International Rail Port Logistics Park

City of West Memphis, Arkansas

Environmental Assessment

June 2014

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Environmental Assessment

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EXECUTIVE SUMMARY

The City of West Memphis, Arkansas (the City) is requesting funds for the International Rail Port Logistics Park (IRPLP) Project through the Railroad Rehabilitation and Improvement Financing program administered through the Federal Railroad Administration (FRA). FRA concluded that lending federal funds to implement the IRPLP Project is a major federal action within the meaning of Section 4(b) of FRA's Procedures for Considering Environmental Impacts (FRA Environmental Procedures).[1] This Environmental Assessment (EA) was prepared for FRA consistent with Section 10 of the FRA Environmental Procedures.

The IRPLP Project was evaluated under the National Environmental Policy Act (NEPA)[2] in 2009 as a Documented Categorical Exclusion (DCE) for the Federal Highway Administration (FHWA). This EA incorporates information and analysis completed for the 2009 FHWA DCE to meet FRA NEPA requirements. Several design modifications have occurred to the IRPLP Project since the DCE was completed in 2009. The Port coordinated with FHWA in early 2011 to update the 2009 DCE to address substantive modifications that have occurred to the IRPLP Project, and those design modifications are incorporated into this EA. The update to the FHWA DCE was completed on April 4, 2011.

The purpose of the IRPLP Project is to:

- expand port rail capacity and operations within the existing port facility, specifically unit train capacity, to enhance the rail network for future growth and development while minimizing disruption to existing port tenants and businesses; and
- relieve congestion, improve operational efficiencies, and ensure continued safe rail operations as rail traffic grows in and around the port, and along the existing Burlington Northern San Francisco (BNSF) north-south and east-west main lines.

The need for the IRPLP Project is based on the Port's existing rail infrastructure's insufficient capacity to meet the current and future industrial needs of the City of West Memphis and eastern Arkansas. Three elements contribute to this problem of inadequate capacity and are likely to cause the situation to worsen in the future: (1) the Port's existing rail infrastructure does not allow for efficient construction of unit trains; (2) projected economic growth will increase demands on existing and future tenants for more efficient rail operations; and (3) projected increases in traffic along the BNSF and Union Pacific (UP) main line corridors will increase rail congestion within the general vicinity, further reducing service capabilities.

Originally, the City identified a Proposed Action and the No Action Alternative. During the course of the environmental review these alternatives, the Proposed Action was considered unreasonable because it could not be permitted by the United States Army Corp of Engineers due to impacts to future planned projects. Therefore, a new proposed action was identified, and the subsequent analysis of alternatives was focused on the reasonable Proposed Action and No Action alternatives.

[1] 64 FR 28545 (May 26, 1999)
[2] 42 U.S.C. § 4321, et seq.

The No Action Alternative would consist of operating the current track and continuing the current level of maintenance; there would be no appreciable change to current track configuration or operating conditions.

The Proposed Action would implement the IRPLP Project to expand the capacity of the rail system to provide rail access to the Louis Dreyfus Commodities Inc. (LD) transload facility and to reduce track congestion. The Proposed Action would extend from the BNSF/UP main lines to accommodate existing and future port tenants (Figure 1-1). The IRPLP Project would include an expanded rail facility, roadway modifications, stormwater facilities, import of clean fill, disposal of some excavation materials, utility relocation, wetland and riparian mitigation, and construction of a grain transloading facility. The IRPLP Project would also include both aboveground and below-grade construction elements.

The proposed rail improvements would start on the St. Louis Southwestern Railway near 8th Street and extend to the River Bend Distribution Center - Cotton Warehouse spur. The northern end of the proposed new rail alignment would tie into the UP main line at one location (the rail-spur adjacent to the River Bend Distribution Center at the end of South Avalon Drive) (Figure 1-2). The new alignment will include a rail loop to support the transload facility, which will be located on American Electric Power (AEP) property where Port Road turns east to cross the levee.

The City and LD evaluated the anticipated environmental impacts of all reasonable alternatives (Proposed Action and No Action alternatives) as summarized in the following table.

Summary of Impacts

Resource Area	Anticipated Environmental Effects	
	No Action Alternative	**Proposed Action Alternative**
Air Quality	Train emissions over time would increase due to increase idle time.	General Conformity determination is not required. Locomotive emissions and ambient diesel particulate matter concentration increases would be minimal and emissions related to transportation of commodities over time would decrease as more efficient locomotives replace trucks. Temporary air quality effects during construction.
Noise and Vibration	No Impact	No long-term impacts to noise-sensitive receptors. Train horn noise at Thompson Avenue/W 16th Street would decrease. Slight increases in vibration at two vibration-sensitive receptors. Temporary noise effects during construction.
Transportation	Long-term increase in truck traffic to move additional freight to and from the transload facility. Increase in rail traffic congestion in project area and main line. No impact to pedestrians/bicycles.	Increase in daily train trips. Decrease in train delays and rail traffic congestion on BNSF/UP main line. Realignment of several internal IRPLP roads but no long-term road closures. No impact to pedestrians/bicycles. Minor train, vehicle, pedestrian, and bicycle transportation disruptions during construction.
Geology, Soils, and Farmland	No Impact	No long-term impacts to geologic hazard areas or soils. Temporary disturbance of soils and sediments by construction activities. No impacts to timber or mineral resources.
Water Resources and Floodplains	No Impact	No adverse impacts to the local aquifer. Short-term impacts to water resources during construction.
Water Quality	No Impact	Temporary water quality impact during construction from erosion, stormwater runoff, and turbidity.
Wetlands	No Impact	Permanent wetland loss (6.48 acres) and wetland buffer impacts will be mitigated on AEP property south of the wetland location, while 0.2 acre would be mitigated on City of West Memphis property (6.68 ac total). Construction effects to wetlands and buffers (14.19 ac) would be temporary and would result in a short-term loss of wetland functions.
Ecological Resources	No Impact	Short-term impacts to ecological resources during construction.
Threatened and Endangered Species	No Impact	No threatened or endangered species or their habitat will be affected.
Cultural and Historic Resources	No Impact	No impacts to historical or archaeological resources.
Section 4(f) Resources	No Impact	No impacts to historical property.

Resource Area	Anticipated Environmental Effects	
	No Action Alternative	**Proposed Action Alternative**
Socioeconomics and Environmental Justice	No Impact	No impacts to community cohesion. No impacts to elderly and handicapped populations. No environmental justice impacts. Temporary construction impacts to businesses in the area.
Land Use, Zoning, and Recreation	No Impact	No impacts to land use, zoning, or recreation.
Public Health and Safety	No Impact	Reduction in public safety concerns at road crossings. Short-term risk to public safety during demolition and construction activities. Temporary construction impacts to public health from activities in areas containing hazardous materials.
Hazardous Materials and Solid Waste	No Impact	No impacts to environmental media; no contaminated media anticipated.
Energy Use and Greenhouse Gases	No impact	An increase in rail and truck traffic, resulting in an increase in energy consumption and greenhouse gas emissions.
Indirect Impacts	No Impact	Indirect impact of promoting growth; growth would be consistent with land use planning and zoning requirements. Beneficial long-term economic growth and increase in jobs for the community. Indirect impacts to wetlands from vegetation removal, introduction of invasive species, and accidental spills.
Cumulative Impacts	No Impact	Beneficial cumulative effect on socioeconomic resources.

The City also proposes minimization and mitigation measures to avoid and lessen the anticipated environmental impacts of the Proposed Action. These measures are summarized in the following table.

Summary of Proposed Avoidance, Minimization, and Mitigation Measures

Resource Area	Proposed Measures
Air Quality	During demolition of any building, the City would retain certified inspectors to identify all material in the buildings, and remove asbestos-containing material before building demolition begins. All construction equipment must satisfy EPA emission standards for non-road engines.
Noise and Vibration	No measures are proposed.
Transportation	No measures are proposed.
Geology, Soils, and Farmland	Best management practices (BMPs) will be used to eliminate or minimize effects of erosion, sedimentation, and accidental fuel or oil tank leaks.
Water Resources and Floodplains	BMPs will be used to eliminate or minimize effects of erosion, sedimentation, and accidental fuel or oil tank leaks. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented.
Water Quality	BMPs will be used to eliminate or minimize effects of erosion, sedimentation, and accidental fuel or oil tank leaks. An SWPPP will be prepared and implemented.
Wetlands	BMPs will be used to eliminate or minimize effects of erosion, sedimentation, and accidental fuel or oil tank leaks. Stormwater treatment will be provided. Temporarily impacted wetlands will be restored to pre-existing conditions following construction. Permanent wetland impacts will be mitigated on adjoining AEP property or City of West Memphis Property.
Ecological Resources	BMPs will be used to eliminate or minimize effects of erosion, sedimentation, and accidental fuel or oil tank leaks. Provide stormwater treatment. BMPs will be used to minimize spread of noxious weed seeds.
Threatened and Endangered Species	BMPs will be used to eliminate or minimize effects of erosion, sedimentation, and accidental fuel or oil tank leaks. Stormwater treatment will be provided. Trees will be planted to offset tree removal impacts as needed.
Cultural and Historic Resources	Mitigation measures will be implemented as outlined in the Memorandum of Agreement. During construction, identified archaeological resources would be avoided to the extent practicable.
Section 4(f) Resources	Mitigation measures will be implemented as outlined in the Memorandum of Agreement.
Socioeconomics and Environmental Justice	During construction, the City will send mailings to affected businesses and residents. Adequate signage will be provided for the road closure at Port Road, South Avalon Drive, and W 8th Street.
Land Use, Zoning, and Recreation	No measures are proposed.
Public Health and Safety	Contractors will have a Health and Safety Plan. Contractors will obtain all appropriate railroad safety requirements. Temporary construction fencing and permanent fencing following construction will be installed. BMPs will be used to eliminate or minimize effects of accidental fuel, oil tank leaks, or other hazardous spills. Construction equipment and materials will be stored and used properly during construction. A Contaminated Media Management Plan (CMMP) will be prepared prior to construction.

Resource Area	Proposed Measures
Hazardous Materials and Solid Waste	BMPs will be used to eliminate or minimize effects of accidental fuel, oil tank leaks, or other hazardous spills. Construction equipment and materials will be stored and used properly during construction. A CMMP will be prepared prior to construction.
Energy Use and Greenhouse Gases	Construction areas, staging areas, and material transfer sites will be designed to reduce wait times for equipment and engine idling.

1. INTRODUCTION

The City of West Memphis, Arkansas (City or Grantee) is requesting funds for the International Rail Port Logistics Park (IRPLP) Project (Project) through the Railroad Rehabilitation and Improvement Financing (RRIF) program administered through the Federal Railroad Administration (FRA). FRA concluded that lending federal funds to implement the IRPLP Project is a major federal action within the meaning of Section 4(b) of FRA's Procedures for Considering Environmental Impacts (FRA Environmental Procedures).[3] This Environmental Assessment (EA) was prepared for FRA consistent with Section 10 of the FRA Environmental Procedures.

The improvements in this Project include the upgrade of existing track in the IRPLP in West Memphis, Arkansas, to support the handling of heavier rail carloads of manifest and unit trains within the Port and the construction of approximately 13,500 ft. of a new rail lead to the base of the St. Francis levee. These improvements will facilitate the connection to and construction of a new transload facility on private lands through an agreement with the City and a private developer that will add the capability for handling bulk commodities from truck and rail to the Mississippi navigational transportation system. The City of West Memphis currently operates a port in this system and the private developer intends to construct a port on the Mississippi River as well.

1.1 Background

West Memphis is strategically situated at one of the most active multimodal transportation crossroads in both the nation and the world (Figure 1-1). It is the convergence point and gateway for rail, road, and inland marine transportation in the Central United States and the funnel point for expedited and palletized cargo shipments moving via air at the Memphis International Airport.

While the Memphis region has highly developed transportation infrastructure and distribution resources, the region west of the Mississippi River remains a largely untapped economic resource for the next phase of multimodal development. The City offers low cost and available land, a competitively priced workforce, low taxes, and close proximity to existing multimodal connections (interstate highways, rail intermodal terminals, deep water port on the Mississippi River) in the nation's transportation system (Figure 1-2).

On January 31, 2012, the U.S. Department of Transportation (USDOT) issued a Notice of Funding Availability (NOFA) in the *Federal Register* for funds appropriated under the provisions of the Full-Year Continuing Appropriations, 2012 (Division B of the Department of Defense and Full-Year Continuing Appropriations Act, 2012, regarding National Infrastructure Investments) (the Act). The grant program under the Act is referred to as "FY 2012 TIGER Discretionary Grants," or "TIGER Discretionary Grants." In response, the City of West Memphis submitted an application for the IRPLP Project on March 18, 2012. The USDOT reviewed the Grantee's application for eligibility, and it was evaluated in accordance with the

[3] 64 FR 28545 (May 26, 1999)

criteria outlined in the NOFA. On the basis of this evaluation, the USDOT Secretary of Transportation selected the City of West Memphis for an award through a cooperative agreement with the FRA for $10,953,244 for the Project.

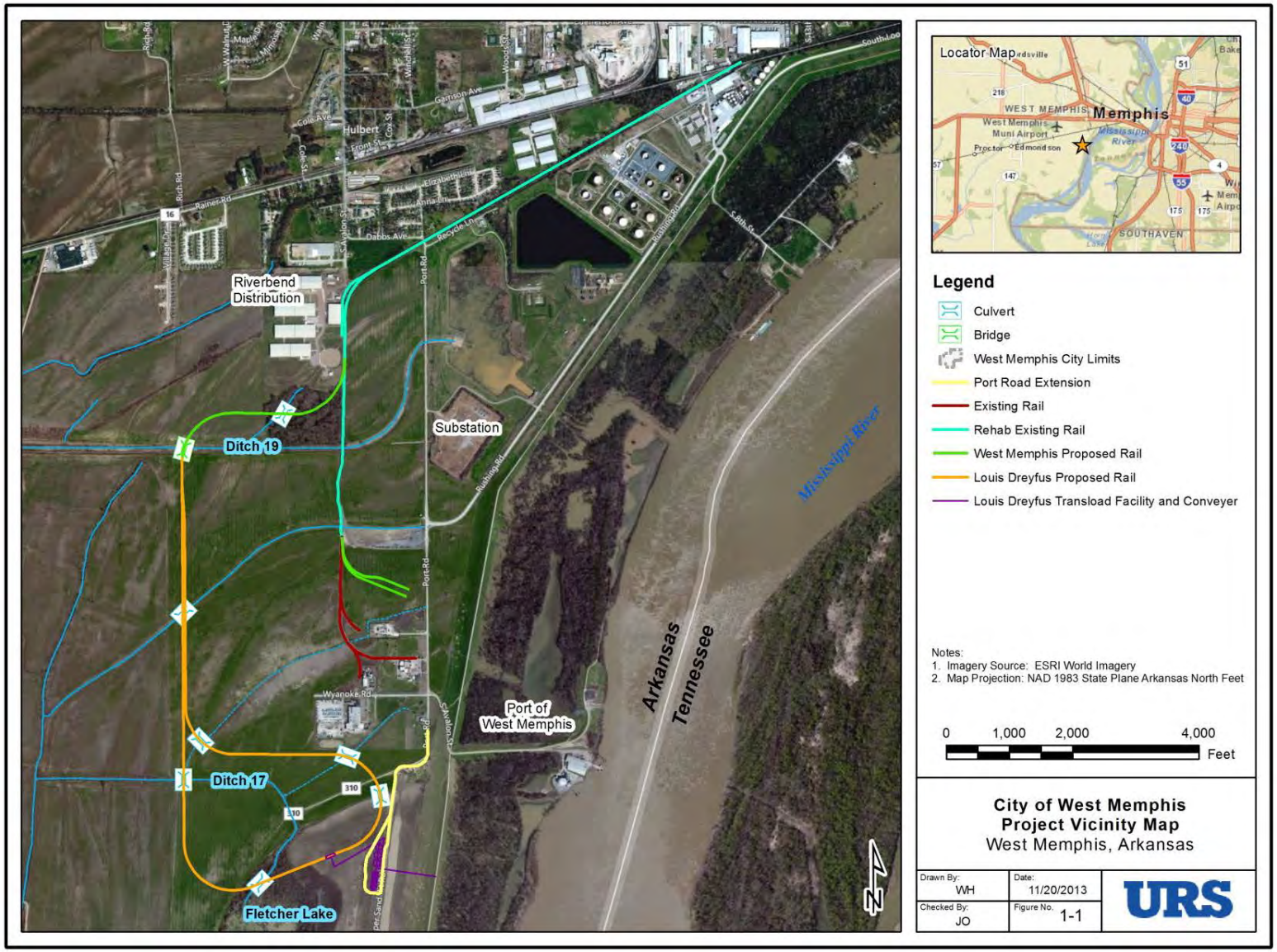


Figure 1-1. Project Vicinity Map

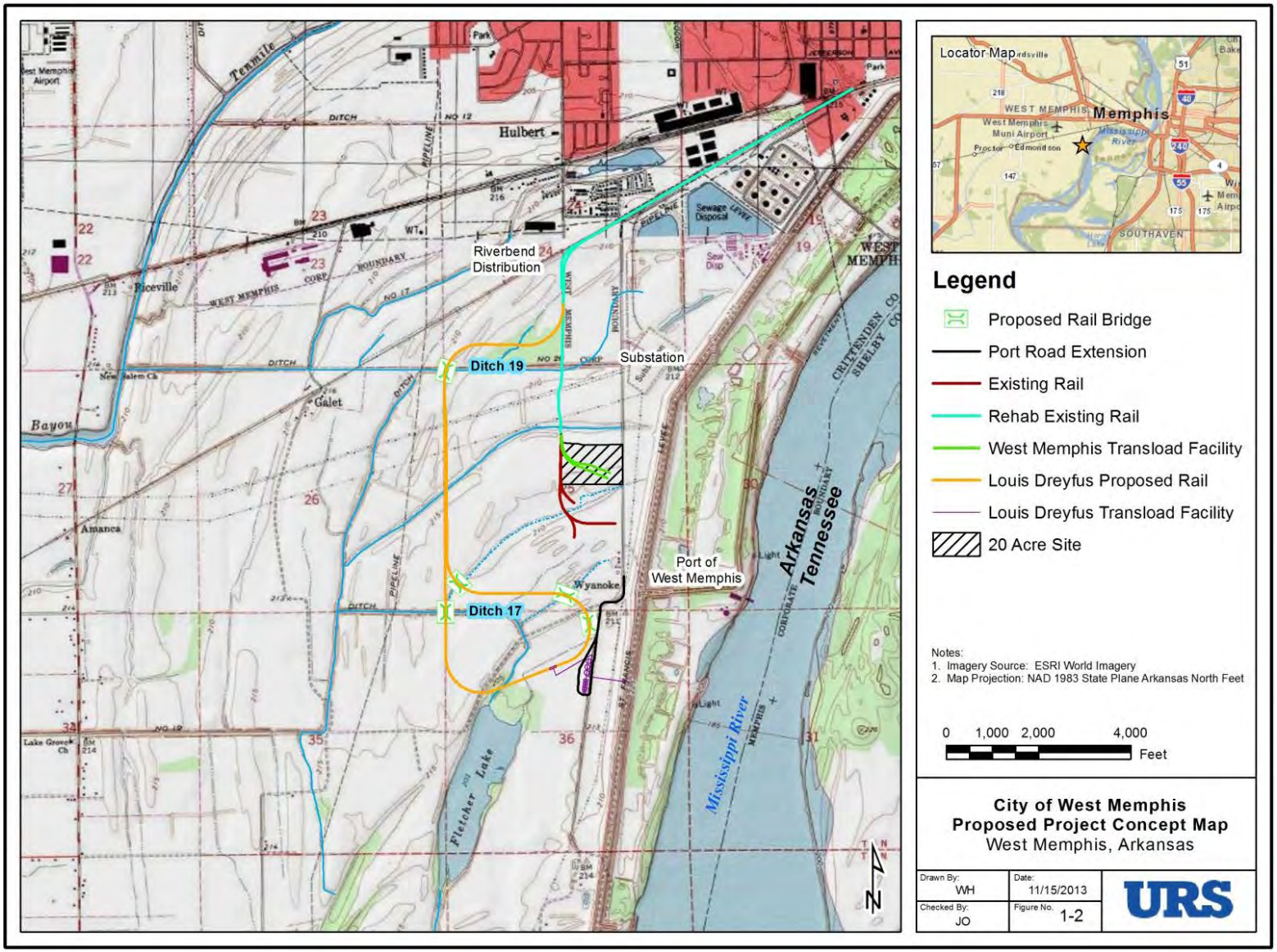


Figure 1-1. Proposed Project Overview

1.2 Related NEPA Processes

The FRA determined that the combined effort of federal and non-federal components would require an EA. As part of the NEPA documentation for the Project, the City prepared several reports to evaluate Project impacts on environmental resources. These reports have been prepared as necessary to meet NEPA requirements and FRA Environmental Procedures and have been used in the preparation of this EA. They include:

- Cultural Resources Survey (TRC Inc. 2013)
- Hazardous Materials Discipline Report (URS 2013)
- Noise and Vibration Discipline Report (URS 2013)
- Ecological/Wetlands Discipline Report (URS 2013)
- Social Effects and Environmental Justice Discipline Report (URS 2013)
- Land Use Discipline Report (URS 2013)

2. PURPOSE AND NEED

The improvements in this Project will allow the IRPLP to handle manifest and unit train carloads of heavier rail cars, which will facilitate the connection to and construction of a new transload facility to add the capability for the handling of bulk commodities from truck and rail to the Mississippi navigational transportation system. The transload facility will include primarily large grain storage and transfer facilities. These facilities will receive grain from rail and truck haulers in large bulk quantity and will reduce congestion to improve efficiency for handling more material that is anticipated to come, eliminating local truck traffic on the roads through the use of improved freight transport and decreasing long haul traffic. The improvements in the new transload facility will enable the Memphis region to diversify its intermodal freight transportation system by connecting western freight railroad with maritime carriers for export and import cargo shipments of bulk commodities.

This EA evaluates the projects included in the TIGER Grant for activities west of the levee, as the IRPLP Project (Figure 1-2).

2.1 Purpose of the Project

The improvements in this Project will provide the ability for the IRPLP to handle manifest and unit trains of heavier rail cars and connect to the Mississippi River. Specifically, the purposes for the Project include:

- Provide current and future industrial development of approximately 2,500 acres as a multimodal IRPLP;
- Relief of congestion at regional distribution centers currently at full capacity, which are limited due to access restrictions and transportation delays;
- Provide full multimodal connectivity for regional distribution centers that do not have capability for railroad on-dock service;
- Maximize multimodal access potential in the region to connect established transportation corridors, specifically to major roadway crossings of the Mississippi River at Interstate 40 and Interstate 55, and two western freight railroads (Union Pacific and Burlington Northern and Santa Fe [BNSF]);
- Provide a diversion option for a significant portion of continental eastbound dry bulk material that currently crosses the Mississippi River via rail and road to river vessel;
- Provide sufficient off-loading and barge-loading capacity to meet commodities shipping demands;
- Benefit to the environment, quality of life, and regional economy in an economically distressed area; and
- Ensure safe rail support for shipping of commodities and products (through upgrading rail capacity).

Businesses within the IRPLP would be able to operate at maximum capacity, thus increasing regional employment. The IRPLP Project would help ensure the future success and economic growth of current port tenants, allowing them to grow and expand their businesses. The IRPLP

Project would also facilitate development of new properties, bringing more jobs and revenue to the local community.

2.2 Need for the Project

The West Memphis area is an economically depressed area in need of jobs and development. The area is also near some of the most productive grain producing land in the country and the northern most deep water port on the Mississippi River. The area is currently served by a short, city-owned industrial spur that comes off of a Union Pacific mainline. A portion of the spur is the old TennArk line and the spur is now known as the Friday-Graham Spur. The Friday-Graham Spur has insufficient weight baring capacity for unit trains (110 cars per train). Current regional distribution centers are at a full capacity and area to expand is limited or non-existent. Several years ago Union Pacific recognized the need for an industrial park in this area that would provide rail-served space and have sufficient trackage to make up unit trains. The City of West Memphis developed a conceptual layout and, with the assistance of Union Pacific, made a number of presentations to developers. The number of inquiries for rail-served space has dramatically increased in 2010 as has a new interest in transload facilities adjacent to the City-owned Port of West Memphis. Recent land purchases and requests for switch access to the Friday-Graham spur have highlighted the need for rail development in the IRPLP The IRPLP will provide area for regional commodity and bulk material shippers to expand, access deep port shipping and connect with major railways and Interstate.

More recently, a private partner has committed to development of additional port capacity that requires extensive rail improvements to supply it commodities. New rail infrastructure will be required to support the current commitments and future IRPLP businesses preparing for economic growth. The IRPLP Project is needed because (1) the IRPLP's existing rail infrastructure does not allow for efficient construction of unit trains; (2) private partners have committed to the area and require more efficient rail operations; and (3) projected increases in traffic along the BNSF main line corridors will increase rail congestion within the IRPLP general vicinity, further reducing service capability.

3. DESCRIPTION OF NO ACTION, PROPOSED ACTION, AND ALTERNATIVES NOT CARRIED FORWARD

The City evaluated a No Action, the Proposed Action and one alternative not carried forward. The proposed action included one alternative that was not carried forward as part of the NEPA process. This alternative included the extension of the rail loop and rail extension adjacent to the levee and further south of the Proposed Action location. This concept was eliminated at the request of the Memphis Corps of Engineers as it would have resulted in the location of a dock that would have conflicted with potential future wing dams in the Mississippi River and potential impacts to navigation and permit could not have been issued. In addition, a greater potential impact to wetlands and levee stability could be avoided. The City identified the No Action and Proposed Action alternatives for detailed evaluation in the EA. The alternatives were evaluated based on their ability to meet the IRPLP Project purpose and need, to satisfy engineering design criteria, and to avoid or minimize adverse environmental impacts.

3.1 No Action Alternative

The No Action Alternative would consist of operating the current track and continuing the current level of maintenance; there would be no appreciable change to current track configuration or operating conditions. The No Action Alternative would not meet the IRPLP Project purpose and need because it would not provide rail access to future port facilities, would not provide increased load capacity for transportation of commodities, and would not result in the construction of a transload facility for loading commodities to the deep water port at the City of West Memphis. The No Action Alternative is included in this EA to provide a baseline for the comparison of impacts of the Proposed Action Alternative and to help decision-makers and the public understand the consequences of taking no action.

3.2 Proposed Action Alternative

The Proposed Action Alternative would extend from the rail lines to the transload facility to accommodate existing and future IRPLP tenants on City owned property (Figures 3-1). The drawing plans for the Ditch 17 Bridge are provided in Figure 3.2. The proposed layout of the rail loop and transload facility on adjoining private property owned by American Electric Power (AEP) , are illustrated in a preliminary engineering design drawing, Figure 3.3. The Proposed Action Alternative would include an expanded rail facility, roadway modifications, stormwater facilities, transload facility construction, and wetland and riparian mitigation. The Proposed Action Alternative would include both aboveground and below-grade construction, including the following major elements.

- Rehabilitation and upgrade of approximately 13,500 ft. of existing track on the Friday-Graham spur to 136 lb. rail (new or recycled) to support the handling of manifest and unit trains of 286,000 lb. rail cars within the IRPLP;
- Construction of 1,500 ft. of new track to extend Track #859 into the IRPLP;
- Proposed construction of approximately 1,000 ft. of new track on a 20 acre site on Port Road for access to a future industrial facility;

- Construction of approximately 21,000 ft. of new track to connect the existing rail facilities within the IRPLP with the new transload facility adjacent to the St. Francis Levee along the Mississippi River;
- Construction of a bridge over Ditch 17 and culverts over other drainages;
- Construction of a transload facility connecting to the rail lead track at the St. Francis Levee constructed in the Federal Subproject in a cooperative agreement;
- The transload facility will include a six acre tract of land with silos, elevators, hoppers, conveyors and continuous batch weigher.
- Construction of a connector road from Port Road to the transload facility; and
- Construction of stormwater retention ponds in current wetlands.

3.2.1 Proposed Rail Alignment

Under the Proposed Action Alternative, the City would expand its existing rail facilities to serve existing and future port tenants

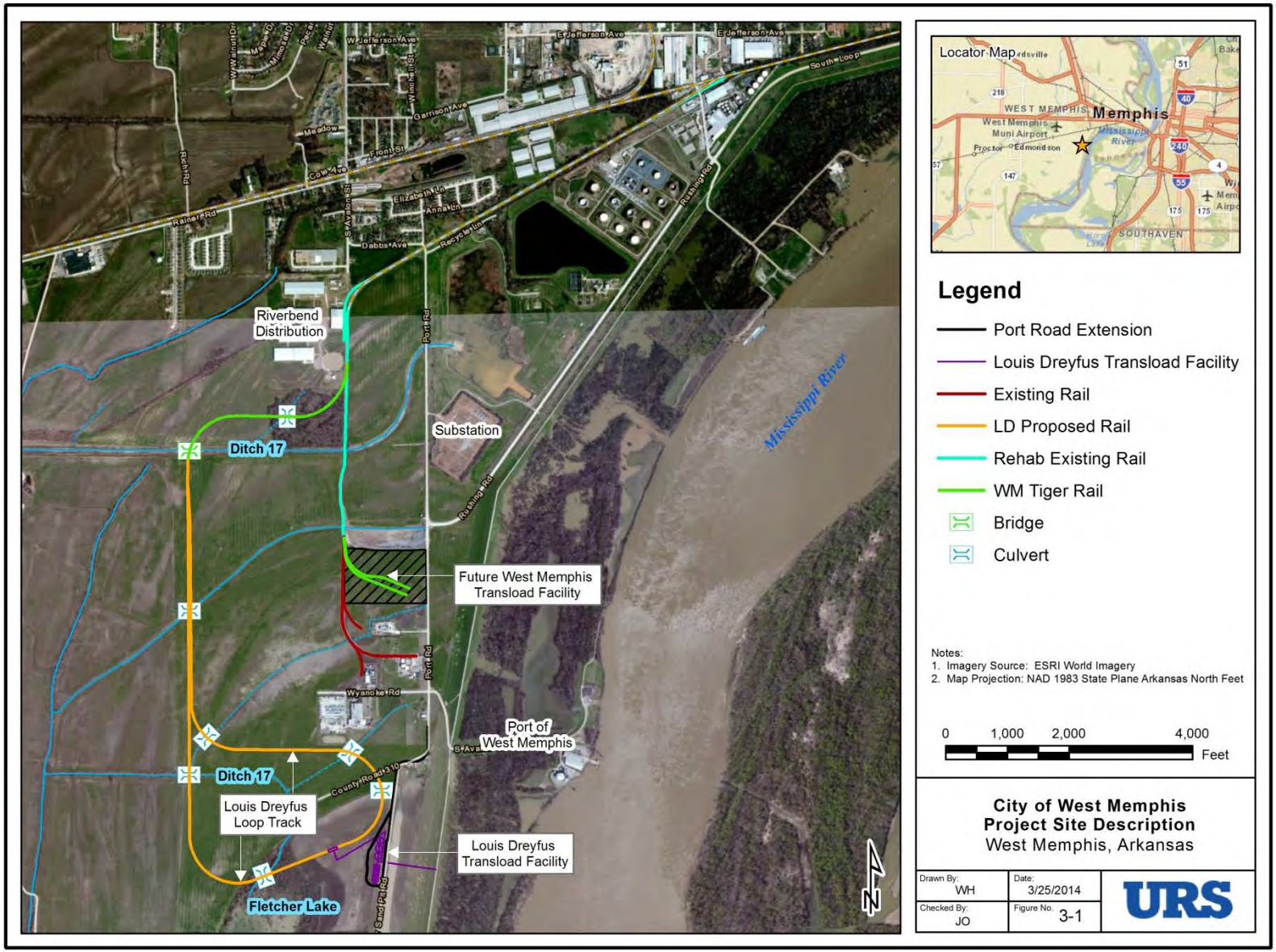


Figure 3-1. IRPLP Project Site Detail

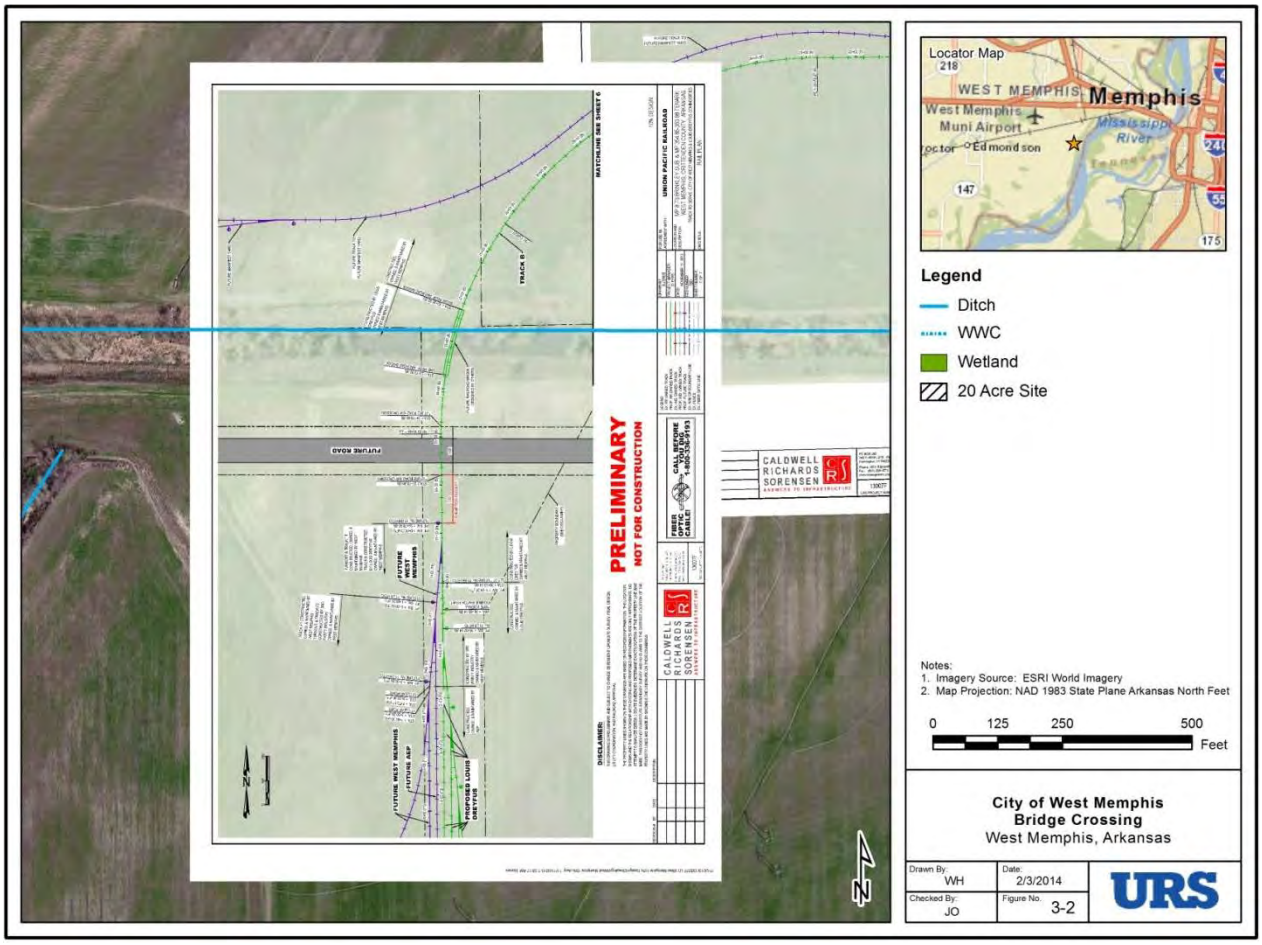


Figure 3-2. Bridge Crossing

The northern end of the proposed rail alignment would tie into the UP main lines near 8th Street (Figure 3-1).

The new Louis Dreyfus Commodities Inc. (Louis Dreyfus) lead track would begin at the end of the River Bend Cotton warehouse spur and run southwest approximately 3,000 feet before turning south to form the Louis Dreyfus rail loop at the Louis Dreyfus transload facility. Just north of the bend to the south, on the Louis Dreyfus rail loop, the City will add a manifest yard to the west. The yard will include two parallel spurs approximately 3,200 to 3,800 feet in length. The City will also add a 1,500-ft rail spur on a 20-acre tract on Port Road (Figure 3-1).

In order for the proposed rail alignment to cross over Ditch 17 and Ditch 19 west of the current railroad crossing, two new bridges will be constructed. A concrete column-supported bridge would be constructed over Ditches 19 and 17 (Figure 3-2). In addition, a concrete piling supported rail will be constructed over a portion of Fletcher Lake on the southern end of the

Louis Dreyfus rail loop. The rail will be constructed in a manner to limit impacts to wetlands and not obstruct water flow or animal passage through the wetlands. Additional bridging may be needed to cross small ditches. Other ditches or drainages in the area are not considered streams and will not require Section 404 permitting.

The proposed rail alignment would require the construction of a stormwater pond at a location near the transload facility to avoid impacts on wetlands at Fletcher Lake.

The Proposed Alternative includes the loop track at the Louis Dreyfus transload facility. The loop will consist of a dual track with two inbound tracks and two outbound tracks. The tracks will have a capacity to accommodate 220 car unit trains (110 full and 110 empty).

3.2.2 Roadways

The Proposed Action Alternative would include the extension of Port Road to service the Louis Dreyfus transload facility (Figure 3-1). No new at-grade crossings are proposed on Port Road or any other public roadways.

The approaches will be constructed using either sloped fill, where possible, or vertical mechanically stabilized earth walls where the footprint of the grade separation needs to be minimized. Minor changes may occur to the existing roadway alignment and cross sections to meet safety and design standards.

3.2.3 Transload Facility

The Transload facility will consist of four primary components as well as access road and conveyor. These four components include: grain receiving, administrative office, slipform concrete storage bins, and 500,000-bushel steel storage silos. These facilities are depicted in Figure 3.3 and described as follows:

3.2.3.1. Grain Receiving

Grain will be received to the facility via truck and rail. Two remote truck scales and two (2) remote sampling systems will be part of the Project. Trucks will enter the truck receiving building via one of two identical truck receiving driveways. Trucks will discharge their hoppers through a receiving grate at a rate of 20,000 bushel per hour (bph) through drag conveyors. Grain would normally be transferred directly to two (2) 20,000 bph bucket elevators or, alternatively, sent directly to the barge load out conveyor system.

Grain received by unit train will include a dual pit receiving system aligned in series to continuously unload railcars at a rate of 60,000 bph. The grain will be collected under the rail pit and transferred on conventional belt conveyors to the top a continuous batch weigher capable of continuous weighing at 60,000 bph then up a second belt to the concrete storage system. The grain will be sampled and distributed into one of the 12 concrete storage silos or to one of two steel storage silos. The two (2) truck receiving pits will be enclosed with a pre-engineered building. The receiving building will be equipped with electric overhead doors on each end.

3.2.3.2. Administrative Offices

Directly adjacent to the truck receiving building will be an office building. A control room, manager's office, receptionist area, electrical room, and sample room will all be located in this area.

3.2.3.3. Slipform Concrete Storage Bins

Twelve (12) 160,000-bushel capacity slipform concrete silos will function as the day bins for the facility. Each silo will be 45'-0" inside diameter by 140'-0" tall and be equipped with cone steel hopper bottoms for gravity cleanout. The silo interstices approximately 35,000 bushel capacity will be used for wet grain storage for the new 12,000 bph grain drier. The silos will be filled from the receiving bucket elevators and the rail receiving belt through a series of drag conveyors. The silos can also be filled from a reclaim system from one of the two 500,000-bushel silos through the grain cleaning bucket elevators at 40,000 bph. The concrete will be equipped with aeration systems and will be equipped with high- and low-level sensors. The day bins will discharge via a series of 40,000 bph enclosed belt conveyors directly to the barge load out transfer belt conveyor system at 80,000 bph.

3.2.3.4. 500,000-Bushel Steel Storage Silos

Two 105’ diameter, 500,000 bushel each steel silos will have a raft-style foundation, including stem walls around the perimeter and an 8'-0" tall by 8'-0" wide center reclaim tunnel. Each silo will be equipped with a bin sweep, Aeration floor system and fans, temperature detection system, and a 50,000 pound-rated roof system to support the fill conveyor and bridge. Each silo will be filled via a 60,000 bph drag conveyor from the dual distributor off of the rail receiving belt conveyor and the two 20,000 bph truck receiving bucket elevators.

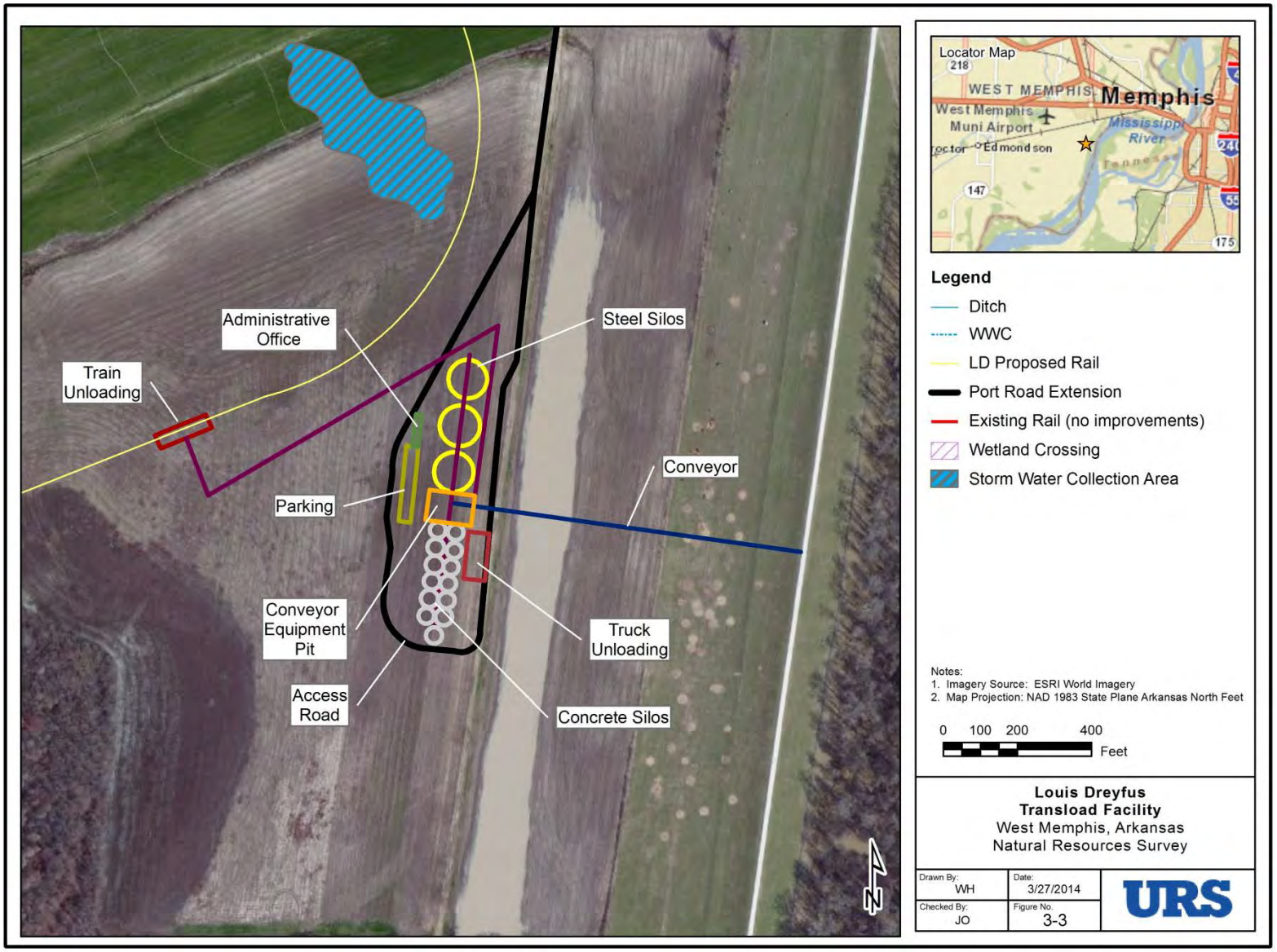


Figure 3-3. Transload Facility

3.3 Project Scheduling

To minimize effects to existing IRPLP operations and make the process more manageable, the IRPLP Project is broken into numerous sub-projects that will be designed and built separately over a period of roughly eight years. As described in Section 1.2, the City completed an initial NEPA process with the Federal Highway Administration (FHWA) and received federal, state, and local permits and approvals for the IRPLP South Loop Project in 1995 (City of West Memphis 1995) This allowed the IRPLP to commence construction of the sub-projects using federal and non-federal funds, separate from the RRIF Loan from FRA.

This EA evaluates the entire IRPLP Project and discusses in Chapter 4 which elements of the Project and resources have been affected by construction of the rail improvements to the IRPLP.

No other IRPLP sub-projects have been built, although it is expected that additional rail spurs may be constructed as new industry is attracted to the area.

3.4 Project Area Description

The Project area for the Proposed Action Alternative is the same as the IRPLP Project area (Figure 1-2) and is generally defined by the horizontal and vertical extent of the proposed rail alignment and associated improvements, including the transload facility. Based on this horizontal and vertical footprint, an additional 75-ft buffer measured from the edge of the footprint was applied. Potential mitigation sites were also included within the area studied. The vertical extent of disturbance includes the depths needed to excavate and grade in preparation for rail, bridge and facility construction and construction of mitigation as needed. For the most part, this is anticipated to be minor (a few feet) with the exception of piles, shafts, etc., used to support the new rail over ditches and wetlands and silos and conveyor tower at the transload facility. In the location of bridges over ditches and wetlands depths to install support structures are anticipated to be 30 feet deep. The depth to support structures at the transload facility will be approximately 10 feet.

The Project area includes all City-owned and privately-owned properties that would be bisected by the proposed rail alignment. The study area for some resources includes a larger area because the impacts may extend beyond the immediate construction corridor. These differences are described where applicable.

3.5 Alternatives Evaluated and Dismissed

In addition to the Proposed Action and No Action Alternatives, the City and Louis Dreyfus considered one other alternative route during the NEPA process. Due to the surrounding environment of the site, consisting mostly of prime farmland and wetlands, there were only two practical engineering options identified as feasible and practical to analyze within the environmental process. Other alternatives were not feasible due the extreme cost of building the transload facility and associated port in a location that would be affected by future navigation wing dams in the Mississippi River. The construction of these potential future wing dams is in the planning stages with the USASE and acquiring permits to construct in close proximity to

these proposed dams would be deemed unfeasible. This alternative is described below and is shown in Figure 3-4. For the reasons discussed below, the City and Louis Dreyfus determined that this alternative was unreasonable and, therefore, did not require further consideration.

3.5.1 Alternative 1: Rail Extension Adjacent to the St. Francis Levee

Aside from the No Build Alternative and Proposed Action Alternative, one additional alternative was considered during the early stages of Project development. This alternative was designated Alternative 1, and similar to the Proposed Action Alternative, would provide a transload facility for Louis Dreyfus, and rail capacity for staging trains from the current Union Pacific line. Alternative 1 would include the upgrade of 13,500 feet of existing rail to a heavier weight capacity, extend 13,000 feet of new rail south along the St. Francis Levee, located the transload facility east of Fletcher Lake, and extend the rail spur to just north of Ash Slough. This alignment differs from the Proposed Action Alternative by locating the transload facility farther south and providing rail staging capacity to Louis Dreyfus as a spur rather than a loop located farther to the south (Figure 3-4).

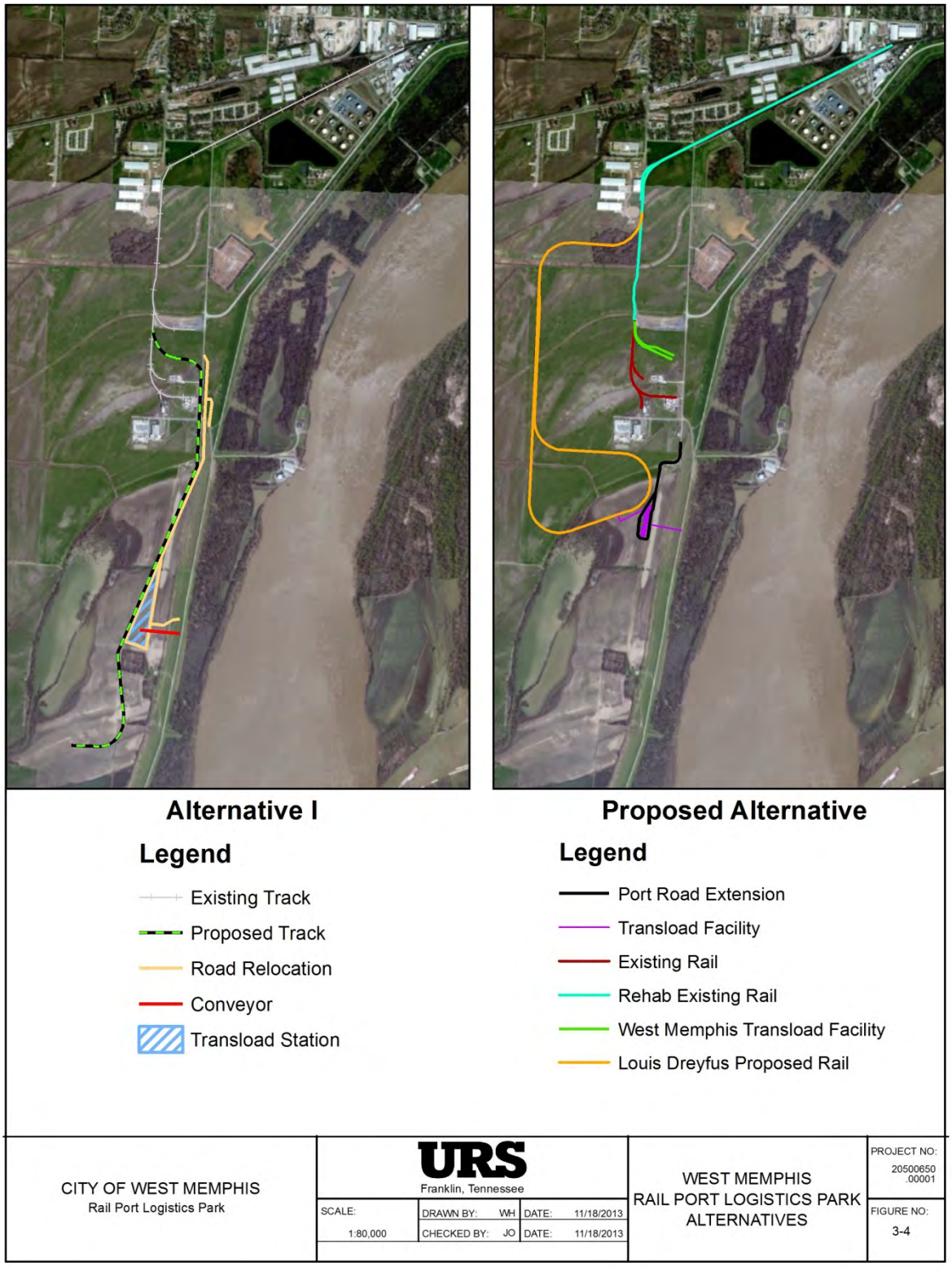


Figure 3-4 Project Alternatives

Although Alternative 1 would provide storage tracks and a new connection to the UP main line; however, it would be built in a location that might interfere with future wing dikes proposed by the U.S. Army Corps of Engineers (USACE) Memphis District in the Mississippi River. The proposed future wing dams are designed in order to minimize dredging and maintain an open navigation channel in the River. Future construction of a new wing dike would result in the obstruction of the proposed port and barge loading area. The wing dike would not allow for a barge loading location that would accommodate the number of barges needed to load unit trains of commodities. While the wing dikes are not under construction, the USACE would not issue a permit for the Alternative 1 port and barge loading facility location. This made Alternative 1 unfeasible, therefore this alternative was not considered further.

3.6 Applicable Laws, Regulations, and Permits

Federal and state local laws and regulations authorize agencies to issue permits, review plans, or provide consultation regarding potential Project impacts. Table 3-1 identifies the most pertinent federal, state, and local laws and regulations governing permits, consultation, and review requirements for the Proposed Action Alternative. Regulations presented in Table 3-1 are organized by the issuing agency.

Table 3-1. Applicable Laws and Related Permits and Approvals for the Proposed Action Alternative

Applicable Law or Order	Primary Agency Citation	Description and Requirements
Federal Permits / Approvals		

Applicable Law or Order	Primary Agency Citation	Description and Requirements
NEPA of 1969	FRA 42 United States Code (USC) 4321	The purpose of NEPA is to ensure that environmental factors are weighted equally when compared to other factors in the decision-making process undertaken by federal agencies, including a multidisciplinary approach to considering environmental effects. NEPA's basic policy is to ensure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment. The Act declares a national policy, which will encourage productive and enjoyable harmony between man and his environment; to promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.
Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act	FRA 40 Code of Federal Regulations (CFR) 1500–1508	Provides regulations for implementing NEPA procedures. Procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken and that information is of high quality. NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.
Procedures for Considering Environmental Impacts	FRA 64 FR 28545, May 26, 1999	Provides procedures for the assessment of environmental impacts of actions and legislation proposed by the FRA and for the preparation and processing of documents based on assessments.
Regulations Governing Loans and Loan Guarantees under the Railroad	FRA 49 CFR 260.35	Requires completion of appropriate environmental and historic preservation documentation prior to a decision by FRA on an applicant's financial assistance request.
Clean Water Act (CWA) Section 404	USACE and Environmental Protection Agency (EPA) 33 USC 1344 et seq.	The USACE requires a permit for discharge of dredged and fill material into waters of the United States, including wetlands. Approval of discharge of dredged and fill material must be in accordance with guidelines [404(b)(1) guidelines] developed by EPA in conjunction with the USACE.
CWA Section 402	Arkansas Department of Environmental Quality (ADEQ) 33 USC 1344	Projects disturbing 1 acre or more of land during construction will require a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES permit requires that Best Management Practices (BMPs) be in place during construction to avoid and minimize pollutant discharges that may affect water quality.
CWA Section 401	ADEQ 33 USC 1341	Section 401 requires state review and authorization for issuance of a Certificate of Reasonable Assurance regarding protection of water quality when discharging dredged or fill material into waters of the United States. This permit is obtained concurrently with the CWA Section 404 permit.

Applicable Law or Order	Primary Agency Citation	Description and Requirements
Endangered Species Act (ESA)	U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) 16 USC 1536	Provides for the conservation of species that could become extinct through all or a substantial portion of their range. Prohibits any action that results in "taking" a listed species, adversely affecting identified critical habitat, or trading in listed species. Section 7 of the act requires all federal agencies to consult with USFWS and/or NMFS to determine whether any effects to listed species will result from the Project.
Migratory Bird Treaty Act	USFWS 16 USC 703 et seq.	Prohibits the taking of migratory birds, unless specifically excepted or authorized. "Taking" can include losses from habitat. A permit or consultation is not required but all federal agencies must comply with the Act. This typically includes performing nest clearances outside the breeding season, avoiding active nests, and minimizing loss of habitat through BMPs. Nest removal must be conducted by an individual permitted by the USFWS.
National Historic Preservation Act (NHPA) Section 106 and Executive Order 11593, Protection & Enhancement of the Cultural Environment Archaeological Resource Protection	Arkansas State Historic Preservation Office (AR-SHPO) and the State of Arkansas Archaeological Survey	Provides for the identification and protection of historic properties. Requires federal agencies to take into account the effects to properties on or eligible for the National Register of Historic Places (NRHP) and requires federal agencies to check for sites that may be eligible and prepare a Determination of Eligibility. For both historic properties and archaeological resources, a Finding of Effect as a result of the Project is prepared and submitted to AR-SHPO for concurrence.
USDOT Act of 1966, Section 4(f)	FRA 49 USC 303 23 USC 138	Forbids USDOT from using public parks, recreation areas, wildlife/waterfowl refuges, or historic sites unless there is no "prudent and feasible" alternative and the agency employs "all possible planning to minimize harm." Amendments to Section 4(f) in Section 6009(a) of Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) allows projects with de minimis effects on historic properties to be approved.
Land and Water Conservation Fund Act (LWCFA)	National Park Service and Arkansas Department of Parks and Tourism 36 CFR 59.3	Section 6(f) of the LWCFA concerns projects that propose to convert outdoor recreation property that was acquired or developed with LWCFA grant assistance, which in Arkansas is distributed by the Arkansas Department of Parks and Tourism.
Executive Order 13175, Consultation/Coordination with Tribes	FRA	Requires responsible agency(ies) to follow specific processes, including policymaking criteria, consultation, and coordination, before taking certain actions that affect "Indian tribes" as defined by the Order.
Clean Air Act (CAA)	EPA Region VI 42 USC 7506	Requires federal agencies to conduct an air quality analysis (air quality conformity) per an approved implementation plan to determine the likelihood and extent of potential impacts on air quality.
CAA Amendments	EPA Region VI 42 USC 85	Intended to affect transportation decision-making, not only to achieve air quality goals but also to affect broader environmental goals related to land use, travel mode choice, and reduction in vehicle miles traveled. A key section of the CAA Amendments relating to conformity is Title I, Provisions for the Attainment and Maintenance of National Ambient Air Quality Standards (NAAQS).

Applicable Law or Order	Primary Agency Citation	Description and Requirements
CAA Amendments	40 CFR 50	EPA began regulating greenhouse gases (GHGs) from mobile and stationary sources of air pollution for the first time on January 2, 2011. Standards for mobile sources have been established pursuant to Section 202 of the CAA.
Executive Order 12898, Environmental Justice	FRA 59 FR 7629, Feb. 11, 1994	Requires that federal agencies ensure there are no disproportionately high and adverse effects on minority and low-income populations for their agency actions. An evaluation of potential effects and potential mitigation or avoidance measures is required.
Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency (LEP)	FRA 65 FR 50121	Requires federal agencies to examine the services they provide, identify any need for services to those with LEP, and develop and implement a system to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. It is expected that agency plans will provide for such meaningful access consistent with and without unduly burdening the fundamental mission of the agency.
Agriculture and Food Act of 1981, containing the Farmland Protection Policy Act (FPPA)	NRCS, Public Law 97-98 subtitle I of Title XV, Section 1539-1549	The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland.
Uniform Relocation & Real Property Acquisition Act	FRA 42 USC 4601 et seq.	Requires agencies that must use private property to acquire it at fair market value and assist in any necessary relocation of residences or business.
Americans with Disabilities Act (ADA)	U.S. Department of Justice Public Law 101-336	Prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, state and local government services, public accommodations, commercial facilities, and transportation.
Fish & Wildlife Coordination Act	USFWS, NMFS, FRA 16 USC 662	Requires federal agencies to consult with wildlife agencies regarding effects to fish and wildlife for any project that involves impoundment (only where surface area is 10 acres or more), diversion, channel deepening, or other modification of a stream or other body of water.
Executive Order 11990, Protection of Wetlands	FRA 42 CFR 26961	Prohibits federal agencies from undertaking or providing assistance for new construction located in wetlands unless the agency finds there is no practicable alternative to the construction and the proposed action includes all practicable measures to minimize harm to wetlands. Agencies shall provide for early public review of any plans or proposals for new construction in wetlands in accordance with Executive Order 11514, Protection and Enhancement of Environmental Quality, Mar. 5, 1970, 35 FR 4247. Compliance with Executive Order 11990 is demonstrated as part of the CWA Section 404 permit process.

Applicable Law or Order	Primary Agency Citation	Description and Requirements
Executive Order 11988, Floodplain Management	Federal Emergency Management Agency (FEMA) 42 CFR 26951	Requires federal agencies to evaluate the potential effects of any actions located in a floodplain with the aim of reducing the risk of floodplain loss and restoring and preserving "the natural and beneficial values" of floodplains. Agencies shall consider alternatives to avoid adverse effects and incompatible development in floodplains and shall modify its action using mitigation measures. Agencies shall also circulate a notice to the public and provide opportunity for early public review of any plans or proposals for actions in floodplains. Furthermore, agencies shall include adequate provisions for the evaluation and consideration of flood hazards in the regulations and operating procedures for licenses, permits, loan or grant aid programs they administer.
Use of Locomotive Horns at Highway-Rail Grade Crossings, Final Rule	FRA 49 CFR 222 and 229	The FRA is the federal agency responsible for regulating noise from heavy rail operations. Requires the use of locomotive horns at public grade crossings, but gives FRA the authority to make reasonable exceptions.
Oil Spill Prevention and Response Plans	USDOT 49 CFR 130	Prescribes prevention, containment, and response planning requirements of the USDOT applicable to transportation of oil by motor vehicles and rail vehicles.
Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements	USDOT 49 CFR 172	Requires persons transporting hazardous materials to have shipping papers, package marking, labeling, and transport vehicle placarding for shipment and transportation of hazardous materials.
State Permits / Approvals		
Resource Conservation and Recovery Act Hazardous Waste Management Act of 1976	ADEQ 40 CFR 239–282	Governs the disposal of solid waste and hazardous waste. Approvals from ADEQ are required for disturbances to sites with a restrictive covenant.
Water Pollution Control Act	Arkansas Pollution Control and Ecology Commission, Regulation 6	Operators of small construction sites shall be deemed to have a permit by rule for the purposes of the federal CWA 33 USC 1251 et seq., and the Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (ACA) 8-4-101 et seq.
Arkansas CAA	Subchapter 2 of the Arkansas Water and Air Pollution Control Act, ACA 8-4-201 et seq., 19	Similar to the federal CAA, it requires adherence to state air quality standards and an evaluation of potential impacts on air quality.
Local Permits / Approvals		
State Environmental Policy Act (SEPA)	State Act 498 of 1983	Similar to NEPA, it is state policy that requires state and local agencies to consider the likely environmental consequences of a proposal before approving or denying the proposal. A copy of the EA will be submitted to the Arkansas Clearing House.
Floodplain Development Permit	Arkansas Natural Resources Commission [Act 745 of 2003 (ACA 14-268-106)]	Under the state's Flood Control Management Law, a local Floodplain Development Permit or other permit identifying the floodplain management conditions is required for any development within the mapped 100-year floodplain.

Applicable Law or Order	Primary Agency Citation	Description and Requirements
Off-site Impacts	City of West Memphis Noise Ordinance	City code prohibits noise impacts that exceed the maximum environmental noise levels at a receiving property as established by the Arkansas noise regulation and also ensures compliance with federal law. The Arkansas noise regulations (and by reference, the City regulation) include two key exemptions: "sounds created by surface carriers engaged in interstate commerce by railroad" are exempted from both daytime and nighttime noise limits and "sounds originating from temporary construction sites as a result of construction activity" are exempted from daytime noise limits.

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 Air Quality

4.1.1 Study Area and Methodology

The study area for air quality is defined as the City of West Memphis, Arkansas, ozone maintenance area. Maintenance areas are those geographic areas that had a history of nonattainment, but are now consistently meeting the NAAQS.

Construction emissions were estimated using the approximate duration of construction and equipment used during calendar year 2012 as well as EPA's *Emission Factors for locomotives* that were established in 1997 .[4] As a result of an aggressive emissions reduction plan implemented by EPA and State regulations, in addition to enhanced control technology available, actual emissions occurring during the peak construction phase would likely be lower than the 2012 values used for the analysis as a result of reduced emissions associated with more stringent air regulations and better control technology.

To evaluate emissions associated with locomotive operations the analysis considered the existing train operations, increase in train operations, average train speed, and horsepower. Locomotive emissions were estimated using EPA emission factors[5] and the rail traffic activity assumptions were provided by LD and the City of West Memphis.

4.1.2 Affected Environment

The City of West Memphis area in which the IRPLP Project is located has been designated a maintenance area for ozone and a non-attainment area for all other pollutants.

4.1.2.1 Federal General Conformity Regulations

A General Conformity Determination is required for a federal action in a maintenance area where the total of the direct and indirect emissions (including emissions from temporary construction emissions) resulting from the action would exceed the threshold emission rates.[6] The General Conformity Determination criterion for ozone within a designated ozone maintenance area is 0.075 ppm per 8-hour test;[7] thus, for purposes of the site's analysis, air quality impacts would be considered significant if:

- Ozone emissions generated by construction of the Project, combined with ozone emissions from additional traffic traveling within the Memphis-West Memphis maintenance area, are predicted to exceed 0.075 ppm in an 8-hour period and/or

[4] U.S. Environmental Protection Agency, *Emission Factors for Locomotives*, 1997. http://www.epa.gov/nonroad/locomotv/420f09025.pdf
[5] *Id.*
[6] 40 CFR 93.153
[7] *Id*.

- Ambient air pollutant concentrations generated by the Project construction and operations are predicted to exceed the NAAQS.

4.1.2.2 Federal Emissions Standards for Construction Equipment and Locomotives

Diesel-powered construction equipment and diesel locomotives that run over the site's rail system emit soot particles, referred to as diesel particulate matter (DPM). DPM is recognized as an important air pollutant because it consists of ultra-fine particles that can be inhaled into the lungs, and it contains a mix of recognized toxic compounds and suspected carcinogenic compounds (California Air Resources Board, 1998). In response to the recognized importance of DPM, the U.S. Congress enacted the Diesel Emission Reduction Act of 2005.[8] As required by that federal act, EPA enacted aggressive new regulations that require new and remanufactured non-road diesel equipment (including construction equipment and locomotives) to steadily reduce per-vehicle DPM emissions in the future (EPA, 2009).

DPM emissions generated by rail operations are expected to gradually decrease as a result of those aggressive regulations.

4.1.3 Environmental Consequences

4.1.3.1 No Action Alternative

No construction of rail facilities or infrastructure improvements would occur as part of the No Action Alternative; however, train volumes on the main line and within the site are expected to increase by steady growth of the local economy. The increase in the number of trains would result in additional delay times, thereby increasing train idling times (see Sections 4.3 and 4.15). Vehicular traffic would also be delayed at crossings as a result of the increased congestion on the main line. To compensate for the lack of expanded rail capacity, a No Action Alternative would likely involve greater truck traffic within the area. Increased train and truck traffic to the site, creating train and vehicular delays, would increase emissions.

Ambient air pollutant concentrations as well as DPM concentrations would not likely exceed the NAAQS because while the locomotive operations are likely to increase, emissions would be distributed over miles of rail corridor, within the site, and along the main lines serving the southeast. Emissions from vehicular traffic while idling during train delays are expected to result in a negligible increase in emissions. In addition, as federal emission standards require continued improvements to newly manufacture and remanufactured locomotive engines, the amount of pollutants released by rail operations will continue to decrease. Therefore, emissions associated with the increase in rail activity under the No Action Alternative would be offset by improved emissions ratings for locomotives.

4.1.3.2 Proposed Action Alternative

Operational Impacts

[8] Public Law 109-58

The Proposed Action Alternative would allow tenants to assemble unit trains within the site, rather than doing so at other locations along the main line, and would increase train and truck traffic. The site estimates an increase in operational hours by a factor of 31 by site tenants when the proposed action is fully operational (Chapin 2013). Doing so would increase the amount of switch engine traffic within the site, but it would decrease switch engine usage outside the site by a similar amount. Therefore, the Proposed Action Alternative is not anticipated to cause an emission increase by switch engines; it would simply change the location where those emissions occur.

Direct operational emission increases caused by the Proposed Action Alternative would be generated by additional long-haul trains traveling within the ozone maintenance area. The Proposed Action Alternative would result in an increased volume of unit train trips per day compared to current levels. The estimated increase in operational ozone emissions would be negligible since the emissions would create an environment that is nitrogen oxides (NO_x) rich relative to volatile organic compounds (VOCs). In such an environment ozone formation is hindered. Even when combined with estimated annual construction emissions, the total emissions from the site are well below the limits for ambient air set by NAAQS for all six monitored pollutants (Table 4-1). Therefore, a conformity determination is not required for the Proposed Action Alternative. Emissions from vehicular traffic while idling during train delays and unloading is expected to decrease, resulting in a decrease in emissions.

Table 4-1. Estimated Pollutant Emission Levels and NAAQS Limits

Pollutant	Estimated Emissions		NAAQS Limit	Sample Time Period
	µg/m^3	ppb		
VOC	2.02	1.68	NA	—
NO_x	43.92	36.60	53 ppb	annual sample
PM	1.26	1.05	150 µg/m^3	24-hour sample
SO_x	0.89	0.74	500 ppb	3-hour sample
CO	6.32	5.27	9,000 ppb	8-hour sample

CO = Carbon Monoxide
PM = Particulate Matter
SO_x = Sulfur Oxides
Note: The background levels are annual averages. Source data were not available in sufficient detail to examine emission fluctuations on scale with test procedures. It would be highly unlikely for these emission levels to be in violation.

The contribution to ambient air pollutant concentrations near the site rail yards and the local rail lines would not likely exceed the NAAQS because the increase in rail activity would result in a small emission increase that would be distributed over many miles of rail corridor, within the site, and along the main lines serving the southeast. In addition, as federal emission standards require continued improvements to newly manufactured and remanufactured locomotive engines, the amount of pollutants released by rail operations should continue to decrease, offsetting the emissions associated with the expected increase in rail activity.

In addition to the truck and train emissions, the transload facility will require a permit for air emissions. The transload facility will power all conveyors, elevators and administrative buildings with electricity. Potential air emission sources will include the grain drier that will use natural gas, and dust collection systems at the elevators and silos. The specific size and design

of these air emission sources will be included in the final design. All sources will be regulated in accordance with an air quality permit issued by the State of Arkansas.

The site's net contribution to ambient DPM concentrations at public areas is also expected to gradually decrease over time as the efficiency of rail, replaces truck traffic. The anticipated gradual reduction in site-related emission rates, combined with the fact that the site's relatively low rail-related DPM emission rates would be distributed over a large geographical area, indicates that the site's contribution to ambient DPM concentrations at any given public location is not expected to be significant.

In conclusion, the Proposed Action Alternative would not cause any significant air quality impacts because the increase in pollutant emissions near the site rail yards and regional rail lines would not likely exceed the NAAQS due to their relatively small magnitude and the relatively large area over which they would be distributed. No organic fuel use is anticipated at the transload facility as all heating and cooling will be powered by electricity and all motors will be electric as well. Detailed analysis of air quality impacts are provided in Appendix A.

Construction Impacts

The construction of the new rail and transload facility and demolition of a small number of old farm buildings would generate limited emissions from fugitive dust and from diesel-powered construction equipment. These emissions would be temporary and localized, and are not expected to affect areas beyond the site facility boundary. The majority of new construction would be over a mile from any residential area.

Federal and local regulations prohibit demolition of structures that contain asbestos-containing material. The Port would retain certified inspectors to identify all such material in the buildings, and would remove asbestos-containing material before building demolition begins.

Ambient air pollutant concentrations at public areas beyond the construction zones during construction would likely be below the NAAQS because the construction emissions would be relatively small and would be distributed over a large area. The Proposed Action Alternative is a rail construction project over a large area of rail corridor. All construction equipment must satisfy EPA emission standards for non-road engines. These factors ensure that ambient air pollutant concentrations at public areas outside the construction zones would not approach significant levels.

4.1.4 Minimization and Mitigation Measures

4.1.4.1 No Action Alternative

No significant air quality impacts would occur, so no mitigation measures are required.

4.1.4.2 Proposed Action Alternative

As explained above, the Proposed Action Alternative would not result in significant air quality impacts; therefore, no air quality mitigation would be required.

4.2 Noise and Vibration

4.2.1 Study Area and Methodology

The study area for noise and vibration is defined by the regulatory guidance provided by the FRA and is larger than the IRPLP Project area.

Although the FRA has its own noise and vibration assessment guidelines (FRA 2012), they are applicable only to high-speed trains, so they are not applicable to this Project. The impact methodologies developed by the Federal Transit Administration (FTA) are relevant to this Project and were used to assess noise and vibration impacts. The assessment of increased train noise used a two-step process as defined by FTA guidelines (FTA 2006).

- Step 1 (Noise Screening): The noise screening distance is determined according to FTA guidelines (2006). The receptors that are closer than the noise screening distance are identified. The noise screening distance is the distance at which the projected 24-hour average noise level caused by projected train traffic exceeds 50 adjusted decibels (dBA) day-night sound level (L_{dn}).
- Step 2 (General Noise Assessment): For receptors closer than the screening distances described above, the difference in 24-hour L_{dn} noise levels between existing conditions and the future full build-out condition was forecast, and the projected L_{dn} noise increase was compared to the FTA significance thresholds (2006). The FTA significance thresholds use a sliding scale based on the existing background L_{dn} noise level.

Similar to the noise analysis, the vibration analysis used a two-step process – vibration screening and general vibration assessment. Additionally, the FRA safety regulations require all trains to sound their horns at least 15 seconds before passing grade crossings of public roads.[9] Although the FRA has a horn noise model (FRA 2012), the FTA guidelines were used to model the horn noise since the FRA model only addresses noise zones, while the FTA model can be tailored to be receiver-specific. As for the other train noise sources, the FTA guidelines define a train horn noise impact by comparing the projected noise increase with the existing condition using a sliding scale. The methodology is further described in the Noise and Vibration Discipline Report in Appendix B.

The significance criteria used for both the noise and vibration analyses are listed below. Noise and vibration impacts would be considered significant and would require mitigation if any of the criteria listed below are triggered:

- Relevant noise regulations exempt interstate rail operations from numerical noise limits. However, it is acknowledged that temporary daytime construction noise could potentially be disruptive to nearby residents. Therefore, for this analysis, daytime construction noise is

[9] 49 CFR 222

determined to be significant if modeled short-term (i.e., 1-hour average) construction noise levels are more than 90 dBA at any existing dwelling, as recommended by FTA guidelines (FTA 2006);

- If train traffic increases along a rail line that is closer to existing dwellings than the noise screening distances specified by FTA;
- If increases in train traffic cause the 24-hour L_{dn} noise levels at a dwelling to increase by more than the significance criteria specified by FTA; or
- If vibration levels are high enough to be discernible at the residential areas closest to the proposed upgraded rail line, based on sensitivity criteria set by FTA.

4.2.2 Affected Environment

4.2.2.1 Existing Noise-Sensitive Receptors

FTA guidance identifies three categories of noise-sensitive land uses that are subject to different impact thresholds depending on the category. Category 1 includes tracts of land where quiet is an essential element in their intended purpose. Category 2 includes residences and buildings where people sleep. Category 3 includes institutional land uses with daytime and evening use where quiet conditions are important for the function of the building. This analysis considered the following noise-sensitive receptors, which represent the residential areas closest to the IRPLP Project area (see Figure 4-1):

- Site M-1 is located in a grass field south of Dabbs Avenue and north of the existing railroad tracks. A community of single family residences is located to the north of Dabbs Avenue. These residences are considered to be Category 2 noise-sensitive receptors.
- Site M-2 is located in the mowed yard of a mobile home located inside the Cotton Staple Cooperative Association (Staplecotn) warehouse facility at 1102 South Woods Street. The residence is located just north of the rail line that runs along the southern border of the warehouse facility and a second rail line that bisects the Staplecotn site. It is considered to be an isolated Category 2 noise-sensitive receptor.

FRA noise regulations require all trains to sound their horns near the grade crossings of public roads.[10] There is one public grade crossing associated with the IRPLP Project near residences – at Port Road to the south of Site M-1.

4.2.2.2 Existing Vibration-Sensitive Receptors

FTA guidance identifies three categories of vibration-sensitive land uses that are subject to different impact thresholds similar to those used in the noise analysis. Category 1 includes special vibration-sensitive buildings in which work activities cannot tolerate vibration of the building. Category 2 includes residences and buildings where people sleep. Category 3 includes institutional buildings with daytime and evening use where quiet conditions are important for the function of the building. Vibration-sensitive receptors were identified within 200 feet of the Project rail alignment – the same residences represented by monitoring locations M-1 and M-2.

[10] *Id.*

4.2.2.3 Existing Noise Conditions

Cars and trucks on local streets are the primary sources of existing noise levels at the closest noise-sensitive residential areas to the Project. Within the IRPLP, a maximum of one train currently travels to and from the IRPLP each day on the existing rail alignment.

To address the potential for Project-generated sound to be discernible at the closest residential properties (shown in Figure 4-1), URS monitored background noise levels on May 20, 2013, at two representative locations near the Project site and near the closest residential properties – one near the northeast Project site boundary and one near the northwest Project site boundary – to document the background sound levels in the area. Figure 4-1 shows these locations, along with the other closest residences to the proposed Project, superimposed on an aerial map. Each of these locations provides background sound levels representative of the closest residential communities to the north of the Project site. There are no other noise-sensitive locations within 1,000 ft. of the Project and the transload facility is over 1,000 feet south of these residential areas.

The weather conditions during the entire monitoring period were favorable for the sound level measurements, with no precipitation, light winds (less than 10 miles per hour), and temperatures in the mid-70s°F to mid-80s°F. The sound monitor was a Larson Davis Model 820 Type 1.

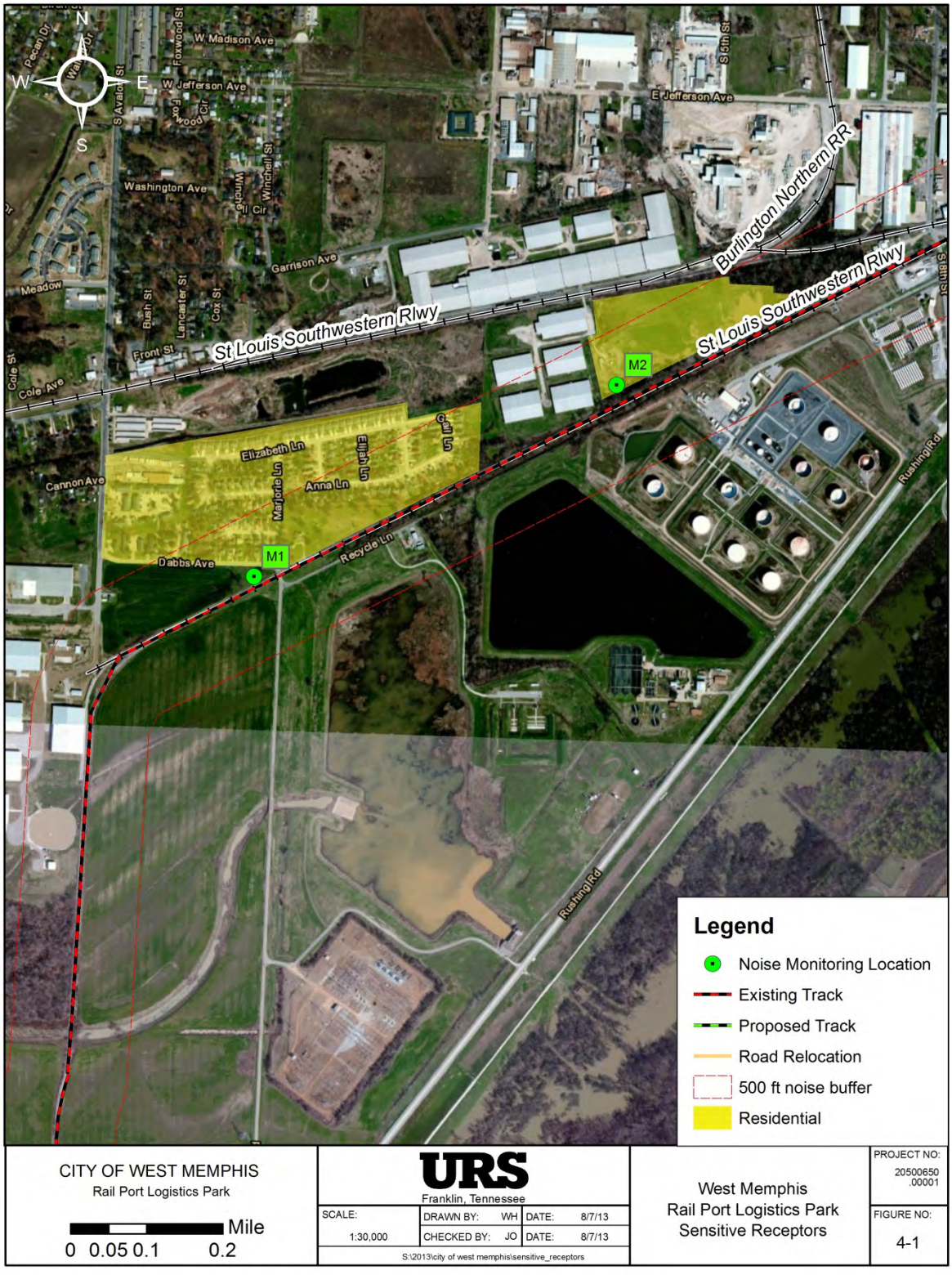


Figure 4-1. Noise- and Vibration-Sensitive Areas and Noise Monitoring Locations

(ANSI S1.4-1983) sound level meter (serial number 1655), field-calibrated before and after the session with a Larson Davis Model CAL200 calibrator (serial number 3704). All instruments had been factory-calibrated within 12 months of their use. All measurement procedures were in accordance with standard industry-accepted practices.

Sound level monitoring was conducted at locations M-1 and M-2, shown on Figure 4-1. The measurements were used for this analysis to represent background conditions at the closest residential receptors to the Project, on the north side of the Project area. Noise sources at M-1 included automobile traffic in the forms of motorcycles, automobiles, and medium and heavy trucks. The City of West Memphis maintains a firing range southwest of M-1. The firing range was observed to be in use during visits to the site. Dabbs Avenue becomes Port Road directly east of M-1 and crosses the railroad at-grade, where there is a rail grade crossing. Port Road serves the industrial area south of M-1 and maintains a steady traffic flow of medium and heavy trucks and lighter automobiles.

Noise sources at M-2 included current stationary rail activity occurring at this and neighboring locations and heavy truck traffic occurring at other parts of the Staplecotn grounds. The site is somewhat isolated from the surrounding community and was observed to be relatively quiet when rail activities were not occurring.

4.2.3 Environmental Consequences

4.2.3.1 No Action Alternative

Operational Impacts

No construction of rail facilities or infrastructure improvements would occur as part of the No Action Alternative; and train volumes on the main line and within the Port are not expected to increase. As a result, no increases in noise and vibration levels under the No Action Alternative are expected.

Construction Impacts

No construction is expected as part of the No Action Alternative; therefore, no construction-related noise or vibration impacts would occur.

4.2.3.2 Proposed Action Alternative

Operational Impacts

Noise Impact Analysis

According to the FTA screening procedure, the noise screening distance for Category 2 receptors is 750 feet for unobstructed houses (FTA 2006). Using this distance is conservative for this Project since the FTA screening distance is based on an assumption of multiple train passbys during the day and night and this Project will only introduce one new train. The transload

facility will operate 24 hours a day during peak operation (October – December). However, this facility will be located over two miles from the residential area of West Memphis. Figure 4-1 shows several houses along Dabbs Avenue and Anna Lane are within 500 feet of the rail line, so noise impacts are possible for those houses. Therefore, a general noise analysis was conducted for these Category 2 receptors.

Rail traffic is expected to increase from a maximum of 1 train trip per day to 2 train trips per day. Current rail traffic only occurs during daytime hours, but future operations with the Project may include a train passing noise-sensitive areas during the day or night. Project-related trains would be different from those currently using the rail line. Current trains average a single locomotive and 10 cars, while Project-related trains would average 3 locomotives and 110 cars.

Train horn analysis used the FTA guidelines to determine whether the increase in rail use and the resulting noise from train horns at the Port Road crossing would significantly increase 24-hour L_{dn} noise levels at the residential neighborhood to the north.

The guidelines define a train horn noise impact by comparing the projected noise increase with the existing condition, using the sliding scale developed by the FTA. The train horn noise model indicates that the potential impact zone could extend as far as 172 feet north of the rail crossing. Based on these modeling results, the increase in train horn noise caused by the Project would have a potential to create a noise impact to sensitive resident receivers if not mitigated properly.

General assessment calculations assuming the worst-case noise condition of the future train operating at night showed the two residences closest to the rail line would experience severe noise impacts from the train horns. Therefore, increased train operations would have a potential to create a noise impact at the closest residential receptors to the rail line. Although trains may be idling overnight for this Project and increased truck traffic will occur on area roadways, none of these activities will take place within 1,000 feet of residences, so noise and vibration impacts are not expected from idling trains or truck traffic.

Vibration Impact Assessment

Similar to the noise analysis, the vibration analysis used a two-step process – vibration screening and general vibration assessment. According to the FTA screening procedure, the vibration screening distance for Category 2 receptors is 200 feet (FTA 2006). Figure 4-1 shows several houses along Dabbs Avenue and Anna Lane are within 200 ft. of the rail line, so vibration impacts are possible for those houses. Therefore, a general vibration analysis was conducted for these Category 2 receptors.

Unlike the cumulative averaged levels used for the noise criteria, the FTA vibration impact criteria are based on instantaneous maximum levels. Since the locomotives with the proposed Project would be similar to those present in the existing conditions, the vibration levels would not increase with the proposed Project. Since the current vibration levels do not exceed the FTA limits at the closest residences, the results of the analysis show that operations along the proposed rail alignment would not cause significant vibration impacts at the nearby residential community to the north of Port Road.

Construction Impacts

There are no local noise regulations regarding construction activities. However, it is acknowledged that temporary daytime construction noise could potentially be disruptive to nearby residents. Therefore, for this analysis daytime construction noise was evaluated by predicting the temporary increase in construction noise levels compared to existing background levels. In addition, FTA construction noise guidelines set a 1-hour L_{eq} daytime limit of 90 dBA and a nighttime limit of 80 dBA for residential properties. This limit was taken into consideration in evaluating construction noise levels.

Construction activities would be limited to daytime hours (between 7:00 AM and 8:00 PM). The only construction activities related to this Project near noise-sensitive locations will be for upgrading the existing tracks, since the construction of any rail facilities are well over a mile south of any residences. This construction activity would occur roughly 100 to 200 ft. from some residences, causing temporary, localized noise level increases (see Table 4-2). The estimates listed in Table 4-2 were calculated in accordance with the FTA general assessment guidelines assuming the two noisiest pieces of equipment are operating full time and simultaneously. As Table 4-2 shows, the construction noise caused by the Proposed Action Alternative may exceed background noise levels at the closest residences.

Table 4-2. Estimated Construction Noise Levels at Closest Residences from Rail Upgrade Construction

Receptor Location	Typical Construction Noise Level at 50 feet (dBA L_{eq})	Estimated Noise Level during Construction at Closest Residence (dBA L_{eq})	Measured Existing Daytime Background Noise Levels (dBA L_{eq})
M-1	85	79	59
M-2	85	73	55

As shown in Table 4-2, the predicted noise levels during construction at both M-1 and M-2 are higher than the average measured existing daytime levels. Construction activity along the proposed rail alignment may be discernible at those residential areas compared to normal background noise, but the construction activity would not cause noise levels exceeding the daytime or nighttime FTA limits. Therefore, construction noise impacts are not expected to be significant at all noise-sensitive locations.

Construction-related vibration impacts would only be considered if pile driving or blasting were planned near the residential communities. Since this is not the case, no construction-related vibration impacts are expected for this Project.

4.2.4 Minimization and Mitigation Measures

4.2.4.1 No Action Alternative

There are no impacts expected from the No Action Alternative. No mitigation is required.

4.2.4.2 Proposed Action Alternative

Potential noise impacts are predicted for the two closest residences to the northern rail section of the Project. These impacts would be caused by the required operation of horns within 220 feet of the Port Road grade crossing. FRA's horn rule requires train horns to sound at least 15 seconds prior to a train passing a grade crossing.[11] Given the average train speed of 10 miles per hour, 15 seconds translates to 220 feet

Practical measures that would eliminate noise impacts at the closest residential properties include prohibiting the sounding of horns near the Port Road grade crossing, limiting future train operations near the northern residential communities to daytime hours, providing noise barriers between the rail line and the residences, and providing sound insulation for the impacted residences.

A quiet zone, which is defined in FRA's horn rule, would eliminate the sounding of horns near the Port Road grade crossing and thus eliminate noise impacts from the Project. There is an official application process for establishing quiet zones. This process will be evaluated as well as the mitigation measures identified above.

4.3 Transportation

4.3.1 Study Area and Methodology

The Project study area for transportation correlates to the IRPLP Project area described in Section 3.4 and extends to the north to Rainer Road, to the west by Waverly Road, and east to Port Road.

Transportation was evaluated through an analysis of anticipated train travel along the Port's main rail line and the proposed loop, and on vehicular travel and pedestrian access in the Project vicinity in relation to the proposed impacts from the No Action and Proposed Action Alternatives.

4.3.2 Affected Environment

4.3.2.1 Rail Traffic

The proposed rail alignment would commence with the existing TennArk Industrial Lead track that comes off of the Brinkley Sub east of the West Memphis Yard and runs to the Port property. The existing track is to be rehabilitated. The Louis Dreyfus loop track is proposed to come off the TennArk track at a point east of the existing warehouses (Figure 1-2). There is a fair amount of rail traffic in the area because of the presence of a main BNSF line. On an average day two trains operate on these tracks, some of which is generated by the IRPLP tenant Louis Dreyfus (Louis Dreyfus 2013). The Port's rail activity consists mainly of grain trains going to and from Louis Dreyfus.

[11] *Id.*

Louis Dreyfus's base projections for rail and truck traffic are shown in Table 4-3. The volume of traffic for both modes is a function of shipments of grain during harvest season, which varies as shown in the table. These projections are compared to a current estimated use of 10 to 20 trucks per day and two trains per week, with each current train averaging 10 cars compared to future unit trains (110 cars) in Table 4-3.

Table 4-3. Louis Dreyfus Base Case Projection

Month	Average Trucks per Day	Average Trains per Week
September	83	1
October	241	3
November	139	3
December	56	2
January	37	1
February	4	0
March	4	0
April	4	0
May	4	0
June	4	0
July	0	0
August	0	0

For the majority of the year truck and rail traffic will be very low, resulting in negligible impacts to traffic in the area. During harvest season, particularly October and November, a sizeable increase in truck traffic will affect traffic movement in the area.

4.3.2.2 Vehicular Traffic

The street system includes City of West Memphis streets and internal roads (Figure 1-2) within the IRPLP Project area. These streets and their functions are described below.

- Port Road is classified as a minor arterial. It is one of the ways to access the Port facilities and links the Port to Rainer Road and the West Memphis train yard. Port Road provides access to several port tenants and industrial properties. The roadway is two lanes and does not have sidewalks; the speed limit is 25 miles per hour. No current average daily traffic volumes are available for Port Road.
- South Loop Road runs parallel to the river. This road connects the Port to the City and Interstate 40. South Loop Road is a two-lane roadway with no parking, has a posted speed of 40 miles per hour, and is surrounded by industrial land uses. The City classifies South Loop Road as a minor arterial. No current average daily traffic volumes are available for South Loop Road.
- Rainer Road runs north of the port property in an east-west direction. The roadway runs from Port Road on the east to Waverly Road on the west. The roadway is the primary link between Waverly Road and Port property.

4.3.2.3 Pedestrians and Bicycles

Pedestrian facilities within the IRPLP Project area consist of wide shoulders and shared roadways.

There are no sidewalks or pedestrian-only paths on IRPLP property. The edges of most roadways, primarily Port Road, are delineated with paint stripes with room for walking outside the delineated area on the shoulder.

4.3.3 Environmental Consequences

4.3.3.1 No Action Alternative

Operational Impacts

Rail Traffic

No construction of rail facilities or infrastructure improvements would occur as part of the No Action Alternative.

Vehicular Traffic

Under the No Action Alternative, no modifications to roads are expected. To compensate for the lack of expanded rail capacity, a No Action Alternative could involve greater truck traffic, resulting in higher levels of truck traffic on the primary arterials (Rainer Road, Port Road, and South Loop Road) that lead to the Port.

Pedestrians and Bicycles

Under the No Action Alternative, no modifications to roads are expected; therefore, no impacts to pedestrians or bicycles would occur.

Construction Impacts

No construction would occur as part of the No Action Alternative; therefore, no construction impacts would occur to transportation.

4.3.3.2 Proposed Action Alternative

Operational Impacts

Rail Traffic

Louis Dreyfus has projected the base numbers for increased truck and rail traffic (see Table 4-3). The increase in the number of trains per week is relatively minor during harvest season and insignificant for the remainder of the year.

Vehicular Traffic

No road improvements are anticipated for this alternative other than extension of Port Road to and around the trainload facility. While the number of trucks per day anticipated during harvest

season will increase, the volumes for the rest of the year are quite low. Additional truck traffic during the fall will be limited to major access roads and Port Road. This traffic is not expected to negatively impact current traffic flow. No traffic count data are available to evaluate the change in level of service for the Port access roads; however, it is not believed to be significant.

Pedestrians and Bicycles

The Proposed Action Alternative would have no impact on existing pedestrian facilities. There are no sidewalks in the area immediately affected by the Proposed Action Alternative. Where road shoulders exist, they would be maintained and would allow for pedestrian traffic. Roadways relocated within the IRPLP would continue to be delineated by paint stripes and outside the striped areas there would be adequate room for pedestrians.

Construction Impacts

Rail Traffic

Construction work would begin with rehabilitating the TenArk Industrial Lead track. The Louis Dreyfus loop track would then be constructed off of that track.

Future track construction is anticipated for the Port property.

Vehicular Traffic

Little disruption to existing roads is anticipated, with the exception of a temporary closure on Port Road when the track rehabilitation work is being done. An alternative route would be provided during the temporary closure.

Pedestrians and Bicycles

Pedestrian and bicycle traffic could be temporarily affected during the closure of Port Road. An alternative route would be provided during the temporary closure.

4.3.4 Minimization and Mitigation Measures

4.3.4.1 No Action Alternative

No adverse impacts to transportation will occur as a result of the No Action Alternative; therefore, no mitigation is proposed.

4.3.4.2 Proposed Action Alternative

No adverse impacts to transportation will occur as a result of the Proposed Action Alternative; therefore, no mitigation is proposed.

4.4 Geology, Soils and Prime Farmland

4.4.1 Study Area and Methodology

The Project study area for geology and soils correlates to the IRPLP Project area described in Section 3.4.

Geology and soils in the study area were evaluated by reviewing existing documentation and Urban Hazard Mapping Project soil surveys for the Arkansas Geological Commission (reference). Effects of the Project were determined by comparing design information with data from the existing geologic and soil conditions of the Project area. Federally funded projects involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, must initially complete a farmland conversion impact analysis. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106, in accordance with the Agriculture and Food Act of 1981[10] containing the Farmland Protection Policy Act (FPPA) subtitle I of Title XV, Section 1539-1549

4.4.2 Affected Environment

4.4.2.1 Geology and Soils

The West Memphis area is mapped within the Geologic Map of Arkansas and two Holocene units were delineated: a stream over-bank deposit and a channel meander deposit. The stream over-bank deposit was described as alluvial deposits of small streams, the overbank deposits of major streams, or older meander belt deposits of major streams. The channel meander units are described as representing the more recent channel meanders and current flood plain deposits of significant streams. Both units were of variable thickness (Arkansas Geological Commission 2004).

The Arkansas Geological Commission (AGC) conducted several geotechnical, environmental, and hazardous materials assessments of soils underlying the proposed construction areas for the proposed rail alignment, cut slopes, and overcrossings. These investigations uncovered three types of Holocene deposits: back swamp deposits, point bar/meander belt, and abandoned channels. All of these deposits are indicative of stream and water activity. They all consist of clay, silt, and sand deposits that vary based on the flow of water experienced during their formation. The back swamp deposits contain a higher percentage of silt, whereas the point bar and abandoned channels are more clay and sand deposits with the main difference being that abandoned channels contain silt layers near the clay intersections, indicating stagnant water cycles.

As a part of the AGC survey, static groundwater levels were measured in the West Memphis area. These surveys indicated, in a review of 143 alluvial water well drilling logs, that the static water level averages 17 feet with a range of 5 to 32 feet

Data from geotechnical borings indicated that the upper 35 to 64 feet of soil consists of silty

[10]Public Law 97-98

clay with a standard penetration blow point of generally less than 10 blows per foot. This overlays a sandy sequence extending to a range of 66 to 101.5 feet This sandy section has a standard penetration blow count averaging more than 30 blows per foot. The entire IRPLP Project area is classified as geologically hazardous as a result of the potential for liquefaction, dynamic settlement, or ground shaking amplification during earthquakes. According to the AGC survey, the West Memphis area shear wave velocity is less than 360 m/s and has a National Earthquake Hazards Reduction Program classification of D with a few places Class E (shear wave velocity less than 180 m/s). The region around West Memphis has shown historical liquefaction around epicenters in 1811–1812 and some records list the area as Class F based on these historical observations.

4.4.2.2 Minerals and Timber Resources

No mineral or timber resources are located within the IRPLP Project area, with the exception of a small timber lot north of Ditch 17.

4.4.2.3 Prime Farmland

The total acreage of prime farmland within the Project area (Crittendon County) is 344,680. The total acres in the county is 408,000. Therefore, the large majority of land in the county is prime farmland.

4.4.3 Environmental Consequences

4.4.3.1 No Action Alternative

There will be no impacts to geology, soils, minerals, prime farmland, and timber resources because no rail or other improvements would occur as part of the No Action Alternative.

4.4.3.2 Proposed Action Alternative

Operational Impacts

The primary geotechnical concerns include seismic loads on ground-level structures and foundations generated by earthquakes; settling, downdrag, and lateral spreading caused by liquefaction during major earthquakes; differential settling caused by either liquefaction or routine settling of compressible soils; and uplift of the pile-supported trench at the Ditch 19 or Ditch 17 bridges during high-water flooding events. Specific seismic design assumptions (e.g., the magnitude of the design earthquake) for the above structures will be established as part of the detailed design process. Geotechnical borings will be conducted as needed for individual construction projects to determine physical properties of the subsurface materials. Operational impacts would not affect minerals, timber or prime farmland.

Construction Impacts

Construction of the Proposed Action Alternative will result in temporary disturbance of upland soils and sediments in the immediate area of construction activities and will permanently remove 44 acres of prime farmland from production.

As part of the building permit application, the City will evaluate how the proposed rail alignment could affect foundations of existing structures near the rail corridor and demonstrate that no impacts would occur. The proposed rail alignment and associated structures, including any bridges, would be constructed to address geotechnical and seismic constraints according to the 2003 International Building Code or the most recent code adopted by the City. Geotechnical studies would also ensure that additional structural loadings caused by the operation of freight trains along the proposed rail alignment would not affect soil or foundations of existing buildings near the proposed rail alignment and ancillary structures.

A limited number of low value trees (non-hardwood) such as cottonwood, hackberry, and silver maple may be lost as a result of the Project.

The impacts to prime and unique farmland were assessed by the Natural Resources Conservation Service (NRCS) by use of the farmland conversion impact rating for CPA-106 (Appendix D). The total acreage of prime farmland impacted by the Project is calculated to be 44 acres, resulting in 0.01% of farmland in the local area impacted. The average farm size in the area is 1,284 acres, indicating that the area impacted is insignificant compared to average farm size or total area of prime farmland in the area. Prime farmland will not be significantly impacted by this Project.

4.4.4 Minimization and Mitigation Measures

4.4.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.4.4.2 Proposed Action Alternative

There are no significant impacts from the Proposed Action Alternative. No mitigation is required. BMPs in accordance with the approved NPDES Construction Stormwater Permit would be used to minimize effects to surrounding resources.

4.5 Water Resources and Floodplains

4.5.1 Study Area and Methodology

The Clean Water Act and Federal Emergency Management Administration[11] regulate the protection of surface water and floodplains respectively. The Project study area for water resources and floodplains correlates to the IRPLP Project area described in Section 3.4, focusing on the proposed rail alignment and access roads, transload facility, and existing and proposed port properties. All Project elements drain to the Mississippi River via ditches that drain

[11] Executive Order 11988

to the West Memphis Stormwater Pond (Ditch 17) or south via Ditch 19 to Fletcher Lake. Ditch 17 flows primarily east in the Project area to the West Memphis Stormwater Pond. On the western end of the Project, near Bollinger Road, Ditch 17 flows west to Ten Mile Bayou.

Water resources were evaluated by reviewing existing documentation, including aerial photography, floodplain mapping, and water-related regulations. Effects of the Project on water resources were analyzed qualitatively by evaluating design information with regard to surface waters, floodplains, and groundwater.

4.5.2 Affected Environment

4.5.2.1 Surface Water Resources

The IRPLP Project area is located along the west side of the St. Francis Levee, west of the Mississippi River between river mile (RM) 726 and RM 729. The Mississippi River is the single major river in the Project area. On the north side of the IRPLP Project area is the West Memphis pump station and stormwater pond. Water from the Project area drains via ditches and overland flow to Ditch 19 and Ditch 17. Ditch 19 drains south to Fletcher Lake. Ditch 17 flows west to Ten Mile Bayou and east to the West Memphis stormwater pond. Ditch 17 flow divides near the current railroad bridge. Ditch 17 is bermed on the south to form a drainage divide. Land south of Ditch 17 flows to Ditch 19, while land north of Ditch 17 flows south to Ditch 17 (Figure 4-2). In addition to Ditch 19 and Ditch 17, a number of small tributaries flow from the levee to the west to these ditches. These tributaries include two intermittent streams and wet weather conveyances (WWC). The WWCs are dry except in response to rain events. Intermittent tributaries include one that starts at the junction of Port Road and South Loop Road and flows southeast to Ditch 19 and a second tributary, which is the former Ditch 20 that flows south to Ditch 19.

In the area of the proposed transload facility, an agricultural field retains stormwater or weep water. Weep water is water that “weeps” through the St. Francis Levee during high water events in the Mississippi River. Two small groundwater weeps are also present along the base of the west side of the levee (Figure 4-2), south and east of the proposed transload facility. These weeps relieve pressure on the levee during high water periods in the Mississippi River. Weeps contained water during the May 14, 2013, site survey when the Mississippi River was at an elevation of 217.6 feet above mean sea level (msl). These two small weeps, at approximately elevation 212 feet msl, flow to a larger agricultural field, which acts as a water detention pond. During high water periods the field stores weep water and has no outlet. Fletcher Lake is located to the west and down gradient of the flooded field. South of the weep overflow area is a larger weep/seep area approximately 6 acres in size (Wetland 3). This large seep was inundated with water on May 14, 2013, with water deepest on the west side (approximately 2 feet deep) with an outlet on the northwest corner. The area was bermed and the outlet was directed overland toward Fletcher Lake. Farther south of Wetland 3 was another seep area (Wetland 4). Both of these wetland areas were delineated as wetlands, see Section 4.6.

4.5.2.2 Floodplains

The Project area is not located within the 100- or 500-year floodplain of the Mississippi River. Water bodies (i.e., Ditch 17, Ditch 19, and Fletcher Lake) are within the 100-year floodplain of the Mississippi River (Figure 4-3).

The 100-year flood elevation is 210 ft. msl within the City of West Memphis and 208 ft. msl within the Project area (FEMA 2013). Areas within Ditch 17 and Ditch 19, the West Memphis stormwater pond, and Fletcher Lake are at or below 208 ft. msl. The levee is at an elevation of 227 ft. msl on the north end of the Project and approximately 225 ft. msl near the south end of the Project. Land elevation in the Project area ranges from 205 to 215 ft. msl. During the May 14, 2013, site visit, the river elevation was 217.6 ft. msl, approximately 10 feet below the levee.

4.5.2.3 Groundwater

Groundwater level changes in the Project area generally correspond to changes in the Mississippi River stage level. The correlation between river stage and groundwater elevation in the Project area indicates that infiltration from the Project area has a relatively small impact on groundwater levels. The primary direction of groundwater movement is south toward the Mississippi River during low flow; however, groundwater movement is away from the river during high water periods (i.e., May and June) (USGS 2013). During high water periods, water flows under the levee via "weeps," which reduce pressure on the levee. Weeps are located along the levee throughout the Mississippi River system. Weeps in the Project area are primarily west of RM 726 and 727, south of proposed construction activity.

The Proposed Action Alternative is entirely within the Fort Pillow Sand Aquifer (FPSA). The City of West Memphis obtains its drinking water from the FPSA at a depth of 900 to 1,200 feet The alluvial topography of the proposed Project area prevents pollutants from easily entering the aquifer. The FPSA is a federally designated sole-source aquifer. Groundwater elevations in the FPS aquifer are highest on the east side of the aquifer. Most of the groundwater in the FPS aquifer has a minimum age of less than 100 years; in many areas groundwater is less than 10 years old.

There are several water supply wells in the IRPLP Project area. The City of West Memphis obtains its drinking water from a groundwater well located approximately 1.5 miles north and up gradient of the site (EDR 2013). A number of shallow irrigation wells are located to the west and southwest of the Project site.

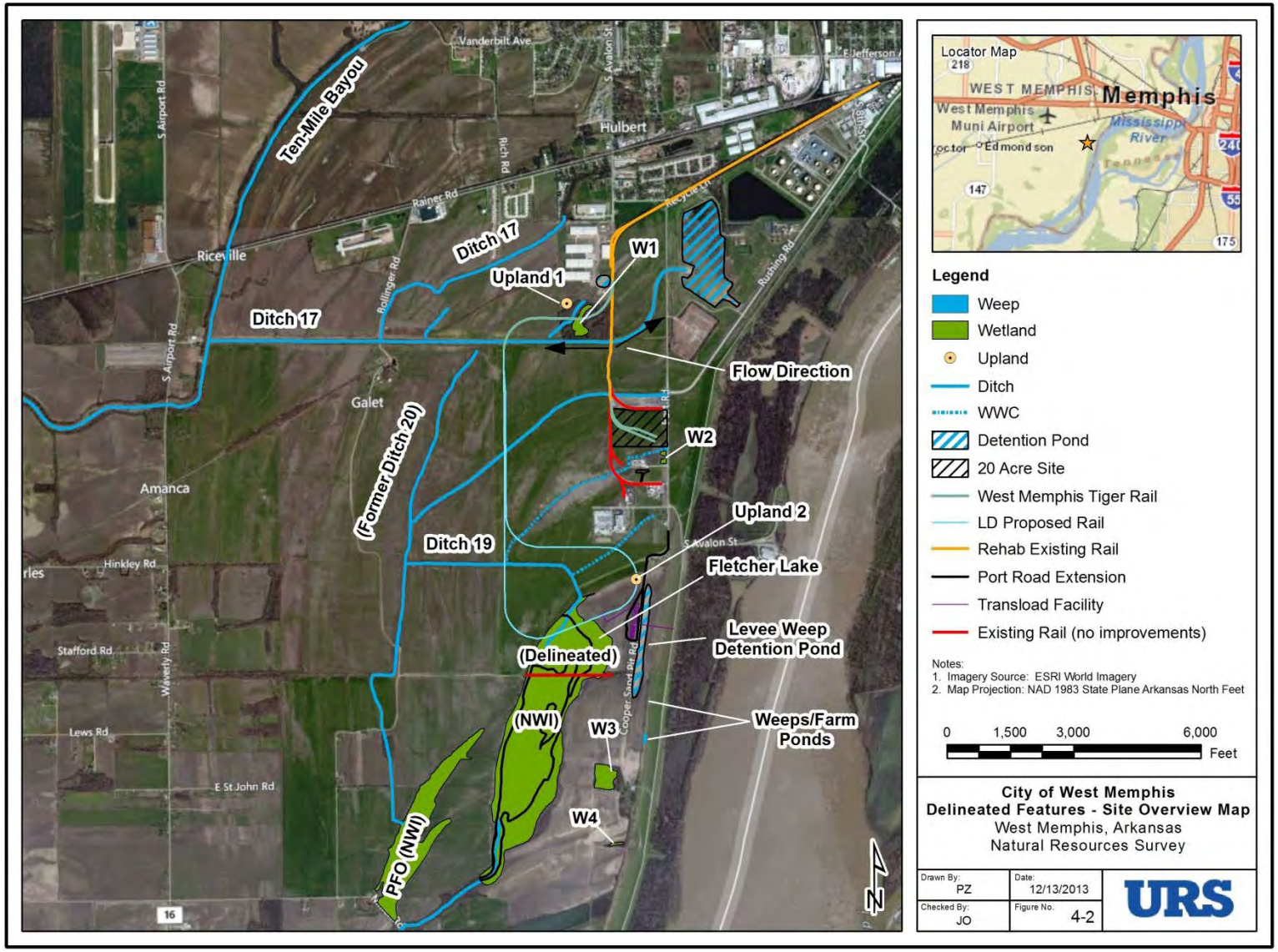


Figure 4-2. Surface Water Features Map

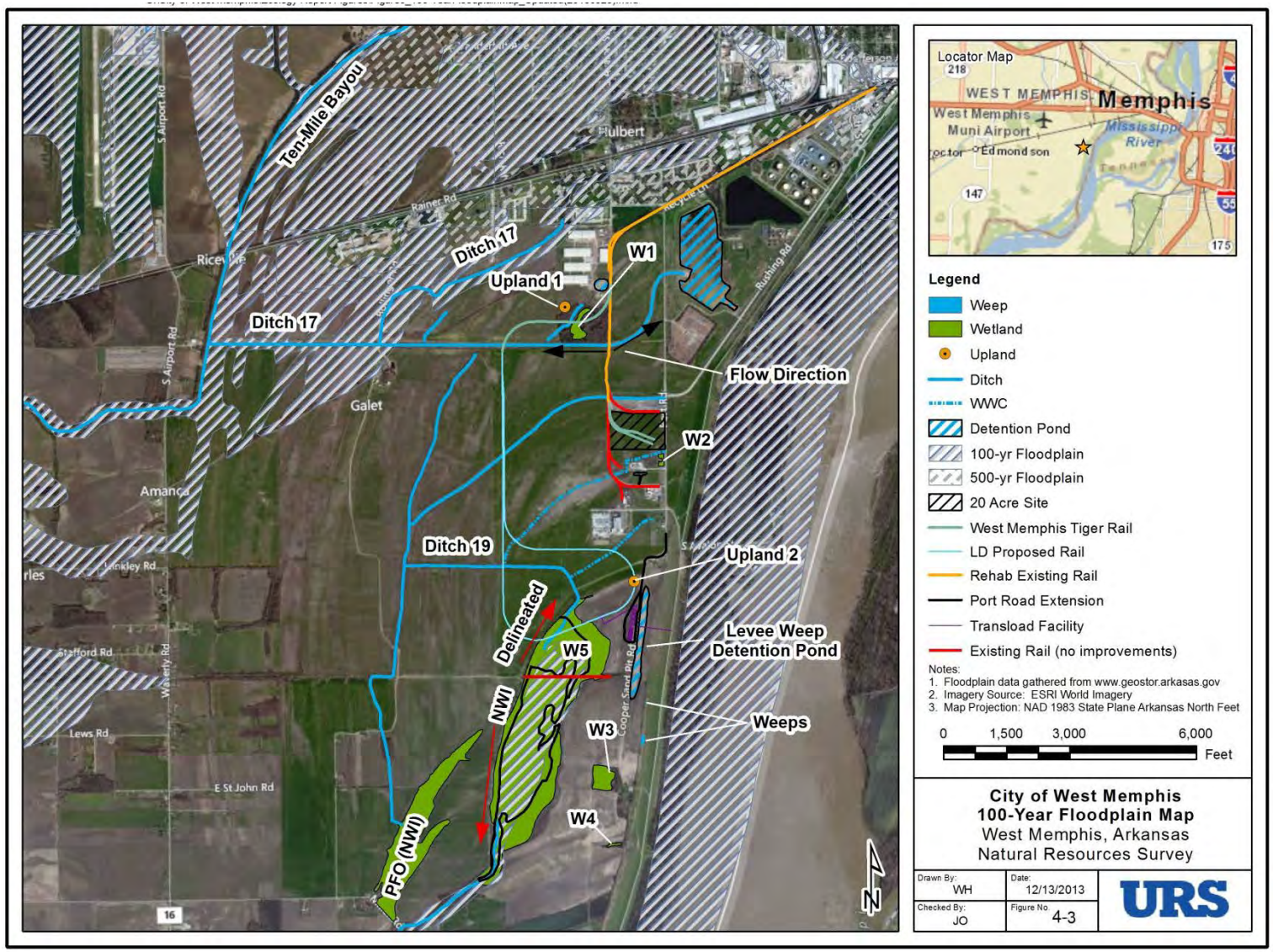


Figure 4-3. 100-year Floodplain Map

4.5.3 Environmental Consequences

4.5.3.1 No Action Alternative

There will be no impacts to water resources or floodplains because no rail improvement projects will be constructed.

4.5.3.2 Proposed Action Alternative

Operational Impacts

Surface Water Resources

The Proposed Action Alternative will not permanently impact the Mississippi River, Ditch 19 and Ditch 17, or the West Memphis stormwater lagoon. Ditch 17 currently is crossed by a railroad bridge. An additional bridge will be constructed for the rail system (Figures 3.1 and 3.2). The new bridge will be located to the west of the existing bridge approximately 2,000 feet. This is not likely to have a negative effect on these watercourses as all bridges and culverts will be engineered to allow passage of the 100-year storm event. Two new bridges are also proposed for the crossing of Ditch 19 (Figure 3.1). In addition, wetlands will be crossed in Fletcher Lake by a bridge over the ditch channel and rail bed within the wetlands. Wet weather conveyances and ditches will be culverted and will be sized to allow 100-year flood events.

The Proposed Action Alternative will replace pervious surfaces, such as pasture or crop land (at the transload facility, new rail, and roads) with other pervious surface with open ballast rock, allowing for infiltration of stormwater. New impervious surfaces created by the Project would be collected and treated per the requirements in the Stormwater Management Manual for Arkansas (ADEQ 2013). Because Ditch 19 and Ditch 17 are exempt from flow control requirements, stormwater treatment would be designed for water quality treatment only. Any stormwater not treated by designed stormwater ponds will be treated either in the West Memphis stormwater pond prior to discharging into the Mississippi River or in Fletcher Lake. The Project would result in a net increase in impervious surfaces, which could increase stormwater runoff. However, the peak flow would be reduced and treated by construction of stormwater retention structures. An increase in stormwater runoff and decreased infiltration would increase peak flows and reduce base flows in receiving waters (i.e., Ditch 19 and Ditch 17). In addition to Ditch 19 and Ditch 17, the rail extension may cross over areas that retain weep water from the levee during high water stages in the Mississippi River. The capacity of the weeps, flow, and water storage areas will not be impacted.

Floodplains

Since the Project will not be constructed in the 100-year floodplain, a floodplain analysis is not required. The Project will cross over the 100-year floodplain with bridges over Ditch 17, Ditch 19, and the north end of Fletcher Lake. These bridges are designed such that the bottom of the

bridge is not within the 100-year floodplain and will not obstruct flow of the 100-year storm. The Project will not have a significant impact to floodplains.

Groundwater

The primary source of pollutants from the proposed Project is expected to be sediment generated by stormwater runoff during construction. These sediments should pose no threat to the deep FPSA since there are no well or direct links to the aquifer within any near proximity to the proposed Project (the closest drinking water well is approximately 8,500 feet to the north). Irrigation wells are located to the west of the proposed rail, but are limited to the shallow wells, no more than 125 feet deep.

The Proposed Action Alternative would result in the construction of a rail extension in the vicinity of the levee weeps. The rail extension will be constructed in a manor such that shallow flow from weeps will not be obstructed.

Construction Impacts

The Proposed Action Alternative would require installation of foundations for the transload facility, new railroad bed, and roads designed for truck traffic (Figure 3.3). The total area impervious surface at the transload facility will be approximately 4.1 acres. These foundations could encounter shallow groundwater or the weep zone of the levee. Site drainage will be designed to avoid impacts to shallow groundwater flow. A Stormwater Pollution Protection Plan (SWPPP) and erosion controls will be prepared to control impacts of construction to surface water, groundwater and floodplains. Stormwater from the transload facility will be discharged to a stormwater retention pond. The current wetland detention area east of the facility is proposed for the stormwater pond.

All disturbed areas would be stabilized following construction. For the foundations and rail bed, construction is expected to occur during low flows in the summer; therefore, construction-related effects during flood events are not expected.

No construction impacts to the aquifer are anticipated.

4.5.4 Minimization and Mitigation Measures

4.5.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.5.4.2 Proposed Action Alternative

Impacts to surface waters would be avoided or minimized through the implementation of BMPs consistent with the minimum technical requirements of the Stormwater Management Manual for Arkansas (ADEQ 2013). Permanent impacts to wetlands will be mitigated by development of a wetland mitigation on AEP property south of the Project, see section 4.7.

4.6 Water Quality

Section 401of the Clean Water Act[12] requires state review and authorization for issuance of a Certificate of Reasonable Assurance regarding protection of water quality of waters of the United States. Industrial stormwater flows from impervious and pervious surfaces in the Project area to stormwater collection facilities that discharge treated stormwater to the Mississippi River. These existing stormwater facilities are located at existing facilities in the Project area. Stormwater discharge is covered under individual NPDES permits currently held by each facility.

4.6.1.1 Environmental Consequences

No Action Alternative

There will be no impacts to water quality because no rail improvement projects will be constructed under this alternative.

Proposed Action Alternative

Operational Impacts

The Proposed Action Alternative would replace pervious surfaces (in agricultural fields) with pervious open ballast rock. This would allow for stormwater infiltration and natural filtration of pollutants from stormwater to occur in the soil. Impervious surfaces will be constructed at the transload facility (roads, buildings, silos) resulting in a relatively small increase in impervious surface, approximately 200,000 sq. feet Overall the Project would result in a small net increase of pervious surface area. Pollutant loading to the Mississippi River and Fletcher Lake is not anticipated to increase due to a designed stormwater treatment pond at the transload facility.

Where new impervious surfaces are created, stormwater would be collected and treated in compliance with the recommendations of the Stormwater Management Manual for Arkansas (ADEQ 2013). These areas include 4.1 acres (178,600 sq. ft.) of new impervious area (asphalt and roof tops) for the transload facility and 9.1 acres of gravel area for railbed construction. All stormwater from the transload facility will be directed to a stormwater detention pond. This pond will be developed as a wetland detention pond for enhanced treatment of stormwater runoff. Operational (source control) BMPs, the facilities Emergency Response Plan (Louis Dreyfus), and audits of tenants' environmental procedures would also be implemented during operation of the Proposed Action Alternative to prevent the contamination of stormwater from truck or rail-related sources. Through the use of BMPs and plans, the impacts of the Proposed Action Alternative on water quality would be negligible. Stormwater discharge would also be in compliance with the facility's NPDES permit.

Because the Proposed Action Alternative would treat stormwater from all new impervious surface areas, and would result in only a small net increase in impervious surfaces, the pollutant

[12]33 USC 1344

loads would potentially be reduced from existing conditions. The Proposed Action Alternative would result in no net increase in pollutant loading and would not alter flow (base flow, peak flow, or duration).

Construction Impacts

Heavy equipment use during construction has the potential to result in spills of fuel, lubricants, antifreeze, and other materials into receiving waters. In addition, clearing, grading, excavation, and fill placement all expose sediment to the erosive action of wind and precipitation, which could also result in water quality impacts. Once construction of the Proposed Action Alternative is complete, all areas would be stabilized and there would be no further impacts from ground disturbance.

4.6.1.2 Minimization and Mitigation Measures

No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

Proposed Action Alternative

Water quality impacts would be avoided or minimized through the implementation of BMPs consistent with the minimum technical requirements of the Stormwater Management Manual for Arkansas (ADEQ 2013). The conditions of the site and the configuration of the proposed rail alignment would effectively avoid water quality impacts, with the possible exception of the foundations for the transload facility, which might encounter the weep zone (shallow groundwater) of the levee during high water in the Mississippi River.

The Project would be required to meet local, state, and federal water quality standards during construction. The Proposed Action Alternative would be subject to coverage under a NPDES Construction Stormwater General Permit. Under this permit the construction contractors will operate under an SWPPP, including provisions for prevention and management of spills in both construction and staging areas.

The SWPPP would also include stabilization and structural BMPs that would be used during and after the completion of construction. Any disturbed earth not covered by ballast materials would be planted with grass, mulched, or otherwise covered as soon after earthwork is completed as is practical. Reseeding must be done early enough in the season to ensure a uniform stand of grass, able to withstand the erosive forces it would be subject to, before the rainy season commences. Other measures, such as jute matting, erosion control blanket, or clear plastic covering, would be employed temporarily, until seeding/planting with grasses or other appropriate species is complete. A Temporary Erosion and Sediment Control Plan will also be developed to minimize the mobilization of sediment. Monitoring requirements specified in the SWPPP would provide a feedback mechanism to ensure that these and other erosion control practices are properly and effectively operating.

Other BMPs used for the Proposed Action Alternative may vary based on the final design and actual conditions encountered in the field.

4.7 Wetlands

4.7.1 Study Area and Methodology

Under Section 404 of the Clean Water Act,[13] the USACE requires a permit for discharge of dredged and fill material into waters of the United States, including wetlands. The Project study area for wetlands correlates to the IRPLP Project area described in Section 3.4.

Wetlands within the Project study area were delineated by URS in May and July 2013, and Ensafe July and August 2013 using the USACE Wetland Delineation Manual (USACE 1987) and the Gulf and Atlantic Coast Regional Supplement (USACE 2008). Additional details regarding the methods for evaluating wetlands are in the Ecological Discipline Report in Appendix C. URS delineated wetlands on property owned by the City of West Memphis and AEP. Ensafe also delineated wetlands on AEP property and completed the 404 permit application for impacts to wetlands and streams associated with railway, roads, bridges and the transload facility on AEP property.

4.7.2 Affected Environment

Five wetlands and three areas with wetland characteristics (weeps and seeps) were delineated in the Project area (Figures 4-4N and 4-4S). Wetland 1 is located due south of the River Bend Cotton facility west of the current railway on the north end of the Project area. This is a forested wetland that receives drainage from the River Bend Cotton Facility as well as the agricultural field north of Ditch 17. A new rail bridge will be constructed to cross Ditch 17. Less than 0.1 acre of stream will be impacted by the new bridge. Hydrologic connectivity and floodplain volume will not be significantly affected by the new bridge. Approximately 8,000 square feet of wetland will be affected by the Project in Wetland 1. A small intermittent drainage flows through Wetland 1 will be culverted. The drainage starts in an agricultural field north of Ditch 17 and east of River Bend Cotton, then flows through the River Bend Cottons' stormwater pond and through the wooded area to Ditch 17. Wetland 2 is a small area adjacent to Port Road near the entrance of the Allied Universal Corporation facility. The area appears to have been a small borrow area. This area is adjacent to a tributary to Ditch 19. The tributary flows west then south to the closed Diaz Intermediates Corp. facility. There is a stormwater basin on this facility, fenced, with no access. Wetland 2 is an isolated disturbed area and will not likely be affected by the Project.

Wetland 3 is a seep area at the toe of the levee on the south end of the Project. This area extends into the agricultural fields and receives both seep water and surface runoff. Wetland 3 is south of the Project and will not be impacted. Wetland 4 is located south of Wetland 3 and would not be affected by the Project. Wetland 5 is Fletcher Lake. Fletcher Lake will be crossed by the rail loop. The USACE reviewed the wetland delineation for the Proposed Action Alternative and determined that a 404 permit will be required for the crossing of streams and

[13] *Id*

filling of wetlands prior to construction (Appendix D).

Wetland 1 is located in the area of proposed railway construction and may be affected by the Project. Approximately 0.2 acre of Wetland 1 may be filled by construction of the railway. Wetland 2, a smaller wetland, is located in a shallow depression adjacent to Port Road. This wetland is a depressional, palustrine emergent wetland. It is not hydrologically connected to other waters of the United States and is considered isolated. It is also considered a disturbed area, is 2,000 square ft. in area, and is exempt from permitting. Wetland 2 will not likely be affected by the Project. Wetlands 3 and 4 are south of the Project area and will not be affected by the Project.

Wetland 5 will be crossed by new railway construction. Within Wetland 5 is a channel for Ditch 19. Ditch 19 will be culverted at this location as well as farther north in the agricultural field. The Project will result in total of 6.46 ac of permanent impact (3.27 ac forested wetland, 3.21 ac of agricultural wetland), and 14.19 acres of temporary impact (7.97 ac forested wetland and 6.22 ac of agricultural wetland). Temporary impacts include a 50 foot "buffer" on each side of the Project location for construction access, which will be allowed to revert to preexisting conditions once construction is completed for the Project. The Project design indicates that Wetland 1 and 5 will be disturbed. A USACE 404 permit and ADEQ 401 Water Quality Certification will be needed for the filling of wetlands and crossing of Ditch 17 and 19. Separate permit applications will be prepared for each land owner: Wetland 1 and Ditch 17 for the City of West Memphis; and Wetland 5 and Ditch 19 and its tributaries for AEP. All wetland mitigation for Wetland 5 will be conducted on AEP property south of the Project site. Wetland mitigation for Wetland 1 will be adjacent to Wetland 1 on agricultural land. An Wetlands will be compensated at a ratio agreed to with the Memphis District COE.

Several ditches along with Ditch 17 and 19 will be culverted. Culverts and bridges will be designed to allow passage of 100 year storm flow.

A detailed description of the wetlands is included in the Ecological Discipline Report (Appendix C).

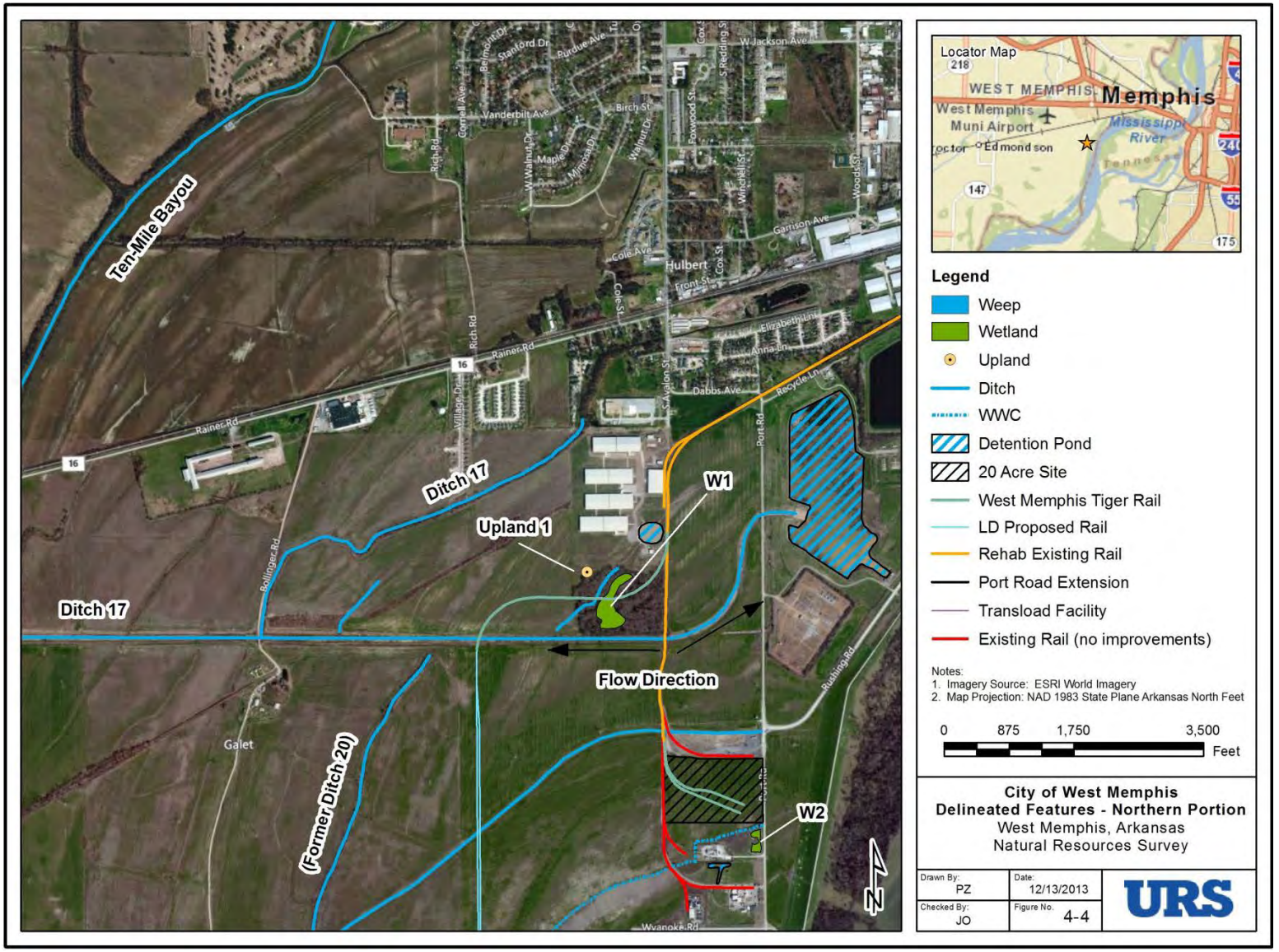


Figure 4-4N. Wetlands on the Northern Half of Project

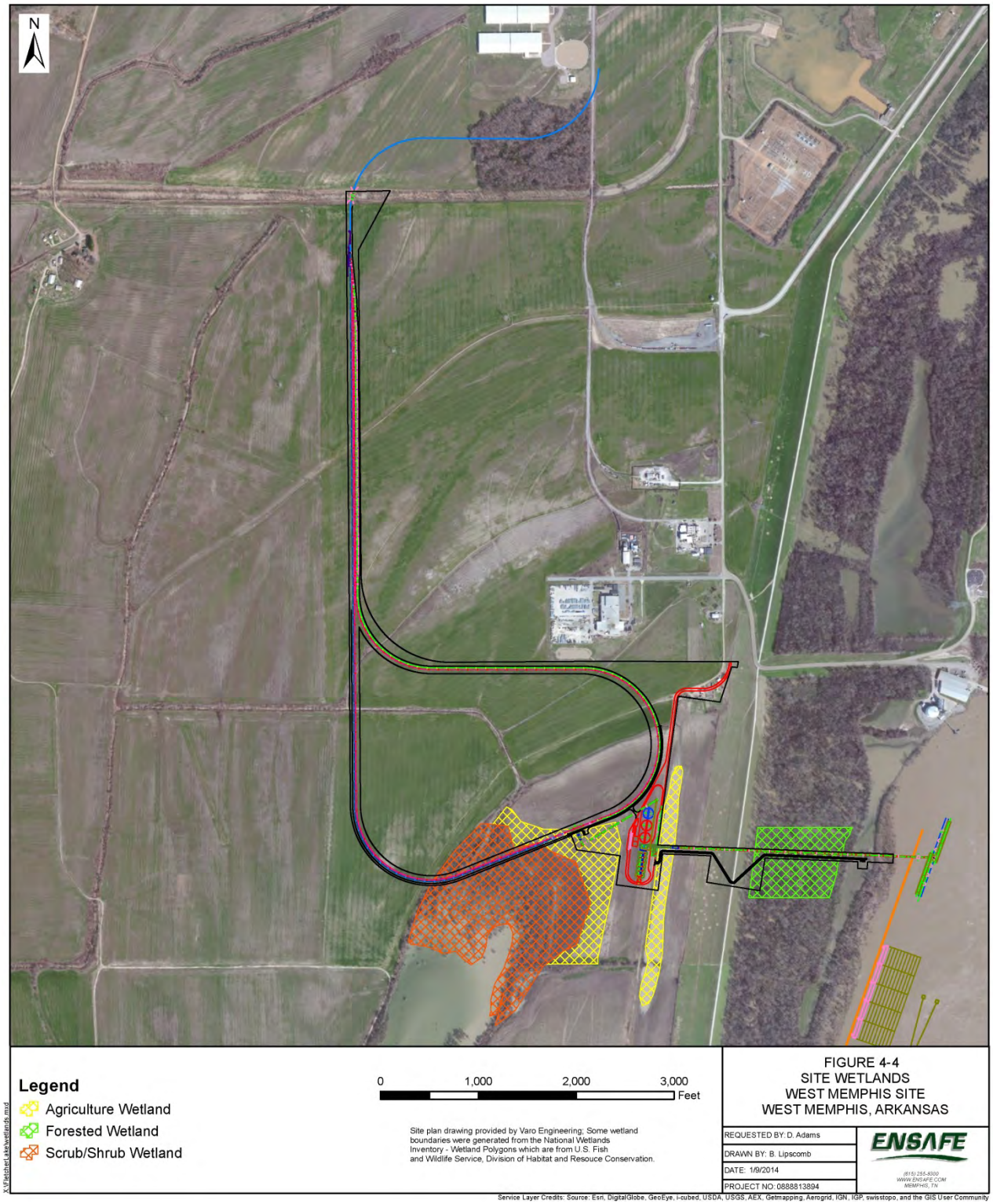


Figure 4-4S. Wetlands Delineated on AEP Owned Property by Ensafe, August 2013.

4.7.3 Environmental Consequences

4.7.3.1 No Action Alternative

There will be no impacts to wetlands because no rail or other improvements would occur.

4.7.3.2 Proposed Action Alternative

Operational Impacts

Construction in the area of the proposed railway would permanently fill approximately 0.2 acre of Wetland 1 and 6.48 acre of Wetland 5. These impacts would occur as a result of construction of the proposed rail alignment.

The increased number of train trips associated with future conditions under the Proposed Action Alternative would increase the risk of spills, primarily of diesel fuel, into adjacent wetlands and wetland buffers. In the event of a spill, the impact on wetlands would depend on the location, timing, quantity spilled, and toxicity of the spilled material. However, as discussed in Section 4.14, all regulatory and safety requirements would be met concerning hazardous materials.

Construction Impacts

Temporary construction impacts would occur to 14.19 acres of wetlands as a result of the Project and result in temporary loss of wetland functions associated with habitat and water quality. Ground disturbance could result in erosion of disturbed soils into wetlands and buffer areas, impairing vegetation and habitat. Clearing and grading activities in the vicinity of wetlands would have the potential to impact surface water quality during seasonal events when surface water is present. Uncovered or otherwise uncontained soils may erode into surface waters, increasing turbidity. Clearing of vegetation at and near Wetland 1 and 5 will include removal of trees and shrubs, resulting in short-term loss of habitat and water quality functions of the buffer and wetland.

4.7.4 Minimization and Mitigation Measures

4.7.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.7.4.2 Proposed Action Alternative

The majority of the wetland area will be avoided by the route selected for the new rail through the most narrow part of the wetland as possible. In addition, the turning radius of the rail loop will be designed to minimize the length of rail built in wetlands. Impacts will also be minimized by design of a single rail through the wetland area. Regardless of the minimization and avoidance efforts, implementation of the Proposed Action Alternative would result in permanent

impacts on wetlands and wetland buffers; therefore, wetland mitigation is required. Wetland mitigation to offset approximately 6.68 acres of permanent wetland impact at Wetland 1 and Wetland 5 will occur on adjoining AEP owned property south of the Wetland 5 and on City owned property adjacent to Wetland 1, Figure 4.5. At both locations former converted wetlands, now in

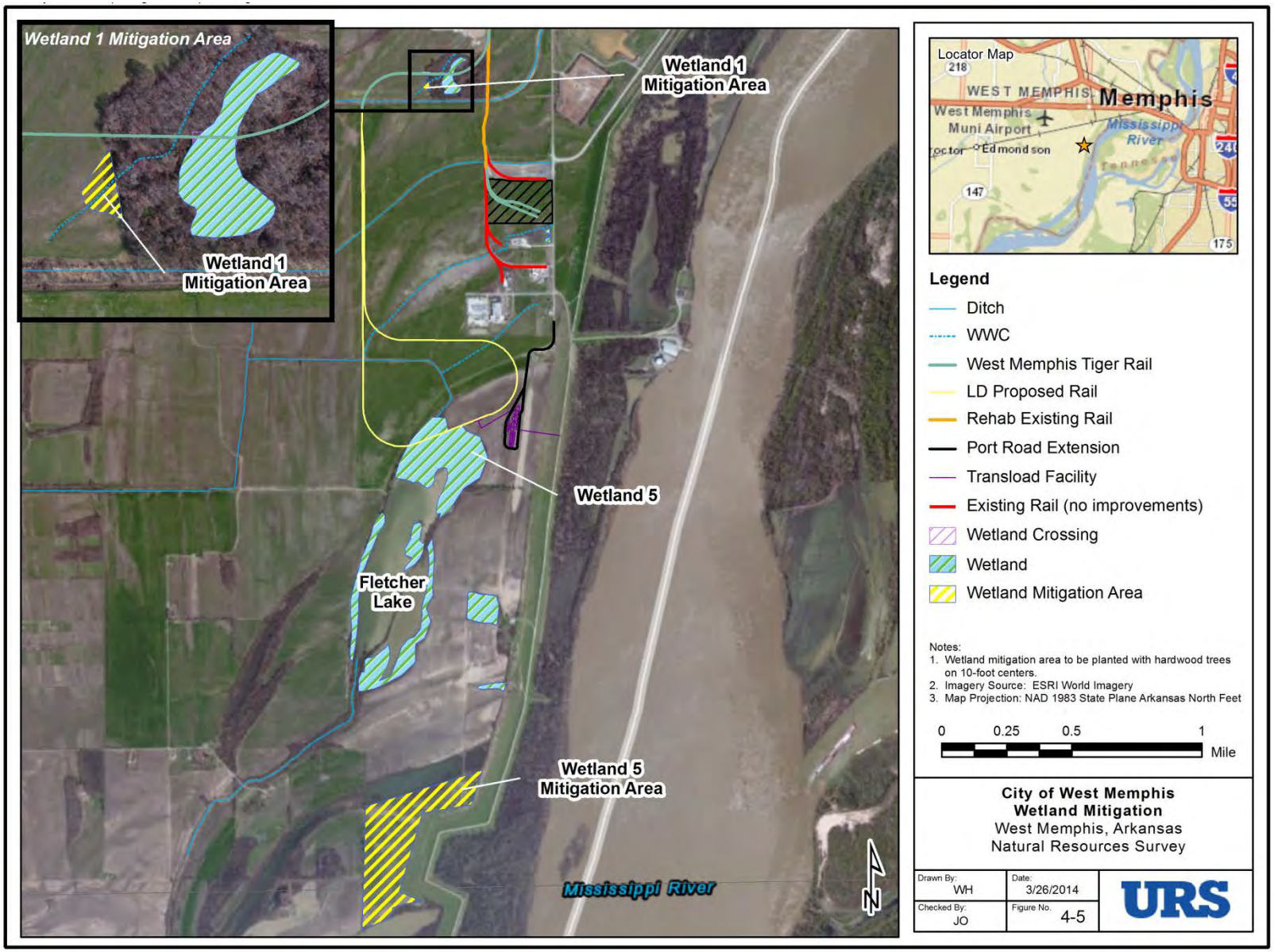


Figure 4-5 Proposed Wetland Mitigation Area

agricultural use, will be used for wetland creation. Wetlands will be mitigated on adjoining property at a ratio of 3:1. The mitigation of wetlands at Wetland 1 will be in agricultural land directly adjacent to the Wetland 1. Mitigation for Wetland 5 (Fletcher Lake) will be to the south of Fletcher lake. A total of 20.04 acres of agricultural land (prior converted wetland) will be converted to forested and shrub/scrub wetlands by this mitigation.
Timing of construction and implementation of BMPs, including sediment and erosion control measures and spill prevention, would be used to reduce potential construction impacts on wetlands.

4.8 Ecological Resources

4.8.1 Study Area and Methodology

The Wildlife Coordination Act[14] requires federal agencies to consult with wildlife agencies regarding effects to fish and wildlife for any project that involves impoundment (only where surface area is 10 acres or more), diversion, channel deepening, or other modification of a stream or other body of water. In addition, the Migratory Bird Act[14] prohibits the taking of migratory birds, unless specifically excepted or authorized. The Project study area for ecological resources correlates to the IRPLP Project area described in Section 3.4.

Existing ecological resources were evaluated through a review of aerial photography, ADEQ habitat databases, and other existing mapping for the study area. A site visit was performed to document site-specific ecological conditions in May and August 2013. Effects to ecosystems were analyzed by cross-referencing Project design information with existing conditions.

4.8.2 Affected Environment

Historically, the IRPLP Project area was forested but over time it has been converted to primarily agricultural and industrial uses. This conversion has removed the majority of terrestrial habitat capable of supporting native plant and animal species. Native vegetation is absent from most of the Project area, which is predominantly covered with agricultural land. At the industrial properties in the Project area, impervious surfaces or existing rail alignments and roads are present. Flood control earth levees along the riverward extent of the Project extend along the length of the Mississippi River in this area. Riparian vegetation is limited to the east side of the levee. Natural areas in the Project area include wooded habitat associated with Wetland 1, forested and shrub land at Fletcher Lake, sparsely vegetated ditches, and pastureland adjacent to the levee on the south end of the Project. These vegetated areas provide little habitat to both terrestrial and aquatic species as they are small in patch size and fragmented from other habitat areas by the surrounding industrial development or large agricultural fields. The Mississippi River is the dominant ecological resource adjacent to the IRPLP Project area and is discussed in Section 4.5. Wetlands are discussed in Section 4.6, which includes primarily Fletcher Lake. Fletcher Lake occupies approximately 200 acres. Within this lake are open water, emergent wetlands, shrub/scrub wetlands, and forested wetlands.
[14]16 USC 662 and 703

The fragmentation of habitat interrupts wildlife movement in and through the IRPLP Project area. While much of the Project area has been disturbed, the high quality agricultural land attracts a number of species. These primarily include bird species that are adapted to open areas and are grain feeders or insectivores (i.e., mourning dove, meadowlarks, sparrows, mocking birds, redwing blackbirds, etc.). The close proximity of the Project to aquatic habitat, Mississippi River and Fletcher Lake, also attracts a variety of shoreline and wading birds as well as waterfowl. Numerous egrets, heron, ducks, geese, and small wading birds were observed during the site visits. These birds, particularly the waterfowl, attract birds of prey such as red tailed hawk and red shouldered hawk. In addition to the abundant bird species present, the terrestrial species most likely to use the IRPLP Project area include squirrels, raccoons, nutria, eastern cottontail, small mammals (rodents and shrews), and deer. Near the wetland areas and along the Mississippi River reptiles and amphibians are likely to be found. Aquatic species that are listed under the ESA are discussed in Section 4.8.

The Arkansas State Plant Board maintains a list of plant species considered to be noxious (ASPB 2013). Noxious weeds are nonnative, invasive species that contribute to the loss of agricultural production or ecological diversity. The ASPB lists 24 noxious plants in Arkansas. A number of noxious weeds were observed primarily around the edge of agricultural fields and ditches. Noxious weeds found at the area include cocklebur, cheat grass, horsenettle, Johnsongrass, and field bindweed. Most noxious weeds in the study area are controlled by local farmers spraying their crops and cultivating fields.

4.8.3 Environmental Consequences

4.8.3.1 No Action Alternative

Ecological resources would not be affected by the No Action Alternative because no rail or other improvements would occur.

4.8.3.2 Proposed Action Alternative

Operational Impacts

The Proposed Action Alternative would remove wetland vegetation, agricultural land, and forest in the area of Wetland 5 that can alter shading, affecting water temperature and reduce wildlife habitat.

The riparian vegetation along a large wetland like Fletcher Lake has a minimal effect on water temperatures because the shaded area is such a small proportion of the wetland surface. This vegetation serves as valuable vertebrate habitat and a source of woody debris within this area.

Potential effects to threatened and endangered species are discussed in Section 4.8. Potential effects to wetlands are discussed in Section 4.6.

Construction Impacts

In-water (wetland) construction would occur in Fletcher Lake as part of the railway sub-balast. In or near water work would increase turbidity temporarily, potentially affecting aquatic species. In addition, in or near water work is anticipated to occur during low water in the summer. This will minimize the extent of in-water work and turbidity. The Project will use BMPs during construction to avoid and minimize unavoidable impacts to aquatic and terrestrial habitat. In addition, standard terms and conditions of approvals from regulatory agencies have been incorporated into the designs for the Proposed Action Alternative.

Activities at construction sites and at staging areas may cause disturbance, displacement, or injury to species as a result of changes to habitats, grading, vegetation impacts, increased nighttime lighting, hydrologic changes, water quality changes, elevated noise during construction, or visual disturbance. Exposed soil during construction could also temporarily increase the presence of noxious weeds as these plants frequently colonize disturbed areas. The Project will use BMPs during construction to avoid and minimize unavoidable impacts to terrestrial habitat. The primary users of terrestrial habitat in the Project area are bird species. In addition, standard terms and conditions of approvals from regulatory agencies have been incorporated into the designs for the Proposed Action Alternative.

4.8.4 Minimization and Mitigation Measures

4.8.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.8.4.2 Proposed Action Alternative

Implementation of the Proposed Action Alternative would result in permanent fill in wetlands. Impacts to other ecological resources is not anticipated.

Further discussion of mitigation for impacts to wetlands is discussed in Section 4.6.

4.9 Threatened and Endangered Species

4.9.1 Study Area and Methodology

Section 7 of the Endangered Species Act[15] requires all federal agencies to consult with USFWS and/or NMFS to determine whether any effects to listed species will result from the Project. The study area for threatened and endangered species is the same as the Project footprint as described in Section 3.4.

Existing conditions were evaluated through a review of existing information, including Arkansas Game and Fish Commission and USFWS habitat databases and aerial photography. A site visit was performed to document existing habitat for ESA-listed species and to survey the study area for the presence of threatened or endangered species. Effects to these species were determined by evaluating Project activities and relating them to potential direct, indirect, interdependent,

[15]16 USC 1536

and interrelated effects on individuals and their habitats.

4.9.2 Affected Environment

The IRPLP Project area supports one or more life stages of seven species listed under the ESA. The species and occurrence within the action area as evaluated in the Ecological Discipline Report (Appendix C) are summarized in Table 4-4. The species include three bird species, three aquatic species, and one plant.

Table 4-4. ESA Listed Species in the IRPLP Project Area

Species Name	ESA Listing	Critical Habitat Designated	Occurrence in the IRPLP Project Area
interior least tern (*Sterna antillarum althalassos*)	Endangered	Not present in Project area	Adults and juveniles and may utilize the Mississippi River shoreline
piping plover (*Charadrius melodus*)	Endangered	Not present in Project area	Nesting habitat on sand beaches of the Mississippi River shoreline.
pallid sturgeon (*Scaphyrinchus albus*)	Endangered	Not present in Project area	May occur in the Mississippi River
pondberry (*Lindera melissifolia*)	Endangered	Not present in Project area	Wetland habitats such as bottomland and hardwoods in the interior areas, and the margins of sinks, ponds, and other depressions in the more coastal sites
scaleshell (*Leptodea leptodon*)	Endangered	Not present in Project area	Prefers swift clear water and may be extant from Crittendon County
fat pocketbook (*Potamilis capax*)	Endangered	Not present in Project area	Prefers slower water and may be found in larger irrigation canals
Bald Eagle (*Halieaatus leucocephalus*)	Protected	Potentially present in Project area	May have nest sites along the Mississippi River

Within the IRPLP Project area, Fletcher Lake provides freshwater feeding and habitat for wading birds and waterfowl. Water quality is adequate for feeding and resting areas during migration. A number of these species may be year-round residents. Shoreline habitat associated with Fletcher Lake is not considered suitable for shoreline nesting birds as sand is not present on the shoreline and water levels vary dramatically seasonally, which allows emergent vegetation to grow extensively. Ditch 17 and Ditch 19 were reviewed as potential habitat for ESA species, particularly Fat Pocketbook (*Potamilis capax*). This species prefers slow water flow and has been found in large irrigation channels. The more common habitat for Fat Pocketbook is slow water areas of the Mississippi River. Ditch 17 and 19 do not maintain permanent water and are not considered to be acceptable habitat for the fat pockbook. Pallid sturgeon is limited to the Mississippi River and not found on the Project site. Bald Eagles have been noted in the region as they feed on fish primarily from the Mississippi River and larger oxbow lakes. No nest sites were observed during the site surveys.

4.9.3 Environmental Consequences

4.9.3.1 No Action Alternative

Threatened and endangered species would not be affected by the No Action Alternative because no rail, stormwater treatment, or other improvements would occur.

4.9.3.2 Proposed Action Alternative

Operational Impacts

An Ecological Discipline Report (Appendix C) was completed for the original IRPLP Project. A coordination letter from USFWS was issued on May 20, 2013, October 28, 2013 and January 24, 2014 (Appendix D). The coordination letter determined that adverse effects associated with sedimentation and nitrification from all phases of construction activities may be minimized and/or alleviated through proper implementation and maintenance of erosion control BMPs and maintaining vegetative buffers. Buffer width is dependent upon slope, vegetation type, and soil types. The FWS also indicated concerns for migratory birds that may nest on bridges or other structures. No existing bridges or structures will be impacted by the Project. Migratory bird nest sites will be avoided. Vegetation removal will be avoided during nesting periods (March – September) as much as possible. FWS made an effect determination that endangered species are not likely to be negatively affected by the Project, dated January 24, 2014.

Construction Impacts

Construction activities associated with the new bridge construction over Ditch 17 and Ditch 19 may have some potential to negatively impact aquatic habitat. Potential impacts include localized turbidity or sedimentation near work areas. For the most part, Proposed Action Alternative construction would be conducted in the dry, above the usual seasonal low water level. However, a portion of the bridge supports would be installed at an elevation that could be at or below daily stream surface elevations.

4.9.4 Minimization and Mitigation Measures

4.9.4.1 No Action Alternative

As no impacts are proposed to listed ESA species, no mitigation is required.

4.9.4.2 Proposed Action Alternative

The Project will use BMPs during construction to avoid and minimize unavoidable impacts to listed species. In addition, in-water work is anticipated to occur during low water. This will minimize the extent of in-water work and turbidity. Due to the use of these avoidance and minimization measures, USFWS has determined that the Project not likely negatively affect ESA-listed species and bald eagle habitat.

4.10 Cultural and Historic Resources

4.10.1 Study Area and Methodology

Section 106 of the National Historic Preservation Act (NHPA) provides for the identification and protection of historic properties. Requires federal agencies to take into account the effects to properties on or eligible for the National Register of Historic Places (NRHP) and requires federal agencies to check for sites that may be eligible and prepare a Determination of Eligibility. A literature search and field investigation was performed for the Area of Potential Effect (APE). The Area of Potential Effects (APE) is defined in the regulations implementing the Section 106 review process as "The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."[16] Surveys were conducted to identify and evaluate resources that may be eligible for listing in the NRHP, pursuant to the requirements of Section 106 of the NHPA of 1966, as amended. For a property to be eligible for listing on the NRHP it should generally be at least 50 years old (TRC 2013). Phase I surveys were conducted by TRC in September 2013 and a supplemental Phase I conducted March 2014 of the Transload Facility area by Panamerican. No findings were recorded in either survey. Coordination with the AR-SHPO was conducted in September 2013 and again in April 2014. A letter of correspondence from the Department of Arkansas Heritage SHPO was received November 8, 2013 following review of the initial Phase I Cultural Resources survey, and May 12, 2014 following the review of a subsequent Phase I Cultural Resources Survey. The SHPO agreed that no historic properties would be impacted by the Project. The SHPO comments are included with all agency correspondence (Appendix E).

The proposed IRPLP upgrades consist of a 20-acre site with rail spur for potential new industrial user, the six acre transload facility site and approximately 3.76 miles of new railroad tracks measuring approximately 25 to 50 ft. wide (Figure 4-7). Archaeologically, the APE of the current Project consists of these areas. A total of approximately 48 acres were subject to archaeological survey coverage.

The APE for cultural studies included a 0.5-mile (0.8-km) area surrounding the Project area as well as any areas where the Project will alter existing topography or vegetation in view of a historic resource. The APE to and from the Project area was terminated where topography, vegetation, and/or modern development obstructed lines of sight.

4.10.2 Affected Environment

No previously recorded archaeological sites are located within the APE. An archaeological survey of the Project area was conducted from August 19 to 22, 2013. No new archaeological sites were recorded as a result of these investigations. The Cultural Resources Surveys recommend that no archaeological sites are present within the APE of the proposed Project and no additional archaeological investigations are recommended in respect to this

[16:] 36 CFR Part 800.16(d).

undertaking (TRC 2013, Panamerican 2014). The historic architectural survey identified one previously recorded architectural resource (CT-0017). This resource is no longer extant. No additional investigation of aboveground resources is recommended for the proposed undertaking.

4.10.3 Environmental Consequences

4.10.3.1 No Action Alternative

There will be no impacts to cultural and historic resources because no such resources are located within the appropriate APE.

4.10.3.2 Proposed Action Alternative

Operational Impacts

There will be no impacts to cultural and historic resources because no such resources are located within the appropriate APE.

Construction Impacts

Based on the results of the literature review and field investigation, accidental disturbance of cultural resources is not anticipated due to the proposed Project and no further investigation is recommended at this time (TRC 2013, Panamerican 2014). The Phase I Cultural Resources reports, prepared by TRC Consultants, and Panamerican Consultants were reviewed by the Department of Arkansas Heritage. The Department concluded that no historic properties would be affected by the Project undertaking. The TRC report was supplemented by the Panamerican Phase I investigation of the proposed transload facility (six acres). This survey also identified no cultural resources (Appendix E).

No impacts would occur to historic structures due to the construction of the proposed Project because no such structures exist in the APE.

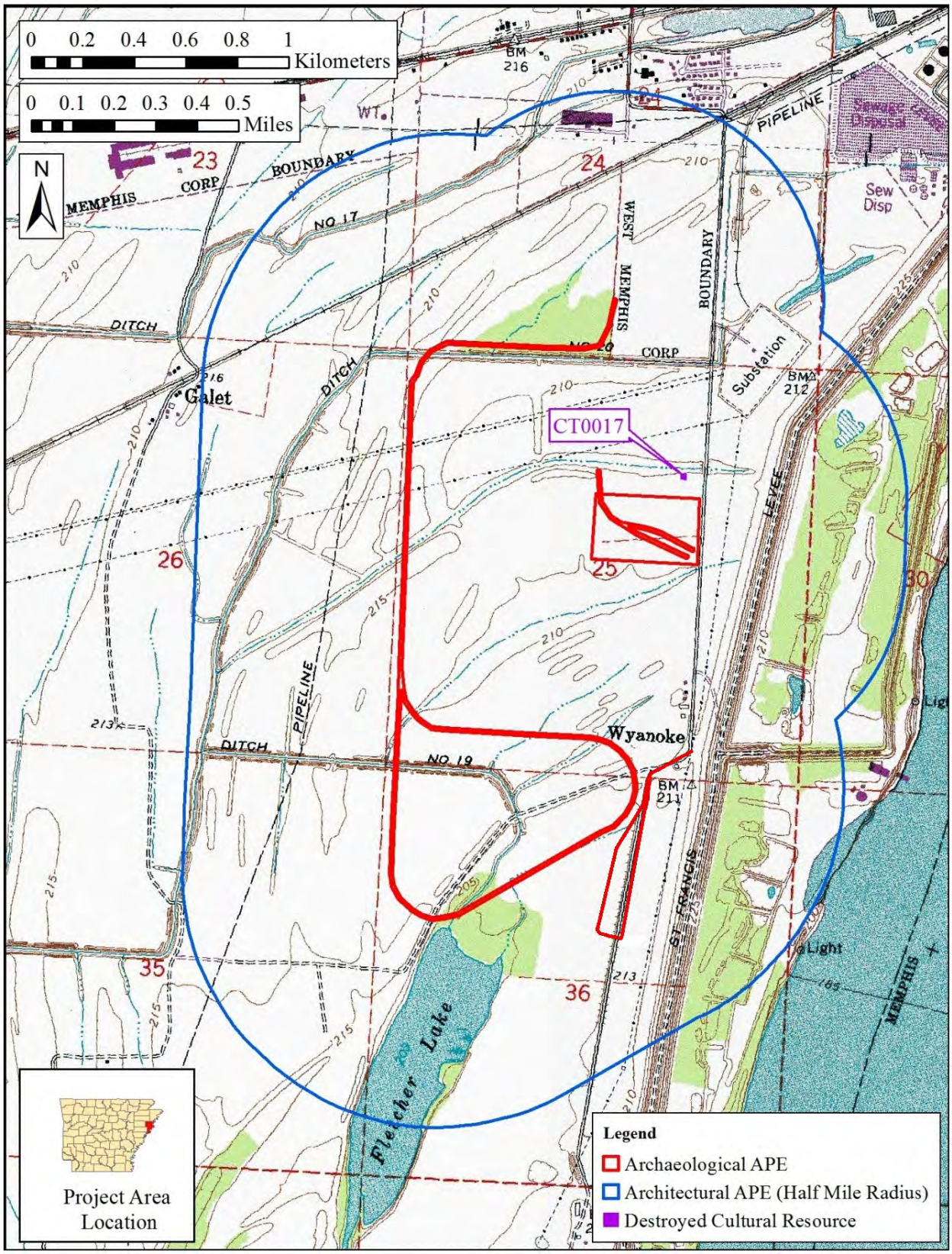


Figure 4-6. Cultural Resources Study Area

4.10.4 Minimization and Mitigation Measures

4.10.4.1 No Action Alternative

There are no impacts from the No Action Alternative; therefore, no mitigation is required.

4.10.4.2 Proposed Action Alternative

There are no anticipated impacts from the Proposed Action Alternative; therefore, no mitigation is required.

Should any resources be disturbed, construction would halt immediately and the appropriate parties notified to identify and implement the required mitigation.

4.11 Section 4(f) Resources

4.11.1 Study Area and Methodology

The Project study area for Section 4(f) resources correlates to the IRPLP Project area described in Section 3.4.

Section 4(f) resources in the study area were evaluated by reviewing existing documentation, including a literature search and field investigation that were performed as part of the Cultural Resources Survey (TRC 2013). Cultural resources (historic sites) are one example of properties considered Section 4(f) resources, and thus the cultural resources surveys that were conducted to identify and evaluate NRHP eligible resources also identified Section 4(f) resources. Effects of the Project were determined by comparing design information with data on the existing Section 4(f) resources present in the Project area. Section 4(f) refers to the original section within the U.S. Department of Transportation Act of 1966 which provided for consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development. The law, now codified in 49 U.S.C. §303 and 23 U.S.C. §138, applies only to the U.S. Department of Transportation (U.S. DOT) and is implemented by the Federal Highway Administration (FHWA) and the Federal Transit Administration through the regulation[17].

4.11.2 Affected Environment

No publicly-owned public parks, recreation areas, wildlife or waterfowl refuges, or historic resources eligible for listing on the NRHP and therefore protected under Section 4(f) of the USDOT Act of 1966 have been identified within the study area.

[17]49 USC 303, 23 USC 138

4.11.3 Environmental Consequences

4.11.3.1 No Action Alternative

The No Action Alternative would not require the use or demolition of any Section 4(f) resources. The Section 4(f) analysis documented that the proposed improvements would avoid all Section 4(f) resources (TRC 2013).

4.11.3.2 Proposed Action Alternative

Operational Impacts

The Proposed Action Alternative would not require the use or demolition of any Section 4(f) resources. The Phase I Cultural Resources Survey analysis documented that the proposed improvements would avoid cultural resources (TRC 2013).

The Proposed Action Alternative avoids publicly-owned parks, recreation areas, and wildlife or waterfowl refuges.

Construction Impacts

Construction of the Proposed Action Alternative would not result in the relocation of facilities determined to be eligible for listing on the NRHP and protected under the NHPA, or publicly-owned parks, recreation areas, and wildlife or waterfowl refuges, and Section 4(f) of the USDOT Act of 1966.

4.11.4 Minimization and Mitigation Measures

4.11.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.11.4.2 Proposed Action Alternative

There are no impacts from the Proposed Action Alternative. No mitigation is required.

4.12 Socioeconomics and Environmental Justice

4.12.1 Study Area and Methodology

The study area for analyzing social and environmental justice effects is roughly bounded by the Mississippi River on the south and east, U.S. Highway 70 to the north, and Waverly Road to the west. The study area is larger than the IRPLP Project study area because the potential social effects of the proposed Project could extend into the local community beyond the physical footprint of the proposed activities in the Project area. For consistency and clarity with demographic research conducted for the Project, the study area coincides with and includes the full geographic limits of census tracts 303.01 (block groups 1 and 2), 303.02 (block group 1),

305.01 (block group 1), 305.02 (block group 1), portions of 306.00 (block groups 1 and 3), and 312.00 (block groups 1 and 2) (Figure 4-8).

Socioeconomic resources and environmental justice concerns in the study area were evaluated by conducting a visual survey and interviewing key City of West Memphis outreach staff to research how people, both residents and employees, within and adjacent to the study area would be affected by the changes that would occur with the proposed Project. The research conducted was used to establish baseline conditions to attempt to quantify and qualify anticipated social and environmental justice effects of constructing and operating the proposed Project. Executive Order 12898 requires that federal agencies ensure there are no disproportionately high and adverse effects on minority and low-income populations for their agency actions.[18]

[18:] 59 FR 7629

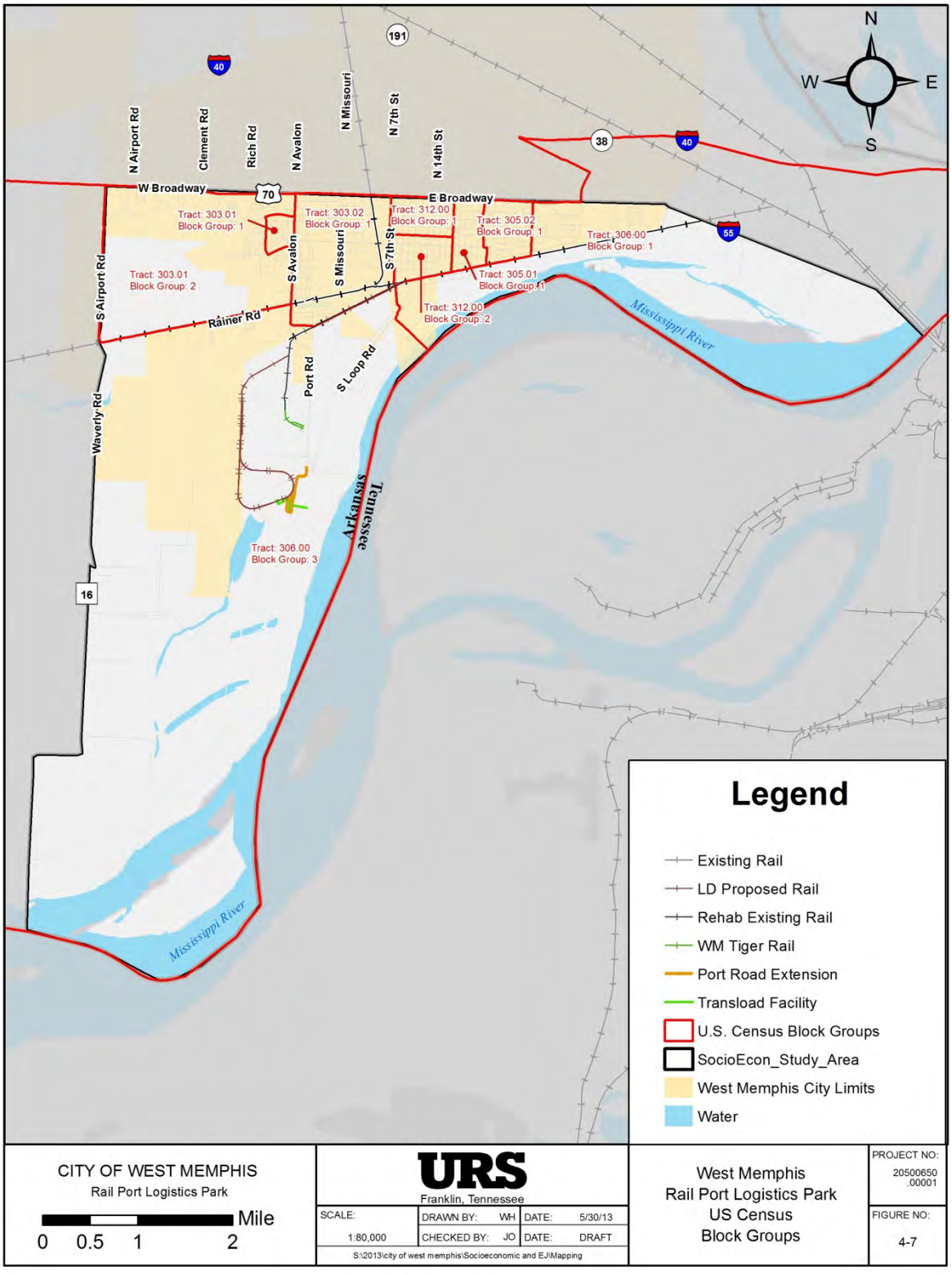


Figure 4-7. Census Block Groups

4.12.2 Affected Environment

4.12.2.1 General Population

As of Census 2010, 50,701 persons resided in Crittenden County, and of these, 26,245 resided within the city limits of West Memphis. Approximately 8,850 people live in the study area identified in the Social Effects and Environmental Justice Discipline Report (URS 2013) (Appendix F). In 2003, the University of Arkansas' Center for Business and Economic Research established an anticipated county-wide population growth rate of 15.3% between the years 2010 and 2025, bringing the county population to 59,113.

The IRPLP Project occurs on agricultural and industrial lands. There are no residential populations in the IRPLP Project area.

4.12.2.2 Elderly and Handicapped Populations

Within the City of West Memphis, 11.4% of the population is 65 and older and 47.4% of the elderly population is disabled. There are no residential populations in the IRPLP Project area, and therefore, no elderly or disabled populations are present. Existing port facilities are in compliance with applicable ADA requirements.

4.12.2.3 Environmental Justice Populations

Of the 8,850 people residing in the study area, approximately 43.59% of the population is living below the poverty level. Of the nine census block groups that comprise the study area, seven display poverty levels higher than the countywide average of 27.9%. Of these nine block groups, two display poverty levels significantly higher than the county average, meaning the proportion of persons living in poverty is at least twice as high as the county average.

Data from Census 2010 indicates that 75.6% of the City of West Memphis' population is composed of minorities and these individuals identified themselves as African American (63.5%), Asian American (0.4%), American Indian or Alaskan Native (0.2%), or Hispanic (1.6%). In addition, less than 1% of the population in the City of West Memphis is LEP.

The proposed IRPLP Project is located in an area isolated from residential uses and does not contain concentrated minority, low-income, or LEP populations that would be adversely or disproportionately impacted by the Project. There are also no minority-owned businesses within the IRPLP Project area. Therefore, the IRPLP Project would not create negative impacts to environmental justice populations within the study area.

4.12.2.4 Community Cohesion

The proposed IRPLP improvements are located in the southern portion of West Memphis in an area characterized by industrial and agricultural land uses. Residential areas are located north of the Project area beyond Dabbs Avenue and the existing rail line. The more extensive

improvements such as the transload station are located on port property, which is not accessible to the public.

The City of West Memphis displays a high degree of community cohesion centered on numerous neighborhood parks, schools, and worship facilities that serve well-defined neighborhoods. However, these neighborhoods are not located in the Project area and will not be directly impacted by the Project.

4.12.2.5 Businesses

Approximately nine business tenants are in the Project area. Many businesses depend on the freight access provided by the existing rail lines. These businesses include, but are not limited to, Riverbend Distribution Center; FSLD, LLC; Tandem Leasing Corporation; Tetra Technologies Inc.; Diaz Chemical; J.M.C. West Memphis, LLC; Bunge North America; and the Port of West Memphis.

4.12.3 Environmental Consequences

4.12.3.1 No Action Alternative

Operation of the existing port facilities would continue as it does under current conditions. Because there would be no rail expansion, none of the potential benefits associated with job creation would be realized. Business development within the IRPLP would be impeded and the ability of the IRPLP to achieve the 147 jobs that are anticipated to result from construction and rail operations expansion may not be achieved.

To compensate for the lack of expanded rail capacity, the No Action Alternative may result in greater truck traffic within the study area and higher levels of truck traffic on the primary arterials (Port Road, South Loop Road, and Avalon Street) that lead to the Project area. Ambient effects from such increased truck traffic could include a potential for increased noise, associated air emissions, and potential bicycle and pedestrian safety conflicts.

4.12.3.2 Proposed Action Alternative

Operational Impacts

General Population

No residential areas would be directly affected by the Proposed Action Alternative. The Proposed Action Alternative, on completion, will not result in any permanent displacements or alterations to transit or pedestrian access in the study area. Buildout of the Proposed Action Alternative would result in substantial improvements to roadway congestion caused by truck freight by diverting shipments to rail and maritime freight carriers.

Elderly and Handicapped Populations

Although there are populations that are categorized as disabled and elderly within the study area, there would be no significant effects with respect to air quality, noise, transportation access, or hazardous materials (Sections 4.1, 4.2, 4.3, and 4.14, respectively) anywhere within the study area. Therefore, these populations would not be affected by the Proposed Action Alternative.

Environmental Justice Populations

As discussed above, low-income and minority populations are present in the study area. Effects to environmental justice populations were evaluated for all or portions of the study area. Implementation of the Proposed Action Alternative would not affect any of the residential areas and there would be no displacement of any residents. No minority-owned businesses and no businesses or establishments frequented by minority or low-income populations would be relocated as a result of the Proposed Action Alternative.

Although there are populations that are categorized as environmental justice populations within the study area, there would be no significant effects with respect to air quality, noise, transportation access, or hazardous materials (Sections 4.1, 4.2, 4.3, and 4.14, respectively) anywhere within the study area. Therefore, there would be no disproportionately high and adverse effects on environmental justice populations, and the Proposed Action Alternative has met the provision of Executive Order 12898.

Community Cohesion

The Proposed Action Alternative will be operated largely within areas with limited public access and would not generate any off-site impacts. As a result, the Proposed Action Alternative would not affect elements of community cohesion.

Businesses

It is not anticipated that any jobs would be lost or that any businesses would experience any financially significant impacts as a result of the relocation. No businesses will be displaced. However, the Proposed Action Alternative would require right-of-way acquisition and modifications to lease agreements for some existing businesses and leaseholders within the Project area. In most cases the businesses will remain in virtually the same location or located within the IRPLP property following the completion of the Proposed Action Alternative. The following list specifies the businesses that would be affected by relocations, right-of-way acquisition, and lease modifications.

- Riverbend Distribution Center – acquisition of approximately 2.8 acres and relocation of existing stormwater pond.
- AEP – acquisition of approximately 80 acres – 50 acres in the footprint of new railway, 20 acres of the Cox Property, and 10 acres for the transload facility, Port Road extension, and conveyor.

Additional discussion regarding socioeconomics and environmental justice is provided in Appendix F.

Construction Impacts

Construction-related effects on populations are anticipated to result from noise and dust generated from heavy machinery during construction. However, these impacts are anticipated to occur primarily within industrially-zoned land either owned by the City or land that is in a rail-related industrial use. A limited amount of impact may be anticipated within agricultural land. Construction would not affect neighboring communities, as there are no residential areas within or abutting the construction area. Construction of the Proposed Action Alternative would not affect ADA compliance at the Port and ADA access would be maintained during construction. Therefore, disabled, elderly and environmental justice populations are not anticipated to be impacted by the construction of the Proposed Action Alternative.

The City will also work with the County transportation departments' public involvement offices to send mailings to affected businesses and residents (including the general population, elderly and handicapped populations, and environmental justice populations) and provide adequate signage to alert motorists, bicyclists, and pedestrians of any road closure. In addition to the road closure at W 8th Street, in order to avoid the use of downtown streets for construction traffic, most construction traffic may be directed into the IRPLP area via South Loop Road. Therefore, there will be a slight increase in traffic near the West Memphis Fairgrounds, located at the intersection of South Loop Road and Port Road. However, because the park is located at the intersection of a principal arterial and a primary entrance into IRPLP operations, the character of traffic adjacent to the park is already heavy industrial in nature and the effects of the construction traffic are not anticipated to be substantially different from existing conditions. These effects would not reduce community cohesiveness or limit access to any community facilities.

Signal upgrades which would require a temporary road closure may be required for the at-grade crossings at Dabbs Avenue/Port Road. Closing the road at this rail crossing would temporarily limit traffic from entering the IRPLP but would not disrupt community cohesion of adjacent residents located north of the rail crossing and the larger community.

Businesses

No business relocations are required by the Proposed Action Alternative. Therefore, no relocation impacts to existing operations are anticipated.

4.12.4 Minimization and Mitigation Measures

4.12.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.12.4.2 Proposed Action Alternative

General Population, Elderly and Handicapped Populations, Environmental Justice Populations, and Community Cohesion

Given there are no impacts to the general population, elderly and disabled populations, environmental justice populations, or community cohesion, no mitigation is proposed. Project components would be in compliance with ADA requirements where applicable.

Businesses

The Proposed Action Alternative does not require any business relocations and therefore, does not require mitigation. For all right-of-way purchases, the City is in consultation with existing lease holders who would be affected by the Proposed Action Alternative and is developing compensatory measures to ensure that these businesses and agricultural land owners are provided just compensation consistent with the Uniform Relocation Assistance and Real Property Acquisition Policy Act (Uniform Act).

4.13 Land Use, Zoning, and Recreation

4.13.1 Study Area and Methodology

The Project study area for land use, zoning and recreation correlates to the IRPLP Project area described in Section 3.4.

Land use, zoning, and recreation resources in the study area were evaluated by determining the relevant land use plans and land use regulations; reviewing adjacent land uses, planned land uses, critical areas, and shorelines jurisdiction; conducting a visual survey of the study area; and reviewing any previously prepared documentation associated with the IRPLP Project. Effects of the Project were determined by comparing design information with data on the existing land use, zoning, and recreation resources present in the Project area. Additional information on land use, zoning, and recreation in the IRPLP Project area may be found in Appendix G.

4.13.2 Affected Environment

4.13.2.1 Existing and Proposed Land Use

The IRPLP Project traverses lands currently used for agricultural and various industrial purposes in the Project area, including utilities, distribution, forestland, wetland, and warehouse/storage. The predominant land use is agricultural. However, these properties have been zoned by the City of West Memphis for industrial uses as the properties develop.

Beginning at the northern end of the alignment and heading south, businesses that occur within the proposed new rail alignment include Riverbend Distribution Center; FSLD, LLC; Tandem Leasing Corporation; Tetra; Diaz Chemical; J.M.C. West Memphis, LLC (Stateside Wire);

Bunge North America; and the Port of West Memphis. Additional information regarding existing land uses is in Appendix G.

Most of the properties that are adjacent to the IRPLP Project area are either in current industrial use or are zoned for future industrial use that would accommodate on-site storage of shipping containers. It is anticipated that the industrial properties within and adjacent to the IRPLP Project area that are zoned for industrial use will continue to be used for industrial purposes.

4.13.2.2 Zoning Designations

The entirety of the IRPLP Project is under the zoning jurisdiction of the City of West Memphis with zoning designations that include I-2 (General Industrial) and I-2C (General Industrial-Intermodal Container Storage Yard) (Figure 4-9).

4.13.2.3 Shoreline Environment and Critical Areas

The IRPLP Project is located west of the Mississippi River and the Francis Levee. The City of West Memphis has designated the west shoreline of the Mississippi River with a zoning of CV (Conservation Zoning). The Port of West Memphis and Bunge North America lease areas are existing industries east of the Project area (east of the levee) but are not included in the proposed Project.

4.13.2.4 Recreation

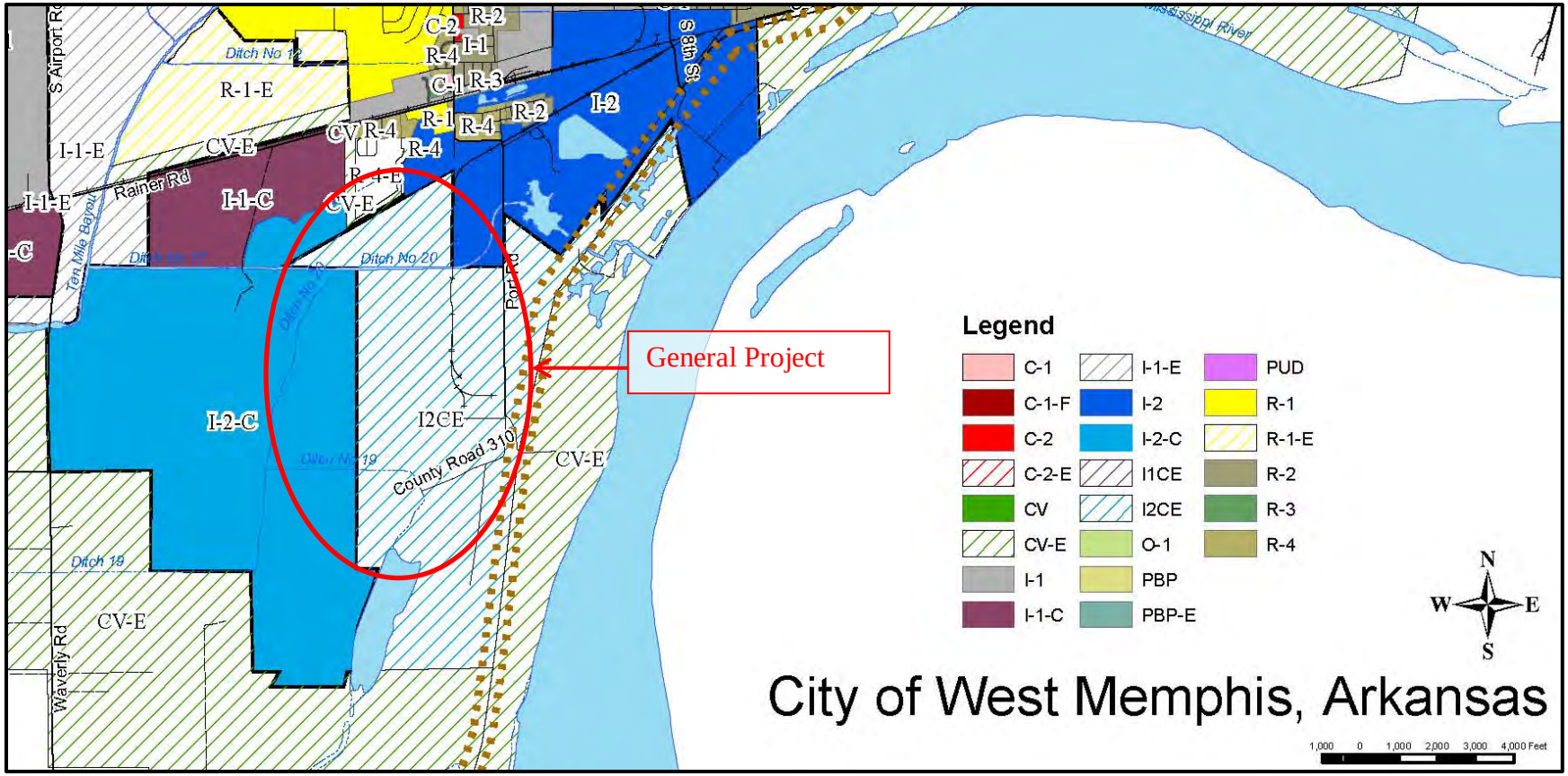
There are no existing trails within the IRPLP Project area; however, the Mississippi River Trail (MRT) is located west of the Proposed Action Alternative along South Airport/Waverly Road. The MRT runs from the headwaters of the Mississippi River in Itasca, Minnesota, to the Gulf of Mexico (www.mississippirivertrail.org). Arkansas hosts 85 miles of the MRT from West Memphis to downtown Helena-West Helena. The MRT travels along Highway 70 (Broadway) to the north of the Project area before turning south on Tom Sawyer Road and then south on Airport/Waverly Road, which is located at the western edge of the Project area. No trail right-of-way would be acquired by the proposed rail alignment.

The West Memphis Fairgrounds are located east of Port Road and the proposed rail improvements. The fairgrounds host competitive barrel racing and horse shows that are sponsored by the Crittenden County Saddle Club. No right-of-way would be acquired from the West Memphis Fairgrounds by the proposed rail alignment.

4.13.3 Environmental Consequences

4.13.3.1 No Action Alternative

The No Action Alternative would not result in additional construction of rail tracks and associated infrastructure; therefore, no impacts to land use, zoning, or recreation are expected.



Source: City of West Memphis Zoning Map

Figure 4-8. Existing Zoning Project Environs

4.13.3.2 Proposed Action Alternative

Operational Impacts

Land Use and Zoning

The Proposed Action Alternative involves expansion of existing freight right-of-way in areas currently in rail use and also into new areas currently used for industrial business operations, existing stormwater ponds, and on unused land zoned I-2 and I-2-C by the City. This would result in the conversion of 70 acres of land that is zoned for and in industrial use to rail facilities; however, this conversion would not conflict with any existing land uses or land use zoning. Rail lines and railroad yards are permitted uses in the heavy industrial zoning provisions of the West Memphis Zoning Ordinance. Thus, this conversion is consistent with the planned uses for the property.

Recreation

Construction of the proposed rail alignment would not conflict with the MRT bike route or the West Memphis Fairgrounds facility because no right-of-way would be acquired from either recreational resource.

Construction Impacts

Land Use and Zoning

Construction would occur within the existing port facilities, and no effects to land use from construction are anticipated. The construction of the transload facility will be in land zone for industrial development 12CE.

Recreation

Construction of the Proposed Action Alternative is not expected to affect recreation resources within the Project area.

4.13.4 Minimization and Mitigation Measures

4.13.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.13.4.2 Proposed Action Alternative

Land Use and Zoning

No adverse impacts are anticipated from the Proposed Action Alternative on land use and zoning; therefore, no mitigation is required.

Recreation

No adverse impacts are anticipated from the Proposed Action Alternative on recreation resources within the Project area; therefore, no mitigation is required.

4.14 Public Health and Safety

4.14.1 Study Area and Methodology

The Project study area for public health and safety correlates to the IRPLP Project area described in Section 3.4. Public health and safety were evaluated by reviewing existing port operations and construction protocols, train and vehicular/pedestrian collision, and use of hazardous materials.

4.14.2 Affected Environment

Safety concerns primarily involve train collisions at at-grade crossings. Currently, there is one public road at-grade rail crossing within the IRPLP Project area at Port Road/Dabbs Avenue. Eighth Avenue is crossed by the City of West Memphis spur track near the City of West Memphis' detention pond property that presents a public safety issue with potential accidents resulting from train collisions. According to City of West Memphis records, no train-vehicle collisions have occurred in the past 3 years and none are on public record (Wimbish 2013). This crossing is uncontrolled, with only signage to warn drivers and pedestrians of the at-grade crossing.

Hazardous materials are present on properties that would be used by the IRPLP Project and could pose a potential public health concern if not properly handled or maintained. Materials include contaminated soils and groundwater, chemicals, and other materials that may be used by area industries or carried by rail and truck to and from the Port. All tenants at the Port have contractual agreements requiring compliance with environmental regulations, including requirements to maintain BMPs and equipment for spill prevention and spill response. Interstate and intrastate rail and truck carriers that ship oil and hazardous substances are also required to implement spill prevention measures. Additional information related to hazardous materials present at the Port is addressed in Section 4.14.

4.14.3 Environmental Consequences

4.14.3.1 No Action Alternative

Public health and safety would not be affected by the No Action Alternative because no rail or other improvements would occur.

4.14.3.2 Proposed Action Alternative

Operational Impacts

The Proposed Action Alternative would comply with existing safety and security requirements of the port and other regulations. In addition, any security fence removed would be replaced and new fencing installed in areas currently undeveloped.

At-grade crossings within the IRPLP area would remain unchanged. In addition, trains within the Port and the City of West Memphis maintain speeds of less than 10 miles per hour, which reduces the potential and severity of train collisions. The Proposed Action Alternative also has the potential to reduce truck traffic within the City of West Memphis by diverting shipments to rail. A reduction in truck freight would represent an increase in safety on public streets. As rail freight traffic increases, signal crossing upgrades would be required at the Port Road crossing and possibly other nearby at-grade crossings.

View of the Port Road at-grade crossing from the north

View of the Port Road at-grade rail crossing from the south

Public health concerns related to hazardous materials are addressed in detail in Section 4.14 and are primarily related to the use of hazardous materials at the site.

Construction Impacts

Construction activities have the potential to result in physical harm to construction workers, tenants, port staff, and unauthorized persons entering the construction area. Physical harm can range from minor slips and falls to more serious injuries requiring hospitalization.

Public health concerns related to hazardous materials include potentially encountering unanticipated contaminated soil, materials, or contaminated perched shallow groundwater during construction and building demolition. Unless properly managed by the construction contractor, such unanticipated contaminated materials could adversely impact the environment. Construction contractors would store and use a variety of potential contaminants (e.g., fuel, cleaning solvents, and paint). All construction contractors, tenants, and rail carriers at the IRPLP must abide by

standard contractual conditions requiring them to maintain spill prevention programs and equipment in the manner required by federal, state, and local regulations.

4.14.4 Minimization and Mitigation Measures

4.14.4.1 No Action Alternative

No adverse impacts to public health and safety are anticipated from the No Action Alternative; therefore, no mitigation is proposed.

4.14.4.2 Proposed Action Alternative

The Proposed Action is expected to have no substantial negative or positive effects on potential safety issues at the Port Road/Dabbs Avenue crossing during operations; therefore, no mitigation is proposed. Minimization measures for operational impacts to public health are detailed in Section 4.13 and include maintaining BMPs and equipment for spill prevention and spill response, properly training staff, and continued annual visual environmental audits as appropriate for IRPLP tenants.

To mitigate for potential contaminated media encountered during construction, the City will require construction projects to implement appropriate contingency plans. The construction bid packages issued by the City should notify all bidders of the potential for finding contaminated soil and groundwater along the corridor. General safety concerns during construction would be minimized through the following measures:

- Workers would comply with existing safety and security requirements of the IRPLP and other regulations. Contractors would be required to obtain a Transportation Worker Identification Credential (TWIC) or be escorted by a TWIC-certified individual prior to entering or working within areas requiring a TWIC. This credential is administered by the Transportation Security Administration and confirms access to secure areas within IRPLP facilities in an effort to enhance security.
- Permanent fencing would remain in place as appropriate. Any fencing removed for construction would be replaced with temporary fencing to prevent unauthorized entry to the construction sites.
- Work on and near active track lines would be completed in compliance with federal and railroad regulations and City safety requirements. Flaggers would be used when construction activities would interfere with train operations.

4.15 Hazardous Materials and Solid Waste

4.15.1 Study Area and Methodology

The Project study area for hazardous materials and solid waste correlates to the IRPLP Project area described in Section 3.4.

Hazardous materials were evaluated through an initial Phase 1 Environmental Site Assessment that included a review of regulatory databases, historic review, site reconnaissance, and title searches to assess whether contaminated soil or groundwater resulting from historic hazardous material releases from facilities might be present within areas where the site would purchase new parcels, upgrade existing rail alignments, or construct new rail alignments. Areas most affected by the proposed alternative include areas of known or historic industrial or commercial activity and where ground will be substantially disturbed. Currently, there are a limited number of areas that meet both of these criteria. They include the crossover rail construction at the Staplecotn warehouse facility at 1102 South Woods Street, the relocation of the stormwater pond at the River Bend Cotton facility, and the active farm operation on AEP property south of Stateside Steel. Solid waste was evaluated by reviewing the existing and proposed solid waste generated by the IRPLP and the appropriate disposal measures, and determining the impacts from the No Action and Proposed Action Alternatives.

4.15.2 Affected Environment

4.15.2.1 Contaminated Sites

Hazardous materials can impact the environment, construction projects, and long-term cleanup liability. Hazardous material is a broad term for media that may be toxic to humans or the environment. This term includes dangerous waste, problem waste and contamination, petroleum products, and hazardous substances. The IRPLP Project would be constructed on parcels currently owned or slated for acquisition by the Port. Many of these parcels have histories of industrial uses and, therefore, the potential for site contamination. Additional information on these sites is in the Hazardous Materials Discipline Report in Appendix H. Groundwater monitoring wells are located generally to the south and west of the IRPLP Project area. These wells may be used to monitor groundwater contamination from various sources at the IRPLP if they are operable.

No soil caps will be disturbed in the Project area. According to the EDR Corridor Study, there is one contaminated site within 1 mile of the Project. This is a closed Superfund site that has been capped and decommissioned. It previously was an uncontrolled landfill site. As this site is on the east side of the levee from the Project area, it will not to be affected by Project activities.

The EDR also lists sites in the vicinity of the Project that hold the potential for contamination from aboveground storage tanks (ASTs) and underground storage tanks (USTs) that are maintained by the surrounding industries. Local AST holder, Valero Inc., maintains 500,000+ gal of petroleum products at an oil terminal northeast of the Project area. The tanks are in a secure facility away from the Project area and their interaction is improbable. ASTs are also located at Warren Unilube Inc., where 20,000-gal propone tanks area stored. All the USTs listed in the EDR have been out of service for more than a decade. Contamination from USTs is unlikely. ASTs are located within spill prevention containment dikes.

4.15.2.2 Hazardous Materials Use

Hazardous materials are used in the Project area. All tenants at the IRPLP have contractual agreements requiring compliance with environmental regulations, including requirements to maintain BMPs and equipment for spill prevention and spill response in accordance with local, state, and federal regulations. Adherence by all IRPLP tenants will continue to ensure that tenant staff are properly trained and equipped to prevent spills, and any accidental releases that occur along new and existing rail lines will be promptly cleaned up and reported to appropriate regulatory agencies.

Interstate and intrastate rail carriers that ship oil and hazardous substances are subject to spill prevention regulations under federal DOT regulations: Oil Spill Prevention and Response Plans[19], and Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements[20].

These federal railroad regulations apply to railcars that are in transit, either within or outside IRPLP property. They require the rail carrier to maintain emergency response plans and to train their staff to notify off-site emergency responders (e.g., the City fire department) immediately in the event of a spill.

4.15.2.3 Solid Waste Disposal

Proper solid waste disposal, as with clean air and safe drinking water, is a necessary service and must be properly transported, contained, and located. Solid waste falls under the least restricted category of wastes as classified by EPA. Solid waste at the port currently consists of domestic and commercial waste. Domestic waste is generated from office and administration activities and generally includes food waste, paper, plastic, glass, metals, and other wastes. Site owners and tenants are responsible for coordinating the removal and proper disposal of these wastes.

Commercial waste is also generated at the IRPLP. This waste consists of surplus or demolition materials such as wood, metals, rail ties, tracks, and switches that were removed during construction of other facilities. If these materials are reusable, the local companies stockpile the materials on-site for later use. As with domestic waste, commercial wastes are to be handled and disposed of properly.

4.15.3 Environmental Consequences

4.15.3.1 No Action Alternative

As no construction is associated with the No Action Alternative, there is no potential to encounter potentially contaminated or hazardous materials. There would be no change in solid waste disposal. Therefore, no adverse impacts are anticipated.

4.15.3.2 Proposed Action Alternative

Operational Impacts

Contaminated Sites

Construction activities associated with the Proposed Action Alternative are not anticipated to encounter hazardous materials according to environmental database search and interviews with local representatives. The contaminated site in the vicinity of the Project is on the east side of the levee, not close to where any ground would be disturbed. Based on the Phase I site assessment, there are only minor contamination concerns in the Project area related to agricultural and cotton warehousing use that has been the land's primary historical use. These concerns are limited to stained soil located in the area of farm equipment maintenance and sprayers at the farm on the AEP property, long-term storage of material at the Staplecotn warehouse and short-term impacts to the stormwater pond at River Bend Cotton. At both Staplecotn and River Bend, warehousing of cotton has been the primary use and no storage or use of chemicals. There is the potential for minor spills of fuel associated with trucks and toe-motors, but these would be minor. No signs of spills were observed during the site inspection (Appendix H).

Project Construction on Environmental Caps

Construction of the rail line, roads or transload facility is not likely to encounter any environmental caps (i.e. landfills or other covered areas).

Asbestos, Lead-Based Paint, and PCB Transformers at Buildings to be Demolished

No existing buildings containing asbestos are being demolished as part of this rail line construction. It is possible that some small farm buildings and warehouses will be demolished, but no asbestos was noted during the Phase I environmental study.

Hazardous Materials Use

Hazardous materials would continue to be used at the IRPLP. The IRPLP and all of its tenants would continue to operate as required by federal, Arkansas State, and local law, including regulations under ACA Sect. 8-7-202 et seq. and ACA Sect. 8-7-501 et seq.

Solid Waste Disposal

The Proposed Action Alternative would result in improved capacity within the IRPLP; however, the Proposed Action Alternative would not directly increase solid waste generation. As capacity improves in the IRPLP, tenants are expected to expand existing operations and new tenants would likely emerge. The expansion of operations within the IRPLP would indirectly result in generation of additional solid waste, both domestic and commercial. All solid waste disposal would continue as with current tenants, with disposal at the county landfill and recycling with local vendors.

Construction Impacts

Hazardous Materials Use

As a result of the Proposed Action Alternative there will be construction equipment on-site. The fuel associated with the use of this equipment is the only notable hazardous material associated with this Project. Where there is fuel there is the potential for a spill. However, it is anticipated that with the Project's close proximity to local fuel stations that construction crews will not need to store fuel on-site during construction, which would limit any potential spills to insignificant amounts.

Additionally, the IRPLP could potentially encounter unanticipated contaminated soil or contaminated perched shallow groundwater along the proposed rail alignment. Contaminated soil of shallow groundwater will be properly assessed and remediated as needed. Unless properly managed by the construction contractor, such unanticipated contaminated materials could adversely impact the environment. Construction contractors would store and use a variety of potential contaminants (e.g., fuel, cleaning solvents, and paint). All construction contractors, tenants, and rail carriers at the IRPLP must abide by standard contractual conditions requiring them to maintain spill prevention programs and equipment in the manner required by federal, state, and local regulations.

The Proposed Action Alternative would potentially require installation of piles, drilled shafts, or stone columns at Ditch 17, Ditch 19, northern edge of Fletcher Lake, and at other stream or ditch spans, which may encounter groundwater in areas regulated by a restrictive covenant. During construction of the pile-supported trench at similar sites, stone columns were anticipated to be approximately 45 ft. below the bottom of the trench (total of approximately 60 ft. below ground surface). These columns consisted of compacted crushed stone to decrease the potential for liquefaction. The columns were constructed using a vibrating auger that horizontally compacted the surrounding soils and then injected and compacted the crushed stone. These stone columns formed an area that is less permeable than the surrounding soil. The tops of the columns were then covered with an impervious surface that forms the bed of the trench, above which a rail was placed. As a result of less permeable soils and the placement of impervious surfaces above the columns, impacts to groundwater from contaminated materials in the site were not expected to occur.

To mitigate for potential contaminated media encountered during construction, the IRPLP will develop a Contaminated Medium Management Plan (CMMP) to require all construction projects to implement appropriate contingency plans. The construction bid packages issued by the IRPLP should notify all bidders of the potential for finding contaminated soil and groundwater along the corridor. The CMMP requires the contractor to manage contaminated media to prevent "clean" materials, humans, and water (surface and groundwater) from contacting contaminated media. Prevention measures include:

- Known contaminated areas are identified on the construction drawings.
- During construction, handling and managing materials per an approved stockpiling plan and SWPPP are required.

- Equipment and personnel used in known areas of contamination or in handling suspect materials are required to be decontaminated prior to exiting the contaminated area.
- Personnel working in known areas of contamination are required to have the necessary federal and state safety training.
- Known areas of contamination and suspect materials are to be tested and disposed of appropriately.

Solid Waste Disposal

All waste and materials requiring disposal during construction of the Proposed Action Alternative will be properly disposed of per federal and state requirements.

4.15.4 Minimization and Mitigation Measures

4.15.4.1 No Action Alternative

There are no impacts from the No Action Alternative. No mitigation is required.

4.15.4.2 Proposed Action Alternative

The IRPLP will follow agreements/approvals from ADEQ regarding disturbances to the environmental caps. BMPs will continue to be used as previously described and the Port will follow applicable laws to minimize risk of future spills. Tenant and IRPLP audits will also continue as described.

4.16 Energy Use and Greenhouse Gases

4.16.1 Study Area and Methodology

The Project study area for energy use and greenhouse gases (GHG) correlates to the IRPLP Project area described in Section 3.4 as well as the City of West Memphis area main line for evaluating rail traffic and congestion.

To evaluate energy use, rail traffic and heavy duty diesel truck (as discussed in Section 4.3) were reviewed to determine potential fuel consumption for trains and trucks at the site. Fuel consumption was also used to determine potential emissions to evaluate impacts to GHG.

4.16.2 Affected Environment

4.16.2.1 Energy Use

The primary source of fuel consumption from trains and trucks at the site is a result of idle time. Given the volume of truck and train traffic at the site, trains consume about 10 times as much fuel as trucks per year on average. The idle fuel consumption rate for the engines that pull freight trains is approximately 5 gal per hour, and for heavy duty diesel trucks is approximately 0.75 gal

per hour. In an average year both trucks and trains combine to consume 137,000 gallons of fuel idling on-site, calculated from numbers reported by the client.

Electrical energy is used on the right-of-way to operate switches, crossing guards, and communication devices. In addition, each train operates electrical equipment, such as radios, through on-board power generation. Yard operations also consume diesel fuel, although quantities of fuel consumed are not available.

4.16.2.2 Greenhouse Gases

Vehicles emit a variety of gases during their operation; some of these are GHGs. The GHGs associated with transportation are water vapor, carbon dioxide (CO_2), methane (also known as "marsh gas"), and nitrous oxide. Any process that burns fossil fuel releases CO_2 into the air. CO_2 makes up the bulk of the GHG emissions from transportation.

National estimates show that the transportation sector (including on-road vehicles, construction activities, airplanes, and boats) accounts for almost 27% of total domestic CO_2 emissions. However, in Crittenden County, Arkansas, transportation accounts for just over half of GHG emissions in the county (ADEQ 2002).

Railroads on average are four times more fuel efficient than trucks. Moving freight by rail instead of truck reduces GHG emissions by 75% (Association of American Railroads 2010). Freight railroads account for just 0.6% of U.S. GHG emissions from all sources and just 2.4% of emissions from transportation-related sources (Association of American Railroads 2010). In Crittenden County, Arkansas, rail accounts for 1.2% of the carbon emissions listed for off-road vehicles. Out of all the vehicle emissions both on and off road locomotives account for 0.00091% (ADEQ 2002). Moving more freight by rail also reduces highway congestion. The average freight train can take the equivalent of 280 or more trucks off the highways (Association of American Railroads 2010).

4.16.3 Environmental Consequences

4.16.3.1 No Action Alternative

Operational Impacts

Energy Use

Under the No Action Alternative the number of site trains idling remains the same because the No Action Alternative assumes no or only a minimal increase in site freight volume.

Greenhouse Gases

With the No Action Alternative, GHG emissions would remain the same since no additional freight would be moved through the site.

Construction Impacts

No construction is expected to occur with the No Action Alternative; therefore, no impacts would occur.

4.16.3.2 Proposed Action Alternative

Operational Impacts

Energy Use

Expected site traffic based on client estimates shows that the site will become a port with a major increase in traffic. This is an increase from 5 to 6 trains and few trucks operating per year to 38.8 trains and 16,440 trucks operating per year. A calculation of the exact increase in traffic was not possible as that data were not available.

A primary goal of this Project is to reduce the congestion within the Port and increase the volume of goods handled. This would result in an overall decrease in travel time, which would reduce fuel consumption. In addition, idling time by trains would be substantially reduced and fuel consumed by idling trains would likewise be reduced. Fuel consumption will decrease at a rate of 5 gal per hour as a result of the decrease in idle time.

Greenhouse Gases

The Proposed Action Alternative would allow the use of freight trains to transport materials to and from existing and future industrial facilities at the Port, and would be expected to increase the number of trucks on the local roadway network. Because the average freight train can take the equivalent of 280 or more trucks off the highways (Association of American Railroads 2010), the Proposed Action Alternative is expected to generate fewer emissions than if the same amount of freight were hauled by truck. In addition, the Proposed Action Alternative would result in less idling time of trains within the Port as well as entering and exiting the facilities. The reductions in fuel consumption described above would also reduce the overall amount of GHG emissions.

Construction Impacts

Energy Use

A temporary increase in energy consumption would occur at the IRPLP Project area during construction. Energy would be consumed by diesel-fueled heavy machinery, electrical- or gas-powered hand tools, and battery or generator electrical lighting and safety signals. Specialized heavy machinery that is track-mounted would be fueled within the port facilities. Vehicles and hand-held tools would be replenished with local supplies. Energy impacts resulting from temporary construction would not adversely affect the IRPLP Project area. Electricity and diesel fuel are available to meet temporary energy needs. Construction areas, staging areas, and material transfer sites will be designed to reduce wait times for equipment and engine idling.

Greenhouse Gases

Construction areas, staging areas, and material transfer sites would be designed to reduce wait times for equipment and engine idling. These measures would reduce fuel consumption. Increases in emissions that may occur during construction would be temporary in nature and are not expected to contribute substantially to overall GHG emissions.

4.16.4 Minimization and Mitigation Measures

4.16.4.1 No Action Alternative

Mitigation for reducing both energy use and GHG emissions is best achieved on a regional and national scale. In October 2008, the Governor of Arkansas signed and the 86th General Assembly of Arkansas passed Act 696 (H2460), also known as the Governor's Commission on Global Warming. Act 696 requires state agencies to find ways to reduce GHG emissions and adapt to the future that climate change may create. The goal of the law is to promote Arkansas as a leader in attracting clean industries and energy opportunities to the state.

4.16.4.2 Proposed Action Alternative

As the Proposed Action Alternative would result in reduced delays and idling of trains as well as an increased use of freight rail over truck freight, energy use and GHG emissions are expected to decrease as a result of the Proposed Action Alternative. The Proposed Action Alternative would be consistent with the Governor's Commission on Global Warming Act 696 of the Arkansas General Assembly.

4.17 Indirect Impacts

4.17.1 No Action Alternative

The No Action Alternative would have no indirect environmental impacts. The existing conditions in the Project area would remain unchanged.

4.17.2 Proposed Action Alternative

The Proposed Action Alternative is anticipated to result in indirect impacts to the general population by fostering future economic growth within the City of West Memphis, adding 87 temporary construction, and 60 permanent jobs to the local community (Wimbish 2013). Although many of these jobs would be filled by current residents, some additional housing, public services, and ancillary business/professional services may be necessary in the community. The proposed industrial growth is consistent with the City of West Memphis Zoning Ordinance, which designated the IRPLP Project area for industrial uses that support expanded rail and port operations. Thus, the projected job growth at the Port has been anticipated by the community and service providers to ensure such growth can be accommodated.

The Proposed Action Alternative would have the indirect effect of promoting growth within the IRPLP Project area for existing tenants because the improved rail access would allow existing tenants to expand their operations and new tenants to be attracted to the area. In addition, the construction of the rail loop and transload facility would provide rail infrastructure to undeveloped property that is currently zoned for industrial uses. This ready access to rail would provide added incentive for future tenants to locate in the IRPLP Project area. This would represent a conversion of land from its current use, a vacant industrial lot, to a rail-dependent industrial use. The West Memphis Office of Economic Development is currently marketing undeveloped industrial sites within the IRPLP Project area. Implementation of the rail loop and transload facility could also provide added incentive to convert adjacent lands to industrial uses in the future. Future development in these locations would represent a conversion of land from current agriculture and open space uses to industrial uses. This intensification of future development could result in ambient effects such as additional lighting, increases in operational noise, grading/soil disturbance, increased impervious surfaces, loss of farmland, loss of wetlands and habitat, etc. Anticipated growth impacts resulting from the proposal would be consistent with applicable land use planning documents and zoning and are anticipated to be minimal.

The Proposed Action Alternative would also have indirect impacts to wetlands located in the IRPLP Project area. Approximately 1,500 ft. of rail-bed and a bridge will be placed in Fletcher Lake. This will potentially separate approximately 14 acres of wetlands on the north end of the lake from the remaining 185 acres south of the proposed railway. Flow will not be impacted through the wetland by the construction of a span bridge. Aquatic and terrestrial life will be able to move freely between both parts of the wetlands. Terrestrial species observed in the Project area and utilizing Fletcher Lake are primarily avian species, which can fly over the railway and will not be substantially affected by its construction, or are aquatic species that will continue to utilize the Ditch 19 channel.

Vegetation removal would occur from the area to construct the transload facility and support the new rail alignment, which would result in a minor reduction of available habitat and increase the potential for erosion and sedimentation. Some noxious weeds may be eradicated through vegetation and seed bank removal; however, there is also an opportunity to introduce additional noxious and invasive species. This could occur through movement of seeds on construction equipment or vehicles. In addition, accidental spills could occur during operations and result in indirect impacts to terrestrial habitat and species.

4.18 Cumulative Impacts

Cumulative impacts result from the incremental impacts of an alternative when added to other past, present, or reasonably foreseeable future actions, regardless of what agency undertakes those other actions. Cumulative impacts were evaluated by considering the impacts from the Proposed Action Alternative and reasonably foreseeable future actions on the environmental resources within the study area for each environmental resource.

4.18.1 Louis Dreyfus Barge Loading Facility

The City of West Memphis currently operates a port adjacent to the Project area. Louis Dreyfus is considering adding a port in order to ship commodities on the Mississippi River originating from West Memphis. The port would occur near the City of West Memphis Port current location and take advantage of the Proposed Action Alternative. The Project would accommodate additional barges, increasing maritime freight operations on the Mississippi River. This Project relies on the Proposed Action Alternative to provide full benefit or build-out of the site.

4.18.2 BNSF Crossover Rail

A private manufacturer is proposing to construct a crossover rail line from BNSF to the Tenn-Ark Industrial Lead rail spur on the site of the Staplecotn distribution facility. The crossover rail Project would allow more convenient access to the proposed IRPLP transload facility from the BNSF rail line. The private manufacturer is proposing to construct the crossover rail with private funds, and the City of West Memphis is assisting with right-of-way negotiations. Existing warehouses on the Staplecotn site are proposed to be relocated to the east of their current location.

4.18.3 City of West Memphis Manifest Yard and Rail Expansion

The City of West Memphis is considering addition rail expansion and a relocated manifest yard to serve the remaining acreage of the IRPLP. The additional rail will provide access to additional properties that are planned to develop as industrial sites according to the City of West Memphis Zoning Ordinance.

4.18.4 Cargill, West Memphis

Cargill is currently undergoing review with the City of West Memphis to develop a site upriver from the Port of West Memphis. The site will be used to transfer shipments of grain from the local market onto barges. The facility will process an estimated 20,000 truckloads of grain per year. This Project does not rely on the Proposed Action Alternative to provide full benefit or build-out of the site.

In addition to the above reasonably foreseeable future projects, the other actions considered in the cumulative impact analysis are:

- Previous floodplain filling, altering of riparian areas, filling of wetlands, pollutant loading (past, ongoing and future actions);
- Development of industrial land, rail lines, and other transportation facilities (past, ongoing and future actions); and
- Continued operation of the port and associated industrial activity (ongoing and future action).

4.18.5 No Action Alternative

The No Action Alternative would have no direct impact on noise and vibration; vehicular, bicycle, and pedestrian traffic; geology and soils; water resources and floodplains; water quality;

wetlands; ecological resources; threatened and endangered species; cultural and historic resources; Section 4(f) resources; aesthetics; socioeconomics and environmental justice; land use, zoning, and recreation; public health and safety; and hazardous materials. Therefore, the No Action Alternative would not contribute to a cumulative effect on these resources.

As discussed in Section 2.2, requests for rail service and the number of inquiries for rail-served space has dramatically increased in 2010 as has a new interest in transload facilities adjacent to the City-owned Port of West Memphis. More recently, a private partner has committed to development of additional port capacity and requires extensive rail improvements to supply its commodities to the port. New rail infrastructure will be required to support the current commitments and future port businesses preparing for economic growth. The IRPLP Project is needed because (1) the port's existing rail infrastructure does not allow for efficient construction of unit trains; (2) private partners have committed to the area and require more efficient rail operations; and (3) projected increases in traffic along the BNSF main line corridors will increase rail congestion within the Port's general vicinity, further reducing service capability. Therefore, the No Action Alternative would have a cumulative impact on rail traffic, energy, and air quality.

4.18.6 Proposed Action Alternative

The Proposed Action Alternative would result in cumulative impacts for most of the environmental resources but most impacts are minimal, or when considered with reasonably foreseeable future action, the impacts are negligible. The cumulative impacts for each environmental resource are discussed below.

- **Air Quality** – Air quality impacts from the Proposed Action Alternative would be minimal and air quality impacts are expected from reasonably foreseeable future projects; therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would have a negligible cumulative effect on air quality.
- **Noise and Vibration** –Noise impacts from the Proposed Action Alternative are expected to remain at current levels or decrease at several locations. Vibration impacts would increase slightly from the Proposed Action Alternative. Noise and vibration impacts would be anticipated from reasonably foreseeable future projects. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on noise and vibration.
- **Transportation** – The Proposed Action Alternative would result in an increase in rail traffic that would be offset by improvements to rail capacity. Vehicular traffic impacts from construction of the Proposed Action Alternative would be coordinated with port tenants to minimize disruptions and would occur over several years, which would also minimize off-site impacts to vehicular, bicycle, and pedestrian traffic. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a beneficial cumulative effect to rail traffic and a negligible cumulative effect on vehicular, bicycle, and pedestrian traffic.
- **Geology and Soils** – The Proposed Action Alternative would not result in impacts to geology and soils, and would not contribute to a cumulative effect on this resource.

- **Water Resources and Floodplains** – The Proposed Action Alternative would result in impacts to water resources and floodplains that would be offset by minimization and mitigation measures. Water resource and floodplain impacts are anticipated to occur from reasonably foreseeable future projects. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.
- **Water Quality** – The Proposed Action Alternative would result in minimal impacts to water quality that would be offset by BMPs and other minimization measures. Water quality impacts are anticipated to occur from reasonably foreseeable future projects. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.
- **Wetlands** – The Proposed Action Alternative would result in impacts to wetlands that would be offset by minimization and mitigation measures. Wetland impacts are not anticipated to occur from reasonably foreseeable future projects. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.
- **Ecological Resources** – The Proposed Action Alternative would result in minimal impacts to ecological resources that would be offset by minimization and mitigation measures. Ecological resource impacts are anticipated to occur from reasonably foreseeable future projects. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.
- **Threatened and Endangered Species** – The Proposed Action Alternative is not anticipated to result in impacts to threatened and endangered species; any minimal impacts would be offset by minimization and mitigation measures. Minimal impacts are not anticipated to occur to threatened and endangered species from reasonably foreseeable future projects. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.
- **Cultural and Historic Resources** – The Proposed Action Alternative would not result in impacts to cultural and historic resources and would not contribute to a cumulative effect on this resource.
- **Section 4(f) Resources** – The Proposed Action Alternative would not result in impacts to Section 4(f) resources and would not contribute to a cumulative effect on these resources.
- **Environmental Justice** – The Proposed Action Alternative would not result in impacts to environmental justice or other sensitive populations, and would not contribute to a cumulative effect on these resources.
- **Land Use, Zoning, and Recreation** –The Proposed Action Alternative would not result in impacts to land use, zoning, or recreation resources, and would not contribute to a cumulative effect on these resources.
- **Public Health and Safety** –The Proposed Action Alternative would improve safety at existing at-grade crossings, and result in other minimal impacts to public health and safety that would be offset by minimization and mitigation measures. Reasonably foreseeable future projects are anticipated to have public health and safety effects similar to those associated with the proposed action. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.

- **Hazardous Materials** –The Proposed Action Alternative would result in impacts to hazardous materials that would be offset by restoration measures. A limited amount of soils will be removed from farm equipment maintenance areas. Reasonably foreseeable future projects are anticipated to have hazardous materials effects similar to those associated with the proposed action. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.
- **Energy Use** – The Proposed Action Alternative would increase efficiency and capacity of rail operations in the port facilities and would result in reduced delay times and a decrease in fuel usage. Reasonably foreseeable future projects are anticipated to consume energy and fuel. Therefore, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, would result in a negligible cumulative effect on this resource.
- **Socioeconomics** – The Proposed Action Alternative and reasonably foreseeable future actions are anticipated to help foster future economic growth in the West Memphis area and add jobs to the local community. This projected job growth at the IRPLP has been planned for by the community and service providers who have a capital facilities plan to ensure such growth can be accommodated. It is not anticipated that future growth from reasonably foreseeable future actions, in combination with the Proposed Action Alternative, will cause negative cumulative impacts to the study area. The jobs created by the Proposed Action Alternative and reasonably foreseeable future actions are anticipated to have a beneficial cumulative effect on socioeconomic resources in the study area.
- **GHG** – The Project included in the cumulative effects analysis would contribute to GHG emissions. Although construction and operation of the Proposed Action Alternative would produce GHG emissions, the Project would result in fewer emissions compared with shipping the same amount of freight by truck. As stated, the purpose of the Proposed Action Alternative is to increase efficiency and capacity of rail operations in the port facilities. The efficiency and capacity improvements would result in reduced delay times that contribute to GHG emissions. Reasonably foreseeable future actions would also benefit from these improvements and result in reduced delay times that contribute to GHG emissions. Thus, the Proposed Action Alternative, when considered with reasonably foreseeable future actions, is anticipated to have an overall beneficial cumulative effect on GHG emissions.

5. COORDINATION AND CONSULTATION

Coordination and consultation with agencies, stakeholder groups, and the public was initiated by the City early during preparation of the NEPA documents in order to incorporate agency and public comments and concerns into the development and analysis of the Project purpose and need, alternatives, and potential resultant environmental impacts. The City is actively engaged in discussions with the various federal, state, and local agencies as part of other Project updates independent from this EA. No additional comments or concerns have been raised as part of those discussions. These discussions are summarized below:

- A letter of concurrence from AGFC was provided on May 31, 2013 and USFWS was provided on May 20, October 28, 2013 and January 24, 2014 (Appendix D). Impacts to threatened and endangered species are not anticipated. Long-term impacts to migratory birds are also not anticipated as feeding and nesting areas will not be disturbed. The wetlands are impacted will be mitigated on adjacent land and will result in a greater amount of wetland habitat in the area than currently exists.
- A letter of correspondence from the USACE Memphis District was provided June 6, 2013, December 11, 2013 and February 2014 (Appendix D). These letters agreed with the delineation and indicated that jurisdictional waters of the United States would be affected and 404 permitting would be required. Based on the mitigation proposed, no negative impacts to wetlands or streams are anticipated.
- A letter of correspondence from the St. Francis Levee District was provided to the City October 31, 2013 (Appendix D). The Levee Board anticipates no negative impacts to the Levee and is fully supportive of the Project.
- A letter of correspondence was received from the NRCS on October 21, 2013 (Appendix D). The CPA–106 analysis of the Project indicates that impacts to prime farmland will not be significant.
- A letter of correspondence from the Department of Arkansas Heritage (SHPO) was received October 3 November 8, 2013 following review of the Phase I Cultural Resources survey. The SHPO agreed that no historic properties would be impacted by the Project.
- An email was received from the Cherokee Indians of Oklahoma November 15, 2013 following a request to 14 Native American tribes for comment. The Cherokee Indians had no comment or objections. Correspondence was received January 14, 2014 from the Quapaw Tribe of Oklahoma indicating that they had no objections to the Project.
- The US EPA was contacted by phone by URS October 24, 2013. They had no comments at that time and would review the completed Draft EA.

The City meets regularly with public interest groups, community agencies, representatives of the West Memphis Chamber of Commerce, neighborhood associations, public school districts, and other community groups and stakeholders. The City also meets with local governments. Additionally, the City provides information to the public and key agencies through electronic updates (City and County list services) and news releases (posted as necessary). The City complied with all required public notification and comment periods associated with local, state, and federal permits for the proposal.

Permits required for the Project are listed in Table 5-1.

Table 5-1. IRPLP Project Permits and Approvals

Regulatory Approval Requirement	Agency	Date of Approval
NEPA EA	FRA	Pending
CWA Section 404 Permit, Individual Permit and NWP-14 408 Permit Request	USACE Memphis District Potential impacts to the Levee	Individual Permit Pending NWP-14 approved Feb. 18, 2014 Pending
ESA Letter of Concurrence	USFWS	January 24, 2014
Section 106	AR-SHPO	November 8, 2013, April 2014
Native Americans	Cherokee and Quapaw	November 15, 2013 and January 14, 2014
Section 4(f)	FRA	Pending
401 Water Quality Certification	Arkansas Department of Environmental Protection	Pending
NPDES Stormwater Permit (SWPPP)	Arkansas Department of Environmental Protection	Pending, following submittal of SWPPP

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7. ABBREVIATIONS AND ACRONYMS

ACA	Arkansas Code Annotated
ADA	Americans with Disabilities Act
ADEQ	Arkansas Department of Environmental Quality
AEP	American Electric Power
ASPB	Arkansas State Plant Board
APE	Area of Potential Effect
AR-SHPO	Arkansas State Historic Preservation Office
AST	Aboveground Storage Tank
BMP	Best Management Practice
BNSF	BNSF Railway
CAA	Clean Air Act
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CMMP	Contaminated Media Management Plan
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CWA	Clean Water Act
dBA	adjusted decibels
DPM	Diesel Particulate Matter
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPSA	Fort Pillow Sand Aquifer
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHG	Greenhouse Gas
IRPLP	International Rail Port Logistics Park
Ldn	day-night sound level
Leq	equivalent sound level
LEP	Limited English Proficiency
LWCFA	Land and Water Conservation Fund Act
MRT	Mississippi River Trail
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOFA	Notice of Funding Availability
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

PM	Particulate Matter
ppm	parts per million
RM	River Mile
RRIF	Railroad Rehabilitation and Improvement Financing
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SEPA	State Environmental Policy Act
SO_x	Sulfur Oxides
Staplecotn	Cotton Staple Cooperative Association
SWPPP	Stormwater Pollution Prevention Plan
TWIC	Transportation Worker Identification Credential
UP	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WWC	Wet Weather Conveyance

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