higher free-flow rate on US Hwy 72. An acceleration lane for the southbound right turns is also required at Industrial Road to provide trucks an opportunity to merge in gaps without significantly impeding traffic on US Hwy 72 or increasing the potential for a collision. These project-required improvements would be made by the private Developer in conjunction with the MDOT Highway Occupancy Permit (HOP).

As outlined in the Manual of Uniform Traffic Control Devices (MUTCD), a traffic signal should not be installed unless traffic volumes and intersection characteristics meet a set of warrants or requirements. The intersection of US Hwy 72 and Industrial Road was evaluated for each of the warrants, for 2015 and 2032. The warrant analysis assumes two exiting lanes from Industrial Road, an

eastbound left turn lane on US Hwy 72, and a westbound right turn lane on US Hwy 72. The results of the analysis indicate that neither the projected 2015 nor the projected 2032 traffic volumes satisfy the requirements of the signal warrants.

As shown in Figure 3-9, for the proposed four-lane configuration, US Hwy 72 would accommodate the 2015 volume without apparent congestion. Figure 3-9 represents the approximate 15,000 vpd that US Hwy 72 is expected to carry in 2015 with the 2.5% per year growth rate, including the projected trip generation for the proposed facility of 1,668 trucks and 278 passenger vehicles per day.

Figure 3-9: 2015 Roadway Volumes Four-Lane Segment US Hwy 72 (2.5% Growth)

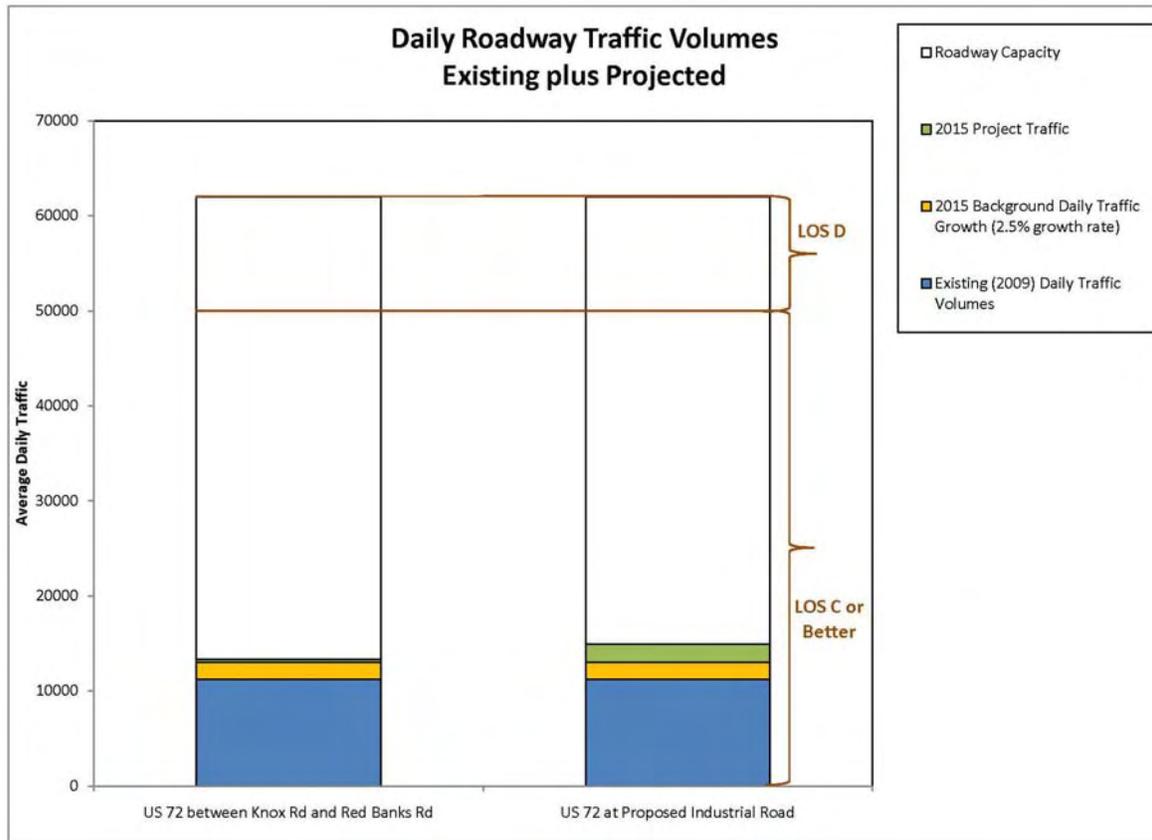
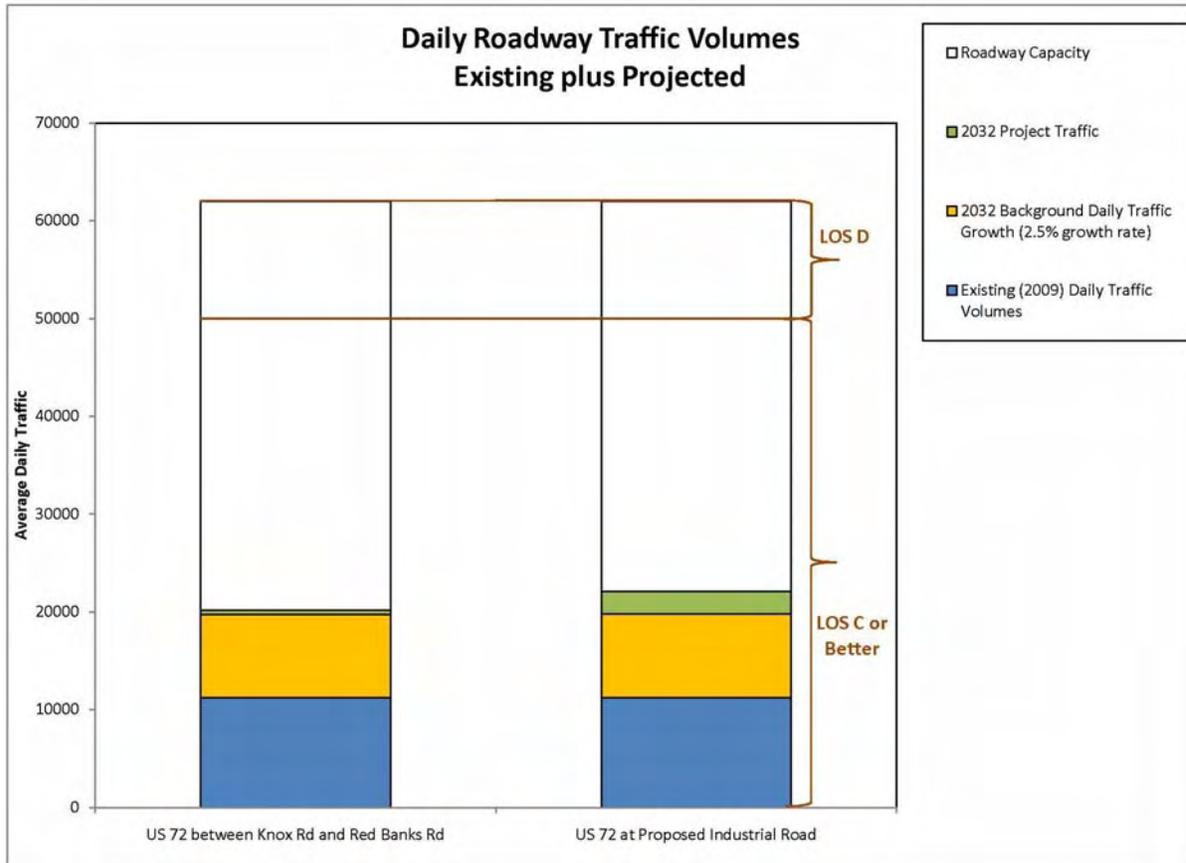


Figure 3-10 represents the approximate 22,200 vpd, including the projected trip generation for the proposed facility of 1,974 trucks and 334 passenger vehicles per day plus a 2.5% per year growth in existing traffic expected in 2032.

Figure 3-10: 2032 Roadway Volumes on Four-Lane Segment US Hwy 72



Access to the proposed project site would be provided by Industrial Road that would intersect US Hwy 72 from the north, near Lenderman Road. According to AASHTO “the available sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path.”⁸⁴ Based on the 70 mph design speed⁸⁵, the intersection of US Hwy 72 (as a two-lane road) and Industrial Road should be designed to provide at least 1,180 feet and 1,080 feet of sight distance when looking to the west and east, respectively. With the same design speed for US Hwy 72 as a four-lane road, the intersection should be designed to provide at least 1,540 feet and 1,440 feet of sight distance when looking to the west and east, respectively.

3.3.3.4 Recommendations

The MDOT plans to widen US Hwy 72 from MS-302 to SR-196 to a four-lane roadway in the near future. A firm time

⁸⁴ AASHTO's A Policy on Geometric Design of Highways and Streets, 2004,

⁸⁵ MDOT specified design speed for US Hwy 72 at 70 mph during a phone call with AMEC on April 13, 2010.

line has not been established for this improvement, though it is currently programmed to start construction in 2012 with an expected completion time of 2015.⁸⁶

In anticipation of the planned widening of US Hwy 72 to four lanes in the vicinity of the project area, MDOT has requested that the design and construction of the proposed intersection of Industrial Road and US Hwy 72 include widening US Hwy 72 to four-lanes, with stub-outs to the east and west.⁸⁷ By incorporating the planned widening of US Hwy 72 into the design of the proposed intersection, MDOT could avoid impact to the intersection during the future widening of US Hwy 72.

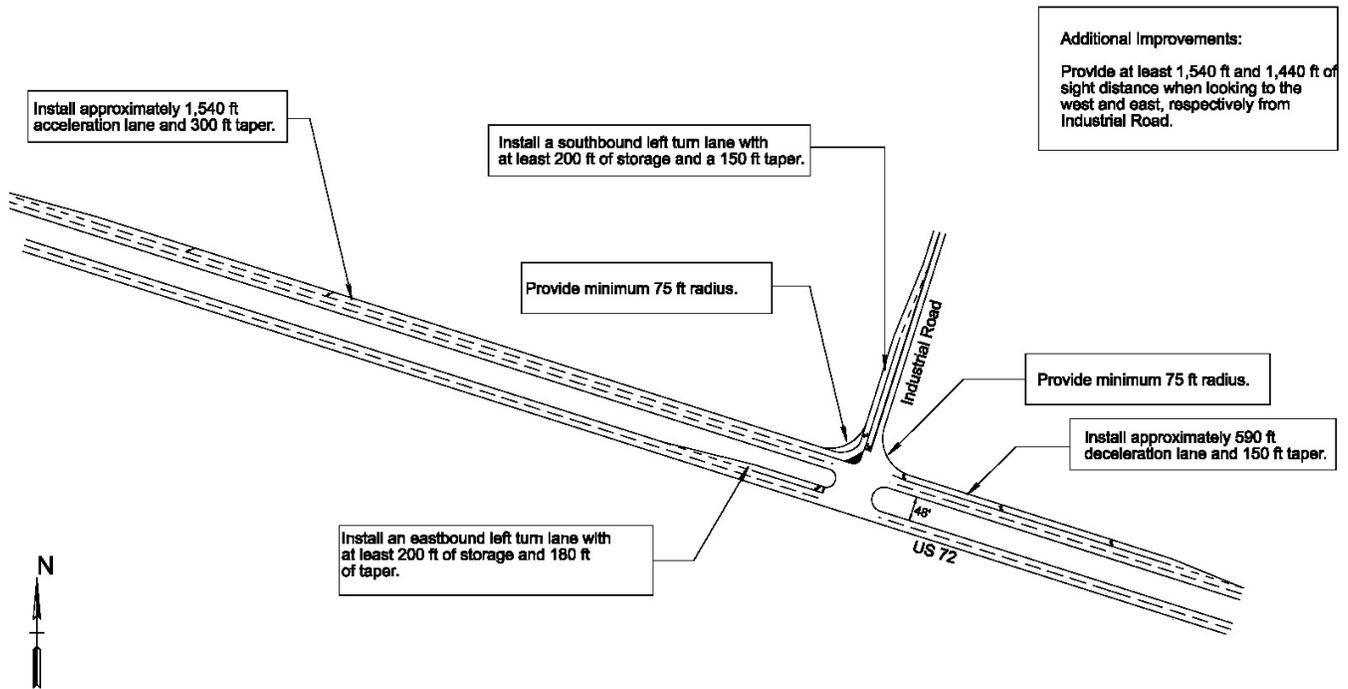
Based on the evaluation and analyses of existing and future conditions, traffic generated by the proposed Memphis Regional IMF is expected to have a minimal impact on the adjacent roadway network. In order to address the expected operational impacts of the Memphis Regional IMF and provide safe traffic operations, the following configurations were included in the Traffic Impact Study. Figure 3-11 illustrates the required configuration of US Hwy 72 as a four-lane rural principle arterial. These project-required improvements would be made by the private Developer in conjunction with the MDOT Highway Occupancy Permit (HOP).

- One each turn lanes for right and left turning vehicles from Industrial Road onto US Hwy 72.
- Channelize the southbound right turning movement on Industrial Road at US Hwy 72.
- Add an eastbound left turn lane on US Hwy 72 at the intersection Industrial Road.
- Locate the intersection of US Hwy 72 and Industrial Road to provide adequate sight distance to the west and east.
- Add acceleration and deceleration lanes on US Hwy 72 at the intersection with Industrial Road.

⁸⁶ Mississippi DOT 2010-2013 STIP.

⁸⁷ Meeting with MDOT, NSR, AECOM, AMEC, and Developer in Batesville on October 22, 2009.

Figure 3-11: Proposed Improvements to Four-Lane US Hwy 72



3.3.3.5 Conclusion

Traffic impacts on US Hwy 72 due to Build Alternative 1 are expected to be minor until 2015. By 2015, congestion would become apparent and four-lanes would be warranted assuming the 2.5% per year growth in background traffic.⁸⁸ Throughout this timeframe, trucks should not be lining the sides of US Hwy 72 or Industrial Road to get into the Memphis Regional IMF. The AGS would be designed to include 5 inbound and 5 outbound queuing lanes to handle the anticipated peak traffic flow into the facility where there should be no more than three trucks queued at one time. Also the entrance to the Memphis Regional IMF is approximately 4,000 feet from the property boundary (along Industrial Road).

Rail access alternatives to the facility were also considered. Among the issues for consideration are grade crossings. The lead tracks of Build Alternative 1 must cross SR-57 in order for trains to access the facility. NSR proposed a crossing at the north end of the project near the NSR mainline to be a grade-separated crossing to ensure that local traffic is not interrupted by trains on the lead track. This would consist of construction of the SR-57 overpass.



⁸⁸ Using the 1% per year growth rate, congestion was not apparent until 2032.

Under the No-Build Alternative, traffic on US Hwy 72 would continue to increase. Results of the 2015 LOS analysis for background traffic indicated that all the turning movements and signalized intersections are expected to operate at LOS D or better. Results of the 2032 LOS analysis for background traffic indicate that those same movements would operate above LOS E, showing a need for increased capacity.

3.4. Social Impacts

This section describes the existing social characteristics of the local community and its residents and evaluates potential impacts of the proposed Memphis Regional IMF. It examines the people, the community, and public and social services.⁸⁹ Data have been collected from previously published documents issued by Federal, State, and Local agencies and from State and National databases (e.g., data collected by the U.S. Census Bureau). The analyses presented in this section follow the *Tennessee Environmental Procedures Manual Guidelines for Preparing Environmental Documentation for Federally Funded and State Funded Transportation Projects* (April 2007).⁹⁰

3.4.1 Existing Social Conditions

The area surrounding the project is categorized as forested, rural, residential, and agricultural (pastured livestock or cultivated agriculture). Approximately 55 residences and two churches are located within 0.5 mile of the project boundary including the SR-57 overpass. Another five residences are located within 0.25 mile of Industrial Road. The properties that surround the project area are generally bordered by Neville Road and Parnell Road to the west, the railroad line north of SR-57 to the north, Knox Road to the east and the Tennessee/ Mississippi State Line to the south.

Table 3-6 outlines general population data from the 1990 and 2000 U.S. Census for Fayette County, Tennessee and Marshall County, Mississippi. Statewide information for both Tennessee and Mississippi is also included as a point of comparison.

Table 3-6 illustrates that population growth for Fayette County is projected to be slightly less than the rest of Tennessee in 2000. Between 1990 and 2000, Tennessee

⁸⁹ FHWA, "Community Impact Assessment: A Quick Reference for Transportation" (Publication No. FHWA-PD-96-036), September 1996.

⁹⁰ TDOT, *Tennessee Environmental Procedures Manual: Guidelines for Preparing Environmental Documentation for Federally Funded and State Funded Transportation Projects*, April 2007.

experienced a 14.0% increase in total population compared to 11.3% increase for Fayette County. However, the forecasted growth for Fayette County is 25.8% by the year 2010 and 46.7% by 2020. Tennessee as a whole is forecasted to grow at a slower rate, with a projected growth of 8.7% by the year 2010 and 17.1% by 2020.⁹¹

Table 3-6: Population Data

Geographical Area	1990 Population	2000 Population	Percent Change from 1990	Estimated 2010 Population	Percent Change from 2000	Estimated 2020 Population	Percent Change from 2000
Tennessee	4,890,525	5,689,283	14.0	6,229,564	8.7	6,860,231	17.1
Fayette County, TN	25,559	28,806	11.3	38,848	25.8	54,051	46.7
Mississippi	2,573,216	2,844,658	9.5	3,090,895 (Year 2015)	8.0	3,160,850	10.0
Marshall County, MS	30,361	34,993	13.2	37,691 (Year 2015)	7.1	38,390	8.8
Source: US Census Bureau, 2000, 2005 Tennessee Advisory Commission on Intergovernmental Relations and The University of Tennessee Center for Business and Economic Research, June 2009							

The population growth for Marshall County and Mississippi are similar. Marshall County experienced a 13.2% increase in total population between 1990 and 2000, compared to a 9.5% increase for Mississippi. The forecast growth for Marshall County is 7.1% by the year 2015, and 8.8% by 2020. Mississippi as a whole is forecasted to grow at a slightly faster rate, with a projected growth of 8.0% by 2015, and 10% by 2020.⁹²

Table 3-7 contains demographic data for the project area based on the 2000 U.S. Census. As shown, minority populations comprise 19.9% of the population in Tennessee and 37.5% in Fayette County. The project area lies within Census Tract 607 and Block Group 3. Minority populations comprise 38.1% of Census Tract 607 and 44.6% of Block Group 3. The percentage of minority populations within Block Group 3 is larger than the percentage in Fayette County and the State of Tennessee. Rossville has a 28.1% (105 individuals) minority populations; Piperton is at 14% (81 individuals); and

⁹¹ US Census Bureau, 2000, 2005; Tennessee Advisory Commission on Intergovernmental Relations and The University of Tennessee Center for Business and Economic Research, June 2009

⁹² US Census Bureau, 2000/2005.

Collierville has an 11.2% minority populations (3,710 individuals).

According to the 2000 Census, minority populations comprise 39.3% of the population in Mississippi and 52.3% in Marshall County. The project area lies within Census Tract 9501 and Block Group 3. Minority populations comprise 39.1% of Census Tract 9501 and 26% of Block Group 3. In Byhalia, Mississippi, approximately 39% of the population is minority. The percentage of minority populations within Block Group 3 is lower than the percentage in Marshall County and the State of Mississippi.

In Tennessee, the percentage of persons under 18 years of age in Block Group 3 is nearly equal to that of the State, County, and Census Tract (Table 3-7). Tennessee has approximately 24.6% of the total population under 18 years of age, and Fayette County has 25.7% of its residents being younger than 18. Block Group 3 has a slightly lower percentage of population under the age of 18 (22.9%) than Census Tract 607 (24.6%).

In Mississippi, the percentage of persons under 18 years of age is 27.3% (Table 3-7). For Marshall County and Census Tract 9501, the percentages are similar, 26.6% and 26.4% respectively for population under 18 years of age. In Block Group 3, the percentage of persons under 18 almost doubled in 49%

FHWA defines "low-income" as a person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines.* According to the 2000 Census, in Tennessee, Fayette County (14.3%), Census Tract 607 (13.9%), and Block Group 3 (11.8%) have lower populations with incomes below the poverty threshold than in Mississippi (Table 3-7). Marshall County, Mississippi (21.9%) and Census Tract 9501 (16.9%) have slightly higher populations below the poverty threshold. This topic is discussed further in the Environmental Justice section (Section 3.4.2).⁹³ According to the 2000 Census, Fayette County, Tennessee, Census Tract 607, and Block Group 3 and Marshall County, Mississippi, Census Tract 9501 do not meet the definition of a poverty area as all areas are well below the 20% threshold (Table 3-7). This topic is discussed further in the Environmental Justice section

For more information:

Low-income =

A household income at or below the U.S. Department of Health and Human Services poverty guidelines.

Low-income population =

Any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed / transient persons (such as migrant workers or Native Americans) who would be similarly affected.

Minority =

Person who is Black, Hispanic, Asian American, or American Indian and Alaskan Native.

Minority Population =

Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed / transient persons (such as migrant workers or Native Americans) who will be similarly affected

⁹³ See also FHWA, An Overview of Transportation and Environmental Justice, May 2000. <http://www.fhwa.dot.gov/environment/ej2000.htm>.

(Section 3.4.2). Marshall County, Mississippi, however, does meet the definition of a “poverty area” because 21.9% of its residents have incomes below the poverty threshold.

Table 3-7: Population Characteristics

Geographical Area	Percent Minority Population	Percent Population Under Age 18	Percent High School Graduates	Median Household Income	Percent Below Poverty Line
Tennessee	19.9	24.6	75.9	36,360	13.5
Fayette County	37.5	25.7	70.6	40,279	14.3
CT 607	38.1	24.6	73.3	42,165	13.9
BG 3	44.6	22.9	71.1	40,833	11.8
Mississippi	39.3	27.3	72.9	31,330	19.9
Marshall County	52.3	26.6	61.0	28,756	21.9
CT 9501	39.1	26.4	35.5	29,963	16.9
BG 3	26.0	49.0	NA	NA	NA

Source: US Census Bureau, 2000
 Note: CT= U.S. Census Tract; BG=U.S. Census Block Group; NA=Not Available

3.4.2 Environmental Justice

This project has been developed in accordance with Executive Order (EO) 12898 and *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (1994), which requires identifying and mitigating disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment.⁹⁴

To assess the impacts of Build Alternative 1 on minority and low-income populations, project planners reviewed U.S. Census data for the project area, coordinated with local government, and conducted a field review in 2009.⁹⁵ Based on the information gathered, it has been determined that this project would not have a disproportionately high and/or adverse effect on low-income or minority populations.

At this time, no adverse impacts to a minority or low-income population have been identified as a result of Build Alternative 1. Since the project avoids community segmentation and relocations, no adverse impacts are anticipated on local communities and the effects of the

⁹⁴ FHWA, “FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”, DOT Order 6640.23 (1998) available at http://www.fhwa.dot.gov/legsregs/directives/orders/6640_23.htm.

⁹⁵ TDOT, Tennessee Environmental Procedures Manual: Guidelines for Preparing Environmental Documentation for Federally Funded and State Funded Transportation Projects, April 2007.

project on minority and/or low- income populations would be expected to be the same as those on non-minority and/or non-low-income populations. Consequently, the project would not have a disproportionately high or adverse effect on minority and/or low-income populations. Additionally, all the people living in the project area would potentially share the benefits of the proposed project.

3.4.2.1 Low-Income Populations

As Figure 3-12 illustrates, the area around the proposed Memphis Regional IMF does not have a high concentration of low income population as defined by applicable EPA guidance and other federal guidelines. According to the 2000 Census, the Memphis Regional IMF area surrounding the project has a lower percentage of low income population, approximately 11.8% (Block Group 3) then the larger Census Tract 607 (13.9%) or Fayette County (14.3%). The average per capita income for residents in Block Group 3 is \$42,165, which is higher than the Fayette County-wide average of \$40,279. The nearest low income neighborhood, based on information from the Town of Rossville, is located on Morrison Road, approximately 1.7 mile from the Memphis Regional IMF. Several low income families live on Knox Road southeast of the facility. The Memphis Regional IMF will not have a disproportionate impact directly or indirectly on the Morrison Road neighborhood or the low income families living on Knox Road due to distance and intervening topography.

In Marshall County, Mississippi, approximately 21.9% of the county's population is living below the poverty line. The Marshall County Census Tract 9501 has approximately 16.9% of the population living below the poverty line. In Marshall County Census Tract 9501, the average per capita income is higher in the project area (\$29,963) than in the overall county (\$28,756). The closest neighborhoods in Mississippi to the Memphis Regional IMF are not considered low income. The nearest low income neighborhood identified is located off of US Hwy 72 approximately 0.5 mile west of the intersection of US Hwy 72 and Industrial Road. The low income neighborhood is approximately 2.0 miles southwest of the proposed Memphis Regional IMF.⁹⁶ Due to the distance and intervening topography the Memphis Regional IMF will not have a disproportionate impact on the low income neighborhood off of US Hwy 72.



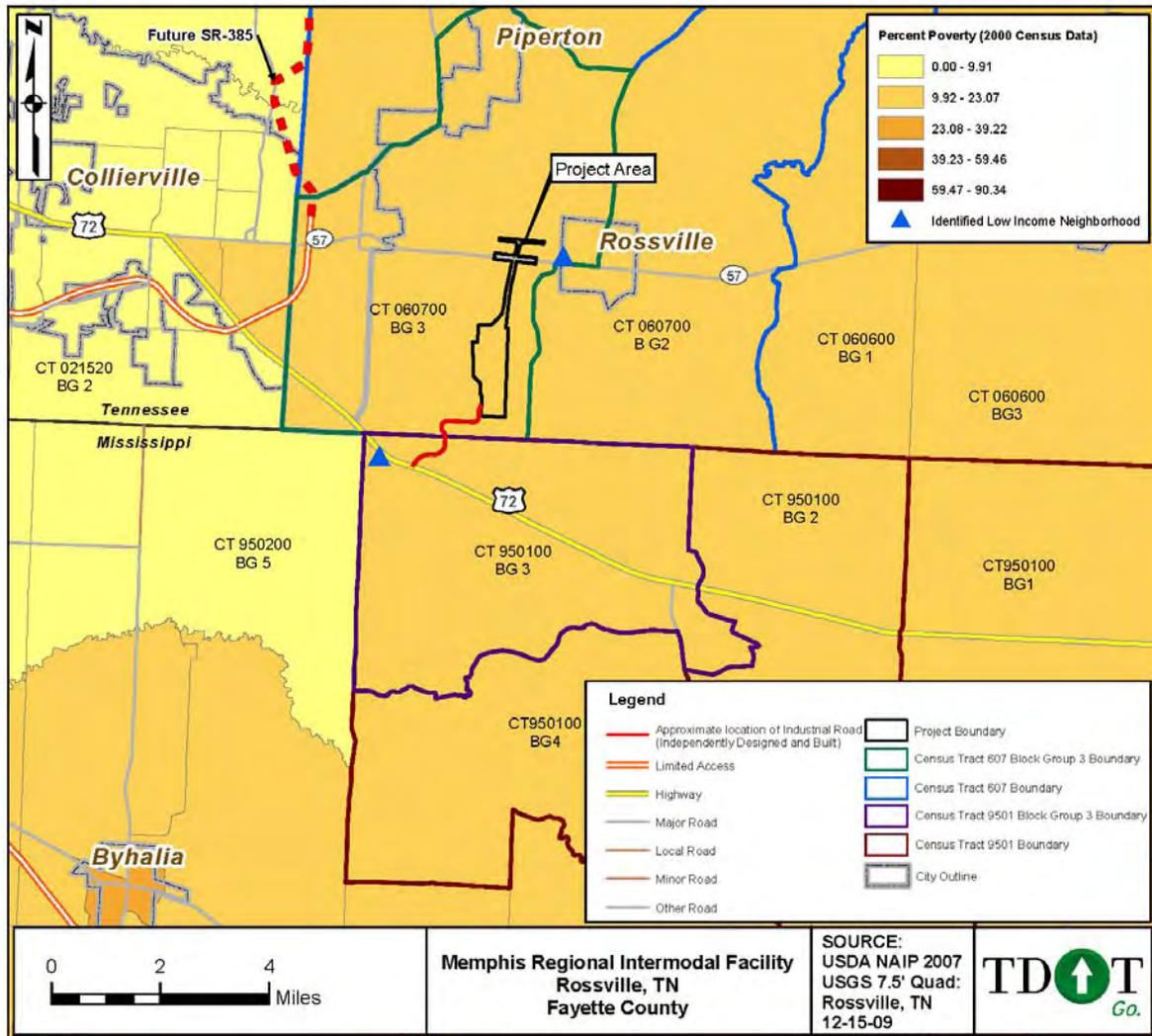
What are Disproportionately High and Adverse Effects?

A Disproportionately High and Adverse Effect on Minority and Low-Income Populations means an adverse effect that:

- 1. Is predominately borne by a minority population and/or a low-income population; or*
- 2. Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or low-income population.*

⁹⁶ Personal Communication with Executive Director, Marshall County Industrial Development Authority, March 2010.

Figure 3-12: Percent Poverty from 2000 Census (Block Group Level)



3.4.2.2 Minority Populations

Figure 3-13 illustrates the distribution of the minority population across the study area. Census Block Group 3 (BG 3), which includes the majority of the project area, contains a 44.6% minority population. Rossville has a lower minority population of 28.1% (105 individuals). The Memphis Regional IMF is within the Rossville growth boundary. No minority neighborhoods have been identified adjacent or near to the Memphis Regional IMF and therefore, no disproportionate impacts to minority neighborhoods are anticipated. The two closest neighborhoods with predominantly minority populations, based on discussions with local officials, include a neighborhood located approximately 2 miles north of downtown Rossville off SR-194 and a neighborhood located approximately 1.50 miles east of downtown Rossville off Mt. Pleasant Drive).⁹⁷ The minority neighborhoods are approximately 5.2 miles and 4.0 miles from the proposed Memphis Regional IMF and no adverse impacts to these neighborhoods are anticipated.

According to the 2000 Census, minority populations comprise 39.3% of the population in Mississippi and 52.3% in Marshall County. A portion of Industrial Road lies within Census Tract 9501 and Block Group 3. Minority populations comprise 39.1% of Census Tract 9501 and 26% of Block Group 3. The percentage of minority populations within Block Group 3 is lower than the percentage in Marshall County and the State of Mississippi.

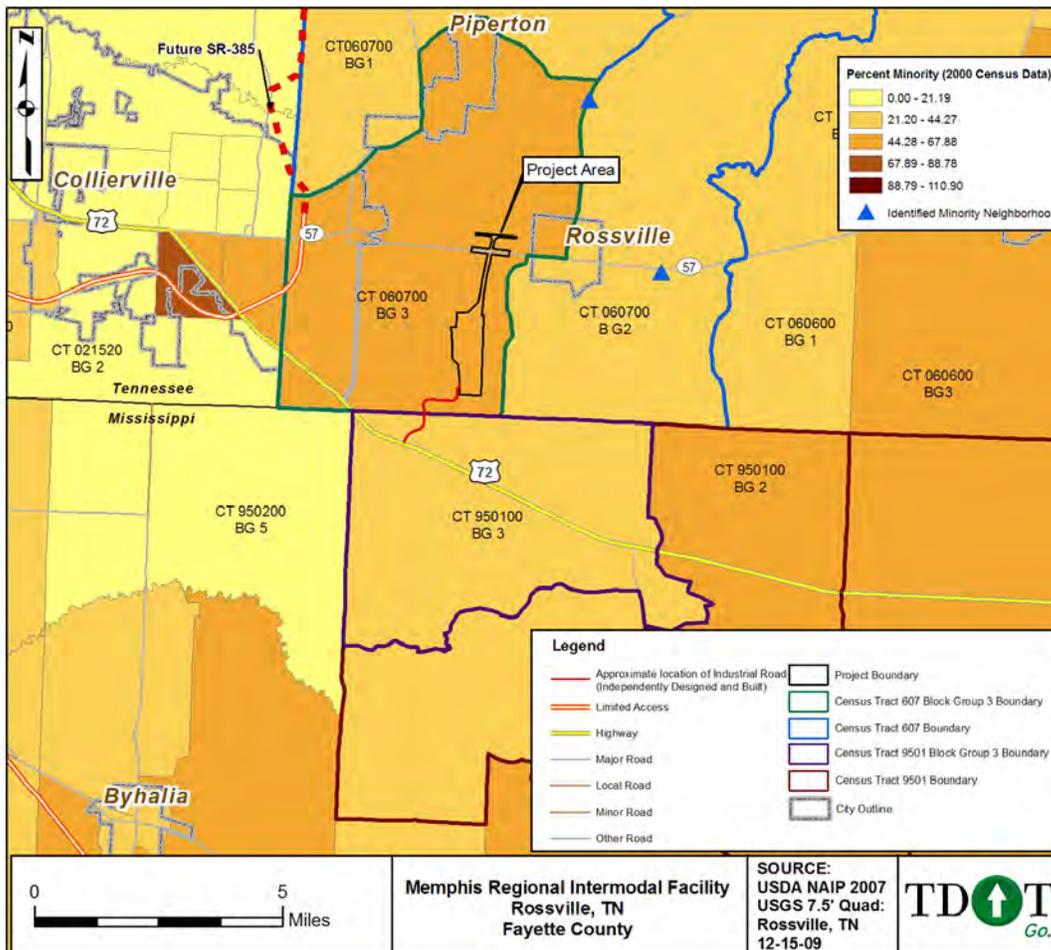
In summary, there is no evidence that any low-income or minority populations or neighborhoods with predominantly low-income or minority populations would bear any adverse effects as a result of Build Alternative 1. Even during construction, area roads would remain unimpeded in order to ensure safe and uninterrupted passage for area residents to places of worship, community services, government assistance offices and hospitals. Social interactions within the community would continue unhindered. There are no anticipated impacts associated with Build Alternative 1 concerning social isolation, segmentation or disruption of local communities.

Although no special needs or impacts associated with minority or low-income populations have been identified at this time, FRA acknowledges that these needs may be identified during further public involvement meetings held

⁹⁷ Personal communication with Planning and Zoning Department representative, Town of Rossville, 10/27/2009.

regarding the project.⁹⁸ Should such needs arise at a later date, FRA would insure NSR addresses the needs through the design phase, the public involvement process, and any further environmental process.

Figure 3-13: Percent Minority from 2000 Census (Block Group Level)



In accordance with Title VI of the Civil Rights Act of 1964, TDOT would comply with Title VI to ensure that “No person shall be, on the grounds of race, color or national origin, excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal assistance.”

3.4.3 Existing Community Services

Build Alternative 1 is not anticipated to represent a barrier to social interaction. Construction of the proposed project would result in temporary or minor impacts to residents in the project area. No business or residential relocations

⁹⁸ EPA Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses available at http://www.epa.gov/compliance/resources/policies/ej/ej_guidance_nepa_epa0498.pdf.

would occur due to Build Alternative 1. Therefore, other than short-term, construction-related effects (e.g., noise and alterations in traffic and traffic patterns), this project is not anticipated to have any adverse community service impacts.

3.4.4 Social Impacts

Build Alternative 1 would not represent a barrier to social interaction or community cohesion. There are no schools, churches, or hospitals located within the project site. The nearest schools are located in Piperton and Rossville proper. Two churches are located near the site. One church, the Golden Jerusalem M.B. Church is located approximately 0.6 mile west from the proposed SR-57 overpass and the second church, St. Luke's Church (Photo 3-5), is located on Knox Road approximately 0.5 mile east of the lead tracks. The closest hospitals are located in Collierville, Tennessee, and Holly Springs, Mississippi.

It is likely that residents in the immediate area would experience temporary or minor impacts as a result of construction of Build Alternative 1. These impacts are not expected to be substantial. There would be some short-term construction-related impacts (e.g., noise and alterations in access and traffic patterns), but Build Alternative 1 is not anticipated to have any adverse, long-term social impacts. Potential impacts are as follows:

- Residents/Neighborhoods. Residents on Neville Road in Tennessee may experience an increase in noise levels from train traffic. Residents on North Lenderman Road in Tennessee and Mississippi may experience a similar increase in noise levels along with increased congestion due to truck traffic. See Section 3.8 for additional discussion about noise levels.
- Schools (and school buses). No schools are located in the project area. Local school buses utilize the section of US Hwy 72, where the construction and operating traffic would enter the facility. Some school buses travel on SR-57, which would be placed on a temporary bypass while the grade separation overpass is constructed over the lead tracks to the facility.
- Industries. The Memphis Regional IMF would be operated by approximately 140 employees, 65% of whom are expected to be shift workers. Additional short-term jobs would be created both on- and off-site during construction and IMF operation.

Photo 3-5: St. Luke's Church located on Knox Road



- **Community Services and Facilities.** The facility should have no effect on existing daycare, churches, or civic groups. The facility might cause a slight increase in the need for fire, police, hospital or other type of emergency services. Emergency services would be provided by the Town of Rossville in Fayette County, Tennessee.

There are no adverse social impacts from the No-Build Alternative.

3.4.5 Security Impacts

The Memphis Regional IMF would be fenced and/or have other physical barriers and close-circuit monitoring to protect areas from unauthorized access. The final decision on fencing and security measures would be made during the project design phase. Gates would control personnel and vehicles moving, entering, or leaving the Memphis Regional IMF. Measures to enhance boundaries/access points include clear zones, security lighting in selected areas, locks, and signage. Security around and within the facility should not have a negative impact on the area and are not expected to be substantial.



There are no security impacts from the No-Build Alternative.

3.5. Displacements

Build Alternative 1 would not result in residential or business relocations.

There are no relocations associated with the No-Build Alternative.

3.6. Economic Impacts

3.6.1 Existing Economic Conditions

As of November 2009, the Tennessee Department of Labor and Workforce Development estimate that the Fayette County labor force was 17,820 with 15,780 employed and 2,040 unemployed. The Fayette County unemployment rate was 11.4%, which is higher than the statewide rate of 10.1%.⁹⁹

The Tennessee Advisory Commission on Intergovernmental Relations (TACIR) estimates that the largest major industry sector in Fayette County (as of



⁹⁹ Tennessee Department of Labor and Workforce Development, "Labor Force Estimates – United States & Tennessee, December 23, 2009.

2007) was Manufacturing (30.9% of the employment), followed by Government (23.1%), then Trade, Transportation and Utilities (12.9%). The three largest companies in Fayette County in 2009 were The Troxel Company (401 employees), Kellogg's Convenience Foods (350 employees) and Medegen Medical Products (250 employees).¹⁰⁰

As of September 2009, the Mississippi Department of Employment Security (MDES), Labor Market Information Department estimates that the Marshall County labor force was 14,859.¹⁰¹ The Marshall County unemployment rate was 11.2%, which is higher than the statewide rate of 8.8%. According to the Marshall County Industrial Development Authority, the following five companies/facilities are the largest employers in the county, each of which employs between 200-400 people: 1) Hunter Fan; 2) Thomas and Betts Electrical Supply Company; 3) Parker Hannifin; 4) Exel Corporation-distribution carrier; and 5) Marshall County Corrections Facility.¹⁰²

The Marshall County Industrial Development Authority has sites available for industrial growth.¹⁰³ The Chickasaw Trail Industrial Park (an independent development) consists of 2,600 acres zoned industrial and available sites in the municipalities of Holly Springs, Byhalia and Potts Camp, each town located along US Hwy 78 in Mississippi.

3.6.2 *Economic Impacts*

Build Alternative 1 would positively affect economic conditions in Fayette and Marshall Counties. The Memphis Regional IMF would be an investment of over \$129 million dollars. It would be operated by approximately 140 employees, 65% of whom are expected to be shift workers. Additional short-term jobs would be created both on- and off-site during construction and site development. At this time, it is anticipated that most employees would be from Fayette, Shelby and Marshall Counties as well as the surrounding region. This creation of employment would result in additional personal income for the purchase of goods and services within the region.

¹⁰⁰ www.tennessee.gov/tacir.

¹⁰¹ Mississippi Department of Employment Security, Labor Market Information Department - www.mdes.ms.gov (10/25/09)

¹⁰² Personal communication with representative from the Industrial Development Authority (IDA) of Marshall County, MS on 10/23/09.

¹⁰³ Marshall County, MS, "Economic Development Assets in Marshall County," http://www.marshallcoms.com/Economic_Development/econdev.html.

The benefits noted in Section 1 and attributable to the Memphis Regional IMF when it is fully operational, are expected to include nationwide more than \$81.4 million in annual congestion savings nationwide, avoidance of an estimate \$20.7 million in highway crashes and fatalities costs nationwide¹⁰⁴, and 6,186 new or benefited jobs for the region.¹⁰⁵ In this context, a benefited job is one at a company that uses intermodal transportation to reduce costs and consequently is more profitable such that the job is more secure.

The additional persons using the facility should benefit local gas stations and restaurants. Further indirect and cumulative economic impacts are discussed in Section 3.18.4.

Another economic impact of Build Alternative 1 is the potential taxes payable by NSR and others related to the construction and operation of the Memphis Regional IMF and the development it is projected to attract.

Build Alternative 1 is located in an area characterized by average weekly wages and median household incomes that are higher than the statewide average. It is expected that the proposed project would have a positive economic impact on the area.

The No-Build Alternative would have no economic impact in the Fayette and Marshall County areas. The employment opportunities associated with a new IMF would not occur. The unemployment rates in Fayette and Marshall Counties would be expected to continue at their current levels of over 11%.

3.7. Air Quality Impacts

Air pollution is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Air quality describes the amount of pollution in the air, with good air quality representing acceptable concentrations of air pollutants and poor air quality indicating unacceptable concentrations of air pollutants. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, reducing productivity or vigor of crops or natural vegetation, or reducing human or animal health.

For more information:

The *Air Quality Technical Report* is available for review at TDOT Environmental Division.

¹⁰⁴ *Analysis of Truck to Rail Diversion Benefits – Memphis*, Cambridge Systematics, Inc., January 20, 2010..

¹⁰⁵ Insight, May 2009..

3.7.1 Existing Air Quality Designation

The ambient air quality in an area can be characterized with respect to compliance with the primary and secondary National Ambient Air Quality Standards (NAAQS). The Clean Air Act, as amended (CAAA)¹⁰⁶, requires the U.S. EPA to set NAAQS for pollutants considered harmful to public health and the environment. Currently, EPA has set NAAQS for six principal pollutants, called criteria pollutants: carbon monoxide (CO); lead (Pb); nitrogen dioxide (NO₂); sulfur dioxide (SO₂); ozone (O₃); and respirable particulate matter (PM), including PM with an aerodynamic size less than or equal to 10 micrometers (PM₁₀) and PM with an aerodynamic size less than or equal to 2.5 micrometers (PM_{2.5}). The Federal standards adopted by EPA set allowable concentrations and exposure limits for various pollutants. Title I of the CAA established criteria for attaining and maintaining the NAAQS. The NAAQS include two types of air quality standards. The Primary Standards are established to protect public health. Secondary Standards are established to protect public welfare and the environment. In promulgating the Primary Standards for protection of public health, EPA evaluated environmental health effects including establishing a margin of safety to protect children and other sensitive populations. Secondary Standards include protection against decreased visibility, damage to animals, crops, vegetation, and buildings.¹⁰⁷ These pollutants, when present at concentrations that exceed NAAQS, are believed to be detrimental to public health and the environment and to cause property damage.

Fayette County, Tennessee, and Marshall County, Mississippi, are designated as in attainment for all NAAQS; therefore, the current air quality in the location of the proposed project is not a concern.

3.7.2 Conformity Analysis

Transportation Conformity is a way to ensure that Federal funding and approval are given to those transportation activities that are consistent with air quality goals. It ensures that these transportation activities do not worsen air quality or interfere with the "purpose" of the State Implementation Plan (SIP), which is to meet the NAAQS.¹⁰⁸ Transportation Conformity is a process required of Metropolitan Planning Organization (MPO)

What is the Clean Air Act?

The Clean Air Act of 1970 (42 USC 7401 et seq.) was enacted to protect and enhance air quality and to assist state and local governments with air pollution prevention programs. Under the Clean Air Act Amendments of 1990, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to Clean Air Act requirements.

What does "in attainment" mean?

Areas where concentrations of pollutants are below the National Ambient Air Quality Standards (NAAQS) are classified as "attainment areas." This means that the area attains the standards and generally has air quality that is protective of human health and welfare.

¹⁰⁶ CAA, 42 U.S.C. s/s 7401 et seq.

¹⁰⁷ EPA National Ambient Air Quality Standards for Particulate Matter, 71 Fed. Reg. 61,144 (Oct. 17, 2006).

¹⁰⁸ EPA and FHWA, "Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas," 2006, EPA 420-B-06-902, www.fhwa.dot.gov/environment/conformity/pmhotspotguid.htm.

pursuant to the CAAA, which requires federally assisted transportation plans, transportation improvement programs, and transportation projects such as IMFs to be consistent with or “conform to” the purpose or intent of the SIP for a given area.¹⁰⁹

In terms of demonstrating conformity to a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS (as well as achieving expeditious attainment of the NAAQS), the CAAA require that Federal actions may not cause or contribute to a new violation of a standard in the area significantly affected by the project or over a region which would otherwise not be in violation of the standard during the future period in question, if the project were not implemented; or increase the frequency or severity of any existing violation. Conformity is satisfied for projects in nonattainment and maintenance areas if it is demonstrated that during the time frame of the transportation plan no new local violations would be created and the severity or number of existing violations would not be increased as a result of the project.

Transportation Conformity applies to nonattainment and maintenance areas for O₃, CO, PM_{2.5}, PM₁₀, and NO₂.¹¹⁰ Fayette County, Tennessee, and Marshall County, Mississippi, are designated in attainment for all of the Transportation Conformity regulated criteria pollutants.

A portion of Fayette County near Rossville, Tennessee, remains under a maintenance plan until 2015 to ensure that air quality remains in attainment of the Pb NAAQS. However, the project site is located outside the maintenance plan coverage. Therefore, the location of the proposed Memphis Regional IMF is in attainment for the Pb NAAQS.

Fayette County, Tennessee, and Marshall County, Mississippi, are in attainment for all of the Transportation Conformity regulated criteria pollutants, thus, under the Transportation Conformity requirements; a conformity determination is not required. Tennessee Department of Environment and Conservation (TDEC) concurred with this determination in a letter dated November 17, 2009, in Appendix A. In addition, because the Memphis Regional IMF will receive funding from the U.S. Department of Transportation, Transportation Investment Generating Economic Recovery (TIGER) Program as part of the American Recovery and Reinvestment Act (ARRA) of

¹⁰⁹ EPA and FHWA 2006.

¹¹⁰ EPA and DOT. “Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum,” December 2008.

2009, the Transportation Conformity requirements of the CAA do not apply.

The General Conformity Rule ensures that actions taken by federal agencies in nonattainment and maintenance areas meet national standards for air quality. Established under the Clean Air Act (section 176(c)(4)), the General Conformity Rule plays an important role in helping states and tribal regions improve air quality in those areas that do not meet the National Ambient Air Quality Standards (NAAQS). Under the General Conformity Rule, Federal agencies must work with State, Tribal and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the initiatives established in the applicable state or tribal implementation plan.

As noted above, Fayette County is designated in attainment for all NAAQS. A portion of the county near Rossville, however, was historically designated as nonattainment for Pb in 1993, and then re-designated as attainment in 1995. This area, therefore, remains under a maintenance plan until 2015 to ensure that air quality remains in attainment of the Pb NAAQS.

The established limit for Pb in a maintenance area is 25 tons per year (tpy). However, there are no reasonably foreseeable emissions of Pb associated with the Memphis Regional IMF project. The only consequential stationary source of Pb in Fayette County was the Ross Metals facility which was closed in 1992. The predominant emissions associated with the IMF would be fugitive dust emissions during construction and mobile source emissions during both construction and operation. Only minor (or exempt) stationary sources of air emissions such as ASTs and an emergency generator are anticipated to be associated with the IMF. Gasoline no longer contains Pb additives although both gasoline and diesel contain trace levels of naturally-occurring Pb.

No substantial emissions of Pb are anticipated with the construction and operation of the proposed IMF consequently the General Conformity emission thresholds will not be exceeded. In addition, the project site is located outside the maintenance plan coverage. Fayette County is designated as attainment for all other criteria pollutants. Therefore, the project will not be subject to the General Conformity requirements.

3.7.3 Evaluate Air Quality

With Build Alternative 1 being located in an area designated as in attainment for all applicable air pollutants,

a detailed analysis of the emission and subsequent dispersion of air pollutants was not required. Some air quality analysis was still undertaken to evaluate impacts.

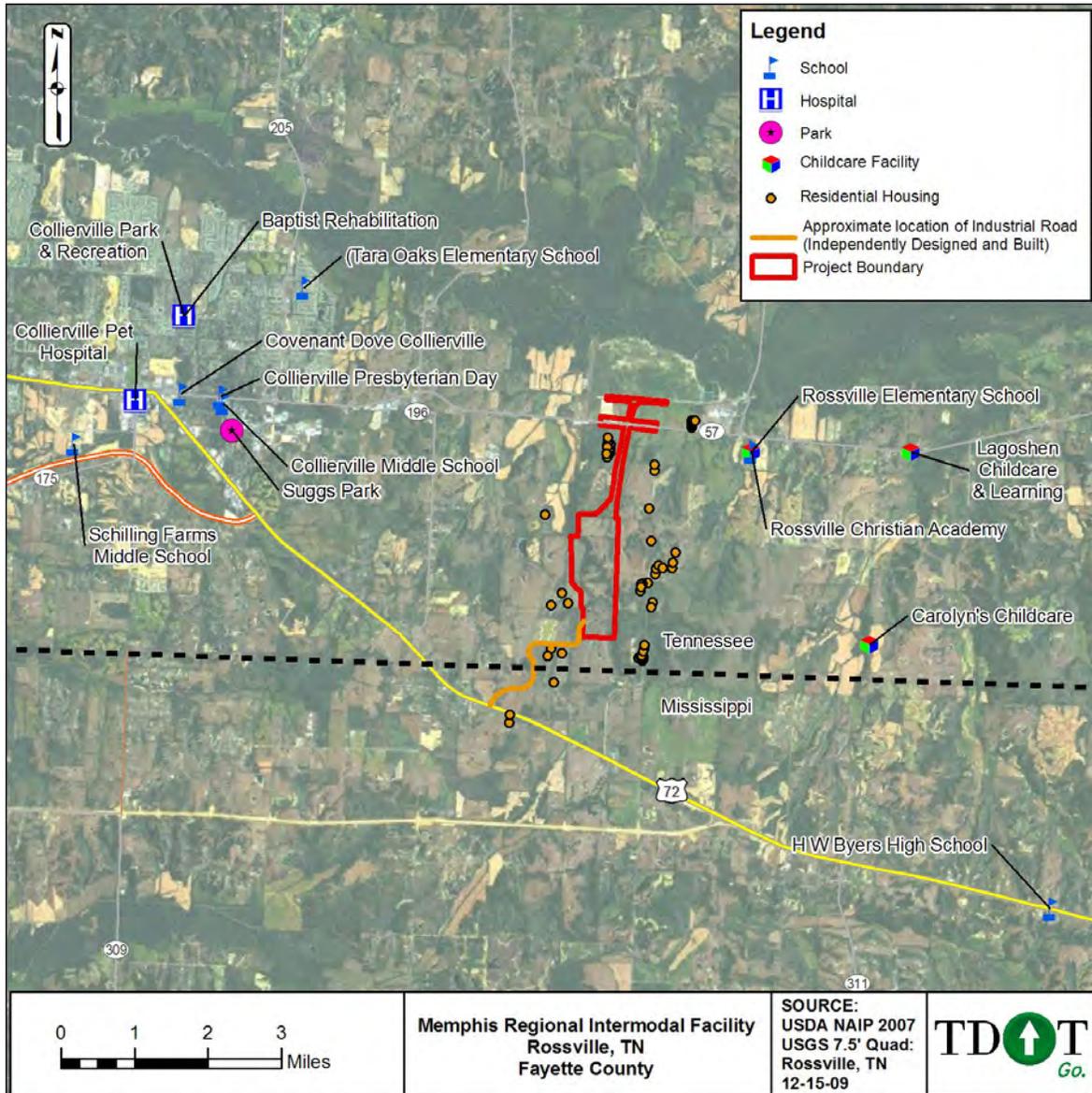
Analysis of aerial photography of the project vicinity indicates that approximately 55 residences are located within ½ mile of the project limits, including the SR-57 overpass. Another approximate 20 residences are located within ½ mile of the Industrial Road. These residences and other sensitive populations (e.g. schools, nursing homes, day cares, hospitals, parks etc.) in the area are illustrated on the map in Figure 3-14.

The Memphis Regional IMF would have capacity to perform 327,000 lifts of containers and trailers from and to rail cars annually. Air emissions from the IMF would be comprised almost entirely of exhaust emissions from diesel powered locomotives, trucks, and IMF support equipment

The emission producing activities that would occur at the facility once it is operational would include the following:

- Mobile source emissions from semi-tractor trailers and/or bobtails entering and/or exiting the facility, including travel on Industrial Road.
- Mobile source emissions associated with the movement of containers and trailers within the yard, including the use of cranes, hostler trucks, and side loaders.
- Mobile source emissions from locomotive movement in the yard including locomotives moving on the lead tracks, in the support yard, or on the loop track.
- Mobile source emissions from maintenance trucks present at the facility.
- Mobile source emissions from employee vehicles, including travel on Industrial Road.
- Exempt stationary source emissions associated with diesel fuel combustion in an emergency generator.
- Insignificant stationary source emissions of volatile organic compounds (VOCs) from aboveground storage tanks (ASTs) that would be present at the yard for the storage of petroleum products including lubrication oil and diesel fuel.

Figure 3-14: Sensitive Population Locations



3.7.3.1 Mobile Source Air Toxics (MSATs)

A discussion of mobile source air toxics (MSATs) as it relates to proposed Memphis Regional IMF is presented in the following text. The non-project specific MSAT discussion is drawn substantially from the Federal Highway Administration’s (FHWA) *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents*.¹¹¹

Controlling air toxic emissions became a national priority with the passage of the CAAA of 1990, whereby Congress

¹¹¹ Federal Highway Administration (FHWA), *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents*, September 30, 2009.

mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS).¹¹² In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment.¹¹³ These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles traveled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050 as presented in Figure 3-15

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the NEPA.

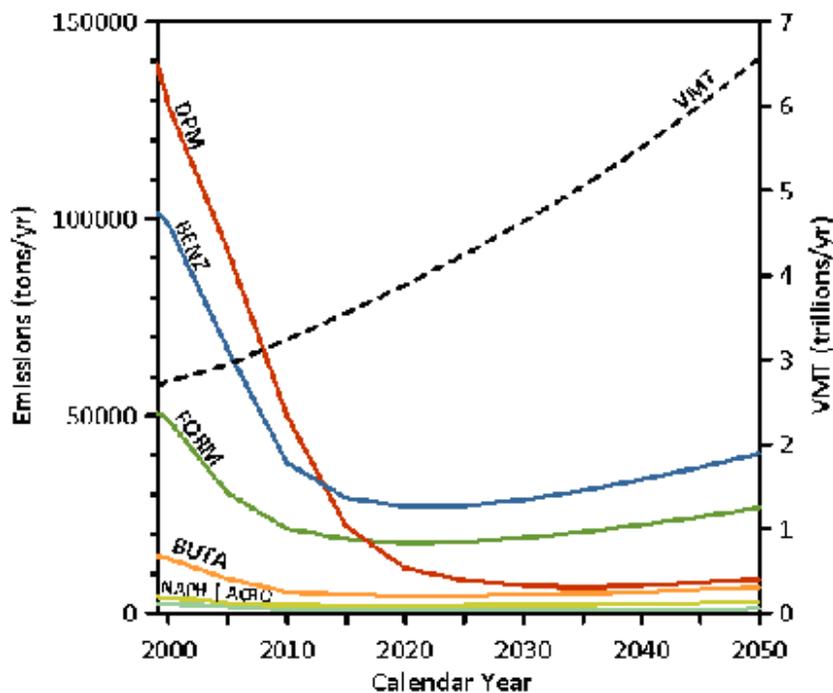
Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, it is duly expected by the public and other agencies that MSAT impacts be addressed in environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects.

¹¹² <http://www.epa.gov/ncea/iris/index.html>.

¹¹³ NATA, <http://www.epa.gov/ttn/atw/nata1999/>.

On February 3, 2006, the FHWA released “*Interim Guidance on Air Toxic Analysis in NEPA Documents*.”¹¹⁴ This guidance was superseded on September 30, 2009 by FHWA’s “*Interim Guidance Update on Air Toxic Analysis in NEPA Documents*”. The purpose of FHWA’s guidance is to advise on when and how to analyze MSATs in the NEPA process for transportation-related projects.

Figure 3-15: National MSAT Emission Trends 1999 – 2050 for Vehicles Operating on Roadways Using EPA's MOBILE6.2 Model



Note:

(1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.

(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles traveled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

FHWA’s 2009 Interim Guidance groups projects into the following categories, each with an expected level of MSAT analysis:

Level 1 - Exempt Projects and Projects with no Meaningful Potential MSAT Effects – no MSAT analysis required;

Level 2 - Projects with Low Potential MSAT Effects – these are projects “that serve to improve operations of

¹¹⁴ FHWA, *Interim Guidance on Air Toxics Analysis in NEPA Documents*, February 3, 2006.

highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions” – qualitative MSAT assessment required; and,

Level 3 - Projects with Higher Potential MSAT Effects - these include projects that “create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location” . . . and are “proposed to be located in proximity to populated areas.”

The proposed Memphis Regional IMF is the construction and operation of a new intermodal facility. As noted previously, the location of the facility is rural with only approximately 55 residences located within ½ mile of the project limits and with another approximate 20 residences located within ½ mile of the Industrial Road. There are no sensitive population (e.g., schools, hospital, nursing homes, day cares, etc.) identified within ½ mile of the facility, Figure 3-15. Therefore, the project is considered to fall within the Level 2 category of projects with low potential MSAT effects that require a qualitative assessment of MSATs. To confirm this designation, both a qualitative and an initial quantitative analysis of MSAT emissions were conducted. Each Build Alternative, if taken to the preliminary design stage, would have evaluated an IMF with a maximum design capacity of 327,000 container/trailer lifts annually.

As outlined by FHWA for Transportation and Toxic Air Pollutants, Appendix B - Examples of Prototype Language for Qualitative Project Level MSAT Discussions is presented below. For each alternative in this EA, the amount of MSATs emitted would be proportional to the amount of truck vehicle miles traveled (VMT) and rail activity, assuming that other variables (such as travel not associated with the intermodal facility) are the same for each alternative. The truck VMT and rail activity estimated for the Build Alternatives are higher than those for the No Build Alternative because of the additional activity associated with the intermodal facility.

An analysis of the Industrial Road Alternative, i.e., Build Alternative 1, presented below in Table 3-8, indicates that an additional 5,838 VMT per day are estimated in association with the proposed Memphis Regional IMF. The diversion of these units and their associated VMT would produce significant reductions in: highway hours of travel (over 3 million hours); fuel consumption (nearly 24 million gallons); CO₂ emissions (over 265,000 tons); and highway crashes avoided (185). In 2015, the Memphis

Regional IMF is projected to handle 186,798 loaded units (containers and trailers) of traffic to and from Northeastern US points that currently move all-highway. Diverting this number of units from truck to rail would save more than 185 million miles of truck VMT, because the average length of the diverted truck trips is around 1000 miles each. The largest number of units would be removed from highways in Tennessee, Virginia, West Virginia, Maryland, and Pennsylvania, but there would also be units removed from highways in Delaware and New Jersey.¹¹⁵

Table 3-8: 2015 Design Year VMT Projections on Industrial Road and IMF

<i>Alternative</i>	<i>LOCAL Year 2015 VMT per day</i>	<i>NON-LOCAL (Regional/National) Year 2015 VMT per day</i>
No-Build Alternative	0	478 million VMT per day ^b
Industrial Road Alternative	5,838 VMT per day ^a	0

^a VMT for Industrial Road and travel on the facility is estimated at 6 miles round trip for 834 trucks per day and 139 employee vehicles per day.

^b VMT No-Build is estimated at 938 miles trip between Memphis International Airport and NSR PA Zero IMF Harrisburg PA for 186 million trucks per year.

This increase in truck VMT and rail activity associated with the Build Alternatives would lead to higher MSAT emissions (particularly diesel particulate matter) in the vicinity of the intermodal facility. The higher emissions could be offset somewhat by two factors: 1) the decrease in regional truck traffic due to increased use of rail for inbound and outbound freight; and 2) increased speeds on area highways due to the decrease in truck traffic. The extent to which these emissions decreases would offset intermodal center-related emissions increases is not known. However, NSR has committed to the use of ultra low-sulfur transportation grade diesel fuel (0.0015 percent sulfur) for NSR container and trailer handling equipment. In addition, NSR will use Tier 4 technology in the overhead lift cranes at the proposed Memphis Regional IMF.

Near-roadway health studies indicated that elevated concentrations of pollutants emitted from motor vehicles near large roadways generally occur within approximately 200 meters (approximately 650 feet) of the road, although the distance may vary depending on traffic and

¹¹⁵ *Analysis of Truck to Rail Diversion Benefits – Memphis*, Cambridge Systematics, Inc., January 20, 2010.

environmental conditions, with concentrations returning to background levels beyond this distance.¹¹⁶

Because the estimated truck VMT and rail activity under each of the Build Alternatives are nearly the same, varying by less than one percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives since the same annual lifts would be used at any alternative which meets the need and purpose. Only alternatives with a capacity of 327,000 container/trailer lifts annually would meet the need and purpose as discussed in Section 1.3. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent from 1999 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the EPA-projected reductions are so significant (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future as well.

The additional freight activity contemplated as part of the project alternatives would have the effect of increasing diesel emissions in the vicinity of nearby homes, schools, and businesses; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT would be higher than under the No Build alternative. The localized differences in MSAT concentrations would likely be most pronounced as outlined in Table 2-2 at the Expansion of Forrest Yard (Alternative 3) and Pigeon Park (Alternative 6) due to increased urbanization of and non-attainment issues with these Memphis area alternatives. In addition, East Rossville (Alternative 2) could impact a minority neighborhood along with other sensitive populations in Rossville. The Pictsweet (Alternative 4) and Vulcan (Alternative 5) could impact a lower income neighborhood. However, as discussed above, the magnitude and the duration of these potential differences cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific health impacts. Even though there may be differences among the Alternatives, on a region-wide basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would cause substantial reductions over time that in almost all cases the MSAT levels in the future will be significantly lower than today.

¹¹⁶ EPA, Regulatory Impact Analysis Control of Hazardous Air Pollutants from Mobile Sources Chapter 3 Air Quality and Resulting Health and Welfare Effects of Air Pollution from Mobile Sources, Office of Transportation and Air Quality, EPA420-R-07-002 February 2007.

If the Memphis Regional IMF were not constructed, it is reasonable to presume that rail activity would remain at somewhat comparable levels on the existing NSR mainline tracks, and the vehicles, including the employee vehicles and container trucks, would be still be present on the local highway and interstate system.

In summary, the increase in local emissions due to facility operation would be offset regionally by three factors:

- 1) The decrease in long-haul truck traffic due to the increased use of rail for inbound and outbound freight;
- 2) A reduction in MSAT emissions associated with future reductions in domestic cargo transfers at the NSR Forrest IMF in Memphis; and
- 3) Decreased roadway congestion on area highways which would allow vehicles to consistently travel at posted speeds.

One of the advantages of the project is that future long-haul highway truck traffic between Memphis and the Northeast would be reduced by an estimated 186 million loaded truck vehicle miles per year¹¹⁷; thereby considerably reducing air emissions, including MSATs on a large-scale regional and national basis. In addition, NSR will shift some of their domestic intermodal capacity from the Forrest IMF to the new facility.

The existing NSR Forrest IMF is located in a highly urban setting within the City of Memphis and handles both international and domestic intermodal shipments. Forrest IMF is surrounded by lower income and minority population, plus other sensitive population. The Memphis Regional IMF would have a maximum design capacity of 327,000 container/trailer lifts annually, which would include the domestic capacity reductions from the Forrest IMF. Even with a projected growth in the international shipments, the shift of domestic capacity to the new facility is expected to result in an approximate 27% reduction of lifts performed at the Forrest IMF on an annual basis. This reduction would not only result in a decrease in truck traffic in the vicinity of the Forrest IMF, but NSR also anticipates that the number of intermodal trains servicing the Forrest IMF would be reduced from four to two. Therefore, the net reduction in intermodal freight transfers at the Forrest IMF will result in a corresponding net reduction in MSAT emissions.

¹¹⁷ NSR 2010.

The decreased congestion on area highways and city streets near the Forrest IMF would allow vehicles to consistently travel at posted speeds. According to EPA's MOBILE6.2 Vehicle Emissions Model, emissions of all of the priority MSATs decrease as speed increases (except for DPM which MOBILE6.2 estimates as constant with speed).¹¹⁸ Implementation of the EPA's mobile source vehicle emissions standards and fuel programs will result in an estimated 98 percent reduction in allowable PM emissions and a 97 percent reduction in allowable NOx emissions from new heavy duty on-road trucks after 2010.¹¹⁹

In addition, EPA has promulgated increasingly more stringent emission standards for locomotive engines and support equipment, as well as more stringent requirements on the fuels they use, such that MSAT emissions from rail activity in the study area are also likely to be lower in the future. The locomotive diesel engines designed to meet the more stringent standards will achieve PM reductions of 90 percent and NOx reductions of 80 percent, and these new standards will also yield sizeable reductions in emissions of nonmethane hydrocarbons (NMHC), CO, and air toxics.¹²⁰ Regulations include 40 CFR 80¹²¹, 40 CFR 89¹²², 40 CFR 92¹²³, 40 CFR 1033¹²⁴, and 40 CFR 1039¹²⁵ (see also 69 FR 38958¹²⁶ and 73 FR 37096¹²⁷).

In sum, all Build Alternatives in the design year are expected to be associated with higher levels of MSAT emissions in the study area, relative to the No Build Alternative, along with some benefit from improvements in speeds and reductions in region-wide truck traffic. There also could be slightly higher differences in MSAT levels among Alternatives in a few localized areas where freight activity occurs closer to homes, schools, and businesses. Under all alternatives, MSAT levels are likely to decrease

¹¹⁸ EPA, Mobile6.2 Vehicle Emission Modeling Software, 2004, <http://www.epa.gov/otaq/m6.htm>.

¹¹⁹ FHWA, Recent Examinations of Mobile Source Air Toxics, 2010, <http://www.fhwa.dot/environment/airtoxic/msatcompare/index.htm>.

¹²⁰ EPA, Regulatory Impact Analysis: Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression Ignition Engines Less than 30 Liters Per Cylinder, Office of Transportation and Air Quality, EPA420-R-08-001a, May 2008.

¹²¹ EPA, 40 CFR 80, Regulation of Fuels and Fuel Additives, Subpart I, Motor Vehicle, Nonroad, Locomotive, and Marine Diesel Fuel.

¹²² EPA, 40 CFR 89, Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines.

¹²³ EPA, 40 CFR 92, Control of Emissions from Locomotives and Locomotive Engines.

¹²⁴ EPA, 40 CFR 1033, Control of Emissions from Locomotives.

¹²⁵ EPA, 40 CFR 1039, Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines.

¹²⁶ Federal Register, 69FR38958, Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel.

¹²⁷ Federal Register, 73FR 37096, Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder (republication).

over time due to nationally mandated cleaner vehicles and fuels.

FHWA and EPA have provided guidance to define what would constitute an “air quality project of concern” for demonstrating transportation conformity in nonattainment or maintenance areas.¹²⁸ This guidance is specific to projects of air quality concern for particulate matter. Although a conformity determination under Transportation Conformity is not required for this project, the FHWA/EPA guidance suggests that projects with greater than 125,000 annual average daily traffic (AADT) volumes and with more than 8 percent of the AADT as diesel truck traffic are considered “air quality projects of concern.” The FHWA interim MSAT guidance indicates that projects that create new or add significant capacity to highways with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year are projects with higher potential MSAT effects (i.e., Level 3 projects).¹²⁹

The maximum expected increase in truck traffic at the proposed facility is only 834 trucks per typical weekday (less on weekends) (1668 round trips), which is less than 1.5 percent of EPA’s guidance for total AADT for particulate matter and less than 1.2 percent of FHWA’s guidance for total AADT for MSATs. The particulate emissions from rail activity as estimated for the Memphis Regional IMF are not large enough to make up the remaining 98.5 percent of emissions associated with “air quality projects of concern”. Therefore, the evaluations presented above support the identification of the proposed Memphis Regional IMF as a Level 2 project that requires a qualitative analysis of MSATs due to the low potential MSAT effects.

However, an initial quantitative evaluation of MSATs was completed. MSAT emissions from activities associated with the proposed Memphis Regional IMF operation are predominantly exhaust emissions from visiting locomotives, visiting trucks, and IMF dedicated support equipment. Emission factors for the acrolein, benzene, 1,3-butadiene, formaldehyde, naphthalene, and POM can be calculated by the EPA’s MOBILE6.2 Vehicle Emission Model. In addition, this model calculates DPM emission factors which are classified by sulfate, organic carbon, and elemental carbon fractions. These emission factors were used in conjunction with available operation information for

¹²⁸ EPA and FHWA 2006.

¹²⁹ FHWA 2009.

the proposed Memphis Regional IMF to estimate MSAT emissions for these compounds from tractor trailers (i.e., the container trucks), on-site maintenance trucks, and employee vehicles.

In addition, DPM emissions for locomotives and non-road support equipment including cranes, sideloaders, and hostler trucks were estimated using the EPA's Emission Factors for Locomotives¹³⁰ and the EPA's NONROAD2008a Emission Model¹³¹, respectively. Emission factors for the individual MSAT compounds are not readily available for the nonroad sources, i.e., the IMF yard equipment and locomotives. To estimate individual MSAT emissions from these sources, a conservative approach was applied. This approach assumes the individual MSAT compounds are emitted in association with the VOC fraction of diesel combustion products from on-road mobile sources. A ratio of VOC emissions from the on-road mobile sources (i.e., container and trailer trucks, maintenance trucks, and employee vehicles) to the nonroad sources (locomotives and yard equipment) was calculated and then this ratio was applied to the individual MSAT emissions for mobile sources to allow for an estimation of emissions for the nonroad equipment and locomotives. Such an approach has historically been used by states for SIP preparation purposes at the county-wide emissions level. Given that specific projects like MRIMF use specific truck types that are not representative of the distribution of truck types across the county, this approach may not be reflective of actual MSAT emissions from nonroad equipment and is expected to be conservative due to the large heavy-duty trucks that factor into the calculation of the ratio.

A review of potential MSAT emissions indicates that the proposed project is expected to be associated with higher levels of MSAT emissions in the local study area during facility operation, relative to the No-Build Alternative. The conservative evaluation of MSAT emissions indicates, however, that the increase in the emissions associated with the five individual MSATs and POM is relatively small with less than 1.4 tpy being emitted in Fayette County, and less than 0.02 tpy in Marshall County. DPM emissions associated with the proposed IMF are estimated at less than 8 tpy in Fayette County, and less than 0.1 tpy in Marshall County.

¹³⁰ EPA, Emission Factors for Locomotives, Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009.

¹³¹ EPA, NONROAD2008a, Emission Inventory Model posted July 2009, <http://www.epa.gov/oms/nonrdmdl.htm#mo>.

It should be noted that NSR has committed to the use of Tier 4 technology in the overhead lift cranes at the proposed Memphis Regional IMF. Emissions, however, were conservatively estimated assuming Tier 3 technology.

As noted previously, on a regional basis, EPA mandated vehicle and fuel regulations in combination with fleet turnover are expected to result in significant reductions in MSAT emissions. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles traveled [VMT]) increases by 145%, a combined reduction of 72% in the total annual emission rate for the priority MSAT is projected from 1999 to 2050.¹³²

Construction-related MSAT emissions are not anticipated to be substantial for this project as construction is not planned to occur over an extended building period. However, construction activity may generate temporary increases in MSAT emissions in the project area.

As outlined by FHWA for Transportation & Toxic Air Pollutants in Appendix C, the following is the Prototype Language for Compliance with 40 CFR 1502.22 for Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis.¹³³ In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects".¹³⁴ Each report

¹³² FHWA MSAT Guidance September 30, 2009.

¹³³ FHWA 2009.

¹³⁴ EPA, <http://www.epa.gov/ncea/iris/index.html>

contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI).¹³⁵ Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations¹³⁶ or in the future as vehicle emissions substantially decrease.¹³⁷

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unworkable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in a National Cooperative Highway Research Program (NCHRP) study¹³⁸, which documents poor model

¹³⁵ HEI is a nonprofit corporation chartered in 1980 as an independent research organization to provide science on the health effects of air pollution. Although HEI receives government funding, it is not a regulatory body for the purpose of development of applicable requirements under the CAA.

¹³⁶ HEI, <http://pubs.healtheffects.org/view.php?id=282>

¹³⁷ HEI, <http://pubs.healtheffects.org/view.php?id=306>

¹³⁸ http://www.epa.gov/scram001/dispersion_alt.htm#hyroad

performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections.¹³⁹ The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI.¹⁴⁰ As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA¹⁴¹ and the HE¹⁴² have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to

¹³⁹ Modeling methods and criteria established in other jurisdictions would not be applicable to the Memphis Regional IMF. This information is being provided only in the context of describing the inconsistency and uncertainty of methods and approaches to MSAT analysis as specified in FHWA guidance at FHWA 2009.

¹⁴⁰ <http://pubs.healtheffects.org/view.php?id=282>

¹⁴¹ <http://www.epa.gov/risk/basicinformation.htm#g>

¹⁴² <http://pubs.healtheffects.org/getfile.php?u=395>

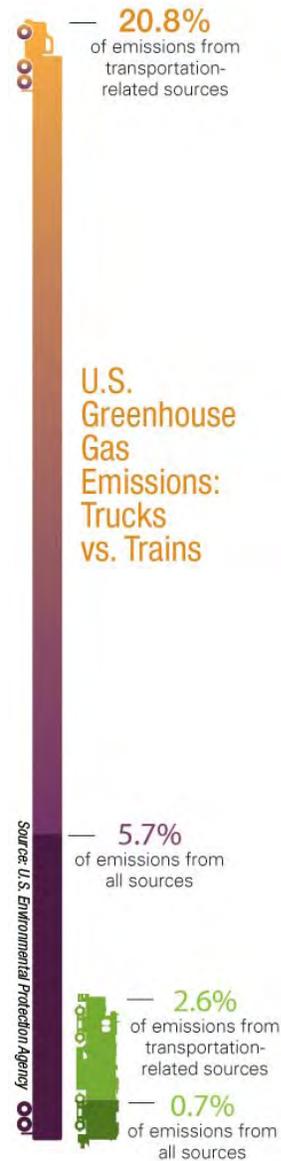
emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Although as discussed above the uncertainties and limitations in methodologies for assessing MSATs and their effects are significant, the qualitative analysis of MSAT emissions for the MRIMF indicates that the increase in MSAT emissions, which would be experienced only locally and offset by the removal of 186 million vehicle miles per year of loaded truck travel, amounts to a less than 1.4 tpy being emitted in Fayette County, and less than 0.02 tpy in Marshall County. DPM emissions associated with the proposed IMF are estimated at less than 8 tpy in Fayette County, and less than 0.1 tpy in Marshall County. These projections utilized Tier 3 technology emissions, not Tier 4 which would be phased in for the facility as a mitigation measure, and does not include the future reductions in MSATs anticipated by EPA's mandated vehicle and fuel regulations which project a significant decrease in MSATs – a 72% reduction by 2050 even if vehicle miles traveled increased by 145%. Accordingly, MSAT emissions resulting from the MRIMF would not be considered to have a substantial effect on air quality.

3.7.4 Air Quality Impacts

The operation of the proposed IMF would result in a minor increase in the emission of criteria air pollutants and MSATs in the Fayette and Marshall Counties, primarily through the operation of mobile sources. The primary purpose of the proposed Memphis Regional IMF is to meet



demand for intermodal (rail/truck) transportation in the Memphis region. An advantage of the project is that the future highway truck traffic between Memphis and the Northeast would be reduced by an estimated 186 million loaded truck vehicle miles per year.¹⁴³ Ultimately, the increased rail usage would remove long-haul trucks from highways reducing congestion with an added benefit of increased safety and air quality, including a decrease in GHG emissions of carbon dioxide by approximately 264,000 tons annually.¹⁴⁴

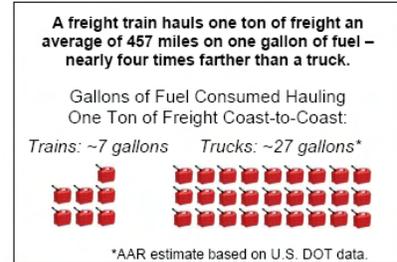
Therefore, although the project would cause a minor localized increase in the emissions of criteria air pollutants and MSATs, it is expected to have no adverse impacts on air quality in the area.

The No-Build Alternative would have no localized air quality affect. However, with the No-Build alternative, trucks would continue to carry freight in the region and nationally and therefore, emissions of criteria air pollutants and other emissions would not be reduced.

3.7.5 Greenhouse Gas Emissions/Climate Change

The GHG emissions are gases in the Earth’s atmosphere that absorb and emit radiation within the thermal infrared range. The main greenhouse gases in the Earth’s atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone. This process is the fundamental cause of the greenhouse effect. The EPA has recently issued an endangerment finding for GHG emissions indicating that elevated concentrations of GHGs in the atmosphere may reasonably be anticipated to endanger the public health and to endanger the public welfare. Carbon dioxide is expected to remain the dominant anthropogenic GHG.¹⁴⁵

The GHG emissions are directly related to fuel consumption. Because railroads are approximately three and a half times more fuel efficient than trucks on a ton-mile basis, shipment of freight by rail has been shown to result in a corresponding decrease in carbon and other emissions.¹⁴⁶ Given that the Memphis Regional IMF would transfer an estimated 327,000 containers and trailers per year through the facility, there would be a substantial reduction in carbon dioxide and other emissions.



¹⁴³ Analysis of Truck to Rail Diversion Benefits – Memphis, Cambridge Systematics, Inc., January 20, 2010.

¹⁴⁴ Analysis of Truck to Rail Diversion Benefits – Memphis, Cambridge Systematics, Inc., January 20, 2010.

¹⁴⁵ Federal Register Volume 74, No. 239, pages 66496-66546, December 15, 2009.

¹⁴⁶ AAR, November 2009.

Further indirect and cumulative impacts associated with air quality and GHGs are discussed in Section 3.18.12.2.

3.8. Noise Impacts

Noise guidelines and regulations have been established to protect citizens from potential hearing damage and various other adverse physiological, psychological, and social effects associated with noise. "Noise" is generally defined as unwanted sound. Under NEPA, the Noise Control Act of 1972 (NCA)¹⁴⁷ and EO 12088: Federal Compliance with Pollution Control Standards, DOT, MDOT, and TDOT must assess the environmental impact of noise produced by the Memphis Regional IMF. Fayette County, Tennessee, Marshall County, Mississippi, nor the Town of Rossville has any applicable general noise control laws or regulations.

Evaluation of noise levels generated by trains entering and departing the Memphis Regional IMF, container and trailer transfer related equipment operations, and truck traffic entering and departing the facility are included in the analysis, along with potential impacts thereof. To more accurately predict noise levels from each of the activities mentioned above and the overall Memphis Regional IMF noise impacts, multiple methodologies are used.

For rail- and facility-related noise, the analysis is in accordance with the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*.¹⁴⁸ Both the FTA and the FRA use this manual for evaluating rail-related noise.

The roadway portions of the noise analysis have been prepared in accordance with the Procedures for Abatement of Highway Traffic and Construction Noise, 23 C.F.R. 772¹⁴⁹ and the Highway Traffic Noise Analysis and Abatement Policy and Guidance.¹⁵⁰ The evaluation also followed the MDOT *Highway Traffic Noise Policy*¹⁵¹, the TDOT *Policy on Highway Traffic Noise Abatement*¹⁵², and additional noise analysis guidance from TDOT personnel. For rail- and facility-related noise, the analysis is in accordance with the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment*

For more information:

The *Noise Study Report* is available for review at TDOT Environmental Division.

- **Sound intensity, or noise level, is measured in exponential units of decibels (dB), scaled to the frequencies humans hear best.**
- **Expected that most noise will be in area of the gate where trucks enter and exit Intermodal Facility.**
- **Loudness is reduced by distance, terrain, vegetation, and natural and man-made obstructions.**
- **Effective noise barriers can reduce noise levels by 10 to 15 dB, reducing the facility noise by as much as half.**

¹⁴⁷ 42 U.S.C. 4901 et seq.

¹⁴⁸ FTA, May 2006.

¹⁴⁹ FHWA, 23 C.F.R. 772.

¹⁵⁰ FHWA, 1995.

¹⁵¹ MDOT, 1996.

¹⁵² TDOT, Policy on Highway Traffic Noise Abatement, September 2005.

Manual.¹⁵³ Both the FTA and the FRA use this manual for evaluating rail-related noise.

3.8.1 Fundamentals of Sound and Noise

The intensity or loudness of sound is measured in units called decibels (dB). However, since the human ear does not hear sound waves of different frequencies at the same subjective loudness, an adjustment or weighting of the high-pitched and low-pitched sounds is made to approximate how an average person hears sounds. When such adjustments to the sound levels are made, they are called “A-weighted levels” and are usually labeled “dBA.” A noise level change of 3 dBA is barely perceptible to average human hearing, whereas a 5 dBA change in noise level is noticeable. A 10 dBA increase in noise level is perceived as doubling of noise loudness.

To provide a context to compare the magnitude of noise levels discussed in this analysis, Table 3-9 presents some common A-weighted noise levels.

Because most environmental noise fluctuates from moment to moment, it is standard practice to condense data into a single level called the equivalent sound level (L_{eq}). The L_{eq} is a steady sound level that would contain the same amount of sound energy as the actual time-varying sound evaluated over the same time-period. The L_{eq} uses weighted averaging of the louder and quieter moments, giving much more weight to the louder moments. For highway traffic noise assessment purposes, the FHWA and TDOT use L_{eq} to evaluate the peak one-hour period of the day and it is defined as $L_{eq(1h)}$.

The FTA/FRA use another metric to quantify the noise environment: the Day-Night Sound Level (L_{dn}). The L_{dn} averages continuous noise, such as a busy transit corridor, and provides a measure of total sound energy over a 24-hour period. When determining L_{dn} over the course of a 24-hour day, a 10 dBA penalty is applied to noise levels generated during night-time hours (10 p.m. to 7 a.m.). Thus, L_{dn} effectively identifies a “noise dose” for a day. Scientific studies and social surveys have found L_{dn} to be a good measure for assessing levels of annoyance associated with all types of environmental noise.



What are Noise Abatement Criteria (NAC)?

The NAC are noise impact thresholds for considering abatement measures. The basic goals of the NAC, as they apply to highway projects, are to minimize the adverse noise effects on the community during the operation of the project and, where necessary and appropriate, to provide feasible and reasonable noise control.

¹⁵³ FTA, May 2006.

Table 3-9: Typical Sound Levels Measured in the Environment and Industry

Source	Noise Level [dBA]	Comment
Shotgun (at shooter's ear); Carrier flight deck.	140	Painfully Loud
Civil Defense Siren (100 ft away)	130	
Jet takeoff (200 feet away)	120	Threshold of Pain
Loud rock music; rock music concert	110	
Pile driver (50 feet away)	100	Very loud
Ambulance siren (100 ft away); Boiler room.	90	
Pneumatic drill (50 ft); Noisy restaurant.	80	
Busy traffic; Hair dryer; Freeway traffic.	70	Intrusive
Normal conversation (5 feet); Data processing center.	60	
Light traffic (100 ft); Rainfall; Typical suburban background.	50	Quiet
Bird calls (distant); Average living room; Library	40	
Soft whisper (5 feet); Quiet bedroom.	30	
Recording Studio	20	
Normal breathing; Rustling leaves	10	Threshold of hearing

Source: Beranek, 1998; City of Brentwood, CA General; Plan, March 2009.

Sound intensity attenuates as it travels away from the source in accordance with principles called geometrical spreading. The standard rule-of-thumb for the attenuation of sound from geometrical spreading for line sources (e.g., vehicles passing along a roadway or trains on a railway) is the reduction of 3 dBA per doubling of distance length, beginning at 50 feet from the noise source. Sounds from point sources (i.e., cranes, yard areas, which do not move over large areas) attenuate approximately 6 dBA for every doubling of the distance. Additional attenuation of sound occurs due to a phenomenon of ground absorption of sound energy if the ground type is soft, such as a grassy field or forest. Geometrical spreading and ground absorption propagation are defined mathematically in the *FTA Transit Noise and Vibration Impact Assessment Manual*.¹⁵⁴

Additional environmental attenuation of sound may be provided by the presence of natural or man-made sound barriers. Natural sound barriers include topographical

¹⁵⁴ FTA, May 2006.

features separating noise sources from receiver locations. The term insertion loss (IL) is used to describe the reduction in L_{eq} when a noise barrier is constructed or a topographical feature (e.g., ridgeline) exists which blocks the line-of-sight between the noise source and the receiver. For example, if the L_{eq} at a point is 75 dBA and the L_{eq} after a barrier is constructed is 65 dBA, then the IL would be 10 dBA. An effective noise barrier or topographical feature has an IL of 10 to 15 dBA, which reduces the perceived noise of a source by half. These shielding characteristics are defined mathematically in Section 6.3.2 of the FTA *Transit Noise and Vibration Impact Assessment Manual*.¹⁵⁵

Additional environmental attenuation of sound can be provided by atmospheric conditions and the presence of dense vegetation. However, due to the variability of atmospheric and vegetation conditions in the environment, these factors are often not considered for purposes of community noise evaluations.

3.8.2 Criteria for Determining Impacts

The FHWA noise standards,¹⁵⁶ MDOT noise policy, and TDOT noise policy each provide that traffic-related noise impacts that warrant consideration of abatement occur when peak-hour $L_{eq(1h)}$ approaches (within 1 dBA) or exceeds the Noise Abatement Criteria (NAC) listed for various land use or activity categories in Table 3-10.¹⁵⁷

TDOT's noise abatement policy¹⁵⁸ defines "approach" as within one decibel (1 dBA) below the NAC. The guidelines also state that noise mitigation should be considered for any receptors where predicted traffic noise levels for future conditions are greater than existing noise levels by 10 dBA or more when future noise levels are between 57 and 67 dBA. For purposes of evaluating potential noise impacts associated with the Memphis Regional IMF, those receptors defined as Activity Category B, or exterior areas of residences and churches, are considered to be sensitive land use areas.

¹⁵⁵ FTA, May 2006.

¹⁵⁶ 23 CFR 772.

¹⁵⁷ *Policy on Highway Traffic Noise Abatement*, Tennessee Department of Transportation Policy No. 520-01, September 2005.

¹⁵⁸ TDOT, September 2005.

Table 3-10: FHWA/TDOT Noise Abatement Criteria for Traffic Noise Impacts

Activity Category	$L_{eq(h)}$ (dBA)	Description of Activity
A	57 (Exterior)	Land on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: TDOT, Policy on Highway Traffic Noise Abatement, 2005.

Table 3-11 presents the TDOT criteria used to define the severity of impacts due to noise increases associated with the proposed project, when the future sound level is between 57 and 67 dBA.¹⁵⁹

These criteria are established by the U.S. Department of Transportation (FHWA/FRA/FTA), TDOT, and MDOT. Note that The MDOT's *Highway Traffic Noise Policy* mirrors TDOT's criteria, except MDOT's definition of a traffic noise impact differs in that a substantial increase between future project-related and existing $L_{eq(1h)}$ is defined as an increase of 15 dBA instead of 10 dBA.¹⁶⁰ Therefore, compliance with the 10 dBA increase criteria meets both the TDOT and MDOT policies.

Table 3-11: Criteria to Define Impacts Due to Traffic Noise Increases

Increase in Existing Noise Levels (dBA)	Subjective Descriptor
0 – 5	Minor Increase
6 – 9	Moderate Increase
10 or more	Substantial Increase

Source: TDOT, Policy on Highway Traffic Noise Abatement, 2005.

Potential impacts associated with rail components of this project were evaluated according to Chapter 3 of the FTA *Transit Noise and Vibration Impact Assessment Manual*.

¹⁵⁹ TDOT, September 2005.

¹⁶⁰ MDOT, 1996.

Land use category descriptions and associated noise metrics for rail-related noise impacts are summarized in Table 3-12.¹⁶¹

Table 3-12: FTA Land Use Categories and Metrics for Rail Noise Impact Criteria

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor $L_{eq(h)}$	Tracts of land where quiet are an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheatres and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where night-time sensitivity to noise is assumed to be of utmost importance.
3	Outdoor $L_{eq(h)}$	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

Source: FTA 2006

For rail transit projects potentially affecting residences (Land Use Category 2), predicted noise levels are evaluated for impacts using the L_{dn} descriptor. The 'projected noise exposure' L_{dn} would be compared to the existing 'nominal' L_{dn} to evaluate whether impacts are predicted. For churches and other Category 3 land uses, predicted noise levels are evaluated for impacts using the L_{eq} descriptor. The FTA/FRA impact criteria are shown graphically in Figure 3-16.

For Build Alternative 1, noise measurements were conducted at several reference locations, also called Receivers, representing an exterior area of a cluster of residences. Existing sound levels were measured and/or predicted at Noise Receiver locations are shown on Figure 3-17.

¹⁶¹ *Transit Noise and Vibration Impact Assessment*, USDOT, Federal Transit Administration (FTA). FTA report FTAVA-90-1003-06. May 2006.

Figure 3-16: FTA Impact Criteria: Graphical

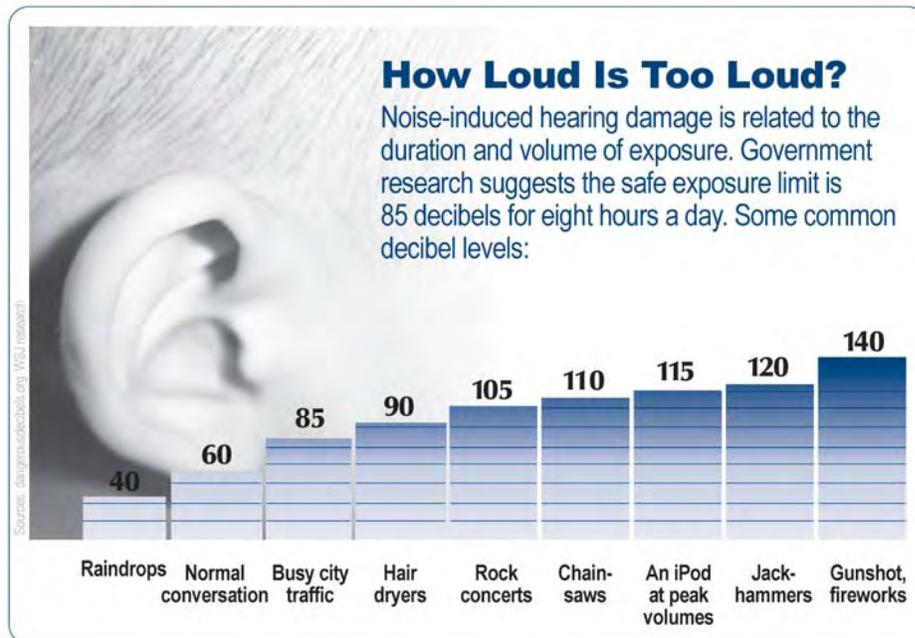
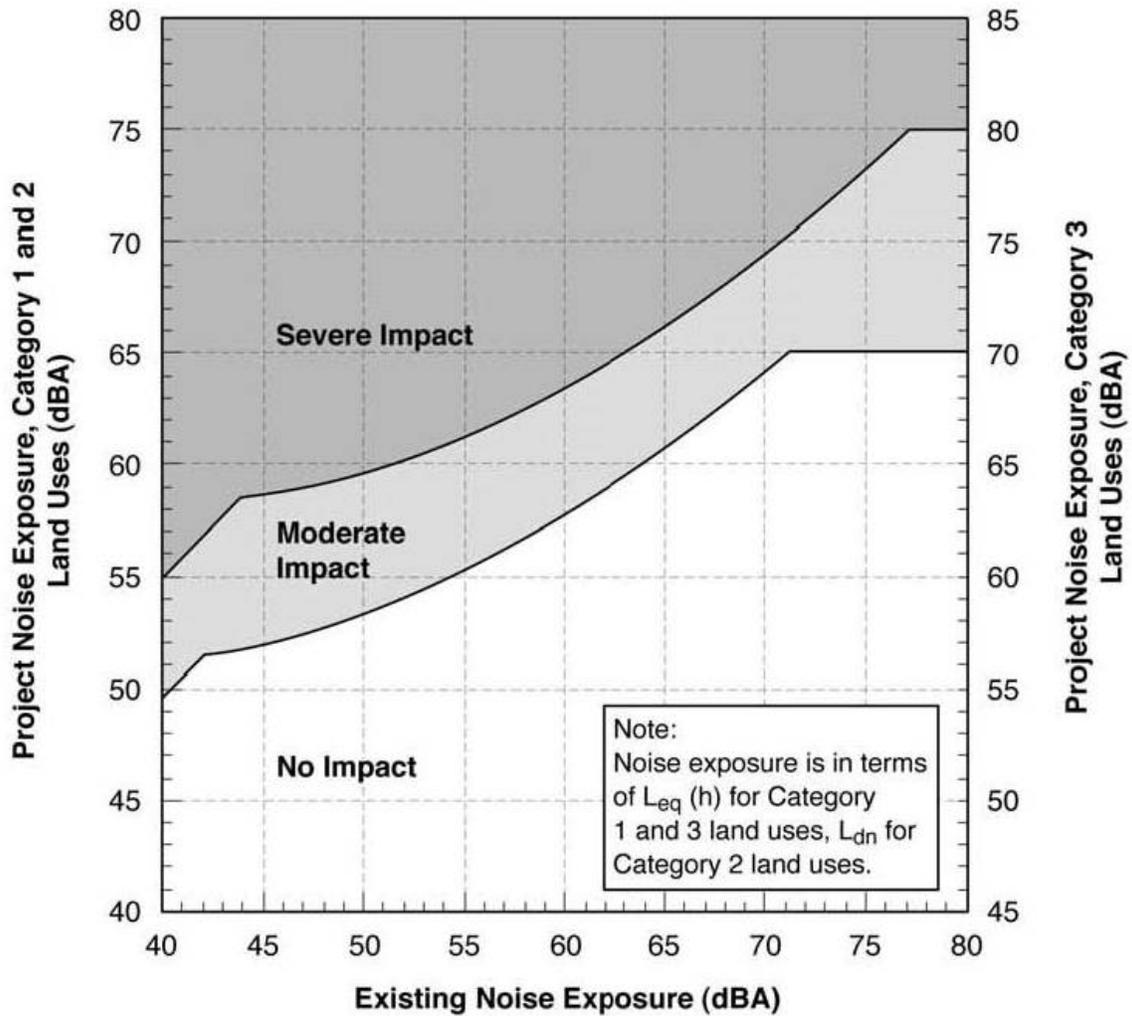
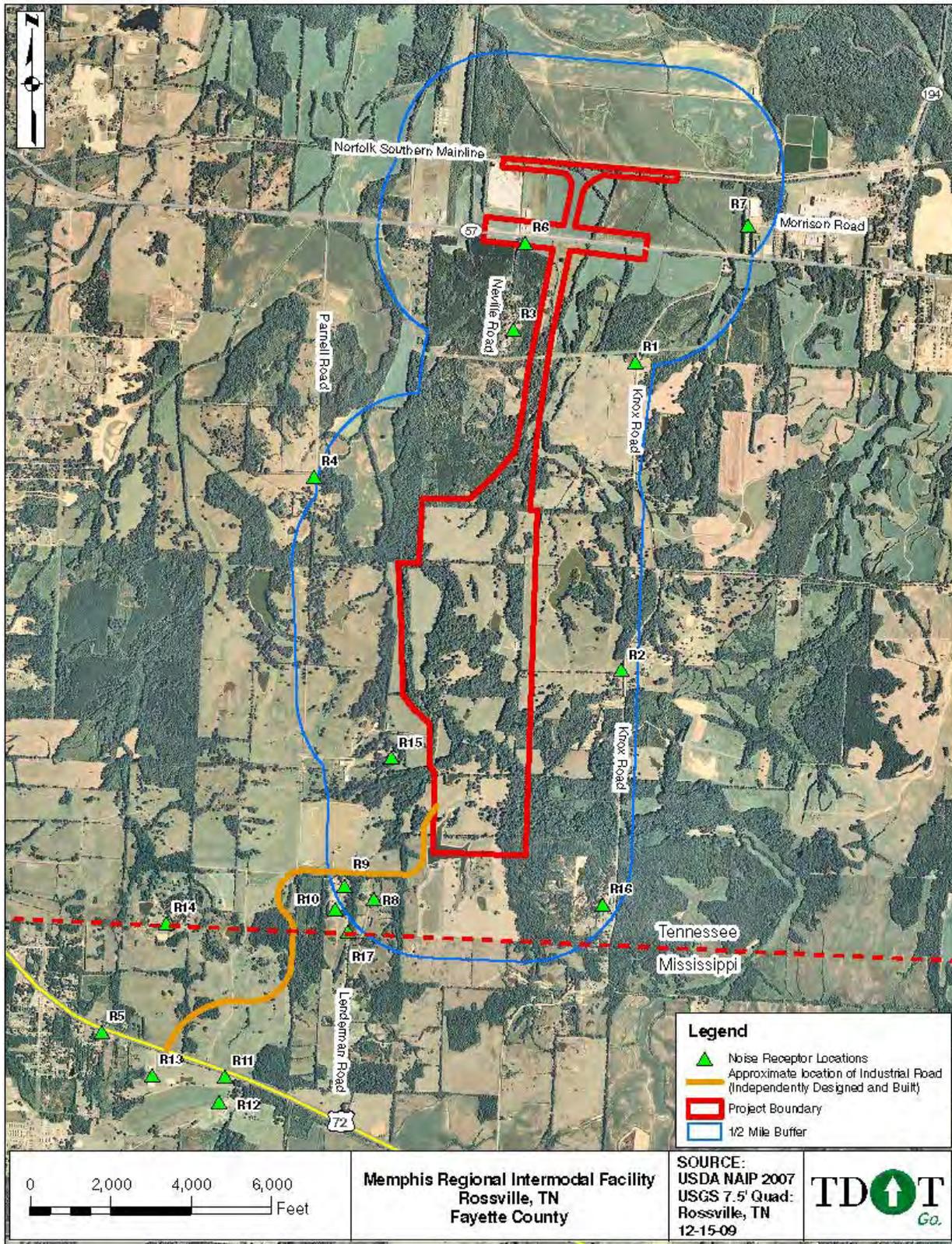


Figure 3-17: Noise Receptors Location



3.8.2.1 Future Noise Level Analysis

To predict future sound levels caused by the proposed Memphis Regional IMF, sound levels associated with construction, roadways, trains, and operation of cranes, loaders, and other equipment inside the yard area were determined separately. NSR developed rail and roadway traffic projections, as well as facility operation schedules, for the project for the design year 2032. Highway traffic noise modeling of the project area for the existing scenario was completed using the FHWA Traffic Noise Model (TNM) Version 2.5 computer program. NSR followed TDOT guidance on how to model the sound levels from the Memphis Regional IMF operating yard. This guidance resulted in a conservative approach whereby all IMF noise sources were assumed to be at the closest edge of the IMF operational area (where the cranes and packers would operate) relative to the receiver rather than at actual locations across the operating area(s). For example, cranes operating in the loading and unloading area would actually be more than 2,000-feet away from the western edge of the IMF. This approach conservatively predicts higher noise levels at receiver locations. A more detailed description of this methodology is included in the Noise Assessment Technical Report on file with TDOT.¹⁶²

Since most environmental noise fluctuates from moment to moment, it is standard practice to condense data into a single level called the equivalent sound level (L_{eq}). Because train arrivals and departures are projected to occur during night-time hours, this analysis examines the future rail-related L_{dn} for Build Alternative 1. Average hourly Memphis Regional IMF train movements and operations during daytime and night-time periods were calculated. The guidelines in the FTA *Transit Noise and Vibration Impact Assessment Manual*¹⁶³ were used to predict sound levels generated along the lead tracks and the Memphis Regional IMF yard area, and those values were then summed logarithmically to develop a composite L_{dn} at each identified noise receiver location. Finally, Total L_{dn} was determined by adding the composite IMF facility L_{dn} to the existing L_{dn} for comparison to FTA impact criteria.

3.8.2.2 Noise Impact Analysis for Design Year 2032

Based on the MDOT April 2010 request, the following parameters, which affect the potential noise impacts, increase the growth rate to 2.5% per year for background

¹⁶² AMEC, December 2009.

¹⁶³ FTA, May 2006.

(or existing) traffic volumes (instead of the 1% increase developed based on historical growth trends) and increase in design speed for US Hwy 72 as four-lane rural principal arterial to 70 mph (instead of the 65 mph originally provided).¹⁶⁴

As demonstrated by Table 3-13, no traffic noise impacts were identified according to FHWA, MDOT, and TDOT criteria. Receiver locations selected for the noise analysis for the project include locations near the noise-sensitive land uses in the project areas. For the split columns in Table 3-13, first dBA number was based on a 1% per year growth along US Hwy 72 with a 65 mph design speed; the second dBA number was based on a 2.5% per year growth along US Hwy 72 with a 70 mph design speed.

According to Table 3-14, one receiver, Receiver 15, representing 3 residences, is expected to experience an impact due to operations within the proposed IMF in accordance with FTA criteria. Six of the 17 receiver locations are located very near the state line or are in Marshall County, Mississippi. Accordingly, these land uses will also be evaluated in accordance with MDOT's *Highway Traffic Noise Policy*.¹⁶⁵ Furthermore, it should be noted that these results are conservatively based on the TDOT modeling approach.

As demonstrated in Tables 3-13 and 3-14, in the design year (2032) L_{dn} , Receivers 1, 2, 3, 4, 6, 7, 8, 10, 12, 13, 14, 16, and 17 experience no or very slight increases in environmental noise associated with traffic or rail operations for the proposed facility. Any minor increases caused by traffic or rail operations are defined as 'no impact' in accordance with the FHWA/MDOT/TDOT and FTA/FRA noise impact criteria, respectively. Higher traffic noise levels were identified in the revised Build scenario for Receivers 5, 11, 12, and 13 with the 2.5% background traffic growth rate than those noted with the 1% growth rate. Noise levels for all other receiver locations were predicted to remain the same for either growth rate.¹⁶⁶

Receiver 9 is predicted to experience moderate noise increases which do not exceed either FHWA/MDOT/TDOT or FTA/FRA noise abatement criteria. Receiver 9 represents one residence in the vicinity of Industrial Road. The design year (2032) L_{eq} predicted noise levels to be 8 dBA higher than existing sound levels during the peak

¹⁶⁴ Phone call between AMEC and MDOT on April 13, 2010; MDOT ED (Kim Thurman) defined these parameters.

¹⁶⁵ MDOT, 1996.

¹⁶⁶ *Noise Analysis of the Memphis Regional Intermodal Facility*, AMEC, March 2010

traffic hour as shown on Table 3-13. This increase is defined as 'moderate'. According to FHWA/MDOT/TDOT policy, this increase does not constitute an impact. Likewise, this receiver is not expected to experience noise impacts associated with rail-related activities according to FTA/FRA policy.¹⁶⁷

- Two receivers (5 and 11) representing 21 residences located on and situated very close to US Hwy 72, currently exceed the NAC of 67 dBA due to existing traffic volumes on US Hwy 72. Both receivers are also expected to exceed the MDOT/FHWA noise abatement criteria in the Build 2032 scenario. L_{eq} values for these receivers are predicted to be approximately 1 to 2 dBA higher than the Existing condition and 1 to 2 dBA higher than the No-Build scenario as shown on Table 3-13. This condition would exist even with increases in traffic volume associated with vehicles entering and leaving the proposed facility. These increases are defined as 'minor' in accordance with FHWA's impact criteria and MDOT policy, and are not considered to be impacts caused by the project because the difference between the Build and No-Build scenarios is less than 3 dBA.
- Receiver 15, representing 3 Parnell Road residences in the vicinity of the AGS area, would not experience traffic noise impacts according to FHWA/TDOT noise impact criteria (see Table 3-13). Future Receiver 15 noise levels, however, are predicted to be 12 dBA higher than existing sound levels due to the proposed Memphis Regional IMF, as shown on Table 3-14.

According to FTA/FRA noise impact criteria, Receiver 15 would be considered a 'severe' noise impact. This result does not include planned earthen berm construction along west side of facility as discussed in Section 3.8.3, which would reduce the noise impact.

3.8.3 Noise Abatement Measures Evaluation

Based on FHWA and FTA/FRA guidance and projected facility operations, the study has identified potential noise impacts to sensitive land use areas. In particular, those impacts are identified in the vicinity of the southwest corner of the Memphis Regional IMF near the AGS. Receiver 15, representing three residences on Parnell Road, could be affected by noise impacts.

¹⁶⁷ FTA, May 2006.

Table 3-13: Predicted Traffic Noise Results and Summary of Traffic Noise Impacts

Receiver Location No.	FHWA Noise Abatement Criteria (NAC) (dBA)	Nominal Existing 2009 L _{eq} (dBA)	Traffic Noise Model (TNM) Existing 2009 Worst-Hour L _{eq} (dBA)		TNM No-Build 2032 Worst-Hour Traffic L _{eq} (dBA)		TNM Build 2032 Worst-Hour Traffic L _{eq} (dBA)		Greater of TNM Build 2032 and Measured L _{eq} (dBA)		FHWA Traffic Noise Increase Caused by Project?	Predicted Traffic Noise Level Approaches or Exceeds NAC?	FHWA NAC Impact Caused by Project?	Number of Residences Affected by Impact
			1%	2.5%	1%	2.5%	1%	2.5%	1%	2.5%				
Background Traffic Growth Rate			1%	2.5%	1%	2.5%	1%	2.5%	1%	2.5%	(per year)			
1	67	52	34	34	35	35	37	37	52	52	None	No	No Impact	0
2	67	49	29	29	30	32	40	40	49	49	None	No	No Impact	0
3	67	48	35	35	36	36	38	38	48	48	None	No	No Impact	0
4	67	52	29	29	31	32	37	38	52	52	None	No	No Impact	0
5	67	72	71	71	72	73	73	77	73	77	Minor	Yes	No Impact	0
6	67	71	58	58	59	59	61	61	61	61	None	No	No Impact	0
7	67	61	41	41	42	42	43	43	52	52	None	No	No Impact	0
8	67	48	34	34	36	37	52	52	52	52	Minor	No	No Impact	0
9	67	48	34	34	36	37	56	56	56	56	Moderate	No	No Impact	0
10	67	48	34	34	36	38	49	49	49	49	Minor	No	No Impact	0
11	67	67	68	68	69	71	69	74	69	74	Minor	Yes	No Impact	0
12	67	52	51	51	52	54	53	56	53	56	Minor	No	No Impact	0
13	67	52	52	52	53	55	55	58	55	58	Minor	No	No Impact	0
14	67	46	39	39	41	42	44	45	46	46	None	No	No Impact	0
15	67	46	31	31	33	34	45	45	46	46	None	No	No Impact	0
16	67	46	32	32	33	35	39	39	46	46	None	No	No Impact	0
17	67	46	35	35	37	38	47	47	47	47	Minor	No	No Impact	0

Table 3-14: Predicted Rail Noise Results and Summary of Impacts

<i>Receiver Location No.</i>	<i>Nominal Existing L_{dn} (dBA)</i>	<i>Predicted Lead Tracks L_{dn} (dBA)</i>	<i>Predicted 2032 IMF Yard L_{dn} (dBA)</i>	<i>Topography Line-of-Sight Attenuation Loss (dBA)</i>	<i>Predicted 2032 IMF Project Noise Exposure, L_{dn} (dBA)</i>	<i>Predicted 2032 Total IMF Noise Level, L_{dn} (dBA)</i>	<i>Noise Increase Caused by Project (dBA)</i>	<i>FTA/FRA Impact Caused by Project?</i>	<i>No. Residences Affected by Impact</i>
1	52	45	41	0	47	53	1	No Impact	0
2	50	45	47	-5	44	51	1	No Impact	0
3	51	51	42	-2.5	49	53	2	No Impact	0
4	52	41	52	-5	48	53	1	No Impact	0
5	75	27	42	0	42	75	0	No Impact	0
6	64	44	37	0	45	64	0	No Impact	0
7	52	33	34	0	37	52	0	No Impact	0
8	50	45	50	-5	46	51	1	No Impact	0
9	50	44	50	-5	46	51	1	No Impact	0
10	50	43	49	-5	45	51	1	No Impact	0
11	71	29	43	-5	38	71	0	No Impact	0
12	52	28	42	-5	38	52	0	No Impact	0
13	52	28	42	-5	37	52	0	No Impact	0
14	49	29	45	-5	40	50	1	No Impact	0
15	49	40	60	0	60	61	12	Severe	3
16	49	44	39	-2.5	43	50	1	No Impact	0
17	49	43	48	-5	44	50	1	No Impact	0

The FHWA, MDOT, TDOT, and FTA/FRA require that noise abatement measures be considered for feasibility and reasonableness when impacts are predicted to occur at sensitive land uses.

In order to be considered feasible, noise barriers (noise walls or berms) should be physically possible to construct and should produce a 10 dBA reduction with a minimum 7 dBA reduction in future noise levels for closest receivers according to TDOT Noise Abatement Policy. Because the available area within the facility is sufficient for construction of noise walls or earthen berms, noise barriers are considered to be a feasible option. Due to the low number of residences (3) associated with Receiver 15 experiencing the potential impacts, construction of a noise barrier in the location would normally be considered cost-prohibitive and therefore not reasonable based on TDOT's Noise Abatement Policy and FTA/FRA noise mitigation guidance.

However, due to public concerns identified during the NEPA process, proximity of certain residences, and potential future land uses in vicinity, NSR will construct noise barriers (earthen berms) on the proposed facility as follows: 1) along portions of eastern and western boundaries of the IMF facility and AGS area and 2) along portions of western side of lead tracks (Neville Road area).

It is anticipated the proposed berms would achieve noise reductions of approximately 5 to 7 dBA at Receiver 15, reducing the impact category from 'severe' to 'moderate' impact at an L_{dn} of 6 dBA above existing L_{dn} .

A berm along the lead tracks would block much of the sound path between receivers and trains entering and departing the IMF. It is estimated the proposed berm would achieve noise reductions of 3.5 dBA at these residences.

The noise reductions provided by the proposed earthen berms and final anticipated noise levels at each receiver location are presented in Table 3-15.

In addition, NSR would incorporate other noise reduction measures into the overall design to minimize noise impacts, including:



Table 3-15: Predicted Noise Levels with Berm Installation

Receiver Location No.	Nominal Existing L_{dn} (dBA)	Predicted 2032 IMF Noise Exposure L_{dn} Without Berms (dBA)	Proposed Berm Noise Attenuation (dBA)	Predicted 2032 IMF Noise Exposure L_{dn} With Berms, [dBA]	Predicted 2032 Total IMF Noise, L_{dn} With Berms (dBA)	Noise Increase Caused by Project, With Berms (dBA)	FTA/FRA Impact Caused by Project?	No. Residences Affected by Impact
1	52	47	0	47	53	1	No Impact	0
2	50	44	-3.5	41	51	1	No Impact	0
3	51	49	-3.5	46	52	1	No Impact	0
4	52	48	-3.5	44	53	1	No Impact	0
5	75	42	0	42	75	0	No Impact	0
6	64	45	0	45	64	0	No Impact	0
7	52	37	0	37	52	0	No Impact	0
8	50	46	-3.5	42	51	1	No Impact	0
9	50	46	-3.5	42	51	1	No Impact	0
10	50	45	-3.5	41	51	1	No Impact	0
11	71	38	-3.5	35	71	0	No Impact	0
12	52	38	-3.5	34	59	0	No Impact	0
13	52	37	-3.5	34	59	0	No Impact	0
14	49	40	-3.5	37	49	0	No Impact	0
15	49	60	-7.0	53	55	6	Moderate Impact	3
16	49	43	-3.5	39	50	1	No Impact	0
17	49	44	-3.5	41	50	1	No Impact	0

- Grade crossings have been eliminated from the project design by creating an overpass at SR-57. This will eliminate train horn blowing that is otherwise required at such crossings. Horn blowing may still occur within the facility for emergency warning purposes.
- Rail lines would be constructed of continuous welded rail (non-jointed) track with radius of rail curvatures ranging between 6° (Radius 955.37') and 8°30' (Radius 674.69') with the majority of the rail curves consisting of an 8° (Radius 716.78') to minimize transient rail noises.
- The horizontal and vertical alignments of the lead tracks are constrained by mainline elevations, topography and facility design considerations for the selected alternate. The facility grading plan, combined with natural topographic features of the project vicinity, provide inherent noise reductions for many of the area residents. Further alteration of horizontal and vertical alignments for noise abatement purposes is not feasible.
- Rail and truck operations in the vicinity of the proposed facility would operate at low speeds, thereby keeping speed-related noise emissions to a minimum.



3.8.4 Design Year (2032) No-Build Alternative Noise Environment

Under the No-Build Alternative, the Memphis Regional IMF construction and operation would not affect noise levels. Noise levels, however, would continue to increase in the project area due to vehicle traffic that is anticipated to occur due to planned growth in the Rossville UGB in Tennessee, the Chickasaw Trail Industrial Development (an independent development) area in Mississippi and along US Hwy 72 in Mississippi.

3.9. Cultural Resource Impacts

Cultural resources or historic properties include archaeological sites and architectural buildings and structures. Pursuant to the guidelines for Section 106 of the National Historic Preservation Act (NHPA), as outlined in 36 C.F.R. Part 800, studies were conducted to determine if any cultural resources exist in the project's Area of Potential Effect (APE) that are listed in or eligible for listing on the NRHP.

For more information:

The *Architectural / Historical Assessment and Assessment of Effects Addendum Report* is available for review at TDOT Environmental Division.

In order to be listed or eligible for listing on the NRHP, the cultural resource must meet one or more of the following criteria:

- a) Associated with events that have made a significant contribution to the broad patterns of our history;
- b) Associated with the lives or persons significant in our past;
- c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
- d) Have yielded, or may be likely to yield, information important in prehistory or history.¹⁶⁸

Based on early coordination with the Tennessee Historical Commission (THC), Tennessee State Historic Preservation Office (SHPO), the APE for historic architectural resources was determined to include Build Alternative 1 project site and a one-mile buffer area that surrounds it (Figure 3-18).

The APE extended into Mississippi and Industrial Road is located partially in Mississippi. Therefore, it was appropriate to also coordinate with the Mississippi Department of Archives and History (MDAH), which serves as the Mississippi SHPO. The historic architectural resource survey examined buildings and structures within the APE.

The APE for archaeological resources was limited to the project site (Figure 3-18). The archaeological APE was used to determine the archaeological field survey boundary.

The NRHP Criteria of Eligibility, outlined in 36 CFR Part 60, describe what makes a property historically significant.¹⁶⁹ These criteria were used to evaluate the significance of the surveyed historic architectural and archaeological properties within the APE and to determine

¹⁶⁸ Criteria for Evaluation. 36 CFR Part 60.4.

¹⁶⁹ National Park Service, Criteria for Evaluation, 36 C.F.R. Part 60.4.

if such properties were eligible or potentially eligible for listing on the NRHP.

3.9.1 Historic Architectural Resources

Based on consultation with the Tennessee SHPO on August 27, 2009, a records search was conducted at the THC and the MDAH to identify any historic sites listed or eligible for listing on the NRHP in the APE for Build Alternative 1. The search revealed that no properties in the APE had been previously surveyed and no resources were listed in or previously determined eligible for the NRHP. In fact, no structures exist on the property except for a modern storage shed, which is less than 50 years old.

A field survey and research were then conducted to determine: 1) if any of the previously surveyed properties were NRHP-eligible; 2) if the NRHP listed resources were still present and still eligible and; 3) if there were any other individual historic architectural resources (e.g., individual buildings or structures, such as bridges) or historic districts in the project's APE that would meet the Criteria of Eligibility for the NRHP. Figure 3-18 shows the APE.

The only cultural resource identified within the APE was the Rossville Historic District, which is listed on the NRHP. Not every building within the Rossville Historic District is located within the APE as the APE reaches only the western section of the historic district. The survey determined that the Rossville Historic District has no visibility of the proposed IMF due to (1) its location approximately one mile from the proposed SR-57 overpass, (2) 1.5 to 2 miles from the Memphis Regional IMF, (3) the height of the proposed overpass (31 feet higher than existing SR-57) and (4) features at the Memphis Regional IMF, the 70-foot light posts distributed over the IMF site are tallest element. Heavy forestation and modern development in the area, specifically the Kellogg Company plant located west of the Rossville Historic District, screen the Memphis Regional IMF site. No historic resources would be adversely impacted by the proposed IMF.¹⁷⁰



¹⁷⁰ AMEC Earth & Environmental, "Memphis Regional Intermodal Facility, Viewshed Survey," 17 November 2009.

Under the No-Build Alternative, the Memphis Regional IMF and the SR-57 overpass would not be constructed. Industrial Road would; still be constructed independently by the Developer. As the property has been rezoned industrial and is within the Rossville UGB, it is anticipated that the property could be developed in the future for some other purpose under the No-Build Alternative. The No-Build Alternative, however, would not have an effect under Section 106 to historic architectural resources, since there would be no APE and no new construction of an IMF.

As required by Section 106, Tennessee SHPO reviewed this finding and concurred with it in a letter dated February 9, 2010, (Appendix B).

3.9.2 Archaeological Resources

A records search was conducted to identify archaeological resources within the APE that would meet the Criteria of Eligibility for the NRHP set forth in 36 CFR Part 60.4. No listed or eligible archaeological resources were identified within the archaeological APE.¹⁷¹

Ten archaeological sites were identified within a 1.25 mile (2 km) record search buffer around the APE. These archaeological sites included 8 prehistoric sites (3 with historic components) and 2 historic sites. No determination of eligibility for the NRHP had been conducted for any of these 10 sites.

A field survey during May through July 2009 recorded two previously undocumented archaeological sites (40FY456 and 40FY457) within the APE. Site 40FY456 is a historic site in an open pasture. Artifacts included ceramics, container and window glass fragments, and nails. Nearly all of the artifacts recovered dated from after the Civil War period and into the early 1900s. The site likely represents a domestic residential structure, although no structural remains were identified during the survey and none were located on the historic maps in this area. Deed research of the site area could not determine the owner of the property during the late nineteenth century and no economic or ethnic information about the owners or inhabitants of the site could be obtained.

Site 40FY457 is a historic archaeological site on a rise east of a stream that crosses the project site. The artifacts date from after the Civil War into the early 1900s. Artifacts included ceramics, container and window glass fragments,



¹⁷¹ AMEC Earth & Environmental, "Memphis Regional Intermodal Facility, Phase 1- Archeological Report," December 2009.

nails, a metal button, and two cartridge casings. The types of artifacts suggest that this was the site of a domestic residential structure. However, no structural remnants were identified during the survey and none were located on historic maps for this area. Deed research established that at least four individuals owned the property during the late nineteenth century. Unfortunately none of these names were linked to census data for the area and no inferences could be made regarding the family size, ethnicity or economic status of the inhabitants.

All artifacts from both 40FY456 and 40FY457 were recovered from the upper soil layers (approximately down to 20 inches)(plowzone of former agricultural fields) and no evidence of intact cultural deposits at deeper depths was noted. Due to the lack of intact subsurface archaeological deposits or foundation remnants, the degree of plowzone disturbance in the site areas, and the gaps in the archival record, Sites 40FY456 and 40FY457 were not recommended as eligible for inclusion on the NRHP and no further archaeological investigations were recommended.

No sites were identified in the area of the lead tracks or the proposed SR-57 overpass area.

Since there are no listed or eligible archaeological resources within the APE, the proposed project would have no effect to archaeological resources under Section 106.

As there would be no construction of a new IMF, the No-Build Alternative would not have effect under Section 106 to archaeological resources.

The Tennessee SHPO concurred in a letter dated January 28, 2010, that no adverse findings regarding eligibility and effects to archaeological resources (Appendix B).

3.9.3 Section 106 Coordination

This project has been coordinated with appropriate parties pursuant to Section 106 of the NHPA.¹⁷²

During the initial coordination phase, TDOT coordinated with local government and Native American (American Indian) tribes. On September 29, 2009, letters were sent to City of Rossville and Fayette County Mayors. On October 13, 2009, letters were sent to tribal representatives. Coordination letters were sent to the following Native American Tribes pursuant to Section 106:

¹⁷² Advisory Council on Historic Preservation, 36 CFR Part 800.2.

- Alabama-Quassarte Tribal Town
- The Chickasaw Nation
- Choctaw Nation of Oklahoma
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Jena Band of Choctaw Indians
- Kialegee Tribal Town
- Mississippi Band of Choctaw Indians
- Muscogee (Creek) Nation
- Poarch Band of Creek Indians
- Quapaw Tribe of Oklahoma
- Shawnee Tribe
- Thlopthlocco Tribal Town
- Tunica-Biloxi Indians of Louisiana, Inc
- United Keetoowah Band of Cherokee Indians

TDOT received no responses from interested parties and received no responses from tribes. A copy of the TDOT letters sent to the Native American tribes is included in Appendix B. On June 30, 2010,, the FRA also sent letters to the above listed Native American tribes. If any tribes express interest in the project area, they would be invited by FRA to become a consulting party regarding the tribe's area(s) of concern and the project.

The *Phase I – Archaeological Survey* and Architectural and Historic Survey have been submitted to the Tennessee SHPO for concurrence. Coordination with the Tennessee SHPO and the Mississippi SHPO was initiated on June 25, 2009 and September 18, 2009, respectively. A meeting was held with the Tennessee SHPO on August 27, 2009 to discuss the appropriate APE for the historic architectural survey. Correspondences with the Tennessee and Mississippi SHPOs are included in Appendix B.

3.10. Recreational Resource Impacts

Section 6(f) of the Land and Water Conservation Act of 1965 establishes the Land and Water Conservation Fund (LWCF) to assist Local, State, and Federal agencies in meeting the demand for present and future outdoor recreation sites, through grants for land acquisition, park amenities, and other park development costs.¹⁷³ Once a city, county, or agency has used Section 6(f) for funds, either the land or the park appurtenances cannot be eliminated or acquired without coordination with the Department of Interior and mitigation that replaces the eliminated items.

No outdoor recreational land and water areas or facilities were identified as being established from grants-in-aid from the LWCF in the project area. Therefore, a Section 6(f) evaluation is not required for this project. The No-Build and Build Alternative 1 will not involve or impact any recreational resources or property developed using Land and Water Conservation Act (Section 6(f)) funds.

3.11. Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 requires an evaluation if a transportation project uses publicly owned land (park, recreation area, and wildlife and waterfowl refuge) and/or a publicly/privately owned historic site.¹⁷⁴ A “use” occurs when (1) land from a Section 4(f) site is acquired for a transportation project, (2) there is an occupancy of land that is adverse in terms of the statute's preservationist purposes, or (3) the proximity impacts of the transportation project on the Section 4(f) sites, without acquisition of land, are so great that the purposes for which the Section 4(f) site exists are significantly impaired (normally referred to as a constructive use).

No Public Park, recreation land, wildlife refuge, or historic or archaeological site listed or eligible for listing on the NRHP was identified in the project area. The analysis revealed that the No-Build and Build Alternative 1 will not involve or impact any Section 4(f) resources.

3.12. Natural Resources Impacts

The ecology study prepared for Build Alternate 1 is summarized below. The project is within the Coastal Plain physiographic unit and the Wolf River watershed

For more information:

The *Ecology Report* is available for review at TDOT Environmental Division.

¹⁷³ 16 U.S.C. 4601.

¹⁷⁴ 49 U.S.C. 303.

(Hydrologic Unit Code [HUC] 08010210).¹⁷⁵ Ecological resources described in the text are shown in Figure 3-19.

3.12.1 Terrestrial Resources

Based on site reconnaissance, much of the project area has been cleared and converted to pasture. The site appears to have been used for agricultural purposes and possibly timbering within the past century. This inferred past disturbance is supported by the environmental assessment and archaeological reviews.¹⁷⁶ Presently, much of the land is forested or in shrub/scrub thickets. Some habitats are in earlier stages of succession. The balance of the land is pasture. Land use in the vicinity of the site includes forest, pasture, and rural residential areas.

Over 70% of the immediately surrounding area consists of agricultural and pasture lands.¹⁷⁷ Forested areas, which cover less than approximately 30% of the surrounding area, are sporadic and primarily occur along drainages.¹⁷⁸ Residential development is relatively sparse; approximately 55 residences are located within 1/2 mile of the project area. There are no naturally occurring glades, old growth forests, or other unique habitats within the project boundary.

Plant communities found in the area are characteristic of communities formed over loess deposits. Different plant communities may develop on different topographic land forms and at different elevations. The upland forested communities are dominated by various oaks (i.e., white oak [*Quercus alba*], southern red oak [*Q. falcata*], post oak [*Q. stellata*], and black oak [*Q. velutina*]) and other hardwoods including sweetgum (*Liquidambar styraciflua*), yellow-poplar (*Liriodendron tulipifera*), black locust (*Robinia pseudoacacia*), black cherry (*Prunus serotina*), and slippery elm (*Ulmus rubra*). River birch (*Betula nigra*), American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), box elder (*Acer negundo*), and green ash (*Fraxinus pennsylvanica*) are common along drainages and in floodplain areas.¹⁷⁹

¹⁷⁵ Miller, R. A., 1974, The geologic history of Tennessee. Tennessee Div. Geol. Bull. No. 74. 36pp. 1974.

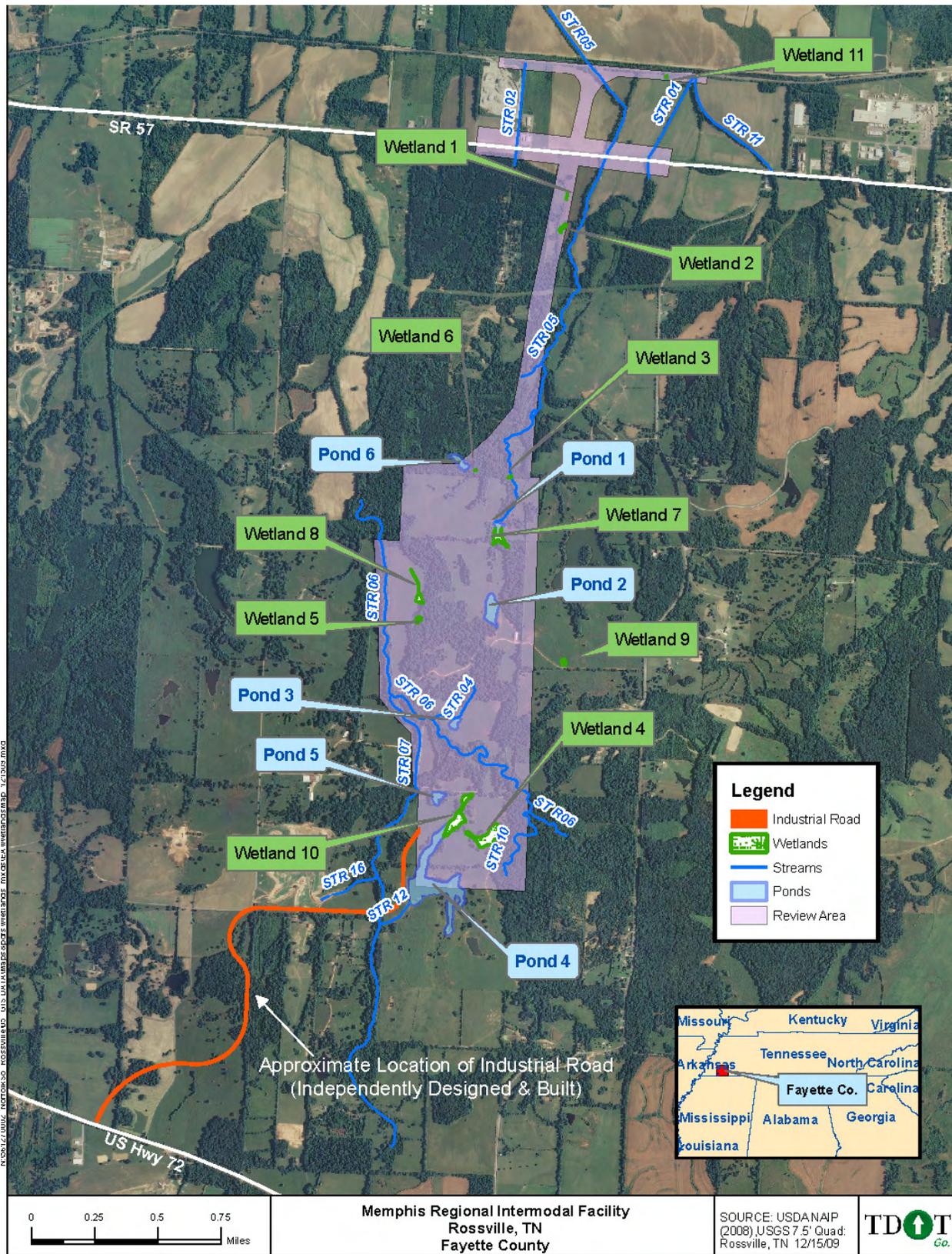
¹⁷⁶ AMEC, "Phase I – Archeological Survey, Proposed Memphis Regional IMF, near Rossville, Fayette County, Tennessee," December 2009, and AMEC, "Phase I -ESA, Proposed Memphis Regional IMF, near Rossville, Fayette County, Tennessee" November 2009.

¹⁷⁷ Visual estimates based on 2009 Imagery from Google Maps.

¹⁷⁸ Visual estimates based on 2009 Imagery from Google Maps. Supported by FWS, November 2007, Forest Inventory & Analysis Factsheet Tennessee 2004.

¹⁷⁹ USDA, "The Plants Database," 28 Dec 2009 <http://plants.usda.gov>.

Figure 3-19: Wetlands and Aquatic Resource Locations



Open field habitats are dominated by various grasses. Both upland and floodplain forested habitats provide food, cover, and nesting opportunities for numerous small mammals, including rabbits, squirrels, and other rodents, as well as numerous reptiles, native birds, spiders and other arachnids, and insects.

Common wildlife species in this area include: white-tailed deer (*Odocoileus virginiana*), raccoon (*Procyon lotor*), eastern cottontail (*Sylvilagus floridanus*), eastern gray squirrel (*Sciurus carolinensis*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), bobcat (*Lynx rufus*),¹⁸⁰ songbirds, osprey (*Pandion haliaetus*), wild turkey (*Meleagris gallopavo*), ruffed grouse (*Bonasa umbellus*), owls, waterfowl, egrets, and various species of toads, frogs, snakes, and turtles. Specific species that have been observed on-site include: raccoon, white-tailed deer, beaver, Eastern box turtle (*Terrapene carolina*), American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), redwing blackbird (*Agelaius phoeniceus*), gray catbird (*Dumetella carolinensis*), blue jay (*Cyanocitta cristata*), mourning dove (*Zenaida macroura*), eastern wood pewee (*Contopus virens*), field sparrow (*Spizella pusilla*), grasshopper sparrow (*Ammodramus savannarum*), eastern meadowlark (*Sturnella magna*), wild turkey, turkey vulture (*Cathartes aura*), European starlings (*Sturnus vulgaris*), indigo bunting (*Passerina cyanea*), mocking bird (*Mimus polyglottos*), mallard ducks (*Anas platyrhynchos*), Canada geese (*Branta canadensis*), great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), downy woodpecker (*Picoides pubescens*), and belted kingfisher (*Ceryle alcyon*).¹⁸¹

Several streams and ponds occur on-site, which likely provide habitat for various small fish as well as crayfish and aquatic insects. However, no essential fish habitat or fisheries of special concern occur on-site. No trout streams occur on-site.

Short-term impacts to the area's habitat would consist of dust, noise and changes in land use. Long-term impacts would consist of permanent loss of open and small wooded tracts as a result of the additional right-of-way (ROW) needed. In addition, construction and earthmoving activities would create disturbed soil areas potentially susceptible to invasive exotic plant species. While these

¹⁸⁰ Wildlife North America, <http://www.wildlifenorthamerica.com/A-Z/Mammal/common.html>.

¹⁸¹ The Cornell Lab of Ornithology "All About Birds," <http://www.allaboutbirds.org/guide/search>.

impacts would decrease the total area of terrestrial habitat within the project area, these impacts are not expected to be substantial.

One of the larger habitat impacts includes the loss of approximately 244 acres of forested habitat and 206 acres of non-forested habitat within the 650 acre site, as well as the loss of stream habitat.¹⁸² The losses would be less as the facility footprint is defined during design and impacts to habitat are avoided or minimized as practicable. The estimated disturbed area for the facility is 380 acres with the portion of forested and scrub-shrub habitat similar to the entire property boundary. The disturbed area would eliminate habitat for local fauna that currently utilize the site.

To avoid impacting forested habitat, NSR designed the facility to avoid streams where possible and minimize impacts to the riparian corridors within the footprint of the facility. The forested habitat within the property boundary is mainly located along streams and around wetlands. NSR would maintain a 50-foot buffer where possible along streams that do not require direct impacts to the stream channel. As discussed below, NSR would also use retaining walls (or similar structure) to reduce impacts to the stream meanders, floodplain and forested riparian areas.

Stream 6 is a tributary of the Wolf River that flows through the southern part of the site and along the western edge of the project site. The original design would have impacted several hundred feet of Stream 6 along its western boundary, requiring relocation and fill of the existing waterbody. To avoid impacting the floodplain and riparian forest along this portion of Stream 6, as well as potentially relocating several hundred feet of Stream 6, NSR shifted the facility footprint east of Stream 6. Shifting the facility to the east moved the majority of the facility footprint out of the Stream 6 Zone A floodplain and reduced impacts or disturbance to forested areas along Stream 6. The construction plans would designate the area along Stream 6 as not to be disturbed for as wide of an area as possible, while still allowing for construction of the facility. All of the area outside of the facility footprint would be designated as open space.

Within the 650 acre site, the facility area would include about 380 acres. The remainder would be left as vegetated and would serve as refuge habitat for more

¹⁸² Based on preliminary footprint for the Memphis Regional IMF and 2009 imagery.

mobile species (e.g., white-tailed deer (*Odocoileus virginiana*), raccoon (*Procyon lotor*), eastern cottontail (*Sylvilagus floridanus*), eastern gray squirrel (*Sciurus carolinensis*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), bobcat (*Lynx rufus*)¹⁸³ and various species of birds including waterfowl of Pond 4 and the riparian habitats surrounding Stream 6 would remain following project construction.

During construction activities, wildlife would be expected to vacate the site; some individuals of the less-mobile species (i.e., small mammals, reptiles, amphibians) could be lost during construction. Most wildlife would likely acclimate to human activity and return to adjacent areas following construction. From a 2004 aerial photograph, land within a one-mile perimeter around the site includes approximately 10,500 acres.¹⁸⁴ Approximately 3,200 acres appear to be forested and 7,300 acres appear to be non-forested.¹⁸⁵ This is very comparable to the percentage of land type within the planned facility footprint.

Noise and light associated with the IMF may temporarily affect wildlife utilization of habitats. Because the main portion of the facility is located in a rural setting and is not located near a major airport, an interstate highway, or other major State and Local highways, noise and light are not already a factor within existing habitats. After development, areas that remain undisturbed within the property boundaries would, over time, provide some degree of refuge for local wildlife as the surrounding areas continue to urbanize.

For light reduction, NSR would use fixtures that direct light downward to minimize the effects of the light to surrounding areas. To be able to operate the facility safely, the site would be graded to create a plateau for constructing a facility consisting of level tracks for rail cars to be placed for unloading and unloading of containers and trailers. To create the plateau, the majority of the eastern side of the facility would be in a cut that ranges up to 40-foot deep in places. The western side of the facility would be constructed on a fill. Along the eastern and western boundary of the facility, where there is less than 10-foot in depth, NSR would construct a landscape berm where the top of the berm would be 10-foot higher than the top of pavement adjacent to the berm. Also along the western

¹⁸³ Wildlife North America, "List of North American Mammals," <http://www.wildlifenorthamerica.com/A-Z/Mammal/common.html>.

¹⁸⁴ USDA, 2007 Aerial photograph.

¹⁸⁵ Visual estimates based on Imagery.

edge of the proposed lead adjacent to the residences along Neville Road, NSR would construct a landscape berm where the top of the berm would be approximately 15-foot higher than the adjacent top of rail. In the long-term, noise and light associated with the IMF would become part of the existing environment and would not likely impact wildlife in adjacent habitats appreciably. Over time, most wildlife species in adjacent habitats would adapt to the noise and light associated with the IMF.

The No-Build Alternative would not be expected to have any immediate impact on flora and fauna with the project boundaries.

3.12.2 Water Quality and Aquatic Resources

The proposed Memphis Regional IMF would be situated within rolling topography at generally high elevations within the Wolf River watershed. The IMF would be at approximate elevation 385 feet amsl, with a maximum ground elevation of about 450 feet amsl due east of the site. The site is dissected by several streams and WWC, most of which originate within the IMF footprint. As such, the IMF would be at the headwaters of these features.

Within the Wolf River watershed, the site is dissected by numerous WWC and small intermittent streams, which eventually flow into one of two unnamed tributaries of the Wolf River. As shown previously on Figure 3-19, several streams flow within close proximity to the proposed IMF footprint, lead tracks, proposed SR-57 overpass and Industrial Road. In general, these streams have sandy bottoms, eroding banks, and are typical for streams in this region. Two of these streams (Streams 4 and 5) originate on-site and are considered first order streams. These streams are intermittent and are relatively small, generally having a bottom width of approximately three to five feet. Streams 6, 7, and 11 are somewhat larger (bottom width of approximately 10 to 25 feet) and maintain a more constant flow. One additional small first order stream (Stream 3) bisects the proposed lead tracks ROW.

Several farm ponds were identified on or immediately adjacent to subject property. These impoundments range in size from less than one acre to 18 acres, Figure 3-19.

Tennessee water quality standards require the incorporation of the Antidegradation Policy into regulatory decisions.¹⁸⁶ In exceptional waters, degradation cannot

Types of Streams:

Perennial streams flow year-round.

Intermittent streams typically flow for only a portion of the year.

Wet Weather Conveyances (WWC) or ephemeral streams can be man-made or natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality, and whose channels are above the groundwater table and do not support fish or aquatic life and are not suitable for drinking water.

¹⁸⁶ Rules of Tennessee Department of Environment And Conservation, Water Quality Control Board, Division of Water Pollution Control, Chapter 1200-4-3, Aquatic Resource Alteration.

be authorized unless (1) there is no reasonable alternative to the proposed activity that would render it non-degrading, and (2) the activity is in the economic or social interest of the public. In Outstanding National Resource Waters, no new discharges, expansions of existing discharges, or mixing zones would be permitted unless such activity would not result in measurable degradation of the water quality.

Due to the presence of *Escherichia coli* (*E-coli*), Tennessee classifies the unnamed tributaries of the Wolf River (TN08010210004-0400) that drain the site as impaired and lists them on the 2008 303d List. These streams are considered Category 4A, impaired. The EPA approved a pathogen total maximum daily load (TMDL) that addresses the known pollutants.¹⁸⁷ The proposed Memphis Regional IMF could reduce the *E-coli* being deposited into these streams by not allowing livestock to graze within the IMF.

The impacts reported in Table 3-16 are based on preliminary designs of the proposed Build Alternative 1. These preliminary designs have included minimization and avoidance of existing waters and sensitive areas.

Impacts to Waters of the United States require authorization from the USACE under Section 404 of the CWA. Similarly, impacts to State waters require permits from the TDEC under the Aquatic Resource Alteration Permit (ARAP) program¹⁸⁸ and Tennessee Water Quality Control Act¹⁸⁹ and NPDES stormwater discharge program. In conjunction with refinements in site design and Section 404 and ARAP permitting, the impacts may increase or decrease once final design of Build Alternative 1 is completed. TMDL criteria will be appropriately addressed by TDEC via the project NPDES construction permit.¹⁹⁰ The proposed project would be designed to avoid and minimize impacts to aquatic resources to the extent practicable. Efforts to further minimize impacts would continue throughout the design, permitting, and construction process.

¹⁸⁷ TDEC, "Final Total Maximum Daily Load (TMDL) for E. Coli in the Wolf River Watershed (HUC 08010210) Fayette, Hardeman, and Shelby Counties, Tennessee," August 2007.

¹⁸⁸ Rules Of Tennessee Department Of Environment And Conservation, Water Quality Control Board, Division Of Water Pollution Control, Chapter 1200-4-7, Aquatic Resource Alteration.

¹⁸⁹ Tennessee Water Quality Control Act of 1977, TCA 64-3-101.

¹⁹⁰ <http://www.epa.gov/owow/tmdl/intro.html#tmdlfitcwa>.

Table 3-16: Impacts to Aquatic Resources

Aquatic Resource	Potential Impacts (feet)	Type of Potential Impacts	Description
STR-1	NA	Runoff	Intermittent Stream
STR-2	50	Encapsulation	Intermittent Stream
STR-3	292	Encapsulation	Intermittent Stream
STR-4	700	Fill	Intermittent Stream
STR-5	3200 / 100	Fill/Encapsulation	Intermittent Stream
STR-6	250	Encapsulation	Perennial Stream
STR-7	200	Encapsulation	Perennial Stream
STR-10	NA	Runoff	Intermittent Stream
STR-11	NA	Runoff	Perennial Stream
PND-1	260	Fill	Pond
PND-2	NA	Fill	Pond
PND-3	200	Fill	Pond
PND-4	300	Crossing/Encapsulation	Pond
PND-5	NA	Fill	Pond
PND-6	NA	Fill	Pond
Total Stream Impacts	5352		

Notes:

1. Ponds 2, 5, and 6 (totaling 5.6 acres) are non-regulated, isolated farm ponds.
2. Estimates are based on preliminary sketches; specific impacts would be calculated once a grading plan is finalized and permitting occurs.
3. Impacts to wetlands are included in Table 3-17.
4. Perennial streams based on USGS topographic map.¹⁹¹
5. Impacts to Stream 7 are related to the Industrial Road.
6. Impacts to Stream 2 and a portion of the impacts to Stream 5 (approximately 50 feet) are related to the construction of the SR-57 overpass.
7. Floodplain and aquifer impacts are discussed in Section 3.12.5 Floodplain Impacts and Section 3.12.6 Aquifer Impacts.

To minimize sedimentation and runoff impacts, erosion and sediment control plans would be included in the project construction plans. TDOT *Standard Specifications for Road and Bridge Construction*¹⁹², which include erosion and sediment control standards for use during construction, would be implemented in conjunction with the SWPPP and implemented in accordance with the NPDES

¹⁹¹ USGS Topographic Quadrangle Map for Rossville, Tennessee (1981).

¹⁹² TDOT, "Standard Specifications for Road and Bridge Construction," 1 Mar 2006, <http://www.tdot.state.tn.us/construction/specs.htm>.

construction permit under Section 402 of the CWA and Section 69 3 108 of the Tennessee Water Quality Control Act.

The project is being designed to avoid and minimize wetland and stream impacts where practicable. Impacts to on-site aquatic resources have been minimized to achieve the basic project purpose. Design features that allow for avoidance and/or minimization of wetland and stream impacts include the following:

- After determining minimum sizing of facility structures, site features were overlaid on topographic and wetland mapping to avoid impacting streams and wetlands, where possible.
- Avoid re-channelization during bridge construction.
- Design stream crossings at or near 90 degree angles, where practicable, to minimize stream impacts.
- Design stream crossings to avoid meanders to reduce stream length impacts.
- Maintain natural bottom of streams at crossings, where practicable.
- Utilize rock drains to allow natural groundwater flows to continue to feed undisturbed downgradient segments of streams.
- Use retaining walls to avoid placing fill in stream channels and/or stream relocations.
- Minimize rechannelization when using culverts.

The project was located to avoid streams and wetlands to the extent possible. Within the limits of geotechnical concerns, slopes were steepened to reduce the footprint of the facility on floodplains. Native material from other areas of the site and/or clean fill would be used as fill material in wetland areas.

Although NSR is designing the facility to avoid major impacts to Stream 6 (Photo 3-6), the loop track and Industrial Road must cross it near the south end of the site. Two bridges are proposed to cross Stream 6. Both bridges would span the stream. No fill would be placed in the stream channel in association with these bridges. The preliminary design of the facility included a combined road

Photo 3-6: Unnamed tributary of Wolf River (STR-6)



and rail crossing of Stream 6, which would have required the relocation/channelization of Stream 6 due to the presence of meanders. By crossing Stream 6 in two locations, NSR would avoid channelization which would impact less length of stream because one of the crossings can be at a lower elevation. Impacts would be reduced from over 300 feet to less than 150 feet.

Retaining walls are being designed near the loop track crossing and along the west side of the fill slope to further minimize impacts to Stream 6 and its associated floodplain. NSR would use retaining walls at two locations to avoid approximately 350 feet of in-stream impact to Stream 6 as well as impacts to the floodplain.

For intermittent streams that lie within the footprint of the facility (such as Streams 4 and 5), avoidance and/or relocation are not practicable alternatives. Stream 4 is a small intermittent stream that originates on-site. Instead of filling the channel with earthen fill and eliminating the future seepage of groundwater to this surface feature, NSR would place rock fill within the existing stream channel (encapsulated beneath the facility) to help convey potential flows downstream to undisturbed portions of the stream. This would minimize impacts to functioning downstream portions of the stream. The length of Stream 4 filled with rock will be mitigated in accordance with the CWA.

Stream 5 (Photo 3-7) is another small intermittent stream, which originates on-site. As the headwaters of Stream 5 lie within the footprint of the facility, avoidance and/or relocation is not a practicable alternative. The beginning of Stream 5 lies in an area that would be undercut during project construction. To minimize impacts to downstream portions of the stream, NSR is designing for the collection of the existing Wet Weather Conveyances (WWC) so they would continue to feed Stream 5. The design includes a minimum amount of stormwater from the proposed track areas to be routed to a ditch that would flow into Stream 5. Runoff from the pads and the majority of the facility would be routed to an on-site stormwater detention system. The length of Stream 5 eliminated will be mitigated in accordance with the CWA.

The largest wetland within the project site (Wetland 4) encompasses 2.84 acres. The loop track was originally designed to cross a portion of Wetland 4 and a meander of Stream 6. To avoid impacting Wetland 4 (Photo 3-8) and reduce impacts to Stream 6, NSR purchased additional property allowing the loop track to be shifted east. This

Photo 3-7: Unnamed tributary of Wolf River (STR-5)



Photo 3-8: Wetland 4



would allow Build Alternative 1 to avoid impacting 300 feet of Stream 6 as well as 2.84 acres of Wetland 4.

Appropriate Best Management Practices (BMP) would be followed to minimize erosion, turbidity, or other temporary impacts. Following minimization and avoidance measures, the project will impact both wetlands and streams. All impacts will be mitigated as required by regulatory agencies. Mitigation will be designed to meet the requirements of USACE and EPA's Final Rule on Compensatory Mitigation for Losses of Aquatic Resources.¹⁹³

Stream channels requiring relocation (channelization) would be replaced on site to the extent possible, using techniques that would replace existing stream characteristics such as length, width, gradient, and tree canopy. Water body impacts that cannot be mitigated on-site, such as impacts to springs that require rock fill, would either be mitigated off-site by improving a degraded system or by making a comparable payment to an in-lieu-fee program. An in-lieu-fee program would perform off-site mitigation under the direction of State and Federal regulatory and resource agencies.

The State of Tennessee sets water quality standards, including water quality criteria, for waters of the State. The water quality standards are established at levels protective of designated uses and to protect aquatic life and water quality in accordance with the Clean Water Act (CWA). Water Quality Standards must be met during construction and operation of the proposed project, and are a requirement of permits issued by TDEC for discharges to waters of the State. Therefore, the project would not cause or contribute to a violation of water quality standards and accordingly is not expected to adversely affect water quality in the area. In addition, NSR will coordinate with TDEC Division of Ground Water Protection in order to protect the quality of groundwater in the area.

Build Alternative 1 would impact several streams (totaling approximately 5,352 linear feet of impact, Table 3-16) within the footprint of the facility and the SR-57 overpass. Much of this stream length is currently listed as "impaired". The unavoidable loss of stream channel will be offset through compensatory mitigation. Potential water quality impacts would be minimized through the implementation of

¹⁹³ (Apr. 10, 2008) issued pursuant to Section 404 of the CWA, 33 U.S.C. § 1344, and regulations at 33 C.F.R. Part 332 and 40 C.F.R. Part 230.

BMP and other regulatory requirements so that water quality in the area will not be significantly impacted.

The No-Build Alternative would not be expected to impact stream resources or water quality in the area with the following exceptions:

- Industrial Road would cross Stream 7 and is being built under Tennessee NPDES Permit, TNR152966, and TDEC ARAP Permit, NR0905.065.
- Several streams within the project site are listed as impaired by TDEC for *Escherichia coli* (E. Coli). The IMF could potentially improve this condition by reducing livestock grazing (a potential E. Coli source) at the site.

3.12.3 Wetland Resources

Wetlands are defined by the USACE and the EPA as “those areas that are inundated or saturated by surface or groundwater at a frequency or duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands typically include swamps, marshes, bogs and similar areas.”¹⁹⁴

Approximately 7.5 acres of confirmed wetlands at 11 sites have been identified within or near the anticipated project limits (Figure 3-19 and Table 3-17). Jurisdictional determination of these wetlands was confirmed by the USACE.

Efforts to further minimize impacts will continue throughout the design, permitting, and construction process. Impacts from construction of the proposed Memphis Regional IMF and the proposed SR-57 overpass will be permitted simultaneously. Industrial Road is under construction in Tennessee (Tennessee NPDES Permit Tracking Number TNR152966¹⁹⁵) and is not expected to impact any wetlands.

Mitigation is required for all wetland impacts that do not meet the requirements for the State of Tennessee’s general ARAPs or for certain Nationwide Section 404 permits (USACE). Following minimization and avoidance measures in accordance with Chapter 1200-4-7, some

¹⁹⁴ 33 CFR 328.3.

¹⁹⁵ Permit issued to Mr. William Adair by TDEC Memphis EFO on November 2008

3 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

wetlands and streams within the footprint of the facility will be impacted by the project. All wetland and stream impacts will be mitigated.¹⁹⁶

Table 3-17: Impacts to Wetlands

Wetland Type	Type of Potential Impacts	Primary Function of Wetland	Potential Impacts (acres)		Description
			Total	Likely Elimination or Drained	
WTL-1 Emergent	Fill	Wildlife Habitat and Watering	0.01	0.01	Small, low quality, depressional area in field
WTL-2 Emergent	Fill	Wildlife Habitat and Watering	0.16	0.16	Small, low quality, depressional area in field
WTL-3 Fringe	Fill	Wildlife Habitat and Watering	0.04	0.04	Fringe wetland
WTL-4 Emergent	Fill	Wildlife Habitat and Watering	2.84	2.84	Herbaceous wetland with scattered trees located on broad flat area.
WTL-5 Fringe	Fill	Wildlife Habitat and Watering	0.21	0.21	Fringe wetland
WTL-6 Fringe	Fill	Wildlife Habitat and Watering	0.01	0.01	Fringe wetland
WTL-7 Fringe	Fill	Wildlife Habitat and Watering	0.77	0.77	Fringe wetland
WTL-8 Fringe	Fill	Wildlife Habitat and Watering	0.57	0.57	Fringe wetland
WTL-9 Emergent	No impact	Wildlife Habitat and Watering	0.20	0.00	Small, low quality, depressional area in field.
WTL-10 Emergent	Fill	Wildlife Habitat and Watering	2.70	2.70	Herbaceous wetland with scattered trees located on broad flat area.
WTL-11 Emergent	No impact	Wildlife Habitat and Watering	0.02	0.00	Small, low quality, depressional area in field
Total Wetland Impacts			7.53	7.31	

* Estimates are based on preliminary sketches; specific impacts will be calculated once grading plan is finalized and permitting occurs.

The minimum replacement ratio for wetlands is 2:1 and may be higher depending on hydrogeomorphic analyses or if optimum mitigation sites are unavailable. Wetland impacts may be mitigated through on-site or off-site mitigation. In addition, the credits in a wetland mitigation bank may be purchased to off-set impacts.

¹⁹⁶ Mitigation will also be designed to meet the requirements of USACE and EPA's Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (Apr. 10, 2008) issued pursuant to Section 404 of the CCWA, 33 U.S.C. § 1344, and regulations at 33 C.F.R. Part 332 and 40 C.F.R. Part 230.

It is anticipated that approximately 7.3 acres would be filled as a result of the construction. Efforts will be made; however, during further project design, to avoid or minimize impacts to as many of these sites as possible. Any project related impacts to wetlands within the project limits will be mitigated as required by the appropriate permitting agencies. It is anticipated that mitigation will be accomplished by purchasing wetland mitigation credits from the Wolf River Mitigation Bank, LLC¹⁹⁷, which is within the same 8-digit HUC watershed as the project.

There would be no wetland impacts for the No-Build Alternative.

3.12.4 Channelization of Streams

The proposed Memphis Regional IMF will be constructed in accordance with all applicable rules and regulations regarding channelization as required in TDOT's *Standard Specifications for Road and Bridge Construction*. Construction of the proposed Memphis Regional IMF would include bridges and culverts to cross existing and proposed drainage features. For bridge construction, no channelization would occur as a result of the project. Minimal channelization would occur with the culverts. If stream channels requiring relocation cannot be replaced or otherwise mitigated on-site, additional mitigation measures (i.e., in-lieu-fee programs) would be utilized in accordance with applicable laws and regulations.

The No-Build Alternative would not necessitate any channelization of streams.

3.12.5 Floodplain Impacts

In accordance with EO 11988: Floodplain Management, an assessment of impacts to the floodplains was conducted. Floodplains are low-lying areas located adjacent to the channel of a river, stream or other type of waterbody.¹⁹⁸ These areas are subject to periodic flooding during heavy rains and/or long periods of wet weather. Floodplains are important because they:

- Provide temporary storage of flood waters;
- Prevent severe erosion caused by quickly flowing water;



**What is
Executive Order
11988 - Floodplain
Management?**

The intent of this executive order is to avoid impacts to floodplains and to preserve and/or restore their natural values.

¹⁹⁷ http://www.mvm.usace.army.mil/regulatory/MBL/mitigation_bank_listing.htm.

¹⁹⁸ FEMA. Flood Insurance Rate Map, Fayette County, Tennessee, Map # 47047C0415C. Effective Date: November 5, 2008

- Provide a vegetative buffer that filters silt and contaminants from runoff before it enters a stream or other waterbody; and
- Recharge and protect groundwater.

Areas of Fayette County are subject to periodic inundation from flooding and are regulated by the Fayette County Flood Damage Reduction District. Fayette County's floodplain management regulations are set to ensure that proposed development within any flood prone areas (within the 100 yr flood) does not create significant adverse affects to public safety or create substantial environmental impacts. These regulations are organized to ultimately ensure that development is in compliance with the regulations from the National Flood Insurance Program (NFIP). Some of the County's sub-sections exceed the parameters of the NFIP in order to address items of specific concern to the county's future growth while protecting the public from risks.

Because the Memphis Regional IMF is partially located with a flood prone area, the design would take into account the Fayette County Regulations. Under the Standards for Streams for areas of Special Flood Hazard, Zone AE and Zone A (where streams exist, but no base flood data has been provided), Fayette County applies the following provisions:

- New construction shall comply with all applicable flood hazard reduction provisions.
- No encroachments shall be located within an area equal to the width of the stream or twenty feet, whichever is greater unless a professional engineer demonstrates the cumulative effect of the proposed development will not increase the water surface elevation or the base flood more than one foot at any point within the community.¹⁹⁹

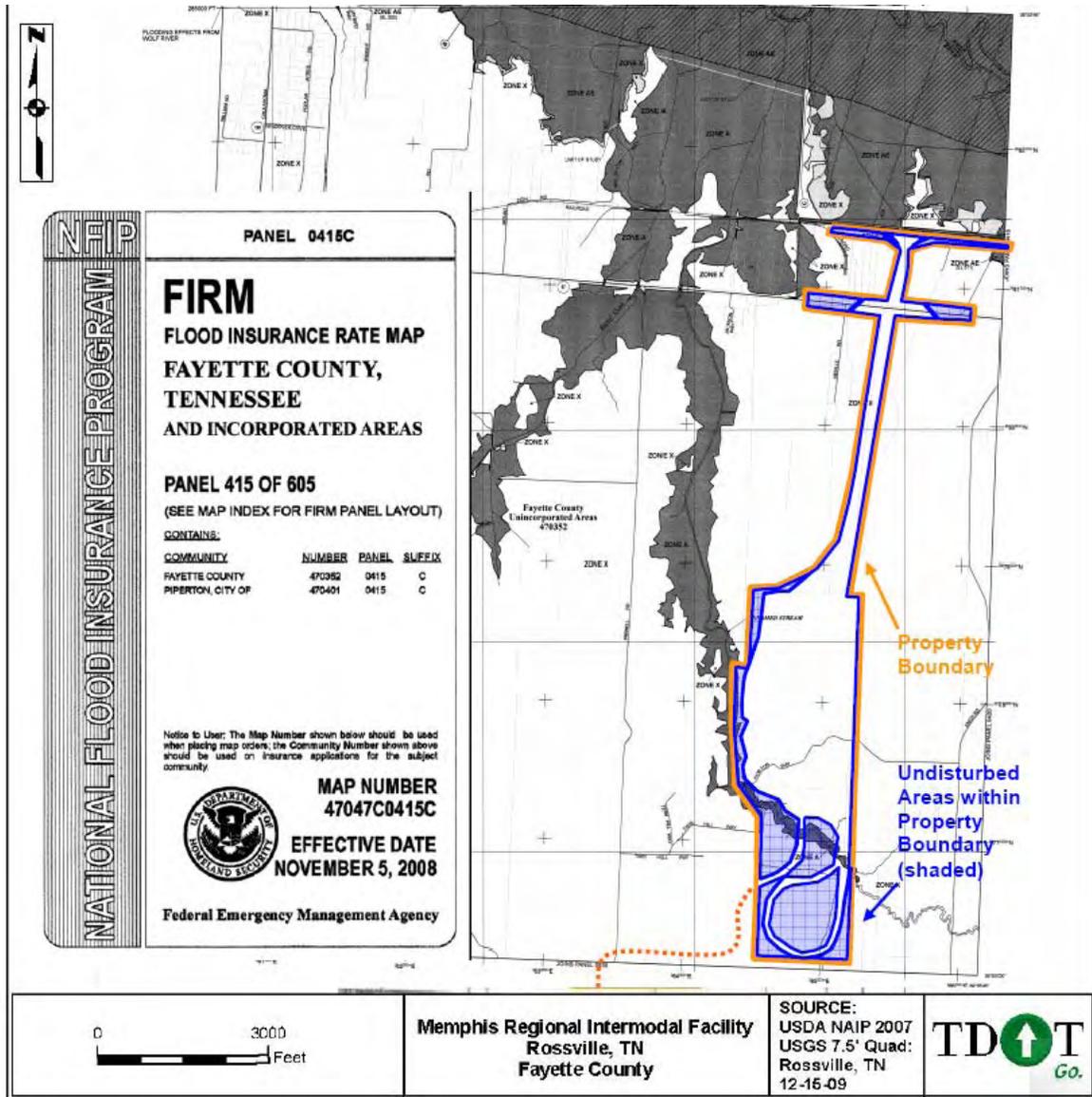
As part of the Memphis Regional IMF, none of the buildings are within the floodplain. For encroachment in Zones AE or A, a professional engineer would certify that these encroachments would not increase the water surface elevation of the base flood more than one foot at any point within the community.

Based on Flood Insurance Rate Map (FIRM), the southern portion of the project area encompasses an unnamed

¹⁹⁹ Fayette County "Flood Damage Reduction District" Resolution.

tributary of the Wolf River (identified as Stream 6).²⁰⁰ A special flood hazard area (SFHA), or 100-year floodplain, has been delineated for this portion of the unnamed tributary of Wolf River. The SFHA is identified as Zone A, indicating the 100-year floodplain was determined by approximate methods depicted in Figure 3-20. No base flood elevations or depths of flooding are shown within this zone.

Figure 3-20: Flood Hazard Area



Additionally, the northeast corner of the project review area encompasses approximately four acres of the

²⁰⁰ FEMA, 2008.

SFHA delineated for the Wolf River. This SFHA is identified as a Zone AE indicating the 100-year floodplain was determined by detailed methods.²⁰¹ Base flood elevations were determined by detailed hydraulic analysis.

The facility would be sited outside of the Wolf River floodplain (Zone AE) except for potential impacts when the lead tracks tie back into the NSR mainline. The project encompasses multiple streams. Only Stream 6 has a designated floodplain within the facility. The Industrial Road and loop track would cross Stream 6 within its Zone A. These crossings cannot be avoided, but the design will cause a “no-rise” condition with respect to floodwaters or will limit any such impacts to on-site areas. Design adjustments include methods to prevent fill encroachment into the Zone A floodplain along Stream 6, including walls or gabion structures along the toe of fills and lowering the height of stream crossings to reduce the length of impacts. The floodplain/riparian habitat along Stream 6 is outside of the clearing limits and would be left undisturbed by construction and operation of the project, except for potential temporary impacts for bridge construction.

As discussed in additional detail in Section 3.12.7, NSR has proposed to develop a stormwater control system that would provide storage to allow discharges to mimic pre-development hydrology and minimize initial flows following rain events and also decrease resultant peak flows. The stormwater control system features several detention basins to capture and treat stormwater runoff from the 232 acre paved concrete container and trailer transfer and parking area within the operating yard. To prevent excessive runoff from entering the receiving streams during and following rainfall events, NSR would design and implement a stormwater detention system that would operate during both construction and operation of the facility. The stormwater detention system would be designed so that post-construction flows do not exceed pre-construction flows (designed for the 100-year event).

The Memphis Regional IMF area is less than 1.5% of the 12-digit HUC Wolf River Subwatershed (43,204 acres) with the project draining into the Unnamed Tributary to Wolf River (TN08010210004-0400). The less pervious areas of the IMF, approximately 233 acres of paved surface and 76 acres of track, is less than 2% of the portion of the 0301 subwatershed south of the Wolf River between Piperton and Rossville (approximately 15,500 acres).

²⁰¹ FEMA, 2008.

Executive Order 11988 requires federal agencies to avoid to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Analysis of floodplain impacts have been performed in conjunction with the project design, and avoidance of impacts to the floodplain is a major design feature. Additional details on potential floodplain impacts are provided in EA Sections 3.12, 3.18, and 3.19 and included in submittals to federal agencies with respect to NEPA and permitting for the project. In summary, the entire facility has been sited outside of the Wolf River floodplain, except for potential impacts when the lead tracks tie back into the NSR mainline, which has existed in its location for decades. This connection to the mainline and minimal encroachment on the floodplain is not avoidable and there is no practicable alternative to this connection.

Facility impacts from post-construction hydrology and impacts to the Zone A floodplain will be avoided, minimized, or mitigated during project design. The facility would be designed to ensure that pre- and post-hydrology, including stormwater discharge from the site, will not change significantly due to the project. NSR has adopted the construction and maintenance practices outlined in the local floodplain practices, to the extent practicable, and do not anticipate floodplain impacts.

In accordance with EO 11988, the analysis of floodplain impacts includes provisions of the Clean Water Act, the National Flood Insurance Act, the Flood Disaster Protection Act, and other applicable provisions relating to floodplain impacts. For this project, NSR would adopt all construction and maintenance practices in Fayette County's floodplain management regulations and obtain the appropriate zoning authorizations from Fayette County for this project. While NSR plans to voluntarily comply with such local criteria whenever possible, there may be instances where those criteria are incompatible with rail operations.²⁰² For this project, as noted above, substantive local floodplain measures to the extent

²⁰²As noted in Section 3.1 of the EA, in recognition of the importance of rail transportation in interstate commerce, Congress has enacted legislation providing that federally regulated railroads operating in interstate commerce are not subject to otherwise applicable local and state laws. See Interstate Commerce Commission Termination Act of 1995 ("ICCTA"), 49 U.S.C. § 10501 and the Federal Railway Safety Act of 1970 ("FRSA"), 49 U.S.C. § 20101 et seq. In accordance with these and other similar federal laws, most state and local regulation of railroads is preempted in order to ensure barriers to interstate commerce are not created. This includes local planning, zoning and similar laws and ordinances. However, as discussed in this section, NSR will adopt local floodplain impact practices for this project.

applicable to rail have been included in construction specifications.

The water crossings would be designed to convey floodwaters so that there would be no major risk of property damage or loss of life due to the encroachment in the floodplains. Construction would ensure that an evacuation route is provided for local residents and businesses. Attempts will be made to minimize impacts to the unnamed tributary to Wolf River (Stream 6) floodplain in project design. If impacts to the floodplain occur, the design selected for the floodplain encroachment will be supported by analysis of design alternatives with consideration given to: capital costs and risks; and economic, social and environmental concerns.

Based on the proposed design features discussed above and in Section 3.12.7, the Memphis Regional IMF should not have an adverse affect on the floodplain including riparian habitat and local residences/businesses.

The No-Build Alternative will not involve any immediate impacts to floodplains.

3.12.6 Aquifer Impacts

The Memphis Sand aquifer is part of a sequence of water bearing aquifer units that forms the Mississippi Embayment (Figure 3-21) and underlies a vast area including parts of Kentucky, Tennessee, Alabama, Arkansas, Mississippi, Louisiana and Texas.

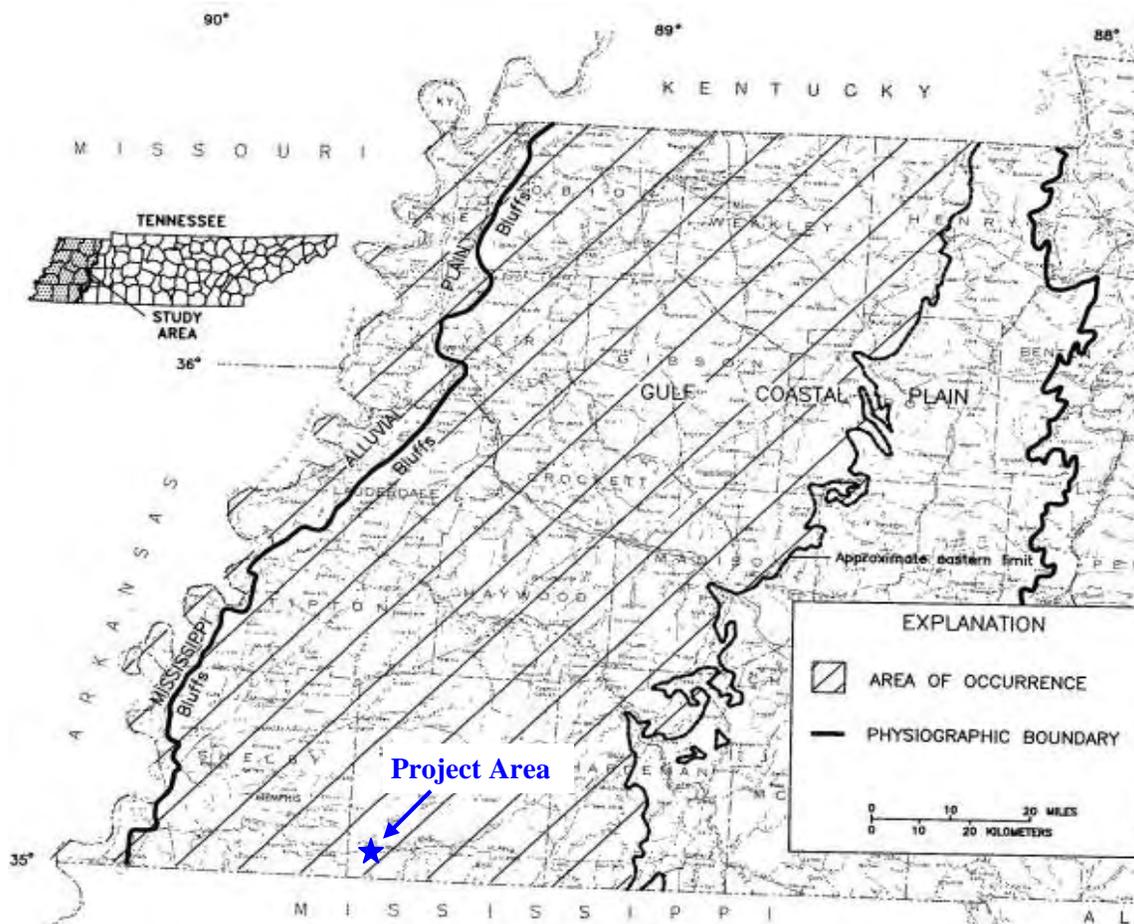
Figure 3-21: Mississippi Embayment Area



The Memphis Sand of the Claiborne Group underlies approximately 7,400 square miles in western Tennessee,

including Fayette County as shown in Figure 3-22.²⁰³ The proposed Memphis Regional IMF is located within the potential recharge area of the Memphis Sand Aquifer.

Figure 3-22: West Tennessee Memphis Sand - Major Physiographic Subdivision

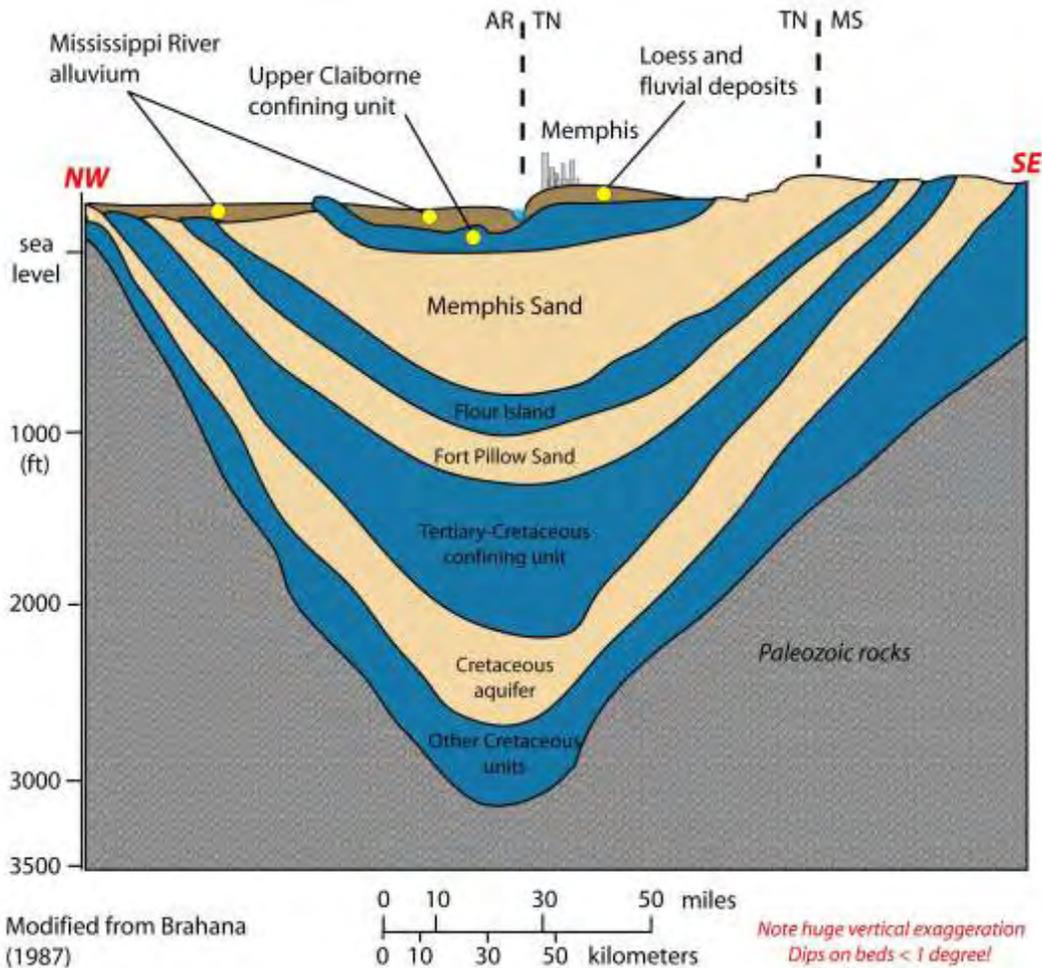


The Memphis Sand ranges from 0 to about 900 feet in thickness. Where the original thickness is preserved, it is about 400 to 900 feet thick. The unit is U-shaped such that wells in the Memphis area are typically 400-500 feet deep, Figure 3-23. In fact, the sequence of strata approximately equivalent to the Memphis Sand was referred to as the “500-foot” sand in many early reports for the Memphis area. Recharge to the Memphis Sand aquifer is, in part, from precipitation on the outcrop which is located along the eastern edge of the formation in proximity to Build Alternative 1. In the outcrop-recharge belt, the Memphis Sand aquifer is considered to be under

²⁰³ The University of Memphis Groundwater Institute, “History of Memphis Groundwater,” <http://gwi.memphis.edu/webpages/history.html>.

water-table conditions (unconfined). In this area, the potentiometric surface is complex and generally conforms to the topography.²⁰⁴

Figure 3-23: Memphis Sand Layers



West of this area, the aquifer is confined. In general, the groundwater flow direction in the Memphis area is to the west and northwest.²⁰⁵ The Town of Collierville is located northwest of the project area. Collierville draws its drinking water from the Memphis Sand aquifer. Aquifer recharge and transmissivity characteristics are such that groundwater in the Collierville wells is considered to be relatively “young”, on the order of 30-50 years old.²⁰⁶

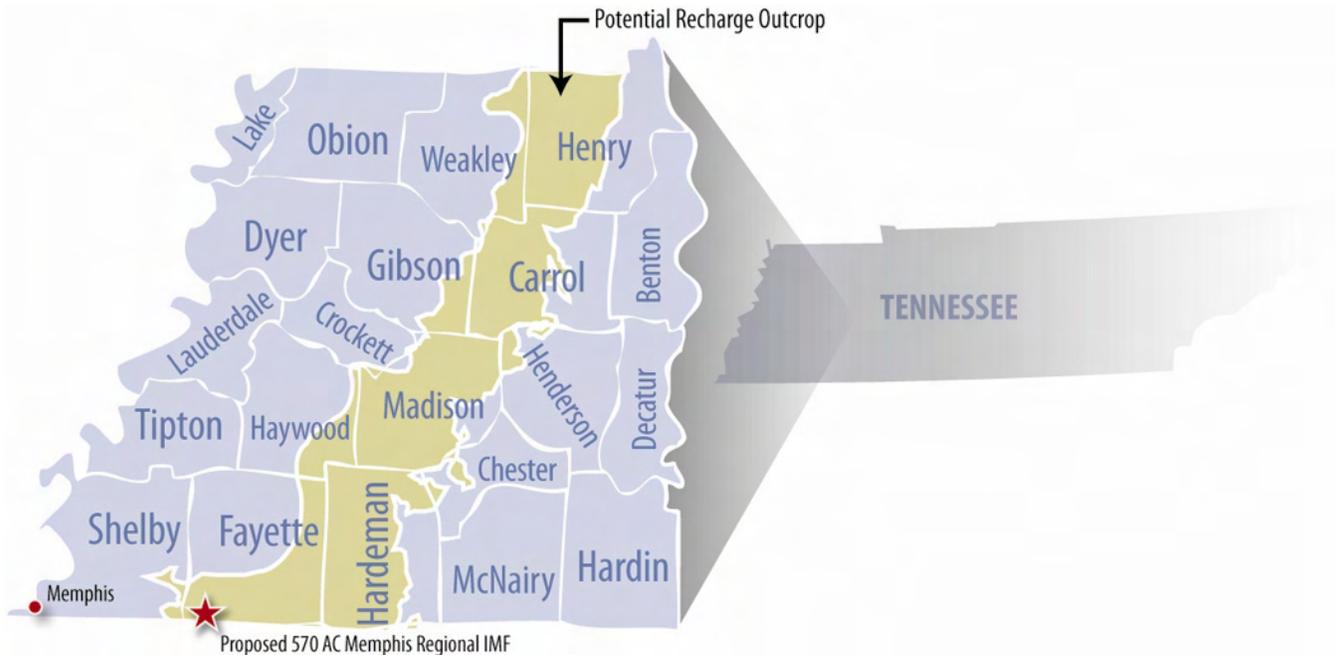
²⁰⁴ W.S. Parks and J.K. Carmichael, “Geology and Ground-Water Resources of the Memphis Sand in Western Tennessee,” Water-Resources investigation Report 88-4182, (U.S. Geological Survey,) 1990.

²⁰⁵ Schrader, T.P. 2008, Potentiometric Surface in the Sparta-Memphis Aquifer of the Mississippi Embayment, Spring 2007.

²⁰⁶ Discussion between the Town of Collierville and the University of Memphis Groundwater Institute.

As noted previously, Build Alternative 1 (total project area of 650 acres) is located within the potential recharge area of the Memphis Sand aquifer. The IMF footprint would encompass 380 acres consisting of approximately 233 acres of paved surface and 76 acres of track. The recharge area covers over 2,200 square miles in west Tennessee alone, Figure 3-24.²⁰⁷ Consequently, the planned facility would impact a surface area of less than 0.03% within the potential recharge area in West Tennessee alone.

Figure 3-24: West Tennessee Memphis Sand Recharge Outcrop Area



Soil borings completed for the project encountered variable materials including clay, sandy-clay, silty-clay, silty-sand, and clayey-sand. The borings did not encounter distinct intervals of clean sand. The clayey-sand material is potentially part of the Memphis Sand. The borings indicate that layers of clay are present below the proposed Memphis Regional IMF site.²⁰⁸ These clay layers are probably discontinuous but greatly reduce the vertical permeability of the soil in this area. The discontinuous nature of the clay layers however, means that the clayey-sands in the project area are interconnected with the confined aquifer northwest of the site.

²⁰⁷ Water-Resources investigation Report 88-4182, "Geology and Ground-Water Resources of the Memphis Sand in Western Tennessee", U.S. Geological Survey, 1990, by W.S. Parks and J.K. Carmichael.

²⁰⁸ Insert Geotech report reference

A large percentage of aquifer recharge occurs along exposures within the bottoms of streams and rivers where a relative constant or consistent source of water is present to infiltrate the sandy material. These features will remain largely intact at the project area although some of the smaller streams will be eliminated, crossed or encapsulated. As such, recharge via such features should be preserved. As discussed in additional detail in this section, NSR has proposed to develop a stormwater control and management system that would mimic pre-development site hydrology. In doing so, peak discharges to streams following rainfall events would not exceed pre-development flows. Likewise, post-development flows in the streams should be similar to pre-development flows. The stormwater detention system would be designed so that post-construction flows do not exceed pre-construction flows (designed for the 100-year event).

A number of residential water wells are present around the project site along Knox Road, Neville Road, and SR-57. As reported by TDEC Ground Water Management Section, these wells are relatively shallow on the order of 90-150 feet deep.²⁰⁹ Based on topographic relief in the area and on the planned elevation of the facility, most of the screened well intervals should be 80 to 150 feet below the planned IMF elevation. The Town of Rossville obtains its water from three groundwater wells ranging from 90-102 feet deep.²¹⁰ Piperton obtains its water from Collierville. Collierville's water supply is taken from eleven deep wells pumping from 350 foot and 600 foot sands.²¹¹ As discussed in additional detail in Section 3.12.6 and Section 3.13, NSR has proposed construction techniques that would provide protection to the underground water sources during construction and operation of the facility. Federal hazardous materials transportation laws and regulations limit freight that can and cannot be shipped through intermodal service. As discussed in additional detail in Section 3.16, NSR has an extensive spill prevention program.

Well heads are not expected within the limits of the project site. During construction, if such features are encountered, they will be properly plugged and abandoned by a Tennessee licensed well contractor in accordance with TDEC criteria.

²⁰⁹ TDEC 2009, Ground Water Management Section, Database Information on Commercial and Residential Wells in Fayette County.

²¹⁰ Town of Rossville, Rossville Waterworks, 2007 Water Quality Report.

²¹¹ Collierville Chamber of Commerce website: <http://www.colliervillechamber.com/economic/utilities.htm#Water>.

During operation of the facility, all surface drainage from the production areas would be collected and routed through lined-detention basins to ensure water quality meets applicable standards prior to discharge. The basin system would include appropriate positive controls in the unlikely event of a spill at the site in order to contain fluids until appropriate cleanup actions are taken. In addition to being lined with compacted clayey soil to reduce infiltration, the basins would also be designed to reduce standing water. The maintenance pad for site equipment would likewise include a controlled drainage and treatment system so that drainage from the site will comply with State and Federal water quality standards.

Construction and site grading work would follow standard NSR specifications with project specific requirements to provide additional protection for potential exposures of the Memphis Sand. In particular, NSR's standard specifications require that the subgrade within all areas of cut, scarified, and re-compacted to provide a uniform bearing surface. Due to the clayey nature of the site soils, this would provide a relatively low permeability surface of the prepared subgrade. In addition, NSR will require that the bottoms of the detention basins and any Memphis Sands within the facility footprint exposed at the planned subgrade level, be lined or covered with at least a 12-inch thick layer of clayey material, preferably a low plasticity clay (CL) or high plasticity clay (CH) material, and that the cover layer be compacted to 100% Standard Proctor per AASHTO T99. The liner or cover material will be placed at a moisture content of between -1% to +4% optimum moisture.

NSR's standard construction specifications for placement of fill material include the following:

- Earth fill must be placed in uniform layers of not more than 6 inches thick after compaction.
- In a fill section, after stripping topsoil and organic material, the entire area where the embankment is to be placed shall be plowed and scarified for a minimum depth of 6 inches. This surface and all future fill layers shall be compacted to 95 percent of maximum density per Standard Proctor in accordance with AASHTO T 99 or 90 percent of maximum density per Modified Proctor in accordance with AASHTO T180, except that a minimum of the top 2 feet of fill shall be compacted to 100 percent Standard Proctor.

- The top 12 inches of the subgrade in cuts shall be plowed, scarified and compacted to 100 percent Standard Proctor. The Engineer shall determine the AASHTO test method to be used after review of the soil analysis.
- Moisture content of soil shall be controlled as necessary to obtain the specified densities based upon the optimum moisture content for each material.

Once the site is graded to the required elevation, the temporary and/or permanent ditches, culverts, and/or under-drains would be installed to provide positive drainage across the site. During construction of the paved concrete container and trailer transfer and parking areas within the operating yard, positive drainage to interior catch basins would be established to reduce the potential for standing or ponding water. The interior catch basins would be installed to collect storm water from the proposed pavement surfaces. Above the soil subgrade, a 6 inch layer of aggregate would be placed in the operational yard, maintenance area/pad, and entrance area. For planned operations, the best operational paved surface for the facility is roller compacted concrete. The concrete would be placed on top of the aggregate layer. It would range in thickness from 9 to 17 inches based on the type of equipment, which would be operating in specific areas of the IMF.

Concrete is a commonly used environmental measure to prevent or reduce the amount of pollutants that could otherwise infiltrate directly into sub-grade and potentially into the aquifer. Concrete protects the aquifer in two major ways. First it prevents materials from contacting site soils, effectively containing any materials from operational areas. Second, concrete prevents rain from contacting soil and allowing for movement of materials into the groundwater. Accordingly, the concrete within operating portion of the yard would cover the exposed sub-grade, which could include outcrops of the potential Memphis Sand recharge zone. In addition, under the concrete is at least a 12-inch thick layer of compacted subgrade material. Should areas of the Memphis Sand be exposed during excavation, the 12-inch thick layer of compacted subgrade material would be clayey soil.

Maintenance and fueling activities from IMF equipment would occur within the maintenance pad area. Included in this area would be five (5) ASTs ranging in size from 300 to 3,000 gallons. The larger AST would be for storage of

diesel fuel. Per EPA regulations, the ASTs are required to have secondary containment.²¹² The stormwater from the maintenance pad would be treated via an oil-water separator. The pollutants would be disposed of through the Rossville separate sewer system. The remaining stormwater would be discharged into a Bio-Treatment Pond. The bio-treatment pond is not lined to allow for vegetation and natural processes to function as designed. Effluent from the bio-treatment pond would pass through a lined storm water detention basin. The only fueling, which would not occur on the maintenance pad, is limited to locomotives. The IMF does not include locomotive maintenance or permanent fueling facilities.

The IMF operation would employ appropriate BMP to protect the recharge area and the quality of the stormwater that may eventually enter the groundwater regime. Stormwater from above the cut slope would be directed in a ditch along the lead track into Stream 5 or Stream 6, based on the sites current drainage pattern. The construction of the paved concrete container and trailer transfer and parking area within the operating yard and maintenance pad area would eliminate direct recharge in this 233 acre section of the IMF. Of the 650 acre project area, 270 acres outside of the 380 acre facility would be either left natural or restored to open or green space, which would allow for continued recharge. The majority of the stormwater collected on the paved operating yard would discharge into Stream 6 after passing thru the stormwater basins, which fundamentally matches the pre-construction drainage pattern. The stormwater directed to Streams 5 and 6 would allow recharge to occur through the Unnamed Tributary of Wolf River. According to the University of Memphis, Groundwater Institute, 95% of the recharge of the aquifer occurs through the area's streams.²¹³

Stormwater that falls on the pad area would be collected in a series of catch basins and culverts. The culverts would daylight into ditches and into multiple permanent stormwater basins. The basins would be constructed with a low permeability layer to minimize infiltration.

NSR has a very successful spill prevention program. Only four spills were recorded in the last two years (2008-2009) at NSR owned and operated 27 intermodal facilities among 4.96 million intermodal containers and trailers moved. The site-specific spill prevention plans for the Memphis

²¹² 40 C.F.R 112.7.

²¹³ Meeting between AMEC, TDEC EFO, and GWI on March 16.

Regional IMF would outline the standard processes and procedures to be implemented in the unlikely event of a spill or release. The plan would include appropriate personnel training and be updated as needed. Spill kits would be on-site in the maintenance pad area and with the fueling trucks. For example, an NSR standard operating procedure for fueling a locomotive on the track, states that the contractor must use a portable containment tank to catch any spills. If spills occur (no matter the size), they are immediately reported and the designated spill clean-up contractor is contacted to perform the clean-up. The contractor would remove and properly dispose of the contaminated material.

Because the very few hazardous materials utilized at the IMF or transported, and the very low likelihood of a release, as described in Section 3.16, the measures above would be considered precautionary in nature as environmental enhancement measures toward the protection of groundwater and aquatic resources. Based on the measures taken as part of the construction and operation of the Memphis Regional IMF, no adverse impacts are expected from Build Alternative 1 on the quantity or quality of groundwater in the area.

The No-Build Alternative has no effect on the Memphis Sand Aquifer.

3.12.7 Stormwater Impacts

NSR would to develop a stormwater treatment system that would provide storage to allow discharges to mimic pre-development hydrology and minimize initial flows following rain events and also decrease resultant peak flows. The stormwater treatment system features a several detention basins approach to capture and treat stormwater runoff from the 232 acre paved concrete container and trailer transfer and parking area within the operating yard. To prevent excessive runoff from entering the receiving streams during and following rainfall events, NSR would design and implement a stormwater detention system that would operate during both construction and operation of the facility. The stormwater detention system would be designed so that post-construction flows do not exceed pre-construction flows (designed for the 100-year event).

This stormwater management system provides substantial water quality benefits, but is not required under CWA National Pollutant Discharge Elimination System (NPDES) provisions because the stormwater discharged from the proposed Memphis Regional IMF does not fall within the

category of industrial stormwater from transportation. For transportation facilities like the Memphis Regional IMF, EPA only regulates post-construction stormwater discharges from vehicle maintenance and equipment cleaning operations, and specifies that only those portions of a rail transportation facility that are involved in such operations constitutes regulated stormwater from industrial facilities.²¹⁴ The stormwater management system receives runoff from the pads and track areas, which do not constitute industrial stormwater. The detention facilities will provide stormwater treatment above and beyond the requirements of the Tennessee Multi-Sector General Permit for the Discharge of Storm Water from an Industrial Activity (TMSP) No. TNR050000 and the discharge will meet water quality standards established by the State of Tennessee for the receiving water bodies. NSR will develop a Storm Water Pollution Prevention Plan (SWPPP) applicable to the entire facility, not just those vehicle maintenance and equipment cleaning operations addressed by the NPDES program.

The stormwater management system also serves a dual function. The drainage system for the facility would include valves at the outlets to the stormwater management system to allow the detention basin outfalls to be closed under certain circumstances. NSR would include these valve closures to allow the on-site detention to serve a secondary function for spill control in the unlikely event that a release of materials occurs that exceeds the containment capacity of the on-site concrete pad. NSR has installed similar detention valves at other facilities and their use has been rare.

NSR also evaluated multiple potential locations, sizes, and configurations of detention basins in order to reduce impacts of stormwater from both a hydrological and water quality perspective. In terms of locations, detention basins location will avoid use of streams, wetlands, or other waters of the State or U.S.²¹⁵ Locations have been assessed to minimize impact to on-site habitat. Additionally, NSR also considered locations for necessary stormwater management facilities required during construction.²¹⁶ The basins would be lined with at least a 12-inch thick layer of compacted clayey soil to reduce infiltration. NSR would use appropriate BMP for

²¹⁴ TDEC, Tennessee Storm Water Multi-Sector General Permit for Industrial Activities No., TNR050000 (NPDES), 40 C.F.R. § 122.26(b)(14)(viii).

²¹⁵ TDEC Division of Water Pollution Control, "Aquatic Resource Alteration Permit (ARAP)," Chapter 1200-4-7 Aquatic Resource Alteration.

²¹⁶ TDEC General NPDES Permit for Discharge of Stormwater Associated with Construction Activities, Permit No. TNR100000.

construction stormwater management in accordance with TDEC and EPA guidelines to protect local waterbodies.

For personal vehicle parking areas, NSR would use approximately 1 acre of pervious concrete. Per Leadership in Energy and Environmental Design (LEED) guidance, pervious pavement is a common usage for employee parking lots.²¹⁷ This would reduce the amount of stormwater flows from the site.

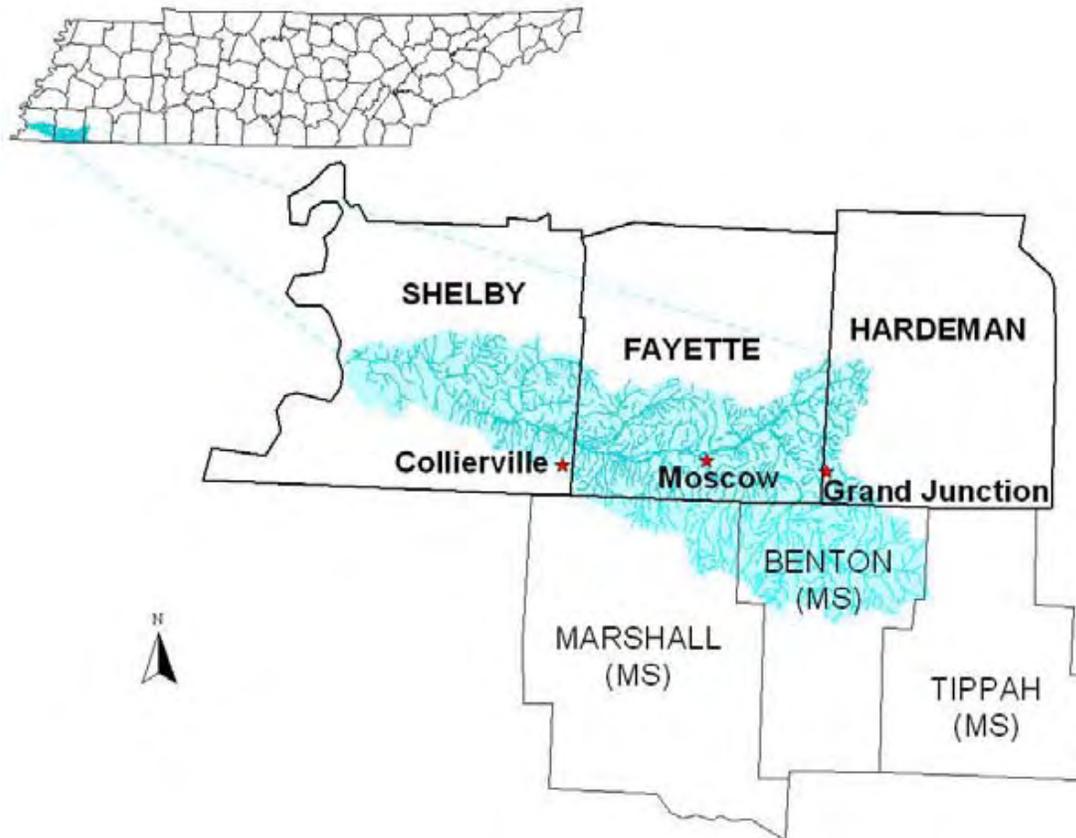
To avoid creating unstable slopes, NSR would use 3:1 slopes in most areas of the facility. The use of 3:1 slopes instead of 2:1 slopes would reduce the potential for erosion and potential sedimentation into streams during storm events.

The general hydrology of the site is the Wolf River Watershed (08010210) as classified by USGS. It drains 819 square miles across Tennessee and Mississippi (Figure 3-25).²¹⁸ The Wolf River empties into the Mississippi River Watershed (08010100). The Wolf River Watershed is characterized by a large river system with wide floodplains. The streams are low-gradient and murky with silt and sand bottoms.



²¹⁷ U.S. Green Building Council, "Improvement of Porous Pavement System for on-site Stormwater Management, 2008 <http://www.usgbc.org/ShowFile.aspx?DocumentID=5306>.

²¹⁸ TDEC, Wolf River Watershed (08010210) of the Mississippi River Basin, Watershed Management Plan, December 17, 2005.

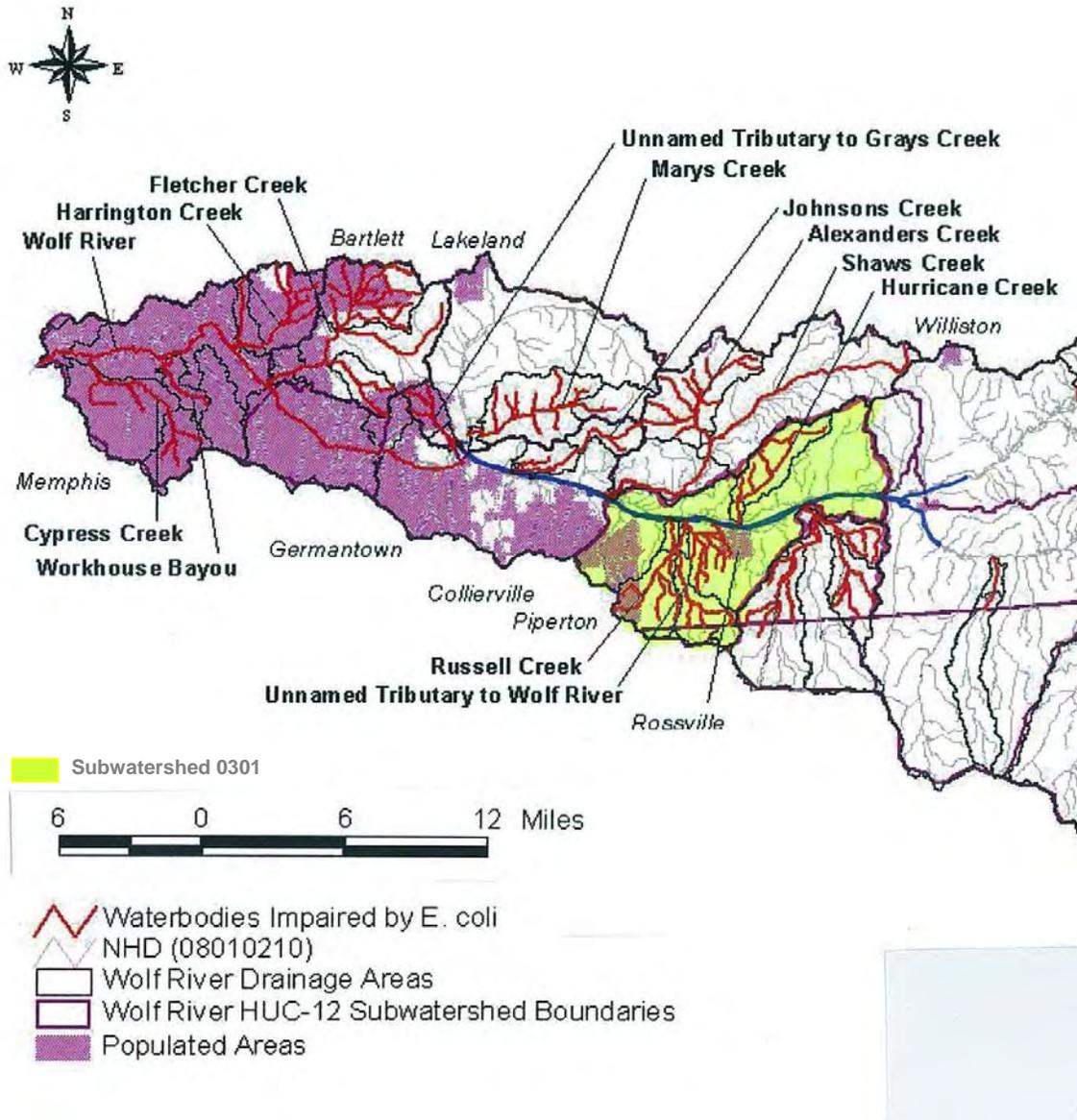
Figure 3-25: Location of Wolf River Watershed

The Wolf River Watershed is divided into three 10-digit HUC subwatersheds. The Memphis Regional IMF, SR-57 overpass and part of Industrial Road would be sited in the 10-digit HUC Wolf River Subwatershed (0801021003), the largest of the three. This subwatershed covers 227,618 acres.²¹⁹ A further division of the watershed places the site into the 12-digit HUC subwatershed of 0301 (080102100301).²²⁰ The 0301 subwatershed has contributing drainage area on both sides of the Wolf River as shown in Figure 3-26. The project area is less than 1.5% of the 12-digit HUC subwatershed (43,204 acres). The project area would drain into the Unnamed Tributary to Wolf River (TN08010210004-0400). The less pervious areas of the IMF, approximately 233 acres of paved surface and 76 acres of track, is 2% of the portion of the 0301 subwatershed south of the Wolf River between Piperton and Rossville (approximately 15,500 acres).

²¹⁹ TDEC, Wolf River Watershed, Watershed Management Plan, December 17, 2005.

²²⁰ In 2009, TDEC renumbered subwatersheds within the Wolf River. The numbers within the report are the unchanged numbers.

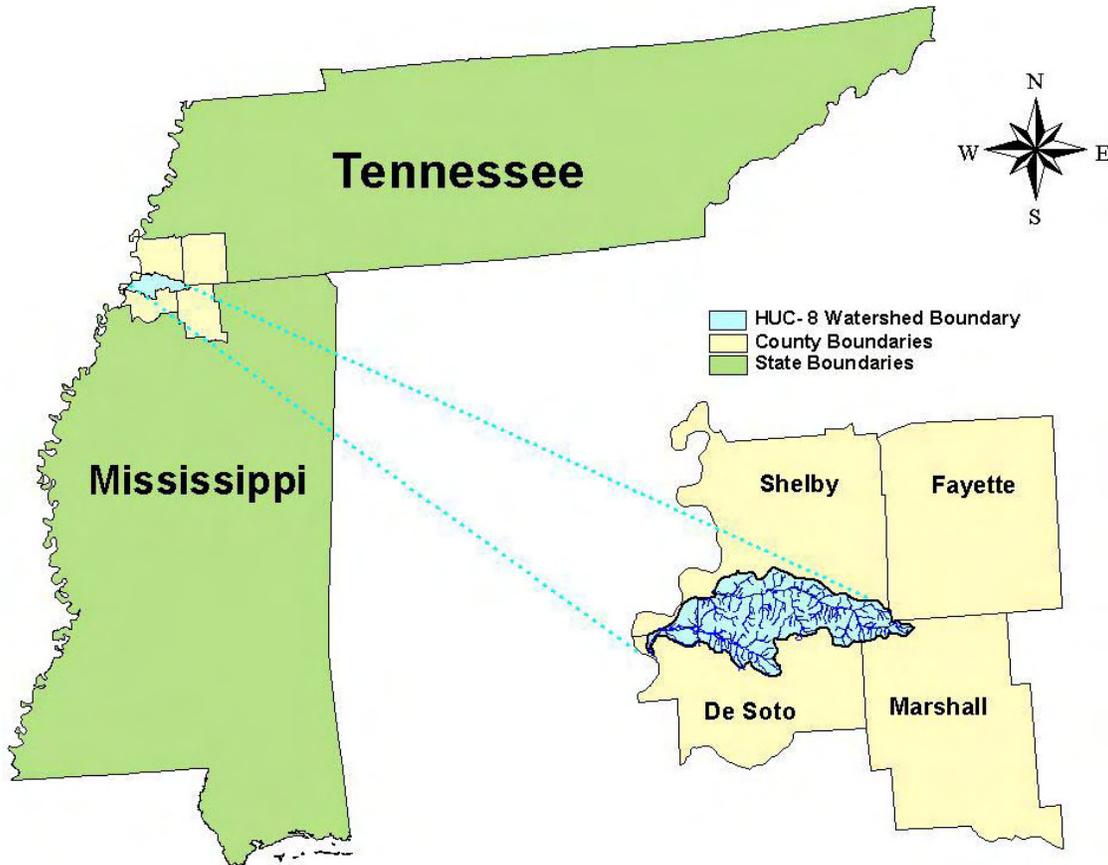
Figure 3-26: Wolf River Subwatershed 0301



The general hydrology of Industrial road is a mixture between the Wolf River Watershed (08010210) and the Nonconnah Creek Watershed. The Nonconnah Creek Watershed (08010211) drains 281 square miles across Tennessee and Mississippi (Figure 3-27).²²¹ The Nonconnah Creek empties into the Mississippi River Watershed (08010100). The Nonconnah Creek Watershed is characterized by gently rolling, irregular plains. The streams are low-gradient and murky with silt and sand bottoms.

²²¹ TDEC, Nonconnah Creek Watershed (08010211) of the Mississippi River Basin, Water Quality Management Plan, November 9, 2000.

Figure 3-27: Nonconnah Creek Watershed



The No-Build Alternative has no effect on existing stormwater.

3.12.8 Threatened and Endangered Species

Pursuant to Section 7 of the Endangered Species Act (ESA), coordination and consultation has been conducted with the U.S. Fish and Wildlife Service (FWS). On June 23, 2009, the FWS was asked to comment on any known threatened or endangered species within the project corridor. The agency responded on July 23, 2009 (Appendix A).

For more information:
The *Ecology Report* is available for review at TDOT Environmental Division.

Based on correspondence with the FWS, TDEC, and Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP), no federally-listed species (protected under the ESA) have been documented as occurring in Fayette County, Tennessee. Moreover, no federally or State listed species have been documented within one (1) mile of the project area. However, three State listed species, copper iris (*Iris fulva*), fatmucket (*Lampsilis siliquoidea*), and Southern hickorynut (*Obovaria jacksoniana*), have been

documented within four (4) miles of the project area (Table 3-18).²²² All correspondence is included in the Ecology Report.

3.12.8.1 State-Listed Species within Four Miles of Project

***Iris fulva* - Copper Iris**

The State-listed threatened Copper Iris (*Iris fulva*) has been known to occur within four miles of the project area. The Copper Iris may be found in bottomland habitats.²²³ Although marginal habitat for this species is present within the project area, no individuals were observed during preliminary field surveys in April and June of 2009 at the actual project site. Therefore, this species is considered likely not present within the project area. No impacts to this species are expected as a result of the proposed project.



***Lampsilis siliquoidea* – Fatmucket**

The Fatmucket (*Lampsilis siliquoidea*), which has been known to occur within four miles of the project area, is tracked by the State of Tennessee, but is not listed as Threatened or Endangered.²²⁴ This species occurs in slackwater with mud substrate within the Wolf River in west Tennessee.²²⁵ Potential impacts to this species could occur by sedimentation occurring as a result of the proposed project, but any such potential impacts would be prevented by implementing appropriate erosion and sediment control measures during construction. Therefore, no substantial impacts to this species are expected as a result of the proposed project.



***Obovaria jacksoniana* – Southern Hickorynut**

The Southern Hickorynut (*Obovaria jacksoniana*), which has been known to occur within four miles of the project area, is tracked by the State of Tennessee, but is not listed as Threatened or Endangered.²²⁶ This species occurs in rivers with medium-sized gravel substrates and low to moderate current.²²⁷ This species could potentially be impacted by sedimentation occurring as a result of the proposed project, but this also would be prevented by



²²² <http://www.state.tn.us/enviroment/na/pdf/county.pdf>.

²²³ TDEC Natural Heritage Program. Rare Species List by County, <http://www.state.tn.us/environment/na/pdf/county.pdf>.

²²⁴ TDEC Division of Natural Areas. Correspondence dated June 24, 2009.

²²⁵ TDEC Natural Heritage Program. Rare Species List by County, <http://www.state.tn.us/environment/na/pdf/county.pdf>.

²²⁶ TDEC Division of Natural Areas. Correspondence dated June 24, 2009.

²²⁷ TDEC Natural Heritage Program. Rare Species List by County., <http://www.state.tn.us/environment/na/pdf/county.pdf>.

implementing appropriate erosion and sediment control measures during construction. Therefore, no substantial impacts to this species are expected as a result of the proposed project.

Table 3-18: Rare, Threatened and Endangered Species Documented within 4 Miles of Project

Common Name	Scientific Binomial	TN Status	Federal Status	State Rank	Preferred Habitat	Habitat Present?
Copper Iris	<i>Iris fulva</i>	T	N	S2	Bottomlands Fl: May-Jun Fr: Jun-Jul	Yes
Fatmucket	<i>Lampsilis siliquoidea</i>	N	N	S2	Slackwater with mud subst; Wolf R (MS R Tributary); West TN	No
Southern Hickorynut	<i>Obovaria jacksoniana</i>	N	N	S1	Rivers with medium-sized gravel substrates and low-mod. current; Wolf River; West TN	No

N – Not Listed

T – Threatened species means any species or subspecies of plant which appears likely, within the foreseeable future, to become endangered throughout all or a substantial portion of its range in Tennessee.

S1 – Extremely rare and critically imperiled in the State with five or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extirpation from Tennessee.

S2 – Very rare and imperiled within the State, six to twenty occurrences and less than 3000 individuals, or few remaining individuals, or because of some factor(s) making it vulnerable to extirpation from Tennessee.

3.12.8.2 Summary

At this time, no Federal- or State-listed threatened or endangered species are known to occur within the specific project site, and no impacts are expected. Therefore, the proposed project is not expected to have an adverse effect on threatened or endangered species. Two State-tracked species occur within the project area; however, impacts would be avoided to these species by following proper erosion and sediment control measures during construction.

Impacts associated with clearing and grubbing would not affect any plants of concern within the construction zone. To minimize sedimentation and runoff impacts, erosion and sediment control plans would be included in the project construction plans. TDOT's *Standard Specifications for Road and Bridge Construction*, which includes erosion and sediment control standards for use during construction, will be implemented.

The No-Build Alternative will not involve any impacts to Threatened or Endangered Species.

3.12.9 Invasive Species

Executive Order 13112 calls for the prevention of and control of invasive species (non-native exotics).²²⁸ EO 13112 directs Federal agencies to not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States unless the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

The guidelines of EO 13112 will be adhered to while constructing and maintaining the project in an attempt to control and prevent the spread of any invasive exotic species to the project site. NSR will be required to use invasive-free seed mixtures and re-vegetate with native plant species only.

The No-Build Alternative would not be expected to alter conditions at the site concerning invasive species.

3.12.10 Wild and Scenic River

The National Wild and Scenic Rivers System (NWSRS) was created by Congress in 1968²²⁹ to preserve rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations.

There are no watercourses or rivers listed on the NWSRS or in Nationwide Inventory of Rivers for potential inclusion in the NWSRS within the project area of the Build Alternative 1.

The No-Build Alternative has no effect on any watercourse listed on the NWSRS.

3.12.11 Exceptional Tennessee Waters or Outstanding National Resource Waters

Exceptional Tennessee Waters (ETW, previously known as Tier 2) and Outstanding National Resource Waters (Tier 3) have been designated to implement the Tennessee's anti-degradation policy. In general, these include



What is Executive Order 13112 - Invasive Species?

Intended to prevent the introduction of invasive plant species, for example, into areas disturbed by roadway construction.

²²⁸ See EO 13112, Invasive Species, 64 Fed. Reg. 6183 (February 3, 1999).

²²⁹ Public Law 90-542; 16 U.S.C. 1271 et seq.

waterbodies with good water quality, important ecological values, valuable recreational uses, and outstanding scenery.²³⁰

Build Alternative 1 would have no effect on any watercourse listed as an ETW or ONRW as none are contained in the project area.

The No-Build Alternative has no effect on any watercourse listed on the ETW or ONRW.

3.12.12 Environmental Permits

Alterations to streams or other aquatic sites designated as Waters of the State or Waters of the U.S. require either individual or general Aquatic Resource Alteration Permits (ARAP)²³¹ from the State of Tennessee, Individual or Nationwide 404 USACE permits, and, where applicable, a Tennessee Valley Authority (TVA) 26a permit or letter of no objection.

Section 26a of that TVA Act of 1933²³² requires that TVA approval be obtained before any construction activities can be carried out that affect navigation, flood control, or public lands along the shoreline of the TVA reservoirs or in the Tennessee River or its tributaries. The project area does not lie along a TVA reservoir, the Tennessee River, or its tributaries. Therefore, a TVA Section 26a permit is not required for the proposed project.

All wetland impacts require confirmation by, and coordination with, permitting agencies. All require either general or individual ARAP permits from the State of Tennessee. Almost all require either Nationwide or Individual permits from the USACE pursuant to Section 404 of the CWA. Other agencies such as the FWS and EPA may be involved in the permitting process.

Wetland impacts which are subject to both State or Federal jurisdiction, and which do not meet criteria for either general or Nationwide permits require Individual permits. These typically require compensatory mitigation for impacts.

²³⁰ TDEC, "The Known Exceptional Tennessee Waters and Outstanding National Resource Waters," http://environment-online.state.tn.us:7654/pls/enf_reports/f?p=9034:34304:4367000856339681.

²³¹ "Aquatic Resource Alteration Permit" means a permit pursuant to §69-3-108 of the Tennessee Water Quality Control Act of 1977, which authorizes the alteration of properties of waters of the State which result from activities other than discharges of wastewater through a pipe, ditch or other conveyance (CHAPTER 1200-4-7).

²³² 48 Stat. 58-59, 16 U.S.C. sec. 831.

Construction projects disturbing one or more acres of land require stormwater control permits issued by the State of Tennessee pursuant to the NPDES. For any project that affects water flowing into an open sinkhole or cave, or for any impact that may affect the groundwater via a sinkhole, a Class V Injection Well Permit may be required.²³³

Various industrial stormwater NPDES permits would be required to operate the facility. Compliance with these and any other permit requirements would be identified further in the project development process.

FRA, FHWA, and TDOT would carry out further coordination with regulatory agencies before preparing mitigation plans and submitting permit applications. Permit requirements and mitigation plans will be based on these discussions.

NSR would be required to apply for State and Federal environmental permits after appropriate technical studies have been completed. The following permits would be required for the proposed project:

- (1) USACE Individual or Nationwide Permit for Impacts to Waters of the U.S. (including wetlands and aquatic resources).
- (2) ARAP (TDEC) for Construction and Removal of Minor Road Crossings.
- (3) ARAP (TDEC) - General Permit for Minor Alterations to Wetlands.
- (4) NPDES Stormwater Individual Permit for Construction.
- (5) NPDES Construction General Permit (if needed).

The No-Build Alternative would not necessitate the acquisition of any State and Federal permits.

3.13. Geological and Soil Impacts

3.13.1 Geology

The project is located in the Coastal Plain physiographic unit province of Western Tennessee. Based on the published geological information, the near-surface mapped geologic unit belongs to the Tertiary age Claiborne group

For more information:

The *Geotechnical Report* is available for review at TDOT Environmental Division.

²³³ Rules of the Tennessee Department of Environment and Conservation, Division of Water Supply, Rules of Water Quality Control Board Chapter 1200-4-6, Underground Injection Control.

specifically the Memphis Sand. This formation generally includes unconsolidated combinations of sand, silt, and clay, extending to great depths. Typically, an unmapped, thin mantel of Quaternary age loessial soils or clays and/or stream terrace deposits of sand/silt/clay would overlie the primary geologic unit. Thin lenses of lignite can be present.²³⁴

Reportedly, the site is underlain by the recharge area for the Memphis Sand Aquifer, Figure 3-24. The Memphis Sand should not affect general grading or facility construction except that flatter slope inclinations could be required for stability and erosion controls.

The No-Build Alternative would have no impact to the area geology.

3.13.2 Soils

Based on the USDA Soil Survey of Fayette County, Tennessee, the site appears to contain three general types of soils: Collins silt loam (map unit Co), Grenada silt loam (map unit GaB2) and Lexington-Ruston complex (map unit LeF).

- The Collins series are moderately well drained, nearly level, acid soils that are on bottomlands and along narrow drainage-ways. These soils consist of recently deposited silt and sandy alluvium. The surface layer of Collins soils is brown silt loam to brown fine sandy loam. The subsoil is brown silt loam to brown fine sandy loam mottled with gray. In many places a layer of recently deposited alluvium, 14 to 36 inches thick, overlies an older, poorly drained soil.
- The Grenada Series consists of deep, moderately well drained, level to strongly sloping soils on uplands and terraces that range from 2 to 5 percent. Many of the members are eroded to severely eroded. These soils are formed in thick loess. The surface layer is brown silt loam, and the subsoil is brown or yellowish-brown silt loam or silty clay loam. The pan layer is mottled gray and brown. It occurs at a depth of about 24 inches and is 1 to 5 feet thick.
- The Lexington series consists of deep, well-drained, nearly level to strongly sloping soils that are on narrow ridge tops and side slopes that range from 2

²³⁴ Burns Cooley Dennis, Inc., December 17, 2009, Geotechnical Investigation SR-57 Bridge and Approach Over Norfolk Southern Rail Line, Rossville, TN, Report to AECOM.

to 12 percent. These soils are formed in loess that is less than 42 inches thick and is underlain by sandy material of the Coastal Plain. The surface layer is brown silt loam, and the subsoil is reddish-brown to yellowish-red silty clay loam.

3.13.3 Geologic Hazards

Published geological information from the TDEC indicated that Fayette County does not contain any karstic or 'sinkhole' environmental hazards.

Based on the site topography, significant landslides are not of concern for this area. Some minor, shallow sloughing associated with stream erosion could be possible in any local branch channels in this region.

The regional soils do not indicate any subsurface concerns related to corrosive or collapsible soil conditions. Some areas in the region with loessial deposition have indicated a potential for dispersive soil conditions, but due to the project parameters and physical conditions of the site soils encountered, this is not considered a critical design concern at this site. There exist a potential of surface erosion during heavy rain events, but it's considered a typical soil condition for this region and not of specific of inordinate concern for the project site soils encountered.

The site is within the defined footprint (over 2,200 square miles in west Tennessee alone) for the Memphis Sands aquifer recharge zone. Precautions would be taken to prevent contaminants from entering the aquifer.

3.13.4 Seismic

Rossville, Fayette County, is located within an area affected by the New Madrid seismic zone. No specific active faults are identified in the project area.²³⁵ Geotechnical design parameters for the site should be obtained from the respective technical reports.

3.13.5 Geologic or Soil Impacts

Construction of the Memphis Regional IMF would require land-disturbing activities to approximately 440 acres of land, which would increase the potential for long-term and temporary impacts to the topography and soils in the project area.

Potential temporary impacts include soil compaction and erosion. Movement of construction equipment could cause

²³⁵ Burns Cooley Dennis, Inc., December 17, 2009, Geotechnical Investigation SR-57 Bridge.

excessive soil compaction, which could result in restricted water penetration, restricted vegetation root development, and reduced oxygen diffusion rates. Outside of the planned footprint of the operating yard and tracks, the potential for excessive soil compaction would be minimized through limiting the duration of construction to the greatest extent practicable, decreasing the frequency of construction equipment traffic in areas that would not be paved, and decreasing construction traffic in areas with soils that are susceptible to compaction. Severely compacted areas that would be revegetated would be mitigated through plowing or tilling to loosen the soils prior to revegetation efforts. Soil erosion would be mitigated through temporary erosion and sedimentation control measures during construction and implementation of permanent measures, such as revegetation, following construction.

Potential geological impacts include contamination entering the Memphis Sand aquifer within the recharge areas. Any project, within the over 2,200 square miles recharge zone in west Tennessee, should manage surface runoff and protect underground water sources. Planned mitigation measures are discussed in Section 3.12.6 Aquifer Impacts and Section 3.12.7 Stormwater Impacts. For surface water these measures include lined-storm water detention basins with outlet structures that can be closed to stop any contaminated stormwater from reaching the stream in the unlikely event that a release occurs. In addition, the stormwater system would be design to mimic pre-development hydrology and minimize initial flow rates following rain events and decrease resultant peak flows. For underground water sources, such as any exposed Memphis Sands, measures include lining or covering with at least a 12-inch thick layer of compacted clayey material, preferably a low plasticity clay (CL) or high plasticity clay (CH) material. To insure positive flow of any exposed underground water, temporary and/or permanent ditches, culverts, and/or under-drains would be installed to provide positive drainage across the site.

For Build Alternative 1, the only impacts to the soils are expected to be constructability type issues related to compaction and permanent slope inclinations.

The No-Build Alternative would have no effect on the soils occurring within the boundaries of the project.

3.14. Visual Impacts

3.14.1 Existing Visual Environment

The visual landscape within the project area can be divided into the following:

- Hilly pasture,
- Forested areas,
- Scattered residential development, and
- Commercial and industrial development.

Viewers would be those able to see the Memphis Regional IMF or lead tracks from adjacent properties, along SR-57, or from within the facility itself, Photo 3-9. Some commercial and industrial businesses are located on SR-57. Persons or groups of persons with a view of the proposed Memphis Regional IMF include residents of adjacent properties, travelers on SR-57, and employees and customers of commercial and industrial businesses in the vicinity. Views of the proposed project area vary from unrestricted to restricted, depending on the surrounding vegetation, terrain, and placement of buildings and track.

Photo 3-9: Looking north toward the NSR mainline from SR-57



Fayette and Marshall Counties do not have comprehensive plans, transportation plans, or development regulations that contain guidelines or recommendations to limit the visual impacts of development. Interviews with local officials and reviews of planning maps indicate no identified scenic areas or recognized areas of beauty in the project area.

3.14.2 Visual Impacts

The project would introduce a new commercial facility, railroad track, and overpass into the viewshed. The light poles (70 feet tall) and cranes (approximately 40 feet tall) used to load and unload freight cars would potentially be visible offsite from the east side of Neville Road and from the new SR-57 overpass. The new SR-57 overpass would be visible to travelers on SR-57 and local businesses and residences along SR-57

Photo 3-10: Looking south into the IMF from SR-57



Some residents on the east side of Neville Road, as well as travelers on SR-57 and businesses along SR-57, would have a view of the lead tracks, Photo 3-10. Forested areas along the eastern and southern sides of Neville Road would provide some screening. Topography would visually

shield some nearby residents from the Memphis Regional IMF.

Due to topography, construction of the Memphis Regional IMF would require up to a 40-foot cut slope on the eastern side of the site. Along this eastern edge of the facility a 10-foot differential would be maintained between the existing ground and top of rail. This would limit the potential visual impacts for residents and travelers on Knox Road. In addition, the west side of Knox Road is forested and would screen views of the Memphis Regional IMF, Photo 3-11.

Photo 3-11: Looking west from Knox Road towards Build Alternative 1

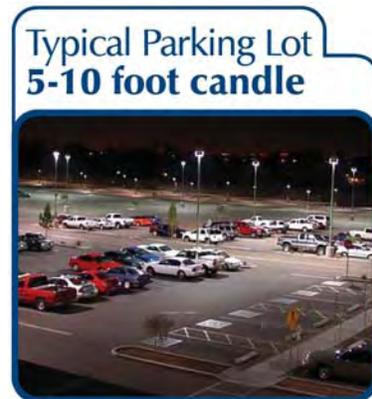


Following a review of these viewsheds (and noise impacts), NSR modified its proposed preliminary design to voluntarily include earthen berms along parts of the western and east sides of the facility and along a section of the west side of the lead tracks.²³⁶ The berms along with the current topography and vegetation would break the potential line of sight for nearby residents.

Lighting at the Memphis Regional IMF is required for security, safety and operations.²³⁷ Lighting would consist of shielded directional lighting (i.e., shine/point downward) designed to reduce glare effects or ambient light to the adjacent properties, minimizing the potential for light pollution.²³⁸ Pole-mounted fixtures would also be set at the lowest height possible to achieve the required level of illumination. Within the operating yard, the lighting plan (Figure 3-28) would reduce the pole-mounted fixture height from the 100-foot NSR standard to 70 feet tall.

At other locations within the IMF, the standard 40-foot tall street lights would be used. The goal of these measures would be to avoid or minimize light pollution or trespass where light, direct or reflected, spills beyond the boundary of the intended illuminated subject area where it is not desired or required.²³⁹

Lighting fixtures (as shown in Figure 3-28) would produce illumination level not exceeding 0.5 foot candles along the project boundary. Average light levels for the majority of the facility would be less than 2 foot candles except for the maintenance pad and entrance area, which would be lit to



²³⁶ Due to property issues, NSR would not be able to construct the berm on the west side of the lead tracks until after October 2010.

²³⁷ NSR considered Dark Sky measures to reduce light pollution by changes in lighting practices, education, and light mitigation.

²³⁸ International Dark-Sky Association, "Statement on Outdoor Lighting Energy Legislation," July 2009.

²³⁹ Lighting Research Center, Rensselaer Polytechnic Institute, "Lighting Answers," February 2007 <http://www.lrc.rpi.edu/programs/nlpip/lightinganswers/lightpollution/lightTrespass.asp>

places. The western side of the facility would be constructed on a fill. Along the eastern and western boundary of the facility, where there is less than 10-foot in depth, NSR proposes to construct a landscape berm where the top of the berm would be 10-foot higher than the top of pavement adjacent to the berm. Also along the western edge of the proposed lead adjacent to the residents along Neville Road, NSR is volunteering to construct a landscape berm where the top of the berm would be approximately 15-foot higher than the adjacent top of rail.²⁴² These features should reduce the visual and noise impacts from the facility.

No areas of high visual quality or visually sensitive resources exist in the area. The visual setting along SR-57 has already been disrupted by the construction of commercial and industrial facilities. The visual impact to residents, businesses, and travelers in the area would not be adverse.

Under the No-Build Alternative, no activities would occur related to the proposed Memphis IMF and there would be no visual impacts.

3.15. Energy Impacts

The energy expected to be used by Build Alternative 1 is summarized below.

3.15.1 Construction

Energy consumption would result from activities related to site preparation and construction of the facility, lead tracks, SR-57 overpass, the loop track, and Industrial Road. It is anticipated that the main energy source for these activities would be diesel fuel. Also, energy consumption would occur related to the manufacturing and transport of the construction components and by the heavy equipment used for facility.

Temporary traffic delays in Tennessee could occur on SR-57 during construction of the overpass. Adding turning lanes to US Hwy 72 could cause temporary traffic delays in Mississippi. These delays could result in temporary, insignificant increases in energy use including gasoline and diesel fuel.



²⁴² Due to property issues, NSR would not be able to construct a berm on the west side of the lead tracks until after October 2010.

3.15.2 Facility Infrastructure and Operations

A major design feature of Build Alternative 1 is the construction of a loop track at the south end of the facility to facilitate train movements into and out of the IMF. If the facility design had not included a loop track, additional switching would be required. This additional operating time would increase energy consumption as well as potential noise and air quality impacts.

Operational energy impacts would be reduced by implementation of energy conservation measures and use of energy efficient technologies. In December 2009, NSR became the first large railroad in the nation to join the U.S. Green Building Council, a Washington based nonprofit dedicated to promoting cost-efficient and energy-saving buildings.²⁴³ To increase energy efficiency, the administrative building is being designed for submission as a LEED Green Building Rating System certified building.²⁴⁴



During operation of the IMF, much of the site would be powered by electricity. Electricity would be required for lighting of the IMF operations during the night; control of gates; and normal administrative building functions (such as lighting, heating, computer, and telecommunications facilities). Operational energy impacts would be reduced by implementation of energy conservation measures and use of energy efficient technologies. Facility equipment such as cranes and switch engines would use diesel fuel. NSR has committed to use ultra low-sulfur transportation grade diesel fuel (0.0015 percent sulfur) for NSR containers and trailer handling equipment and to use Tier 4 technology for the overhead lift cranes.

3.15.3 Train and Truck Use

Freight trains, switch engines, and trucks use diesel fuel as their energy source.

Under Build Alternative 1, fuel savings would be realized in the long term due to higher efficiencies in the movement of freight on rail versus highway trucks. Nationwide, 23.8 million gallons of fuel are estimated to be saved on an annual basis from the projected conversion of 187,000 truckloads from highway to rail between the new Memphis Regional IMF and Northeastern regions of the U.S.²⁴⁵ An estimated 186 million loaded truck vehicle miles per year

²⁴³ Worldnews.com, "Norfolk Southern joins Green Building Council", December 8, 2009.

²⁴⁴ Worldnews.com, "Norfolk Southern joins Green Building Council", December 8, 2009.

²⁴⁵ *Analysis of Truck to Rail Diversion Benefits – Memphis*, Cambridge Systematics, Inc., January 20, 2010.

on highways between Memphis and the Northeast U.S. are projected to be eliminated by the project, which is anticipated to contribute to safety and relieve highway congestion.²⁴⁶

In summary, a substantial amount of energy would be required to construct the facility but these energy uses are temporary in nature. Once operating, the Memphis Regional IMF would require modest energy usage but would lead to substantially reduced energy costs overall primarily due to the reduction in truck traffic for freight shipment.

Under the No-Build Alternative, the short-term energy uses would not occur. However, the long-term energy savings would also not occur.

3.16. Hazardous Materials Impacts

This section discusses hazardous materials as related to the property for Build Alternative 1 and the types of materials that may pass through the site via intermodal traffic. Hazardous materials are substances that have, or would have when combined with other materials, a harmful effect on humans or the natural environment. Stationary hazardous materials are primarily regulated under the Resource Conservation and Recovery Act (RCRA) of 1976, as amended; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980; and the Superfund Amendments and Reauthorization Act (SARA) of 1986. Hazardous materials in transit are those identified under comprehensive hazardous materials transportation laws²⁴⁷ and DOT regulations²⁴⁸ administered through the Pipeline and Hazardous Materials Safety Administration (PHMSA), formerly part of the Research and Special Projects Administration (RSPA), and the FRA.

For more information:

The *Hazardous Material Report* is available for review at TDOT Environmental Division.

3.16.1 Potential Hazardous Material Sites

A Phase I Environmental Site Assessment was conducted for the project site in 2009 in general accordance with Guidance Document E-1527-05 per the American Society for Testing and Materials International (ASTM), *Standards on Environmental Site Assessments for Commercial Real Estate*.²⁴⁹ The following concerns were the subject of the investigation: hazardous waste materials, aboveground

²⁴⁶ *Analysis of Truck to Rail Diversion Benefits – Memphis*, Cambridge Systematics, Inc., January 20, 2010.

²⁴⁷ 49 U.S.C. 5101 et seq.

²⁴⁸ 49 C.F.R. Parts 171-180.

²⁴⁹ AMEC, PHASE I ESA, November 2009.

and underground storage tanks, landfills, dumps, spill sites, or other chemical, physical, or biological hazards.

In addition, an environmental database search was conducted on April 21, 2009. The resulting Environmental Data Report did not identify any potential hazardous materials or petroleum contamination sites within the proposed project corridor that are listed in Federal or State databases.

One National Priorities List (NPL) site, Ross Metals, was identified approximately 0.8 miles east-northeast of the Memphis Regional IMF site. The Ross Metals site is located at 100 North Rail Road Street in Rossville. From 1978 to 1992, Ross Metals operated a secondary lead smelter at the site. It received spent lead acid batteries, lead oxide, scrap metal, and other lead waste and material. Blast furnace slag was managed on site in a landfill. Wastewater and runoff was collected in the northeast corner of the Ross Metals facility and discharged into a wetland area. The EPA conducted a removal option at the site. The Ross Metals property is not anticipated to have caused a recognized environmental condition on Build Alternative 1 site due to its distance away and the anticipated groundwater flow direction away from the Ross Metals site toward the Wolf River.

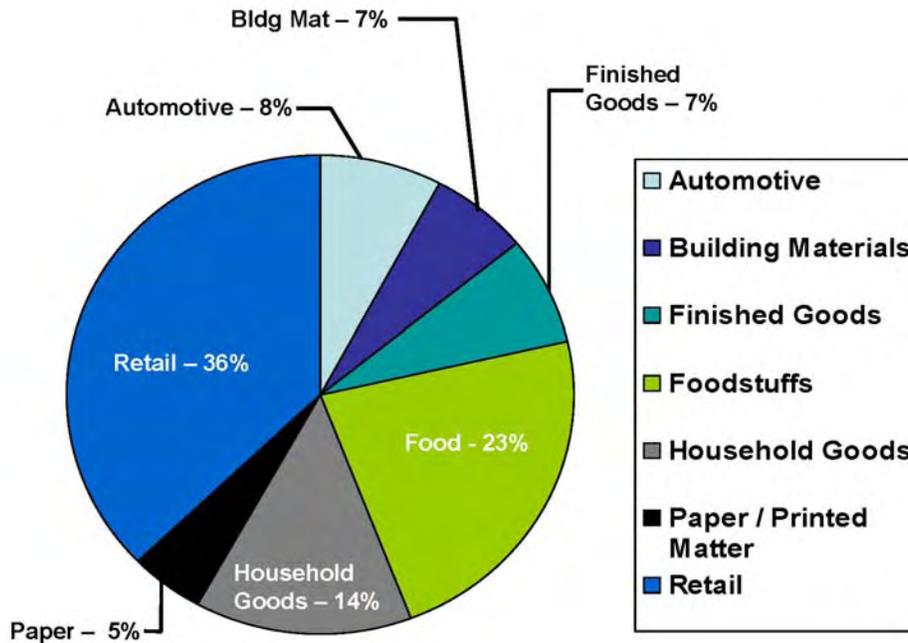


3.16.2 Potential Hazardous Material in Transit

At this time, traffic along the NSR mainline in the Rossville area includes about 18 trains per 24 hour period (about nine trains each direction). About four of those trains (2 each direction) are intermodal trains. When the Memphis Regional IMF becomes fully operational, NSR expects the new intermodal traffic to be approximately four westbound trains terminating and four eastbound trains originating each day (eight intermodal trains movements). Two of these intermodal train movements would have previously traveled to the Forrest IMF in Memphis. The net result would be an increase of a predicted 6-7 intermodal trains on the NSR mainline east of the proposed IMF and a reduction of 1-2 intermodal trains on the mainline west of the IMF each day. These new trains would enter and exit the facility on a daily basis. Intermodal trains that enter the facility would carry containers and trailers. Examples of commodities in the container and trailer shipments transferred between trucks and trains at the IMFs include: electronics, mail, toys, paper products, clothes, appliances, textiles, and auto parts (Figure 3-29). Only 3 to 4 percent of the intermodal shipments currently transported by NSR

contain commodities that are considered hazardous materials.²⁵⁰

Figure 3-29: What Moves in Intermodal Containers/Trailers



Federal hazardous materials transportation laws and regulations limit freight that can and cannot be shipped through intermodal service. Before freight is accepted for transport, shippers of hazardous materials are required by Federal law to classify the material, describe the material in shipping papers, meet DOT packaging requirements, ensure the freight is marked and labeled as required, and ensure that the freight is in proper condition for transportation. Federal regulations specify packaging and container requirements. Containers and trailers hauling hazardous materials would remain sealed during their movement through the facility boundaries.

DOT's list of materials considered hazardous includes items such as paint, liquids that are flammable or corrosive, batteries, materials under pressure such as gases and fire extinguishing equipment, auto parts including air bags, as well as the types of materials more

²⁵⁰ Under comprehensive hazardous materials transportation laws (e.g. 49 U.S.C. 5101 et seq.) and DOT regulations, 49 C.F.R. parts 171-180, administered through the Pipeline and Hazardous Materials Safety Administration (PHMSA) and Research and Special Projects Administration (RSPA), and the Federal Railroad Administration (FRA).

traditionally considered hazardous and found in DOT's list.²⁵¹

Most of the containers that would be transported through the Memphis Regional IMF would not contain materials in quantities that would cause a release off of the Memphis Regional IMF site if a container were damaged. DOT container, packaging, packing, and handling requirements would reduce the likelihood of a release. Spills of transported hazardous materials on intermodal facilities are rare, but if a leak or spill would occur on-site, trained IMF staff would quickly respond to contain, manage recovery, and clean up the spill.

Certain hazardous commodities are strictly forbidden from intermodal shipment. "Forbidden" commodities are never accepted for transportation through intermodal containers by NSR or its railroad subsidiaries.²⁵² Such "forbidden" commodities include:

- Toxic inhalation hazards (TIH)
- Asbestos of any form
- Class 7 radioactive materials (except small items such as watch dials)
- Division 4.2 spontaneously combustible materials, including sodium dithionite and sodium hydrosulfite
- Temperature controlled organic peroxides (Division 5.2)
- Medical wastes/infectious substances
- Explosives (Division 1.1, 1.2, or 1.3)
- Batteries for reclamation of material



Petroleum products and equipment fluids necessary for the facility's operations would normally be present at the maintenance area. In addition, the line-haul and switch locomotives would be refueled by truck. The maintenance and refueling areas are designed to provide secondary containment and other measures to protect against release and threat to human health or the environment, in

²⁵¹ 40 C.F.R. § 172.101.

²⁵² NSR, Background on Norfolk Southern Intermodal Items Considered Hazardous Commodities, March 8, 2008. NSR, Intermodal Rules Circular #2, November 8, 2000 (Updated February 5, 2009), http://www.nscorp.com/nscintermodal/Intermodal/Rules_Circular/intermodal_rules_circular.pdf.

accordance with State and Federal environmental regulatory requirements pertaining to the handling of such materials.

3.16.3 Potential Hazardous Material Impacts

With respect to the property proposed for the Memphis Regional IMF, no recognized environmental conditions or potential sources of hazardous materials were located in/or adjacent to the site. One small area in the south-central portion of the project area was identified as containing a moderate amount of old bulldozer parts and metal debris. Another small area where the lead tracks would be located appeared to contain household solid waste. The metal debris and the household solid waste would be removed and recycled or disposed in accordance with Federal and State requirements during construction.

In the event hazardous substances/wastes are encountered within the proposed project site, their disposition shall be subject to the applicable sections of the Federal Resource Conservation and Recovery Act, as amended; and the CERCLA, as amended; and the Tennessee Hazardous Waste Management Act of 1983.²⁵³

With respect to the transport of hazardous materials, certain commodities are prohibited from being transported through an IMF, such as toxic inhalation hazards (e.g., chlorine gas), radioactive materials, asbestos and explosive materials. Many items, however, that could be considered hazardous are commonly found in household items, such as paints, lubricants, fertilizers, and cleaners.

On an annual basis, NSR typically transports approximately 2.2 to 2.7 million shipments or containers through their existing IMFs across the eastern United States, of which only 3 to 4 percent contain hazardous materials.²⁵⁴ During the period 2004 through 2009, NSR intermodal transported 16,070,989 intermodal units. During that same time there were 25 spills from intermodal units inside IMFs, or 0.000156% for each shipment. Additionally, the trend has been toward fewer spills each year (2004-10, 2005-5, 2006-2, 2007-04, 2008-1 and 2009-3). Of these 25 spills, 17 were one gallon or less in size and only one spill was over 25 gallons. NSR owns and operates 27 different intermodal facilities.²⁵⁵ IMF personnel are trained and would take immediate action



²⁵³ 42 U.S.C. 6901 et seq; 42 U.S.C 9601 et seq; Tennessee Code Annotated (T.C.A.) 68-212-101 et seq.

²⁵⁴ NS Technical Memo, Subject Memphis Regional Intermodal Facility – HazMat Traffic, dated January 15, 2010.

²⁵⁵ NSR Intermodal operation records.

upon noticing a spill and have contact information to bring in specialized vendors to contain and remove any leaked material. The IMF would be designed with a shutoff valve in the drainage system to ensure that any leaked material does not leave the facility. The Memphis Regional IMF would be designed such that any fluid materials which leave the large concrete pad are directed to a detention basin with a temporary holding capacity in excess of 30 acre-feet and which would be equipped with emergency valves and gates to prevent materials from leaving the site. The potential risks of adverse impacts from releases from such shipments are considered to be very low because:

- Low percentage of shipments containing hazardous materials,
- Prohibitions on the most hazardous commodities,
- NSR's commitment to safety and recognized past track record of intermodal facility safety,
- DOT shipping and packaging requirements noted previously, and
- Low incidence of even very minor releases of transported hazardous commodities in an IMF.



It is not anticipated that the proposed facility would have materials triggering the inventory provisions of Federal laws such as the Emergency Planning and Community Right-to-Know Act (EPCRA)²⁵⁶, but all applicable emergency response protocols and notifications would be implemented in case of a release event.

The operation of the Memphis Regional IMF would utilize small amounts of materials considered hazardous, primarily fueling and lubrication materials for on-site equipment. Maintenance and fueling activities from IMF equipment would occur within the maintenance pad area. Included in this area would be five (5) ASTs ranging in size from 300 to 3,000 gallons. The larger AST would be for storage of diesel fuel. The other four (4) ASTs would hold gasoline, 40W motor oil, anti freeze, transmission oil, used oil, and hydraulic oil. Per EPA regulations, the ASTs are required to have secondary containment adequate to contain the full amount of the tank contents, applicable inspection, testing and spill detection measures as included in AST management.²⁵⁷ In accordance with the



²⁵⁶ 42 U.S.C. § 11001 et seq.

²⁵⁷ 40 C.F.R. Part 112

Spill Prevention, Control and Countermeasures Program (SPCCP) developed by EPA, facility drainage is designed to capture and contain any releases. Additionally, the stormwater from the maintenance pad would be treated with an oil-water separator. The pollutants would be disposed of through the Rossville sewer system. The remaining stormwater would be discharged into a Bio-Treatment Pond. The only fueling, which would not occur on the maintenance pad, is limited to locomotives. The IMF does not include locomotive maintenance or permanent fueling facilities.

Any petroleum or hazardous materials needed for facility operations would be handled and used in accordance with package labels and manufacturer's directions. Wastes would be segregated, labeled, and stored in a manner that would prevent the release of hazardous constituents into the environment.

In addition, the IMF and its employees are subject to the United States Hazardous Materials Instructions for Rail, which are operating rules that implement certain portions of 49 CFR Part 172 and include emergency response. Under facility response protocols, facility employees, working with NSR environmental staff and local emergency first responders as necessary, have around-the-clock access to emergency response resources (local first responders, local environmental contractors, EPA, and USACE) accessible through a telephone call to the NSR Tennessee Division dispatch office, which is staffed 24 hours a day, 7 days a week. NSR also has published a Railroad Emergency Response Planning Guide, which is available to local first responders.

In the unlikely event of a hazardous material spill, emergency protocols (site specific spill prevention control and countermeasure (SPCC) plan for response and recovery would go into immediate effect and a variety of emergency response resources are available as necessary, including facility personnel, local, state and federal emergency responders as well as emergency response contractor resources. Emergency protocols for the IMF will provide for certified and trained employees onsite to handle any hazardous materials release or emergency spill response. Additionally, under facility response protocols, facility employees, working with NSR environmental staff and local emergency first responders as necessary, have around the clock access to emergency response resources accessible through a telephone call to the dispatch office which is staffed 24 hours a day, 7 days



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a week, to handle any release or spill of hazardous materials.

The facility would also be governed by NSR's Emergency Response Guide to Railroad Incidents and its divisional emergency action plan and SPCC plan, which specify response protocols and notifications. In addition, guidelines established by nationally recognized bodies (such as EPA, PHMSA, OSHA, and DOT) assist emergency response service organizations. For transportation incidents, detailed procedures are found in the *2008 Emergency Response Guidebook*.²⁵⁸ The *2008 Emergency Response Guidebook* provides emergency detailed procedures for a variety of types of spills and releases.

No potential hazardous material sites would be impacted by Build Alternative 1. Also, given NSR's safety record, DOT's comprehensive regulatory program governing hazardous materials shipments, emergency response planning and preparedness measures noted above, and the facility design, Build Alternative 1 would be expected to have low potential for impact to the natural or human environment due to hazardous material transport through the facility.

Based upon historical information on releases or spills at IMFs, any release or spill that would occur would be a small volume and be contained upon the concrete pad where IMF containers are temporarily stored. The Memphis Regional IMF is designed such that any fluid materials that leave the large concrete pad are directed to multiple retention basins, which are equipped with emergency valves and gates to prevent materials from leaving the Memphis Regional IMF facility. With the emergency response training of on-site personnel, the availability of additional response personnel on an around the clock basis, the protocols established for local emergency response and the notification provisions for additional emergency response resources, the proposed Memphis Regional IMF would achieve a very high level of safety and protection from hazardous materials releases or spills.

The No-Build Alternative would not be expected to impact any hazardous materials nor would such materials be transported to the site. Shipments would however, continue along the mainline tracks north of the site.

Norfolk Southern
Leads all U.S. Railroads in employee safety
20 Consecutive Years 1988 - 2008



- For the past 20 years, Norfolk Southern has won the Harriman Gold Medal for U.S. railroad with the best employee safety record.
- Norfolk Southern is the safest major freight railway in the world.
- Annually, NS provides rail training to approximately 5,000 emergency responders across our network.
- For the past 7 years, Norfolk Southern has won TRANSCAER National Achievement Award for community outreach and interaction with communities and first response organizations.

²⁵⁸ DOT 2008.

3.17. Pedestrian and Bicycle Impacts

TDOT's bicycle and pedestrian policy, as stated in the Bicycle and Pedestrian element of the Tennessee Long-Range Transportation Plan, includes provisions for bicycle and pedestrians in new construction and reconstruction of roadway projects through design features appropriate for the context and function of the transportation facility. The policy also identifies existing and proposed bicycle routes. SR-57 in the project area is not currently on the State list of existing or proposed bicycle routes.

No dedicated bicycle or pedestrian facilities exist in the project area. The project area is currently agricultural land. The existing shoulder width along SR-57 within the project area varies from 0 to 2 feet. Currently, the only dedicated pedestrian facilities or sidewalks exist in the nearby towns of Rossville and Piperton. No dedicated bicycle facilities exist in these towns. Fayette County and the towns of Rossville and Piperton do not have comprehensive bicycle and pedestrian plans and do not address bicycle and pedestrian facilities in other planning documents.

Under Section 1202(a) of the Transportation Efficiency Act for the 21st Century (TEA-21) and 23 U.S.C. § 109(n), TDOT considered the need to provide bicycle and pedestrian facilities. No bicycle or pedestrian facilities would be appropriate for the Memphis Regional IMF site or the lead tracks area.

The proposed SR-57 overpass would have paved 10-foot shoulders that would accommodate pedestrians and bicyclists. Currently, no plans exist to add sidewalks or pedestrian facilities along SR-57 in the project area. Build Alternative 1 would have a minor positive benefit to long-term pedestrian and bicycle use on SR-57 is anticipated due to inclusion of improved shoulder width on the overpass.

Due to the commercial nature of Industrial Road and the fact that it dead-ends within the restricted access IMF, there are no plans to include pedestrian or bicycle paths along this road.

The No-Build Alternative would not change the existing roadway network for bicyclists and pedestrians.

3.18. Indirect and Cumulative Impacts

Sections 3.1 through 3.17 describe the project's anticipated direct effects associated with Build Alternative



1. This section presents a discussion of the potential indirect and cumulative impacts.

The indirect (secondary)²⁵⁹ and cumulative effects associated with the proposed Memphis Regional IMF development are presented as below for each of the resource areas.

Indirect (secondary) effects are caused by an action (such as the proposed Memphis Regional IMF) and occur later in time or farther removed in distance, but occurring in the reasonably foreseeable future.²⁶⁰ Generally, these impacts are induced by the proposed project but are not a direct effect. Indirect effects can occur within the full range of impact types, such as changes in land use, economic vitality, neighborhood character, traffic congestion, air quality, noise, vibration, and water and natural resources. Examples of indirect effects can include growth-inducing effects and other effects related to induced changes in land use patterns, population density, and growth rates, and related effects on air and water and other natural systems.

The President's Council on Environmental Quality (CEQ) defines a cumulative impact as:

...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.²⁶¹

For a cumulative impact to occur, the action must affect a given resource and must have the potential to interact with other actions with regard to that resource, either directly or collectively. Additionally, cumulative impacts must be assessed at the geographic scale at which the project may impact given resources and the scope of the cumulative impacts analysis may vary among resources.²⁶²

²⁵⁹ Effects and impacts are used synonymously in CEQ regulations. 40 C.F.R. 1508.8.

²⁶⁰ 40 C.F.R. 1508.8b.

²⁶¹ 40 C.F.R. § 1508.7.

²⁶² FHWA Project Development Branch, HEP-32, "Secondary and Cumulative Impact Assessment in the Highway Project Development Process," April 1992.

Cumulative impact analysis is resource specific and generally performed for the environmental resources directly impacted by a Federal action under study, such as a transportation project.²⁶³ The cumulative impacts analysis below identifies the resources to be considered in the analysis and, in accordance with CEQ guidance, assesses cumulative effects in the context of Build Alternative 1. Any resource which has been identified as potentially impacted as part of Build Alternative 1 has been given primary focus in the cumulative effects analysis.

In accordance with NEPA, CEQ, TDOT, FRA, and FHWA requirements, cumulative impact assessments for each resource must consider spatial (physical) and temporal (duration) boundaries. For this analysis, the spatial boundaries for the consideration of cumulative effects are identified in the discussion of cumulative impacts below.

Cumulative impacts must be considered over a specified time period to assess the influence of an action. Cumulative impacts may carry forward for decades and the actual time of influence attributable to a single project generally diminishes through time.²⁶⁴ The temporal assessment of cumulative impacts is tailored to the resource. For example, for local land use impacts, Fayette County completed its 20 year growth plan in 2003, allowing for land use controls and cumulative impacts analysis to include uses pre-dating the growth plan and through its implementation to 2023. CEQ NEPA regulations and guidance on cumulative effects do not require development of a catalog of specific past actions or quantification of these actions in a cumulative effects analysis, and CEQ recognizes that “because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to inform decision making” *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*. June 24, 2005.²⁶⁵ In accordance with CEQ guidance, past actions are considered collectively in describing the existing conditions within the spatial area and temporal scope of analysis for each resource.

The cumulative impact assessment also includes identification of reasonably foreseeable future actions. In some cases, information regarding specific actions that have been recently commenced is available. Local and

²⁶³ Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process,” FHWA, May 2003 <http://www.environment.fhwa.dot.gov/guidebook/qaimpact.asp>.

²⁶⁴ FHWA, 1992.

²⁶⁵ CEQ, “Guidance on the Consideration of Past Actions in Cumulative Effects Analysis,” 24 Jun 2005.

regional planning agencies and documents contain information relating to future land use, growth, and traffic projections and measures. For traffic, a combination of FHWA Office of Freight Management and Operations and specific analysis of direct effects from the traffic report was used to forecast cumulative traffic effects. Local and regional planning agencies and documents contain information relating to future land use, growth, and traffic projections and measures. Environmental effects of cumulative impacts are analyzed using information from agencies such as the EPA's "Consideration of Cumulative Impacts in EPA Review of NEPA Documents"²⁶⁶, and "Habitat Evaluation: Guidance for the Review of Environmental Impact Assessment Documents."²⁶⁷

3.18.1 Indirect and Cumulative Impacts to Land Use

3.18.1.1 Indirect Impacts

While the project is located in an area already planned for growth and experiencing an increase in warehousing growth, the Memphis Regional IMF is anticipated to have some indirect effects on planned land uses. Local and regional planning bodies anticipate growth in the vicinity of the project area, including areas of industrial and residential growth. As noted in Section 1.5, the project location is in a portion of the Memphis area which has experienced a substantial increase in development since 2002. Warehouses or distribution centers have been identified as a growing land use for the area. Support and service businesses, such as restaurants and gas stations, have also seen a growth.

The indirect impacts are based on employment ("at-risk" jobs) from the Insight Research economic analyses.²⁶⁸ While these jobs could be created anywhere in the region and likely would not all be on Industrial Road, this conservative approach assumes all the predicted jobs would occur in businesses along Industrial Road.²⁶⁹ Based on the above assumptions, the 2,105 "at risk" jobs can be converted to approximately 855,300 square feet of industrial park buildings.²⁷⁰

²⁶⁶ EPA, "Consideration Of Cumulative Impacts In EPA Review of NEPA Documents, EPA," May 1999.

²⁶⁷ EPA, "Habitat Evaluation: Guidance for the Review of Environmental Impact Assessment Documents," January 1993.

²⁶⁸ Insight, May 2009.

²⁶⁹ The Industrial Road area is currently an undeveloped field.

²⁷⁰ ITE Trip Generation Manual, 8th Edition, Land Use Code "Industrial Park" used for trip generation.

Patterns of planned land use could be changed by the proposed Memphis Regional IMF but many of the potential land use changes have been anticipated in local and regional land use planning and projected growth (see the Fayette County Growth Plan²⁷¹, Town of Rossville Comprehensive Plan [currently being updated]²⁷², and the Shelby County Growth Plan²⁷³). Marshall County does not have a comprehensive plan.²⁷⁴ The Marshall County Industrial Development Authority (MCIDA) is supervising the development of commercial and industrial areas within Marshall County, Mississippi.²⁷⁵ In particular, the Chickasaw Trail Management Committee is focused on the development in the Chickasaw Trails Industrial Park area. The property within this industrial/commercial zoned area has specific covenants to control land use and development.²⁷⁶

Local and regional planning contemplates industrial, commercial, and residential growth and their impacts on air and water and other natural systems, including ecosystems. Thus, although the majority of land uses in Fayette and Marshall Counties are currently rural in nature, growth of the type that may be influenced by the Memphis Regional IMF is included in regional planning and accommodated in local land use and zoning.

The Fayette County Growth Plan was finalized in 2003 and provides a 20 year plan for projection of growth in the vicinity of the proposed Memphis Regional IMF as well as throughout Fayette County. The growth plan encourages compact and contiguous high density development and promotion of economic health and employment opportunities²⁷⁷, such as those land uses that would be directly and indirectly induced by the Memphis Regional IMF. Undeveloped, land bordering the project site includes medium and high density residential zoning (Section 3.1, Figure 3-2). The land north of SR-57 is zoned for business and land south of the site is general industrial. Accordingly, the Memphis Regional IMF development and its indirect impacts are consistent with the Fayette County Growth Plan and area zoning and planning.

²⁷¹ Terry, Bill, Fayette County Growth Plan: A Report to the Administrative Law Judge Panel, June 2009.

²⁷² Personal Communication with Town of Rossville Planning and Zoning, December 29, 2009.

²⁷³ Memphis and Shelby County Division of Planning and Development, "Recommendations for Planned Growth and Rural Areas, Shelby County Growth Plan," 13 Nov 2000.

²⁷⁴ Personal Communication with Marshall County Planning Commission and Zoning, December 29, 2009.

²⁷⁵ <http://www.marshallcoms.com/>.

²⁷⁶ "Covenants of Chickasaw Trail Industrial Park", <http://www.marshallcoms.com/chickasaw-trail-industrial-park-mississippi.html>.

²⁷⁷ Terry, Bill, Fayette County Growth Plan: A Report to the Administrative Law Judge Panel, June 2009.

The type of industrial development induced by IMFs is typically light industrial, primarily warehouse distribution and manufacturing.

Within the industrial zoning area, the current growth plans for the area authorize land uses including manufacturing, industrial development, and other business related uses. Fayette County's industrial zoning regulations²⁷⁸ permit a range of uses including warehousing and manufacturing activities. The Town of Rossville's comprehensive plan and zoning ordinances are being updated.²⁷⁹ Under the Zoning Ordinances of the City of Piperton, Tennessee has designated light manufacturing districts to allow a range of wholesale and light industrial establishments and to promote economic development.²⁸⁰ Shelby County, Tennessee's light industrial zoning district is intended to provide areas in which the principle uses permitted are manufacturing, wholesales, and warehousing.²⁸¹

In April 2010, Marshall County changed the zoning of the property along Industrial Road and directly across US Hwy 72 from Industrial Road from A-R (Agricultural-Residential) and R-E (Residential-Estate) to C-2 (Highway Commercial District) and I-1 (Light Industrial District).²⁸² Marshall County, Mississippi, zoning regulations²⁸³ allow in its I-1 Light Industrial District uses such as truck terminals, warehousing and distribution, assembly plants, beverage bottling and distribution and food packaging. C-2 is Highway Commercial District, which provides for retail and service outlets serving the needs of nearby residential areas and through highway traffic.

The Memphis Regional IMF may indirectly affect the rate of growth of the area by bringing estimated direct and indirect economic benefits of \$2.7 billion to the region by 2020, and creating or benefiting an estimated 6,186 new or benefited jobs in the same time period.²⁸⁴ Jobs created by the Memphis Regional IMF, both direct and indirect employment, would be expected to result in increased residential development and service businesses to support the increased population consistent with local and regional planning and growth projections.

²⁷⁸ Personnel Communication with Fayette County Planning and Development Office, December 23, 2009.

²⁷⁹ Personal Communication with Town of Rossville Planning and Zoning, December 29, 2009.

²⁸⁰ City of Piperton, Zoning Ordinances, Article 7: Provisions Governing Manufacturing Districts.

²⁸¹ Shelby County, Code of Shelby County Tennessee, Appendix A: Zoning, Section 24 Industrial Districts.

²⁸² Personal Communication with Marshall County Zoning Office, April 2009. [Approved meeting minutes should be available to the public on May 13, 2010.]

²⁸³ Marshall County Zoning Regulations, Section 10.

²⁸⁴ Insight, May 2009.

Indirect impacts on land use would be minimized because any impact on land use would be consistent with land uses already planned for the project area and located within areas zoned or planned for the type of development. The presence of the Memphis Regional IMF is not expected to have a negative impact on planned growth, development, or land use and zoning implementation. Any potential changes in land use or development patterns can be addressed through changes to zoning and land use plans and provisions.

3.18.1.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF when added to past, present, and reasonably foreseeable future land use changes within the areas potentially affected by the project. The direct impacts of the project on land use are described in Section 3.1.2. Prior and existing land uses and future land use planning projections are discussed in Section 3.1.1.

As noted in Section 3.1.2, with respect to the project site, the project is located within the Rossville UGB and is zoned for industrial use. The project site was formerly a horse and cattle ranch, and previous land uses in the project vicinity included pasture, hay, field, and forested areas.

The Fayette County Growth Plan contemplates development consistent with direct and indirect land uses associated with the Memphis Regional IMF. Section 3.18.1.1 above identifies indirect development, such as light industrial and residential development, which may occur in those areas in the vicinity of the proposed Memphis Regional IMF in suitable and properly designated locations for such development. An impact that may potentially be associated with the development in this area on air and water and other natural systems and resources is discussed in each resource discussion in subsection 3.18.12 and 3.18.6 below.

The Town of Rossville prepared a comprehensive plan in 1999 and a summary report on its UGB designation.²⁸⁵ It projected a significant increase in population and the need for a large increase in the UGB for development. The types of direct and indirect development associated with the Memphis Regional IMF would be consistent with the 1999 comprehensive plan. The comprehensive plan is currently

²⁸⁵ Terry, Bill, Fayette County Growth Plan: A Report to the Administrative Law Judge Panel, June 2009.

VIP is a small IMF of approximately 60 acres. Since VIP opened on March 1989, companies locating near VIP have invested over \$600 million to create over 6 million square feet of buildings employing over 7,000 workers. These companies include:

AB&C Group	General Parts Inc.	Spahr Metric Inc
AmeriCold Logistics	Home Depot	SYSCO Corp.
Blue Ridge (HBH) Prestain	HP Hood Inc.	Toray Plastics
Butter-Krust Baking	Jouan / Precision Scientific	Trex
East Coast Brokers	Kohl	Walden Foods
Family Dollar	Pen Tab	Winchester Cold Storage
Ferguson Enterprises	Rite Aid Corp.	World Wide Automotive
Ford Motor Co.	Rubbermaid	

The new jobs created by the facility, including both primary and secondary jobs, would likely result in an increased demand for housing. This housing demand could lead to additional conversion of undeveloped land for residential use and associated small businesses that are typical of suburban settings. This indirect growth in housing demand falls within the existing growth projections (population, housing and employment) for the region, and would be aligned with current planning efforts for the region to minimize the potential for incompatible land uses.²⁸⁶ However, this indirect growth associated with secondary jobs is not anticipated to be any greater than the impacts described in the Land Use Section 3.1.

Any development resulting from residential housing demand would be expected to be compliant with local zoning and comprehensive planning efforts, which would minimize the potential for incompatible land uses. Development in Fayette County is subject to plans developed by the Fayette County Planning and Development Office, including the county's Regional Subdivision Regulations.²⁸⁷ In Shelby County, residential development is subject to policies and strategies developed by the Department of Planning and Development.²⁸⁸ Marshall County, Mississippi is largely

²⁸⁶ Terry, Bill, June 2009; Shelby County; Memphis and Shelby County Division of Planning and Development, November 2000 (reprinted with updated maps); City of Piperton, Urban Growth Boundary Report, May 2001.

²⁸⁷ Fayette County, Regional Subdivision Regulations, January 2008.

²⁸⁸ Shelby County Department of Planning and Development, <http://www.dpdgov.com>.

undeveloped and does not have specific residential development planning, but as noted below addresses economic development land use through promotion of special parks such as the Chickasaw Trail Industrial Park (an independent development).

Secondary growth associated with additional industries that may avail themselves of the services of the Memphis Regional IMF would also comply with local zoning and land use requirements or other land use planning measures and therefore, this secondary growth would not be expected to have negative land use impacts. Land use planning and zoning measures differ amongst the three counties. Development closer to the project site in Fayette County would be subject to the growth plan and most likely within the Rossville UGB zoned for industrial use.

In Mississippi, before the Memphis Regional IMF was proposed, the 2,600-acre, Chickasaw Trail Industrial Park located southwest of the intersection of Cayce Road and US Hwy 72 was rezoned from agricultural land use to industrial use.²⁸⁹ At the intersection of Wingo Road and Mt. Carmel Road, a 700,000 square foot distribution center (Excel) was constructed in January 2006.²⁹⁰ Within the Industrial Park, another venture broke ground in 2009 and a development company bought a large tract for future projects.

The increased industrial, commercial and residential land development contemplated by regional growth and planning entities is expected to result in conversion of agricultural land to other uses. Fayette County contains an estimated 227,434 acres used for agricultural purposes (approximately 50% of the county) and Marshall County contains an estimated 364,175 acres used for agricultural purposes (approximately 82% of the county).²⁹¹ As noted in the assessment of direct impacts, less than 0.2% of agricultural land in Fayette County would be affected by the project. According to NRCS data, agricultural land use has been declining in Fayette and Marshall Counties over the past decade. This is due to growth and development patterns shifting from an agricultural-based economy to a mixed use of residential, commercial, and agricultural uses. In terms of cumulative impacts, the project, including the 2.0 mile long Industrial Road under construction, would

²⁸⁹ Personal Communication with Marshall County Planning Commission and Zoning, October 2009.

²⁹⁰ Marshall County Industrial Development Authority, http://www.marshallcoms.com/Chickasaw_Trail/chickasaw.html.

²⁹¹ Personal Communication with Fayette County Cooperative Extension Service and Marshall County Cooperative Extension Service, October 2009.

affect less than 0.2% of the agricultural acreage in Fayette County.

The 2003 designation of the project area as part of Rossville's UGB indicates that the conversion of agricultural land uses to other uses is expected to continue. Marshall County does not have a growth plan, though Marshall County Industrial Development Authority (MCIDA) is supervising the development of commercial and industrial areas within Marshall County, Mississippi. In particular, the Chickasaw Trail Industrial Park area has designated commercial and industrial. This area includes the property along Industrial Road in Mississippi and where Industrial Road would connect with US Hwy 72.

Due to the existence of planning processes, local zoning regulations, and other land use controls, the large amount of agricultural and urban lands in the project vicinity, the incremental effect on land use of past, present and future actions when combined with the Memphis Regional IMF is not expected to be significant. Any cumulative impacts of the proposed Memphis Regional IMF that could be collectively significant over time would be limited by the land use control and designated industrial park and residential areas in the project vicinity. The presence of the Memphis Regional IMF is not expected to have a negative impact on the continued implementation on land use and planning in the project vicinity and the County can address potential changes in these anticipated development patterns via future updates to county growth plans, zoning, or special districts and areas.

3.18.2 Indirect and Cumulative Impacts to Transportation

3.18.2.1 Indirect Impacts

Growth due to the economic benefits of the Memphis Regional IMF is likely to result in minor increases in traffic volume in those locations in the region where secondary industrial and residential development takes place. As explained in Section 3.18.1.1, the anticipated secondary industrial and residential development is consistent with land use and planning in the region, and accordingly any indirect impacts on traffic would be addressed within the region's larger transportation planning and needs.



The proposed Memphis Regional IMF would include a SR-57 overpass over the lead tracks to prevent IMF train impacts on that roadway. Highway traffic on SR-57 would be maintained during the construction of the overpass by means of an adjacent temporary bypass. The bypass would be designed and constructed using

TDOT Standards.²⁹² The bypass would include a temporary at-grade track crossing, which would be traversed by Memphis Regional IMF construction trains (an average of less than one train per day). The SR-57 overpass construction is planned to be performed as expeditiously as possible to minimize any indirect impacts on traffic. Therefore, traffic impacts along SR-57 would be insignificant.

Existing at-grade roads crossing along the NSR mainline, experience brief periods during which vehicular traffic must yield to trains. Following its full build-out and operation, the proposed Memphis Regional IMF would add a projected four eastbound trains terminating at the facility and four westbound trains originating at the facility per day. (It should be noted that other NSR rail traffic not related to the Memphis Regional IMF would also impact train volumes.) The proposed Memphis Regional IMF is being designed to accommodate trains 8000 feet or longer in length, which would minimize the number of trains necessary to accommodate IMF's projected traffic volumes, thereby also minimizing potential rail-automobile crossing conflicts.



Another indirect transportation effect of the Memphis Regional IMF would include substantial mitigation of roadway congestion due to fewer long-distance trucks utilizing the highways between the Memphis region and the Northeast U.S. Figure 3-31 shows sources for congestions.²⁹³ Associated with congestion mitigation would be improvements in safety and fuel efficiency.²⁹⁴ The Mississippi Strategic Highway Safety Plan²⁹⁵ outlines the State of Mississippi's mission, vision, and goal for prioritizing and coordinating safety initiatives to allow available funding to produce the greatest results in reducing traffic injuries and fatalities. Mississippi would identify areas and initiatives with the greatest potential to substantially reduce traffic fatalities through such measures as: reducing impaired driving, increasing seat belt usage, preventing or reducing the severity of lane departure crashes, reducing the over-involvement of young drivers, and curbing aggressive driving.

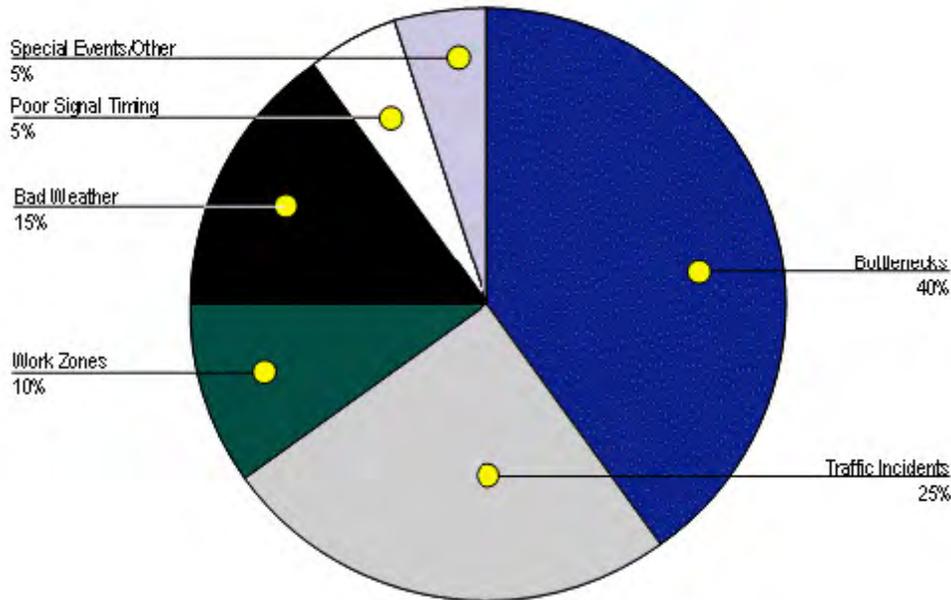
²⁹² TDOT, Work Zone Safety & Mobility Manual, November 29, 2007. TDOT, Transportation Management Plan Workbook, http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/design/TMPWorkbook.dot.

²⁹³ NSR, "Form: 8-K, 12 Jun 2007, http://google.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?SessionID=Ya3uWJ3XXzYY1uh&ID=5241016.

²⁹⁴ Cambridge Systematics, Inc. 2005. Traffic Congestion and Reliability: for the FHWA, September 1, 2005.

²⁹⁵ MDOT, Mississippi Strategic Highway Safety Plan, January 2007.

Figure 3-31: The Sources of Congestion



One method to calculate the volume of vehicular traffic cumulatively connected to the Memphis Regional IMF is to use the employment numbers from the Insight Research economic analyses.²⁹⁶ The employment impact included both direct and indirect employment for both construction and operating phases of the Memphis Regional IMF and associated industrial area expansion. Direct intermodal employment refers to persons involved with the operation of the Memphis Regional IMF, either on-site, or, as an example, the truck drivers delivering and picking up the containers and trailers in the Memphis region. Indirect employment refers to jobs generated by the purchase of goods and services by the facility and its direct employees. Jobs at the area businesses that would utilize the transportation services of the Memphis Regional IMF are another employment category, with both the direct and indirect components. Some of the area customer jobs (called “at-risk”) would not exist without the Memphis Regional IMF, while others (called “benefited”) would exist without the Memphis Regional IMF, but their employers still benefit from its services. The box in the right margin provides additional details of these categories. These impacts are predicted to occur within a 50-mile radius of the IMF.

In analyzing economic benefits:

- **“At Risk”** means that without intermodal service, a type of business is not likely to remain competitive in the Fayette County / Marshall County area. Such a business is not likely to remain or locate in the first place in the region without the competitive advantage that specialized rail logistics can provide.
- **“Benefited Business” or “Benefited Industrial Expansion”** means that intermodal service may be an option for these types of companies that can allow them to grow or be more profitable than they would be otherwise.

²⁹⁶ Insight, May 2009.

Table 3-19: 2020 Employment Impacts of Memphis Regional IMF

Employment	Total
Proposed Intermodal - Direct Impact	926
At Risk (Potential Intermodal Dependent Industrial Development)	1,565
Potential Benefited (Potential Impacts by Intermodal Availability)	3,695
Total (Exclusive of Construction)	6,186

To better define the potential traffic impacts from the creation of the Memphis Regional IMF, additional traffic analyses were completed.²⁹⁷ The predicted traffic impacts based on the employment for the “at risk” industrial area expansions were included in the traffic analyses. Applying the CEQ definitions for direct, indirect and cumulative impacts, the analyses for 2032 included the assumptions at MDOT’s direction that: US Hwy 72 would be a four-lane divided highway, a rural principle arterial, with a design speed of 70 mph. The direct traffic impacts were analyzed in Section 3.3.3.

The indirect impacts based on employment (“at-risk” jobs) were extrapolated using the 1,565 predicted jobs from 2020 to 2105 predicted jobs for 2032. While these jobs could be created anywhere in the region and likely would not all be on Industrial Road, this conservative approach assumes all the predicted jobs would occur in businesses along Industrial Road.²⁹⁸

Based on the above assumptions, the traffic projected for Industrial Road consisted of 1,974 trucks and 334 passenger vehicles per day of direct impact and 5,953 vpd of indirect impact.

Based on the ITE Trip Generation Manual, 8th Edition, the trips generated by 2105 industrial employees are shown in Table 3-20. The indirect traffic mixture was assumed to be 30% trucks and 70% passenger cars based on the assumption that part of the traffic would be individuals driving to work for these additional jobs in their personal vehicles.

²⁹⁷ AECOM, “Analysis of Projected Traffic and Impacts in the Vicinity of the Intersection of US Hwy 72 and Industrial Road”, May 10, 2010, on file with TDOT and MDOT (Nashville, TN: AECOM) and Calculations for various scenarios using *ITE Trip Generation Manual, 8th Edition*.

²⁹⁸ The Industrial Road area is currently an undeveloped field.

Table 3-20: Indirect Trips Potentially Generated

	Daily Traffic	AM Peak Hour		PM Peak Hour	
		Enter	Exit	Enter	Exit
Trucks	1,786	221	36	49	196
Passenger Vehicles	4,167	517	84	114	457
Total	5,953	738	120	163	653

The review of the traffic analyses indicate that based on the 2032 projected direct, indirect, and 2.5% background growth rate traffic volumes, additional improvements would be required for the T intersection currently defined by the traffic study outlined in Section 3.3.3. As required in the May 2010 Industrial Road Traffic Analysis, the intersection of US Hwy 72 and proposed Industrial Road requires a signal control.²⁹⁹ These project-required improvements would be made by the private Developer in conjunction with the MDOT Highway Occupancy Permit (HOP)

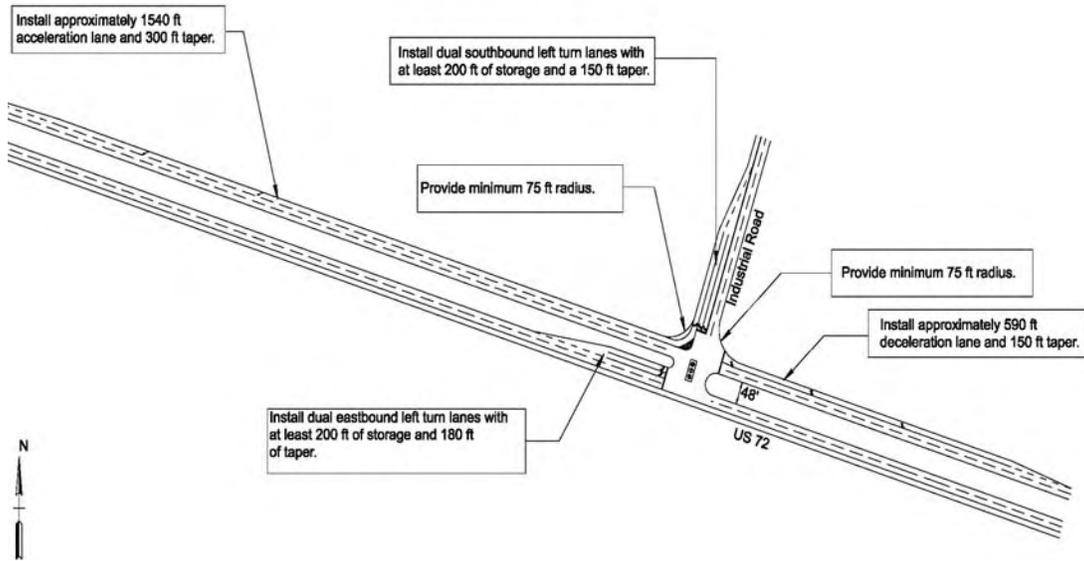
The following measures are required to address the predicted direct, indirect, and background growth impacts of the Memphis Regional IMF on the intersection of US 72 and Industrial Road.³⁰⁰ These required improvements are illustrated in Figure 3-36.

- Signalize the intersection of US 72 and Industrial Road.
- Design Industrial Road to provide three southbound lanes, two for left turning vehicles and one for right turning vehicles. The southbound left turn lanes should each provide storage and transition space.
- Channelize the southbound right turning movement on Industrial Road at US 72.
- Provide dual eastbound left turn lanes, each with storage and transition space on US 72 at Industrial Road. Use 16-foot wide lanes for the dual left turn lanes and receiving lanes to accommodate heavy vehicles.
- Design the intersection of US 72 and Industrial Road with acceleration and deceleration lanes.

²⁹⁹ AECOM, May 10, 2010.

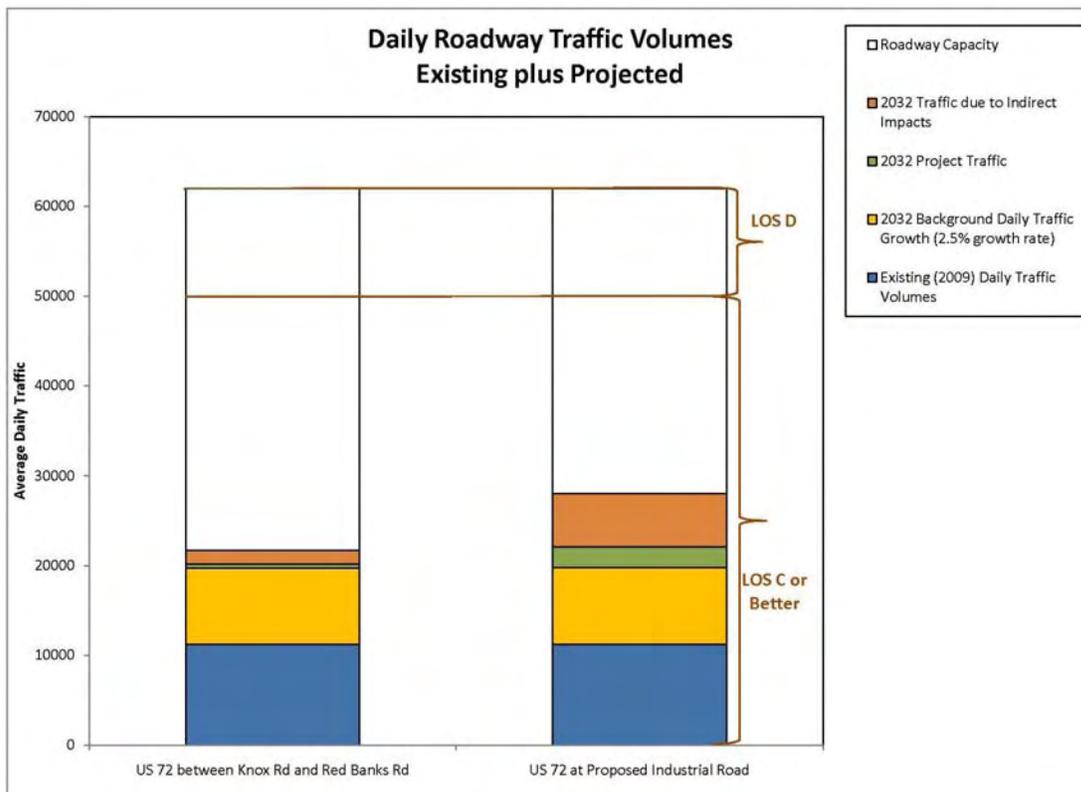
³⁰⁰ For the purpose of NEPA studies for the IMF, the 2.5% growth per year is included as a cumulative effect (i.e. effects which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions, including minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7). Other cumulative effects include but are not limited to those related to the intermodal facility, either directly or indirectly.

Figure 3-32: Improvements to Four-Lane Segment of US Hwy 72



The background traffic on US Hwy 72 was 19,808 vpd of total impact. Figure 3-33 represents the approximate 28,069 vpd that US Hwy 72 is expected to carry in 2032, without apparent congestion.

Figure 3-33: Projected Roadway Volumes on Four-Lane Segment of US Hwy 72



3.18.2.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF on traffic when added to past, present, and reasonably foreseeable future changes in traffic within the areas potentially affected by the project. The direct impacts of the project on traffic, as well as existing traffic assessment in the project vicinity, are described in Section 3.3.3.

a. Roadway

Industrial Road would connect the facility to US Hwy 72 in Mississippi at a still two-lane section. MDOT is planning to widen this section of US Hwy 72 from two-lanes to four-lanes.³⁰¹ Construction of US Hwy 72 from MS 302 to the Tennessee state line was programmed in the Mississippi Statewide Transportation Improvement Plan (STIP) for 2012 on October 14, 2009.³⁰²

In addition recent Mississippi legislation, S. B. No. 3181 amending portions of Mississippi Code of 1972, Title 65, Chapter 4, added “[a]ny project which would allow access to a national intermodal facility with a minimum capital investment of One Hundred Million Dollars (\$100,000,000.00) that is located within five (5) miles of the State of Mississippi and has direct access into an industrial park within the state” to the list of “High economic benefit projects” that political subdivisions can apply for state assistance to fund construction or improvement of any highways or highway segments.³⁰³ Political subdivisions can apply for state assistance to fund construction or improvement of any highways or highway for the primary purpose of encouraging a private company to engage in a high economic benefit project within the geographic boundaries of the political subdivision. The legislative goal of ‘encouraging’ economic benefit cannot be achieved with respect to the Memphis Regional IMF because the Memphis Regional IMF was already independently developed and approved for receipt of Federal TIGER grant funding under the American Reinvestment and Recovery Act prior to the enactment of the above-referenced legislation, and other provisions in the legislation would not apply to the Memphis Regional IMF. Any improvements at the intersection of Industrial Road and US Hwy 72 may be subject to the new legislation

³⁰¹ MDOT Planning Division, “Vision 21 map,” 2002.

<http://www.gomdot.com/Divisions/IntermodalPlanning/Resources/Maps/pdf/Vision21.pdf>

³⁰² Mississippi DOT 2010-2013 STIP, US72 from FR302 to Tennessee State Line, NEED 10 4752.

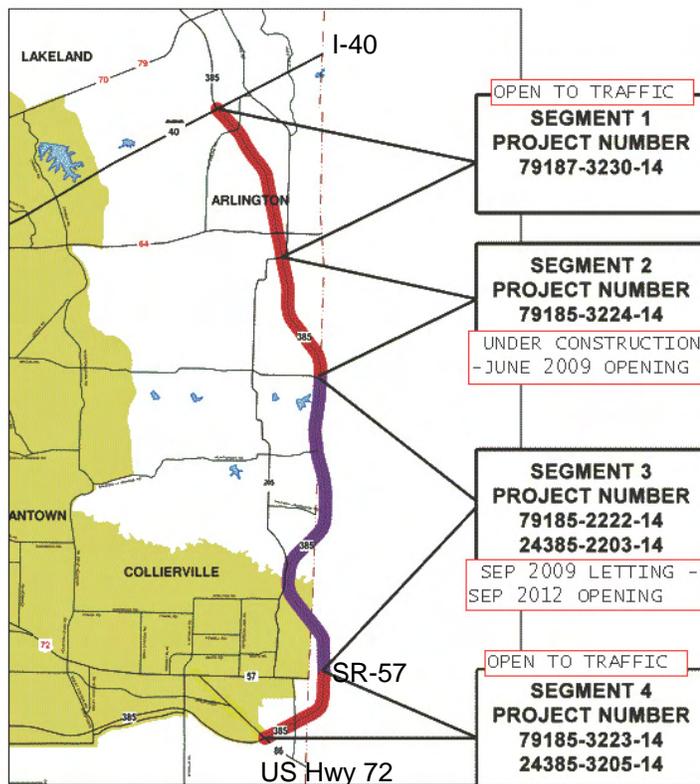
³⁰³ Mississippi SB 3181

should a local political subdivision seek funding and should the party proposing the high economic benefit project submit a letter of intent to the local political subdivision.

Improvements at Industrial Road and US Hwy 72 could permit increased development in the Chickasaw Trail Industrial Park south of US Hwy 72 by allowing truck traffic easier access between I-269 at MS 302 and the Memphis Regional IMF. Such improvements could also permit the potential development of a private roadway network within the Industrial Park for heavier container/trailer loads and a short-line rail connecting to NSR.

The stretch of US Hwy 72 in Tennessee, which connects to SR-385, is a four-lane highway. SR-385 is four-lanes from I-240 to SR-57. TDOT has programmed SR-385 to be four-lanes from SR-57 north to Interstate 40 (I-40), which would allow for truck traffic from I-40 to effectively bypass Germantown and Collierville (Figure 3-34).³⁰⁴

Figure 3-34: Proposed Location of SR-385

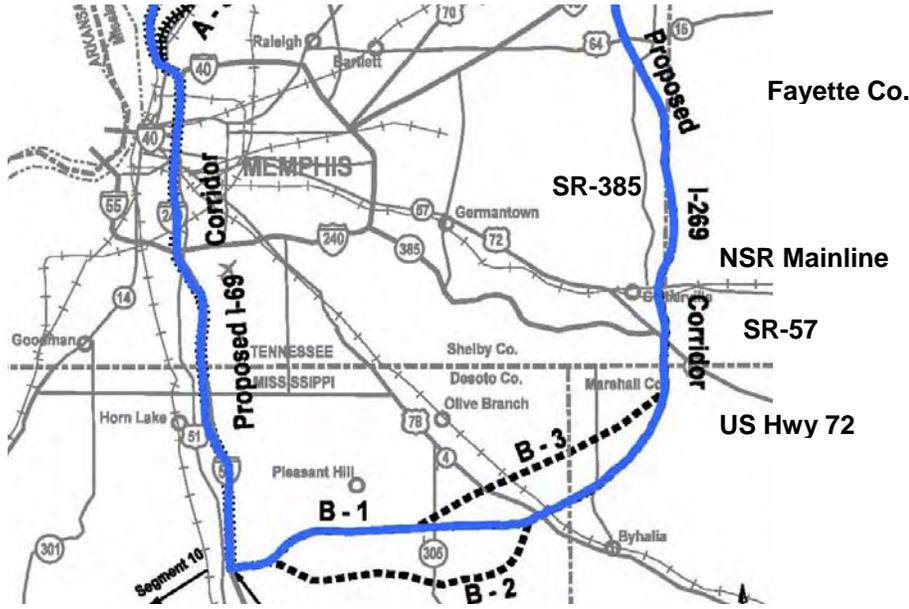


The improvement to SR-385 would be constructed to interstate standards and it would be re-designated as I-269

³⁰⁴ TDOT, "State Route 385," <http://www.tdot.state.tn.us/sr385/>.

once the connections are complete. I-269 would depart from SR-385 in Tennessee near the junction with US Hwy 72. The proposed improvements and construction of I-69/I-269 road project would allow for improved truck traffic flow around the Memphis area (Figure 3-35).³⁰⁵

Figure 3-35: Proposed Location of Southeast Section of I-269



Mississippi STIP lists the construction of I-269 (MS 304) from MS 302 to the Tennessee state line in 2011 and from US Hwy 78 to MS 302 in 2012 (Figure 3-36).³⁰⁶

Cumulative impacts to traffic in the region may result from past growth including the increase in some industrial sectors such as warehousing as described in Section 3.1.1, growth in Fayette and Marshall Counties described in the land use cumulative impacts at 3.18.1.2, as well as future planned infrastructure improvements and policies and practices of Federal, State and Local transportation agencies. Planned roadway infrastructure improvements to US Hwy 72, SR-385, and I-69/269 are potential road improvement projects which may have cumulative effects on traffic. These roadway improvements are expected to improve traffic flow, safety and LOS.

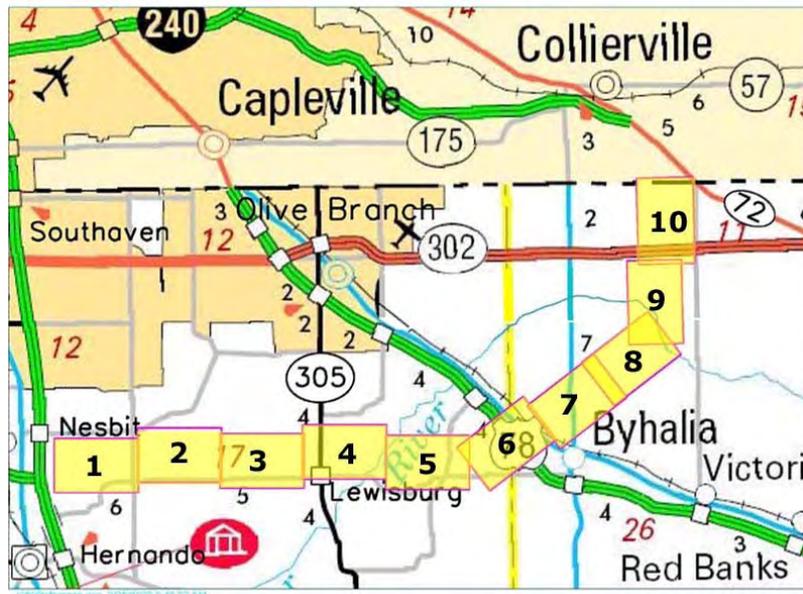
The construction of SR-385 is discussed in Section 2.1 and is expected to provide favorable transportation options for the local area. Section 3.3.3 summarizes the incremental impacts of the proposed Memphis Regional IMF on

³⁰⁵ TDOT, System Alternative Map from Newsletter, <http://www.tdot.state.tn.us/i69/segment9/newsletters/1204.pdf> and TDOT I-69 Website, <http://www.tdot.state.tn.us/i69/default.htm>.

³⁰⁶ Mississippi DOT 2010-2013 STIP

existing and future traffic anticipated on US Hwy 72. The study concludes that the four-lane configuration provides adequate LOS to accommodate proposed Memphis Regional IMF traffic and discusses that MDOT is programming to widen this section of US Hwy 72 from two-lanes to four-lanes to accommodate even greater traffic volumes whether the proposed project is built or not.³⁰⁷ The traffic study concludes that the capacity of US Hwy 72, even after the addition of future projected traffic growth unrelated to the Memphis Regional IMF, would be more than adequate to accommodate increases traffic from the Memphis Regional IMF. The traffic impacts on US Hwy 72 resulting from the IMF will not be substantial.

Figure 3-36: Proposed Location of I-269 in Mississippi



As noted in Section 3.18.1 above, land use and growth planning for the region predicts economic growth in region. Traffic volumes would likely increase with economic growth. Section 3.3.3 outlines current traffic baseline and direct impacts from the proposed Memphis Regional IMF. Traffic analyses projected future traffic volumes and concluded that traffic on the four-lane section of US Hwy 72 in the vicinity of the Memphis Regional IMF would maintain acceptable level of service.

According to the Developer, Industrial Road is anticipated to open with an at-grade connection at US Hwy 72 in 2010.

³⁰⁷ AECOM, "Memphis Intermodal Facility, Traffic Impact Study" November 2009 Revision, on file with TDOT and MDOT (Nashville, TN: AECOM).

The zoning for the 661.75 acres³⁰⁸ in the area was changed in April 2010 to commercial/industrial. The Developer plans for Industrial Road to serve the planned development on his properties (1,556 acres of land in Tennessee and Mississippi). The cumulative traffic impact from the proposed adjacent developments along Industrial Road could increase the traffic volumes along Industrial Road. The development along Industrial Road would develop in accordance with the current and future zoning regulations for Rossville, TN, and Marshall County, MS. This anticipated increase over the IMF only traffic could create congestion along the planned two-lane Industrial Road. Based on the growth along Industrial Road, the Developer would have to widen the access to continue to develop his adjacent property. Cumulative impact from the IMF and adjacent development on Industrial Road traffic is not anticipated to affect Mount Pleasant located approximately 5 miles east of Industrial Road because most traffic on US Hwy 72 would be going or coming from the west to the proposed Memphis Regional IMF. In addition, Mount Pleasant is located along the four-lane section of US Hwy 72 and any additional traffic is not predicted to have a significant negative impact on LOS in the four-lane sections of US Hwy 72.

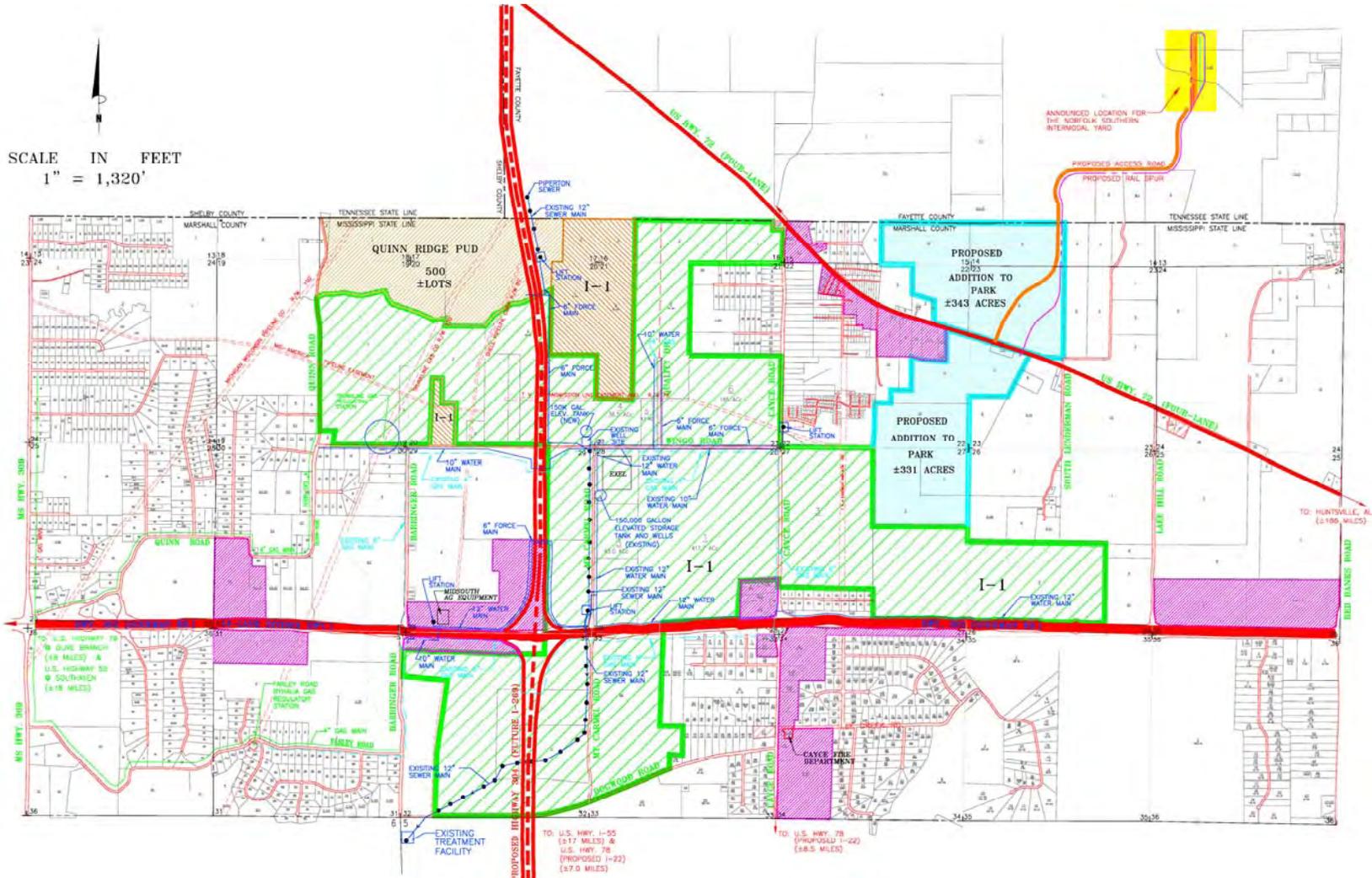
The Developer joined the Chickasaw Trails Industrial Park (light blue area shown in Figure 3-37). The cumulative traffic impacts from other industrial parks along US Hwy 72 and MS 302 in Mississippi, such as the 3,000+ acre Chickasaw Trail Industrial Park, could create a substantial increase in the traffic count in this area upon full build-out. A fully developed Chickasaw Trail Industrial Park (Figure 3-35)³⁰⁹ based on its size and light Industrial type of development, could generate substantial traffic. Marshall County could apply for state assistance to facilitate this development and develop highway improvements to accommodate the potential increases in traffic, per the recent Mississippi legislation.

Currently, the Chickasaw Trail Industrial Park is built out to only a fraction of its designed capacity, and anticipated build-out would follow local economic growth and demand projections.

³⁰⁸ "The Southern Reporter", Legal Notice, March 25, 2010.

³⁰⁹ Provided by Director of Marshall County Industrial Development Authority, March 2009.

Figure 3-37: Chickasaw Trails Industrial Park



SCALE IN FEET
1" = 1,320'

- NOTES:
1. 3-PHASE 14,000V ELECTRIC LOCATED ON THE SOUTH SIDE OF WINGO ROAD AND ALONG THE WEST SIDE OF CAYCE ROAD, ALSO ALONG MT. CARMEL ROAD, FROM WINGO ROAD TO THE MARSHALL COUNTY WATER ASSOCIATION'S ELEVATED WATER TANK.
 2. DSL AVAILABLE ALONG WINGO AND CAYCE ROADS.
 3. FUTURE I-269 WILL HAVE INTERCHANGE AT MS. HWY. 302.

3,000+ ACRE CHICKASAW TRAIL INDUSTRIAL PARK
Southeast Memphis Metro Area Regional Site
 Located in Marshall County, Mississippi

LEGEND:

INDUSTRIAL PARK BOUNDARY	
PROPOSED ADDITION TO PARK	
LIGHT INDUSTRIAL, I-1 (NOT IN PARK)	
COMMERCIAL	

The already proposed and programmed transportation infrastructure improvements along US Hwy 72, I-269, I-69, MS 302, MS 304, and SR-385, along with the potential for state funding to develop highway improvements, recently authorized by the Mississippi legislation should be adequate to handle the predicted increase in traffic volumes from both Industrial Road and other surrounding industrial developments.

Another potential traffic impact along Industrial Road is the Developer's proposed short-line rail spur parallel to Industrial Road to serve Developer's properties planned for the Chickasaw Trail Industrial Park development. Due to speculative nature of this addition, it is hard to predict if the rail spur would be constructed, if businesses desiring this transportation connection would locate in the one of the nearby industrial parks, and if NSR would agree to its connection to their rail system. The Developer also has plans for the rail spur to connect under US Hwy 72 in Mississippi. Based on its location, expected low rail traffic volumes, and the MDOT requirement that the rail line is grade separated from US Hwy 72, any rail traffic on short-line track should have a minimal affect on roadway traffic.

Cumulative traffic impacts further from the proposed project site are expected to be diluted by other anticipated growth and traffic management issues. Because growth in the area would likely follow the development plans and because transportation improvement projects are implemented as a matter of law and policy where growth occurs, long-term negative impacts to traffic and transportation would not be expected. At most, congestion due to growth would likely result in episodic reductions in level of service. Implementation of transportation improvement projects would likely alleviate these conditions. The Memphis and Shelby County Division of Planning and Development has adopted a congestion management system approach wherein congestion is assessed periodically for consideration of necessary infrastructure improvements or other measures.³¹⁰

As discussed in Section 3.18.1.2, the types of development that normally follow the intermodal facilities are warehouses and distribution centers that either transfer the containers and trailers or use the IMF to transport their goods. Intermodal facilities do not normally attract heavy manufacturing or industries that use substantial amounts of hazardous materials.



³¹⁰ Memphis Urban Area Metropolitan Planning Organization (MPO) Congestion Management System Plan (2001).

Current traffic studies within the Memphis area, are being conducted or being planned by TDOT, MDOT, and the Memphis Urban Area MPO for the larger Memphis and I-69 areas. MDOT is currently holding public meeting discussion alternative plans for I-69 Corridor Alternative Analysis (Figure 3-38).³¹¹ The Memphis MPO had multiple studies on-going and planned to identify goals, determine potential development, and allocate transportation investment. Current studies near the proposed Memphis Regional IMF include the Southern/Poplar Corridor Study and the Houston Levee Study. In mid-March 2010, public meeting and workshops would be held for *Image 2035: Mid-South Transportation + Land Use* (IMAGE 2035), a regional planning process.³¹² In accordance with NEPA, as these projects move forward any cumulative effect of the Memphis Regional IMF would be considered in future traffic studies and assessments.

Figure 3-38: I-69 Corridor Alternative Analysis



As defined in regulations implementing NEPA, cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional on freight transportation resources when added to past, present, and reasonably foreseeable future changes and impacts on those resources within the areas potentially affected by the project.³¹³

³¹¹ <http://www.i69aa.com>

³¹² <http://www.Memphismpo.org>.

³¹³ 40 C.F.R. 1508.7 (2009).

b. Rail

The genesis of the current freight rail system was a part of early rail development in the nineteenth century. Substantial development of rail lines took place in the 1850 to 1890 time frame, with development of major east-west corridors. Many states built state-owned lines, and federal land grants were established in recognition of the importance of rail transportation to the United States. This early rail growth spurred economic growth in farming and industry, with indirect benefits to settlement and development in the nation.³¹⁴



As a recognized important national interest, State and Federal government have promoted freight transportation by rail through legislative and policy initiatives from the early years of rail transportation in recognition of the early importance of rail in national economic growth. The Department of Transportation, the former Interstate Commerce Commission (ICC) (prior to its sunset in 1996), and the Surface Transportation Board (STB) (following 1995), have developed comprehensive programs and policies regarding intermodal freight transportation. Intermodal was first identified as a separate category of freight transportation in 1955. Encouragement of intermodal transportation was a central policy of the ICC, which determined that intermodal transportation presented numerous national benefits including energy conservation, reduced congestion, increased efficiency and speed, and reduced freight damage.³¹⁵ The STB and DOT have continued national policy promoting intermodal in accordance with Congressional enactments.

In 1991, Congress enacted the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The policy of the 1991 ISTEA was to provide for economically efficient and environmentally sound transportation policy, providing the foundation for the Nation to compete in the global economy and move people and goods in an energy efficient manner.³¹⁶ In its 1994 report to Congress on intermodal transportation pursuant to ISTEA, the National Commission on Intermodal Transportation recommended development of a National Intermodal Transportation System including the nation's rail, highway, and marine transportation resources. The National Intermodal Transportation System was planned to foster development of freight transportation investment, provide federal funding



³¹⁴ Tindall, "America, A Narrative History" at 437-41 (1st Ed. 1984); DePew, One Hundred Years of American Commerce (1895).

³¹⁵ *Zirbel Transport, Inc., Ext.—Containers*, 125 M.C.C. 663 (1976).

³¹⁶ Pub.L.No. 102-240, Sec. 2.

incentives for projects of national or regional significance, and more flexible and expanded eligibility of State and Federal funds for intermodal projects of public benefit.³¹⁷

The TEA-21, enacted in 1998, reaffirmed the national commitment to intermodal transportation and the policy toward enhancing the integration and connectivity of the transportation system initiated in the 1991 ISTEA legislation.³¹⁸ In 2003, Congress enacted the National Intermodal Transportation System Policy, citing the promise of intermodal transportation systems to “reduce energy consumption and air pollution while promoting economic development and supporting the United States’ preeminent position in international commerce.”³¹⁹



Recently, FHWA and the United States Environmental Protection Agency have collaborated on intermodal policy to help address Clean Air Act goals. The Congestions Mitigation and Air Quality (CMAQ) Improvement Program promotes intermodal transportation projects that reduce mobile source emissions in areas that are designated by EPA as nonattainment with national ambient air quality standards. The CMAQ program identifies some of the benefits are enhanced mobility by shifting traffic from congested highways to rail or marine networks, providing environmental benefits by employing the cleanest possible technologies that improve air quality.³²⁰



Today, the national intermodal system is a part of the nation’s transportation infrastructure, supported by public and private investment and spanning throughout the United States and providing connectivity abroad. DOT, through the FRA, FHWA, and DOT and in conjunction with the STB, support the development and policy regarding intermodal transportation. The intermodal system operates in each state and the District of Columbia, and is connected with the National Highway System at a number of points throughout the United States.³²¹ Within the over 160,000 mile National Highway System, FHWA has identified over 1,400 passenger and freight intermodal connectors.³²² Of the over 1,400 passenger and freight

³¹⁷ “Toward a National Intermodal Transportation System: Final Report,” National Commission on Intermodal Transportation, at 3 (Sept. 1994).

³¹⁸ Pub. L. No. 105-178, 49 U.S.C. § 302(e).

³¹⁹ 49 U.S.C. § 5501.

³²⁰ <http://www.fhwa.dot.gov/environment/cmaqpgs/intermodal/index.htm> (FHWA-HEP-05-021HEP-10-05(4M)E (Oct. 2005).

³²¹ <http://www.fhwa.dot.gov/planning/nhs/intermodalconnectors/index.html>.

³²² FHWA, Freight Management and Operations, NHS Connectors, at Chapter II (undated), http://ops.fhwa.dot.gov/freight/freight_analysis/nhs_connectors/role_nhs_conn/role_sys_conn_2.htm.

intermodal connectors, FHWA has identified 211 truck/rail terminal connectors.

FRA, FHWA, the American Association of State Highway and Transportation Officials, the AAR, and other organizations project substantial growth in the use of rail freight transportation. The Bureau of Transportation Statistics estimated growth in domestic rail freight of over 25% per year from 1996 to 2005, and anticipates growth for rail freight including intermodal to continue. As a percentage of total freight transportation, the Bureau estimated rail freight grew from 25% to over 38% of total freight ton-miles from 1996 to 2005.³²³ Freight transportation tonnage for rail is projected to increase by 44% by the year 2020.³²⁴



The Memphis Regional IMF is proposed to be a part of NSR Crescent Corridor, which has as its core existing intermodal mainlines with double stack capacity operating from Tennessee and Alabama to Pennsylvania and New Jersey. The Crescent Corridor has a number of existing and proposed intermodal facilities. With the projected growth in rail freight transportation, it is foreseeable that improvements to intermodal lines and the national transportation system would occur. These improvements are likely to include new intermodal connection points, rail line improvements, and potentially new terminals and intermodal facilities. NSR is in the planning stage for improvements for the Crescent Corridor which would include new or expanded intermodal facilities in the Birmingham, Alabama, region; Greencastle, Pennsylvania, and Harrisburg, Pennsylvania. Each of these improvements serves independent local or regional transportation demand needs, but would also have cumulative effects on the intermodal system. These cumulative effects would include increase usage of the main line rail system for intermodal shipment, increased efficiency of transportation, and reduced use of highways for long-haul trucking between intermodal points. These cumulative effects would be in addition to the direct effects of the Memphis Regional IMF on rail line usage, long-haul trucking, and transportation efficiency. It is difficult to predict cumulative effects of reasonable foreseeable actions, but it is anticipated that effects would include overall reduction in fuel consumption, reductions in greenhouse gas emissions, and safety and highway benefits. It would also be an expected increase in rail traffic.

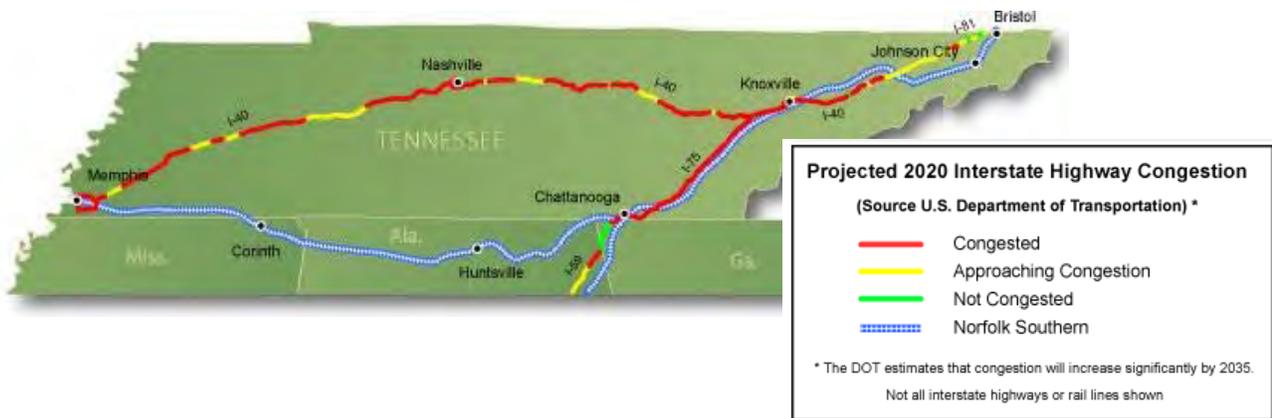
³²³ Bureau of Transportation Statistics, Special Report: A Decade of Growth in Domestic Freight (July 2007).

³²⁴ American Association of State Highway and Transportation Officials, Freight-Rail Bottom Line Report (2009).

With respect to highway congestion, FHWA studies indicate that daily long-haul traffic is anticipated to increase significantly along the I-40 corridor.³²⁵ Figure 3-39 illustrated the projected 2020 congestion along Tennessee Interstates along with NSR's mainline tracks, where the long-haul cargo could be shifted.³²⁶

The Memphis Regional IMF would help facilitate moving freight long distances by rail rather than by highway, thus reducing long-haul trucks. As noted in Section 3, trains, each of which is capable of carrying the equivalent of 280 truck-loads of freight ³²⁷, reduce long-haul truck traffic on congested highways, and result in improvements to safety, energy usage, and air quality.³²⁸

Figure 3-39: Projected 2020 Tennessee Interstate Highway Congestion



3.18.3 Indirect and Cumulative Impacts to Social and Community Resources

3.18.3.1 Indirect Impacts

The Memphis Regional IMF is anticipated to create or benefit an estimated 6,186 direct and indirect jobs and bring direct and indirect economic benefits estimated at \$2.7 billion to the region by 2020.³²⁹ As noted in 3.18.1.1, the potential for jobs at the proposed Memphis Regional IMF could help to encourage more people to move to the area.

³²⁵ FHWA, Office of Freight Management and Operations, Freight Analysis Framework. http://ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm.

³²⁶ FHWA, Office of Freight Management and Operations, http://ops.fhwa.dot.gov/freight/freight_analysis/congestion/index.htm.

³²⁷ Association of American Railroads (AAR), Freight Rail Works 280 Fact Sheet, 2009, <http://www.freightrailworks.org/280.html>.

³²⁸ FHWA, <http://www.fhwa.dot.gov/congestion/>, <http://www.fhwa.dot.gov/environment/cmaqpgs/index.htm>;

³²⁹ Insight, May 2009.

The increase in jobs would likely increase residential population in the vicinity of the project, most likely within Fayette and Shelby Counties, Tennessee, and Marshall County, Mississippi. The types of indirect impacts likely from increased residents are potential increases in school-aged children and the associated demand on school infrastructure, increased need for other community and social services such as police, fire, churches, and other community organizations. As noted below in Section 3.18.3.2 and in the Fayette County Growth Plan, growth in the county has already been anticipated prior to the proposal for the Memphis Regional IMF, and plans are in place to accommodate growth through planning provisions and policies. Growth would be controlled through land use and other planning mechanisms. Accordingly, the indirect impacts are expected to be insignificant.

3.18.3.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF on social and community resources when added to past, present, and reasonably foreseeable future changes in impact on those resources within the areas potentially affected by the project.

Cumulative impacts of growth in the area could potentially strain the capacities of local community resources, such as schools, community and social services such as police, fire, churches, and other community organizations, and could affect local government budgets. However, the impact is expected to be minimal due to planning policies and measures as well as the demographics of the region. Fayette County has been planning for growth. Fayette County's population grew by 11% in the 1970s, 1% in the 1980s, and 19.2% in the 1990s.³³⁰ From 2000 to 2008, Fayette County's population grew 32% to approximately 38,000.³³¹ Fayette County's current population of approximately 38,000 is expected to increase to over 54,000 by 2020.³³²

While growth in Fayette County has been significant spurring land use planning activities, the total population in Fayette County is eclipsed by neighboring Shelby County. Shelby County's residential population is expected to remain relatively stable or slightly decrease from its

³³⁰ Regional Economic Development Center, The University of Memphis, "Population Projections for Piperton, Tennessee," September 1999.

³³¹ U.S. Census Bureau, "State and County QuickFacts Fayette County, Tennessee," 17 Nov 2009.

³³² TACIR and The University of Tennessee Center for Business and Economic Research, "Population Projections for the State of Tennessee, 2010-2030," June 2009.

existing 910,000 to approximately 875,000 residents.³³³ East Shelby County and Collierville, which are in the closest proximity to the proposed Memphis Regional IMF, have been experiencing a high rate of growth. From 1990 to 2000, Collierville experienced a 121% population increase³³⁴ compared to Tennessee's increase of 16.7% for the same time period. The latest Special Census count for Collierville certified by the state in 2008 showed a population increase of 39% from 2000.³³⁵ Collierville's Land Use Plan, I-269 Small Area Plan, and the Downtown Area Plan (under development) indicate opportunities for growth within Collierville and its UGB. Some negative cumulative impacts could occur due to the additional growth related to the Memphis Regional IMF.

With the growth planning in place in Fayette County and its relatively low density and large amount of undeveloped land, the proposed project's relative effect on community and social resources would represent a relatively small percentage of overall growth and resulting cumulative impacts. In Shelby County, with its much larger and relatively high density population projections, any additional cumulative impacts to social and community resources would be minor and readily accommodated by existing or planned resources.

3.18.4 Indirect and Cumulative Impacts to Economic Resources

3.18.4.1 Indirect Impacts

The Memphis Regional IMF would have both short- and long-term indirect beneficial impacts. As noted in Section 1.2, the Memphis Regional IMF is anticipated to contribute to an estimated economic impact of \$2.7 billion in the region by 2020.³³⁶ The Memphis Regional IMF is anticipated to create or benefit an estimated 6,186 direct and indirect jobs by 2020.³³⁷

Indirect short-term beneficial impacts would be realized in the additional jobs created both on- and off-site during construction and site development. Indirect employment would result in the form of jobs associated with the provision of supportive goods, supplies, and services necessary for the construction phase of the project. This creation of indirect employment would result in additional

³³³ TACIR and UT, 2009.

³³⁴ Town of Collierville, Comment Response Letter to TDOT on Draft EA, March 5, 2010.

³³⁵ Town of Collierville, March 5, 2010 Letter.

³³⁶ Insight, 2009.

³³⁷ Insight, 2009.

indirect personal income for the purchase of goods and services within the region.

Indirect long-term economic impacts would result from the operations of the Memphis Regional IMF and associated development. These impacts would be the indirect employment and personal income created because of additional business generated from the operations of the Memphis Regional IMF. Local and regional retail and service outlets would realize increased business volume and personal income. In addition, local and regional vendors of goods and supplies for the businesses within the project area would benefit from the proposed action.

Other indirect benefits would result from the potential expansion of existing businesses and the development of new businesses that would utilize the freight transportation and other services offered through the IMF. Examples could be the new businesses locating on property along Industrial Road or in the Chickasaw Trail Industrial Park (an independent development) in Mississippi or other industrial sites available in Holly Springs, Byhalia and Potts Camp, Mississippi. In addition, indirect benefits would result from service/support businesses, such as gas stations and restaurants, which could locate in the areas zoned commercial along US Hwy 72 or in nearby towns. However, Mount Pleasant, Mississippi, located approximately 5 miles east of the proposed Memphis Regional IMF is anticipated to receive little indirect benefits or negative impacts from the facility as most vehicle traffic using US Hwy 72 would not be heading to or coming from the direction of Mount Pleasant.³³⁸

A Workforce Investment Network (WIN) job center will be opening in Holly Springs.³³⁹ With the proposed Memphis Regional IMF coming to the area, the job center would help prepare and train the local unemployed workforce for job opportunities. As of January 2009, Marshall County had an unemployment rate of 11.2%.³⁴⁰ A consortium of the Mississippi Department of Employment Security (MDES), Marshall and Benton Counties, Holly Springs, Byhalia, Potts Camp, Ashland, and Snow Lake will fund the job center.

Over the last 10 years (without the proposed Memphis Regional IMF), NSR has helped attract \$63 million in investment in new or expanded industries in Mississippi, creating an estimated 460 jobs. In Mississippi, NSR has

³³⁸ Personal communication, Executive Director of Marshall County Industrial Development Authority, March 2010.

³³⁹ Personal Communication, Holly Springs Chamber of Commerce, March 2010. The South Reporter, March 25, 2010.

³⁴⁰ MDES, Labor Market Data Publications, January 2010.

approximately 210 route miles with 190 employees earning a \$13 million annual payroll and \$82 million in annual purchases and payments.³⁴¹ Over the last 10 years (without the proposed Memphis Regional IMF), NSR helped attract \$163 million in investment in new or expanded industries in Tennessee, creating an estimated 1,220 jobs. In Tennessee, NSR has approximately 850 route miles with 1,440 employees earning \$97 million annual payroll and \$68 million in annual purchases and payments.³⁴²

As noted in Section 3.6.2, increased economic development is likely to result in conversion of some existing agricultural lands. However, large areas of total available agricultural lands are currently available within Fayette and Marshall Counties, such that the net impact from indirect economic development relating to the Memphis Regional IMF is expected to be minimal.

3.18.4.2 Cumulative Impacts

The Memphis Regional IMF would create improved and expanded transportation services in the Memphis region by providing for more economically efficient movement of goods by a combination of truck and rail. Currently, the region lacks capacity to effectively transport the projected volumes of freight that would move through the area.

Based on a regional economic benefits study, the freight transportation demand in the Memphis area with the Memphis Regional IMF could contribute to a cumulative economic impact of \$2.7 billion by 2020, and to employment growth of 6,186 new and benefited jobs in the same period.³⁴³ The Memphis Regional IMF would result in benefits in the form of additional jobs, personal income, transportation costs savings, and other monetary returns associated with manufacturing and distribution activities. The demand for long-haul truck drivers is expected to increase. The use of IMF would flatten the rate of increase demand by diverting loads from long-haul trucks to IMF trains and short-haul truckers. The projected 429 jobs directly associated with the operation of the Memphis Regional IMF include 290 “full time equivalent” drayage³⁴⁴ truck driver jobs. The direct jobs would result in 336 indirect short-haul driver jobs (these jobs are part of the 497 indirect jobs as shown in Figure 1-3).

³⁴¹ <http://www.thefutureneedsus.com/states/mississippi.html>

³⁴² <http://www.thefutureneedsus.com/states/tennessee.html>

³⁴³ Insight Research Corp, May 27, 2009

³⁴⁴ Drayage is a term used by the industry to refer to moving the trailers/containers between the IMF and beginning or end destination.

Intermodal facilities have proven to be an economic growth engine.³⁴⁵ For example, since opening in 1989, a smaller IMF at the Virginia Inland Port in Front Royal, Virginia, has resulted in \$600 million in investment, 27 major companies locating nearby, and over 7,000 created and benefited jobs.³⁴⁶ Front Royal, Virginia, is in a rural area.³⁴⁷ Economic growth and benefits are likewise expected from the Memphis Regional IMF.

Potential secondary cumulative impacts include the expansion or establishment of existing and new market areas along with greater product profits accruing from lower transportation costs. Other secondary cumulative impacts include the potential attraction of business and industry to Fayette and Marshall Counties because of the access to the IMF.

3.18.5 Indirect and Cumulative Impacts to Terrestrial Resources

3.18.5.1 Indirect Impacts

Indirect impacts of the Memphis Regional IMF on terrestrial resources include alteration of farmlands and forested habitats through conversion to support secondary development. As noted in Section 3.12.1, following minimization and avoidance measures, the project will impact approximately 244 acres of forested habitat, approximately 206 acres of non-forested habitat, including waters and wetland habitat on site, necessary to meet the purpose and need of the project. Mobile organisms from disturbed areas of the site location are expected to colonize adjacent lands, which include similar habitat as on-site terrestrial resources.

The Memphis Regional IMF, Rossville, and north of Piperton, Collierville, Germantown, etc. are within the Wolf River Watershed (HUC 08010210). The project area is within the HUC-12 Wolf River Subwatershed of 0301. This subwatershed consists of three waterbodies: Hurricane Creek, Unnamed Tributary to Wolf River, and Russell Creek. The project site is within the Unnamed Tributary to Wolf River (TN0801020004-0400), Figure 3-40.³⁴⁸ The majority of the subwatershed is in Tennessee, but the drainage area starts in Mississippi.

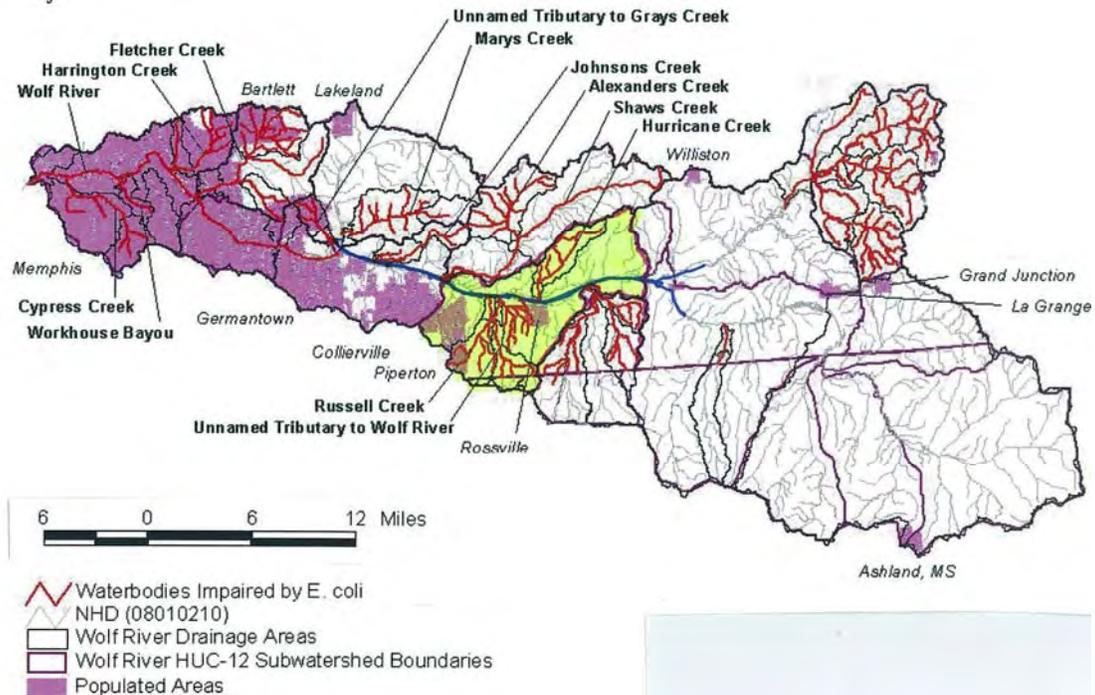
³⁴⁵ NS Crescent Corridor Fact Sheet. <http://www.thefutureneedsus.com/images/pdf/memphis-factsheet.pdf>.

³⁴⁶ NS Crescent Corridor Fact Sheet. <http://www.thefutureneedsus.com/images/pdf/mccalla-factsheet.pdf>.

³⁴⁷ Town of Front Royal, Virginia Comprehensive Area Plan Update: North East, Happy Creek, Leach Run Planning Areas, January 2008.

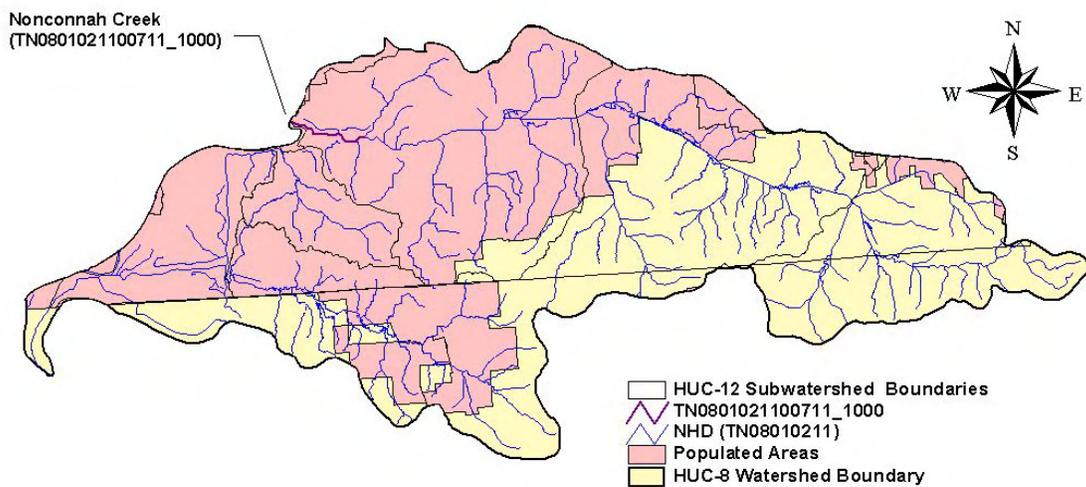
³⁴⁸ TDEC, 1 August 2007, Total Maximum Daily Load (TMDL) for E. Coli in the Wolf River Watershed (HUC 08010210) Fayette, Hardeman, and Shelby Counties, Tennessee.

Figure 3-40: Wolf River Watershed



The part of the Industrial Road and the Developer's proposed commercial/industrial develop along Industrial Road, south of Piperton, Collierville, Germantown, etc., and Chickasaw Trail Industrial Park is within the Nonconnah Creek Watershed (HUC 08010211), Figure 3-41.³⁴⁹ The majority of the subwatershed is in Tennessee, but the drainage area starts in Mississippi.

Figure 3-41: Nonconnah Watershed



³⁴⁹ TMDL for Chloridane, Dioxins, and PCBs in Nonconnah Creek, Shelby County, Approved by EPA June 10, 2009.

Figure 3-42 illustrates the percentage of land use by categories, within the HUC-12 Subwatershed 0301.³⁵⁰

Figure 3-42: Area Land Use (Percentage) within Drainage Areas

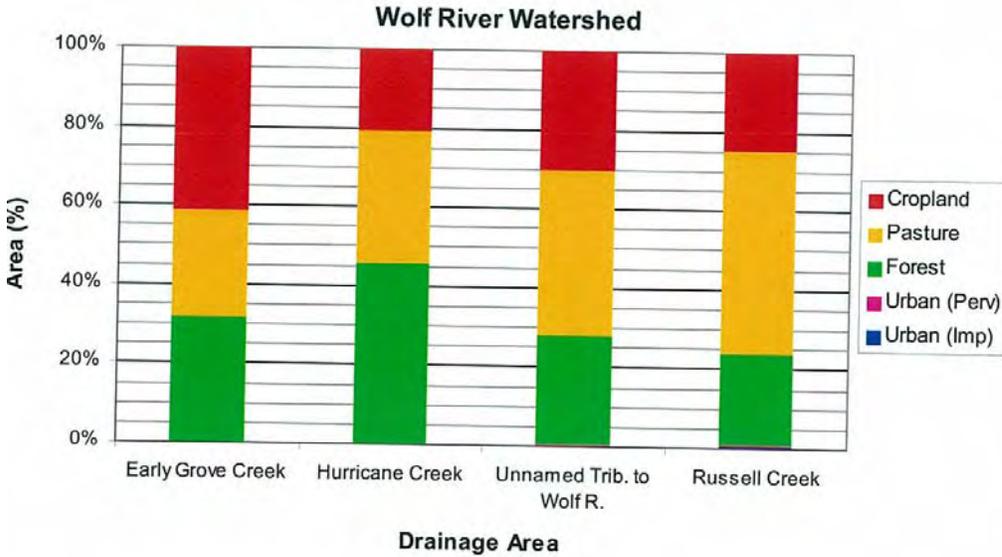
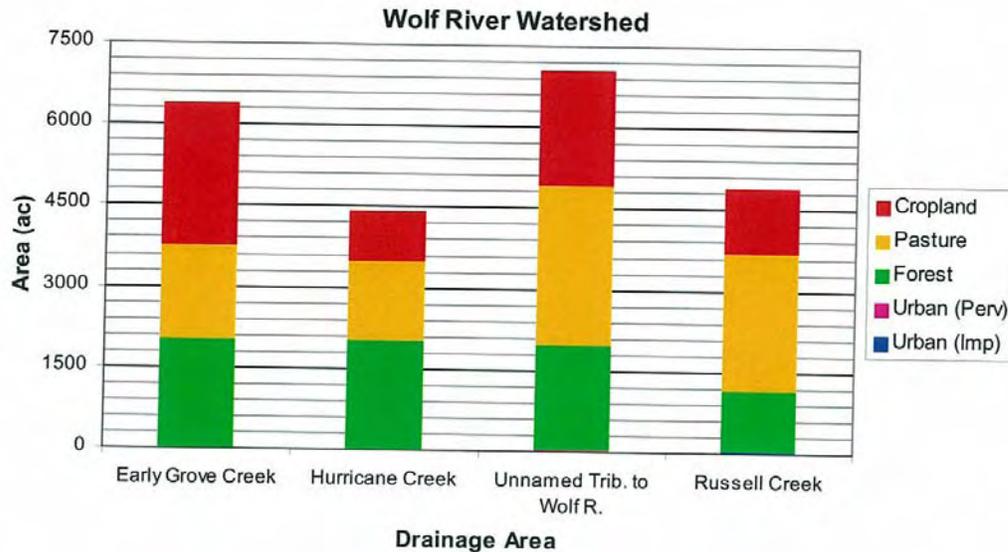


Figure 3-43 illustrates the area by acres of land use by categories, within the HUC-12 Subwatershed 0301.³⁵¹

Figure 3-43: Area Land Use (Acres) within Drainage Areas



As noted in Section 3.1.2 and in the indirect and cumulative impacts to land use in Section 3.18.1., development induced by the Memphis Regional IMF is

³⁵⁰ TDEC, 1 August 2007, TMDL for E. Coli in the Wolf River Watershed.

³⁵¹ TDEC, 1 August 2007, TMDL for E. Coli in the Wolf River Watershed.

expected to include light industrial, including warehousing, and residential development to accommodate job growth. Other commercial service/support businesses, such as restaurants and gas stations, are anticipated to locate along US Hwy 72 due to the anticipated development. This development indirectly caused by the Memphis Regional IMF could cause some loss of wildlife habitat. As a percentage of total habitat and farmland, the secondary impact is expected to be insignificant due to the very large amount of both farmland and forest habitat in the project vicinity.

The types of indirect impacts are similar to the direct impacts to the terrestrial resources as described in Section 3.12.1. Plant communities found in the area are characteristic of communities formed over loess deposits including upland forested communities dominated by various oaks (i.e., white oak [*Quercus alba*], southern red oak [*Q. falcata*], post oak [*Q. stellata*], and black oak [*Q. velutina*]) and other hardwoods including sweetgum (*Liquidambar styraciflua*), yellow-poplar (*Liriodendron tulipifera*), black locust (*Robinia pseudoacacia*), black cherry (*Prunus serotina*), and slippery elm (*Ulmus rubra*). River birch (*Betula nigra*), American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), box elder (*Acer negundo*), and green ash (*Fraxinus pennsylvanica*) are common along drainages and in floodplain areas.³⁵²



3.18.5.2 Cumulative Impacts

The area adjacent to the proposed Memphis Regional IMF is zoned for industrial activity and accordingly it is possible that some of the warehousing and industrial economic development spurred by the Memphis Regional IMF would result in cumulative impacts to terrestrial resources in the local vicinity of the project. The conversion of this land to other uses, such as industrial or commercial, would result in the loss of wildlife habitat from the area. However, as the area is zoned for industrial use these impacts would be likely to occur regardless of the Memphis Region IMF. The types of impacts include those described in direct and indirect impacts related to alteration of terrestrial resources including farmlands and forested habitats through conversion to development.

Because the project is located in an area already planned for growth, the cumulative impacts can be controlled and would likely be localized. As noted in Section 3.1.1, the project vicinity has been experiencing significant growth in warehousing, one of the secondary development types

³⁵²USDA, "The Plants Database," 28 Dec 2009 <http://plants.usda.gov>.

anticipated to be induced by the Memphis Regional IMF. Several industrial parks have recently been established in the area, such as the Chickasaw Trail Industrial Park (an independent development), which is likely to have businesses which would utilize the Memphis Regional IMF.

Patterns of land use could be changed by the projected growth in the region, and accordingly the cumulative impact on terrestrial resources can be controlled through policies on density and development. The Fayette County Growth Plan³⁵³ encourages compact and contiguous high density development and promotion of economic health and employment opportunities, such as those land uses that would be directly and indirectly induced by the Memphis Regional IMF, and accordingly cumulative impacts to terrestrial resources can be controlled. Local governments can manage the level of these impacts through zoning and regulations.

In rural areas, such as these portions of Fayette and Marshall Counties, the amount of forested habitat is decreasing.³⁵⁴ Much of the area in the vicinity of the project has already been cleared for agricultural and residential uses. With the large amount of agricultural and forested lands in Fayette and Marshall Counties, the cumulative impacts would be offset by other available terrestrial resources and habitat. After project construction, areas that remain undisturbed within the property boundaries, would, overtime, provide refuge for local wildlife as the surrounding area becomes more urbanized and habitats are altered.

3.18.6 Indirect and Cumulative Impacts to Wetlands, Water Quality and Aquatic Resources

3.18.6.1 Indirect Impacts

As noted in Section 3.18.1 and 3.18.3, indirect effects include land use changes due to economic development that would be indirectly induced by the Memphis Regional IMF. Within Shelby County, any indirect residential, industrial, or commercial development can be expected to be absorbed within the county's larger population and industrial centers. The primary impacts to wetlands, water quality, and aquatic resources would be limited to construction related impacts such as potential sediment or suspended solids impacts to water quality, and potential impacts to streams or other waterbodies.

³⁵³ Fayette County, 2003.

³⁵⁴ Personal Communication with Fayette County Cooperative Extension Service and Marshall County Cooperative Extension Service, October 2009.

Due to the types of commodities expected to be transported through the Memphis Regional IMF, with a very low percentage of shipments considered hazardous under DOT hazardous materials regulations, indirect, post-construction, effects on water quality, wetlands, and water resources would be minimal. One potential area of impact includes stormwater. Under EPA and TDEC regulations and guidance, these types of developments are typically not considered significant sources of pollutants and accordingly the agencies do not include operational permits or regulatory provisions for individual residences or the type of industrial activities likely to be indirectly induced by the proposed Memphis Regional IMF.³⁵⁵ A NPDES Stormwater Permit for Construction would be required for these developments, if more than one (1) acre of land would be disturbed during construction activities.³⁵⁶

If water quality issues are identified with respect to these future indirect developments, the agencies have authority to specifically address the issues through requiring NPDES permits. Some municipal stormwater discharges related to indirect development are likely to fall within areas subject to EPA and TDEC's municipal separate storm sewer system (MS4) program³⁵⁷, which includes BMP and other conditions to limit impacts on water quality. The regulatory authority extends to protection of the Memphis Sands and other similar type aquifers. Indirect impacts based on the Memphis Regional IMF are subject to Local, State and Federal regulatory programs to protect water quality and water resources, though an aquifer specific permit is not required for construction within the aquifers' recharge zones within Tennessee or Mississippi.

With respect to development and construction related impacts, development and construction will be subject to Local, State and Federal regulatory programs to protect water quality, wetlands, and water resources. On a State and Federal level, all development is subject to regulatory programs such as the CWA and the State ARAP programs, which protect water quality by requiring new development to meet water quality standards, and where alterations to waters cannot be avoided, mitigation to provide for restoration of lost aquatic resource benefits. TDEC's ARAP program is nationally recognized for its comprehensive protection of water resources. The ARAP program includes both wetland and water quality protective measures during permitting and construction, and mitigation such that there is no net reduction in water

³⁵⁵ 40 C.F.R. § 122.26

³⁵⁶ TN NPDES TNR100000.

³⁵⁷ TDEC, <http://www.tennessee.gov/environment/wpc/stormh2o/MS4.shtml>.

habitat function following development.³⁵⁸ Industrial, commercial, and residential developments are subject to construction permits such as the Federal CWA Section 404 permit program protecting waters of the U.S. are administered by the USACE, which requires compliance with water quality standards and a water quality certification from the TDEC. Like the ARAP program, the Section 404 program includes both protective measures during project design, including avoidance and minimization of impacts to regulated waters, as well as comprehensive mitigation requiring the replacement of lost water and wetland ecosystem functions and in some cases enhancement of such functions.³⁵⁹ As noted above, the CWA NPDES requires compliance with water quality standards as a basic and essential requirement of all regulated discharges. An integral part of the NPDES program are associated watershed assessments, water quality management plans, Section 303(d) and 305(b) water quality assessments and reports provided to EPA by TDEC, and implementation measures described in detail in the cumulative impacts section below.

In addition to the numerous levels of protection of water quality, wetlands, and water resources, the areas most likely to experience indirect development from the proposed Memphis Regional IMF have additional protective requirements and measures in place to address water, wetland, and water resource impacts. Fayette County ordinances include restrictions on subdivisions which require assessment of hydrology to address potential impacts from peak flows and other stormwater management related impacts.³⁶⁰ For subdivision developments subject to local ordinances and regulations, the County also includes provisions intended to address recharge and potential impacts to aquifers such as the Memphis Sand.³⁶¹

In addition to the State and Federal requirements protecting water quality and wetlands identified above, Shelby County ordinances also provide for specific water quality and construction related protective measures.³⁶² Protective measures include peak flow protection, buffers, and other general stormwater management provisions and protective measures.

³⁵⁸ USACE and EPA's Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (April 10, 2008) issued pursuant to Section 404 of the CWA, 22 U.S.C. § 1344, and regulations at 33 C.F.R. and 40 C.F.R. 230.

³⁵⁹ USACE, Memphis District, Section 404 Program, <http://www.mvm.usace.army.mil/regulatory/>; Mitigation Guidelines, http://www.mvm.usace.army.mil/regulatory/guidelines/mitigation_guidelines.htm.

³⁶⁰ Fayette County Ordinances, Section 4-105.

³⁶¹ Fayette County, "Subdivision Regulations of Fayette County, Tennessee," January 2008.

³⁶² County Code of Shelby, Tennessee, Chapters 29 and 30, (Codified through Ordinance No. 373), enacted 1 Jun 2009.

In Marshall County, Mississippi, all new development would be subject to the State and Federal provisions identified above, except that NPDES and State construction and water quality protective measures are administered by the Mississippi Department of Environmental Quality (MDEQ).³⁶³ Because MDEQ's NPDES program is a part of the Federal CWA NPDES program, the protective measures for development and construction in Mississippi should be at least as stringent as the Federal program and similar to those in Tennessee administered by TDEC.

3.18.6.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF on water, wetlands, and water resources when added to past, present, and reasonably foreseeable future changes in water, wetland, and water resources within the areas potentially affected by the project. As noted in Section 3.18.1, the area has experienced and is anticipating residential, industrial, and commercial development and growth which would place increasing pressure on wetlands, water quality, and aquatic resources. Fayette County, which has significant rural and agricultural lands, would experience conversion of agricultural lands and forested areas to accommodate residential, industrial, and commercial development. Similar growth patterns have been experienced in Marshall County, Mississippi, which would also likely see some increased conversion of agricultural and forested areas to development, although less is known regarding future growth patterns in Marshall County. Shelby County is already a significant suburban center with relatively stable population and development centers.

For efficient operation and to support the needed equipment, an intermodal facility (approximately 380 acres) requires a relatively flat, paved surface (approximately 233 acres). Grading activities and subsequent paving can alter groundwater recharge and runoff characteristics as compared to the previous forested, agricultural, and natural habitats. The proposed Memphis Regional IMF footprint would be very small compared to the overall recharge area of the Memphis Sands aquifer and therefore its effect on groundwater recharge in the area would be insignificant. Compacted clayey soil below the facility combined with the roller-compacted concrete surface and stormwater controls are expected to provide ample protection to the groundwater resource of the area.

³⁶³ MDEQ, Storm Water http://www.deq.state.ms.us/MDEQ.nsf/page/epd_epdgeneral

Secondary development in the area could result in additional cumulative impacts to wetlands, water quality and other aquatic resources. As noted in Section 3.1.1 and in the Ecology Report, lands in the project vicinity are previously disturbed and include forested, shrub/scrub thickets, pasture, agricultural and rural residential areas. It is unclear if the previous land disturbing activities in the area impacted the quantity or quality of groundwater. Secondary development could add to reduced recharge to the aquifer and to the potential for impacts to groundwater quality. These impacts would result from a loss of pervious ground and associated infiltration and potential releases of contaminants in areas where infiltration does occur. Through regulation and ordinance local government would need to control such development and potential impacts

Industrial Road construction is expected to open the area south of the project to additional commercial and industrial development. Future development would require future construction and its related impacts, and may potentially increase impervious surfaces in the immediate project area.

Future industrial development would most likely be located within existing or planned areas within the three counties most likely to experience induced development related to the Memphis Regional IMF. For Fayette County, the industrial corridor established by the Fayette County Growth Plan, and residential development is most likely to occur in those areas designated as such in the Growth Plan.³⁶⁴ In Shelby County, with its significant existing development and large, stable population, it is anticipated that residential and industrial development would occur within established areas in the county and/or in areas identified by the county's zoning and land use ordinances. In Marshall County, the county has been involved in developments such as the Chickasaw Industrial Park. Industrial development would be anticipated to occur within the Industrial Park area with its infrastructure and location benefits. Residential development locations are not limited in Marshall County.

The conversion of lands to agricultural, commercial, and industrial development would result in cumulative impacts to wetlands, water quality and aquatic resources. Land use and zoning provisions in both Fayette County, Tennessee and Marshall County, Mississippi require that development will not endanger any water supply can reduce potential cumulative impacts.³⁶⁵ The ecosystem in

³⁶⁴ Fayette County, 2003.

³⁶⁵ Fayette County, 2003. Marshall County, 2007.

the vicinity of the project and in areas expected to contribute to cumulative effects are within the Coastal Plain physiographic unit and the Wolf Watershed (HUC 08010210) and the Nonconnah Creek Watershed (HUC 08010211)³⁶⁶ (Figure 3-44). Both drain into the Mississippi River.³⁶⁷ The watershed approach recognizes that waters of the State do not follow State or County boundaries. The Memphis Regional IMF is in the Wolf River Watershed, while the commercial/industrial zoned developments in Mississippi are in the Nonconnah Creek Watershed.

Figure 3-44: West Tennessee Watersheds



TDEC assessed resources based upon land use allocation by watershed and included the results in TDEC’s water quality management plans.³⁶⁸ In the western portion of the watershed, the Wolf River and Nonconnah Creek have experienced significant urbanization and areas of high intensity residential, industrial, and commercial development. Figure 3-45 displays land use characteristics of the Wolf River Watershed.³⁶⁹ Figure 3-46 displays land use characteristics of the Nonconnah Creek Watershed.³⁷⁰

³⁶⁶ TDEC, 9 November 2000, Nonconnah Creek Watershed (08010211) of the Mississippi River Basin Water Quality Management Plan.

³⁶⁷ TDEC West Tennessee Watersheds http://www.tn.gov/environment/watersheds/watershedsigns/regional/west_wshed_map.shtml.

³⁶⁸ TDEC, Watershed Management <http://tennessee.gov/environment/watersheds/index.shtml>.

³⁶⁹ TDEC, August 2007, Total Maximum Daily Load (TMDL) for E. Coli in the Wolf River Watershed (HUC 08010210) Fayette, Hardean, and Shelby Counties, Tennessee.

³⁷⁰ TDEC TMDL PCB June 10, 2009.

Figure 3-45: Land Use Characteristics of the Wolf River Watershed (HUC 0801210)

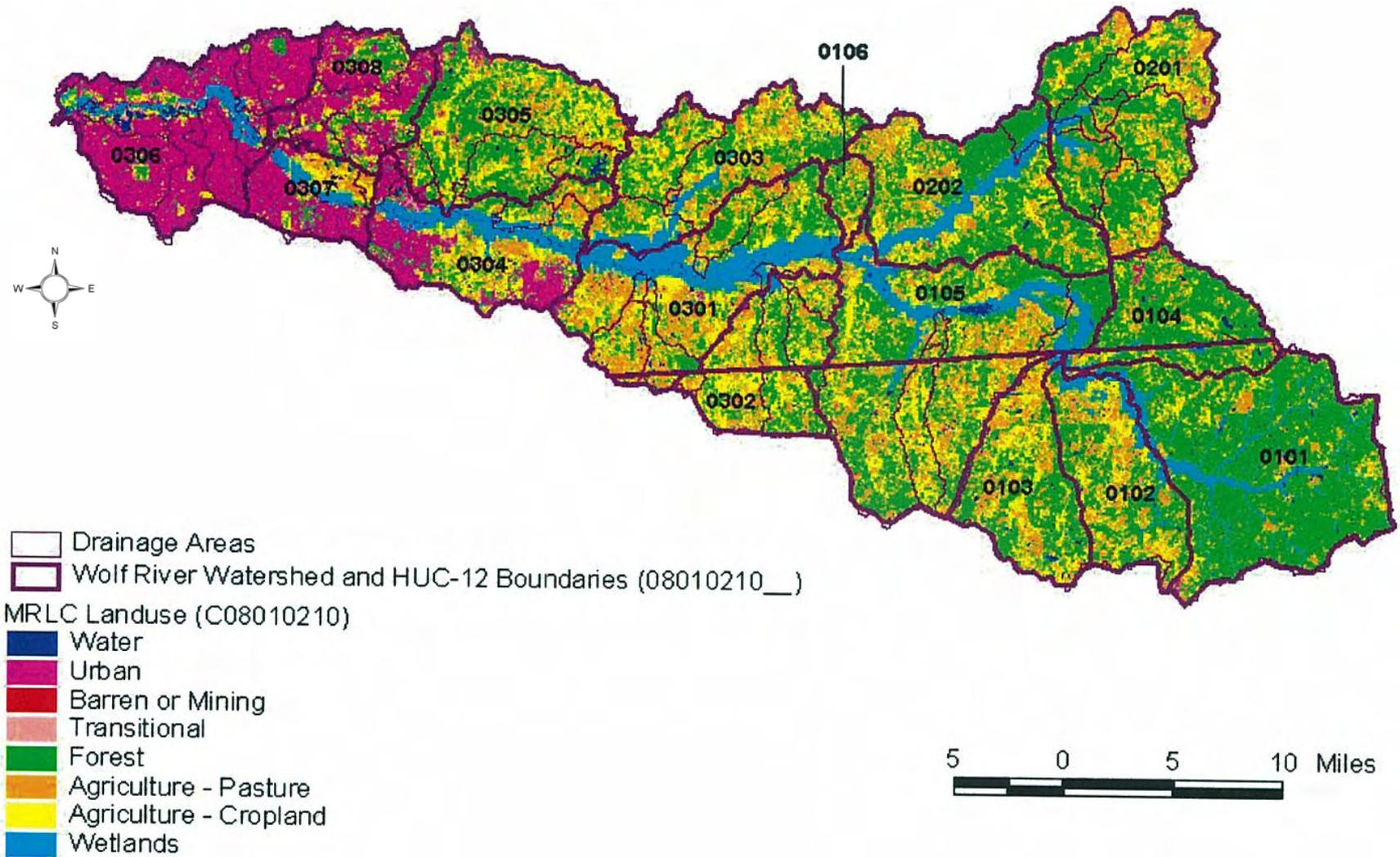
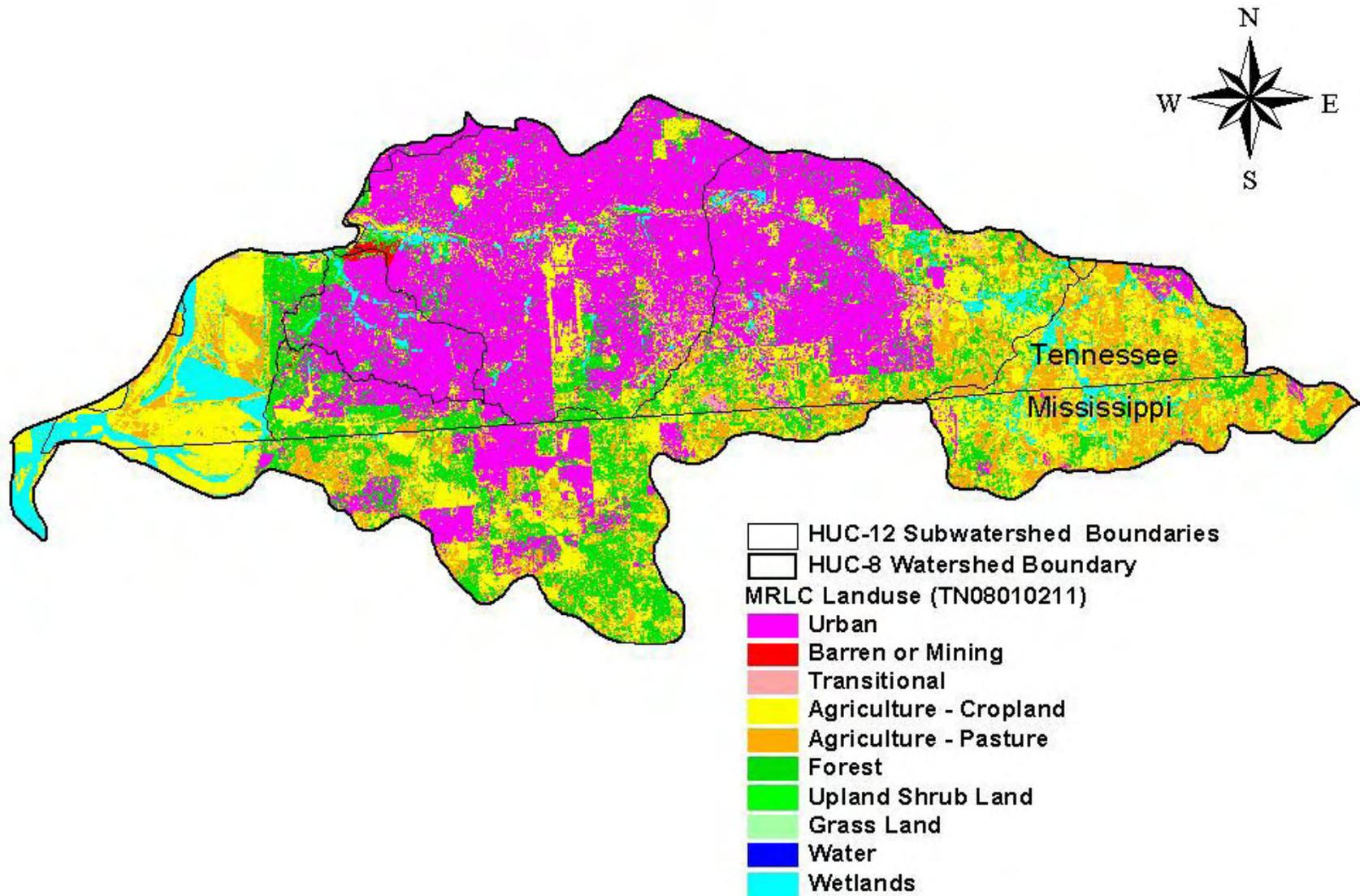


Figure 3-46: Land Use Characteristics of the Nonconnah Creek Watershed (HUC 0801211)



In terms of current land use distribution, as noted in Section 3.18.1, a significant portion of the area is agricultural lands previously converted. Figure 3-47 graphically displays land use for the Wolf River Watershed.³⁷¹ Figure 3-48 graphically displays land use for the Nonconnah Creek Watershed.³⁷²

Figure 3-47: Land Use by Percentage for Wolf River Watershed

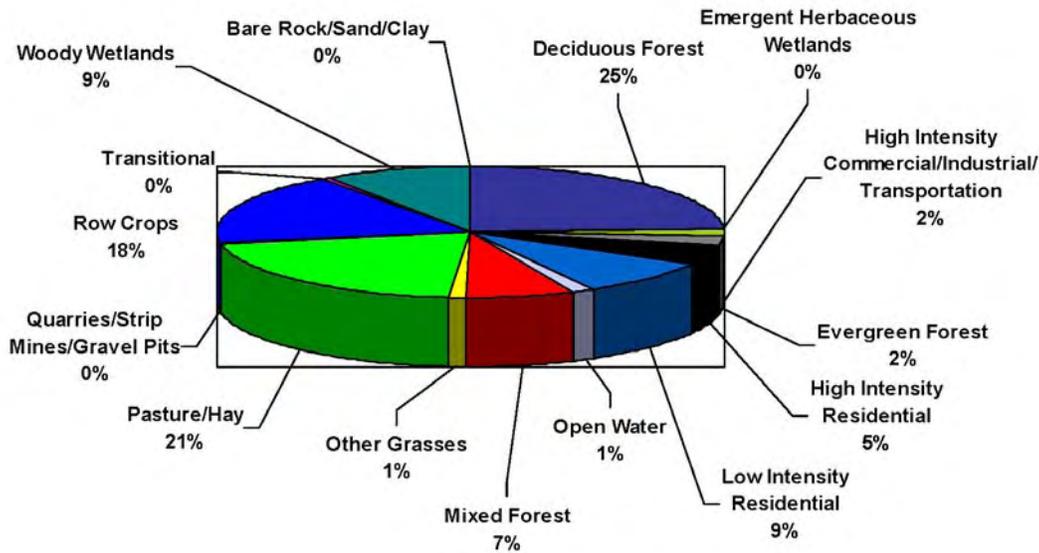
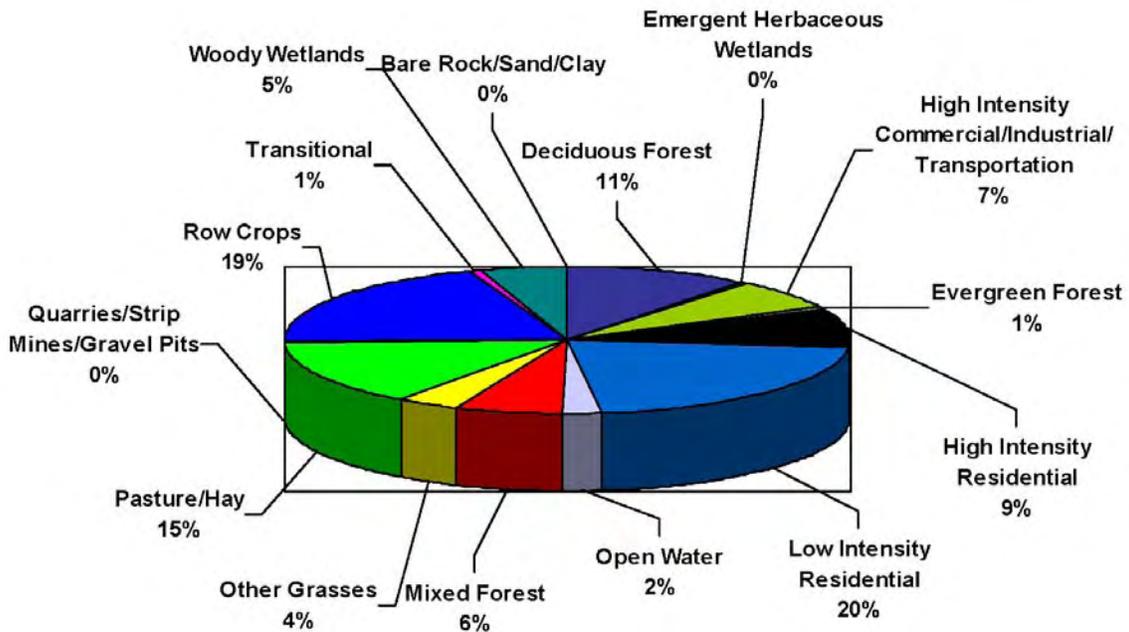


Figure 3-48: Land Use by Percentage for Nonconnah Watershed



³⁷¹ TDEC, TMDL Wolf River PCBs, December 13, 2007.

³⁷² TDEC, TMDL Nonconnah Creek PCBs, June 10, 2009.

Current water quality issues exist in the area unrelated to the Memphis Regional IMF. In 2007, TDEC has published and EPA approved a TMDL for E. Coli in the Wolf River Watershed (HUC 08010210) in Fayette, Hardeman, and Shelby Counties in Tennessee.³⁷³ This includes the Unnamed Tributary to Wolf River (TN0801021004-0400) within the IMF footprint and part of Industrial Road.

- Within the watershed five (5) NPDES permitted wastewater treatment facilities (WWTFs) in the impaired subwatersheds of the Wolf River watershed authorized to discharge treated sanitary wastewater during the TMDL analysis period. Four of the facilities are sewage treatment plants (STPs) serving municipalities and all four (Memphis-Maynard C. Stiles STP [TN0020711], Collierville STP [TN0057461], Rossville STP [TN0064092], and the Collierville Northwest STP [TN0074543]) are major facilities with design capacities equal to or greater than 1.0 million gallons per day (MGD).
- Non-permitted point sources of (potential) E. coli contamination of surface waters include wildlife, agricultural animals, failing septic systems, and urban development from stormwater discharges, illicit discharges, and domestic animals.

The Wolf River Watershed is identified as part of Group 3 watershed assessment, and the Nonconnah Creek Watershed is identified as part of Group 1. In accordance with the water quality management plan, TDEC plans to conduct routine watershed assessments for the purpose of protecting water quality and providing information on which to tailor its regulatory programs such as the NPDES under the Federal CWA, and the State's ARAP program. If the cumulative effects of future actions result in impairments to water quality, under NPDES programs and requirements, water quality improvement implementation plans will be included in new or revised permits and addressed through State non-point source programs under Section 319 of the CWA and other State authorities. The CWA and TDEC's antidegradation provisions require that any new development refrain from negatively impacting water quality with a narrow exception following an assessment of impacts and alternatives. TDEC's watershed approach is intended to provide comprehensive assessment and tools to address future cumulative impacts on the watershed.

³⁷³ TDEC Wolf River E. Coli TMDL, August 2007

The State of Tennessee, in conjunction with environmental conservation organizations such as the Tennessee Environmental Council and the Wolf River Conservancy, are expected to continue their efforts toward the protection of wetlands, water quality, and aquatic resources. The Wolf River Conservancy has been assisting in the development and acquisition of properties along the Wolf River and its tributaries in development of a greenway to protect water quality, waterways and buffers.³⁷⁴ It is anticipated that these efforts would continue to protect high quality waters in the area.

The closest State designated natural areas to the project are Ghost River Designated State Natural Area³⁷⁵ between Moscow and La Grange, Wolf River State Natural Area & Wildlife Management Area³⁷⁶ south between Moscow and La Grange, and William B Clark Designated State Natural Area³⁷⁷ northeast of Rossville; however, none of these areas are within the project boundary or down-gradient of the project.

All industrial and residential development that may be induced by the Memphis Regional IMF is subject to Federal and State laws protecting water quality, wetlands, and water resources. As noted in indirect impacts above, due to the nature of IMF transportation, impacts are expected to be limited to construction and development, as the types of industrial development which may be induced by the proposed Memphis Regional IMF would likely fall within categories which are not considered to have substantial industrial stormwater pollutant contributions.

As discussed in 3.18.1.2, the commercial and industrial developments that normally follow the intermodal facilities are warehouses and distribution centers. Intermodal facilities do not normally attract heavy manufacturing or industries that use or generate hazardous materials.

TDEC and MDEQ have the authority to designate a particular stormwater source as requiring a stormwater permit if impacts are determined to be significant or otherwise affect water quality. With respect to other development not related to the proposed Memphis Regional IMF, due to regulatory programs protecting water quality, wetlands and water resources described in the

³⁷⁴ Wolf River Conservancy, <http://www.wolfriver.org/>; An Introduction to the Wolf River, <http://www.wolfriver.org/images/stories/information/introduction%20to%20wolf%20text.pdf>

³⁷⁵ TDEC, Resource Management Division, <http://tennessee.gov/environment/na/natareas/ghostriver/>.

³⁷⁶ TWRA, Wildlife Management Area, <http://tennessee.gov/twra/gis/wmapdf/WolfRiver.pdf>.

³⁷⁷ TDEC, Resource Management Division, <http://tennessee.gov/environment/na/natareas/wbclark/>.

section, these resources will be subject to periodic assessment and issuance or revision of permits requiring compliance with water quality standards established by the States of Tennessee and Mississippi. Accordingly, sufficient regulatory methods are in place such that the cumulative impact of reasonably foreseeable future actions should not result in impacts or significant degradation of water quality, wetlands, or water resources.

Tennessee and Mississippi have wellhead protection programs to protect public water systems/wells using ground water from contamination.³⁷⁸ All public water systems are required to prepare wellhead protection plans. Piperton, Collierville, and Rossville in Tennessee provide public drinking waters supplies. Communities establish wellhead protection areas and plan to manage potential contamination sources within the wellhead protection area. Wellhead protection programs help to reduce cumulative impacts on ground water. Local communities can participate in additional wellhead and aquifer protections through Local, State and Federal regulations including the Safe Drinking Water Act, 42 U.S.C. §§ 300f to 300j-26.

3.18.7 Indirect and Cumulative Impacts to Floodplains

3.18.7.1 Indirect Impacts

The Memphis Regional IMF is located so as to avoid any direct impact to floodplains, as the location is outside of the Wolf River floodplain and areas identified in special flood hazard designated Zone A (Section 3.12.5). Like most communities, the areas most likely to experience indirect economic growth and development have ordinances limiting development within floodplains in accordance with the National Flood Insurance Program (NFIP).³⁷⁹ As noted in Section 3.18.7, ordinances limiting peak stormwater flows would effectively limit indirect impacts to floodplains from indirect development.

3.18.7.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF on floodplains when added to past, present, and reasonably foreseeable future changes in floodplains within the areas potentially affected by the project. Reasonably foreseeable growth and development unrelated to the project could impact floodplains; however,

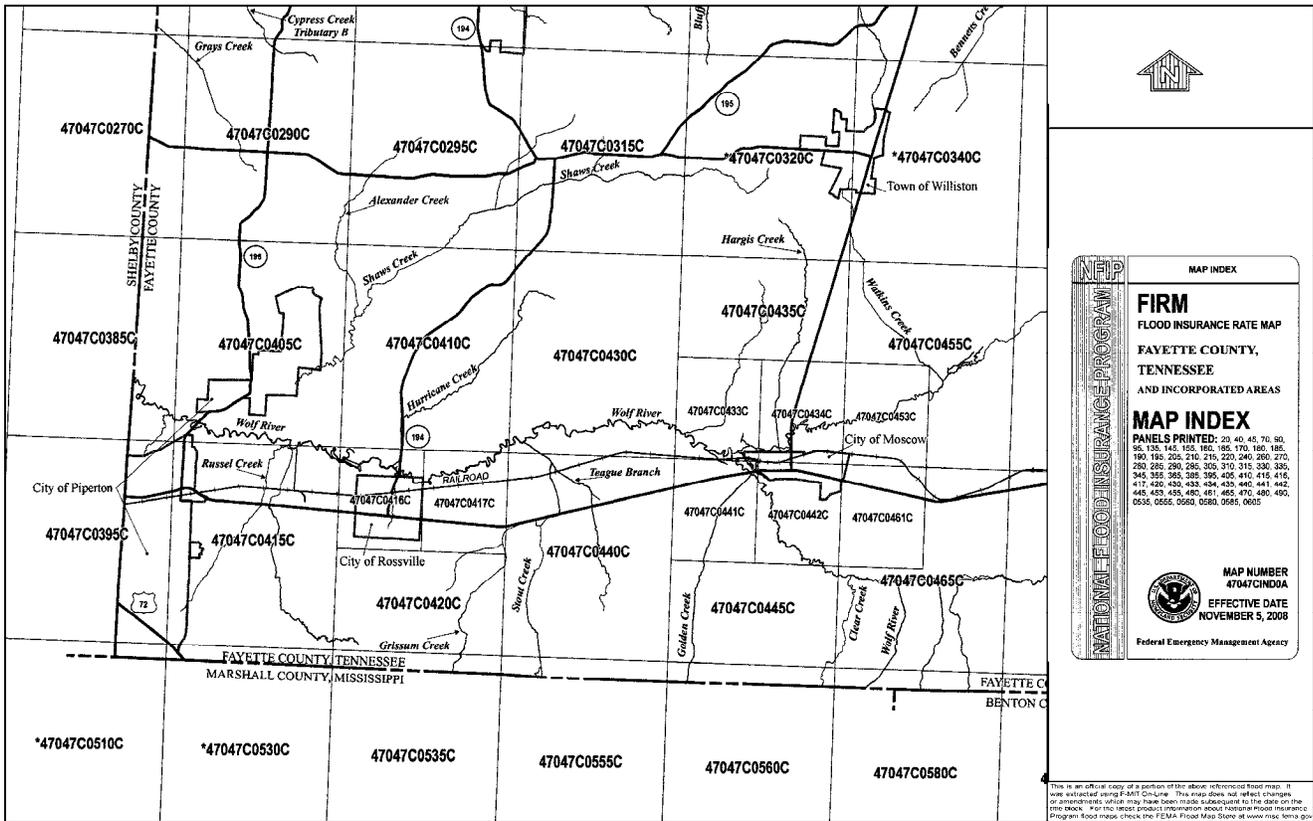
³⁷⁸ Tennessee, Drinking Water Supply Rule, 1200-5-1-34. Mississippi, Surface and Groundwater Use and Protection,

³⁷⁹ City of Piperton, Urban Growth Boundary Report, May 2001; County Code of Shelby, Tennessee, Chapter 30, Section 30-46 Policy Statements for Development, enacted 6 December 2004; Town of Collierville Code of Ordinances, 151.090: Zoning Regulations.

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as noted above the areas most likely to experience indirect economic growth and development have ordinances limiting development within floodplains in accordance with the NFIP. While it is possible that non-conforming projects could receive approval for development, NFIP recommendations require assessment to floodplains and mitigation measures to minimize or avoid floodplain impacts. Figure 3-49 listed the FEMA map numbers for the sheets within southwest Fayette County.³⁸⁰

Figure 3-49: FEMA Map Index for Southwest Fayette County



Ordinances limiting peak stormwater flows would effectively limit indirect impacts to floodplains from indirect development. For example, Chickasaw Trails Industrial Park, a neighboring commercial/industrial development, and the projected development along Industrial Road, have covenants, which restrict and guide development within their community.³⁸¹ These covenants include:

³⁸⁰ FEMA map # 47047CIND0A <http://map1.msc.fema.gov/idms/IntraView.cqj?KEY=78355964&IFIT=1>

³⁸¹ Covenants of Chickasaw Trail Industrial Park as Amended: March 3, 2005 and August 4, 2005.

- Front setback on all buildings of at least one hundred (100) feet from the front property line bordering on any road or street; other setbacks minimum of twenty-five (25) feet.
- Buffer areas along property lines for landscaping, drainage and utility easements, sidewalks, signage, street furnishings and hardware.
- Requirement to leave untouched as much as possible the existing vegetation and natural amenities of the terrain.
- Receive approval for any proposed clearing or vegetation removal.
- Receive approval injure, remove or destroy any live trees over 6" in caliper (diameter).
- Attractively landscaped and maintained to create a landscape buffer along all property lines.
- Constructed all driveways and parking areas to include adequate drainage facilities to dispose of all stormwater.
- Prohibit the discharge of untreated industrial wastes into a stream or open or closed drains.
- Receive approval by the applicable governing body and the appropriate state and federal agencies for all methods of industrial sewage and solid waste treatment and disposal.
- Strict adherence with regulations of state and federal law for discharge volume, quality, and strength of all liquid waste.
- Prohibited uses include junkyards or salvage yards; rubbish, garbage, or trash dumps; asphalt/concrete manufacture; manufacture or storage of explosives, fireworks, or gunpowder; slaughterhouses or stockyards; and manufacture of celluloid pyrosylin or pyroxylin products.

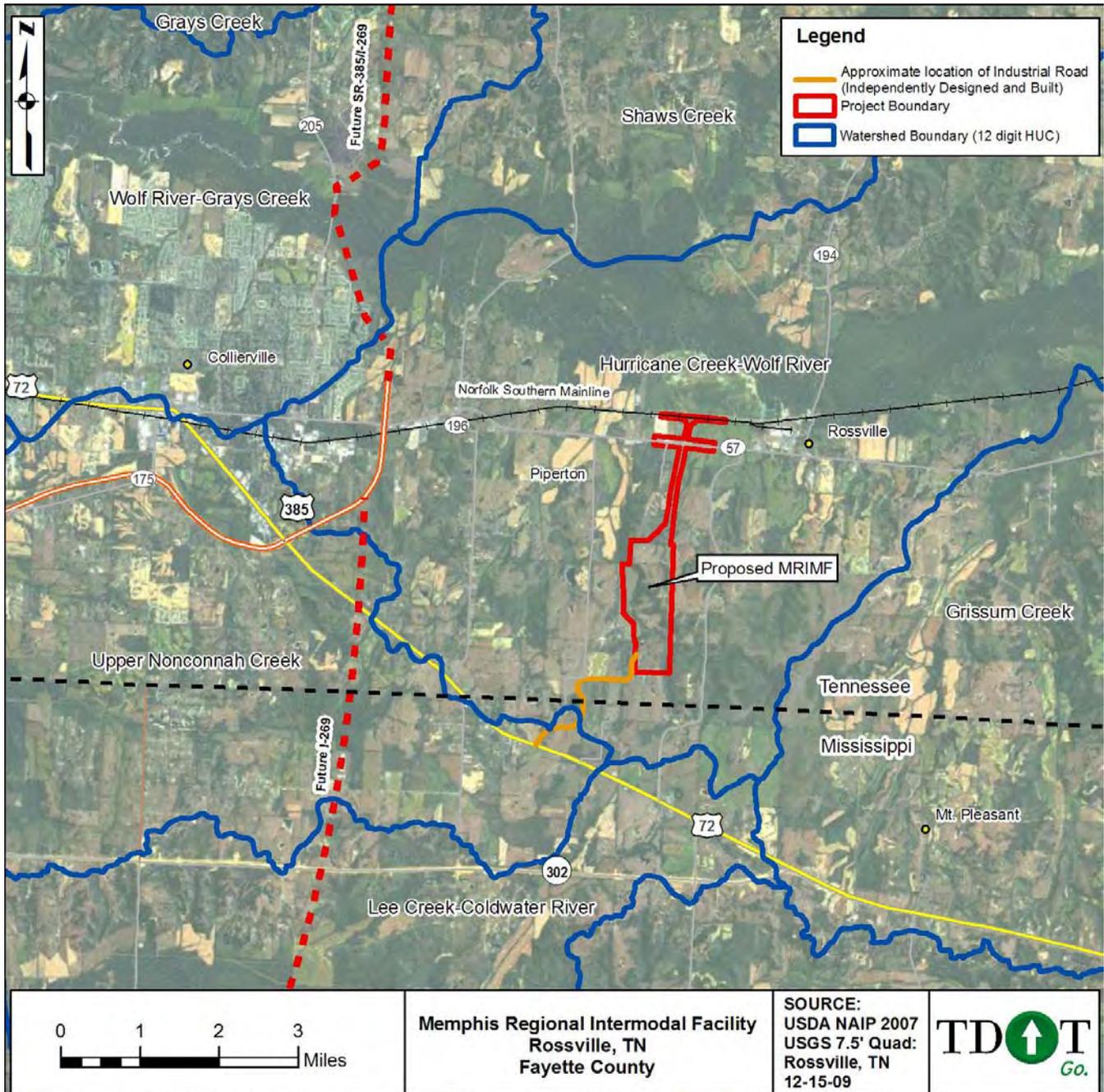
The watersheds within the cumulative impact area are the Wolf River, Nonconnah, and Upper Coldwater River Watersheds, Figure 3-50.

The Wolf River Watershed is divided into three 10-digit HUC subwatersheds. The Memphis Regional IMF, Rossville, and north of Piperton, Collierville, Germantown, etc. are in the 10-digit HUC Wolf River Subwatershed (0801021003), the largest of the three. This subwatershed

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covers 227,618 acres.³⁸² A further division of the watershed places the IMF, Rossville, and Piperton in the 12-digit HUC subwatershed of 0301 (080102100301). The 0301 subwatershed has contributing drainage area on both sides of the Wolf River (43,204 acres).

Figure 3-50: 12-Digit HUC Subwatersheds



³⁸² Insert WR TMDL E. Coli study reference

The part of Industrial Road and the Developer's proposed commercial/industrial development along Industrial Road, south of Piperton, Collierville, Germantown, etc. and Chickasaw Trail Industrial Park are within the Nonconnah Creek Watershed (HUC 08010211). The majority of the subwatershed is in Tennessee, but the drainage area starts in Mississippi. This subwatershed covers 177,412 acres.³⁸³

Additionally, where a development requires authorization under Section 404 of the CWA, assessment of floodplain impacts and consideration of mitigation measures to floodplain impacts is required consistent with EO 11988 and the 404(b) public interest review process. In light of the restrictions and regulatory provisions relating to floodplain impacts, no reasonably foreseeable adverse cumulative impacts to floodplains are expected.

3.18.8 Indirect and Cumulative Impacts to Noise

3.18.8.1 Indirect Impacts

Indirect noise impacts would potentially occur with respect to secondary development induced by the Memphis Region IMF. However, such development is not expected to have substantial noise impacts. It is anticipated that a primary type of indirect development induced by the Memphis Regional IMF would include warehousing, a form of light industrial use which typically has low level noise impacts. As noted in Section 3.18.1, it is anticipated that the location of secondary development would be within industrial parks and/or locations designated and zoned for industrial development, which would mitigate for noise impacts potentially affecting receptors such as residences.

3.18.8.2 Cumulative Impacts

Cumulative impacts associated with the proposed Memphis Regional IMF would include the incremental impacts on the noise environment when combined with reasonably foreseeable future changes in noise in the vicinity of the project. The noise technical analysis assessed direct impacts from the proposed Memphis Regional IMF and predicted impacts in the design year 2032.³⁸⁴ The analysis concluded that direct noise impacts associated with the Memphis Regional IMF would be minor and within acceptable levels. Any cumulative noise impacts in the immediate vicinity of the Memphis Regional IMF would need to be considered and evaluated based on

³⁸³ TDEC TMDL Nonconnah Creek, Jun 10, 2009

³⁸⁴ AMEC Earth & Environmental, "Memphis Regional Intermodal Facility, Noise Analysis," December 2009, On file with TDOT (Nashville, TN: AMEC).

the noise emission characteristics of the proposed developments.

The noise technical analysis concluded that due to anticipated growth in vehicle traffic resulting from planned growth in the Rossville UGB and Chickasaw Trail Industrial Park Development (an independent development)³⁸⁵ area along US Hwy 72, that traffic noise levels were anticipated to increase by up to 2 dBA without development of the proposed Memphis Regional IMF. The addition of traffic supporting the Memphis Regional IMF is not expected to appreciably increase the noise levels along US Hwy 72, with minor traffic noise increases of 1 or 2 dBA higher than the No-Build scenario.

Considering the rule of thumb that doubling of the sound energy produces a 3 dBA sound level increase, a change that is barely perceptible to human hearing, the traffic; therefore, general development in the US Hwy 72 corridor, would have to increase more than double from the predicted volumes in 2032 to noticeably increase cumulative future traffic noise levels.

3.18.9 Indirect and Cumulative Impacts to Cultural Resources

3.18.9.1 Indirect Impacts

As noted in Section 3.18.1, economic growth related to the proposed Memphis Regional IMF would potentially support residential and light industrial development in the project vicinity within Fayette, Shelby, and Marshall Counties. Indirect impacts related to secondary development are possible but the potential for indirect impacts is minimized due to the fact that land use and zoning provisions, as well as established industrial park areas, would limit industrial development to specific geographic areas. A historical and cultural resource study for the Memphis Regional IMF was conducted and in consultation with the SHPO it was determined that on-site impacts to cultural and historic resources were not substantial. A records search was conducted around Industrial Road, which is being independently constructed but would be utilized by the proposed Memphis Regional IMF and other industrial businesses. No archaeological resources either listed or eligible for listing on the NRHP were identified. In terms of significant cultural or historic resources in the vicinity of the proposed project, the cultural resources report identified

³⁸⁵ Marshall County Economic Development Authority, http://www.marshallcoms.com/Chickasaw_Trail/chickasaw.html.

the Rossville Historic District³⁸⁶ as a potentially significant resource.

Secondary development in the area surrounding the proposed intermodal facilities could result in additional impacts to unknown or undiscovered archaeological resources in the area. However, because it is not known where the development would occur, additional surveys would not be useful at this time.

Additional private development would not generally be required to comply with the cultural resource protections afforded by Section 106 for Federal actions. However, the SHPOs do afford a level of historic preservation and protection.

3.18.9.2 Cumulative Impacts

Any sites disturbed during construction of this project would add to the overall disturbance to archaeological resources from all past, present, and future construction projects in the area. All efforts will be made to avoid impacts to cultural resources. If any unknown cultural resources are discovered during construction, all activities in the immediate area would cease and the SHPO would be notified to determine the significance of the site. If potentially significant, the Tennessee Division of Archaeology and the American Indian tribes with interests in the area would be immediately contacted so that representatives may have the opportunity to examine and evaluate the materials.

3.18.10 Indirect and Cumulative Impacts from Hazardous Materials

3.18.10.1 Indirect Impacts

With respect to the commodities that may be transported through the Memphis Regional IMF, only very small (an estimated 3-4%) amounts of the total shipments could be hazardous.³⁸⁷ Furthermore, NSR does not move toxic-inhalants and other certain classes of hazardous materials by intermodal freight.

No known hazardous waste sites exist onsite or nearby. Therefore, indirect impacts associated with existing hazardous waste sites would not occur.

³⁸⁶ National Park Service, National Register of Historic Places, 2001, <http://www.nationalregisterofhistoricplaces.com/TN/Fayette/state.html>.

³⁸⁷ NS Technical Memo, Subject Memphis Regional Intermodal Facility – HazMat Traffic, dated January 15, 2010.

As noted in Section 3.1.1, the Memphis Regional IMF is likely to stimulate secondary economic development, but the nature of intermodal commodities and the IMF operation are such that it would be unlikely that businesses with large hazardous materials usage would be attracted by the presence of the Memphis Regional IMF. As discussed in Section 3.18.1.2, the types of development that normally follow the intermodal facilities are warehouses and distribution centers. Intermodal facilities do not normally attract heavy manufacturing or industries that use hazardous materials. Service businesses, such as gas stations, could locate in the area. Gas stations store petroleum or diesel fuel in underground storage tanks. Due to requirements for double walled tanks as well as leak detection systems, the potential for leaking underground storage tanks would be reduced. Any industrial development, which does include hazardous materials, would be subject to FRA, PHMSA, and RCRA regulations governing the storage, utilization, response to spills, and transportation and disposal of hazardous materials.³⁸⁸

As noted in Section 3.16, NSR has available immediate response resources on a 24/7 basis and a variety of other Local, State and Federal response authorities are also available. The project is not expected to indirectly affect hazardous materials or hazardous waste sites.

3.18.10.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF on hazardous materials and releases, when added to past, present, and reasonably foreseeable future changes in hazardous materials and releases within the areas potentially affected by the project.

As noted in Section 3.16 and in the indirect impacts assessment above, the likelihood of potential cumulative effects on hazardous materials and releases of the Memphis Regional IMF is low. Federal, state and local hazardous materials and waste regulations establish requirements for generating/managing hazardous materials/wastes. Zoning requirements in Fayette and Marshall Counties limit the types of businesses and their potential hazards. Accordingly, it is not anticipated that there would be sustainable cumulative impacts relating to

³⁸⁸ EPA 2008. RCRA Orientation Manual 2008: Resource Conservation and Recovery Act, Office of Solid Waste/Communications, Information, and Resources Management Division, 2008.

hazardous materials at the proposed Memphis Regional IMF.

3.18.11 Indirect and Cumulative Impacts to Visual Effects

3.18.11.1 Indirect Impacts

Construction of the Memphis Regional IMF may induce supportive industrial and residential development which could generate visual impacts away from the project area. Depending on the resident's view-shed, these impacts may or may not be viewed as negative. The impact is expected to be limited to those areas where land use change is anticipated, within the three county area identified in Section 3.18.1.

3.18.11.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF on aesthetic or visual resources when added to past, present, and reasonably foreseeable future changes in visual or aesthetic resources within the areas potentially affected by the project.

There would be limited potential for the Memphis Regional IMF to interact with other projects with regard to visual quality. The facility itself would be constructed with sight barriers or berms and screening vegetation, and would not further alter visual quality after construction is complete. The potential for an incremental contribution to reduction in visual quality would be limited by the screening vegetation, which would be compatible with the surrounding residential, industrial, and commercial development expected to be present.

Long-term cumulative impacts to visual resources could occur when Build Alternative 1 is combined with the development occurring along Industrial Road, the proposed SR-57 overpass or US Hwy 72. Depending on the perception of the residents in the area, these viewshed impacts may or may not be considered adverse.

3.18.12 Indirect and Cumulative Impacts to Air

3.18.12.1 Indirect Impacts

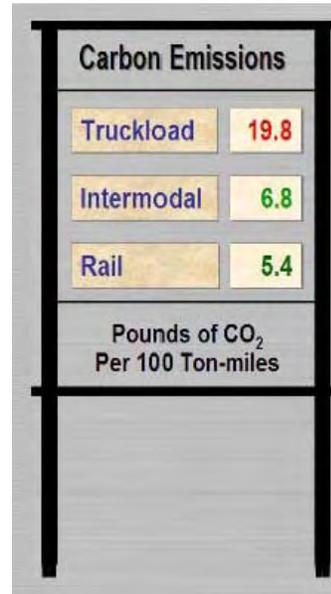
Short-term indirect air quality impacts could occur to the surrounding areas during construction due to the presence of construction vehicles and dust created during construction activities. Indirect air quality impacts are not anticipated to cause air quality standards to be violated.

3.18.12.2 Cumulative Impacts

Cumulative impacts associated with the proposed project would include the incremental impacts of the proposed Memphis Regional IMF on air when added to past, present, and reasonably foreseeable future changes in air within the areas potentially affected by the project.

Locally, vehicle emissions would increase with growth in the region that would occur with or without the Memphis Regional IMF. Throughout the region, as additional businesses are built in response to this and other development in the region, there would be the potential for increases in air emissions over a multi-county area. However, controls on emissions related to current and future air quality standards imposed on the region would be expected to mitigate these increases. Additional requirements imposed on vehicles to control emissions also should minimize air quality impacts from the additional growth.

For example, automobile manufacturers must meet corporate average fuel economy (CAFE) standards, which not only conserve fuel, but also reduce the motor vehicle tailpipe emissions of carbon dioxide, the principal GHG emitted by motor vehicles.³⁸⁹ The National Highway Traffic Safety Administration (NHTSA) estimates the CAFE standards established for model year 2011 cars and light trucks would save 887 million gallons of fuel and reduce GHG emissions by 8.3 million metric tons over the lifetime of these vehicles.³⁹⁰ In addition, the NHTSA and the EPA are jointly proposing to establish even stronger standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles for model year 2012 through 2016 that would reduce carbon dioxide emissions by an estimated 950 million metric tons and save 1.8 billion barrels of oil.³⁹¹



Regional transportation planning includes consideration of mobile source emissions. Operation of the Memphis Regional IMF would contribute to increased local emissions from trucks and decreased regional emissions from trucks. Transportation improvement projects, increased vehicle emission standards, and the expected increase in use of hybrid or other alternate fuel vehicles would result in decreased emissions on a per unit basis.

³⁸⁹ "Average Fuel Economy Standards, Passenger Cars and Light Trucks Model Year 2011," Final Rule, Federal Register Volume 74, No. 59, pages 14198 to 14242, 30 Mar 2009.

³⁹⁰ Average Fuel Economy Standards, Passenger Cars and Light Trucks Model Year 2011, Final Rule, Federal Register Volume 74, No. 59, pages 14198 to 14242, Monday, March 30, 2009.

³⁹¹ EPA 2009. Fact Sheet: EPA and NHTSA Propose Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, EPA-420-F-09-047a, September 2009.

The TDOT Long Range Planning Division has identified both Shelby County (Memphis) and Fayette County as priority counties for truck stop electrification sites. These sites provide truck drivers with alternatives to idling at truck stops in key freight traffic corridors and provide for an immediate positive impact on local air quality by reducing diesel exhaust emissions.³⁹²

The net contribution of the Memphis Regional IMF to regional air quality through interaction with increased vehicle numbers in the region would likely be minor. Emissions during construction and operation of the Memphis Regional IMF will be in compliance with the NAAQS.

New businesses and industries developed along Industrial Road, US Hwy 72, and SR-57 could generate air emissions and affect air quality. However, these businesses and industries would be required to comply with all applicable air quality laws and regulations.

Increased development, such as new commercial storage or warehousing, along Industrial Road or US Hwy 72 would likely increase short-term local air pollution due to emissions from construction vehicles, equipment-related particulate emissions, and fugitive dust emissions. These impacts are anticipated to be minor and would be short term in nature.

Cumulative air quality impacts could occur as a result of increased truck traffic on US Hwy 72; however, these impacts are anticipated to be minor as compared to overall traffic via this route and would be reduced as planned improvements to US Hwy 72 (increase to four lanes) are implemented. Therefore, Build Alternative 1 is not expected to result in negative cumulative impacts to air quality.³⁹³

Evaluation of transportation energy use indicates that highway vehicles account for 80% of the total transportation energy use with 18.7% accounted for by medium and heavy trucks. Rail, specifically Class I freight rail, accounts for only 2.1% of transportation energy use, as illustrated in Figure 3-51.³⁹⁴

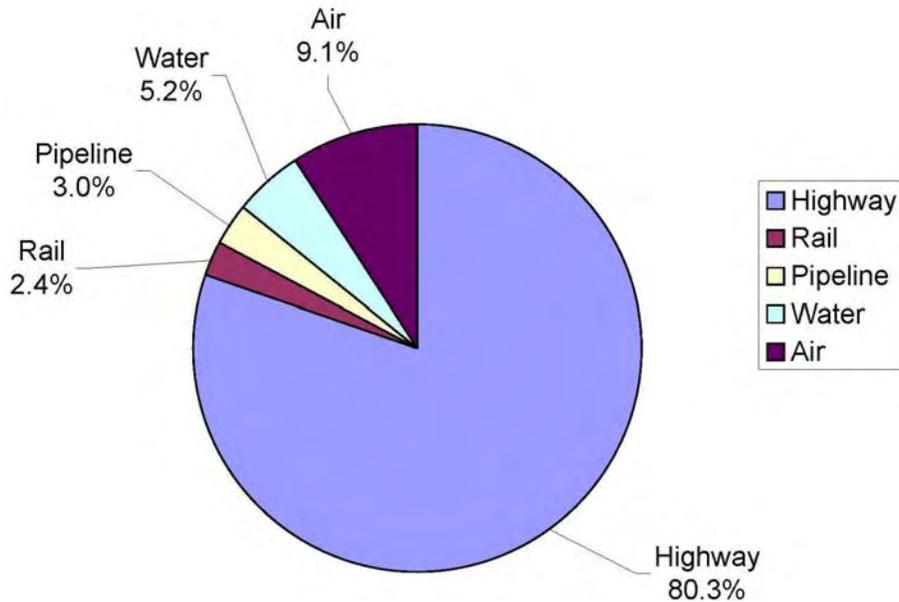
³⁹² TDOT 2009. Truck Stop Electrification Technology Grant Projects and associated Tennessee TSE Corridor map of priority areas, <http://www.tdot.state.tn.us/environment/policy/tse.htm>, October 2009.

³⁹³ AMEC Earth & Environmental, "Memphis Regional Intermodal Facility, Air Quality Technical Report," December 2009, On file with TDOT (Nashville, TN: AMEC).

³⁹⁴ ORNL 2009. Transportation Energy Data Book: Edition 28, ORNL-6984, cta.ornl.gov/data.

The transportation sector contributes approximately one-third of national carbon dioxide emissions.³⁹⁵ Because railroads are approximately three and a half times more fuel efficient than trucks on a ton-mile basis, the shipment of freight by rail has been shown to result in a corresponding decrease in carbon and other emissions. Given that the Memphis Regional IMF would handle an estimated 187,000 loaded containers and trailers per year by 2015 freight that would have otherwise gone via long-haul truck (between the Memphis region and Northeast U.S.), there would be a substantial reduction in carbon dioxide and other emissions on a national basis as a direct result of the increased efficiency of freight travel, and the associated reduction in fuel use that would be attributable to the operation of the Memphis Regional IMF.

Figure 3-51: Transportation Energy Use by Transportation Mode



The annual benefits attributable to the Memphis Regional IMF when it is fully operational in the year 2015 are expected to include nearly 187,000 long-haul truckloads diverted to rail, almost 23.8 million gallons of fuel saved, approximately 264,000 tons of carbon dioxide reduction, reduced costs for pavement maintenance (\$16.1 million); reduced costs for highway delays (\$81.4 million); reduced costs from fuel consumption and emissions (\$20.9 million); reduced costs for highway crashes and fatalities (\$20.7 million); and increases in rail-related wages and job creation/saved (\$91.2 million).³⁹⁶ The operation of the

³⁹⁵ ORNL 2009.

³⁹⁶ *Analysis of Truck to Rail Diversion Benefits – Memphis*, Cambridge Systematics, Inc., January 20, 2010.

proposed Memphis Regional IMF would reduce highway congestion and would ultimately reduce air emissions, including GHG emissions on a national basis.

3.19. Construction Impacts

During construction of the Memphis Regional IMF, some impacts are expected including: utility relocations, construction-related traffic, access to roads and properties, noise, and air quality. These impacts would generally be temporary in nature but could affect local residents, businesses and travelers. Proper planning and implementation of controls should help alleviate these impacts.



Construction impact controls would be integrated into the project's contract specifications and traffic control plans to avoid or minimize these inconveniences. Consequently, the project would have physical construction-related impacts, but with implementation of appropriate controls, construction impacts are expected to be insignificant.

The following construction issues are addressed below:

- Maintenance of traffic and access;
- Employment benefits;
- Waste disposal;
- Utility relocation;
- Discovery of unknown archaeological sites;
- Erosion control;
- Air quality;
- Noise; and
- Natural resources.



3.19.1 Maintenance of Traffic and Access

Traffic would be maintained on existing roadways during construction or detours would be developed. Access to all properties would be maintained.

During construction, truck and construction equipment traffic and worker vehicles would enter and exit the site primarily from the adjacent property to the west and using Industrial Road and US Hwy 72. Approximately 100 heavy

vehicles and 120 worker vehicles would enter and leave the project area on a daily basis. Construction vehicle traffic on SR-57 would be limited to equipment necessary to construct the SR-57 overpass and the lead tracks from SR-57 north to the NSR mainline (approximately 0.1 mile).

Also during this time, a temporary grade crossing of the lead tracks would be required along the SR-57 bypass. Approximately 30 to 40 work trains would use this crossing over an eight month period. Maximum work train frequency would occur when ballast is placed on track being constructed. During that period of construction, only one work train per day would use the crossing. Work train activity would be limited to daylight hours only and NSR would provide flagmen to warn the general public when the crossing would be occupied by a train. Industrial Road, US Hwy 72 and SR-57 are all designed for heavy truck traffic and should; therefore, experience little or no substantial damage due to construction-related traffic.



3.19.2 *Employment Benefits*

The construction timeframe for this project is estimated at two years. Construction activities may result in economic benefits to the local area during the period of construction that would include increased revenue to local businesses through the sale of construction supplies and materials and retail and service purchases by construction personnel.³⁹⁷

Construction jobs would be available for persons residing in the area. These short-term revenues and jobs are expected to be beneficial but not expected to be locally or regionally substantial.

It is not anticipated that any short-term adverse economic impacts would occur to individual local businesses due to construction of the SR-57 overpass. This work is not expected to cause major delays or traffic problems. SR-57 would remain open during construction with a slight detour or bypass. Access to businesses on SR-57 in the immediate area may require a re-route but overall volume should not be affected.



3.19.3 *Waste Disposal*

Solid waste could be generated by project construction (e.g., through demolition and removal of structures). The quantity of disposed waste would represent a negligible

³⁹⁷ Insight, May 2009.

proportion of the total that is currently directed toward local landfills.³⁹⁸

Any toxic and hazardous materials would be handled and used in accordance with package labels and manufacturer's directions. Wastes would be segregated, labeled, and stored in a manner that would prevent the release of hazardous constituents into the environment. In the unlikely event of a spill, emergency protocols for response would go into immediate effect including implementation of the contractor's site specific spill prevention control and countermeasure (SPCC) plan. In accordance with the site specific SWPPP, the contractor would designate specific areas for fueling and minor maintenance of vehicles. The designated area would not be adjacent to streams, wetland, or exposed areas of Memphis Sand. The surface soils at vehicle areas would be checked daily for signs of spillage or staining. Temporary containment would be used as needed during fueling operations. Any fixed fueling station and/or tank storage would have a containment system to prevent runoff from potential spills or tank rupture. Spill kits would be readily available in these areas. Machinery would be serviced or repaired to prevent fluid leaks. Major maintenance of construction equipment would not occur on site. The contractor would dispose of waste materials and their containers in accordance with applicable State and Federal regulations.³⁹⁹

Disposal of excess material would be the responsibility of the contractor who would be contractually required to handle and dispose of the material in accordance with TDOT's *Standard Specifications for Road and Bridge Construction*.

3.19.4 Utility Relocation

The relocation of utilities would be included in final design plans. The City of Rossville would prepare plans for the relocation of its utilities that would be impacted by the Memphis Regional IMF. Existing utilities along SR-57 include electrical, telephone, cable, water, gas and sewer lines. A 12" water main and a 4" gas main are located parallel to SR-57 on the north side with an 8" sewer force main parallel to SR-57 on the south side. A water booster station along SR-57 would need to be moved.



³⁹⁸ TDEC Division of Solid and Hazardous Waste Management, http://www.state.tn.us/environment/swm/solid_waste/.

³⁹⁹ EPA 2005. Managing Your Environmental Responsibilities: A Planning Guide for Construction and Development, Office of Compliance, EPA/305-B-04-003, April 2005.

The project would fund utility relocations, including those described above. NSR would coordinate with appropriate officials to avoid or minimize damage or disruption of existing service during construction of the SR-57 overpass, lead tracks, and Memphis Regional IMF. Impacts are anticipated to be minimal and short term. TVA transmission lines that cross the proposed location of lead tracks would not require relocation. In the TVA transmission line corridor, another underground gas transmission line would need to be bridged by the lead tracks.



The Developer would be responsible for funding the cost of utility connections to Industrial Road and the Memphis Regional IMF.

3.19.5 Discovery of Unknown Archaeological Sites

If archaeological materials are uncovered during construction, all construction work in the immediate area of the find will cease until appropriate clearances have been obtained.

The SHPO Tennessee Division of Archaeology and the American Indian tribes with interests in the area would be immediately contacted so that representatives may have the opportunity to examine and evaluate the materials.

Should earth fill be required for this project, the applicable TDOT borrow provisions would be followed.

3.19.6 Erosion Control

The project would disturb land that has a tendency to erode. The contractor would be required to employ BMP to minimize the impacts of point and non-point source discharge. An erosion control plan would be formulated in accordance with the TDOT's *Standard Specifications for Road and Bridge Construction* and would include the following measures:

- Temporary erosion-control devices, such as silt fences, check dams, sediment traps, sediment basins, burlap, jute matting, grading, seeding, and sodding, would be used to minimize erosion and sedimentation.
- Minimize disturbed areas with vegetation being left undisturbed outside of the clearing limits.
- Construct and stabilize fill slopes during the growing season. The majority of the fill slopes



would be constructed with a flatter (3:1) slope to reduce erosion potential.

These measures would be implemented to the extent that they conform to provisions of the project permits. Due to the size of the project and the construction methods planned, the project must have more than 50 acres disturbed at one time. The project would be phased so that the entire 440 acres to be disturbed are not active at one time. Due to the acreage in each phase, the project would be required to obtain an Individual NPDES Construction Permit. As part of the individual permitting process, additional reviews of the site specific SWPPP would occur. When writing the individual permit, TDEC can place additional requirements and/or restriction on the construction activities, such as monitoring. The permit requirements and provisions will be followed to meet water quality standards.



Construction of Build Alternative 1 would employ BMP to protect the recharge area and the quality of the water that may eventually enter the groundwater regime. Specifically, during construction, appropriate erosion and sediment controls such as basins, swales, silt fence, rock check dams, would be used to prevent suspended solids from entering surface waters. Moreover, fuel or lubricant spills that could potentially occur would trigger immediate response and cleanup via the contractor's spill prevention control and countermeasure plan.

3.19.7 Air Quality

Construction operations could temporarily contribute to air emissions. The primary emissions include fugitive dust (i.e., particulate matter, either PM_{10} or $PM_{2.5}$) resulting from the soils at the site becoming airborne and exhaust emissions from construction equipment. Construction equipment would comply with applicable requirements for control of MSAT. Additional tasks to complete the proposed project would lead to the short-term, temporary emissions of evaporative VOC emissions (e.g., asphalt paving and striping of roadways).



Measures to control fugitive dust emissions during construction activities would include:

- Site grading would promote good drainage and minimize the accumulation of mud on equipment tires that could be transferred to road surfaces, which could otherwise generate fugitive dust from wind erosion, traffic, or heavy equipment operation.

- Ground surfaces would be stabilized as soon as practical to prevent wind erosion.
- Those areas that would revert to maintained grounds would be reseeded as soon as practicable to reduce the potential for fugitive dust generation.
- Clearing limits would be clearly marked to limit disturbance beyond what is required to construct the facility.
- Bare ground in the construction area and on construction roads would be wetted if warranted to minimize fugitive dust from vehicle traffic during dry conditions.
- Roadways used to access the site during construction would be wetted to minimize fugitive dust from traffic or heavy equipment operation.
- Open or lightly traveled areas would either be paved, covered in hard packed aggregate, or vegetated to minimize fugitive dust emissions.
- Construction roads and lay-down areas would be stabilized with suitable materials like stone dust to prevent wind erosion and dust generation by heavy equipment.
- Stone-covered construction entrance and exit roads would be maintained to reduce movement of materials off-site on vehicle tires.
- Cover or wet down truck loads of earth to prevent windblown dust.
- Applicable air pollution control regulations with regard to open burning⁴⁰⁰, Hazardous Air Contaminants⁴⁰¹, and the operation of fueled vehicles will be followed.
- Where required, permits and operating certificates will be obtained.
- Fuel burning construction equipment would be maintained in proper mechanical order to reduce emissions.



⁴⁰⁰ TDEC regulations as specified in Chapter 1200-3-4.

⁴⁰¹ TDEC regulations as specified in Chapter 1200-3-11.

3.19.8 Noise

Construction activities related to the proposed project are expected to temporarily increase noise levels within the project limits during the period of construction activities. The construction schedule is estimated to be approximately 2 years. Short-term noise levels from the proposed construction activities are estimated from the standard noise emission levels of construction equipment expected to be used (Table 3-21).⁴⁰²

Table 3-21: Standard Noise Emission Levels for Construction Equipment

Construction Equipment	Noise Level (dBA) 50' from Source	Construction Equipment	Noise Level (dBA) 50' from Source
Air Compressor	81	Generator	81
Asphalt Cutting Saw	90	Grader	85
Backhoe	80	Jack Hammer	85
Chain Saw	76	Loader	85
Compaction Equipment	82	Locomotive (1000' cars) 30 mph	80
Concrete Mixer	85	Paving Machine	89
Concrete Pump	82	Truck (3-5 axle)	88
Dozer	85	Rubber-tired Roller	74
Excavator/Shovel	82	Scraper	89

Source: FTA 2006

Perceived noise levels associated with a specific construction activity would depend on several factors, including: the type of activity; the types and number of equipment in use; the noise level generated by the various pieces of equipment; the duration of the activity; the distance between the activity and any noise-sensitive receptors; and shielding or absorption effects that might result from existing buildings, topography, or vegetation. Estimates of sound attenuation from potential construction activities for various distances from the proposed construction equipment are presented in Table 3-21.⁴⁰³

Based on noise emission levels at various distances presented in Table 3-22, anticipated construction equipment utilized for the proposed project could generate sporadic noise levels up to 70 dBA at the nearest

⁴⁰² Tennessee Environmental Procedures Manual, TDOT Environmental Division, April 2007.

⁴⁰³ FTA 2006.

residences on Neville Road (800 feet from lead tracks), thereby creating temporary construction noise impacts to some area residents.

Construction-related traffic is unlikely to have a substantial noise impact on the US Hwy 72 corridor during the proposed construction period. However, construction-related trucks and workers traveling on Industrial Road could produce traffic noise levels 5 to 8 dBA greater than the existing background noise levels at the closest residences (335-900 feet), thus creating temporary minor traffic noise increases for residences in the vicinity of Industrial Road.

Table 3-22: Predicted Attenuation of Potential Construction Activities

Noise Levels (dBA) at 50 feet from Construction Activities	Distance from Construction Activity (feet)	Range of Attenuated Noise Levels (dBA)
80 (Single typical equipment)	100	74
	200	68
	400	62
	800	56
	1600	50
90 (Single loud equipment)	100	84
	200	78
	400	72
	800	66
	1600	60
95 (Multiple equipment at 90 dBA each)	100	89
	200	82
	400	76
	800	70
	1600	64

Source: FTA 2006

NSR has also considered noise mitigation measures to minimize noise impacts during facility construction, including:

- The proposed earthen berm noise barriers would be constructed as early in the construction process⁴⁰⁴ as is feasible to reduce construction

⁴⁰⁴ Due to property/ownership issues, NSR would not be able to construct a berm on the west side of the lead tracks until after October 2010.

noise impacts to receivers expected to be benefited.

- To the maximum extent practicable, the use of multiple pieces of construction equipment simultaneously at a concentrated area would be limited. Construction activities would be spread along the linear stretch of the proposed project area rather than being focused at a single point.
- Restrict the use of the noisiest equipment (e.g., jackhammers, pile drivers, and other impact equipment) during evening and night-time hours, or the simultaneous use of multiple pieces of noisy equipment at a given location.
- Construction equipment and vehicles used to implement this project would be properly maintained and equipped with applicable noise control elements (e.g., mufflers). Noise control devices, such as mufflers, should meet the manufacturers' specifications for the equipment and/or vehicles on which they are used. All internal combustion engines shall be equipped with a muffler that meets the manufacturers' specifications.
- Illuminated and flashing traffic controls and construction signs located near residences shall use a quiet power source such as solar or batteries; internal combustion engines shall not be used for illuminated and flashing traffic controls and construction signs in areas of residential usage.
- Construction traffic would be routed away from noise-sensitive areas, where feasible, and Industrial Road would be the primary point of entry.
- Rail-based construction equipment would be operated at low speeds on the lead tracks during construction to minimize noise emissions.
- A staging area would be established to store construction equipment during inactive hours to minimize daily movement of construction equipment off and on the site.
- Construction equipment and vehicle engines would be shut off whenever possible.



- Concerns or complaints received from potentially affected residences would be addressed immediately and wherever possible corrective actions would be taken for issues that impose intrusive construction noise.

3.19.9 Natural Resources

Clearing and grading of the site for construction purposes would directly impact flora and fauna within the limits of disturbance for the facility and tracks. Vegetation within the facility footprint would be cleared and grubbed. Individual wildlife may be impacted during construction depending on the when construction occurs and the mobility of resident wildlife. Species occupying habitat within impoundments located within the facility footprint would be impacted (i.e., fish, turtles, aquatic invertebrates). More mobile animals (i.e., raccoons, birds) would likely vacate the area upon commencement of construction activities.



Clearing and grading of the site for construction purposes would directly impact surface waters within the limits of disturbance for the facility and tracks. The Phase 1 EC Plans within the site specific SWPPP would include appropriate BMP to protect and divert surface waters during clearing operations. These BMP would include silt fence with backing and diversion channels with check dam. The Phase 1a and 2 EC Plans within the site specific SWPPP would include appropriate BMP to protect and divert surface waters during grading operations. These BMP include sediment basins, sediment traps, check dams, polymers, and rolled matting. The permanent and temporary impacts to streams and wetlands within the facility would be clearly defined and regulated as specified in the TDEC and USACE permitting process.

Within the limits of disturbance for the facility and track, exposure of Memphis sands could occur during grading operations. The most likely area of exposure would be in cut sections of the operation yard along the eastern edge of the facility. If this occurs, stormwater would be directed away from the feature during grading. The area would be designed for additional processing during final grading. If the area is located beneath the proposed operational yard, a less permeable layer of compacted clayey soil would be placed over the exposed sand layer before final grading as identified in Section 3.12.6. If the area is located in an open space or 'green space' within the facility, the area would be graded so that stormwater is directed away from the feature.

3.20. Impacts Summary

Table 3-23 provides a summary of the potential impacts of Build Alternative 1.

Table 3-23: Summary of Potential Impacts from Build Alternative 1

IMPACT CATEGORY	POTENTIAL IMPACTS
<i>Project Features</i>	
<i>Project Size</i>	Facility is approximately 7,000 feet long by 2,400 feet wide.
<i>Estimated Area</i>	Property is 650 acres; Facility is 380 acres; 233 acres of paved surface; 76 acres of track and 71 acres open (green space).
<i>Estimated Cost</i>	\$129 million.
<i>Land Use</i>	Conversion from agricultural to industrial. Facility within Rossville UGB and zoned industrial. Industrial Road and surrounding ~1,500 acres being zoned commercial/industrial.
<i>Transportation</i>	Improved efficiency in transporting freight. Reduced truck traffic and associated congestion and emissions between eastern U.S. and Memphis. In 2032, US Hwy 72 will operate at LOS C including direct, indirect, and cumulative impacts.
<i>Farmland (prime/unique farmland/acres used)</i>	311 acres of prime and unique farmland/330 acres total farmland.
<i>Social and Economic</i>	
<i>Social/Community Cohesion</i>	No Adverse Effects.
<i>Community Services</i>	No Adverse Effects.
<i>Environmental Justice</i>	No Adverse Effects.
<i>Residential Relocations</i>	No Relocations.
<i>Business Displacements</i>	No Displacements.
<i>Economic</i>	Approximately 140 new full-time jobs plus temporary construction jobs. Economic impact of \$2.7 billion by 2020 and growth of 6,186 new or benefited jobs.
<i>Air Quality</i>	No Adverse Effects; Minor increase in emissions of criteria pollutants and MSATs expected.
<i>Noise</i>	No Adverse Effects; 1 affected site with 3 residents.
<i>Cultural Resources</i>	
<i>Architectural/Historic</i>	No Adverse Effects.
<i>Archaeological Sites</i>	No Adverse Effects.
<i>Recreational Resources</i>	No Adverse Effects.
<i>Section 4(f) Resources</i>	No Section 4(f) Resources Used.
<i>Section 6(f)</i>	No Section 6(f) Funded Land On-site.

Table 3-23: Summary of Potential Impacts from Build Alternative 1

IMPACT CATEGORY	POTENTIAL IMPACTS
<i>Natural Resources</i>	
<i>Floodplains</i>	Zone A – 32 acres within project boundary; 1 acre of impact to be minimized in design. Zone AE – 4 acres within project boundary; 0 acre of impact.
<i>Ponds</i>	6 ponds totaling approximately 10 acres of impact; however, 3 ponds (totaling 5.6 acres) are non-jurisdictional waters of the U.S. and would not require compensatory mitigation. Impacted lengths to jurisdictional ponds are included as stream impacts.
<i>Stream Impacts (Feet)</i>	5,352 linear feet; all impacts will be mitigated.
<i>Wetlands (Wetland/Acres Impacted)</i>	9 wetlands / 7.31 acres potentially impacted; all impacts will be mitigated.
<i>Federally Threatened or Endangered Species</i>	None On-site.
<i>Aquifer/Groundwater</i>	No Adverse Effects. Impacts could occur from a spill of minor quantities of hazardous materials transported through or used by IMF. Stormwater system would allow positive control of discharges from the site and that would mimic pre-development hydrology.
<i>State-Listed Species</i>	No Adverse Effects.
<i>Invasive Species</i>	No Adverse Effects.
<i>Wild & Scenic Rivers</i>	None On-site.
<i>Visual</i>	No Adverse Effects.
<i>Pedestrian and Bicycle</i>	SR-57 overpass includes paved shoulders that will accommodate both pedestrians and bicyclists. Minor positive benefit.
<i>Energy</i>	Construction will require diesel for equipment. Operations will require diesel and electricity. However, 23.8 million gallons of fuel are estimated to be saved on an annual basis due to intermodal transportation mode.
<i>Hazardous Materials</i>	No Adverse Effects. No existing hazardous materials sites identified within footprint. Only minor quantities of hazardous materials transported through IMF.
<i>Permits</i>	(1) NPDES Construction General Permit (if needed). (2) NPDES Stormwater Individual Permit for Construction. (3) USACE Individual or Nationwide Permit for Impacts to Waters of the U.S. (including wetlands and aquatic resources). (4) ARAP (TDEC) for Construction and Removal of Minor Road Crossings. (5) ARAP (TDEC) - General Permit for Minor Alterations to Wetlands.

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4 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

The public, agencies, and other stakeholders have been given opportunities to provide input during project development in accordance with NEPA, CEQ, TDOT and FRA/FHWA regulations and guidance, as well as the TESA processes. This section describes the agency coordination process and public involvement activities that were conducted for this project. The key issues that have been identified through the coordination activities are described.

4.1. Project Initiation and Coordination

4.1.1 Project Initiation

One of the first steps in the NEPA process involved the development of a plan to ensure that the public, agencies and other stakeholders are given the opportunity to provide input into project development and development of environmental documentation. On July 31, 2009, TDOT notified the FHWA in writing of its intent to initiate the environmental document for this project under the NEPA process. Prior to this, NSR conducted several public meetings to gather local input regarding a proposed IMF in the area and to identify issues regarding the project and location.

4.1.2 Coordination Packages

TDOT prepared a Coordination Package which was distributed to agencies, organizations and interested parties on September 11, 2009. The package included a transmittal letter, a project summary and a project vicinity map. The project summary identified the preliminary purpose and need for the project, alternatives being considered, traffic counts from Industrial Road onto US Hwy 72, and environmental concerns that would be considered throughout the environmental documentation process.

Agencies and organizations receiving the coordination package are listed below. Agencies or organizations with a (C) and/or (P) by their names indicate whether the group is a cooperating (C) or participating (P) organization in the NEPA process for the project. Agencies without a designation by their names did not elect to participate in the NEPA process.



How are lead, participating, and cooperating agencies defined by the National Environmental Policy Act (NEPA)?

Lead Agency: *An agency or agencies responsible for compliance with NEPA.*

Cooperating Agency: *Any Federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative.*

Participating Agency: *Any agency with an interest in the project. The standard for participating agency status is more encompassing than that for cooperating agency status. Therefore, cooperating agencies are, by definition, participating agencies. But not all participating agencies are cooperating agencies.*

Federal Agencies

- U.S. Department of Transportation Federal Highway Administration (C) (P)
- U.S. Army Corps of Engineers (USACE) (C) (P)
- Water Resources Division, U.S. Department of the Interior (DOI) (P)
- U.S. Fish and Wildlife Service (FWS) (P)
- Natural Resources Conservation Services (NRCS), U.S. Department of Agriculture (P)
- Wetland Reserve Program Coordinator, U.S. Department of Agriculture (USDA) (P)
- Tennessee Valley Authority (TVA) (P)
- Environmental Protection Agency (EPA) Region 4 (P)
- Federal Emergency Management Agency (FEMA)
- Office of Environmental Policy and Compliance, DOI
- U.S. Geologic Survey (USGS), DOI
- Office of Surface Mining, DOI
- National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce (DOC)
- Federal Aviation Administration (FAA), Memphis Airport District Office

State Agencies

- Mississippi Department of Transportation (C) (P)
- Tennessee Department of Environment and Conservation (TDEC) (P)
- Tennessee Wildlife Resource Agency (TWRA) (P)
- Tennessee Department of Agriculture (P)
- Tennessee State Historic Preservation Office (SHPO)
- Tennessee Department of Education
- Mississippi State Historic Preservation Office (SHPO)

Local Agencies

- Department of Economic & Community Development, Local Planning Assistance Office, West Tennessee Region (P)
- West Tennessee Regional Planning Office (RPO) (P)
- Regional Planning Office (RPO) Southwest Tennessee Development District (P)
- RPO, Memphis Area Association of Governments (P)
- Memphis Metropolitan Planning Office (MPO), Memphis-Shelby County Department of Regional Services (P)
- Mayor of Fayette County (P)
- Fayette County Planning and Development Office (P)
- Fayette County Chamber of Commerce (P)
- Mayor of Rossville (P)
- Mayor of Piperton (P)
- Mayor of Collierville (P)

Organizations:

- Tennessee Trails Association
- Tennessee Chapter of the Sierra Club
- Chickasaw Group, Sierra Club (Memphis Area)
- The Nature Conservancy
- Tennessee Wildlife Federation
- Tennessee Environmental Council
- Southeast Rivers and Streams Projects, World Wildlife Fund

Section 106 Consulting Parties:

- Mayor of City of Rossville
- Mayor of Fayette County
- Alabama-Quassarte Tribal Town

- The Chickasaw Nation
- Choctaw Nation of Oklahoma
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Jena Band of Choctaw Indians
- Kialegee Tribal Town
- Mississippi Band of Choctaw Indians
- Muscogee (Creek) Nation
- Poarch Band of Creek Indians
- Quapaw Tribe of Oklahoma
- Shawnee Tribe
- Thlopthlocco Tribal Town
- Tunica-Biloxi Indians of Louisiana, Inc
- United Keetoowah Band of Cherokee Indians

4.2. Agency Input

4.2.1 Initial Agency Coordination

The invitations to participate in the NEPA process were sent to all of the above Federal, State, and Local agencies. Included in the invitation was a copy of the Coordination Package. None of the agencies provided comments to the actual Coordination Package.

Table 4-1 summarizes comments received from the agencies before starting the TESA Process as described in Section 4.2.3. These letters and emails are in Appendix A.



Table 4-1: Agency Comments

Agency	Agency Comments	Responses
DHS/FEMA Region IV (1)	<p>FEMA's authority and participation here is limited to informing and advising the lead Federal funding agency (or authorized designee), for them to make their project-specific regulatory compliance evaluation and determinations under Presidential Executive Order 11988 (EO 11988) for floodplain management. EO 11988's 8-step review process helps project decision makers to make more informed decisions about their project's risks, options, costs, feasibilities, plans, designs, etc. EO 11988 requires documentation showing the project EO 11988 review was done, and the agency's reasoning behind their project-specific EO 11988 determinations. The project EO 11988 eight-step review and documentation can be integrated into the project NEPA review process and review document.</p>	<p>Acknowledge decline invitation to participate. FEMA's website was used to collect information about the floodplain within the Build Alternative. EA Section 3.11 discusses the floodplain</p>
DHS/FEMA Region IV (2)	<p>If the project may affect or be affected by a 100-year jurisdictional floodplain, then the lead Federal agency (or designee) would need to consult with all potentially affected communities' Floodplain Administrators. For "critical facility" projects (e.g., police, fire, hazmat, public records, medical, nursing home, emergency shelter, water or wastewater treatment, etc.), that would be if the project may affect or be affected by the 500-year jurisdictional floodplain.</p>	<p>AECOM, the design engineer, has met with the town of Rossville through Fisher and Arnold, Inc., the Town of Rossville's consulting engineers and planners, to discuss potential floodplain issues.</p>
DHS/FEMA Region IV (3)	<p>If applicable for the Memphis Regional IMF, that would require consultation with the Floodplain Administrators for Fayette County, and possibly for the City of Rossville, for their determinations. Both the County and the City participate in the National Flood Insurance Program (NFIP). Their Floodplain Administrators have floodplain management authority and responsibility for their jurisdictions. They may have different primary job titles. They may work in planning, zoning, development, public works, or another local government office.</p> <p>Search starting points: Fayette County: http://www.fayettetn.us/, City of Rossville: http://www.fayettetn.us/Towns&Cities/Rossville.htm.</p> <p>Each NFIP-participating community (county, municipal, or tribal) has a floodplain management ordinance modeled on FEMA's regulations at 44 CFR Part 60.3.</p> <ol style="list-style-type: none"> 1) Such ordinances require anyone proposing "development" within a specific jurisdiction to get a permit from that jurisdiction before starting any project physical work. 2) Such ordinances also require notification of adjacent communities and the State NFIP Coordinator before altering a watercourse (if applicable). 3) Affected communities' floodplain management regulations and related flood insurance policy holders' premiums are both tied to mapped flood risks. When physical environment alterations affect flood risks, the corresponding Flood Insurance Rate Maps (FIRMs) must be revised as outline in 44 CFR part 65 to keep flood risk maps current. 	<p>Based on AECOM, the design engineer, consultation with Fisher and Arnold, Inc., the Town of Rossville's consulting engineers and planners, the project will be designed for a no-rise condition upstream and downstream of the site. Any floodwater increase would be confined within the project footprint.</p>

Table 4-1: Agency Comments

Agency	Agency Comments	Responses
FAA	No airports will be impacted. The proposed facility is beyond jurisdiction of FAA.	Acknowledge.
USGS	USGS declines request to be an official participating agency. USGS is a source of scientific data and expertise concerning the natural resources of the project area.	USGS sources have been used to collect information on the Memphis Sand aquifer.
NRCS	Provide Farmland Rating Form and request to determine if any impacts to Wetland Reserve Program to Dept of Agricultural. Accept invitation to be participating agency.	The Farmland Rating Form (Appendix A) and the request to determine any impacts to the Wetland Reserve Program were submitted to NRCS. EA Section 3.2 discusses farmland impacts and Section 3.12 discusses wetland impacts.
TWRA	Accept invitation to participate. Current concerns are potential environment impacts associated with potential stream, wetland, and floodplain impacts, and impacts to federally and state listed species that may occur due to the construction of this project.	Acknowledge participation. The Ecology Report is on file with TDOT. Impacts to natural environment will be avoided, minimized or mitigated during project design. Additional explanation is in EA Section 3-11.
TN Historical Commission	Project must follow requirements of Section 106 of the National Historic Preservation Act.	TDOT published Section 106 letters.
Town of Rossville, TN	Accept invitation to participate. Concerned about project from a land use standpoint and its impact on our existing infrastructure. Request that Fisher & Arnold, Inc., who serves as the Town's consulting engineers and planners, be included in your distribution list for all of the various reviews, coordination meetings and field reviews as appropriate.	AECOM, the design engineer, has met with Fisher and Arnold, Inc., the Town of Rossville's consulting engineers and planners. Town of Rossville will receive future mailings and reviews.
EPA (1)	1. NEPA Level of Analysis: EPA is concerned with TDOT FHWA pursuing an Environmental Assessment (EA) as opposed to an Environmental Impact Statement (EIS). The proposed project will have a large imprint of 570 acres and will increase traffic within the community. The project also has the potential to substantially impact water resources and increase air toxics. EPA recognizes the expeditious timeline of pursuing this project; however, environmental and socioeconomic impact analysis and public outreach should be proportional with the level of impacts. EPA recommends that TDOT/FHWA conduct a robust analysis of environmental and socioeconomic impacts (direct, indirect and cumulative), comprehensive mitigation planning and pursue an aggressive public outreach campaign. EPA also recommends that TDOT/FHWA fully articulate the rationale for pursuing an EA versus an EIS in the NEPA document.	TDOT and FRA in conjunction with FHWA determined that an Environmental Assessment (EA) is the appropriate NEPA document based upon a preliminary assessment of impact. EA Section 3 provides a robust analysis of environmental and socioeconomic impacts, indicating that the project will comply with all EPA requirements protecting water, air, and other environmental resources. A robust direct, indirect, and cumulative impact analysis in accordance with EPA, FRA, FHWA, CEQ, and other NEPA guidance has been performed, and a robust comprehensive mitigation package addressing the proposed impacts, has been developed. Robust public input procedures have been followed. Upon review of the final draft of the EA, FRA will make a determination as to whether the project will result in substantial impacts warranting elevation to an Environmental Impact Statement (EIS) and articulate its rationale

Table 4-1: Agency Comments

Agency	Agency Comments	Responses
EPA (2)	<p>2. Mobile Source Air Toxics: Evaluation of project of this magnitude should include consideration of the impacts of air toxics emissions on nearby population centers and sensitive populations. The environmental assessment should include a detailed inventory of air toxics emissions (including diesel emissions) from both stationary and mobile sources that serve the facility, including the locomotives, switchers, tractors, and support equipment, etc. It should also include a screening level evaluation of the potential impacts of these emissions on neighboring populations at each of the locations being considered for the facility in order to allow an informed comparison of the level of acceptability of each of the locations being considered. The screening level evaluation could be conducted using the approach described in EPA's Air Toxics Risk Assessment Reference Library (ATRA Library). We refer the sponsor of the project to the ATRA Library, Volume 1 Section 3.3.3 for further details (http://epa.gov/ttnlfera/risk_atra_main.html). The evaluation should include a description of the recent literature concerning the impact of air toxics emissions on near-roadway receptors, including sensitive receptors such as children and the elderly. The evaluation should also describe the methods that will be used to mitigate any unavoidable emissions and impacts.</p>	<p>A Mobile Source Air Toxics (MSAT) analysis was completed pursuant to the FHWA's Interim Guidance Update on MSAT Analysis in NEPA Documents, September 30, 2009. MSAT analysis is summarized in the EA Section 3.6 and presented in the Air Quality Technical Report on file with TDOT.</p>
NRCS (1)	<p>The Agency agree with the proposal's intent to select the least environmentally damaging alternative in the construction of the facility.</p>	<p>Acknowledge.</p>
NRCS (2)	<p>Major streams, wetlands, and cultural resources should be avoided if at all possible. The fewest acres of these resources possible should be impacted. All negatively impacted areas should be fully mitigated.</p>	<p>EA Section 2 includes a discussion of the Industrial Road, and it's direct, indirect, and cumulative impacts are assessed in Section 3 along with all other impacted areas of the site. TDOT has contacted MDOT to participate in the NEPA process. As an outreach to MS residents potentially impacted by the project, the Public Meeting notice was published in both the Marshall County (MS) and Fayette Co (TN) local newspapers along with the <i>Memphis Commercial Appeal</i>.</p>
NRCS (3)	<p>Any sites within the proposed facility subject to hazardous material transfer should be as far away from any possible receiving water and fully buffered against any possible spills.</p>	<p>No hazardous material transfers will occur at Build Alternative 1 except in very rare instances where a defective trailer or container must be unloaded and the contents moved to another trailer or container. NSR will fuel diesel locomotives on-site. The fueling areas will be located away from receiving waters. Spill Control plans will be developed for the facility.</p>

Table 4-1: Agency Comments

Agency	Agency Comments	Responses
Town of Collierville (1)	Environmental Concerns: The impacts to groundwater, wildlife habitat, air quality, and wetlands are a regional concern, and do not recognize government boundaries. The State of Tennessee is blessed with many natural resources, and has wisely adopted many regulations to ensure their protection and conservation.	Impacts to natural environment will be avoided, minimized or mitigated during project design. Additional explanation is in EA Section 3.12.
Town of Collierville (2)	Equitable Application of Standards: We implore the State and Norfolk Southern Railway to meet or exceed Tennessee's tough environmental regulations, and for this use to hold itself to the same restrictions that apply to our private sector citizens, which are not empowered with special privileges and exemptions from law.	NSR will be required to follow the TDEC ARAP and NPDES Construction Permit requirements and process.
Town of Collierville (3)	Threat of Hazardous Material Spills: Of particular concern to Collierville is that we do not fully understand the truck movements or rail traffic anticipated by this new location, and thusly cannot ascertain and plan for the risk of any adverse environmental impacts due to accidental spills of toxic loads being carried by rail or on the road, and the resulting impacts to our role as a groundwater recharge for the region, and the quality of our streams and drainage conveyances.	EA Section 3.16 addresses hazardous materials. Figure 1-1 pictorially depict the flow of freight from the short haul truck to train and back to short haul trucks. As part of IMF operations, hazardous freight in the containers and trailers is not transferred to another container at the site unloaded unless there is a mechanical problem with the container or trailer; this is an extremely rare occurrence. Additional explanation of the IMF operations and the Build Alternative is in EA Sections 1 and 2. As currently projected, the IMF trains will normally be entering and leaving the facility between 6 p.m. and 6 a.m. Trucks will enter and exit the IMF 24 hours a day.
Town of Collierville (4)	Noise and Air Quality: Similarly, understanding noise and air quality impacts for the anticipated truck routes is imperative.	The Air Quality Technical Report and Noise Impact Study were completed in support of the EA and are summarized in the EA Sections 3.7 and 3.8, respectively. The Air Quality Technical Report and Noise Impact Study are on file with TDOT. The noise study does not address noise impacts due to truck traffic on SR-385 because SR-385 is outside of the study area and was designed to accommodate truck traffic like that to be generated by the facility. Presumably noise impacts due to traffic on SR-385 would have been addressed during the design of that route.
Town of Collierville (5)	Land Use Impacts (Gateway to Collierville, Shelby County, State of Tennessee) In April 2009, Collierville adopted a Small Area Plan for the I-269 (see attached) area that anticipated upscale and walkable office, retail, light manufacturing uses, and could support a population of approximately 8,000 additional residents. Of particular concern would be the viability of this adopted vision for this new gateway given the prospect of high truck traffic.	Build Alternative 1 is not within the footprint defined in the Small Area Plan for I-269. Majority of site is within Rossville UGB, the EA Section 3, Figure 3-3, and is zoned industrial, EA Section 3, Figure 3-1.

Table 4-1: Agency Comments

Agency	Agency Comments	Responses
Town of Collierville (6)	Traffic Concerns: Since the decision has been made to put the facility near Highway 72 (US 72), Collierville and our neighboring communities need immediate and comprehensive help from the State and the Department of Transportation (TDOT) to understand and help prevent serious traffic problems. The following are items that we have considered locally to address this issue, but it is difficult for us to know where to prioritize our efforts in pursuing these transportation needs without knowing the full impact of the intermodal facility.	TDOT is sponsoring a study of traffic impacts on the broader highway network, including an assessment of other improvement projects already scheduled. Based on the Traffic Study on file with TDOT, the IMF traffic does not change the Level of Service (LOS) on US Hwy 72 in Marshall County, which is where the IMF traffic will enter and exit the facility. Additional explanation is in the EA Section 3.3 and 3.18.2. SR-385 and I-69 are outside the scope of this EA. TDOT will schedule a meeting between NSR and the Town of Collierville to discuss the Traffic Study.
MDOT (1)	Accept invitation to be a Cooperating/Participating Agency with TOOT and FHWA in the NEPA documentation for the Memphis Regional Intermodal Facility (MRIMF) in Fayette County, Tennessee.	Acknowledge
MDOT (2)	Concern with the impacts to US 72 and the surrounding areas in Mississippi resulting from the MRIMF and anticipated secondary and cumulative developments.	Created Analysis of Projected Traffic and Impacts in the Vicinity of the Intersection of US Highway 72 and Industrial Road to address direct, indirect, and range of cumulative impacts in existing traffic volumes at the intersection of US Hwy 72 and Industrial Road.



4.2.2 Section 106 Coordination

This project has been coordinated with parties pursuant to regulations defining Section 106 of the NHPA.⁴⁰⁵ A description of that coordination is also included in Chapter 3, but is briefly described below. Early coordination letters were sent to Native American tribes, local governments (Rossville and Fayette County mayors) and the Tennessee SHPO informing them of the project, and as applicable, inviting them to serve as Section 106 Consulting Parties for this project. No responses were received from the City and County mayors. No tribes provided responses to the TDOT's coordination letter. The FRA sent out a second letter to potentially interested tribes. Though no tribes have yet expressed objections to the project, they would be notified immediately if any human remains or artifacts falling under the National Native American Graves Protection and Repatriation Act (NAGPRA)⁴⁰⁶ are discovered during construction. In the construction plans, the contractor will be instructed to stop work and to inform NSR and the State Archaeologist of any suspected finds.

Both the architectural/historical and archaeological reports prepared pursuant to Section 106 have been coordinated with the Tennessee SHPO. In letters dated January 28, 2010 and February 9, 2010, the Tennessee SHPO concurred with the findings of the reports that the project would not affect properties under Section 106. Copies of these letters are in Appendix B.

4.2.3 TESA Process

The Tennessee Environmental Streamlining Agreement (TESA) is a cooperative agreement between the Tennessee Department of Transportation; the Federal Highway Administration; various Resource and Regulatory Agencies, and the Metropolitan Planning Organizations within the State of Tennessee.



TESA sets forth the responsibilities of the signatory agencies relative to the priority review of transportation projects. The Agreement is entered into by each signatory agency with the goal of achieving timely planning, development, design and implementation of adequate, safe and economical transportation improvements while also assuring such planning, development, design and implementation is sensitive to the protection and improvement of the resources for which each agency is responsible under Federal or State statute and regulation.

⁴⁰⁵ 36 C.F.R. 800.

⁴⁰⁶ 25 U.S. C. 3001 et seq.

Ultimately, this streamlined environmental process is intended to achieve the timely and efficient identification, evaluation and resolution of environmental and regulatory issues. The Agreement establishes "one decision-making process" to identify and address agency issues at four (4) key points, termed concurrence points, during the planning and National Environmental Policy Act process for transportation projects.

TDOT combined the TESA Concurrence Point #1 (Purpose & Need) with TESA Concurrence Point #2 (Proposed Actions & Alternatives) for the Memphis Regional Intermodal Facility (Memphis Regional IMF). This decision was based on the fact that NSR provided public participation opportunities in the early process of site selection (including evaluation of three other locations in Fayette County), before focusing on the Build Alternative 1 location. The size and complexity of construction of the Memphis Regional IMF will require approximately two years.

The combined Purpose & Need and Proposed Actions & Alternatives package was distributed to all TESA-participating agencies with the lead agencies requesting formal concurrence on the project's Purpose & Need and Proposed Actions & Alternatives for the Memphis Regional IMF. All participating TESA Agencies concurred with the combined Need & Purpose and Alternative sections of the draft EA (Concurrence Point #1 and Point #2). A copy of agency correspondence and a summary of comments received from the reviewing agencies are included in the Summary of CP #1 and #2 document, dated January 2010.

Concurrence Point #3 is the preliminary EA document. Based on the outputs from Concurrence Points #1 and #2 and the subsequent detailed investigation of alternatives and analysis of impacts, the output of Concurrence Point #3 should include concurrence from the participating agencies on the adequacy of the preliminary EA. The agencies have asked to specify whether additional information is needed to fulfill other applicable environmental reviews or consultation requirements. In addition, the participating agencies have specified any additional information needed to comment adequately on the EA analysis of site-specific effects associated with the granting or approving by the agency of necessary permits, licenses, or entitlements. A copy of agency correspondence and a summary of comments received from the reviewing agencies are included in the Summary of CP #3 document, dated May 2010.

Partner Agencies



The preliminary EA package was distributed to all TESA-participating agencies with the lead agencies requesting formal concurrence on the project's Draft EA for the Memphis Regional IMF. All participating TESA Agencies concurred with the Draft EA (Concurrence Point #3). A copy of agency correspondence and a summary of comments received from the reviewing agencies are included in the Summary of CP #3 document, dated March 2010.

Based on FRA's approval of the EA for public review, a public hearing will be conducted in accordance with NEPA requirements and requirements in the project's Public Involvement Plan.

Concurrence Point #4 is the preferred alternative and preliminary mitigation. Based on the output of Concurrence Point #3, along with TDOT and FRA's consideration of any issues, concerns, and/or opportunities identified during the public hearings and comment period for the EA, TDOT will prepare a Preferred Alternative and Preliminary Mitigation Package.

The output of Concurrence Point #4 should include concurrence from the participating agencies on the selection of the preferred alternative and preliminary mitigation. Based on the output from Concurrence Point #4, TDOT will finalize their selection of a preferred alternative and prepare a final document for submittal to FRA.

4.3. Public Involvement

A public information meeting was held in Piperton, Fayette County, Tennessee, on October 22, 2009, at the Community Room at The Bank of Fayette County at 1265 State Route 57 in the project area. The purpose of the meeting was to solicit public input on the Memphis Regional Intermodal project. As noted in Section 4.1, before the initiation of the TESA process, NSR conducted several public meeting to obtain input from the local community regarding the proposed project.

TDOT ran the meeting per their guidelines. Upon signing in, attendees received a handout providing a summary of the proposed project. Formal presentations were made and comments were solicited during the question-and-answer period following the presentation. Staff was available at displays to answer questions before and after the presentation.



4 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

Meeting attendees were encouraged to record their comments with the court reporter present at the meeting, and/or to provide written comments using a comment form either at the meeting or within 21 days following the meeting.

- The public informational meeting was attended by approximately 58 citizens plus 17 TDOT, MDOT, and NSR representatives.
- Four comments were received before the public meeting (two from Mississippi, one from the Sierra Club, and one from Piperton).
- Twelve individuals voiced comments during the meeting and three individuals recorded comments with the court reporter. The 57 citizens included individuals from Rossville, Piperton, Collierville, and Memphis, Tennessee, and Byhalia and Lamar, Mississippi. Based on the information provided when they signed in, ten (10) attendees were from Mississippi and 48 were from Tennessee.
- Eighteen comment cards and five other comments were received within the 21 day comment period after the public meeting (ten from Mississippi, eleven from Tennessee plus one from the Wolf River Airport and GWI, respectively).

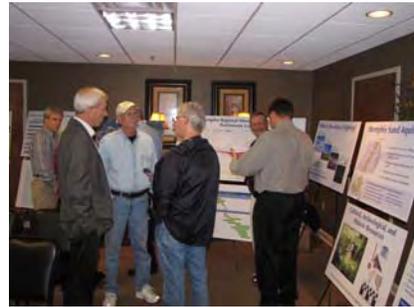
A total of 51 comment forms were provided by 27 individuals and one comment card was signed by 11 citizens living on Neville Road.

Table 4-2 attempts to group the various public comments into general categories aligned with the EA topics.

The official public record of the meeting is available at the TDOT Environmental Division Office at 505 Deaderick Street in Nashville, Tennessee 37243.

Table 4-3 summarizes the consolidation of public comments received and provides a response.

A public hearing on this NEPA Draft EA will be held following FRA and TDOT's approval of this document for circulation. The public hearing will be advertised in the Fayette County Tennessee, Marshall County Mississippi, and Memphis newspapers. This Draft EA will be available for the public to review at the Collierville Tennessee and



Byhalia Mississippi Public Libraries, Rossville City Hall, and MDOT's district office in Batesville and the Holly Springs project office to be determined by MDOT.

Table 4-2: Public Comments Grouped by EA Topics

Applicable EA Section	Comment Category	Number of Comments Made
1	Funding	8
1	Operations	7
2	Alternatives *	40
3.1	Land use	16
3.2	Farmland	4
3.3	Traffic	53
3.4	Social	8
3.6	Economy	12
3.7	Air	12
3.8	Noise	18
3.12	Natural Resources **	41
3.13	Soils	1
3.15	Visual	9
3.16	Hazardous Material	5
NA	Property Value	12
NA	Wind	1
-	Other	25
<p>Note: Categories within the table with larger number of comments were * Section 2.2: No-Build Alternative - 7 comments Section 2.3: Build Alternative 1 - 5 comments Section 2.3.1: Memphis Alternatives - 13 comments ** Section 3.12.7: Stormwater - 16 comments Section 3.12.6: Aquifer - 13 comments</p>		

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
1 Operation	The primary existence of this development by Norfolk Southern is their greenbelt project, which is to get trucks as fast as possible off this intermodal to Pennsylvania. Isn't that pretty much the project description?	The purpose and need of the IMF is addressed in EA Section 1. The Memphis Regional IMF would flatten the increase in demand for long-haul trucks from the highway system by transferring their containers or trailers to the IMF trains. The project would improve transportation efficiencies regionally and nationally.
1 Operation - Trains	I do not see a problem with lines backing up into a main artery. Depending if single stack or double stack, they would carry anywhere from 130 containers to 260 containers. That's how many trucks there are in reality pulling off the road. What time of day would the trains be coming off the spur?	IMF operations are explained in the EA Section 1. Up to 280 containers would be transported on an IMF train. Approximately 4 new westbound trains terminating at the facility and 4 new eastbound trains originating at the facility are expected. Trains are expected to enter and exit the IMF between 6 p.m. and 6 a.m. (subject to change).
1 and 2 Operation - Trucks	Unclear on how trucks would exit facility and head north to PA. Where are the trucks going? Is SR-385 going to continue or be connected at Macon Road? Would SR- 385 connect to I-40? What's short haul truck and how they transfer load? The primary existence of this development by Norfolk Southern is their greenbelt project, which is to get trucks as fast as possible off this intermodal to Pennsylvania. Isn't that pretty much the project description?	IMF operations and highway proximity is explained in the EA Sections 1 and 2. As shown in Figure 1-1 of the EA, trucks will be used for local freight haulage while trains are used for long-haul. SR-385 will connect with I-40. Information on SR-385 is shown in Figure 3-21.
1 Operations - Intermodal	Intermodal is the most efficient form of transportation.	The purpose and need of the IMF is addressed in EA Section 1, including the effectiveness of the IMF form of transportation.
2.1 Alternative – in other locations	Several other areas were recommended for review for the facility's location including: (a) TDOT building another bridge over Mississippi River with the IMF being located in Arkansas, (b) Less-developed area such as Corinth, Mississippi, (c) further east in a less developed area between Rossville and Moscow or between Moscow and LaGrange, or (d) closer to I-40.	The purpose and need of the IMF is addressed in EA Section 1 and the alternative selection criteria are addressed in EA Section 2. These other suggested locations (not evaluated as part of this EA) do not meet the project's purpose and need. The suggested site locations do not meet the site screening criteria defined in Section 2.1. The Arkansas location and sites closer to I-40 do not fit the needs of the IMF's customer base which is moving south and east of Memphis. Corinth, Moscow, and LaGrange are too far east to easily service the customer base. As discussed in the EA, several locations between Rossville and Moscow were considered but eliminated from further consideration. The Rossville area fits well with the warehousing growth trends (Figure 1-9), proximity to highway infrastructure, proximity to NSR's mainline (Figure 2-2), and locations with sufficient space for an IMF.

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
2.2 Alternative – No-Build	Prefer the No-Build Alternative, meaning the proposed facility would not be constructed and existing NSR facilities would continue to operate at current capacity. It is the best for this community. There is absolutely NO public need for a new facility to be built in Fayette County. Existing facilities are not at capacity and rail traffic is decreasing with drop in international trade. This facility would be better suited for an existing industrial zone.	The purpose and need is addressed in EA Section 1 and the alternative selection criteria are addressed in EA Section 2. The No-Build alternative does not meet the need and purpose of the project, and the commenter has provided no justification for the position that there is no public need for additional freight transportation to meet existing and future demand. NSR's existing IMF in Forrest Park is operating at or above its original design capacity and is currently using less effective methodologies to handle the volume of freight moving thru the facility.
2.3 Alternative - Build	The Build Alternative is very non-intrusive and in a vital crossroads for regional traffic. Proposed Location is an excellent location. The negative comments are a minority opinion. Build Alternative is the best of the several proposed options. Piperton Hills is a better option than the Wyndyke site. It addresses the critical issue of keeping the added truck traffic off of SR-57. Is the build alternative necessary?	The purpose and need is addressed in EA Section 1 and the alternative evaluation criteria are addressed in EA Section 2. Build Alternative 1 best meets the defined criteria and is the only build alternative brought forward into the environmental assessment.
2.3 Traffic - Access	Would the access road to the site be a 2 or 4 lane road? Like access road to US Hwy 72. Excellent idea to keep truck traffic off of SR-57. Be sure that truck induction does not impede traffic. The only road access to it is a private, narrow, one-land gravel farm road. What kind of off-ramp is proposed and who would pay for it?	Industrial road would be a paved two-lane road. The requirement for and the traffic and potential impacts from the Industrial Road are addressed in the EA Sections 2.3, 3.3, and 3.18. The traffic would enter and exit the IMF from Industrial Road onto US Hwy 72, not SR-57. Industrial Road will be a Developer built, two-lane, two-mile road that connects the facility and other zoned industrial sites to US Hwy 72. The private Developer would be responsible for constructing the connection from Industrial Road to US Hwy 72 as a section of the future four-lane divided highway.
2.3.1 Alternative – in East Rossville	Build the new Memphis Regional Intermodal Facility (IMF) on the original project site located on the north side of Highway 57 east of Rossville adjacent to the Norfolk Southern Railway Mainline track.	Alternative selection is addressed in EA Section 2. Alternative 2 does not meet the evaluation criteria. It is less intrusive in a number of ways compared to Build Alternative 1, but was deemed not viable due to environmental and cultural concerns and traffic impacts along SR-57.

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
2.3.1 Alternative – in Memphis	The best alternative would be to build the IMF in Memphis, where there is existing infrastructure and warehouses. Its closer to FedEx and the international airport; not in the rural and residential areas of Fayette County. There are idle or underutilized warehouse spaces in Memphis. Frank C Pidgeon Industrial Park is looking for a rail company to move in; sharing of rail lines among competing rail companies could be worked out. NSR is using taxpayer money and cheaper rural land to position themselves for an advantage over the other 4 competing rail companies operating in Shelby County. This facility would be better suited for an existing industrial zone. Since FEDEX is the major employer, how would you relate and coordinate with them?	The purpose and need is addressed in EA Section 1 and the alternative selection criteria are addressed in EA Section 2. The Memphis alternatives do not meet the evaluation criteria established for locating the facility. Suitable IMF locations are limited within the Memphis area based on the defined evaluation criteria. FedEx only one of many customers expected to utilize the Memphis Regional IMF. The warehouses are already moving southeast of Memphis, as shown in Figure 1-9; therefore, Build Alternative 1 better fits this trend and the long-term usage of the facility. The Memphis alternatives are operationally and economically unfeasible as analyzed in Section 2 of the EA.
2.5 Alternative – Sub- Alternatives	Why couldn't it be just a little bit further east rather than so close to our neighborhood (Neville Rd). Why sandwich the IMF between 2 roads? IMF needs to be more in the middle between US 72 and SR-57.	Project is in preliminary design phase. Due to limited flexibility of track design (grade and curve restrictions), options are limited on shifting the facility including the length and location of the lead tracks.
2.5 Overpass - Neville Road	It appears that the overpass is going to end right at Neville Road, can it be shifted away from Neville Road. Suggests: 1. Install a traffic light with triggers allowing Neville Rd traffic to enter SR-57 without unnecessarily delaying SR-57 traffic. 2. Provide left turn lanes for east and westbound traffic on SR-57 turning onto Neville Rd. 3. Move the SR-57 overpass as far East as possible. 4. Reduce the speed limit through the intersection.	Project is in preliminary design phase. Due to limited flexibility of track design (grade and curve restrictions) options are limited on shifting the facility including the lead tracks. Traffic study at SR-57 and Neville Road intersection was conducted, which showed that neither a traffic light nor turn-lane was warranted. ⁴⁰⁷

⁴⁰⁷ In accordance with TDOT and FHWA guidance.

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.1 Land Use	NSR should only be allowed to build on land zoned for commercial/industrial. IMF is inappropriate at the proposed location, it's a rural/residential area more suitable to upscale "farmette" development; not a heavy industrial. Concern about destructive urban sprawl. Would adequate buffers (between warehousing plants and existing residential property) be provided? The 4-mile access road through 3,000 acres of green space is too much land consumption for a facility that only needs approximately 400 acres. NSR said impacts from the access road would not be part of the EA. With the proposed "Chickasaw Trails Industrial Park", the area would essentially be transformed to highly industrialized. The drastic, permanent negative eyesore created by a venture of this magnitude. You can never undo the harm this commercialization would create.	The land use and potential impacts are addressed in the EA Sections 3.1 and 3.18, and in the Air, Ecology and Noise Technical Reports on file with TDOT. Fayette County's urban growth plan, Rossville planning and zoning regulations, and Marshall County's zoning regulations, determine whether the activity types match the area's plans. The project site is zoned industrial, Figure 3-2. The IMF property is 650 acres with 380 acres to be developed, including 233 acres of paved parking. The project will obtain and comply with applicable permits. Marshall County zoning does not require buffers between residential and commercial or industrial properties. The first business in the Chickasaw Trails Industrial Park previously opened in 2006.
3.1 Land Use Input	Copies of <i>Mid-South Horse Review</i> from May and Sept.	The articles were reviewed as part of preparing the EA.
3.2 Farmland	The IMF would have a great impact on farmland. Practically all the land in this area is agricultural – pastureland, woodlands, and farmland. Several area farm owners and residents said their economic livelihood would be negatively impacted. Putting such a facility on prime, pristine farmland in the midst of a bedroom community is totally inappropriate land use.	The farmland and potential impacts are addressed in the EA Section 3.2. Based on coordination with NRCS, the facility impacts are not substantial or significant. The site would remove 330 ac from farming, less than 0.2% of the available farmland in Fayette County. In 2002 in Fayette County alone, 227,434 acres were designated as farmland (approximately 50% of Fayette County's 451,839 acres).

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.3 Traffic	<p>IMF would create bad traffic. IMF would create enormous road hazards and safety concerns for individuals traveling area highways this dangerous stretch of highway. N Lenderman Rd outlets to US Hwy 72 within approximately 14 mile from where 1600 plus trucks would enter and leave the 2-lane section of US Hwy 72 per day. Concerned about inadequate access for trucks coming from IMF to US Hwy 72 and substantial increase in traffic to SR-385 interchange. I do not feel traffic has been adequately addressed and US Hwy 72 would become another US Hwy 78. What type of changes would occur in our road structures (traffic lights) with new access road? SR-57 is a bottleneck coming into Collierville from Fayette Co.; The IMF would worsen traffic flow and increase commute times. What are the planned road improvements/expansion to accommodate such a large facility and additional semi trailer? The IMF would make access to Collierville from Marshall County a nightmare.</p>	<p>Traffic and potential impacts from the facility operation and construction are addressed in the EA Section 3.3, 3.18.1 and 3.19. Based on the Traffic Study on file with TDOT, the IMF traffic does not change the Level of Service (LOS) on US Hwy 72. Impacts to traffic and delays in processing vehicles into the IMF would be minimized by project design and operations. The IMF is not expected to directly increase traffic on SR-57, due to lack of direct access. TDOT is sponsoring a study of traffic impacts on the broader highway network, including an assessment of other improvement projects already scheduled.</p>
3.4 Social	<p>Evaluate the socioeconomic impact. People, who live near it, are concerned about their lifestyle, their quality of life, etc. Numerous foreseeable problems (decreased residential development and property taxes; negative social impacts on community) are expected to impact area residences' lifestyles, livelihoods, and quality of life. Other rail yards in and around Memphis are filth pits, unsightly, crime-ridden. Our life would be forever changed – in a negative way. I see no immediate impact to myself or my property, but our lives would be totally changed.</p>	<p>The potential social and land use impacts are addressed in the EA Sections 3.1, 3.4 and 3.18 and in the Air, Ecology and Noise Technical Reports on file with TDOT. As noted in the EA, the project is not expected to have significant social or land use impacts. The project will obtain and comply with applicable permits. Impacts to natural environment will be avoided, minimized or mitigated during project design. The project site is zoned industrial, Figure 3-2.</p>
3.4 Social- Emergency Services	<p>Fayette County does not have the financial resources needed to support this facility. The police, fire and emergency respondents as well as the general upkeep of roads associated with heavy truck traffic would take more taxpayer money then Fayette County can afford. NSR did not help taxpayers with the additional support needed. With all the growth, traffic etc., more police and fire departments would be needed in the area. The roads would need a better sub-base to hold all the additional truck traffic.</p>	<p>The social and local community and potential impacts are addressed in the EA Sections 3.4 and 3.18. Additional expenditure on schools, police, fire and emergency respondents could occur if the population increases as a result of the IMF. However, potential additional development in the area could increase the tax base to fund the potential increase in emergency response personnel and local road maintenance, if required. Fayette County, Tennessee, will provide emergency services, while Marshall County, Mississippi, would provide local improvements to area roadways. Industrial Road will be private Developer maintained. NSR pays taxes on its operating property in Tennessee as determined by the State Comptroller's Office.</p>

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.6 Economic Impacts	The Build Alternative would stimulate the economy and raise local property values, but it would severely impact on my neighbors who bought and built anticipating life in an upscale residential area.	The economic benefits from the IMF are in the EA Section 3.6 and 3.18.4. Based on a regional study, the Memphis Regional IMF can contribute to a cumulative economic impact of \$2.7 billion by 2020 and to employment growth of 6,186 new or benefited jobs in the same period. ⁴⁰⁸ Based on the EA, the IMF would not severely impact the nearby residential neighborhoods.
3.6 Economic - Taxpayers	The application for tens of millions of federal taxpayer money for this project is absurd. The citizens would not get anywhere near the return of benefit for their taxpayer money. It would not take that many trucks off the road and would not create many jobs. The IMF is NOT in the best economic interests of the state, or community of residents who would have to pay increased taxes for public financing of this private, for-profit venture. Using a Cost of Community Services Analysis (COSA), is the project viable?	The economic and potential impacts of the IMF are addressed in the EA Sections 3.6 and 3.18. Based on the criteria established by DOT, the construction of the Memphis Regional IMF potentially qualifies for federal funding assistance. The final public benefits versus public cost calculation will be made by the DOT. The cost of service for agricultural land is similar to that for other commercial and industrial under median cost of service analytical data and a trust analyses confirmed that industrial land uses have lower cost of service than agriculture and industrial. ⁴⁰⁹ COSA is a tool utilized by land use planning entities applying revenue and budget data and projections.
3.7 Air	Area's air quality is very good with virtually no sources of air pollution. The expected 1668 semi-trucks per day would generate considerable toxic air pollution and fumes, including CO ₂ , NO _x , CO and particulate matter, which is so detrimental to human lungs, and causes even greater harm to horses' lungs. The facility would contaminate the air with toxic chemicals; What would the facility do to air quality in Rossville? Would locomotives be idling all the time (auxiliary power units for locomotives)? The extensive paved area would contribute locally to planetary greenhouse warming. I would like NSR to perform air quality monitoring.	Air quality and potential impacts are addressed in EA Sections 3.7, 3.18, and 3.19. EPA has established emissions standards for NO _x , CO, and particulate matter and the facility is designed to comply with all applicable emissions standards. The Air Quality Technical Report on file with TDOT presents the results of the analysis of potential air emissions and air quality impacts from facility construction and operation. The report indicates the facility would not have a significant impact on air quality nor require mitigation.

⁴⁰⁸ Insight May 2009.

⁴⁰⁹ American Farmland Trust, Farmland Information Center, Fact Sheet Cost of Community Services Study, August 2006.

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.8 Noise	<p>The IMF would significantly increase noise and disrupt peaceful lifestyles. Other rail yards in and around Memphis are noise polluters. I do not feel enough studies have been conducted on the immediate and long term effects from this project in regards to noise. I would like to see actual noise monitoring done at existing facilities and then that information is used to interpret what's going to happen at our facility. The actual intermodal was going to be set down 28', which would kind of have its own berm or whatever you want to call it, where it would minimize noise, is that still the way it's going to be? The IMF would become a loud and industrial place as the trucks and rail cars move in and out of the area. Noise destroys people's relationships, contributes to loss of mental relaxation, can contribute to conflict, and reduces the quality of life in a community. The peaceful serenity that we now enjoy would no longer exist.</p>	<p>Noise and potential impacts from the facility construction and operation are addressed in EA Sections 3.8, 3.18, and 3.19. The Noise Technical Report on file with TDOT indicates that the potential impacts from the facility potentially affect three residences. The noise study was based in part on results of actual noise monitoring conducted at the NSR IMF in Austell, Georgia. Although not required by the noise analysis, the Memphis Regional IMF design includes berms along the western edge of the facility and between a section of the lead tracks and Neville Road to reduce noise impacts.</p>
3.8 Noise on Neville Road	<p>How close is the noise berm (Neville)? We would have the noise to consider from the trains entering the facility (Neville Road). My concern is the noise factor. And if there's going to be any kind of an earthen barrier or anything, because the only thing between us and the railroad, which is about 500 feet from the back of my house. Noise pollution needs to be minimized at the lead track as well as in the IMF by berms and/or other means.</p>	<p>Noise and potential impacts from the facility construction and operation are addressed in EA Sections 3.8, 3.18, and 3.19. Noise Technical Report on file with TDOT indicates that the potential impacts from the facility potentially affect three residences. Although not required by the noise analysis, the preliminary design includes an earthen berm with ancillary noise mitigation benefits between a section of the lead tracks and Neville Road.</p>
3.12 Habitat	<p>The IMF would damage vast wildlife habitat, naturalized and rare plants, mature forest, and native hardwood forests. Paving approximately 386 acres of what is currently pasture and wood would be enormous ecological impacts by transforming "natural" landscape and drastic changing wildlife habitat. I do not feel enough studies have been conducted on the immediate and long-term effects from this project in regards to wildlife. The site would disrupt migration patterns of birds and destroy the current ecological system, which supports a vast array of wildlife. I manage my farm as "greenly" as possible,</p>	<p>The natural resources and potential impacts including habitat are addressed in the EA Sections 3.12, 3.18, and 3.19 and the Ecology Report on file with TDOT. The IMF property is 650 acres with 380 acres developed, which constitutes a very small percentage of land currently in forest or agriculture within Fayette County. The project will obtain and comply with applicable permits which protect environmental resources. A threatened and endangered species review of the site found no significant impacts. Impacts to natural resources will be avoided, minimized or mitigated during project design and construction.</p>

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.12.6 Aquifer	<p>GWI, Univ of Memphis, along with local residents expressed concerns about the facility being located within the Memphis Sand Aquifer recharge area. Safety of the water quality within the aquifer is important. Land use changes would affect both the quantity and the quality of the water, potentially affecting the water table. Pollutants from the rail system and trucks would drain into the groundwater affecting our water supply. IMF is an industrial operation that would have unavoidable leakage and spills even with precautions. What long-term unintentional affects with the facility have on the aquifer? There has been no study on how this unavoidable pollution would affect the water supply.</p>	<p>Memphis Sand and potential impacts are addressed in EA Sections 3.12 and 3.18. Since all the alternatives were within the Memphis Sand Aquifer footprint, it was not a distinguishing factor between alternative locations. Information from GWI (including phone conversations and a meeting with Dr. Anderson) was used in preparing the EA. Pre- and post-hydrology will not change significantly due to the project. Yard construction would include roller-compacted concrete that would essentially cap possible exposures of the Memphis Sands. Surface runoff would be routed through "dry" detention basins prior to discharge.</p>
3.12.7 Stormwater	<p>The IMF will be drastic changes to stormwater by impacting the Wolf River watershed, Memphis Sand Aquifer, and private water wells by: paving within recharge/outcrop areas, increasing volume and intensity of rainfall runoff, and creating polluted runoff. It will impact both the quantity and quality of our regional drinking water source. The IMF will pave 500 acres of storm retention area and release runoff directly into two streams that converge on north end of Wolf River Airport, causing serious flooding and safety hazards. Do not make any final decisions regarding the project until all of the environmental and hydrology studies have been review and impacts assessed. The IMF will add toxic runoff into our streams and aquifer from the oil and diesel that trucks and trains consume. Groundwater safety should be studies on the immediate and long term effects from this project. Stormwater from the property should be impounded and treated before it's released into tributaries; not just retention. Actual water monitors should occur. What will NSR do to make sure and keep the water as clean as possible?</p>	<p>Stormwater and potential impacts are addressed in EA Sections 3.12, 3.18, and 3.18. Hazardous materials and potential impacts are addressed in the EA Sections 3.16 and 3.18. Pre- and post hydrology including stormwater discharge will not change significantly due to the project. Potential floodplain impacts will be avoided, minimized or mitigated. The project footprint is extremely small compared to the potential recharge area of the Memphis Sand Aquifer. No impact to water quantity or quality in the aquifer is expected. The project will obtain and comply with applicable NPDES permits to insure stormwater discharges meet water quality standards. Appropriate BMP will be used to prevent erosion, control sediment movement, and stabilize disturbed soil. Impacts from post-construction hydrology and impacts to the Zone A floodplain will be avoided, minimized, or mitigated during project design.</p>
3.13 Geotech	<p>Make sure all soil is studied so that you don't have stabilization issues or fill issues (as to the quality) we don't want coal ash from Kingston, Tennessee, spill in the fill.</p>	<p>The potential impacts to soils are addressed in the EA Section 3.13 and 3.19. Project is in preliminary design phase, with the slopes inclined at 3H:1V for stability and erosion control, where space allows. Fill will mainly be constructed using on-site borrow material, There is no plan to mix coal ash with soil on the site.</p>

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.14 Visual - Lighting	<p>One of the numerous foreseeable problems is the environmental impacts from light pollution that would impact area residences' lifestyles, livelihoods, and quality of life and scare away wildlife. The light pollution needs to be minimized. Other rail yards in and around Memphis are light polluters. IMF lighting should be directly lighting at the lowest possible elevation to avoids bleed-over outside of the IMF. Would there be any lighting along the lead tracks (it's not necessary)? Would the lights used within the facility meet the dark sky requirements? The lights from a 24-hour facility would ruin the pleasure of the stellar night sky. Evaluation of Light Pollution from the proposed facility in your EA.</p>	<p>Visual/lighting and potential impacts from the facility operation and construction are addressed in EA Sections 3.14, 3.18, and 3.19. Visual impacts off the IMF site from lighting will be avoided, minimized or mitigated during project design. Light poles and fixtures will be required within the container and trailer loading areas and at rail switches along the lead tracks. Lights within the yard area will be on 70-foot tall poles as opposed to the standard NSR 100-foot tall poles. Lights outside the yard area will be on standard 40-foot tall street poles. The fixtures will direct light downward. The downward directing lights would create illumination of less than 0.5 foot candle along the IMF boundary; average light level within the facility ranges from 2-5 foot candles, Figure 3-20. NSR considered Dark Sky initiative concepts to reduce light pollution and believes the facility design is consistent with such initiatives even though none of the local communities appear to be formal participants in Dark Sky.</p>
3.16 Hazardous Materials	<p>These containers only carry mainly consumer-oriented dry goods. Or are there going to be any hazardous materials off-loaded on the site? Is there going to be military hazardous waste coming through the IMF? The chemicals and associated hazardous materials that would undoubtedly be transported to/from this rail yard would pose significant dangers and security threats. Concerned about hazardous materials/waste from on-site activities. The facility needs to have a hazardous materials crew that's trained periodically and is able to respond to hazardous material spills and conditions.</p>	<p>Hazardous materials and potential impacts are addressed in the EA Sections 3.16 and 3.18. Only a very small percentage of the commodities moved through the IMF will be classified "hazardous". The spill prevention plan would address training requirements and hazardous materials handling. As part of IMF operations, containers or trailers are transferred between the trucks and trains as described in EA Section 1.</p>
3.18 Area Developer	<p>Is the Rail line continued into the Chickasaw Trails Industrial Park in Marshall County? Would a railroad track be built across Highway 72 at grade or would an overpass also be built there for traffic to and from Collierville, Tennessee? Would Mississippi have to pay for this? Mr. Adair is negotiating with people to buy other land in the area - future land sales to Norfolk Southern? Or related warehousing? Or related semi truck service stations?</p>	<p>The cumulative impacts of the IMF are discussed in the EA Section 3.18, including some of the potential activities of this Developer and the anticipated growth of the Chickasaw Trails Industrial Park and other areas. The Developer is considering an unrelated project involving a rail line to the Chickasaw Trails Industrial Park in Marshall County. This project is separate from the IMF and is speculative; however, potential general development in the Chickasaw Trails Industrial Park is considered in the cumulative impacts analysis.</p>

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.18 Economic Long-term Concerns	This facility is of no economic use to Mississippi where it is now located. I'm concerned about the traffic on the rail and highway that this is going to bring into the community. I'm concerned about pollution from the environmental standpoint and spin-off businesses. My biggest concern is the other activity that the IMF would be attracted into our community, i.e. low-end motels, fast food, etc. Finding oneself surrounded by an industrial area, rather than agriculture, would have a detrimental economic impact on the livelihood of those depending on area remaining agricultural.	The cumulative impacts of the IMF are discussed in the EA Section 3.18. Fayette County has an urban growth plan and a zoning board for planning and growth regulations. The Towns of Rossville, Piperton, and Collierville have defined urban growth boundary (UGB) and zoning boards for planning and growth regulations. Marshall County has zoning regulations. The property to be used for Build Alternative 1 is within the Rossville UGB and zoned industrial, Figure 3-1.
3.18.2 Traffic - Outside of Study Area	Various concerns were expressed about the adequacy of roadways outside of the study area, including (a) Hwy 57/385 interchange, (b) widening of US 72, (c) construction of I-269, (d) a 4-lane N-S road from US Hwy 72 to MS-302, (e) additional on-ramps from US Hwy 72 to SR-385, (f) widening and adding lanes to SR-385 (Bill Morris Parkway) from SR-57 to I-240, and (g) I-69 would have to be finished to connect with I-40 along with the extra on- and off-ramps for trucks. Recommend creating truck access points from both SR-57 and US Hwy 72. Various alternative traffic routing were expressed including: (a) stay off of SR-196, Knox Road and SR-57, (b) extend MS-302 (Goodman Rd.) to connect with SR-57, (c) connect US Hwy 72 and MS-302, and (d) widen SR-57 to 4-lanes from the IMF to SR-385.	The indirect and cumulative impacts of the IMF are discussed in the EA Section 3.18. Figure 3-23 shows the segment information for SR-385. The last segment of SR-385 was in the TDOT September 2009 letting with an estimated completion date of September 2012. The IMF is not expected to directly increase traffic on SR-57, due to no direct access. TDOT is sponsoring a study of traffic impacts on the broader highway network, including an assessment of other improvement projects already scheduled. Figure 3-24 shows the proposed location of I-269. Neither MDOT nor TDOT has released a construction schedule for US Hwy 72 and I-269, respectively.
3.18.2 SR-57 Overpass - Construction	What is the cost estimate to build the SR-57 overpass for the railroad spur? What is the plan to close SR-57, when building that giant overpass? What is the timeframe that SR-57 would be closed or slow down traffic? Would [overpass] accommodate trailers and larger piece of equipment? What is estimated time of closure/re-route to construct overpass? Would the overpass design be 4-lanes, so won't have to redo the bridge when SR-57 expands in the future.	The indirect impacts of the overpass construction are discussed in the EA Section 3.18 and 3.19. A temporary bypass would be established to allow traffic to move along SR-57 during construction of the overpass. The project is in the preliminary design phase. The construction schedule and cost estimates for the SR-57 overpass have not been finalized.

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.18 Noise from Mainline	Can Norfolk Southern do something to mitigate the noise made by the current through trains? For example: continuous welded rails, cushioned track beds, guarded crossings to avoid horn.	The indirect and cumulative impacts of the IMF are discussed in the EA Section 3.18. The NSR mainline already utilizes welded rail. Grade crossing warning devices are primarily the responsibility of State highway and local road departments. At-grade crossings normally require train horn sounding per Federal regulations. ⁴¹⁰ Quiet zones are established by state or local authorities wishing such zones and committing to installing warnings sufficient to protect the public. The FRA and NSR may review requests from state or local road authorities for quiet zones at grade-crossings.
3.18 Property Value	What would the IMF do to the value of our land? My concerns are: loss of property value, increased crime, bring in undesirable element, inability to sell my house for a decent fair market price, transformation of this quiet community into a distribution hub full of warehouses and support facilities for the thousands of trucks that would be traversing this area. Is NS responsible for plummeting property values and citizens not being able to sell homes and farms at any price? People are not interested in buying because of the potential noise and lights, which we would be facing.	The indirect and cumulative impacts of the IMF are discussed in the EA Sections 3.18. Based on the experience from other IMFs, the property values of existing residential homes initially decrease; though over the long-term, property value increases. The current economy has decreased the value of home across the US; therefore, it is difficult to determine if the current resident's inability to sell their property is related to the proposed IMF or other factors. IMFs have the potential to attract development and jobs to the community. Crime and decreased property values are not a natural outcome. During the design phase, efforts will be made to minimize negative impacts to adjacent property owners and provide security around the IMF.
3.18 Stormwater - Airport	Proposed stormwater retention ponds are non-compliant with the Federal standards and guidelines as set forth for General Aviation airports, with regards to both proximity to and wildlife attractants near airports. There are also several Federal Aviation Administration advisories regarding same, as well as established Agreements in place to which numerous government agencies are signatory.	The indirect and cumulative impacts of the IMF are discussed in the EA Section 3.18. In a letter dated 10/01/09, FAA stated no airports will be impacted by the project. Both construction and post-construction stormwater basins will be designed to avoid, minimize or mitigate impacts. The project will obtain and comply with applicable NPDES permits. The detention basins would be designed to function as dry basins.

⁴¹⁰ DOT, Federal Rail Administration, Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule, 70 FR 21844, April 27, 2005, as amended by 71 FR 47614, August 17, 2006.

Table 4-3: Consolidated Public Comments and Response

Applicable EA Section / Category	Consolidation of Public Comments	Responses
3.19.4 Funding - Utilities	I know you've got to construct water lines, sewer lines, and electricity. This infrastructure has to be constructed, so who is going to pay for this? What funds are the citizens going to be paying on this? Tennessee residences are going to have to pay for the wear and tear on the local roads. How much does it cost to run a truck over the roads? Piperton would incur increased costs of providing water and sewer infrastructure to the facility, in an area annexed by Rossville. What tax and other revenues would Rossville/Piperton receive?	The impacts to area utilities by the IMF construction and operation are outlined in the EA Sections 3.15 and 3.19.4. The private Developer of Industrial Road is providing (paying for) utilities to the site, through his planned development. The project would pay for utility relocations required for installing lead tracks. The potential increase in developments drawn to the area could increase the Fayette, Shelby, and Marshall Counties tax base and utility demands.
4 Other	Most of the residents in this area don't know anything about the facility and they have certainly not been notified by Norfolk Southern.	The public participation process is outlined in EA Section 4 and in the Coordination Plan on file with TDOT. In addition to the NEPA Public Information Meeting, local and governmental meetings were held to discuss the project and revise zoning. This environmental assessment will also be publicly available and more public meetings will be forthcoming after the EA's publication.
4 Public Meeting	What are these meetings for? What is it we're discussing? How can we influence this project, to what degree, in what areas? What can be influenced? TDOT presentation was not to inform and gather public opinions or let individuals discuss the issues in a "neutral" environment, since NSR's head lawyer opened meeting. This biased the meeting in favor of NSR. I object to his continuing to stand facing landowners with a threatening stare. The questionnaire/comment sheet was misleading to general public in the way it was written. The summary sheet is useable. I want to go on record objecting that Tom Love has not returned my phone calls in two weeks. He said he wanted Robin, from NSR to call me; this is a conflict of interest! 100s of people attended the meeting, which concluded promptly at 7pm despite questions and concerns and people just arriving. Residence should had first option for questions. It was inappropriate for such a large proportion of NSR employees, be at and conducting the meeting.	The public involvement is addressed in the EA Section 4. The October 22, 2009, the TDOT Public Informational Meeting held and conducted in accordance with TDOT Public Participation guidance and provided a variety of different methods to provide public input, including submission of written comments following the meeting. ⁴¹¹ Citizens arriving early (before 4 pm) were welcome into the room to discuss issues with technical experts. During the formal presentations, questions were answered in the order they were asked. After the formal presentation portion ended, guests were invited to view posters and talk to technical experts. No official 'this meeting is closed' announcement was made. TDOT representatives were available until all members of the public left the room. Of the 75 individual who sign-in, 18 were representatives of NSR/TDOT/MDOT. TDOT requested NSR to have technical experts available to answer questions.

⁴¹¹ TDOT Public Involvement Plan, A Statewide Transportation Public Participation Guide, October 2007.

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Applicable EA Section / Category	Consolidation of Public Comments	Responses
Funding - Taxpayers	<p>What revenues would state governments be asked to contribute? And how much would the local taxpayers have to pay? If NSR plans to finance this "\$129 million facility ... through a series of public-private partnerships", what are those partnerships? What revenues would state governments be asked to contribute? TDOT should review the cost of this project to taxpayers versus the benefit. Taxpayer money should NOT be used to advance a corporation by giving an unfair advantage over its competitors. Is it possible that county taxes in both Marshall and Fayette county could increase?</p>	<p>In addition to NSR funds, due to the employment, economic, and other public benefits the project will bring, the construction of the IMF is under consideration for economic stimulus funding from the Federal government. The truckers using the IMF would pay fuel and other license/fees like any other highway users. The potential increase in developments drawn to the area could increase the effective tax bases in Fayette and Shelby Counties, Tennessee, and Marshall County, Mississippi and as noted in Section 3.6 of the draft EA, would promote economic development in the region. The long-haul trucks removed from State highways will reduce state highway maintenance and construction costs.</p>
ICCTA	<p>The railroad can do anything they want to do, is that right, from the laws that that were passed to give them the right-of-way back in the 1800's; is that right? It's a done deal. They're going to build it right there. Isn't that right?</p>	<p>If NSR constructs the IMF as described in this EA, it like any other company is required to follow state and local building construction, maintenance, and permitting requirements, as well as Federal safety regulation and permitting requirements. Because of the potential for Federal funding, NSR has also had to submit to this environmental review process to determine a Build Alternative that meets the purpose and need for the project but also impacts the fewest resources. In addition, because of the Federal funding, NSR will be required to make commitments for mitigation of any environmental impacts identified here.</p> <p>For this project, NSR has complied with state and local regulations, including those related to floodplains and zoning. However, in recognition of the importance of rail transportation in interstate commerce, Congress has enacted legislation providing that federally regulated railroad operating in interstate commerce are not subject to applicable local and state laws. See Interstate Commerce Commission Termination Act of 1995 ("ICCTA"), 49 U.S.C. § 10501 and the Federal Railway Safety Act of 1970 ("FRSA"), 49 U.S.C. § 20101 et seq. In accordance with these and other similar federal laws, most state and local regulation of railroads is preempted in order to ensure barriers to interstate commerce are not created. While state and local regulations are subject to preemption, for this project local and state regulations to the extent applicable to rail would be observed.</p>

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Applicable EA Section / Category	Consolidation of Public Comments	Responses
NEPA Process	Why is Norfolk Southern paying for the environmental study? Should an independent company hired by TDOT and MDOT make a study? Please conduct environmental studies that are NOT done by NSR. This is an obvious conflict of interest.	NSR, through its consultant AMEC, is providing technical support and assistance for information necessary for an EA. The EA is being independently reviewed, edited, and compiled by the many cooperating and participating agencies, as well as the FRA. Use of a consultant to assist in preparation of technical documentation is common practice under NEPA and consistent with CEQ guidance. Reviews by all cooperating and participating agencies along with the public should provide a fair environmental assessment of the project and any final determinations made regarding the NEPA documentation or projects are the purview of the lead agencies.
Other	4) Past experience with TDOT assures that promises won't be kept, usually due to "lack of funding".	Acknowledge comment.
Other	If all permits etc are approved, please provide a more detailed build/completion time line for the sites. RR, Highway upgrades, overpass, etc.	NSR will obtain applicable Federal and State permits for the facility and will to the extent required, therein, provide anticipated construction schedule information. A list of potential permits necessary for the project is identified in the EA Section 3.12.11.
Other	Is it possible that someone from Norfolk Southern can contacted us about any of this?	NSR would be willing to contact and invite interested parties to attend subsequent public meeting to further discuss additional information.
Other	It would be great to be able to go to Rossville or Piperton, hop on the train and get into Memphis and back.	NSR is a freight railroad. It does not conduct passenger rail service.
Overpass - Design	SR-57 Overpass, Good approach. It avoids blocking traffic with a rail crossing. It's understandable to have the overpass over Highway 57 so the RR can be at ground level. I just hope it's a 4-lane vs. 2-lane for future growth.	The grade separation concept is for the SR-57 overpass to be two-lanes with 10-foot wide shoulders crossing over the lead tracks to avoid automotive/rail crossing delay
Prioritization	Why is this project taking precedence over other TDOT projects? Why is the IMF such a hurry up situation?	The funding for this project is not part of TDOT's current funding; therefore, it is not taking precedence over other TDOT projects. If approved, the Federal funding would be tied to this specific project. Stimulus funding has specific timeframes that must be followed.
Wind	With all the paving that is proposed, much of the native flora and mature forests would be cut down. This could create more shear winds coming through. It would cause the locations to be barren, hot in summer, and drier all year. Would the facility cause the area become more arid in the future?	There is no scientific evidence of any significant increase in wind shear due to construction of an IMF facility. FRA does not anticipate the area would become more arid due to the facility construction or operation.

Appendix A – Agency Comments



U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request	9/25/09
Name Of Project	Memphis Regional Intermodal Facility	Federal Agency Involved	Federal Highways Administration
Proposed Land Use	Intermodal Facility	County And State	Fayette County, TN

PART II (To be completed by NRCS)		Date Request Received By NRCS	10/5/09
Does the site contain prime, unique, statewide or local important farmland? <i>(If no, the FPPA does not apply – do not complete additional parts of this form).</i>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Acres Irrigated N/A
Major Crop(s) Corn, soybeans, cotton		Farmable Land In Govt. Jurisdiction Acres: 321,141 % 71	Average Farm Size 378
Name Of Land Evaluation System Used Fayette County	Name Of Local Site Assessment System N/A	Amount Of Farmland As Defined in FPPA Acres: 193,476 % 60	
		Date Land Evaluation Returned By NRCS 10/16/09	

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site 1	Site 1A	Site 2	Site 3
A. Total Acres To Be Converted Directly	330.0			
B. Total Acres To Be Converted Indirectly	240.0			
C. Total Acres In Site	570.0	0.0	0.0	0.0

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	311.0			
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.2			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	17.0			

PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	79	0	0	0
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PART VI (To be completed by Federal Agency)	Maximum Points				
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))					
1. Area In Nonurban Use	15	15			
2. Perimeter In Nonurban Use	10	10			
3. Percent Of Site Being Farmed	20	9			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	15			
6. Distance To Urban Support Services	15	0			
7. Size Of Present Farm Unit Compared To Average	10	10			
8. Creation Of Nonfarmable Farmland	10	1			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	2			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	5			
TOTAL SITE ASSESSMENT POINTS	160	72	0	0	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	79	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	72	0	0	0
TOTAL POINTS (Total of above 2 lines)	260	151	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>
Reason For Selection:		

(See Instructions on reverse side)

This form was electronically produced by National Production Services Staff

Form AD-1006 (10-83)



United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

June 18, 2010

Mr. Matt Richards
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: Proposal to construct a State Industrial Access road to serve the Memphis Regional Intermodal Facility near Rossville, Fayette County, Tennessee.

Dear Mr. Richards:

Thank you for your email request on June 17, 2010, for an updated letter on the proposal to construct a State Industrial Access (SIA) road for the Memphis Regional Intermodal Facility (MRIMF) in Fayette County, Tennessee. A private third-party intends to fund construction of a connector road from the proposed MRIMF to U.S. Highway 72 in Marshall County, Mississippi. In addition to commenting on construction of the State Industrial Road, the Tennessee Department of Transportation (TDOT) has requested that we include comments on the MRIMF. Personnel from the U.S. Fish and Wildlife Service (Service) have reviewed the subject project and recommend that TDOT coordinate the Mississippi portion with the Jackson Ecological Services Field Office at 601-965-4900. The following comments pertain to the MRIMF and the segment of roadway that would be constructed in Fayette County, Tennessee.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. Therefore, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act of 1973, as amended, are fulfilled. Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

The purpose of Memphis Intermodal Regional Facility is to meet current and future demand for intermodal transportation in the Memphis region. The facility is proposed to serve future transportation needs and reduce congestion, provide for improved safety, and contribute to economic growth. The *Draft Environmental Assessment Package* (Concurrence Point 3) for this project is currently under agency review pursuant the Tennessee Environmental Streamlining Agreement (TESA). ARAP NRS 10.013 (issued March 3, 2010) indicated that the project would permanently impact 2.24 acres of wetlands and 4,738 linear feet of stream. The applicant proposed mitigation for stream impacts by payment of \$947,600 to the Tennessee Stream Mitigation Program (TSMP). Permanent wetland impacts would be mitigated by debiting, at a 2:1 ratio, 4.5 acres from available credit at the Wolf River Wetland Mitigation Bank.

Our office responded that the total stream impacts and mitigation proposals differ substantially between all documents to date. In the *Draft Environmental Assessment Package* (Concurrence Point 3), the applicant summarized potential impacts to streams as totaling 5,352 linear feet. In the Corps of Engineers Public Notice MVM 2009-234, the applicant offered mitigation for 3,946 linear feet of stream impacts. The applicant offers, as proposed in ARAP NRS 10.013, to provide mitigation for 4,738 linear feet of stream impacts. The Service requested at that time that the applicant be required to produce environmental documentation which accurately summarizes stream impacts prior to receiving a water quality certification. We additionally requested that the ARAP permit be held in abeyance pending completion of the TESA review process.

We note that the proposed SIA road would require stream crossings. All work near streams should be accomplished during low flow periods. Equipment staging and maintenance areas should be developed an adequate distance from streams to avoid entry of petroleum-based pollutants into the water. Concrete and cement dust must be kept out of the streams as they alter water chemical properties and can be toxic to aquatic species. Upon completion of the crossing(s), streambanks should be reseeded with native vegetation beneficial to wildlife and restored to original contours. All excess materials should be removed to a properly confined upland area.

Best management practices (BMPs) should be utilized throughout the entire construction project to minimize runoff of sediment and other contaminants into streams. All sediment structures should be inspected and cleaned regularly to ensure the maximum level of sediment control. If structures fail or are found to be inadequate, work should cease and not resume until appropriate corrective measures have been taken. Provided this project is properly coordinated through the TESA process, wetland and stream impacts are adequately addressed, and BMPs are implemented to include stringent erosion and sediment control measures; we would have no objection to the proposed construction.

Thank you for the opportunity to review this project. If you have any questions regarding our comments, please contact John Griffith of my staff at 931/528-6481 (ext. 228) or by email at john_griffith@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mary E. Jennings". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Foa Mary E. Jennings
Field Supervisor



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
MEMPHIS ENVIRONMENTAL FIELD OFFICE
SUITE E-645, PERIMETER PARK
2510 MT. MORIAH ROAD
MEMPHIS, TENNESSEE 38115-1520
PHONE (901) 368-7939 STATEWIDE 1-888-891-8332 FAX (901) 368-7979

June 16, 2009

Ms. Mary Motte Fikri
AMEC Earth & Environmental
3800 Ezell Road, Suite 100
Nashville, TN 37211

RE: Stream Determinations
Unnamed Tributaries of Wolf River
Proposed Norfolk Southern Railroad Site
South of Highway 57, East of Highway 196 and West of Knox Road, Fayette County
HD0905.009 and HD0905.017

Dear Ms. Fikri:

Stream determinations were conducted on several channels at the above-referenced site on April 6, 2009, April 29, 2009, June 2, 2009, and June 10, 2009.

The channels on the site that are identified by the map points **A** (34.99506N, 89.58261W), **B** (35.00084N, 89.58443W), **C** (34.99791N, 89.57269W), **D** (35.01264N, 89.57644W), **G** (34.99998N, 89.58012W), **H** (35.0211N, 89.57505W), and **K** (35.03033N, 89.57398W) have been determined to be **streams** (highlighted in green on attached map) beginning at the identified points. Please note that channels **A** and **C** were not evaluated upstream of the referenced points. These stream determinations are based upon several factors including, but not limited to, connections to ground water, presence of aquatic macroinvertebrates with extended aquatic lifecycles, dominance of vegetation by hydrophytic species and presence of hydric soils within the channels. The determination forms are attached for your reference.

The remaining channels (**E**, **F**, **I**, **J**, **L**, **M**, **N**, **O** and **P**) have been determined to be **wet weather conveyances** (highlighted in yellow on attached map) from their origins to their convergence with the identified streams. These wet weather conveyance determinations are based on the lack of ground water connection, lack of flow except in response to a rain event, lack of hydrophytic vegetation within the channel, lack of hydric soils within the channels and lack of associated wetlands within or adjacent to the channels. Alterations to wet weather conveyances are

authorized under the *General Permit for the Alteration of Wet Weather Conveyances* (enclosed), provided that the terms and conditions of the permit are met.

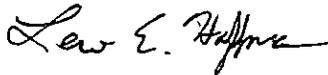
Additionally, several potential wetlands have been noted on the subject property. During our previous meetings with you on site, we have discussed most of these locations. You have indicated to this office that you are awaiting finalization of the stream determinations before you complete your wetlands delineation documentation.

Any alteration to a stream or wetlands requires coverage under an Aquatic Resource Alteration Permit (ARAP) from this Division (application enclosed). Please submit your ARAP application and your wetlands delineation report to Mr. Mike Lee of the Natural Resources Section in Nashville as well as a copy to me at the Memphis Environmental Field Office (MEFO) for our review. Mr. Lee's and the MEFO address can be found on the attached ARAP application form.

Stream and wetland alterations may also require authorization from the U.S. Army Corps of Engineers, Memphis District. They may be reached at (901) 544-0738.

If you have any questions concerning these determinations or concerning the ARAP procedure, please contact me at (901) 368-7962. You may also obtain ARAP information from our web page at www.state.tn.us/environment/permits/arap.htm.

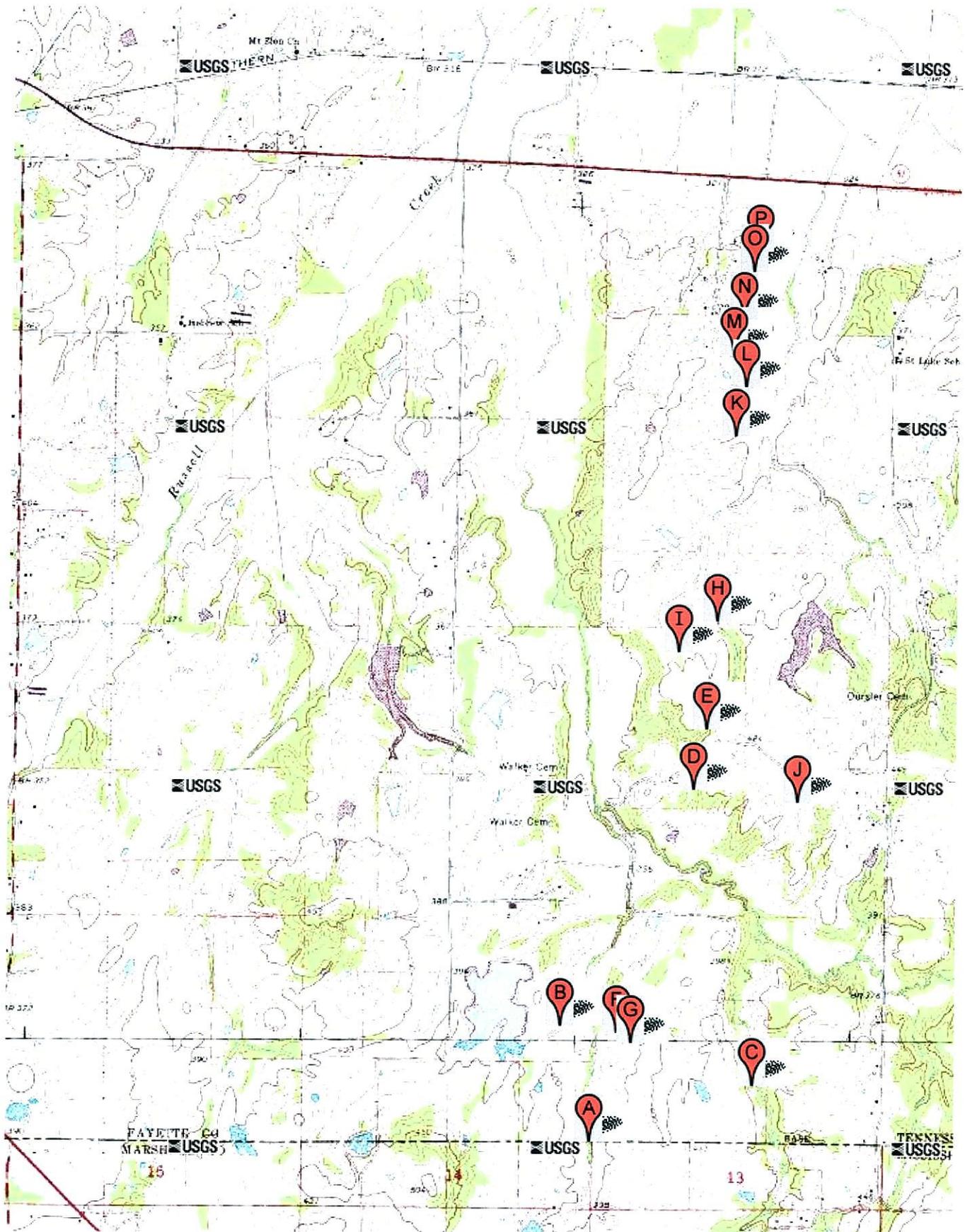
Sincerely,



Lew E. Hoffman
Assistant Manager
Division of Water Pollution Control

Enclosure: Site maps
General Permit for the Alteration of Wet Weather Conveyances
ARAP Application Form

CC: File



Imagery by USGS / Service by TerraServer - Terms of Use



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

July 23, 2009

Ms. Mary Motte Fikri
Natural Resources Specialist
AMEC Earth & Environmental, Inc.
3800 Ezell Road, Suite 100
Nashville, Tennessee 37211

Re: FWS #09-FA-0722

Dear Ms. Fikri:

Thank you for your correspondence of June 23, 2009, regarding a proposed regional intermodal facility project in Fayette County, Tennessee. The proposed project entails the development of approximately 570 acres west of Rossville, and the construction of approximately 1.5 miles of railroad tracks connected to the mainline. All segments of the proposed project are shown on the attachment to your correspondence. Fish and Wildlife Service (Service) personnel have reviewed the information submitted and we offer the following comments.

Information available to the Service indicates that wetlands exist in the vicinity of the proposed project. Enclosed is a copy of a portion of the National Wetlands Inventory's Rossville, Tennessee, quadrangle with the referenced wetlands highlighted. This information is provided for your convenience. Our wetlands determination has been made in the absence of a field inspection and does not constitute a wetlands delineation for the purposes of Section 404 of the Clean Water Act. The Corps of Engineers and Tennessee Department of Environment and Conservation should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes.

We note that the proposed project may impact several unnamed tributaries to the Wolf River. We recommend that you establish a 50-foot protective buffer zone on both sides of these creeks. All of the proposed project activities should be outside of this buffer zone. We further recommend that sufficient rainwater retention structures be incorporated into site plans to prevent excessive runoff from entering the receiving streams. These retention structures should be maintained during both construction and operation of the project. If these recommendations can not be met, note that our agency would likely recommend denial of any federal/state permits required under the Clean Water Act or Tennessee Water Quality Act.

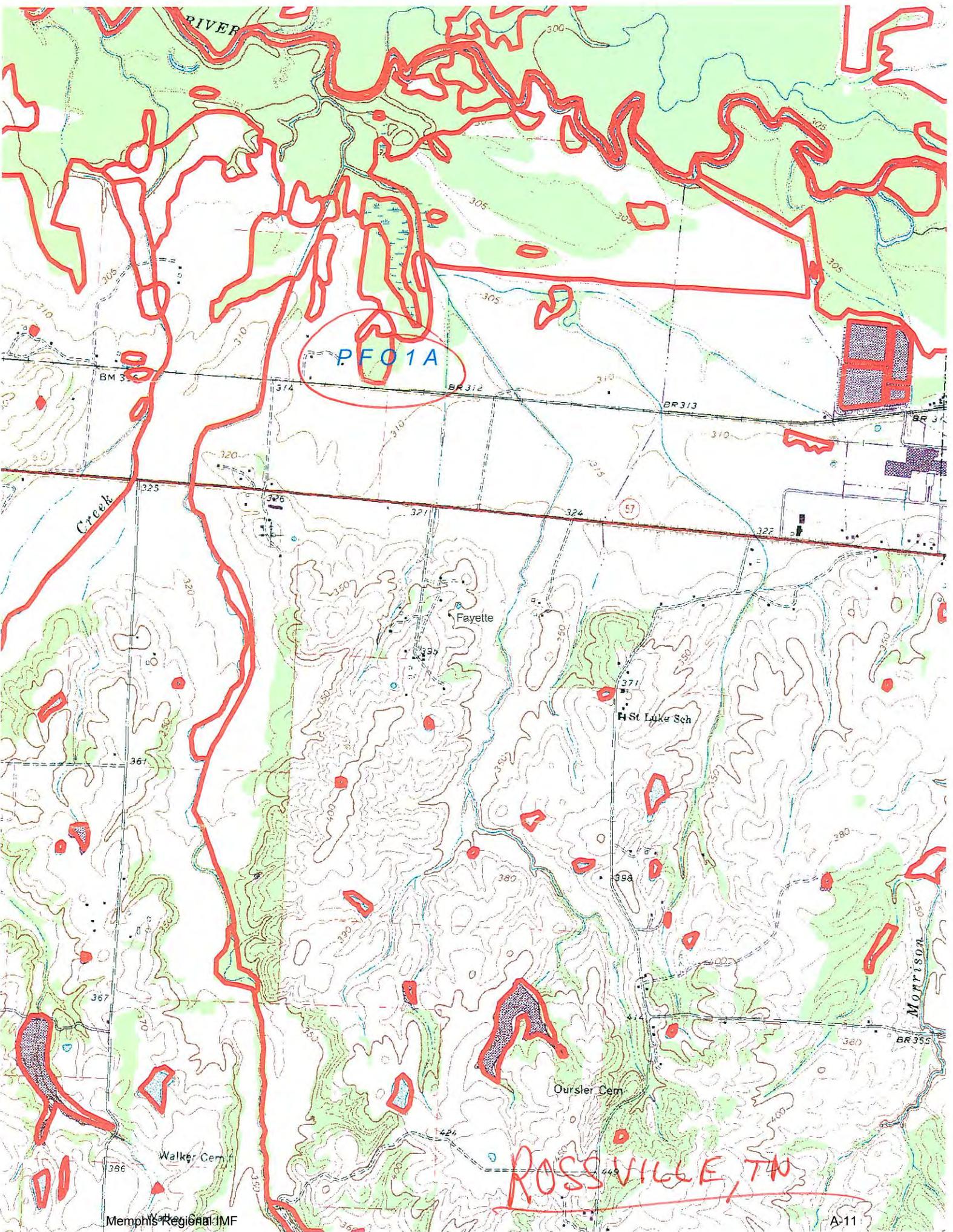
Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality.

Thank you for the opportunity to comment on this proposed action. If you have any questions regarding the information which we have provided, please contact Wally Brines of my staff at 931/528-6481, extension 222, or at wally_brines@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mary E. Jennings", with a long horizontal flourish extending to the right.

For Mary E. Jennings
Field Supervisor





STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Natural Areas
 7th Floor L&C Annex
 401 Church Street
 Nashville, Tennessee 37243
 Phone 615/532-0431 Fax 615/532-0046

June 24, 2009

Mary Motte Fikri
 AMEC Earth and Environmental, Inc.
 3800 Ezell Road, Suite 100
 Nashville, TN 37211

Subject: Norfolk Southern Memphis Regional Intermodal Facility and Lead Track
 Fayette County, Tennessee, Rare Species Database Review, DNA 2009-023

Dear Ms. Fikri:

Thank you for your correspondence requesting an environmental review for the proposed Norfolk Southern Memphis Regional Intermodal Facility and Lead Track project in Fayette County, Tennessee.

We have reviewed the state's natural heritage database with regard to the project location, and we find that no rare species have been previously observed within one mile.

Within four miles of the project, the following rare species have been observed:

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Flowering Plant	<i>Iris fulva</i>	Copper Iris	G5	S2	**	T	Bottomlands
Mollusc	<i>Lampsilis siliquoidea</i>	Fatmucket	G5	S2	**	**	Slow-moving water with mud substrate; Wolf River (Mississippi River tributary); west Tennessee. May also occur at Reelfoot Lake.
Mollusc	<i>Obovaria jacksoniana</i>	Southern Hickorynut	G2	S1	**	**	Medium-sized gravel in water with low to moderate current; Wolf & Hatchie rivers; Mississippi River watershed; west Tennessee.

We wish to emphasize that many areas of the state have been under-surveyed for rare species, especially portions of West Tennessee, and that the above list should not be used as a comprehensive guide for determining impacts to rare species. It is possible that additional rare species may exist in relatively

undisturbed areas of the site including streams, wetlands, and bottomland forests. Based on aerial photography, the site appears to possess such areas with natural vegetation; accordingly, we suggest that the developer assess native habitats on the site and compare them with the requirements for rare species known to Fayette and Shelby Counties. As the state line lies within one mile of the site, we also recommend that you contact the Mississippi Natural Heritage program to determine whether there are rare species known to De Soto and Marshall Counties. If suitable habitat is found on the site or downstream of project activities, we ask that project plans incorporate protective measures for rare species. We also ask that you coordinate this project with the Tennessee Wildlife Resources Agency (Rob Todd, rob.todd@state.tn.us) to ensure that any legal requirements for protection of state-listed rare animals are properly addressed.

Because the site drains into pristine reaches of the Wolf River and associated bottomland forests with known populations of rare species, we ask that the developer implement a robust system of both construction and permanent stormwater controls. For stabilization of disturbed areas, the Division of Natural Areas advocates the use of native trees, shrubs, and warm season grasses, where practicable. Care should be taken to prevent re-vegetation of disturbed areas with plants listed by the Tennessee Exotic Pest Plant Council as harmful exotic plants.

Again, please keep in mind that not all areas of Tennessee have been surveyed and that a lack of records for any particular area is not a statement that rare species are absent from that area. For information regarding the protection status and ranks, please visit our website at <http://state.tn.us/environment/na> .

Thank you for considering Tennessee's rare species throughout the planning of this project. Should you have any questions, please do not hesitate to contact me at (615) 532-0440.

Sincerely,



Silas Mathes
Heritage Data Manager



**MISSISSIPPI
DEPARTMENT OF WILDLIFE, FISHERIES, AND PARKS**

Sam Polles, Ph.D.
Executive Director

July 19, 2009

Mary Fikri
AMEC Earth & Environmental, Inc.
3800 Ezell Road
Suite 100
Nashville, TN 37211

Re: Norfolk Southern Memphis Regional IMF
Intermodal Facility
Marshall County, Mississippi

R# 7398

To Mary Fikri,

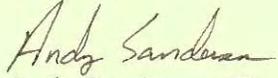
In response to your request for information dated July 15, 2009, we have searched our database for occurrences of state or federally listed species and species of special concern that occur within 2 miles of the site of the proposed project. Please find our concerns and recommendations below.

Thank you for taking time to inquire about our natural heritage records since several waterbodies and animal migratory paths are shared between Tennessee and Mississippi. We do not currently have any records of rare, threatened, or endangered species or communities in the vicinity of your proposed project area. However, the quantity and quality of data collected by the Mississippi Natural Heritage Program are dependent on the research and observations of many individuals and organizations and, in many cases, this information is not the result of comprehensive or site-specific field surveys. In fact, most natural areas in Mississippi have not been thoroughly surveyed and new occurrences of plant and animal species are often discovered. Therefore, we recommend that best management practices be properly implemented, monitored, and maintained to minimize any potential negative impacts resulting from this project.

Based on information provided, we conclude 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.

Please feel free to contact us if we can provide any additional information, resources, or assistance that will help minimize negative impacts to this area. We are happy to work with you to ensure that our state's precious natural heritage is conserved and preserved for future Mississippians.

Sincerely,



Andy Sanderson, Ecologist
Mississippi Natural Heritage Program
(601) 354-6367, ext. 117

The Mississippi Natural Heritage Program (MNHP) has compiled a database that is the most complete source of information about Mississippi's rare, threatened, and endangered plants, animals, and ecological communities. The quantity and quality of data collected by MNHP are dependent on the research and observations of many individuals and organizations. In many cases, this information is not the result of comprehensive or site-specific field surveys; most natural areas in Mississippi have not been thoroughly surveyed and new occurrences of plant and animal species are often discovered. Heritage reports summarize the existing information known to the MNHP at the time of the request and cannot always be considered a definitive statement on the presence, absence or condition of biological elements on a particular site.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

September 18, 2009

Tom Love
Transportation Manager I
Tennessee Department of Transportation
James K. Polk Building
505 Deaderick Street, Suite 900
Nashville, Tennessee 37243-0334

SUBJECT: Participating Agency Request for the Memphis Regional Intermodal Facility (IMF) near Rossville, Fayette County, Tennessee

Dear Mr. Love:

The U.S. Environmental Protection Agency (EPA) received your letter dated September 11, 2009, inviting EPA to become a “participating agency” with the Tennessee Department of Transportation (TDOT) and Federal Highway Administration in the development of the Environmental Assessment (EA) for the proposed new Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Additionally, TDOT requested that EPA comment on the Project Coordination Plan and comment on the proposed project as to potential environmental impacts or areas of concern. In this letter, TDOT requested that EPA “respond to me in writing with an acceptance or denial of the invitation by September 21, 2009.” In accordance with the Tennessee Environmental Streamlining Agreement (TESA), Section 5.5, Invitation to Participating Agencies, “Within 30 days of receipt of the invitation, the signatory agencies and other potential participating agencies, shall decide whether to become participating agencies on the project.” Clearly, EPA has not been given 30 days as required by TESA to adequately to accept or deny the request to become a participating agency, review the Project Coordination Plan or determine potential environmental impacts or areas of concern. However, we accept your invitation to become a participating agency for this project and will endeavor to participate in project activities in the manner suggested in your letter, subject to resource limitations and our TESA agreement. EPA’s participating agency status and level of involvement does not, however, preclude our independent review and comment responsibilities under Section 102(2)(C) of the National Environmental Policy Act and Section 309 of the Clean Air Act, or our authorities under Section 404 of the Clean Water Act. Similarly, our being a participating agency should not imply that EPA will necessarily concur with all aspects of TDOT’s proposed EA.

EPA will provide comments on the Project Coordination Plan and potential project environmental impacts or areas of concern in another correspondence within the 30 days required by TESA. We appreciate the opportunity to work with the TDOT as a participating agency on this important project.



U.S. Department
of Transportation
**Federal Aviation
Administration**

Memphis Airports District Office
2862 Business Park Dr, Bldg G
Memphis, TN 38118-1555
Phone: 901-322-8180

October 1, 2009

Mr. Tom Love
Transportation Manager 1
State of Tennessee
Department of Transportation
Environmental Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243

Re: Memphis Regional Intermodal Facility (IMF) - Rossville, Fayette County, TN

Dear Mr. Love:

The Federal Aviation Administration (FAA) was identified as an agency that may have an interest in the development of the National Environmental Policy Act (NEPA) documents for the above proposal. We have reviewed the information provided by your office for the Memphis IMF planned in Fayette County, TN.

Given the location of the proposal, we have determined that no airports will be impacted. Based on this finding, it is our conclusion that the proposed facility is beyond the jurisdiction of the FAA.

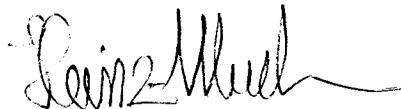
Thank you for the opportunity to comment on this project.

Sincerely,

Phillip J. Braden, Manager
Memphis Airports District Office

Please contact Jamie Higgins, as our primary agency representative for this project, at (404) 562-9681 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Heinz Mueller", with a long horizontal flourish extending to the right.

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

cc: Federal Highway Administration – Tennessee Division



United States Department of the Interior

U. S. GEOLOGICAL SURVEY

Reston, VA 20192

In Reply Refer To:
Mail Stop 423
ER 09/999

SEP 21 2009

Mr. Tom Love
Department of Transportation
Environmental Division
Suite 900
505 Deaderick Street
Nashville, TN 37243-0334

Subject: Invitation to be a Participating Agency for Memphis Regional Intermodal Facility (IMF) near Rossville, Fayette County, Tennessee

Dear Mr. Love:

This is in response to your letter dated September 11, 2009 to the Director of the Office of Environmental Policy and Compliance requesting that the U.S. Department of the Interior serve as a participating agency on the subject environmental impact statement.

The U.S. Geological Survey (USGS) declines the request to be an official participating agency for this NEPA activity. The basis of this decision is that the USGS has no official jurisdiction or authority with respect to the project or the natural resources that may be affected by the proposed action. However, the USGS is a source of scientific data and expertise concerning the natural resources of the project area.

If you have any questions concerning our decision, you can contact me at (703) 648-4423. For information concerning the natural resources of the project area, please contact Scott Gain, Director of the USGS Tennessee Water Science Center, at (615) 837-4700.

Sincerely,

James F. Devine
Senior Advisor for Science Applications

Copies to:
DOI Office of Environmental Policy and Compliance
USGS Tennessee Water Science Center



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

October 8, 2007

Mr. Tom Love
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: Initial Coordination for the proposed development of Memphis Regional Intermodal Facility (IMF) near Rossville, Fayette County, Tennessee.

Dear Mr. Love:

The Tennessee Department of Transportation (TDOT), in cooperation with the Federal Highway Administration (FHWA), is initiating National Environmental Policy Act (NEPA) documentation and analysis for the proposed construction of Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. The facility would be designed to handle containerized intermodal freight.

TDOT and the FHWA have requested that the U.S. Fish and Wildlife Service (Service) be a participating agency with the development of the Environmental Impact Statement. Acceptance of this request does not imply that the Service supports the proposal or has any special expertise with respect to the evaluation of the project.

We have reviewed the project summary and the possible role that our agency would have in the development of Memphis Regional IMF in Fayette County, Tennessee. We accept the invitation to be a participating agency in the development of this project. Our office will strive to provide timely input, participate in coordination meetings, and comment on all alternatives.

Thank you for the opportunity to participate in this process. If you have any questions regarding our comments, please contact John Griffith of my staff at 931/528-6481 (ext. 228) or by email at john_griffith@fws.gov.

Sincerely,

for
Mary E. Jennings
Field Supervisor



United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
710 Locust Street, Second Floor
Knoxville, TN 37902

SEP 21 2009

Mr. Tom Love
Tennessee Department of Transportation
Environmental Division, Suite 900
James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: Coordination package and Invitation to be a Participating Agency
For Memphis Regional Intermodal Facility near Rossville, Fayette County,
Tennessee

On behalf of the Office of Surface Mining (OSM) Knoxville Field Office, I would like to thank the Tennessee Department of Transportation for their e-mail correspondence of September 15, 2009, concerning OSM having been invited to be a participating agency for the above referenced project. In your letter, you also requested that OSM review the material provided and advise you of any comments or concerns we may have.

As a coal regulatory agency, our area of interest is generally limited to the coalfields of East Tennessee and this project lies well outside the coalfield area. This in combination with the fact that mineable coal is not known to exist in the Fayette County area and the fact that Federal regulations at 30 CFR Section 707 provide for a broadly based exemption from complying with Federal mining regulations for coal extraction incident to government financed highway construction, make it unlikely that our agency would have any jurisdiction or authority with respect to this proposed project. As such, we must request that OSM no longer be considered a participating agency on the above proposed project.

We appreciate the opportunity to participate in this process and look forward to working with you on future projects that fall within the coalfields area of East Tennessee. If at any time in the future you have questions or need additional information, please don't hesitate to contact us.

Sincerely,

Earl Bandy, Director
Knoxville Field Office



Hagerty, Robin L

From: Straw, William [William.Straw@dhs.gov]
Sent: Tuesday, September 22, 2009 7:15 AM
To: Hagerty, Robin L
Cc: Tom Love
Subject: RE: Memphis Regional Intermodal Facility - Agency Letter (1)
Follow Up Flag: Follow up
Flag Status: Red

Dear Ms. Hagerty:

Good morning and thank you for the opportunity to comment on the Memphis Regional Intermodal Facility (IMF) near Rossville, in Fayette County, Tennessee.

FEMA's authority and participation here is limited to informing and advising the lead Federal funding agency (or authorized designee), for them to make their project-specific regulatory compliance evaluation and determinations under Presidential Executive Order 11988 (EO 11988) for floodplain management.

EO 11988's 8-step review process helps project decision makers to make more informed decisions about their project's risks, options, costs, feasibilities, plans, designs, etc. EO 11988 requires documentation showing the project EO 11988 review was done, and the agency's reasoning behind their project-specific EO 11988 determinations. The project EO 11988 eight-step review and documentation can be integrated into the project NEPA review process and review document.

If the project may affect or be affected by a 100-year jurisdictional floodplain, then the lead Federal agency (or designee) would need to consult with all potentially affected communities' Floodplain Administrators. For "critical facility" projects (e.g., police, fire, hazmat, public records, medical, nursing home, emergency shelter, water or wastewater treatment, etc.), that would be if the project may affect or be affected by the 500-year jurisdictional floodplain.

If applicable for the Memphis Regional IMF, that would require consultation with the Floodplain Administrators for Fayette County, and possibly for the City of Rossville, for their determinations. Both the County and the City participate in the National Flood Insurance Program (NFIP). Their Floodplain Administrators have floodplain management authority and responsibility for their jurisdictions. They may have different primary job titles. They may work in planning, zoning, development, public works, or another local government office. Search starting points:

Fayette County : <http://www.fayettetn.us/>

City of Rossville: <http://www.fayettetn.us/Towns%20&%20Cities%20/Rossville%20.htm>

Each NFIP-participating community (county, municipal, or tribal) has a floodplain management ordinance modeled on FEMA's regulations at 44 CFR Part 60.3.

- 1) Such ordinances require anyone proposing "development" within a specific jurisdiction to get a permit from that jurisdiction before starting any project physical work.
- 2) Such ordinances also require notification of adjacent communities and the State NFIP Coordinator before altering a watercourse (if applicable).
- 3) Affected communities' floodplain management regulations and related flood insurance policy holders' premiums are both tied to mapped flood risks. When physical environment alterations affect flood risks, the corresponding Flood Insurance Rate Maps (FIRMs) must be revised as outlined in 44 CFR Part 65 to keep flood risk maps current.

If needed, the State NFIP Coordinator contact link is http://www.state.tn.us/ecd/CD_flood_insurance_prg.html.

Our office's FIRM change contact is Mr. Mohammad Waliullah at 770-220-5493.

Please contact me again if I can help further.

Thank you again for the opportunity to comment on this project.

Best regards, +r
 Wm R Straw, PhD
 Regional Envir Plng/Hist Pres Ofcr
 DHS/FEMA Region IV
 770-220-5432



Please consider costs/environment before printing this e-mail

From: Hagerty, Robin L [mailto:robin.hagerty@amec.com]
Sent: Monday, September 21, 2009 7:49 PM
To: Straw, William
Cc: Tom Love
Subject: FW: Memphis Regional Intermodal Facility - Agency Letter (1)

Regional Environmental Officer, Federal Emergency Management Agency,

The original letter (attached) did not allow you the required 30 days to respond to the 'Invitation to be a Participating Agency for Memphis Regional Intermodal Facility (IMF) near Rossville, Fayette County, Tennessee'. We apologize for this confusion.

As a Federal Agency, you must express in writing that you will not be participating before Oct 12. We assumed your agency would not be participating in the NEPA Process. To assist us in tracking participation, we would appreciate a response that you will be participating or will not be participating as soon as your reach a decision.

If you have any questions or concerns, please contact me or Tom Love, TDOT.

Thanks, Robin
Robin L. Hagerty, PE, CPESC[®]
Project Manager
AMEC Earth and Environmental

Tel (615) 333-0630
Fax (615) 781-0655
Mobile (615) 584-6031
Email: Robin.Hagerty@amec.com

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Natural Resources Conservation Service
675 US Courthouse
801 Broadway
Nashville, Tennessee 37203

September 21, 2009

Tom Love
Transportation Manager I
State of Tennessee Department of Transportation
Suite 900 – James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Dear Mr. Love:

Thank you for allowing Tennessee Natural Resources Conservation Service (NRCS) the opportunity to provide information concerning the TDOT Coordination Plan for Agency and Public Involvement for the Norfolk Southern Railway Memphis Regional Intermodal Facility in Fayette County.

Although the USDA-NRCS administers the Wetland Reserve Program under the Food, Conservation, and Energy Act of 2008 (and preceding Farm Bills), the authority for wetland regulations lies with the US Army Corps of Engineers and the State of Tennessee. Tennessee NRCS will determine if any Wetland Reserve Program lands will be impacted and provide such information to you.

The Summary included states that a Farmland Impact Rating Form will be sent to the Dept of Agriculture. We will be glad to provide the completed Rating Form to you upon request. Your request should be sent to: Charlie Davis, Resource Soil Scientist, 235 Oil Well Road, Jackson, TN 38305-7914, and phone number (731) 668-0700.

Although our input to the planned environmental assessment may be limited to any Wetland Reserve Program lands affected and the completion of the Farmland Impact Rating Form, we accept the invitation to become a Participating Agency.

Sincerely,

A handwritten signature in black ink that reads "Carol Chandler". The signature is fluid and cursive.

CAROL CHANDLER
Biologist

cc: Frederick Walker, DC, NRCS, Memphis, TN
Richard West, AC, NRCS, Jackson, TN
Jeff Sanders, SRC, NRCS, Nashville, TN

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STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
7TH FLOOR, L&C ANNEX
401 CHURCH STREET
NASHVILLE, TENNESSEE 37243-1534

October 12, 2009

Mr. Tom Love
Environmental Division
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deadrick Street
Nashville, Tennessee 37243-0334

RE: Coordination Package and Invitation to be a Participating Agency for Memphis Regional Intermodal Facility (IMF) near Rossville, Fayette County, Tennessee

Dear Mr. Love:

We are in receipt of the above referenced material and are hereby advising you that the Tennessee Department of Environment and Conservation does intend to be a participating agency in the development of this project. At this time, we do not have specific comments on the Coordination Plan.

Thank you for the opportunity to participate in the planning of this project.

Sincerely,

Daniel C. Eagar, Manager
Natural Resources Section



Tennessee Department of Agriculture
Ellington Agricultural Center, Box 40627, Nashville, Tennessee 37204
615-837-5100 / FAX: 615-837-5333

Ken Givens
Commissioner

Phil Bredesen
Governor

September 21, 2009

Mr. Tom Love
Transportation Manager 1
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deadrick Street
Nashville, TN 37243-0334

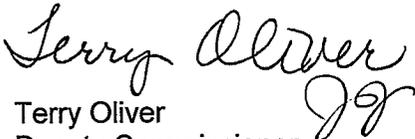
Re: Invitation to be a Participating Agency
Memphis Regional Intermodal Facility, Rossville, Fayette County, Tennessee

Dear Mr. Love:

The Department of Agriculture accepts the invitation to become a participating agency with TDOT and FHWA in the development of the Environmental Assessment for the above-referenced project.

Please do not hesitate to contact us if you have questions about our comments.

Sincerely,


Terry Oliver
Deputy Commissioner

TO/jm/jj



TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

September 16, 2009

Tom Love
State of Tennessee
Department of Transportation
Environmental Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Re: Invitation to be a Participating Agency for the Memphis Regional Intermodal Facility (IMF) near Rossville, Fayette County, Tennessee

Dear Mr. Love:

The Tennessee Wildlife Resource Agency has received and reviewed the information your office provided to us regarding the invitation to become a participating agency for the Memphis Regional Intermodal Facility (IMF) near Rossville, Fayette County, Tennessee. Our current concerns are potential environmental impacts associated with potential stream, wetland, and floodplain impacts, and impacts to federally and state listed species that may occur do to the construction of this project. We accept the invitation to participate in this process and encourage continued consultation with our agency in future phases of this project to further reduce impacts to fish and wildlife resources.

We thank you for the opportunity to comment during the initial coordination process and look forward to working with TDOT personnel in the future to reduce potential impacts to fish and wildlife resources associated with this project.

Sincerely,

Robert M. Todd
Fish and Wildlife Environmentalist

cc: Allen Pyburn, Region I Habitat Biologist
Alan Peterson, Region I Assistant Manager

The State of Tennessee

IS AN EQUAL OPPORTUNITY, EQUAL ACCESS, AFFIRMATIVE ACTION EMPLOYER



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

September 25, 2009

Mr. Tom Love
TDOT Environmental Division
505 Deadrick Ave./900
Nashville, Tennessee, 37243-0334

RE: FHWA, REGIONAL INTERMODAL FACILITY, ROSSVILLE, FAYETTE COUNTY

Dear Mr. Love:

In response to your request, received on Tuesday, September 22, 2009, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800. You may wish to familiarize yourself with these procedures (Federal Register, December 12, 2000, pages 77698-77739) if you are unsure about the Section 106 process.

Considering available information, we find that the project as currently proposed MAY ADVERSELY AFFECT PROPERTIES THAT ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. You should now begin immediate consultation with our office. Please direct questions and comments to Joe Garrison (615) 532-1550-103. We appreciate your cooperation.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg

ACC: Keith Purv's
Mark McConnell

Melinda L. McGrath
Deputy Executive Director/
Chief Engineer

Brenda Znachko
Deputy Executive Director/
Administration



Steven K. Edwards
Director
Office of Intermodal Planning

Willie Huff
Director
Office of Enforcement

Larry L. "Butch" Brown
Executive Director

P. O. Box 1850 / Jackson, Mississippi 39215-1850 / Telephone (601) 359-7249 / FAX (601) 359-7050 / GoMDOT.com

April 27, 2010

The Honorable Gerald F. Nicely
Commissioner
Tennessee Department of Transportation
James K. Polk Building
505 Deaderick Street, Suite 700
Nashville, TN 37243

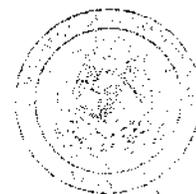
Dear Commissioner Nicely:

On behalf of the Mississippi Department of Transportation (MDOT), we accept your invitation to be a Cooperating/Participating Agency with TDOT and FHWA in the NEPA documentation for the Memphis Regional Intermodal Facility (MRIMF) in Fayette County, Tennessee. We would like to take this opportunity to express our concerns with the impacts to US 72 and the surrounding areas in Mississippi resulting from the MRIMF and anticipated secondary and cumulative developments.

MDOT has the responsibility for maintaining the integrity of the MS Highway System in a safe, cost effective, and environmentally sensitive manner. When changes or modifications to the highway system are proposed that have the potential to impact the safety and efficiency of traffic flow, MDOT's practice is to seek a solution that will safely provide acceptable levels of service (LOS) over a twenty (20) year design period or longer. This methodology eliminates expensive, time consuming changes to our highway system every few years as an area develops.

MDOT is in the process of finalizing right-of-way maps and deeds and will soon begin to acquire the needed rights-of-way for this section of US 72 in order to improve the facility from a two-lane to a four-lane divided highway. MDOT was granted a Finding of No Significant Impact (FONSI) in 2005 by the FHWA - MS Division. Construction for the improvements to US 72 is currently scheduled for FY 2012.

A few months ago Mr. William Adair, a landowner came to my office with information detailing his development and requested a permit for an access point onto US 72 for an industrial road and a grade separation for a railroad spur. This access road will be the sole ingress/egress point for the MRIMF as well as his planned development. It should be noted that Mr. Adair's proposed industrial development is located north and south of US 72 and also to the east of the MRIMF. The land located to the East of the development is bordered by Knox Road. During the Fayette County (TN) approval process for the planned development, Mr. Adair agreed to provide access to the industrial area through his development only at US 72 in Mississippi, thus forgoing any ability to utilize Knox Road.



The Honorable Gerald F. Nicely
Page 2
April 27, 2010

During this meeting, Mr. Adair submitted traffic information supplied by the railroad for the MRIMF, land use maps for his developments, and described in detail the ultimate build out to better accommodate the large amount of freight shipments from the MRIMF. Based on the information supplied to date and follow up discussions With Mr. Adair, MDOT believes that a grade separated interchange is the only safe and adequate solution for the industrial road and the rail spur. I believe this decision is clearly supported by guidance outlined in MDOT's Roadway Design Manual and AASHTO's Green Book (attached).

Other justification supporting the need for an interchange includes:

Functional Classification: The functional classification of US 72 is a rural principal arterial with a design speed of 65 mph.

Congestion: US 72 is four-laned through Mississippi except for a six mile segment between SR 302 and the TN State Line. As noted above, MDOT plans to begin construction on widening US 72 to complete the four-lane section in FY 2012. Traffic Analysis conducted for the MRIMF shows that a signalized intersection at US 72 and Industrial Road as a T-intersection has multiple turning movements with unacceptable levels of service (LOS) in 2032. The overall intersection LOS (32.9) is approaching LOS D in 2032 even with providing dual left turns on US 72 and Industrial Road.

Secondary & Cumulative Development: Based on further conversations with the Developer, who requested access to US 72 and who also agreed to provide access to the MRIMF, it is our understanding that the ultimate build out for this area will include an access road (aka Industrial Road) and a rail spur which will cross US 72 which can accommodate heavy loads exceeding the weight limits on US 72. Therefore, the need for an interchange is further supported.

In addition to the information above, MDOT's position is that an interchange is fully warranted based on safety alone. In 1987 the Department began a statewide four lane program. Due to funding constraints and relying completely on LOS many intersections similar to the proposed intersection were constructed at grade. Even though the LOS for these newly constructed intersections was not failing, the Department began to notice increased accidents which resulted in fatalities or severe injuries. The Department now considers LOS as a tool but by far not the deciding factor as to whether an intersection should be grade separated. Another consideration is driver expectations. There will be an interchange at US 72 and SR 302 and another interchange at I-269 and US 72 in Tennessee. The large number of slow-moving trucks from MRIMF will be integrated with high speed traffic on US 72 within a rural area. To address potential safety concerns, MDOT's desire is to construct interchanges in rural areas in order to avoid traffic signals which contribute to problems associated with mixing traffic with different operating speeds. Mississippi has one of the highest fatal car crash rates in the United States. MDOT is concerned that safety of the traveling public will be compromised without an interchange at this location.

The funding for this intersection has been secured through the Mississippi Legislature, local partners, and MDOT. Discussions with the Congressional Delegation regarding potential earmarks have been favorable. MDOT firmly believes that a grade separated interchange should be included in the NEPA

The Honorable Gerald F. Nicely
Page 3
April 27, 2010

Documentation currently underway for the MRIMF since this is the sole vehicular entry point to the intermodal facility. Our position is supported by EPA as noted in their comments to the Draft EA – TESA Concurrence Point #3. Because of the concerns stated above and since the NEPA process addresses potential impacts from the holistic standpoint, MDOT respectfully requests that the NEPA Documentation for the MRIMF address the footprint of a grade separated interchange on US 72 at Industrial Road.

If you have any questions or need additional information, please do not hesitate to contact Ms. Melinda McGrath at telephone number (601) 359-7004.

Sincerely,



Larry L. "Butch" Brown
Executive Director

LLB:MLM:kdt

Attachments

pc: Mr. Joe Carpenter, Chief, Environmental Bureau, TDOT
Mr. Doug Delaney, Assistant Chief, Environment & Planning, TDOT
Ms. Pamela M. Kordenbrock, Division Administrator, FHWA – TN Division
Mr. Andrew H. Hughes, Division Administrator, FHWA – MS Division
Ms. Melinda McGrath, P.E., Deputy Executive Director/Chief Engineer, MDOT



Fayette County Government

Rhea Taylor / County Mayor

September 21, 2009

Tom Love
Transportation Manager I
Tennessee Department of Transportation
Environmental Division
Suite 900, James K. Polk Building
505 Deadrick Street
Nashville, TN 37243-0334

RE: Participating Agency for Memphis Regional Intermodal Facility (IMF)
Near Rossville, Fayette County, Tennessee

Dear Mr. Love,

I want to be designated as a participating agency during the NEPA process for the Intermodal facility near Rossville, TN. Please alert me to any meetings to attend and any documents that I may need to acquire.

Thank you,

Rhea Taylor
Fayette County Mayor

James C. Gaither, Mayor
Aldermen:

Ben Farley	Ken Spencer
Jerry Fant	Steve Murray
Dee Lenderman	Randall Cox



Town of Rossville, Tennessee

September 16, 2009

Mr. Tom Love
Tennessee Department of Transportation, Environmental Division
Suite 900 – James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

**RE: Coordination Package and Invitation to be a Participating Agency for
Memphis Regional Intermodal Facility (IMF), Rossville, Tennessee**

Dear Mr. Love:

Pursuant to the Department of Transportation's offer for the Town of Rossville to be a Participating Agency in the development of the Memphis Regional Intermodal Facility, the Town does indeed wish to be included in this process. As this IMF will have significant impacts on our community, both from a land use standpoint and also from its impact on our existing infrastructure, it is imperative that we stay connected with the development of this project.

I will be the main point of contact for the Town; however, we also respectfully request that Fisher & Arnold, Inc., who serves as the Town's consulting engineers and planners, be included in your distribution list for all of the various reviews, coordination meetings and field reviews as appropriate. I have listed our main point of contact with Fisher & Arnold, Inc. below for your use.

Thank you in advance for your invitation for Rossville to be a part of this process.

Yours truly,

A handwritten signature in black ink that reads "James C. Gaither".

James Clay Gaither, Mayor

Cc: Mr. Tim Verner, P.E.
Fisher & Arnold, Inc.
9180 Crestwyn Hills Drive
Memphis, TN 38125
(901) 748-1811
(901) 748-3115 fax

360 Morrison St. PO Box 27 Rossville, TN 38066

(901)853-4681 (phone) (901)854-3976 (fax)

3725 Highway 196, Suite B
Piperton, TN 38017
P.O. Box 328
Collierville, TN 38027-0328



Office: 901.853.4830
Fax: 901.854.8396

September 17, 2009

Mr. Tom Love
Transportation Manager 1
Tennessee Department of Transportation
Environmental Division
505 Deaderick Street, Suite 900
Nashville, TN 37243-0334

RE: Participating Agency for Memphis Regional Intermodal
Facility (IMF) near Rossville, Fayette County, TN

Dear Mr. Love:

Receipt is acknowledged of your letter dated September 11, 2009, concerning the above, and I wish to advise, on behalf of the City of Piperton, that we agree to become a participating agency with TDOT and FHWA in the development of the NEPA documentation.

We look forward to participating in this endeavor.

Sincerely,



Whitney J. Chambers, Mayor

Wjc/em

Stan Joyner
Mayor

Maureen Fraser, *Alderman*
Jimmy Lott, *Alderman*
Tom Allen, *Alderman*
Tony Sarwar, *Alderman*
Mike Russell, *Alderman*



James H. Lewellen
Town Administrator

Lynn Carmack
Town Clerk

The Town of Collierville

December 15, 2009

Tennessee Department of Transportation
Environmental Division
Suite 900
James K Polk Building
505 Deadrick Street
Nashville, Tennessee 37243-0334
ATTN: Tom Love, Transportation Manager

Dear Mr. Love,

Thank you for your letter of December 15, 2009 inviting The Town of Collierville to become a participating agency with TDOT and FHWA in the development of the NEPA documentation of the Fayette County Intermodal Facility. The Town of Collierville would like to accept your offer to be designated as a participating agency.

If you need additional information at this time, please feel free to contact James Lewellen, Town Administrator, or me at 901-457-2200.

Sincerely,

Stan Joyner
Mayor



Fayette County Office of Planning & Development

16265 Highway 64, Suite 4 Somerville, TN 38068

Telephone: (901) 465-5250 Fax: (901) 465-5259

Mr. Tom Love
Transportation Manager I
TDOT - Environmental Division
Suite 900 – James K. Polk Building
505 Deadrick Street
Nashville, TN 37243-0334

September 21, 2009

Mr. Love,

As temporary representative of the Fayette County Office of Planning and Development, I accept on behalf of John Pitner, Director TDOT's invitation to participate in the Agency for Memphis Regional Intermodal Facility project. This office's areas of concern are runoff and drainage, ground water contamination, traffic impact, blight and aesthetics as well as offensive noise, odor, smoke, dust, rubbish, heat, glare, or vibration discernable at the lot line. Thank you for the invitation to participate and please do not hesitate to contact me.

Regards,

Esther Sykes-Wood
Assistant Planner
OPD - Fayette County
16265 Highway 64 Suite 4
Somerville, TN 38068
901-465-5250

Stan Joyner
Mayor

Maureen Fraser, *Alderman*
Jimmy Lott, *Alderman*
Tony Sarwar, *Alderman*
Tom Allen, *Alderman*
Mike Russell, *Alderman*



James H. Lewellen
Town Administrator

Lynn Carmack
Town Clerk

Town of Collierville

October 20, 2009

Mr. Thomas Love, Environmental Division
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243

Dear Mr. Love,

Decisions about the intermodal facility are of great concern for Collierville, especially as it relates to environmental and traffic impacts; however, the decision to locate appears to now been set for many reasons (including legal, economic, and logistical). The Memphis metropolitan area, with its prominent transportation infrastructure and locational advantages, make it ideal for rail transit. Rail is experiencing a resurgence due to its many advantages over other modes of travel. The challenge for communities like Collierville, including our neighbors to the east, is to be ready for such change, and to understand its impacts on the local environment and infrastructure. To do that, we will need help from the State of Tennessee, and we will need to work together. The following are our concerns at this point in the process:

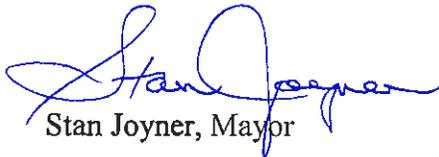
- **Environmental Concerns:** The impacts to groundwater, wildlife habitat, air quality, and wetlands are a regional concern, and do not recognize government boundaries. The State of Tennessee is blessed with many natural resources, and has wisely adopted many regulations to ensure their protection and conservation.
 - **Equitable Application of Standards:** We implore the State and Norfolk Southern Railway to meet or exceed Tennessee's tough environmental regulations, and for this use to hold itself to the same restrictions that apply to our private sector citizens, which are not empowered with special privileges and exemptions from law.
 - **Threat of Hazardous Material Spills:** Of particular concern to Collierville is that we do not fully understand the truck movements or rail traffic anticipated by this new location, and thusly cannot ascertain and plan for the risk of any adverse environmental impacts do to accidental spills of toxic loads being carried by rail or on the road, and the resulting impacts to our role as a groundwater recharge for the region, and the quality of our streams and drainage conveyances.
 - **Noise and Air Quality:** Similarly, understanding noise and air quality impacts for the anticipated truck routes is imperative.
 - **Land Use Impacts (Gateway to Collierville, Shelby County, State of Tennessee)** In April 2009, Collierville adopted a Small Area Plan for the I-269 (see attached) area that anticipated upscale and walkable office, retail, light manufacturing uses, and could support a population of approximately 8,000 additional residents. Of particular concern would be the viability of this adopted vision for this new gateway given the prospect of high truck traffic.

500 Poplar View Parkway • Collierville, TN 38017 • (901) 457-2200 • Fax: (901) 457-2207

- **Traffic Concerns:** Since the decision has been made to put the facility near Highway 72 (US 72), Collierville and our neighboring communities need immediate and comprehensive help from the State and the Department of Transportation (TDOT) to understand and help prevent serious traffic problems. The following are items that we have considered locally to address this issue, but it is difficult for us to know where to prioritize our efforts in pursuing these transportation needs without knowing the full impact of the intermodal facility.
 - It could be that a route providing a direct and convenient access for truck traffic from the intermodal facility to the Chickasaw Trail Industrial Park in Marshall County, Mississippi could be created for trucks to Highway 72, and then on to the new I-269 at Goodman Road (MS 302) to better disperse traffic and prevent concentration of traffic and congestion on Highway 72 and other area state and local roadways, and reduce risks for adverse environmental impacts. This was a concern of the drafters of Collierville's I-269 Small Area Plan (see page 53).
 - Completion of I-269 and SR 385 to I-40;
 - The potential widening of SR 57 (Poplar Avenue);
 - The importance of having I-269 to bridge Fletcher Road to ensure long-term east-west connectivity and prevent bottlenecks on SR 57.
 - Improvements to Collierville-Arlington Road, especially where it impacts Highway 57.
 - The widening of Highway 72 from SR 57 to SR 385, but in a context-sensitive way.

In conclusion, Collierville asks that those at the State that are involved with this decision and its impacts should keep truck movements and routes as a major factor in understanding the environmental impacts of the intermodal facility.

Sincerely,



Stan Joyner, Mayor

Attachment:
Town of Collierville I-269 Small Area Plan

Appendix B – Section 106 Coordination





TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

February 9, 2010

Ms. Martha Carver
Tennessee Department of Transportation
505 Deaderick St/900
Nashville, Tennessee, 37243-0349

RE: FHWA, ARCHITECTURAL SURVEY REPORT, MEMPHIS REGIONAL INTERMODAL FAC.,
ROSSVILLE, FAYETTE COUNTY

Dear Ms. Carver:

In response to your request, received on Monday, February 1, 2010, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800. You may wish to familiarize yourself with these procedures (Federal Register, December 12, 2000, pages 77698-77739) if you are unsure about the Section 106 process.

Considering the information provided, we find that the area of potential effects contains no architectural resources eligible for listing in the National Register of Historic Places affected by this undertaking. You should notify interested persons and make the documentation associated with this finding available to the public.

All borrow areas outside proposed rights-of-way will require separate certification as specified under Section 107.06-Federal Aid Provisions. If your agency proposes any modifications in current project plans or discovers any archaeological remains during the ground disturbance or construction phase, please contact us to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. This office appreciates your cooperation.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

January 27, 2010

Mr. Gerald Kline
Tennessee Department of Transportation
Environmental Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

RE: FHWA, ARCHAEOLOGICAL ASSESSMENT, MISS. REGIONAL INTERMODAL FACILITY,
ROSSVILLE, FAYETTE COUNTY, TN

Dear Mr. Kline:

At your request, our office has reviewed the above-referenced archaeological survey report in accordance with regulations codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). Based on the information provided, we find that the project area contains no archaeological resources eligible for listing in the National Register of Historic Places.

If project plans are changed or archaeological remains are discovered during construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jmb



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
SUITE 900 - JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334**

September 22, 2009

Mr. H. T. Holmes
Mississippi Department of Archives and History
P.O. Box 571
Jackson, MS 39205-0571

**Subject: Section 106 Initial Coordination for Memphis Regional Intermodal Facility (IMF) near
Rossville, Fayette County, Tennessee**

Dear Sir:

The Tennessee Department of Transportation (TDOT), in cooperation with the Federal Highway Administration (FHWA), is initiating National Environmental Policy Act (NEPA) documentation and analysis for a proposed Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. The proposed IMF would be designed to handle containerized intermodal freight. The IMF would be located near the city of Rossville, approximately 1.5 miles south of State Route 57, 0.5 miles west of Knox Road, and 0.5 miles north of the Mississippi/Tennessee state line. A project data summary is attached showing the project location that is under study.

The Advisory Council on Historic Preservation regulations stipulate that TDOT invite state historic preservation officers (SHPOs) to participate in the historic review process as a consulting party. TDOT would like to invite you, as the Mississippi historic preservation officer, to participate as a consulting party for the proposed project.

If you choose to participate as a consulting party, you will receive copies of TDOT's cultural resource reports and will be invited to attend project-related meetings between TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held. As a consulting party, you should be prepared to attend any such meetings between TDOT and the TN-SHPO and provide a response to TDOT's reports in written form within 30 days upon receipt of the report. TDOT also wishes to seek your comments on the identification and evaluation of historic properties that the proposed project might impact.

In coordination with the Tennessee Historical Commission, cultural resources investigations, which include archival research and a Phase I archaeological survey, are being initiated. The Area of Potential Effect (APE) for the archaeological survey is defined as the entire subject property boundary.

No structures exist on the property except for a modern storage shed, which is less than 50 years old. A viewshed survey to assess visual impacts to historic architectural resources from the proposed Memphis Regional IMF is being initiated. The Tennessee Historical Commission has requested that the APE for the architectural viewshed survey be defined as a one-mile buffer around the proposed Memphis Regional IMF footprint. The viewshed survey APE extends into Marshall

County, Mississippi. The tallest parts of the proposed project would be light fixtures (approximately 70 feet in height) and the crane used for loading and unloading containers (approximately 47 feet).

If you would like to participate as a consulting party, please write to me at the above address. To facilitate our planning process, please respond within 30 days of receipt of this letter. Thank you for your assistance.

If you have any questions or would like to discuss in more detail the project or our agency's respective roles and responsibilities during the preparation of this National Environmental Policy Act (NEPA) documentation and analysis, please contact me at (615) 741-5364 or by e-mail (Tom.Love@tn.gov).

Thank you for your cooperation and interest in this project.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tom Love".

Tom Love
Transportation Manager 1

Enclosures: Project Summary
 Project Vicinity and Maps
 Project Map Outlining APE

Memphis Regional Intermodal Facility

Project Data Summary Sheet

Project Location

Memphis Regional Intermodal Facility (IMF) in Fayette County near Rossville, Tennessee.

General Project Description

Memphis Regional Intermodal Facility will be a rail terminal for transferring freight from one transportation mode to another, in this case between trains and trucks, without handling of the freight itself when changing modes. It is a large (approximately 7,000 feet long by 2,400 feet wide) parking lot where the rail to truck and truck to rail modal containers are transferred. The IMF will assist in addressing projected future freight transportation needs, alleviating transportation bottlenecks and optimize shipping efficiencies between the Memphis region and the Northeast U.S.

Project Purpose

The primary purpose of the proposed Memphis Regional IMF is to meet current and future demand for intermodal (rail/truck) transportation in the Memphis region. Norfolk Southern Railway Company (NSR) will build and own the facility. Its location relative to projected future growth in the Memphis area is a critical component to satisfy the project's purpose. To meet the IMF's operational requirements, the following main components needed are:

- Tracks connecting the Memphis Regional IMF site to the NSR mainline (preferably without any at-grade crossings)
- Six 4,000-foot long pad tracks
- Support yard with 34,500 feet of track
- Paved areas for the parking of up to 2,177 trailers and containers on chassis
- Administration, maintenance, and operations buildings
- Equipment maintenance pad and other related facilities

Traffic

The roadway vehicle traffic will enter and exit the IMF through an independently developed access road (currently under construction) to U.S. Highway 72 in Mississippi. The 2009 average daily traffic (ADT) is approximately 11,200 vehicles per day (vpd). The 2015 ADT for the proposed site is expected to generate approximately 1946 vpd (1668 truck & 278 vehicle trips).

Alternatives

Alternatives to be considered in the environmental document will include the No-Build and the Build Alternative, avoidance, mitigation, and environmental enhancement alternatives for the Build site. The No-Build Alternative will mean that the proposed

Memphis Regional Intermodal Facility

facility will not be constructed and existing NSR facilities in the area will continue to operate at current capacity.

The Build Alternative is located approximately 1.5 miles south of State Route 57 and 0.5 mile west of Knox Road near Rossville (**Attachment 1**). The proposed IMF would encompass approximately 570 acres, including an approximately 1.6-mile long, 200-foot wide right-of-way for lead tracks coming from the NSR mainline, which runs parallel to and north of State Route 57 (**Attachment 2**). The connection track corridor would include a grade separation at State Route 57 and a loop track at the south end of the facility for trains to reverse direction. Avoidance, mitigation, and environmental enhancement alternatives will be considered during the study and analysis phase of the NEPA process.

Summary of Environmental Issues

As issues are identified through the NEPA process, additional study and assessment will be considered for the Project.

Land Use

Most of the land within the project boundaries was previously disturbed and consists of both forested (mixed hardwood) and non-forested (hay fields) areas. The site consists of rolling hills and varies in elevation from approximately 350-400 feet above mean sea level. Surrounding land areas may be categorized as forested, rural residential, and agricultural.

Air Quality

Air quality effects will be analyzed for the affected study area, as well as emissions impacts of the transfer of freight from truck to rail. The results of these studies will be analyzed to determine the project impacts on the air quality of the area.

Noise Evaluation

Noise studies will be conducted on the project. The results of these studies will be analyzed to determine the impact of the project on noise sensitive receptors.

Hydrological Impacts

Construction of the project will likely impact streams in the area. The location and design of the project will consider impacts on these features and on the floodplains in the area and will be constructed in accordance with Executive Order 11988 and all local and federal regulations. In accordance with applicable law, mitigation of stream and wetland impacts will be included in the NEPA analysis and is anticipated as a condition of applicable permitting requirements.

The project will be designed and constructed to minimize harm to the streams and environmental resources. During the construction of the project, strict adherence to all

Memphis Regional Intermodal Facility

applicable provisions of TDOT's Standard Specifications for Road and Bridge Construction and Best Management Practices will be followed.

Ecological Impacts

Detailed terrestrial and aquatic studies will be conducted to determine the project's impact on the ecological environment. Studies will be done to determine the presence of any endangered or threatened species or unique wildlife habitat that could be affected by the construction of the project or its operation. Attempts will be made first to avoid and minimize ecological impacts. If avoidance of adverse impacts is not possible, then mitigation measures will be developed to address impacts.

Cultural Impacts

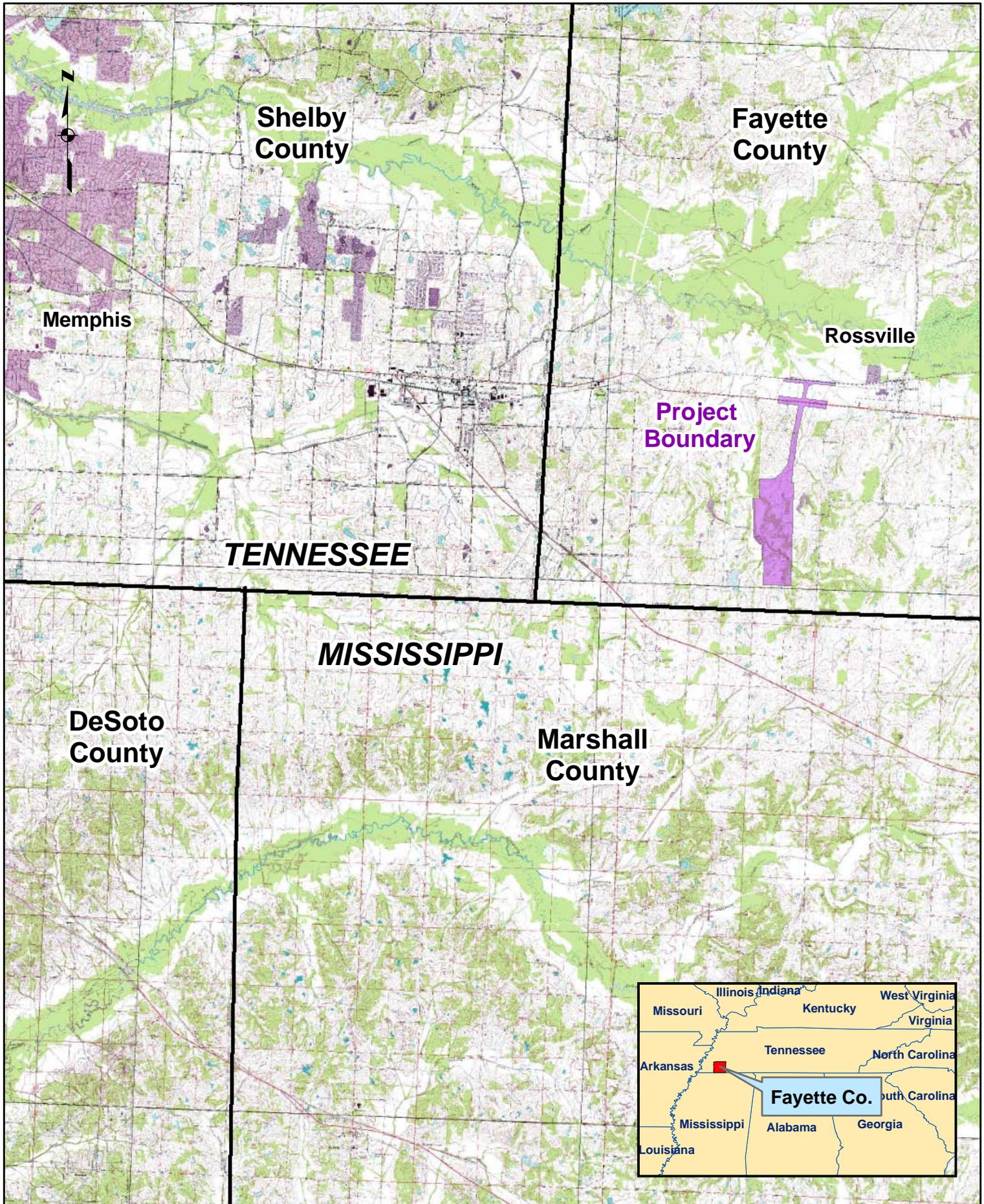
Historical and Archaeological studies will be done to determine if there are any sites or properties in the project impact area eligible for, or included in, the National Register of Historical Places. The studies will determine if the proposed project will affect any sites or properties of significance in the area. Avoidance and mitigation efforts will be evaluated as appropriate for impacts that may occur to these sites or properties.

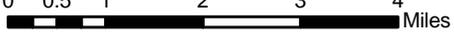
Farmland Impacts

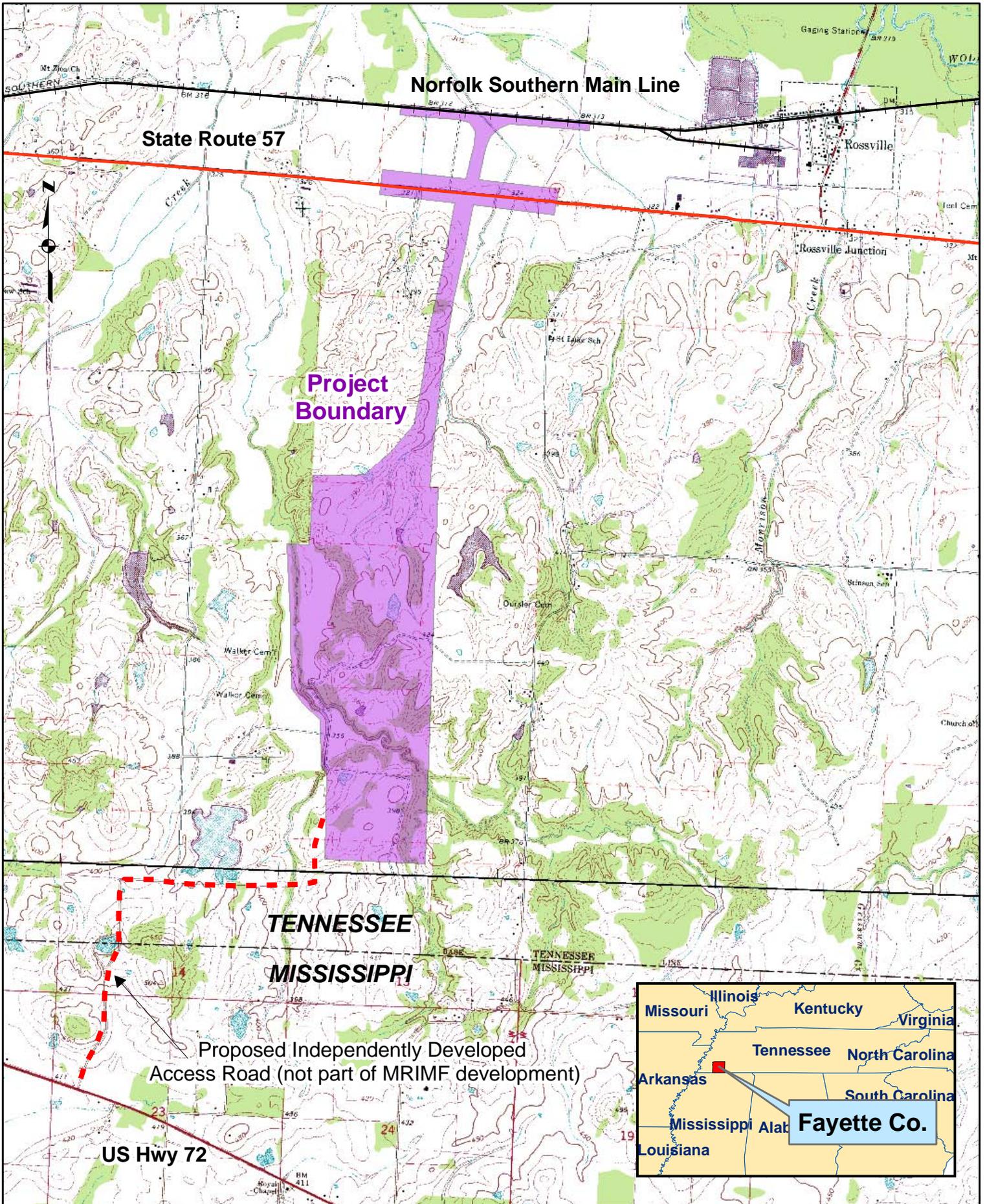
Studies will be done to assess the project impacts on farmland or farmable land. A Farmland Impact Rating Form will be sent to the Department of Agriculture for their input. The results of these studies will be analyzed to determine any project impacts on farmlands.

Socioeconomic Impacts

Analysis will be done to assess any project socioeconomic impacts including economic benefits to the region.



 <p>AMEC Earth & Environmental 3800 Ezell Rd. Nashville, TN 37211</p>	<p>PROJECTION: TN SP FIPS 4100 (ft) DATUM: NAD83</p>	<p>Ordered By: RH Map By: LMB</p>	<h2>Site Location Map</h2>	<p>DATE: 8/6/09</p>
<p>0 0.5 1 2 3 4 Miles</p> 		<p>Rossville, TN Fayette County</p>	<p>SOURCE: AMEC Image Server UGSG 7.5' Quad: Rossville, TN</p>	



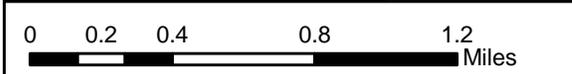
amec AMEC Earth & Environmental
 3800 Ezell Rd.
 Nashville, TN 37211

PROJECTION:
 TN SP FIPS 4100 (ft)
 DATUM: NAD83

Ordered By: RH
 Map By: LMB

MRIMF Project Location

DATE: 8/5/09



Rossville, TN
 Fayette County

SOURCE:
 AMEC Image Server
 UGS 7.5' Quad:
 Rossville, TN



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
THE ENVIRONMENTAL DIVISION
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505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-5257
Fax (615) 741-1098**

October 13, 2009

Alabama-Quassarte Tribal Town
101 East Broadway
Wetumka, OK 74883
Attn: Ms. Augustine Asbury, THPO

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms. Asbury:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

The National Historic Preservation Act (NHPA) recognizes that federally funded undertakings, like the subject project, can affect historic properties to which your tribe attaches religious, cultural, and historic significance. In accordance with 36 CFR 800 regulations implementing compliance with Section 106 of the NHPA, I would like to know if you have information you could share with me about tribal concerns in the project area and if you wish to be a consulting party on the project? Early awareness of your concerns can serve to protect things of value to the tribe.

If you act as a consulting party you will receive cultural resource assessment reports and related documentation, be invited to attend project meetings with FHWA, TDOT, and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held, and be asked to provide input throughout the process. If you choose to not act as a consulting party at this time, you can do so at a later date simply by notifying me.

Please respond to me via letter, telephone (615-741-5257), fax (615-741-1098), or E-mail (Gerald.Kline@tn.gov). I respectfully request responses (email is preferred) to project reports and other materials within thirty (30) days of receipt if at all possible. Thank you for your assistance.

Sincerely,

Gerald Kline
Transportation Specialist I
Archaeology Program Manager

Enclosure

cc Kim Jumper, Shawnee Tribe
Gingy Nail, Chickasaw Nation
Robin Dushane, Eastern Shawnee Tribe of Oklahoma
Mekko Gary Bucktrot, Kialegee Tribal Town
Joyce Bear, Muscogee (Creek) Nation
Tyler Howe, Eastern Band of Cherokee Indians
Charles Coleman, Thlopthlocco Tribal Town

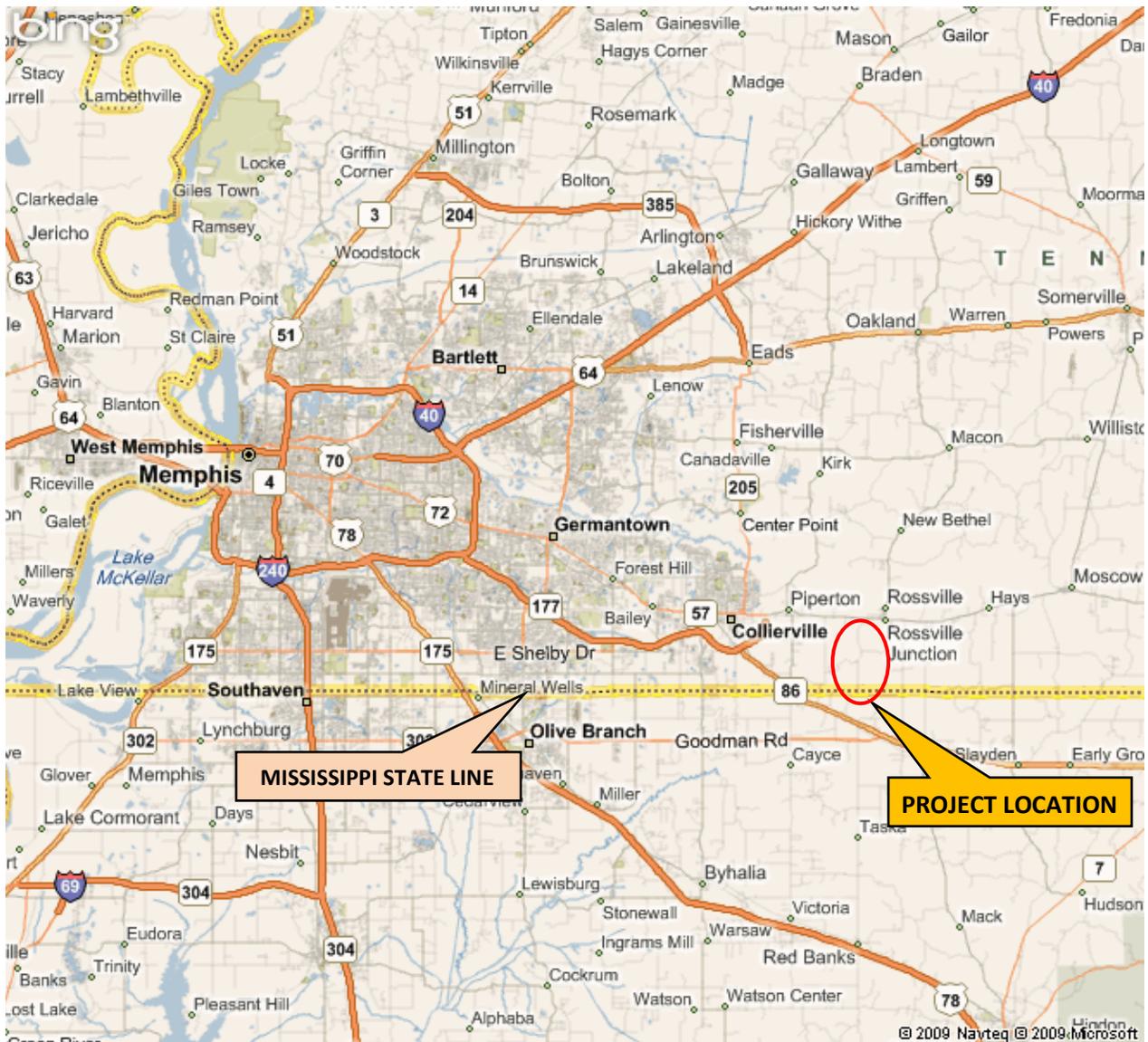
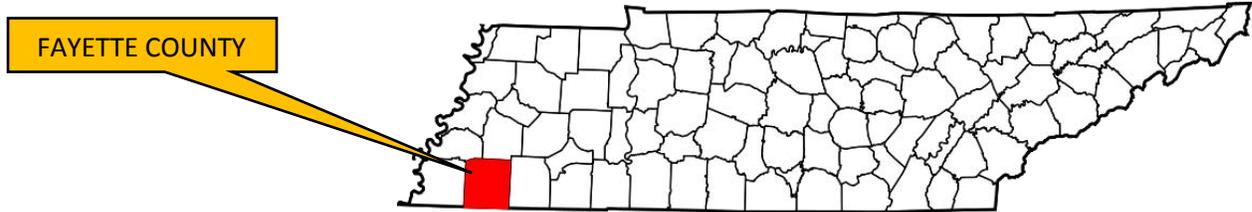
Lisa Stopp, United Keetoowah Band of Cherokee Indians
Robert Thrower, Poarch Band of Creek Indians
Lillie McCormick, Jena Band of Choctaw Indians
Earl J. Barbry Sr., Tunica-Biloxi Indians of Louisiana
Carrie V. Wilson, Quapaw Tribe of Oklahoma
Ken Charlton, Mississippi Band of Choctaw Indians
Terry Cole, Choctaw Nation of Oklahoma

TDOT PROJECT# 99108-1614-04 – Region 4

MEMPHIS REGIONAL INTERMODAL FACILITY

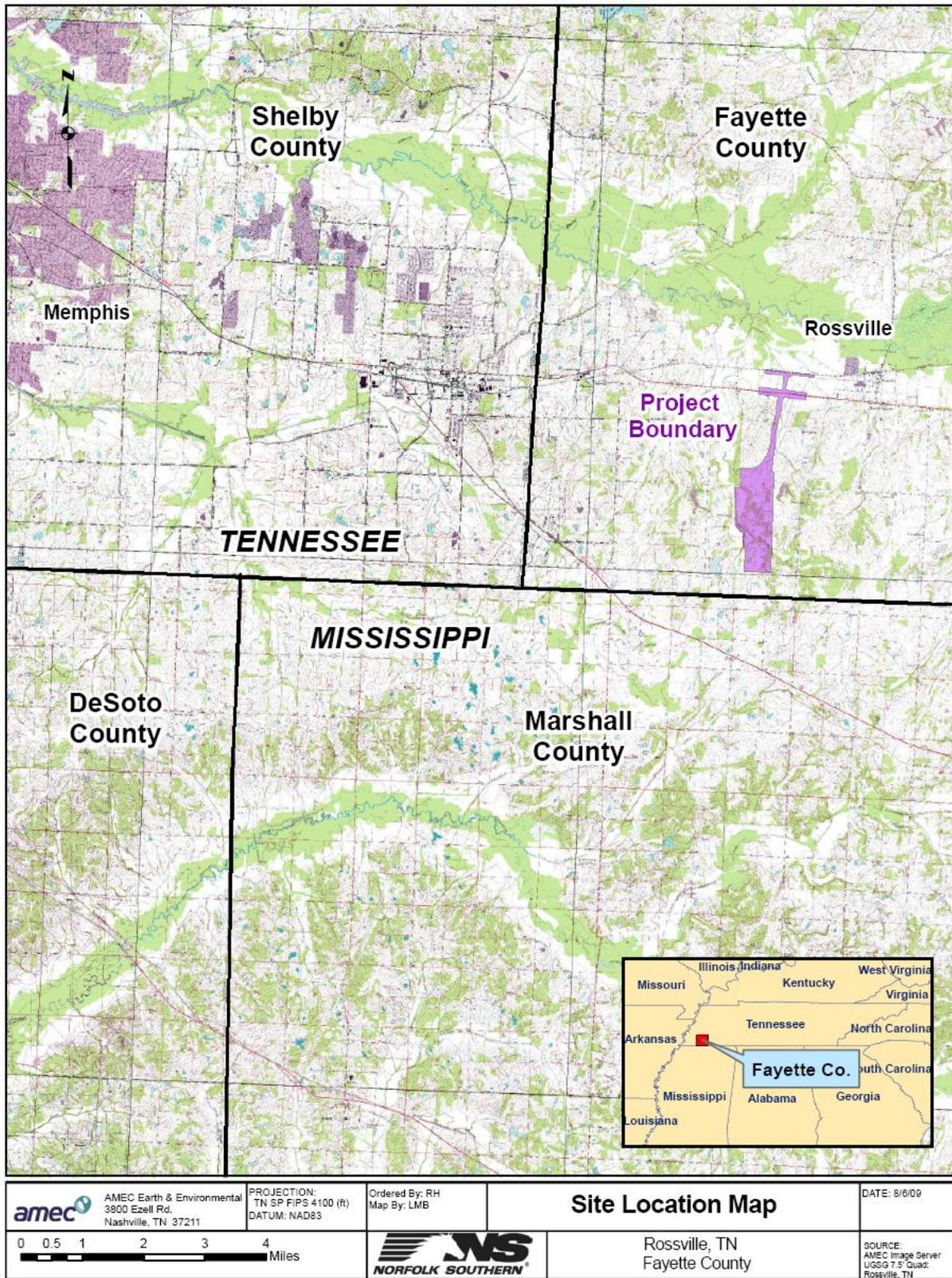
NORFOLK SOUTHERN RAILWAY COMPANY

ROSSVILLE VICINITY, FAYETTE COUNTY, TENNESSEE



Memphis Regional Intermodal Facility, Fayette County, Tennessee

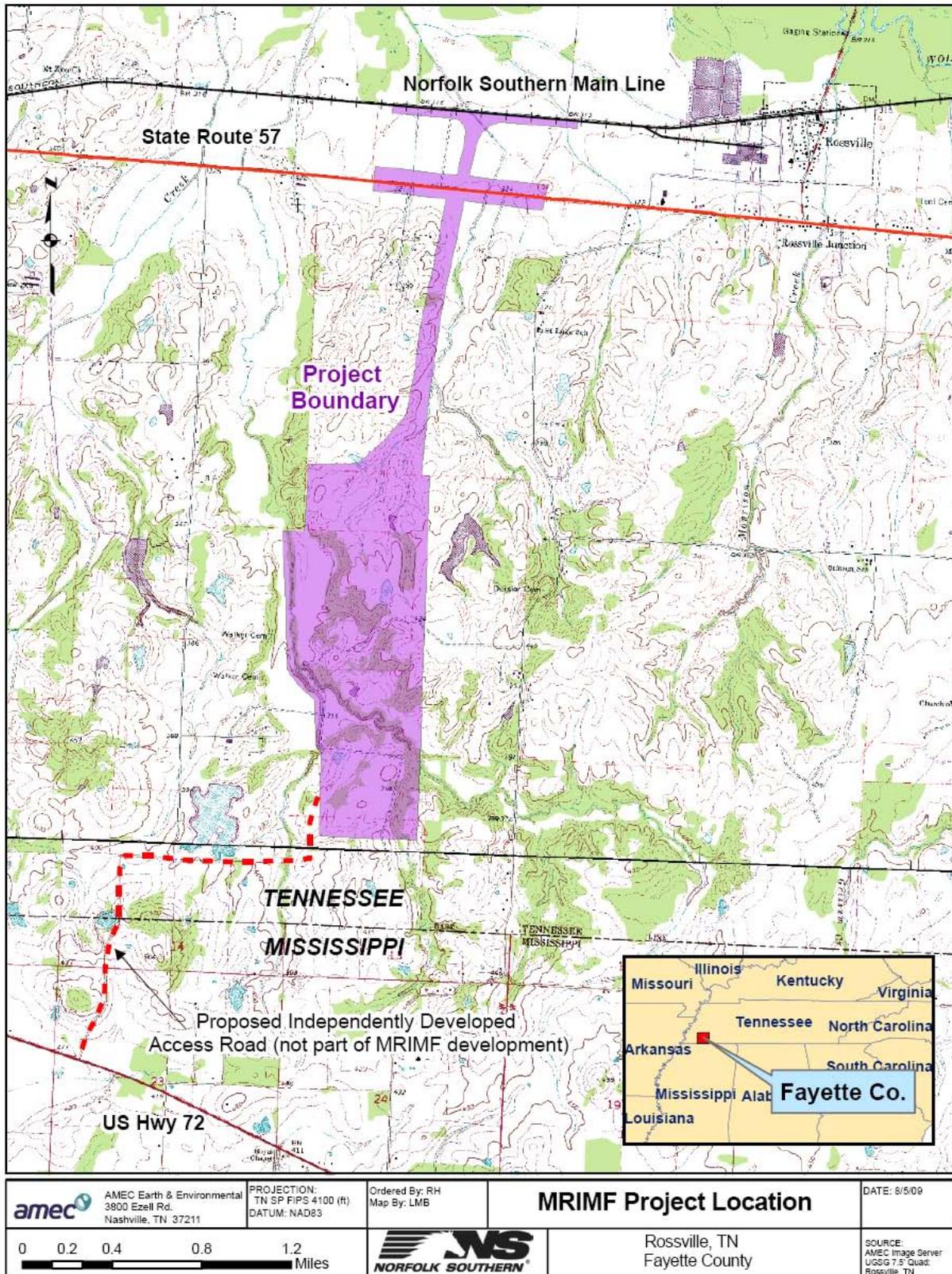
Page 2



Memphis Regional Intermodal Facility, Fayette County, Tennessee

TDOT PROJECT# 99108-1614-04 – Region 4







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(615) 741-5257
Fax (615) 741-1098**

October 13, 2009

Tunica-Biloxi Indians of Louisiana, Inc.
P.O. Box 1589
Marksville, LA 71351
Attn: Mr. Earl J. Barbry, Sr., Tribal Historic Preservation Officer

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Mr. Barbry:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

The National Historic Preservation Act (NHPA) recognizes that federally funded undertakings, like the subject project, can affect historic properties to which your tribe attaches religious, cultural, and historic significance. In accordance with 36 CFR 800 regulations implementing compliance with Section 106 of the NHPA, I would like to know if you have information you could share with me about tribal concerns in the project area and if you wish to be a consulting party on the project? Early awareness of your concerns can serve to protect things of value to the tribe.

If you act as a consulting party you will receive cultural resource assessment reports and related documentation, be invited to attend project meetings with FHWA, TDOT, and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held, and be asked to provide input throughout the process. If you choose to not act as a consulting party at this time, you can do so at a later date simply by notifying me.

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Sincerely,

Gerald Kline
Transportation Specialist I
Archaeology Program Manager

Enclosure

cc Kim Jumper, Shawnee Tribe
Gingy Nail, Chickasaw Nation
Robin Dushane, Eastern Shawnee Tribe of Oklahoma
Mekko Gary Bucktrot, Kialegee Tribal Town
Augustine Asbury, Alabama-Quassarte Tribal Town
Tyler Howe, Eastern Band of Cherokee Indians
Charles Coleman, Thlopthlocco Tribal Town

Lisa Stopp, United Keetoowah Band of Cherokee Indians
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TDOT PROJECT# 99108-1614-04 – Region 4



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Fax (615) 741-1098**

October 13, 2009

Muscogee (Creek) Nation
Highway 75 and Loop 56
Okmulgee, OK 74447
Attn: Ms. Joyce Bear

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms. Bear:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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Archaeology Program Manager

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Fax (615) 741-1098**

October 13, 2009

Kialagee Tribal Town
627 East Highway 9
Wetumka, OK 74883
Attn: Mekko Gary Bucktrot

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Mekko Gary Bucktrot:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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TDOT PROJECT# 99108-1614-04 – Region 4



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Fax (615) 741-1098**

October 13, 2009

Mississippi Band of Choctaw Indians
101 Industrial Road
Choctaw, MS 39350
Attn: Mr. Ken Carleton, Tribal Historic Preservation Officer

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Mr. Carleton:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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TDOT PROJECT# 99108-1614-04 – Region 4



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(615) 741-5257
Fax (615) 741-1098**

October 13, 2009

Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702
Attn: Mr. Terry Cole, NAGPRA Representative

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Mr. Cole:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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Enclosure

cc Kim Jumper, Shawnee Tribe
Gingy Nail, Chickasaw Nation
Robin Dushane, Eastern Shawnee Tribe of Oklahoma
Mekko Gary Bucktrot, Kialegee Tribal Town
Augustine Asbury, Alabama-Quassarte Tribal Town
Tyler Howe, Eastern Band of Cherokee Indians
Charles Coleman, Thlopthlocco Tribal Town

Lisa Stopp, United Keetoowah Band of Cherokee Indians
Robert Thrower, Poarch Band of Creek Indians
Lillie McCormick, Jena Band of Choctaw Indians
Earl J. Barbry Sr., Tunica-Biloxi Indians of Louisiana
Carrie V. Wilson, Quapaw Tribe of Oklahoma
Ken Charlton, Mississippi Band of Choctaw Indians
Joyce Bear, Muscogee (Creek) Nation

TDOT PROJECT# 99108-1614-04 – Region 4



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
THE ENVIRONMENTAL DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-5257
Fax (615) 741-1098**

October 13, 2009

Thlopthlocco Tribal Town
Route 1
Weleetka, OK 74464
Attn: Mr. Charles Coleman, First Warrior, Historic Preservation Officer, and NAGPRA

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear First Warrior Charles Coleman:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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Sincerely,

Gerald Kline
Transportation Specialist I
Archaeology Program Manager

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Fax (615) 741-1098**

October 13, 2009

Eastern Shawnee Tribe of Oklahoma
127 West Oneida
Seneca, MO 64865-0350
Attn: Ms. Robin Dushane, Cultural Preservation Director

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms. Dushane:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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Transportation Specialist I
Archaeology Program Manager

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October 13, 2009

Eastern Band of Cherokee Indians
2877 Governor's Island Road
Bryson City, NC 28713
Attn: Mr. Tyler Howe

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Mr. Howe:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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Archaeology Program Manager

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Fax (615) 741-1098**

October 13, 2009

Shawnee Tribe
21 North Eight Tribes Trail
Miami, OK 74354
Attn: Ms. Kim Jumper/THPO

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms. Jumper:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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October 13, 2009

Jena Band of Choctaw Indians
P.O. Box 14
Jena, LA 71340-0014
Attn: Ms. Lillie McCormick, Environmental Director

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms McCormick:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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Fax (615) 741-1098**

October 13, 2009

The Chickasaw Nation
1001 No. Country Club
Ada, OK 74820
Attn: Ms. Giny Nail, Tribal Historic Preservation Officer

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms. Nail:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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October 13, 2009

United Keetoowah Band of Cherokee Indians
2450 S. Muscogee Avenue
Tahlequah, OK 74465-0746
Attn: Ms. Lisa Stopp

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms. Stopp:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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October 13, 2009

Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, AL 36502-5025
Attn: Mr. Robert Thrower, Tribal Historic Preservation Officer

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Mr. Thrower:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to assist in the construction of the Memphis Regional Intermodal Facility (IMF) in Fayette County, Tennessee. Norfolk Southern Railway Company will build and own the \$129 million facility, which will be located approximately 1.5 miles south of SR-57 and 0.5-mile west of Knox Road, near Rossville. The Memphis IMF will be a rail terminal for transferring freight between trucks and trains. The facility will feature new rail tracks, including a 1.6-mile connecting line; a paved parking lot; access roads, administration, maintenance, and operations buildings; and an equipment maintenance pad. An access road to US 72 in Marshall County, Mississippi, will be constructed independently of this project. Approximately 570 acres of additional right-of-way in Fayette County, Tennessee, is needed (maps attached).

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October 13, 2009

Quapaw Tribe of Oklahoma
223 E. Lafayette Street
Fayetteville, AR 72701
Attn: Ms. Carrie V. Wilson, Cultural Resources Director

SUBJECT: Section 106 Initial Coordination for Proposed Memphis Regional Intermodal Facility, Rossville vicinity, Fayette County, Tennessee

Dear Ms. Wilson:

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Ken Charlton, Mississippi Band of Choctaw Indians
Terry Cole, Choctaw Nation of Oklahoma

TDOT PROJECT# 99108-1614-04 – Region 4



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3655
Fax (615) 741-1098**

September 29, 2009

James C. Gaither, Sr., Mayor
City of Rossville
360 Morrison, P. O. Box 27
Rossville, TN 38066

RE: Section 106 Early Consultation Notice for Memphis Regional Intermodal Facility near Rossville,
Fayette County, Tennessee

Dear Mr. Gaither:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to provide funding for the above referenced project. Its location is shown on the enclosed map.

The Advisory Council on Historic Preservation regulations stipulate that TDOT invite local government representatives to participate in the historic review process as a consulting party. TDOT would like to invite you, as the local government official, to participate as a consulting party for the proposed project.

If you choose to participate as a consulting party, you will receive copies of TDOT's environmental reports and will be invited to attend project-related meetings between TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held. As a consulting party, you should be prepared to attend any such meetings between TDOT and the TN-SHPO and provide a response to TDOT's reports in written form within 30 days upon receipt of the report. TDOT also wishes to seek your comments on the identification and evaluation of historic properties that the proposed project might impact.

If you would like to participate as a consulting party, please write to me at the above address. To facilitate our planning process, please respond within 30 days of receipt of this letter. Thank you for your assistance.

Sincerely,

Martha Carver
Historic Preservation Program Manager

Enclosure



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
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(615) 741-3655
Fax (615) 741-1098**

September 8, 2009

Mr. Skip Taylor
Fayette County Mayor
13095 N. Main, P.O. Box 218
Somerville, TN 38068

RE: Section 106 Early Consultation Notice for Memphis Regional Intermodal Facility near Rossville,
Fayette County, Tennessee

Dear Mr. Taylor:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to provide funding for the above referenced project. Its location is shown on the enclosed map.

The 2001 Advisory Council on Historic Preservation regulations stipulate that TDOT invite local government representatives to participate in the historic review process as a consulting party. TDOT would like to invite you, as the local government official, to participate as a consulting party for the proposed project.

If you choose to participate as a consulting party, you will receive copies of TDOT's environmental reports and will be invited to attend project-related meetings between TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held. As a consulting party, you should be prepared to attend any such meetings between TDOT and the TN-SHPO and provide a response to TDOT's reports in written form within 30 days upon receipt of the report. TDOT also wishes to seek your comments on the identification and evaluation of historic properties that the proposed project might impact.

If you would like to participate as a consulting party, please write to me at the above address. To facilitate our planning process, please respond within 30 days of receipt of this letter. Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script that reads "Martha Carver".

Martha Carver
Historic Preservation Program Manager

Enclosure