Proposed Birmingham Regional Intermodal Facility

October 2010

Submitted Pursuant to the
National Environmental Policy Act of 1969
42 U.S.C. 4332(2)(C)

Lead Agencies:
U.S. Department of Transportation
Federal Railroad Administration

U.S. Department of Transportation
Federal Highway Administration

Cooperating Agency:
Alabama Department of Transportation

Submitted by
CH2MHILL®
on behalf of
Norfolk Southern Railway Company
NS NORFOLK SOUTHERN

Birmingham Regional Intermodal Facility

McCalla, Jefferson and Tuscaloosa County, Alabama

Environmental Assessment

Submitted pursuant to 42 U.S.C. 4332(2)(C)

October 5, 2010

Lead Agencies:

U.S. Department of Transportation
Federal Highway Administration

And

U.S. Department of Transportation
Federal Railroad Administration

Cooperating Agency:

Alabama Department of Transportation

Environmental Assessment

Birmingham Regional Intermodal Facility

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Executive Summary

ES.1 Project Background

The Alabama Department of Transportation (ALDOT), the Federal Railroad Administration (FRA), and the Federal Highway Administration (FHWA) have prepared this Environmental Assessment (EA) for the proposed Norfolk Southern Railway Company (NSR) Birmingham Regional Intermodal Facility (BRIMF or Project). NSR, through its Alabama Great Southern Railroad Company subsidiary, proposes to construct and operate this facility to meet current and future capacity for freight transportation, and optimize intermodal freight service operations and efficiency in the Birmingham region.

Intermodal freight is a shipping method used to send components, material or finished products throughout the supply chain, including from manufacturers and distribution centers to where people buy them. This type of transportation is called "intermodal" because it employs at least two modes of shipping, such as trucks and trains, using containers or trailers. Trucks take the product or item from the origin to a rail terminal and trains then move them from city to city. Finally, trucks take these items from a rail terminal to their final destination. An intermodal facility (IMF) is the rail terminal location where the transfer from truck to train or train to truck takes place. Intermodal transport of freight allows shippers to move their containers or trailers from the trucks to the trains and back again to improve efficiency without having to reload the freight into different containers. This method of shipment also provides a substantial savings in fuel costs, reduces congestion on major highways by reducing long-haul truck volumes between cities, and reduces, on a broad scale, the air emissions that would otherwise result from the additional truck transport. There also are considerable cost savings in this method of transport, providing competitive advantages for the companies that use intermodal services for transporting their goods, and consequently the communities that have IMFs.

This EA has been prepared to describe the current and future need for intermodal infrastructure in the Birmingham region and to address the potential effects resulting from the proposed construction and operation of the BRIMF in accordance with the National Environmental Policy Act (NEPA), its implementing regulations, and other legal and regulatory programs identified in this environmental document. The EA provides a discussion of the purpose and need for the Project, an analysis of reasonable and feasible alternatives, a description of the existing affected environment within the proposed project area, and analyses of potential direct, indirect, and cumulative impacts that may occur as a result of the construction and operation of a new BRIMF. This EA was developed in consultation with other Federal and State agencies which have jurisdiction by law or special expertise regarding particular resource areas and impacts.

ES.2 Purpose and Need

The purpose of the proposed Project is to provide expanded intermodal (rail/truck) transportation capacity to meet the growing demand for containerized freight transport in the Birmingham region.

The need for the proposed BRIMF is based on the following:

- The demand for transportation of freight by containers and similar means is growing and is likely to continue to grow at an even faster rate.
- Existing inter-regional transportation corridors using major highways cannot meet this demand cost-effectively and in an environmentally responsible manner.
- The national demand for improved freight transportation in the eastern corridor from the South to the Northeast, with particular potential for improving transportation to and from the Birmingham region.
- Greater use of rail intermodal transport, in lieu of all-highway freight movement, would alleviate transportation bottlenecks, optimize shipping efficiency, provide alternatives to the use of public roadway infrastructure, decrease interstate highway congestion, and provide for a significant reduction in greenhouse gas (GHG) emissions.
- An IMF must be located on the NSR mainline south of the convergence of the two NSR mainlines entering the Birmingham region from the east at Irondale to ensure the operational efficiency of intermodal trains accessing the facility from either mainline, or departing the IMF to take either rail route.
- The IMF must be located in the greater Birmingham region with respect to NSR's potential customer base in central Alabama.
- The IMF also must have excellent highway access to the customer base in central Alabama, promoting truck-competitive intermodal service and optimizing transportation efficiency.

In addition, there are other regional needs that can be meet by the Proposed Action, to include reduction of congestion on major interstate highways between Birmingham and other regions, reduced damage to highways from heavy long-haul trucks, recued fuel consumption, reduced GHG emissions from fuel combustion, and improved air quality.

ES.3 Build and No Build Alternatives

E.S.3.1 Project Features Required to Meet Project Purpose and Need.

For the BRIMF to meet the purpose and need for the Project, there are several specific features regarding site location and size that must be met. These include the following:

Project Location

- The selected site must be located on an NSR intermodal mainline south of the convergence or junction of the two NSR mainlines entering the Birmingham region to promote fast and efficient service to both the rail line to Chattanooga and the rail line to Atlanta.

Functional Criteria

- Facility dimensions must be at a minimum 6,600 feet (ft) by 1,500 ft to accommodate loading and unloading (pad) tracks, lead tracks to connect the terminal to the mainline tracks, parking areas for trailers and containers, and space for an Automated Gate System (AGS), administration, maintenance, and operations buildings, and an equipment maintenance pad and related facilities.

Seven different build alternative sites were considered and analyzed that had the potential to meet these criteria. Through an alternatives analysis process, all but one of these sites was eliminated from further consideration either because they failed to meet the criteria and/or they had other environmental, engineering, or public interest issues that were undesirable or less optimal compared to the selected site. In addition, as required under NEPA, a No Build Alternative was also considered.

ES.3.2 Description of the Build Alternative

The Build Alternative provides the following attributes for the proposed BRIMF:

- The site is located along the NSR mainline, thereby providing easy access to trains carrying containers to and from the facility, and providing efficient access and reducing delays and energy use.
- The site is of sufficient size to allow for the configuration necessary to develop a facility that would meet intermodal design criteria and support the infrastructure, operations, and storage requirements for effective intermodal operations.
- The site features gently sloping topography favorable for grading, drainage, and construction while minimizing costs and risks to constructability and construction schedule.
- The site is close to the Birmingham customer base, only 3 miles from the interchange between I-20/I-59 and I-459, ensuring fast and reliable intermodal service that would be most competitive and optimize transportation efficiency.
- The site is close to interstate highway access, 1.4 miles southeast of I-20/I-59, allowing for efficient rail/truck intermodal operations. This proximity would further contribute to minimizing transit times for local trucks; and McAshan Drive has the available capacity to accommodate the facility truck traffic.
- The linear configuration of the site provides for a sufficiently long lead track on the southwest end of the facility to avoid disruption of local traffic at the existing Kimbrell Cutoff Road grade crossing during normal facility operations.
- The site affects the smallest area of forested wetlands; and perennial streams, and floodplains are limited mainly to the southwestern portion of the site, which facilitates the avoidance and minimization of wetland and stream impact.

The Build Alternative is located in McCalla in southwestern Jefferson County and eastern Tuscaloosa County (Figure ES-1). The closest interstate highway interchange is I-20/I-59 and McAshan Drive (Exit 104). This interchange would be the primary interstate highway access point for the facility. The proposed site entrance road to the BRIMF is located approximately 1.4 miles southeast of this interchange along McAshan Drive.

The proposed BRIMF, including its running track next to the NSR mainline, would span a distance of approximately 4.3 miles and the main facility infrastructure would encompass approximately 261 acres oriented lengthwise along the mainline with dimensions of about 6,600 ft by 1,500 ft. All of the site would be in Jefferson County with the exception of an approximately 840-ft segment of lead track extending into Tuscaloosa County within the existing NSR mainline operating right-of-way (ROW).

To meet operational requirements for efficiently performing 165,000 annual lifts[1], the proposed BRIMF would consist of the following components:

- Three intermodal tracks (pad tracks) totaling 13,000 ft total clear length and a support yard with four storage tracks totaling 18,900 ft in length in parallel strips to allow longer trains to be separated so as to minimize or avoid localized traffic delays at crossings required to handle cargo, to optimize transportation efficiency including loading/unloading operation, and to maximize fuel savings and emissions reductions.
- Replacement siding track totaling 21,070 ft in length.
- Running track, including 7,050 ft of tail tracks (lead tracks) on the northeast end and 5,860 ft on the southwest end of the facility 1,000-ft engine track to provide mainline access to the facility and onsite loading/unloading.
- 1,474, 53-ft by 12-ft container and trailer spaces necessary for daily operations at the IMF to provide efficient transfer of freight between truck and rail modes.
- AGS and several small administration, transportation, and maintenance buildings located on the support yard pad necessary for transportation operations, security, and maintenance.
- 0.6-mile entrance road from McAshan Drive to the AGS.
- Visual barrier walls including a 16-ft high wall along the south side of the entrance road, two 15-ft high landscaped berms at the AGS and at the southwest facility boundary.
- 5-ft high visual barrier berm with planted vegetation on top would be installed at the entrance to the facility at McAshan Road to minimize the impact from headlights on adjacent residences as trucks enter the facility.

[1] A lift is a transfer through the facility.

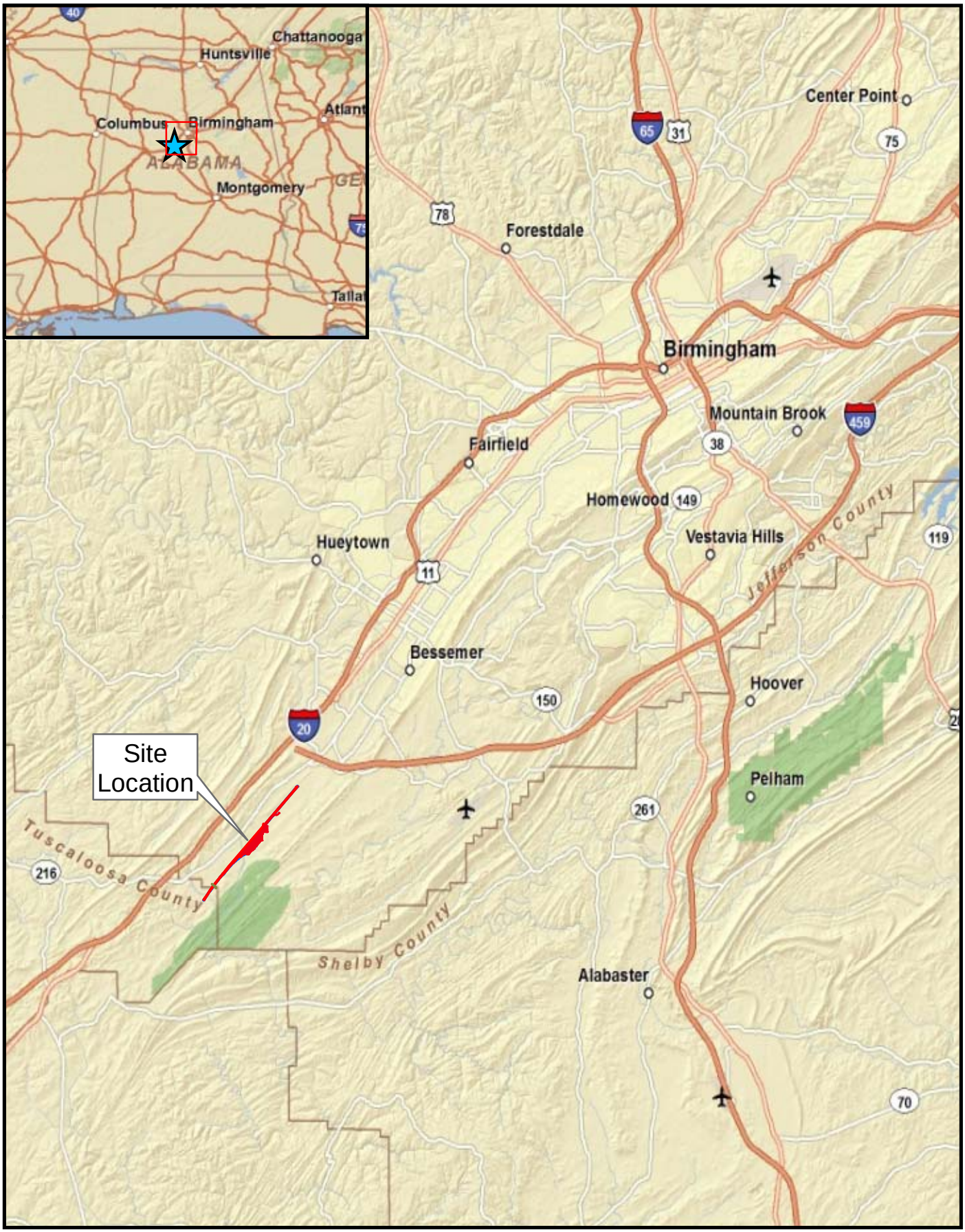


FIGURE ES-1
SITE LOCATION MAP
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

The BRIMF would be operated to provide 165,000 container or trailer lifts per year, with a daily average of 452 lifts. An average of 407 trucks would visit the facility each day based on a 6-day week. Once the facility begins 7-day-per-week operations, a small amount of this traffic would visit the facility on Sunday as well. Truck visits would average less than 25 minutes. Trucks would enter and exit the facility using the entrance road from McAshan Drive, passing through an AGS that would securely control truck entry and egress. Trucks would access McAshan Drive exclusively from I-20/I-59, as the design of the entrance road intersection and prominent roadway signage would direct trucks to turn north toward the interstate and discourage right-hand turns toward Eastern Valley Road to the south.

Locomotives servicing the BRIMF would be line haul engines operating at low power settings during rail car delivery and pickup. Onsite equipment for intermodal operations would consist of: three rubber-tired 47.5-ft cranes and one side-loader lift machine for lifting/transferring containers and trailers; 15 hostler trucks for moving/staging containers and trailers on the site; one fork lift; five supervisor/maintenance light duty diesel trucks; a switch engine locomotive; and one emergency generator.

ES.3.3 Design Modifications in Response to Public and Agency Comments

As the conceptual planning for the BRIMF has proceeded, there have been several opportunities for the public, agencies, and Nongovernmental Organizations (NGOs), to review and comment on the proposed original conceptual design. Their reviews have resulted in recommendations for improving the design and operation of the BRIMF. To the fullest extent feasible, the NSR engineers and environmental teams have revised these original conceptual plans for the Build Alternative to respond to these concerns and interests. These changes are summarized in Table ES-1.

TABLE ES-1
Summary of Sub-Alternatives Evaluated for the BRIMF

Area of Interest	Original Impacts	Change	Benefits from Change
Wetlands	Loss of 0.79 acre of wetlands	Relocated pad and tracks to avoid or reduce impact to wetlands	Reduced impacts to wetlands by 0.45 acre
Wetlands	Loss of 0.07 acre of wetland.	Southwest end of siding track was shortened to avoid stream.	Avoided 0.07 acre of wetland impacts.
Wetlands	Loss of 0.30 acre of wetlands.	Redesigned rail and pad configuration and incorporated two bridge crossings.	Reduced impacts to wetlands by 0.10 acre
Streams	Loss of 926 linear feet of tributary to Mill Creek.	Relocated pad and tracks to avoid or reduce impact to tributary to Mill Creek.	Reduced impact to tributary to Mill Creek by 270 linear feet.
Streams	Loss of 656 linear feet of tributary to Mill Creek.	Redesigned rail and pad configuration incorporating two bridge crossings and a bottomless culvert to reduce impact to tributary to Mill Creek.	Reduced impact to stream channel bottom and reduced loss of tributary to Mill Creek by 436 linear feet.
Streams	Impacts to 123 linear feet of perennial stream.	Southwest end of siding track was shortened to avoid stream.	Avoided 123 linear feet of impacts to a perennial stream.

TABLE ES-1
Summary of Sub-Alternatives Evaluated for the BRIMF

Area of Interest	Original Impacts	Change	Benefits from Change
Stormwater management	Retention pond location near Eastern Valley Road and loss of 680 linear feet of perennial stream.	Relocated retention pond and added three ponds to area within pads and tracks.	Reduced impact to perennial stream by 680 linear feet and removed pond from viewshed of residents.
Stormwater management	Potential impacts of high volumes of water following storm events with scouring or sediment transport within tributary to Mill Creek.	Designed spray irrigation field to manage water volume and reduce potential impacts to tributary to Mill Creek.	Expanded flexibility for stormwater management to minimize or avoid impacts to tributary to Mill Creek.
Stormwater management	Loss of 933 linear feet of perennial or intermittent stream.	Relocated outfall in the design.	Reduced impact to perennial or intermittent streams by 179 linear feet.
Traffic	Potential truck movement onto Eastern Valley Road.	Redesigned access road exit to lead trucks toward Interstate I-20/59 and added signage directing trucks away from Eastern Valley Road.	Further restricted potential movement of trucks on Eastern Valley Road.
Visual and Aesthetics	View of site.	Addition of 2,238 linear feet of visual barriers between the BRIMF and (a) McAdory Elementary School and (b) Eastern Valley Road.	Replaced view of facility with view of vegetated earthen landscape features and/or architectural walls. Provided ancillary benefit of sound reduction.
Visual and Aesthetics	View of trucks on access road.	Addition of 3,000 linear feet of visual barriers between the access road and residents in Sadler Ridge community.	Replaced view of access road with view of vegetated earthen landscape features and/or architectural walls. Provided ancillary benefit of sound reduction.

ES.4 Impacts of the Build Alternative

The following is a summary of the impacts associated with the Build Alternative. A more detailed discussion of the existing environment against which these impacts may be compared is in Section 4.

ES.4.1 Physical Setting

Construction and operation of the BRIMF would convert approximately 261 acres of undeveloped pasture land, old field habitat, and mixed forest to use for an IMF. The construction site, after grading would include approximately 90 acres that are paved, 40 acres developed for the railroad bed, 27 acres used for retention ponds, and 66 acres maintained as landscaped vegetated areas. The remaining land area (38 acres) would be disturbed temporarily during construction and would be restored to pre-existing conditions and contours. The proposed truck entrance to the BRIMF from McAshan Drive would convert the existing land to paved road and would add approximately 200 ft of taper lane on McAshan Drive. There are mixed forests, industrial/commercial properties, and residential properties that border the project site, but construction of the facility would not change the current adjacent land uses. An

area of forest land would be converted to industrial land. The impact would constitute a negligible impact on forest and pasture land in unincorporated Jefferson County.

ES.4.2 Air Quality

The construction of the proposed Project would include emissions during construction that would be temporary in nature, consisting mainly of dust and exhaust emissions from construction equipment that would be operating on the site during construction. Activities would include land clearing, grading, construction of facility infrastructure, and concrete paving. Air impacts would be mitigated through watering and other best available construction practices, and equipment would comply with U.S. Environmental Protection Agency (USEPA) standards that provide for reduced emissions.

Operation of the BRIMF would be expected to begin in 2012, with maximum operations expected to occur beginning in 2015. Air quality impacts during operations are expected to be minimal and were assessed, including (1) criteria pollutant emissions, (2) mobile source air toxic emissions, and (3) applicability of the BRIMF to the requirements of General and Transportation Conformity.

The National Ambient Air Quality Standards (NAAQS) include standards to protect public health and protect public welfare and the environment. The USEPA established the standards for protection of public health through an evaluation of environmental health effects, which included a margin of safety to protect children and other sensitive populations.

Emissions from the activities associated with BRIMF operation would be very low, but those that would exist would occur predominantly as a result of exhaust emissions from diesel powered equipment, including locomotives, container/trailer delivery trucks, IMF dedicated container/trailer handling equipment, and support equipment. Maximum potential emissions of fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), carbon monoxide (CO), volatile organic compound (VOC), and oxides of nitrogen (NO_X) emissions for the first full year of maximum operation (2015) are summarized in Appendix A. Since the diesel powered equipment and trucks that would be operated at the facility would be using transportation grade diesel fuel (i.e., ultra-low sulfur fuel), sulfur dioxide (SO_2) emissions from the facility would likely be minimal and were not estimated.

The projected maximum operational emissions of $PM_{2.5}$, CO, VOC, and NO_X for the BRIMF would be minor compared to those in the 2002 county-wide emissions inventory for Jefferson County. As a result, the impact of facility emissions on ambient air quality in the region would likely be negligible.

An ambient air quality modeling analysis was performed to evaluate the potential impacts of facility operation on ambient air quality for the criteria pollutants $PM_{2.5}$, CO, and NO_X. These analyses evaluated the potential impact on ambient air quality at the nearest residences and at the McAdory Elementary School, which is adjacent to the southwest boundary of the proposed project site. The results of this very conservative analysis demonstrated that the emissions from the proposed facility would not interfere with attainment of the annual $PM_{2.5}$ standard, nor would they cause or contribute to predicted violations of the NAAQS for $PM_{2.5}$. Additional evaluations were completed for Mobile Source Air Toxic (MSAT) emissions as well as General and Transportation Conformity. The details of these analyses are provided in Appendix A. The results of the MSAT analyses determined that the proposed facility's maximum estimated

emissions of air toxics would represent only a very small percentage (0.0054 to 0.11 percent) of county-wide emissions and, within a broader geography, would result in substantial reductions in fuel usage and therefore would result in an overall net air quality benefit, with a net reduction in MSAT emissions.

A $PM_{2.5}$ hotspot analysis for the BRIMF demonstrated that the BRIMF would be in compliance with the NAAQS for $PM_{2.5}$

ES.4.3 Cultural, Historic, and Archeological Resources

The Phase I Survey of the proposed Area of Potential Effect (APE) was conducted. The APE was scrutinized through intensive pedestrian survey and shovel testing. Other than five isolated finds, which do not meet the criteria for listing on the National Register of Historic Places, the potential for undocumented cultural resources to be located within the project area is considered low. The proposed project would also not be expected to affect historic properties.

ES.4.4 Fish, Wildlife, and Vegetation

Most of the vegetated areas that would be cleared and permanently converted to intermodal terminal space include non-native ryegrass that was planted for hay production. It is expected that wildlife would be displaced from the construction area and immediately adjacent lands during construction. The number of animals displaced by the facility would be minimal, as the majority of the land that would be used for the facility has been previously cleared and provides poor habitat value for native wildlife species.

The impacts associated with fisheries in the proposed project area would be minimal for the region given the limited amount of suitable perennial or sensitive habitats nearby. There are no known occurrences of Federally or State protected aquatic species in the vicinity of the proposed project. The affected tributaries would be either culverted or relocated during construction but construction best management practices (BMPs) and the installation of bridge and bottomless culvert crossings would reduce potential impacts to aquatic resources resulting from construction and operation. In addition, the proposed stormwater management system would minimize changes in flow volume discharging from the site during operations. Therefore, impacts to the resources of the region associated with implementation of the Proposed Action would be minor.

Site-specific threatened and endangered species surveys did not identify potentially suitable habitat for other protected plant and wildlife species. Impacts to wildlife would not threaten local populations with extinction and would be negligible in the regional setting.

Potential impacts of operations to fisheries or other aquatic species would be primarily associated with stormwater releases during rainfall events. NSR would obtain National Pollutant Discharge Elimination System (NPDES) permits under the Clean Water Act (CWA) and Alabama Water Pollution Control Act (AWPCA) to address facility-wide discharge. Conditions of these permits would assure that discharges would not cause or contribute to violation of water quality standards promulgated to protect aquatic life. Additionally, to address hydrology, the design of the stormwater retention ponds and management of releases, including the use of spray irrigation, would control flows to reduce or eliminate impact such as erosion or scour of substrate.

ES.4.5 Water Resources

ES.4.5.1 Groundwater

The proposed BRIMF would not require removal of groundwater during construction or operation, nor would the Project be expected to deplete nearby surface water bodies. The geotechnical study completed for this Project has determined that the site is underlain by an expansive clay layer, greatly reducing the potential for spills within the site to reach groundwater.

Drinking water sources, including public water supply wells, in the area would not be impacted since they are distant (greater than 1 mile) from the proposed BRIMF site.

ES.4.5.2 Surface Water

The construction of the proposed BRIMF would encroach upon surface waters. The Proposed Action would result in permanent impacts to approximately 3,256 ft of intermittent or perennial streams and permanent impacts to approximately 6.02acres of ephemeral streams or ponds. Construction activities would result in soil disturbance, exposed soil, and loss of vegetative cover, which would create the possibility for transport of sediment and soil-bound pollutants into streams. Refueling of terminal-based equipment and locomotives would take place on the BRIMF.

The potential water quality impacts would be temporary and the proposed use of construction BMPs would minimize the potential for impacts.

During operations, the modified surface water runoff patterns and volumes could increase the potential for stream channel erosion and transport of sediments in tributary reaches downstream of the Project. Post-construction stormwater controls and BMPs, including the retention ponds, would contain or treat stormwater from new impervious surfaces to prevent offsite impacts to water quality and downstream scouring. Runoff from lesser storms would be detained within the stormwater system. Additionally, NSR policy requires a site-specific Spill Prevention, Control, and Countermeasures (SPCC) Plan to ensure safe management, monitoring, and response to onsite fuel spills should they occur.

ES.4.6 Wetlands

Construction of the proposed project would have unavoidable impacts to six wetlands, resulting in a total impact of 1.44 acres. The proposed BRIMF would result in unavoidable permanent impacts to ephemeral streams and ponds, equivalent to approximately 6.02 acres of impacts that would be mitigated as wetlands.

NSR would mitigate unavoidable impacts to wetlands through purchase of credits at an approved mitigation bank within the watershed. Therefore, the Project would result in no net loss of wetlands.

Operational activities of the BRIMF are not expected to have impacts on wetlands in the area.

ES.4.7 Floodplains

The proposed BRIMF would cross two Special Flood Hazard Areas, one each across an eastern and a western tributary to Mill Creek. Impacts associated with the construction and operation of this portion of the proposed BRIMF would likely be minor and temporary since activity would

be limited to the existing ROW, which is elevated above the floodplain and appropriate BMPs would be used. The western edge of the proposed BRIMF, including small portions of the elevated landscape berm, concrete drop pad, and trailer spaces would also be within the floodplain that leads to Mill Creek.

ES.4.8 Soils and Geology

ES.4.8.1 Soils

Construction of the proposed BRIMF would require land-disturbing activities to approximately 261acres of land, which would result in permanent and temporary impacts to the topography and soils in the project area. Impacts would result from grading activities as necessary to ensure safe facility construction and operation. Temporary impacts include some areas of soil compaction and erosion, most of which would be revegetated. Soil erosion would be mitigated through BMPs during construction.

No land within the proposed project site is classified as unique farmland or land of statewide importance by the Natural Resources Conservation Service (NRCS). The current proposed site design would impact approximately 3.0 acres of prime farmland soils. Appropriate documentation of these effects is provided, as required by the NRCS, in Appendix E showing the impact is within allowable levels.

ES.4.8.2 Geology

Construction and operation of the proposed BRIMF would be unlikely to affect the physiography and geology of the project area. BMPs to protect groundwater from incidental releases or spills of materials would be implemented as necessary, including the facility's SPCC Plan to contain, manage, and clean up the spill. In addition, the geotechnical survey for the site found that there is an expansive underlying layer of clay that would further restrict movement of surface water or releases into groundwater below this layer.

ES.4.9 Hazardous Materials

A Hazardous Materials review of the site has been completed and no existing materials meeting these criteria are onsite. Appropriate clearance from the Alabama Department of Environmental Management (ADEM) is included in Appendix F.

Given the U.S. Department of Transportation's (USDOT) comprehensive regulatory program governing hazardous materials shipments, NSR's emergency response planning and preparedness measures, and the proposed BRIMF's design, a release or spill of a hazardous material at the proposed BRIMF is extremely unlikely. Based upon historical information on releases or spills at IMFs, a release or spill would likely be a very small volume and be contained on the concrete pad where IMF containers are temporarily parked. The BRIMF is designed such that fluid materials which might leave the large concrete pad would be directed to four retention ponds equipped with emergency valves and gates to prevent materials from leaving the BRIMF. A Hazardous Materials review of the site has been completed and no existing materials meeting these criteria are onsite. Appropriate clearance from ADEM is included in Appendix F.

ES.4.10 Land Use

The BRIMF would directly impact approximately 261 acres of unincorporated Jefferson County adjacent to the mainline and Tuscaloosa County within the existing mainline ROW. The majority of the acreage is currently undeveloped as pasture lands, open lands, or mixed forests. Construction would also convert portions of the site to a stormwater management system.

During construction, there would be the potential for temporary impacts to adjacent residential and institutional property values while NSR is clearing the site, constructing the access road, and installing the visual barriers. Local residential property values have recently declined due to economic conditions and it is not anticipated that the effect of construction would be considerable. Additionally, the impacts would be avoided or otherwise mitigated by routing all but the earliest stages of construction along the new access road to be built parallel to the mainline to connect the site to McAshan Drive. Installation of barrier walls or berms would also be completed early to provide visual barriers to the extent practical for local viewsheds. This would include a 15-ft landscape barrier to be placed between the school and the BRIMF. It is anticipated that the regional economic benefits of the Project would contribute to the strength of the local and regional economy, tax base, and residential and institutional property values.

Changes in land use during operation of the BRIMF are not expected to occur in the immediate vicinity of the facility other than continued build-out of the existing Jefferson Metropolitan Park and surrounding areas per the Shades Creek Watershed Comprehensive Plan Proposal Map (JCDLPDS, 2008a). There would be expected additional growth of facilities that would use the BRIMF for product storage and distribution in the seven-county region, but these changes would be expected to follow existing zoning and plans that are compatible with local zoning ordinances and regulatory requirements. The cumulative impacts analysis addresses impacts to resources related to secondary development and economic growth.

Overall design of the BRIMF would include the newly constructed 15-ft landscape barriers; areas of existing vegetation along with additional trees and landscaping to be planted by NSR; and spatial distances between the facility and surrounding homes (370 ft minimum), the school (330 ft minimum) and the daycare center (1,000 ft minimum) that would provide a buffering zone between the BRIMF and the surrounding area.

ES.4.11 Noise and Vibration

Construction of the BRIMF would likely be typical of other light industrial and commercial facilities in terms of schedule, equipment used, and activities. The noise level and duration would vary during the construction period, depending on the construction phase. The overall construction phase is expected to last approximately 18 months and activities would be spread broadly over the site rather than concentrated in one location. Therefore, no concentration of noise-emitting equipment in one localized area would be expected except for very brief periods.

Vibration during construction is expected to be minimal with the exception of limited periods when construction-related blasting would occur. When blasting occurs, however, the vibration would not likely be greater than the vibration currently associated with trains passing through the area. NSR has specific guidelines for blasting that would be applied by the contractor to comply with appropriate safety and other local or regional requirements. Other State or Federal guidelines that pertain to blasting, such as those related to protecting water quality and reducing dust, would be followed as required.

Heavy trucks would be the primary source of motor vehicle traffic noise associated with the facility. All trucks would enter and leave the site on an access road to be built on the north end of the site. Sound from operating equipment, switch locomotives, and trains would result in day/night noise levels at the edge of the facility that are below thresholds considered to substantially impact residences or other receptors. According to the vibration screening results, vibration from trucks serving the proposed BRIMF is expected to be minimal. Vibrations from rubber-tired vehicles would not be expected to cause an impact.

ES.4.12 Social Elements and Environmental Justice

ES.4.12.1 Social and Economic Impacts

Section 4.11 describes the population, housing, employment, and Environmental Justice characteristics of Jefferson and Shelby Counties as well as potential environmental consequences. Adverse impacts to socioeconomic resources associated with the construction and operation of the proposed BRIMF are expected to be minimal because of the ability of the Birmingham-Hoover Metropolitan Statistical Area (MSA) market to absorb local employment and housing fluctuations. Additionally, since the workforce employed onsite during construction and operation of the proposed BRIMF would likely come from within the Birmingham region, local infrastructure and community services are not anticipated to be noticeably affected.

ES.4.12.2 Environmental Justice

Impacts to Environmental Justice (EJ) populations are considered measurable if a disproportionate share of the adverse socioeconomic impacts is borne by minority and low-income communities compared with those of a comparison population, in this case Jefferson and Shelby Counties (USEPA, 1998). There is not a substantial concentration of low-income or minority populations in the area around the proposed BRIMF, nor would there be residents displaced by the construction or operation of the Project. As a result, the development of the proposed BRIMF is not anticipated to have a disproportionate impact on EJ populations.

ES.4.12.3 Safety, Security, and Protection of Children

Construction and operation of the BRIMF would require all persons entering the area to be properly attired to meet appropriate NSR and Federal regulatory safety requirements. Fencing would be used where required to restrict access to the site to authorized personnel. Additional safety measures to be used near the McAdory Elementary School include fencing adjacent to the school, followed by a 15-ft high earthen berm, and finally an 8-ft security fence topped with security wire along the interior side nearest the site. Additional security measures would include 24-hour camera surveillance of the site and periodic inspections by NSR police. Access to the site would be strictly controlled, including positive identification of all truck drivers and shipments accessing the facility via the AGS.

ES.4.13 Traffic and Transportation

Comparison of traffic pattern changes that may be expected by 2015 with the Project in place compared to traffic conditions associated with anticipated changes in the area without the Project indicates that the level of service for McAshan Drive would not change. Traffic to and from the site would follow the most direct route from the nearby interstate exchange at I-20/I-59 and likely would not affect other residential highway uses in the area.

Two key mitigation measures for regulating traffic on McAshan Drive near the proposed entrance would be implemented:

- A taper lane on eastbound McAshan Drive for access into the BRIMF would be constructed with a radius for the right turn to accommodate WB-50 design trucks and to enable traffic to exit McAshan Drive as expeditiously and safely as possible.
- Construction of the BRIMF site entrance/exit would provide one inbound and one outbound lane. A single outbound lane, with a reduced radius for right turning traffic movements, would assist in preventing trucks from turning right out of the facility toward Eastern Valley Road, where trucks are prohibited. The radius would be designed to accommodate passenger cars only and discourage truck traffic.

Although current road conditions indicate that some road improvements may be appropriate in the vicinity of the intersection of McAshan Drive with the interstate, these improvements would not be required by operation of the BRIMF.

ES.4.14 Visual and Lighting

The proposed BRIMF would change the visual quality of the project area in terms of loss of undeveloped land (such as cropland, old fields, and forests) and the modification of wetlands and other water bodies. The final design also would feature a slightly elevated footprint of the pads and tracks, but these should still be largely obscured by the ridge, existing wooded areas that would not be disturbed, and the addition of visual barriers such as berms along several parts of the project boundary.

In the interest of safety, security, and operational efficiency, the BRIMF would feature 100-ft light poles. However, lighting would include cut-off lamps only, with illumination ranging from 1 to 5 foot-candles, depending on onsite location, and minimal or no illumination of adjoining properties. Lighting poles along the entrance road from McAshan Drive would be 25 ft high on 100-ft centers to provide reasonable uniformity in lighting and to reduce glare.

ES.5 Indirect and Cumulative Impacts

Indirect effects of the BRIMF are those that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. These effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems.

Cumulative effects of the BRIMF reflect past, present, and reasonably foreseeable activities that may, in concert with the BRIMF, result in positive or negative impacts to the human or natural environment, and must be considered over a specified time period to assess the influence of an action. Indirect and cumulative impacts for the BRIMF are summarized in Section 5 and describe the potential for occurrence; magnitude of effect, if any; timing and duration; and degree to which the effects can be mitigated, if required.

ES.6 No Build Alternative

The No Build Alternative represents future conditions in the project area without increasing intermodal capacity in the Birmingham region. The No Build Alternative serves as the baseline against which the Build Alternative is compared. The No Build Alternative assumes that NSR would continue to use the existing Norris Yard IMF in Irondale without modification or expansion. Growth in the freight transportation market would be accommodated by increased all-highway truck traffic rather than by increased rail-truck intermodal service. Without adequate rail-truck intermodal service as an alternative to single-driver-truck freight transportation, and with substantial and growing interstate highway congestion, some industries would be less likely to locate in the area, thus hindering regional economic growth and development. Intermodal operations can increase transportation efficiency, reduce emissions, and improve energy-efficiency, and with the No Build Alternative, these benefits would not be realized. Specifically, the No Build Alternative would not result in the diversion of long-haul trucks from eastern and southeastern interstate highway corridors to rail, nor would it yield any of the associated benefits of reduced fuel consumption, reduced highway congestion, reduced GHG emissions (primarily carbon dioxide [CO_2]), or the positive impacts on air quality by effecting a net reduction in national and regional emissions.

The No Build Alternative would have limited direct impacts on the human or natural environment in the project area, such as effects on traffic, as freight transportation needs are increasingly met through trucks. The No Build Alternative would fail to meet demand for much-needed additional intermodal capacity within the Birmingham region. As identified in the Purpose and Need discussion, current capacity limitations for freight transportation contribute to interstate highway congestion and result in unmet demand for rail intermodal service within the Birmingham region. Using the existing Norris Yard IMF and/or other existing IMFs in other regions would not adequately support the Birmingham market. Therefore, the No Build Alternative does not meet the Purpose and Need for the proposed BRIMF.

ES.7 Public Involvement

Public and agency input was vital to the development of the alternatives, the analysis of impacts, the selection of the Build Alternative, and the measures to minimize effects that have been developed to mitigate both anticipated and potential project impacts. Public meetings were held on August 18 and November 12, 2009, at the Bessemer Civic Center. Approximately 750 people attended these two meetings and about 300 comments were received. The responses to these comments are provided in Appendix I. The original copies of the comments may be obtained by contacting ALDOT.

Among the comments received, four main areas of concern were most often cited. These included air quality, especially as it relates to protection of the health of children and teachers at the McAdory Elementary School; noise during operations; traffic on local roads; and impacts to property values. A number of commitments have been made by NSR in response to these comments, which are summarized in Table 6-1. After the release of this EA for public review and comment, there will be an additional opportunity for public involvement at an upcoming public hearing.

ES.8 Conclusion

This EA has been prepared in accordance with NEPA, its regulations and policies, and other applicable law. The Proposed Action would not substantially or adversely affect the human environment. Primary impacts relate to construction of the facility and those that would remain following avoidance and minimization measures, and would be addressed through mitigation in accordance with applicable Federal and State legal provisions. Site design, construction, and operation alternatives are proposed to reduce environmental effects. Additional environmental enhancement measures are proposed to minimize remaining environmental effects. The Proposed Action is among several alternatives that were assessed and was chosen following evaluation of the purpose and need and assessment of the environmental impacts of the various alternatives.

Contents

TABLES

FIGURES

APPENDICES

Acronyms and Abbreviations

AAR	American Association of Railroads ADEM Alabama Department of Environmental Management
ADCNR	Alabama Department of Conservation and Natural Resources
AFT	American Farmland Trust
AGS	Automated Gate System
AHC	Alabama Historical Commission
AL DIR	Alabama Department of Industrial Relations
AL SP	Alabama State Parks Division
ALDOT	Alabama Department of Transportation
APE	Area of Potential Effect
AWPCA	Alabama Water Pollution Control Act
BBA	Birmingham Business Alliance
BMP	Best management practice
BNSF	Burlington Northern Santa Fe Railway
BRCC	Birmingham Regional Chamber of Commerce
BRIMF	Birmingham Regional Intermodal Facility
CAFE	Corporate Average Fuel Economy
CAA	Clean Air Act
CEQ	Council on Environmental Quality
cf	Cubic feet
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CH_4	Methane
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DNL	day-night sound level
EA	Environmental Assessment
EAC	Early Action Compact
EDA	economically depressed area
EMS	Emergency medical services
EO	Executive Order
EPCRA	Emergency Response and Community Right-to-Know Act
EPRI	Electric Power Research Institute
ESA	Endangered Species Act
E.T.S.	Environmental Technical Section (ALDOT)
F&W	Fish and Wildlife
FAF	Freight Analysis Framework
FC	Foot-candles
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration

FIPS	Federal Information Processing Standards
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
FR	Federal Register
FRA	Federal Railroad Administration
FRSA	Federal Railway Safety Act of 1970
FSRS	Fire Suppression Rating Schedule
FTA	Federal Transit Administration
FTE	Full-time Equivalent
GDP	Gross Domestic Product
GHG	greenhouse gas
GSA	Geological Survey of Alabama
GWP	Global Warming Potential
HCFC	Hydrofluorocarbon
IAC	Interagency Consultation
ICCTA	Interstate Commerce Commission Termination Act of 1995
IMF	Intermodal facility
IRIS	Integrated Risk Information System
ISO	International Organization for Standardization
JCDES	Jefferson County Department of Environmental Services
JCDH	Jefferson County Department of Health
JCDLPDS	Jefferson County Department of Land Planning and Development Services
JCEIDA	Jefferson County Economic and Industrial Development Authority
kW	kilowatt
Ldn	Day/Night Equivalent Noise Level
Leq	Equivalent Noise Level
Leq	Energy-equivalent sound level
Leq(h)	hourly average values
LESA	Land Evaluation and Site Assessment
Lmax	Maximum Noise Level
Lmin	Minimum Noise Level
Ln	Percentile Noise Level
LOS	Level of service
LRTP	Long-Range Transportation Plan
MA	Metropolitan Area
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
mgd	million gallons per day
MPO	Metropolitan Planning Organization
MS4	municipal separate storm sewer system
MSA	Metropolitan Statistical Area
MSAT	Mobile Source Air Toxic
NAAQS	National Ambient Air Quality Standards
NAC	Noise abatement criteria
NATA	National Air Toxics Assessment
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program

NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO_2	Nitrogen dioxide
NOx	Oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	Norfolk Southern Railway Company
NWS	National Weather Service
O_3	ozone
ODS	Ozone-depleting substance
OSHA	Occupational Safety and Health Administration
P.L.	Public Law
Pb	Lead
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM	Particulate Matter
PM_{10}	Particulate matter less than 10 microns in diameter
$PM_{2.5}$	Fine particulate matter less than 2.5 microns in diameter
POM	Polycyclic organic matter
PPCTM	Public Protection Classification
ppm	parts per million
RFFA	Reasonably foreseeable future action
ROW	Right-of-way
RPCGB	Regional Planning Commission of Greater Birmingham
RSPA	Research and Special Projects Administration
SASZ	Southern Appalachian Seismic Zone
SC DDS	Shelby County Department of Development Services
SC DPD	Shelby County Department of Planning and Development
SEL	Sound Exposure Level
SHPO	State Historic Preservation Office
SIMS	Strategic Intermodal Management System
SIP	State Implementation Plan
SO_2	sulfur dioxide
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasures
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
TIH	Toxic inhalation hazards
TIP	Transportation Implementation Plan
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
tpy	Tons per year
TRANSCAER	Transportation Community Awareness and Emergency Response
U.S.C.	U.S. Code
UAB	University of Alabama at Birmingham
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture

USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USI	U.S. International
USLE	Universal Soil Loss Equation
VdB	Vibration decibels
VIP	Virginia Inland Port
VMT	Vehicle miles traveled
VOC	Volatile organic compound
WARC	West Alabama Regional Commission
WARPO	West Alabama Rural Planning Organization
WWTP	Wastewater treatment plant

1.0 Introduction

The Alabama Department of Transportation (ALDOT), the Federal Railroad Administration (FRA), and the Federal Highway Administration (FHWA) have prepared this Environmental Assessment (EA) in consultation with other appropriate State or Federal agencies for the proposed Norfolk Southern Railway Company (NSR) Birmingham Regional Intermodal Facility (BRIMF or Project). NSR, through its Alabama Great Southern Railroad Company subsidiary, proposes to construct and operate this facility to meet current and future capacity for freight transportation, and optimize intermodal freight service operations and efficiency in the Birmingham region.

This EA has been prepared to describe the current and future need for intermodal infrastructure in the Birmingham region and to address the potential effects resulting from the proposed construction and operation of the BRIMF in accordance with the National Environmental Policy Act (NEPA), its implementing regulations, and other legal and regulatory programs identified in this environmental document. The EA provides a discussion of the purpose and need for the Project, an analysis of reasonable and feasible alternatives, a description of the existing affected environment within the proposed project area, and analyses of potential direct, indirect, and cumulative impacts that may occur as a result of the construction and operation of a new BRIMF.

Intermodal facilities (IMFs) play a key role in meeting the challenge of freight transport now and into the future as part of the national transportation system[2]. Intermodal shipment is a method of moving freight from origin to destination using two or more transportation modes. An IMF provides a point of transfer of freight from one transportation mode to another, in this case for the BRIMF, between trains and trucks, to speed the environmentally beneficial delivery of freight over long distances. Intermodal freight moves in enclosed containers or trailers. Destinations of intermodal shipments include factories, warehouses, retail stores, businesses, and ports throughout the country; and worldwide when in conjunction with ocean carriers.

IMFs provide fast and efficient transfer of freight shipments in containers and trailers between long-haul trains and short-haul trucks. Long-haul trains carry the containers or trailers for most of the shipment trip. Short-haul trucks start and complete the intermodal shipment by moving the containers and trailers between the IMF and the local pick-up and delivery business locations. The local businesses served by the BRIMF would likely be operating within 90 miles of the proposed facility and within the seven counties that comprise the Birmingham-Hoover Metropolitan Statistical Area (MSA), as well as Tuscaloosa County. Normally, trucks transport one chassis mounted container or trailer. At the IMF, shipping containers and trailers are transferred between trucks and rail cars using

[2] In recognition of the importance of rail transportation in interstate commerce, Congress has enacted legislation providing that Federally regulated railroads operating in interstate commerce are not subject to otherwise applicable local and state laws. See Interstate Commerce Commission Termination Act of 1995 ("ICCTA"), 49 U.S.C.§ 10501 and the Federal Railway Safety Act of 1970 ("FRSA"), 49 U.S.C.§ 20101 et seq. In accordance with these and other similar Federal laws, most state and local regulation of railroads is preempted in order to ensure barriers to interstate commerce are not created. This includes local planning, zoning and similar laws and ordinances. While NSR plans to voluntarily comply with such local criteria whenever practical, there may be instances where those criteria are incompatible with rail operations.

specially designed cranes that lift the containers and trailers to transfer them to and from rail cars.

Shipments enter and depart the facility using a state-of-the-art Automated Gate System (AGS). This system (which relies upon approved drivers being registered with NSR in advance), requires the truck driver to provide access codes for the shipment at an electronic kiosk prior to obtaining access to, or leaving, the facility.

Long-haul rail intermodal service is a safe, efficient, and economical way to move freight from one region of the country to another. An intermodal train can haul the equivalent of approximately 280 truckloads of freight. Each ton of freight transported by rail travels an average of 436 miles on one gallon of fuel. Data (Cambridge Systematics, 2010) show that a ton of freight transported by truck uses approximately 3.5 times as much fuel to travel an equivalent distance on routes served by NSR from the BRIMF.

To meet increased demand for rail intermodal capacity in the Birmingham region, NSR estimates the need for a new facility that can perform 165,000 annual lifts of trailers and containers from and to rail cars. The operation of the BRIMF is estimated by NSR to result in a reduction of more than 81 million VMT annually as a result of the diversion of trucks from highways between the BRIMF, the Northeast, western destinations, and various markets in the Southeast, including seaports.

Six intermodal trains, each operating 5 or more days per week, are projected to serve the BRIMF. Of these six trains, four currently operate along the existing adjacent mainline each day. These four trains would stop at the BRIMF to set out and/or pick up trailers and containers. Additionally, one train would originate, or begin its route, at the BRIMF and one train would terminate, or complete its route, at the BRIMF each day.

2.0 Purpose and Need

This section characterizes the purpose and need for the proposed BRIMF. The BRIMF would provide expanded intermodal transportation capacity in the Birmingham region to meet the demand for rapidly growing freight movement between the Birmingham region and the Northeast U.S., as well as southeast U.S. major container ports and western destinations. The evaluation of the need for the Project considers the adequacy of existing infrastructure and transportation facilities to meet increased demand for rail intermodal capacity and the importance of the facility location within the Birmingham region for providing fast and efficient intermodal service. The central location of the proposed BRIMF with respect to NSR's existing mainline infrastructure and customer base in the Birmingham region is critical to satisfying the purpose and need for the Project.

The process of documenting that (1) a rail IMF is needed and (2) identifying the optimal means and location for meeting this need follows a logical process to:

- Identify the need
- Characterize geography where this need occurs
- Develop a conceptual solution or approach to meet the need
- Define the region and design that will meet the need

2.1 Project Purpose

The purpose of the BRIMF is to provide expanded intermodal (rail/truck) transportation capacity to meet the growing demand for containerized freight transport in the Birmingham region.

2.2 Overarching National Need to Improve Freight Transportation

The need for adding IMFs in selected regions throughout the United States is driven by factors such as:

- Growing congestion on U.S. highways used for long-haul freight movement
- Volatile or high fuel prices and the quest for energy-efficiency
- The strain on the truck driver labor pool
- Need for improvements in shipping services
- Need for efficiencies in the connections between trucks, trains, ships, and aircraft
- The national policy toward the reduction of GHG emissions

The FHWA Freight Analysis Framework (FAF) forecasts that the tons of freight transported within the U.S. will almost double from 2006 levels by the year 2035. The FAF also projects that the increase will be driven primarily by expansion of economic activity, population, and international shipments. During the period from 1980 to 2005, the nation's gross domestic product (GDP) doubled and foreign trade quadrupled, reflecting unprecedented growth in global interconnectivity.

There is ample evidence that the foreseeable expansion of highway infrastructure will not accommodate the current and future demand for long-haul truck freight transportation between many regions of the U.S. There is also expectation that the growth of international trade through U.S. east coast seaports due to additional Suez Canal and Panama Canal vessel routings will greatly expand the movement of International Organization for Standardization (ISO) containers in several regions.

Nationally, there has also been a shift in business logistics practices from "manufacture to supply" or inventory-based logistics, to "manufacture to order" or replenishment-based logistics. This current logistics practice relies more on accurate and timely transportation to match supply and demand (Cambridge Systematics, 2005). However, as noted by FHWA, the freight transportation network today is sensitive to disruption, as shown by interstate highway congestion, which threatens to disrupt the freight network in many regions as a result of reduced reliability and increased delays and transportation costs.

In summary, it is apparent that:

- The demand for transportation of freight by containers and similar means is growing and is likely to continue to grow at an even faster rate.
- Existing inter-regional transportation corridors using major highways cannot meet this demand cost-effectively and in an environmentally responsible manner.
- Intermodal terminal capacity must be created in greater Birmingham to enable a significant modal shift from long-haul trucking to intermodal rail.

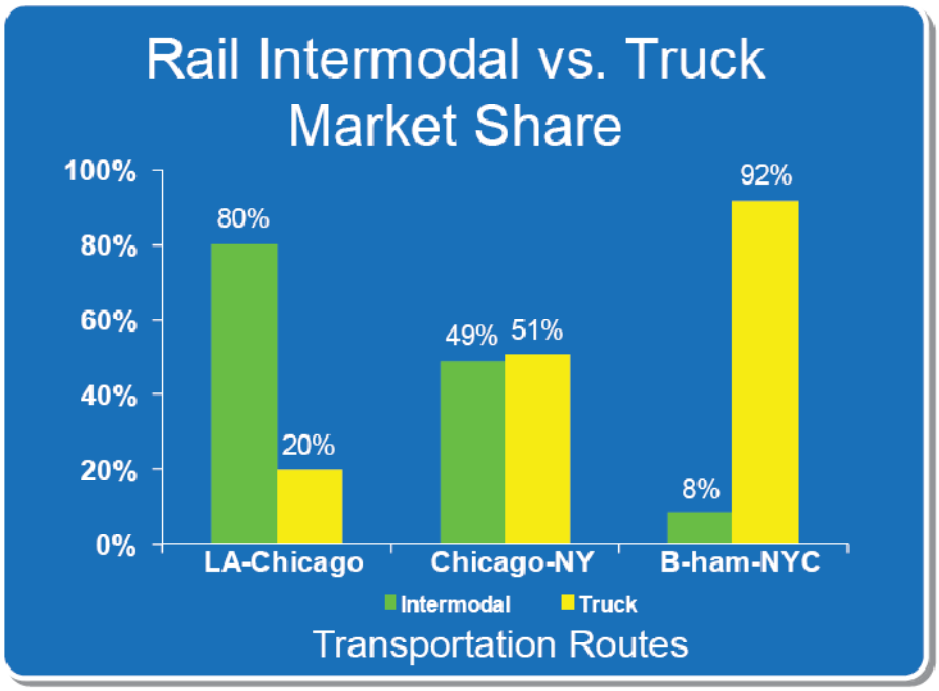
2.3 Demand for Freight Transportation in Birmingham and in the Eastern U.S. Corridor

The need for a means of moving freight from the Southeast to the Northeast more efficiently than on major highways is an urgent freight-related transportation need. As noted in Figure 2-1, the market share for rail intermodal transportation versus long-haul truck transportation is extremely low between the Birmingham region and the northeastern U.S. compared to markets that provide rail intermodal transport to Chicago from the Northeast and the West. This provides a significant opportunity for reductions in long-haul truck VMT, as discussed further below. Additionally, while the U.S. population grew 30 percent from 1980 to 2005, the southern region of the U.S. grew 45 percent during those 25 years. This population growth indicates that the need for freight transportation will intensify in the South.

Existing infrastructure and transportation facilities are not adequate to meet future transportation capacity needs between the central Alabama region and other portions of the U.S. This is evidenced by studies (FHWA, 2007a, b) indicating that the highways connecting central Alabama to other regions, especially the Northeast, will be highly congested by 2020, and by 2035 will include segments of greater than 10,000 daily truck trips (Figure 2-2). The routes used for long-haul truck traffic from the greater Birmingham region to the Northeast are currently dominated and congested by truck traffic. These studies have noted that during the last several decades, there has been a steady growth in demand for freight transportation driven by economic expansion and global trade. As also noted by the FHWA studies, freight transportation capacity is expanding too slowly to keep up with demand and the investments in

the interstate highway system are showing diminishing returns (Cambridge Systematics, 2005) and cannot cost-effectively meet this need.

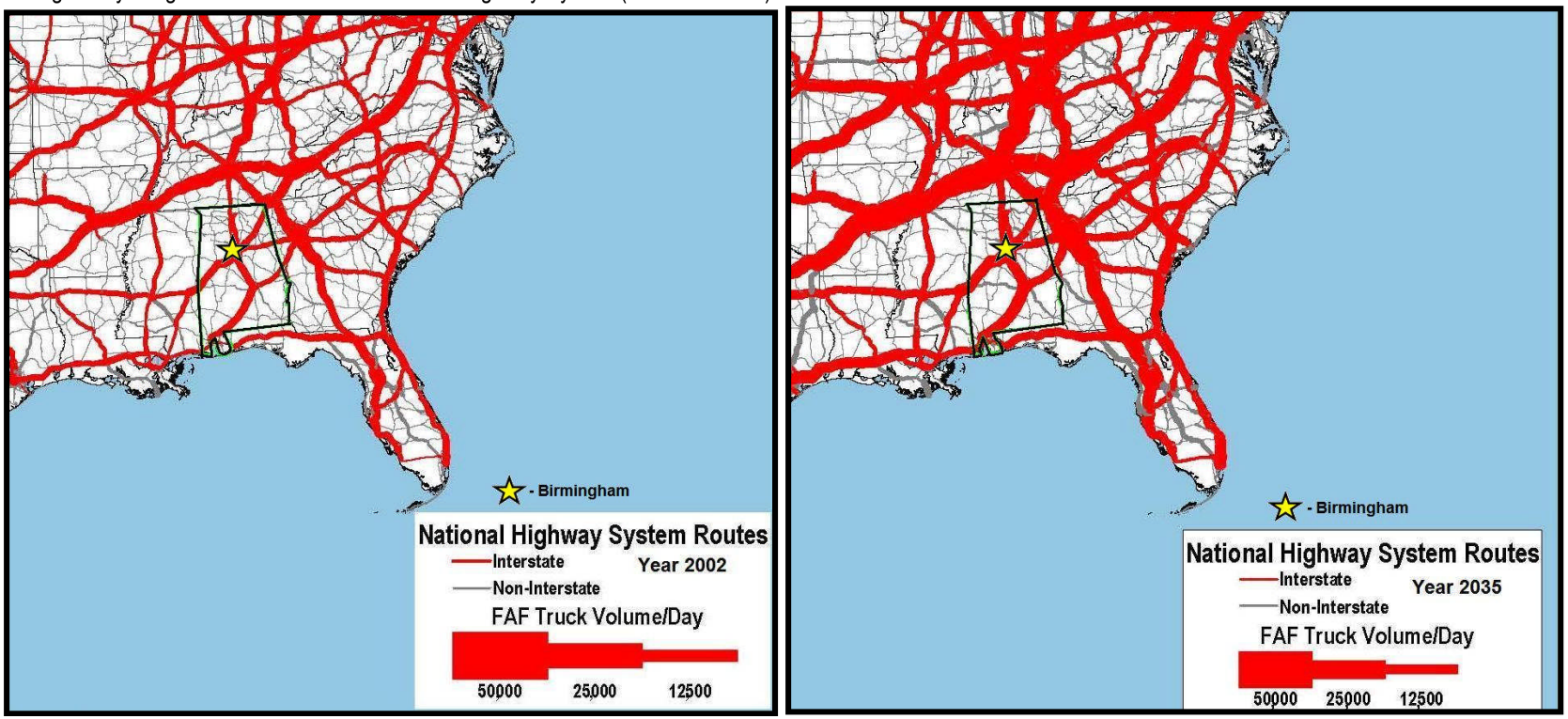
FIGURE 2-1
Rail Intermodal vs. Truck Market Share for Three Major Intermodal Corridors



Congestion on major highways connecting the Birmingham region to the rest of the country and seaports is directly related to increased costs for the industries served by these freight transporters in the region and has a detrimental effect on regional economic development and growth. As noted in Figure 2-1, the market share for intermodal transportation versus long-haul truck transportation is extremely low between the Birmingham region and the northeastern U.S. compared to markets that provide intermodal transport to Chicago from the Northeast and the West. The lower percentage of shippers using intermodal transportation in the Southeast-to-Northeast markets is a result of the lack of available intermodal capacity for railroads providing service between these areas. The Chicago area has numerous IMFs, three of which are currently operated by NSR, which allows railroads the ability to provide service between Chicago and the Northeast. A study commissioned by NSR conducted by Insight Research Corporation (2009) projected that this dependence in the Birmingham region on long-haul truck transport could reduce projected regional industrial development by 12 percent, due to higher transport costs and a lack of intermodal service. They found that another 38 percent of the region's industrial development could be somewhat negatively affected by higher transportation and site location costs without an IMF located in the Birmingham region.

Beyond the economic benefits, the projected conversion of freight from all-highway to rail intermodal service would reduce future highway truck traffic along the interstates in the region by an estimated 55.7 million loaded truck miles (VMT) per year between Birmingham and the Northeast. An additional 25.5 million loaded truck miles (VMT) would be avoided with the

FIGURE 2-2
Average Daily Long-Haul Truck Traffic on National Highway System (2002 and 2035)

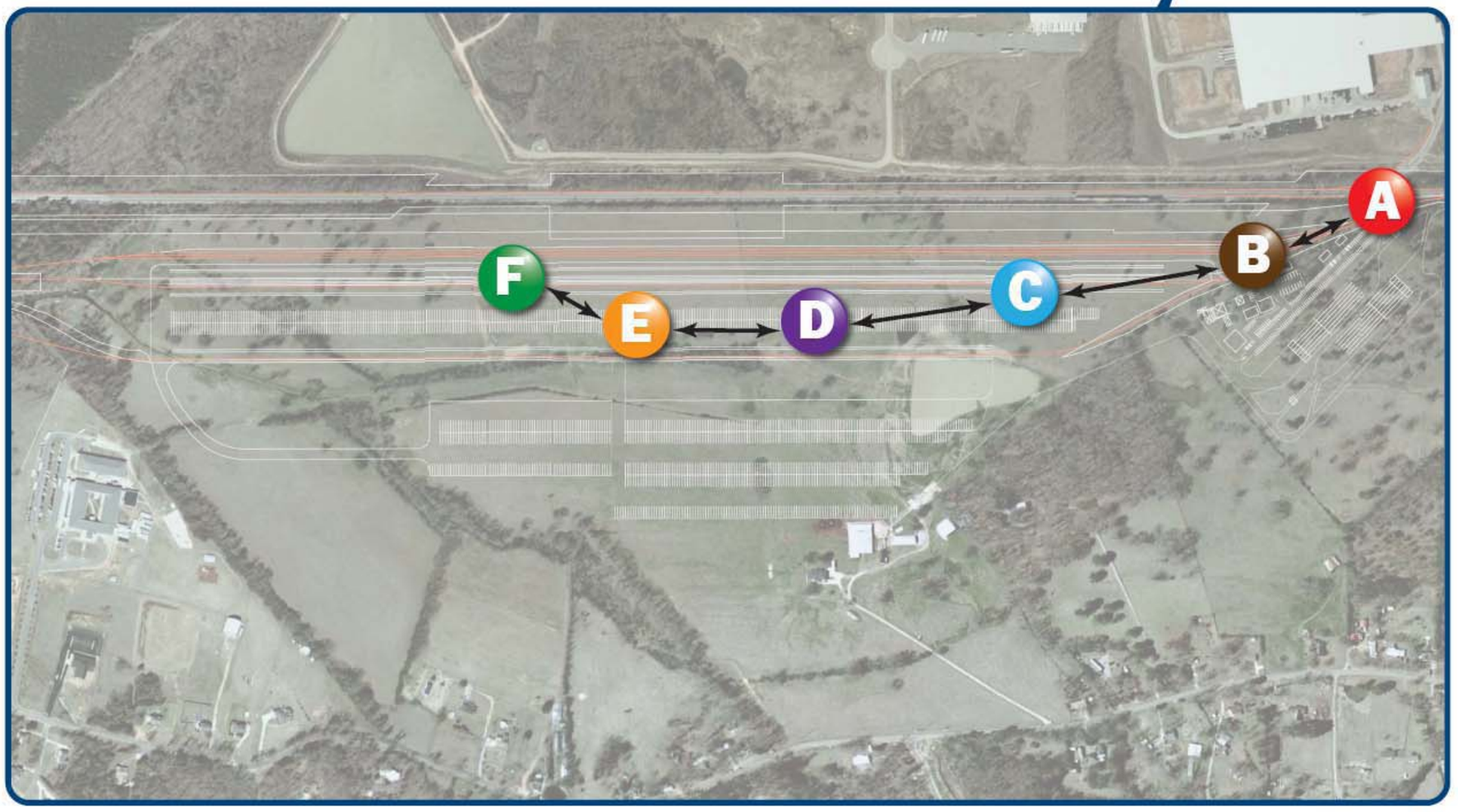


Intermodal Facility

TRUCK. Trucks arrive and depart using the terminal access road only.

GATE. Registered drivers input identification code and shipment identification to gain access to facility.

CRANE. A gantry crane moves the container from the truck chassis to a rail car.



HOSTLER. A hostler is a small single cab truck used to move trailers and containers on chassis within the terminal.

STORAGE. Typically containers are held in a storage area until ready for transport by truck or train.

TRAIN. An intermodal train can be 8,000 ft long and can carry 280 containers.

FIGURE 2-3
INTERMODAL FACILITY OVERVIEW
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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conversion of southeast seaport and other traffic to intermodal. This 81.2 million annual VMT conversion to rail intermodal transport would produce substantial safety and environmental benefits and relieve highway congestion on regional and eastern U.S. interstate highways by 2020, as projected by FHWA.

In summary, the national demand for improved freight transportation is most evident in the eastern corridor from the South to the Northeast, with particular potential for improving transportation to and from the Birmingham region.

2.4 Need for Intermodal Options to Improve Freight Transportation

As noted above, substantial growth in freight transportation has resulted in increased congestion on major national highways, especially in the southeastern U.S., to accommodate the transport to and from the southeastern ports, as well as manufacturing and warehousing facilities and similar ports and facilities in the Northeast. One means of relieving this congestion is greater expansion of these major highway corridors. However, as reported by the FHWA and others, the ability to meet this demand with continued highway expansion cannot keep up with the growth in interstate freight transport along these corridors.

An alternative approach to meet this demand is the development of IMFs to allow more freight to be carried by rail. Intermodal shipment is a method of moving freight from origin to final destination using two or more transportation modes, without handling the freight itself when changing modes. This method improves transportation efficiency by allowing for use of the most efficient transportation mode for each segment of a shipment of goods in a trailer or container (Congressional Research Service, 2003). In an intermodal transportation network, trains, trucks, ships, and aircraft are connected seamlessly to provide an efficient and flexible transportation system meeting the needs of the nation's consumers, carriers, and shippers (FHWA, 2009a).

Intermodal rail service could divert long-haul trucks from the major highways with transit times and efficiencies that can essentially compete with those of single-driver trucks. Developing IMFs that use existing rail lines as a means for freight movement can be especially effective because of lower operating costs and because many of the rail routes are already in place that parallel major highways where existing freight is transported by long-haul trucks. Well planned IMFs efficiently transfer container and trailer freight shipments between long-distance trains and local trucks. Local trucks pick up and deliver goods for customers in the IMF service region. Incorporating IMFs at strategic locations along heavily used long-haul truck shipping corridors can meet the local or regional needs of cities, such as Birmingham, where this demand for reducing congestion and improving freight transport is most apparent. Figure 2-3 provides an overview of the sequence of activities that occur within an IMF.

In summary, increasing the availability of rail intermodal transport would alleviate transportation bottlenecks, optimize shipping efficiency, provide alternatives to the use of public roadway infrastructure, decrease interstate highway congestion, and provide for a significant reduction in GHG emissions.

2.5 Lack of IMF Capacity in Birmingham

Rail intermodal service has not been offered previously from the Birmingham region to the Northeast due to inadequate intermodal terminal capacity in central Alabama and competitive dominance of long-distance trucking. As shown in Figure 2-1, truck freight transportation currently dominates freight transportation between the Birmingham and New York City regions, comprising 92 percent of market share. Consequently, there is no current alternative to dense and increasing long-haul truck traffic on the interstate highways that parallel the NSR rail lines (Figure 2-4). Substantial highway congestion in the region outside of Birmingham already occurs on these interstate highways entering and departing the Birmingham region from Chattanooga, Tennessee and Atlanta, Georgia, respectively (Figure 2-2), and a high proportion of this interstate highway **congestion** is generated by truck freight (FHWA, 2007a, b).

FIGURE 2-4
Parallel Rail-Highway Infrastructure in the Southeastern U.S.

The Birmingham region is centrally located in the Southeast. As a result, it would benefit not only from the decreased interstate traffic congestion outside Birmingham, as described above, but also from improved domestic and international freight delivery between the Birmingham region and western destinations. The Birmingham region would benefit from anticipated growth in international freight delivery to and from the southeastern ports of Savannah, Georgia; Charleston, South Carolina; and Jacksonville, Florida. These southeast ports are positioned for growth in international trade due to Panama Canal expansion in 2014 and additional Suez Canal vessel routings resulting from shifts in international product sourcing. Consequently, a proposed intermodal facility in the region would connect Birmingham area businesses to the nation's seaports, thus providing increased opportunity to compete competitively in the global marketplace.

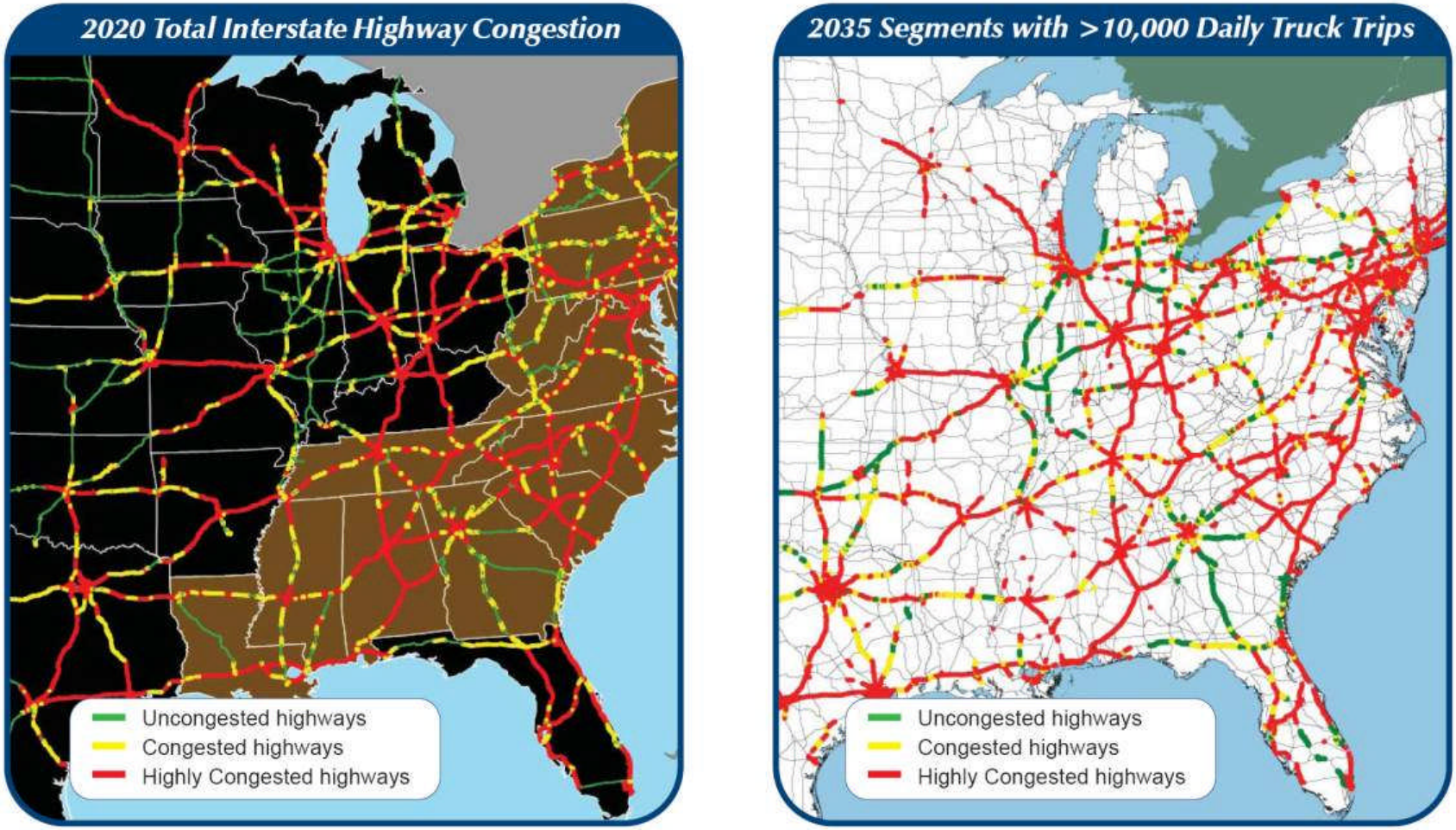
NSR performed evaluations using the IHS Global Insight Transearch Database and proprietary regional data to assess the potential for rail freight diversions from major highways. These data identified the potential for such diversions, indicating that there is an unmet need for intermodal service in the Birmingham region. Based on these evaluations, NSR estimates that by 2015 there will be a need for intermodal terminal capacity to divert 69,000 domestic truckloads from all-highway to rail intermodal between the BRIMF and the Northeast per year. Approximately 51,000 domestic container repositions, or relocations of empty containers to Birmingham for shipper use, are anticipated due to the directional nature of the freight flows to the Northeast. The southeast port traffic is estimated to add an additional 15,000 truckloads, with another 30,000 loads to and from Western destinations each year. With all of these volumes combined, NSR projects the need in the Birmingham region for an IMF that can annually perform 165,000 lifts of trailers and containers from and to railcars.

The projected conversion of freight from all-highway to rail intermodal service would reduce future highway truck traffic by an estimated 56 million loaded VMT per year on interstate highways between Birmingham and the Northeast (Figure 2-5). An additional 25 million loaded VMT would be avoided with the conversion of the southeast seaport and western traffic to rail intermodal. This annual 81 million VMT conversion to rail intermodal transport would produce substantial safety and environmental benefits and help relieve interstate highway congestion between central Alabama and other regions.

The Birmingham area is considered an optimal location to meet this need for increased rail intermodal service capacity because of its location at the convergence of two main eastern interstate highway corridors, I-20 and I-59, between Birmingham and the Northeast and the presence of local markets. These two highways currently provide a key local interface between the long-haul truck carriers providing service between the northeastern U.S. and the local market. Locating the IMF at this interface would most efficiently and effectively provide linkage to the existing flow of long-haul trucks and consequently increase the opportunity for highway to rail intermodal conversions.

In summary, the location of existing rail infrastructure in the Birmingham region that is aligned with major interstate highways currently used for long-haul freight, and the substantial demand for increased regional economic benefits that would accommodate such a facility in the region, make the Birmingham region an optimal location for this IMF.

FIGURE 2-5
Projected Interstate Highway Congestion in the Eastern U.S. (Source: FHWA, 2007a and b)



2.6 Additional Regional Needs Met by the Proposed Action

BRIMF operations would contribute to reduced long-haul truck traffic on congested interstate highways between greater Birmingham and other regions, reduced damage to highways from heavy long-haul trucks, reduced fuel consumption, reduced GHG emissions from fuel combustion, and improved air quality (FHWA, 2009b). The proposed new BRIMF would provide transportation alternatives to long-haul truck traffic to and from central Alabama.

In addition to the efficiencies in freight transport and reduction of future demands on inter-regional highways and energy resources through the development of the BRIMF, the proposed project would also improve the regional economy and provide needed jobs. Five counties within the Birmingham-Hoover, AL MSA (Bibb, Blount, Chilton, St. Clair, and Walker) are USDOT designated economically depressed areas (EDAs). The Birmingham regional economic benefits study (Insight Research Corporation, 2009) estimates that, due to facilitating meeting freight transportation demand in the region, the BRIMF could contribute a cumulative economic impact exceeding $4 billion by 2020, and create or benefit over 8,000 jobs in the same period.

2.7 Conclusion

Existing transportation capacity and intermodal rail service limitations, combined with future projections for intermodal traffic growth, strongly indicate the need for an IMF in the greater Birmingham region. Such a facility must be close to existing major highways and rail lines and have adequate size and scope to meet future capacity demands. The proposed BRIMF would meet these requirements to serve transportation needs, optimize transportation efficiency, and provide jobs.

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3.0 Proposed Action and Alternatives

This section describes the Proposed Action of building and operating the BRIMF, also referred to as the Build Alternative, and the No Build Alternative. Seven different alternative sites were considered and analyzed in selecting the Build Alternative site for the BRIMF, and six of these sites were eliminated from further investigation based on the alternatives analysis provided in this section.

First, Sections 3.1 and 3.2 describe the location requirements and minimum facility size and infrastructure requirements of the BRIMF to function efficiently and effectively to meet projected demand for rail intermodal capacity as defined in the Purpose and Need discussion (Section 2). The BRIMF must provide for certain minimum dimensions to accommodate the infrastructure and operational space necessary to provide for 165,000 annual lifts.

Next, Section 3.2 describes the analysis of seven alternative sites identified in the Birmingham region using a two-part screening process. This screening process incorporates the minimum facility requirements as well as other criteria potentially affecting successful expansion of intermodal capacity. Each alternative was first screened based on certain mandatory criteria essential to meet the Purpose and Need of the Project. Failure to meet these criteria was a basis for removing those sites from future evaluation. The remaining alternatives were moved to the second level of screening and were examined under a set of criteria that were desirable but not mandatory, to include construction, operational and environmental factors associated with each alternative.

Section 3.3 then describes the eight alternatives considered in this EA: the No Build Alternative; the Build Alternative; and six alternative sites that were considered but eliminated from detailed study based on the alternatives analysis screening process. The site descriptions include the factors that favored the selection of the Build Alternative as well as those factors that resulted in the elimination of the other alternatives from further investigation.

Finally, Section 3.4 provides a detailed description of the Proposed Action (Build Alternative), including the key components of the facility, intermodal operations and access, and onsite equipment. In addition, several sub-alternatives are described that were incorporated into the Build Alternative as design modifications specifically in response to public and agency comments for improving the design and operation of the BRIMF.

Only the Build Alternative and the No Build Alternative were carried forward for further detailed evaluation throughout this EA.

3.1 Location Requirements for BRIMF

Choosing an optimal location of the BRIMF is critical to meeting the purpose and need of the Project. In addition to good access to major highways, IMF functional requirements limit possible locations to areas suitable for development along mainline railway lines which can facilitate safe intermodal train operation and minimize impacts to at-grade road crossings. It

is important to note that an IMF must be located on the NSR mainline south of the convergence of the two NSR mainlines entering the Birmingham region from the east at Irondale to ensure the operational efficiency of intermodal trains accessing the facility from either mainline, or departing the IMF to take either rail route. NSR's rail lines are physically separate from and operate independently of other rail lines serving Birmingham. Movement on other rail lines is controlled by the owning railroad. Also, NSR would have to obtain approvals from the other railroad and from the Surface Transportation Board to operate on a track owned by another railroad. Locating the BRIMF on another company's rail line is impractical and would greatly increase transit time and operating costs, which would degrade the service offerings and make it economically very difficult for intermodal service to compete with long-haul trucks.

The IMF also must satisfy the need for intermodal terminal capacity in the greater Birmingham region with respect to NSR's potential customer base in central Alabama. Industrial and commercial economic activity is spread throughout the Birmingham region. Figure 3-1 shows existing warehouses and industrial sites in the Birmingham region. Locating the BRIMF near the areas of projected warehouse and industrial growth in the Birmingham region is essential for developing an efficient rail intermodal freight service alternative to all-highway freight transportation.

To meet the need for intermodal options and capacity in the Birmingham region, the IMF also must have excellent highway access to the customer base in central Alabama, promoting truck-competitive intermodal service and optimizing transportation efficiency. Interstates 59, 20, 459, and 65 are the primary highway routes providing access to the customer base, and thus, proximity to this highway infrastructure is essential to achieving the Project purpose.

3.2 Minimum BRIMF Functional Requirements

To economically and efficiently handle the projected demand for rail intermodal capacity of 165,000 annual lifts, the BRIMF must provide the following mandatory features, including the minimum dimensions specified where applicable:

- Proximity to major highway system
- Tracks connecting the facility to the NSR mainline, preferably without grade crossings
- Facility infrastructure dimensions of 6,600 feet (ft) by 1,500 ft to include:
  - Three intermodal pad tracks (for unloading and loading) averaging 4,000 ft long
  - Support yard with storage tracks at least as long as the pad tracks
  - One engine track 1,000 ft long
  - Paved areas with at least 1,468 spaces for parking trailers and storing containers
- Running track that includes at least 5,000 ft of lead track (longest yard track + 500 ft) on each end of the facility
- Space for an AGS with the capability of handling 165,000 lifts annually
- Administration, maintenance, and operations buildings
- Equipment maintenance pad and related facilities

Source: Economic Development Partnership of Alabama (EDPA)

FIGURE 3-1
EXISTING WAREHOUSES AND AVAILABLE INDUSTRIAL SITES
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

These minimum facility size and configuration requirements for the BRIMF are driven by the demand for 165,000 annual lifts and various other critical factors related to optimizing the efficiency of intermodal operations, including: the length of intermodal trains; the efficient working length of train segments within the facility; the projected train schedules; container and trailer dwell times at the facility; as well as seasonal and daily peak factors.

Based on NSR intermodal trains currently passing through the project area, the optimum length of intermodal trains serving the BRIMF would be 8,000 ft. These trains typically would be split into a minimum number of tracks for efficiently performing lifts and minimizing train dwell time within the facility. Thus, two pad tracks approximately 4,000 ft long are required to efficiently handle an 8,000-ft-long intermodal train. Based on projected intermodal train schedules, the BRIMF must also have the capacity to work on two trains simultaneously, and this determines the need for at least three pad tracks averaging 4,000 ft long.

Additional working space for switching, maneuvering, and storing 4,000-ft blocks of rail cars from two or more intermodal trains would be provided on the running tracks and storage tracks which, for efficient operations, must each be long enough to accommodate at least one 4,000-ft block of rail cars and an engine. A minimum length of 5,000 ft of lead track is needed on each end of the facility to accommodate the splitting, switching, and recombination of intermodal train blocks within the facility to avoid interference with or slowing mainline operations.

The total number of spaces needed for parking trailers and storing containers was determined by an NSR planning model. This model uses factors which include the number of containers/trailers moving through the facility, in-gate and out-gate trailer dwell times, daily, weekend, and seasonal variation in the number of lifts, and other related operational parameters. For optimizing the efficiency of facility operations, locating the trailer/ container parking areas next to or near the pad tracks would reduce haulage within the terminal.

3.3 Alternatives Analysis

3.3.1 Alternative Site Locations

Seven alternative sites (Figure 3-2) were considered and screened to select the Build Alternative for the BRIMF. Initially, six alternative sites were identified in Jefferson and Tuscaloosa Counties based on the following factors to meet BRIMF location and functional requirements which are considered necessary by NSR to ensure successful expansion of intermodal capacity to improve freight transportation in the Birmingham region:

- Proximity to existing rail corridors and U.S. or interstate highways, to minimize transit times for the local trucking component of intermodal service and minimize impacts to local traffic and roadways.
- Location south of the convergence of the two NSR mainlines entering the Birmingham region from the east, ensuring operational efficiency of intermodal trains accessing the facility from both the Chattanooga and Atlanta mainlines.

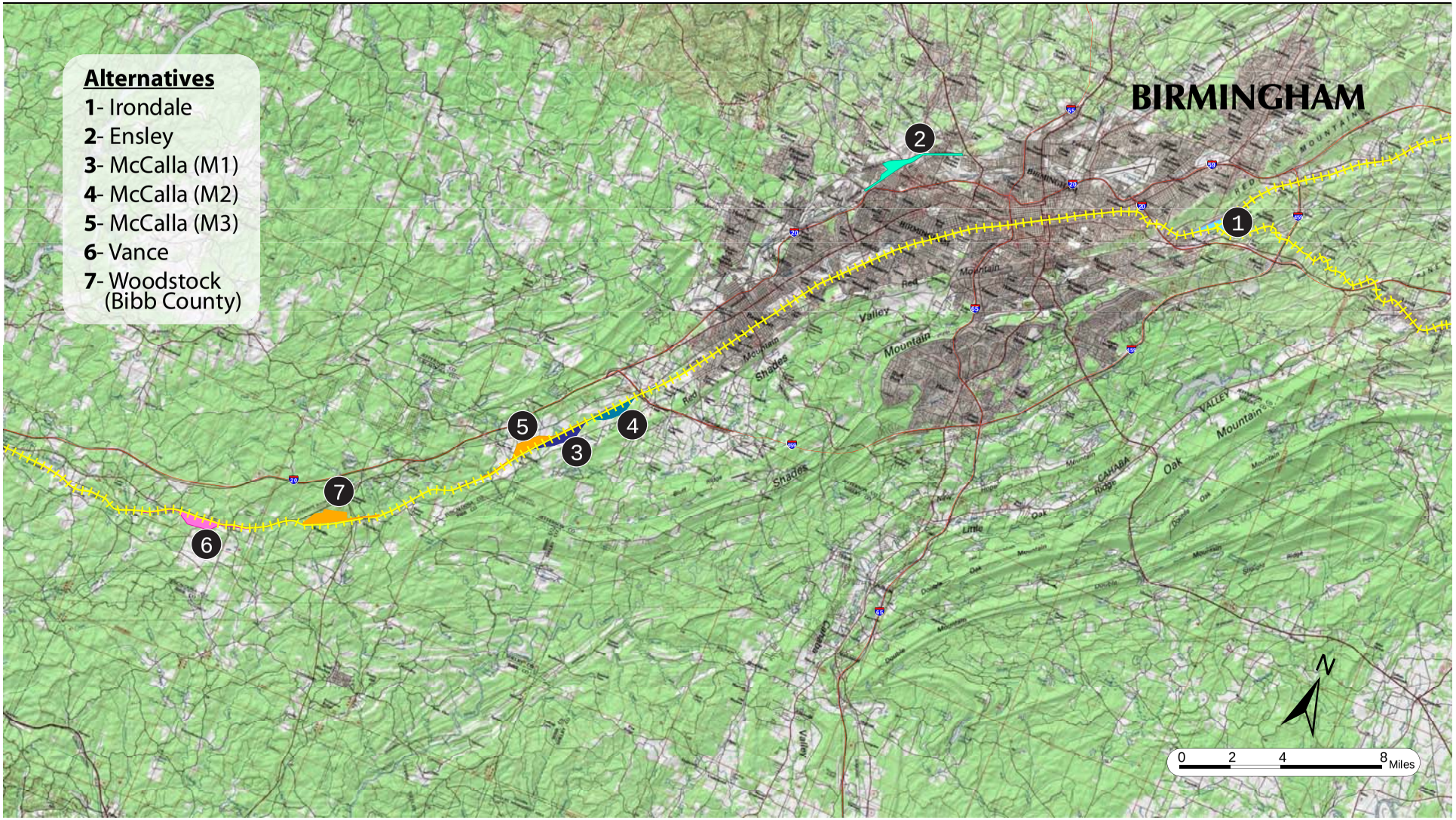


FIGURE 3-2
LOCATION OF ALTERNATIVE SITES CONSIDERED
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

LEGEND

NS Rail Mainline

CH2MHILL

NS NORFOLK SOUTHERN

- Proximity to industrial and commercial activities constituting the customer base, to minimize transit times for the local trucking component of intermodal service and associated fuel usage, emissions, and highway congestion.

- Practical siting considerations such as existing land use, land ownership patterns, and rail/highway grade crossings, and other related factors affecting the efficiency of intermodal operations.

Each of these sites was evaluated for these and other attributes in the two-part screening process described below. NSR presented maps and information on the six alternative sites at the public involvement meeting held in Bessemer, Alabama on August 18, 2009. Based on public comments and input on these alternatives received at the meeting, a seventh alternative site in Bibb County (Woodstock) was added for consideration and analysis. The seven alternative sites considered for the proposed BRIMF (Figure 3-2) are listed below and are described in the sections that follow Section 3.3:

- Alternative 1 – Irondale
- Alternative 2 – Ensley
- Alternative 3 – McCalla (M1)
- Alternative 4 – McCalla (M2)
- Alternative 5 – McCalla (M3)
- Alternative 6 – Vance
- Alternative 7 – Woodstock

3.3.2 Screening Criteria

All seven alternative sites were analyzed through a two-step screening process to select a preferred or Build Alternative for the proposed BRIMF. The analytical approach used was developed in accordance with NEPA and the President's Council on Environmental Quality (CEQ) regulations and guidance, as well as guidance from FHWA and other Federal agencies. The screening steps were as follows:

- The first level of screening applied mandatory criteria considered essential to the successful expansion of intermodal capacity in the Birmingham region and resulted in the elimination from further consideration of those alternatives that did not meet the criteria and would not meet the Purpose and Need for the Project. Because site location along the NSR intermodal route to meet location requirements and adequate size to meet minimum facility requirements are critical to meeting the Purpose and Need, these factors constituted mandatory criteria for the first level of screening.

- The second level of screening applied criteria which were also significant in the analysis, including construction, operational, and environmental attributes. Although individually these more discretionary criteria may show only incremental differences between sites, when considered together they provide a robust comparison of the viability of alternative sites for optimizing the Purpose and Need for the Project while minimizing the potential for adverse environmental, construction, or operational impacts.

The criteria applied in each level of screening are described below, along with a summary of the outcome of each screening. The attributes of each alternative site location are described in Section 3.3.

3.3.2.1 *First Level Mandatory Screening Criteria for Site Size and Location*

To identify those alternative sites with the potential to satisfy the Purpose and Need for the BRIMF, the following two mandatory criteria defined what was an acceptable site and location and were used for the first level of screening:

- **Location along NSR mainline**: The project must meet the location requirement to be along the NSR mainline intermodal route to ensure safe and efficient train operations, and the reliability of intermodal service to provide a cost-competitive alternative to all-highway (single-driver truck) freight transportation. Alternative sites located substantially distant from the NSR intermodal route or on a rail line operated by another company would increase transit time and operating costs, and risk negating the benefits of investments made in rail line improvements elsewhere along the NSR route and in the design of the proposed BRIMF itself (e.g., AGS) for ensuring time-competitive intermodal service.
- **Sufficient site size and configuration to meet the minimum facility requirements**: The Project must be located on a site with sufficient land to develop a facility that would meet intermodal demand and support the infrastructure, operations, and storage requirements as described in Section 3.1.

The first level screening analysis of the seven identified sites applied the mandatory screening criteria, based on the attributes of each site location described in Section 3.3, and included other reasonable considerations for efficient rail intermodal operations. This screening analysis eliminated two alternative sites, Irondale and Ensley, from further consideration because they fail one or more of the mandatory criteria and would not meet the Purpose and Need for the Project. Five sites, including the three McCalla sites, Vance, and Woodstock, had the potential to satisfy the mandatory criteria and thus advanced to the second level of screening. Figure 3-3 summarizes the outcome of the first level screening.

3.3.2.2 *Second Level Screening Criteria for Construction, Operation, and Environmental Considerations*

All of these sites are located along the I-20/I-59 corridor south of the I-459 interchange on the south side of metropolitan Birmingham (Figure 3-4). The existing NSR mainline parallels the interstate highway through this corridor. The three McCalla sites are in Jefferson County (a segment of lead track would extend into Tuscaloosa County at two of these sites), the Woodstock site is in Bibb County, and the Vance site is in Tuscaloosa County.

The five remaining alternative sites were evaluated against six primary criteria, divided into the two basic categories of (1) construction and operational factors and (2) environmental and social factors. Table 3-1 summarizes these criteria and the rationale for comparing the alternatives as described below. Additional criteria considered included other practical siting considerations, such as the availability of land, and other reasonable considerations for efficient rail intermodal operations, such as site constraints on track configurations or horizontal clearances at existing overpasses.

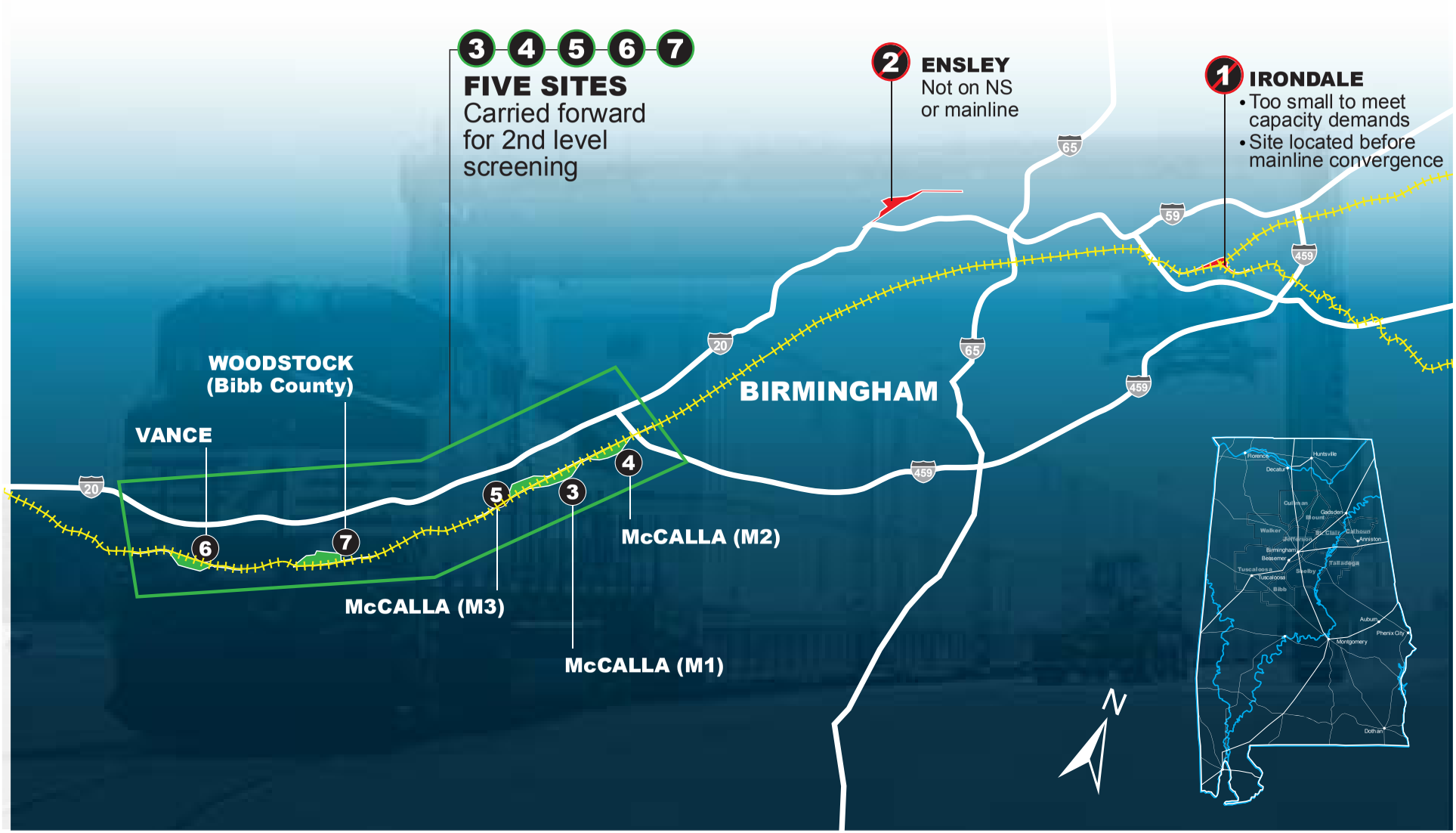
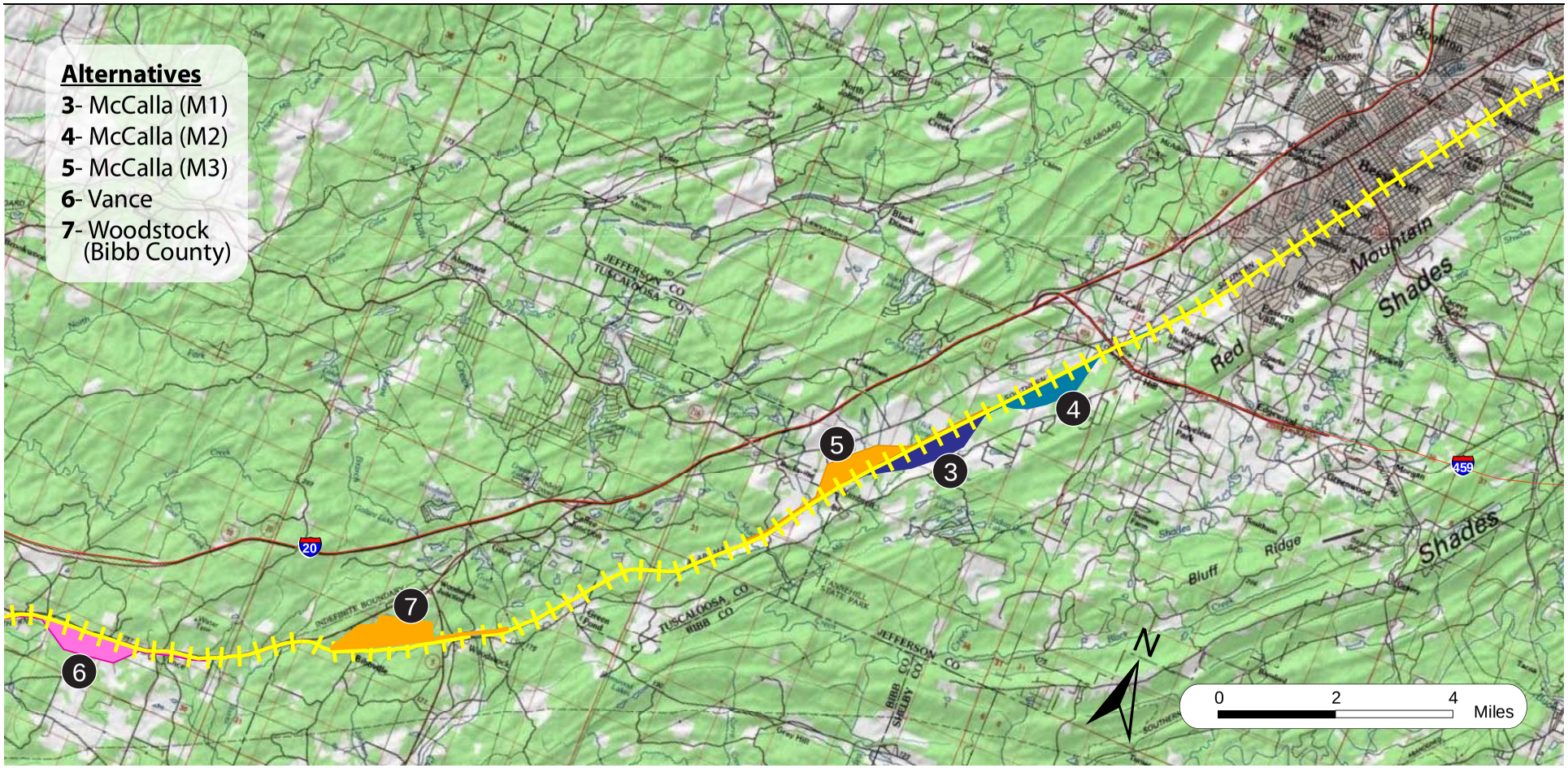


FIGURE 3-3
FIRST LEVEL MANDATORY SCREENING FOR SITE SIZE AND LOCATION
BIRMINGHAM REGIONAL INTERMODAL FACILITY



LEGEND

NS Rail Mainline

FIGURE 3-4
LOCATIONS OF ALTERNATIVES 3, 4, 5, 6, AND 7
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

CH2MHILL NS NORFOLK SOUTHERN

TABLE 3-1
Primary Evaluation Criteria and Rationale Used in Second Level Screening

Evaluation Criteria	Rationale
Construction and Operational Factors:	
1. Topography and Constructability	Alternative should minimize difficulty, schedule, and costs associated with site grading and construction
2. Distance to Birmingham Customer Base	Alternative should be in a location that best serves industrial and commercial customers in the Birmingham region
3. Distance to Highway Infrastructure	Alternative should be close to a major highway to minimize transit times for local truck deliveries and pick-ups
Environmental and Social Factors:	
4. Potential grade crossing impacts	Alternative should be a sufficient distance from grade crossings to avoid local traffic impacts
5. Potential community impacts	Alternative should minimize impacts on the surrounding community
6. Potential wetland and stream impacts	Alternative should minimize impacts to wetlands and streams

Based on map and aerial photo review of readily available information using Geographic Information System (GIS) tools and technology, the five remaining alternative sites were examined and compared against the six primary evaluation criteria. The following metrics or conditions characterizing each primary criterion were qualitatively assessed and compared among alternative sites:

Construction and Operational Factors:

- **Topography and constructability.** Grading, drainage, and infrastructure relocation all can be major constraints to constructability, so the analysis examined such site attributes as: the elevation differential between the mainline and the site as an indicator of grading difficulty; the slope and configuration of streams and floodplains and how they might constrain site development or drainage facility design; and potential conflicts with existing infrastructure, such as transmission lines, which could require that they be relocated prior to construction.

- **Distance to Birmingham customer base.** Minimizing the interstate highway distance from the BRIMF along I-20/I-59 to the I-459 interchange (Exit 106) on the south side of metropolitan Birmingham is essential to optimizing the local trucking component of intermodal service, referred to as "local drayage." The BRIMF must be located near the Birmingham customer base in order to provide fast and reliable intermodal service that would be cost-competitive with all-highway single-driver freight transportation and that would optimize transportation efficiency. Industrial and commercial economic activity in the Birmingham region generally is clustered along the interstate highways and rail lines, particularly where they intersect to provide a single location that can conveniently serve multiple geographic markets. Figure 3-1 illustrates this trend in the Birmingham region by showing existing warehouse developments and potential industrial sites available since 2002 in Jefferson, Shelby, Bibb, and Tuscaloosa Counties. Consistent with

historical land use trends, most of these facilities are sited near the interchange of I-20/I-59 and I-65 on the north side of Birmingham, as well as the interchange of I-20/I-59 and I-459 on the south side of Birmingham. The I-459 interchange on the south side of Birmingham is the primary entry point to the Birmingham interstate network serving the customer base. Satisfying this criterion has associated environmental and social benefits such as reduced local congestion, reduced fuel usage, and reduced emissions.

- **Distance to highway infrastructure.** Proximity of the BRIMF to the highway infrastructure is essential for minimizing transit times for local truck deliveries and pick-ups and for minimizing impacts to local traffic and roadways. Additional time decreases the efficiency of intermodal freight transportation. Thus, the distance between the BRIMF entrance road and the nearest I-20/I-59 access, as well as the potential for slow route speeds related to local traffic flow, road capacity, or other factors, may be important for differentiating alternative sites and their ability to optimize the local trucking component of intermodal service. Satisfying this criterion also has associated environmental and social benefits such as reduced local congestion, reduced fuel usage, and reduced emissions.

Environmental and Social Factors:

- **Potential grade crossing impacts**. The minimum facility requirements for the BRIMF include lead tracks 5,000 ft long and preferably without grade crossings. Intermodal trains can block local traffic at grade crossings if there is insufficient working distance for switching operations between the BRIMF and the grade crossing. Based on an optimal intermodal train length of 8,000 ft and the need to split the train into no more than two sections averaging 4,000-ft for loading and unloading at the IMF, a clear track length of at least 5,000 ft (working room for train section and engine) is needed between the track switch into the facility and the nearest grade crossing to avoid extended traffic disruptions during switching operations. Additional important considerations include horizontal clearances at existing overpasses and whether modifications to the overpass or the mainline track configuration would be necessary to accommodate the additional running track for the IMF.

- **Potential community impacts.** Residential communities and other potentially sensitive receptors such as schools, churches, and parks around an IMF may be affected by changes in noise, traffic, visual aesthetics, or other conditions related to construction and operation. The analysis of potential community impacts examined residential land use and the number of non-residential sensitive receptors within 0.5 mile of the site. Non-residential sensitive receptors are institutions identified in readily available GIS databases, specifically parks, churches, schools, and hospitals, which have the potential to be affected by the Project.

- **Potential wetland and stream impacts.** Wetlands and streams provide important habitat and water quality protective functions and are protected by legal provisions; impacts to these systems should be avoided or minimized. As an indicator of the relative sensitivity of sites for affecting wetlands and streams, wetland and stream attributes of the various sites were compared using forested wetland area, as estimated by aerial photo

interpretation, and perennial stream length, as measured from U.S. Geological Survey (USGS) topographic GIS coverage.

The second level screening applied the primary screening criteria, based on the attributes of each alternative site described in Section 3.3, and included other practical siting considerations and reasonable considerations for efficient rail intermodal operations. This screening analysis identified the McCalla M1 site (Alternative 3) as the Build Alternative because it exhibits the highest favorability for both (1) optimizing the Purpose and Need for the Project, based on the analysis of construction and operational site attributes, and (2) minimizing the potential for adverse impacts, as indicated by the environmental and social factors examined. None of the other four sites would optimize the efficiency of intermodal operations, further minimize the potential for environmental impacts, or offer other substantial advantages over Alternative 3. Therefore, McCalla M2 (Alternative 4), McCalla M3 (Alternative 5), Vance (Alternative 6), and Woodstock (Alternative 7) were eliminated from further detailed investigation, as described further below. Figure 3-5 summarizes the outcome of the second level screening.

3.4 Description of Alternatives Considered

This section describes the eight alternatives considered in this EA, including the No Build Alternative and the Build Alternative. A detailed analysis of all potential environmental, social, and economic impacts of the Build and No Build Alternatives is presented in Section 4. The alternatives considered also include the six alternative sites that were evaluated as potential build alternatives but were eliminated from further investigation based on the screening evaluations presented in Section 3.2 and summarized in Figures 3-3 and 3-5.

The eight alternatives described below are:

- No Build Alternative
- Build Alternative (Alternative 3 – McCalla M1)
- Alternatives Considered but Eliminated from Further Consideration
  - Alternative 1 – Irondale
  - Alternative 2 – Ensley
  - Alternative 4 – McCalla M2
  - Alternative 5 – McCalla M3
  - Alternative 6 – Vance
  - Alternative 7 – Woodstock

3.4.1 No Build Alternative

The No Build Alternative represents future conditions in the project area without increasing intermodal capacity in the Birmingham region. The No Build Alternative serves as the baseline against which the Build Alternative is compared. The No Build Alternative assumes that NSR would continue to use the existing Norris Yard IMF in Irondale without modification or expansion. Growth in the freight transportation market would be met by

FIGURE 3-5
SUMMARY OF SECOND LEVEL SCREENING FOR CONSTRUCTION, OPERATIONAL, AND ENVIRONMENTAL CONSIDERATIONS
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

increased all-highway truck traffic rather than by increased rail-truck intermodal service. Without adequate rail-truck intermodal service as an alternative to single-driver-truck freight transportation, and with substantial and growing interstate highway congestion (Figure 2-5), some industries would be less likely to locate in the area, thus hindering regional economic growth and development.

Intermodal operations can increase transportation efficiency, reduce emissions, and improve energy-efficiency, and with the No Build Alternative, these benefits would not be realized. Specifically, the No Build Alternative would not result in the diversion of long-haul trucks from eastern and southeastern interstate highway corridors to rail or any of the associated benefits of reduced fuel consumption, reduced highway congestion, reduced GHG emissions primarily carbon dioxide [CO_2]), or the positive impacts on air quality by effecting a net reduction in national and regional emissions.

The No Build Alternative would not cause direct impacts to the human or natural environment in the project area, but it would fail to meet present and future demand for much-needed additional intermodal capacity within the Birmingham region. As identified in the Purpose and Need, current capacity limitations for freight transportation create a transportation bottleneck and result in unmet demand for rail intermodal service within the Birmingham region. Using the existing Norris Yard IMF and/or other existing IMFs in other regions would not adequately support the Birmingham market. Therefore, the No Build Alternative does not meet the Purpose and Need for the proposed BRIMF.

3.4.2 Build Alternative (Alternative 3 – McCalla M1)

Alternative 3 would consist of constructing and operating the BRIMF in the area of McCalla in southwestern Jefferson County and eastern Tuscaloosa County, Alabama (Figure 3-2). The McCalla M1 site is located about 20 miles southwest of downtown Birmingham and 8 miles southwest of downtown Bessemer. It is in proximity to interstate highway infrastructure, providing convenient access to the Birmingham region customer base. The site entrance would be located along McAshan Drive approximately 1.4 miles southeast of I-20/I-59 (Exit 104) and 3 miles from the interchange between I-20/I-59 and I-459 (Exit 106) on the south side of Birmingham. Jefferson Metropolitan Park is located on the opposite side of the NSR mainline from this site. Truck traffic would enter and exit the BRIMF using McAshan Drive between I-20/I-59 and the facility entrance on the south side of the road.

The BRIMF at the McCalla M1 site would encompass approximately 261 acres of existing agricultural land abutting the southeast side of the existing NSR mainline, which parallels I-20/I-59 to the north and Eastern Valley Road to the south. The majority of the site would be located in Jefferson County, with a short segment of lead track in Tuscaloosa County. Small tributaries to Mill Creek in the Shades Creek watershed (Cahaba River basin) intersect the southwestern portion of the site. An existing 115-kilovolt (kV) Alabama Power Company power line crosses the main facility footprint. An existing grade crossing is located along the southwestern lead track at Kimbrell Cutoff Road, over 5,300 ft from the track exit to the approach pad footprint. Potentially sensitive non-residential receptors within 0.5 mile of the site include McAdory Elementary School, Tannehill Child Development Center, Tannehill State Park, and Bellview Church.

Based on the comparison of sites considered in the alternatives analysis, Alternative 3 was determined to provide the most favorable features for optimizing the Purpose and Need for

the facility while minimizing the potential for adverse social and environmental impacts. Alternative 3 was identified as the Build Alternative for the following reasons:

- The facility would be located along the NSR mainline that handles intermodal traffic.
- The site size and configuration are sufficient to accommodate the minimum facility requirements and provide for effective intermodal operations.
- The site features gently sloping topography favorable for construction and drainage facility design.
- The facility would be close to the Birmingham customer base, only 3 miles from the facility entrance to the I-20/I-59 and I-459 interchange.
- The facility would be close to interstate highway access, 1.4 miles away, and McAshan Drive has the available capacity to accommodate the facility truck traffic (Skipper Consulting, Inc., 2009).
- The linear configuration of the site would provide for a sufficiently long lead track on the southwest end of the facility to avoid extended disruption of local traffic at the existing Kimbrell Cutoff Road grade crossing during normal facility operations.

This site affects the smallest area of forested wetlands. Moreover, perennial streams and floodplains are limited mainly to the southwestern end of the site, which facilitates the avoidance and minimization of wetland and stream impacts in the site design. Details of the Proposed Action for constructing and operating the Build Alternative for the BRIMF are described in Section 3.4.

3.4.3 Alternatives Considered but Eliminated from Further Consideration

3.4.3.1 *Alternative 1 – Irondale*

Alternative 1 would consist of constructing and operating the BRIMF at a site adjacent to NSR's existing Norris Yard Terminal in Irondale, Jefferson County, Alabama (Figure 3-2). The Norris Yard Terminal is a major facility for the classification or sorting of non-intermodal rail cars routed through the Southeast. NSR currently operates a small (8-acre) IMF within the Norris Yard Terminal. This small IMF has been in operation since May 1999 and has very limited capacity. It consists of a single 1,200-ft loading track where containers are unloaded from or loaded onto rail cars, container storage, parking areas, and a small administrative building. In 2008, the facility performed 12,383 intermodal lifts. Because the non-intermodal rail infrastructure surrounding the Norris Yard IMF makes improvements, expansions, and substantial additional intermodal service offerings there impractical, NSR identified a proposed site immediately adjacent to the existing Norris Yard Terminal for consideration for expanded intermodal capacity.

The proposed Irondale site is located immediately southeast of the Norris Yard Terminal and just northeast of the convergence of the two NSR mainlines (on the Atlanta mainline) on the northeast side of Birmingham, approximately 6.2 miles east-northeast of downtown Birmingham (Figure 3-2). An IMF at this site could serve intermodal trains on both mainlines but, as currently configured, the Chattanooga mainline does not have direct access to the Atlanta mainline at this location. Intermodal trains operating from the Chattanooga mainline would need to cross over to the Atlanta mainline just southwest of the site at Irondale and reverse direction to either enter or exit the facility. The Irondale site

is in proximity to interstate highway infrastructure providing access to the customer base. The site is situated about 3 miles from both the I-20/I-59 interchange and the I-20/I-459 interchange. Truck traffic would enter and exit the BRIMF via U.S. Highway 78 (Crestwood Boulevard) and John Rogers Drive between I-20 Exits 133 and 135 in Irondale.

The BRIMF at the Irondale site would be limited to approximately 47 acres between the Norris Yard Terminal and the existing NSR Atlanta mainline. Existing land cover includes upland forests, shrub land, small open areas, existing train tracks, and forested tributary floodplains along the eastern portion of the site. Streams draining the site flow east into the upper Shades Creek system of the Cahaba River basin. Development of this site would require the relocation of various segments of existing track, NSR fiber lines, and a sewer line, the removal of an existing pump house, the expansion of an existing ballast deck bridge, and the construction of a 0.5-mile access road with an approximately 600-ft span of bridge over existing track. Although no existing grade crossings are located within the site, one grade crossing is located about 1,600 ft beyond the southwestern extent of the lead track at 20th Street (Irondale). This grade crossing is only 300 ft east of the cross-over track between the mainlines; and it would be blocked frequently by intermodal trains switching between the mainlines to enter or exit the facility. Potentially sensitive non-residential receptors[3] within 0.5 mile of the site include six churches, one school (Irondale Junior High School), and one park.

- The Irondale site fails to meet the mandatory screening criterion for sufficient site size and configuration to accommodate the BRIMF minimum facility requirements and, therefore, was eliminated from further investigation for not meeting the Purpose and Need (Figure 3-3). With dimensions of 4,200 ft long and 700 ft wide at its widest point, the Irondale site is much smaller than the minimum required dimensions (6,600 ft long by 1,500 ft wide) and would not be capable of meeting the demand for intermodal service in the Birmingham region.
- As an additional consideration, (although the site criterion alone eliminates the site) because the Irondale site is located east of the convergence along the Atlanta mainline, the switching and reversal in direction needed to maneuver intermodal trains into or out of the facility would not only add substantial transit time but would result in extended local traffic disruptions at the existing 20th Street grade crossing and an overall slow-down of the mainline traffic through this area.

3.4.3.2 *Alternative 2 – Ensley*

Alternative 2 would consist of constructing and operating the BRIMF at the former site of the U.S. Steel Ensley Works, located just north of I-20/I-59 and approximately 6 miles west of downtown Birmingham in Jefferson County (Figure 3-2). This site was identified several years ago as a potential intermodal site and, therefore, was considered as an alternative site for this project. The Ensley site consists of approximately 227 acres that include the industrial brownfield site of a former steel mill and an existing rail terminal served by another railroad company.

The Ensley site would provide for access to the nearby interstate using busy urban streets, but it is located 8 track miles from the NSR mainline on a circuitous segment of rail line that

[3] Non-residential sensitive receptors are institutions identified in readily available GIS databases, specifically parks, churches, schools, and hospitals, which have the potential to be affected by the project.

has a speed limit of 20 miles per hour (mph), numerous grade crossings, and is not accessed by NSR intermodal trains. This route between the NSR intermodal route and Ensley through the urban center of Birmingham (16 miles round-trip), with its low speed limits, route crossings of other railroads, lack of signal, and numerous grade crossings on these tracks, plus the circuitous routing would result in extremely time-consuming train access and uncompetitive transit times that would be too slow for efficient intermodal operations. NSR merchandise trains periodically use these tracks between the NSR mainline and Ensley and require about 4 hours transit time in each direction.

Truck traffic would enter and exit the facility via Alabama Highway 269 (20th Street in Ensley) and Pleasant Hill Road, a route of about 2.2 miles from I-20/I-59 (Exits 120 and 121). Two existing grade crossings are located along the southern lead track, and the nearby Burlington Northern Santa Fe Railway (BNSF) mainline crosses the rail line at grade only 200 ft beyond the northern lead track. Many potentially sensitive non-residential receptors are present within 0.5 mile of this highly urban site, including numerous churches, schools, and parks.

The Ensley alternative site failed to meet the mandatory criterion for location along the NSR mainline intermodal route and, therefore, was eliminated from further consideration for not meeting the Purpose and Need for the Project (Figure 3-3). The slow transit times would increase operating costs, decrease transportation efficiency, and substantially compromise the Purpose and Need for ensuring reliable, time-competitive intermodal service.

Although the mainline location criterion alone eliminates the site, additional critical limiting factors for the Ensley site regarding transportation optimization and efficiency include the following:

- Combining the NSR route to Ensley with that of another railroad, although potentially allowing for a more progressive move from west to east or vice versa without making the reverse move required of the NSR route would require NSR to obtain approvals from the owning railroad and possibly approval from the Surface Transportation Board to operate on a track owned by another railroad. Locating the BRIMF in an area requiring the use of a rail line controlled by another owner railroad would further contribute to increases in transit time and operating costs.
- Switching operations of the BRIMF could periodically interfere with and slow train traffic on the nearby BNSF Railway mainline, which crosses the Ensley rail line at grade only 200 ft beyond the northern lead track.
- The insufficient distance between the facility and the two existing grade crossings on the southern end of the site would disrupt the flow of local traffic.

3.4.3.3 *Alternative 4 – McCalla M2*

Alternative 4 would consist of constructing and operating the BRIMF in the area of McCalla in southwestern Jefferson County, Alabama, at a location just northeast of Alternative 3 (north of McAshan Drive) (Figure 3-2). The McCalla M2 site is located about 19 miles southwest of downtown Birmingham and 7 miles southwest of downtown Bessemer. It is in proximity to interstate highway infrastructure, providing convenient access to the Birmingham region customer base. Similar to Alternative 3, the site entrance would be located approximately 1.4 miles southeast of I-20/I-59 (Exit 104) and 3 miles from the

interchange between I-20/I-59 and I-459 on the south side of Birmingham. Truck traffic would enter and exit the BRIMF using McAshan Drive between I-20/I-59 and the facility entrance on the north side of the road.

The BRIMF at the McCalla M2 site would encompass approximately 266 acres abutting the southeast side of the existing NSR mainline, which parallels I-20/I-59 to the north and Eastern Valley Road to the south. Existing land cover includes transitional (agricultural to residential) land, agricultural, forested, and shrub uplands, and a forested stream corridor along the southeast side of the existing NSR mainline. The northeastern portion of the site encompasses the forested floodplain of a small tributary to Fivemile Creek in the Valley Creek watershed (Black Warrior River basin). An existing grade crossing is located at the northeast end of the site at McAdory School Road within about 4,300 ft from the main facility footprint. Potentially sensitive non-residential receptors within 0.5 mile of the site include McAdory High School.

Alternative 4 was eliminated from further investigation mainly because there would be insufficient distance between the switch to the main facility and the existing grade crossing at McAdory School Road to avoid negative impacts to local traffic flow and there would be greater potential for impacts to forested wetlands (Figure 3-5). This site offers no substantial advantages over Alternative 3, the Build Alternative.

The evaluation criteria resulting in the elimination of the McCalla M2 site from further consideration are described below:

- **Potential grade crossing impacts.** The McCalla M2 site would not provide adequate acreage for a sufficiently long lead track configuration on the northeast end of the facility, which would result in the need for slower train approach speeds, increased time for intermodal trains to enter the facility, and extended traffic disruptions at McAdory School Road during normal BRIMF operations. Moreover, an overall slow-down of the NSR mainline through this area could occur. McAdory School Road provides direct access between Old Tuscaloosa Highway to the north and Eastern Valley Road to the south, including the nearby McAdory High School and the I-459 interchange at Eastern Valley Road. Traffic impacts could be avoided by constructing an overpass at McAdory School Road, but this would very likely require displacing several existing residences and businesses and would involve a substantial increase in the overall construction budget and an extension of the construction schedule (Figure 3-5).
- **Potential wetland and stream impacts.** The McCalla M2 site exhibits a higher potential for wetland impacts than any of the other alternative sites considered. It contains 28.8 acres of wetland area, including 26.4 acres of forested wetlands. The McCalla M2 site also contains 3,782 ft of perennial streams, nearly 1,000 ft more than the Build Alternative. The floodplain at the northeast end of the McCalla M2 site would present substantial challenges for drainage and construction of leads, passing tracks, and trailer parking areas in that vicinity.

Another factor critically limiting the favorability of Alternative 4 for the BRIMF would be the problematic prospects for land acquisition at this location because of the recent clearing of a substantial area of the central portion of the site for future residential development.

3.4.3.4 *Alternative 5 – McCalla M3*

Alternative 5 would consist of constructing and operating the BRIMF in the area of McCalla in southwestern Jefferson County and eastern Tuscaloosa County, Alabama at a location just southwest of Alternative 3 on the opposite side of the NSR mainline and adjacent to Jefferson Metropolitan Park (Figure 3-2). The McCalla M3 site is located about 21 miles southwest of downtown Birmingham and 9 miles southwest of downtown Bessemer. It is in proximity to interstate highway infrastructure, providing access to the Birmingham region customer base. Truck traffic would enter and exit the BRIMF through an entrance located north of the site along Old Tuscaloosa Highway, approximately 2.4 road miles south of I-20/I-59 (Exit 104) and 4 miles from the interchange between I-20/I-59 and I-459 on the south side of Birmingham.

The BRIMF at the McCalla M3 site would encompass approximately 226 acres abutting the northeast side of the existing mainline, which parallels Old Tuscaloosa Highway and I-20/I-59 to the north. Existing land cover includes agricultural uplands and a substantial area of tributary floodplain bisecting the middle of the site. Several small tributaries to Mill Creek in the Shades Creek watershed (Cahaba River basin) intersect the site. In addition, a 500-kV Alabama Power Company transmission line within a 200-ft-wide maintained right-of-way (ROW) crosses the main portion of the site. An existing grade crossing is located along the southwestern lead track at Kimbrell Cutoff Road, a distance of about 1,400 ft from the main facility footprint. Kimbrell Cutoff Road would be blocked by a train switching at the facility from the south. Potentially sensitive non-residential receptors within 0.5 mile of the site include McAdory Elementary School, Tannehill Child Development Center, and Bellview Church.

Alternative 5 was eliminated from further investigation due to transmission line impacts, grade crossing factors, and greater environmental impacts (Figure 3-5).This site offers no substantial advantages over the Build Alternative.

The evaluation criteria resulting in the elimination of the McCalla M3 site from further consideration are described below:

- **Topography and constructability.** Approximately 2,500 ft of the existing Alabama Power Company 500-kV transmission line angles through the main portion of the site and would require relocation prior to construction of an IMF. Relocating this high-voltage line would require a substantial increase in the overall construction budget and an extension of the construction schedule.
- **Potential grade crossing impacts.** The longitudinally compressed configuration of this site would require a shorter lead track at the southwest end of the facility and a distance of only 1,400 ft between the switch to the main facility and Kimbrell Cutoff Road. The insufficient distance to the grade crossing would result in extended traffic disruptions at Kimbrell Cutoff Road during normal BRIMF operations. Traffic impacts could be avoided by constructing an overpass at Kimbrell Cutoff Road, but this would involve a substantial increase in the overall construction budget and an extension in the construction schedule and could require displacing an existing residence and business.
- **Potential wetland and stream impacts.** The McCalla M3 exhibits a higher potential for perennial stream impacts than any of the other alternative sites considered. This site

contains 6,184 ft of perennial streams, over 3,400 ft more than the Build Alternative, and 15.8 acres of wetland area, all of which appear to be forested wetlands. Avoidance and minimization of stream and wetland impacts in the site design of Alternative 5 would be complicated by the location of a substantial area of tributary floodplain in the middle of the site.

3.4.3.5 *Alternative 6 – Vance*

Alternative 6 would consist of constructing and operating the BRIMF in the town of Vance, Tuscaloosa County, Alabama (Figure 3-2). The Vance site is located just south of the Mercedes-Benz U.S. International (USI) manufacturing facility and U.S. Highway 11 about 1 mile west of Vance along the south side of the NSR mainline. Although located close to the interstate highway and next to the Mercedes-Benz USI facility, this alternative site is the most distant from the customer base in metropolitan Birmingham, and a direct route to a north-south interstate would not be easily accessible for container deliveries. The Vance site is located about 35 miles southwest of downtown Birmingham and 23 miles southwest of downtown Bessemer. The site entrance would be located on Tingle Tangle Road south of U.S. Highway 11, a road distance of 2.3 or 3.2 miles to I-20/I-59 (Exit 89), depending on the direction of travel on I-20/I-59.

The BRIMF at the Vance site would encompass about 194 acres among hilly topography and ravines. Existing land cover at the site includes upland forest, managed timberlands, a sanitary sewer spray irrigation field in the middle of the site, a strip mine, and a tributary floodplain in the western portion of the site. Streams draining the site flow west into the Hurricane Creek system of the Black Warrior River basin. Four existing grade crossings are located within the footprint of the lead tracks to the Vance site, and a fifth existing grade crossing is located immediately west of the site. Potentially sensitive non-residential receptors within 0.5 mile of the site include Vance Elementary School, Vance Baptist Church, and Emery Church.

Alternative 6 was eliminated from further investigation because it is located the farthest distance from the customer base, its steep topography and marginally suitable size would pose substantial difficulty and costs to construction, and there would be insufficient distance between the main facility switches and four existing grade crossings to avoid substantial negative impacts to local traffic flow in and around Vance. This site offers no substantial advantages over the Build Alternative.

The evaluation criteria resulting in the elimination of the Vance site from further consideration are described below:

- **Distance to Birmingham customer base.** The Vance site is too far from the metropolitan Birmingham customer base to optimize the intermodal transportation efficiency needed to successfully compete with long-haul-truck freight transportation. The I-20/I-59 access near the Vance site (Exit 89) is located 17 miles from the I-20/I-59 and I-459 interchange (Exit 106) on the south side of Birmingham. This distance of 34 miles round-trip from and to I-459 would result in critically time-consuming local truck deliveries and pick-ups, especially to access the I-65 north-south route into the customer base. Compared to the Build Alternative (Alternative 3), the additional cost per year for NSR rail operating costs and highway drayage costs (local trucking) would be $2.4 million.

- **Topography and constructability.** The Vance site is of marginally suitable size (194 acres) and configuration to accommodate the minimum BRIMF requirements, and with its hilly topography and ravines, site grading potentially would be difficult, protracted, and expensive with greater potential impacts on environmental resources than the Build Alternative. Site construction and drainage design could be further complicated by issues associated with the existing strip mine extending through the western portion of the site. Other potential conflicts with site development include the existing sanitary sewer spray irrigation field in the middle of the site and an electric transmission line that bisects the site and connects to the Mercedes-Benz USI manufacturing facility just north of the mainline and U.S. Highway 11.
- **Potential grade crossing impacts.** Four existing grade crossings are located within the footprint of the lead tracks, and a fifth existing grade crossing is located immediately west of the site. The distance between the main facility switches and all five grade crossings is less than 5,000 ft and, therefore, insufficient to avoid impacting local traffic flow. These multiple grade crossings would result in the need for slower train approach speeds, increased time for intermodal trains to enter the facility, and extended local traffic disruptions during normal facility operations.

3.4.3.6 *Alternative 7 – Woodstock (Bibb County)*

Alternative 7 would consist of constructing and operating the BRIMF in the town of Woodstock, Bibb County, Alabama (Figure 3-2). This site is located just west of Woodstock on the north side of the NSR mainline and was identified for consideration by participants in the August 18, 2009, public meeting. The site is located about 3 miles northeast of Vance, and 0.7 mile south of the intersection of U.S. Highway 11 and Alabama Highway 5 at Woodstock Junction. The Woodstock site is relatively distant from the metropolitan Birmingham customer base, being located about 30 miles southwest of downtown Birmingham and 18 miles southwest of downtown Bessemer. The site entrance would be located on Alabama Highway 5, a road distance of approximately 3.7 miles to I-20/I-59 (Exit 97) via U.S. Highway 11 to the northeast.

The BRIMF at the Woodstock site would encompass about 323 acres of undeveloped forested and second growth uplands on steeply sloping terrain. The NSR mainline is in a valley and the terrain rises abruptly away from the mainline to an elevation nearly 100 ft higher at the north (back) edge of the site. Several headwater streams drain south from the site and flow to the Caffee Creek system within the Cahaba River basin.

An existing grade crossing is located within the facility footprint toward the east end of the site at Strickland Drive in Woodstock. NSR field observations and measurements indicate the likely need to either realign the mainline track or replace two existing overpasses toward the east end of the site due to limiting horizontal clearances with the existing track configuration. Potentially sensitive non-residential receptors within 0.5 mile of the site include Woodstock Baptist Church, Woodstock United Methodist Church, Bibbville Baptist Church, Academy Park, and Woodstock School.

Alternative 7 was eliminated from further investigation because of its substantially greater distance to the customer base, its unfavorably steep topography that would pose difficult and costly challenges to construction and site drainage, and the insufficient distance between the main facility and the existing grade crossing at Strickland Drive to avoid

negative impacts to local traffic flow in the town of Woodstock. This site, therefore, offers no substantial advantages over the Build Alternative.

The evaluation criteria resulting in the elimination of the Woodstock site from further consideration are described below:

- **Distance to Birmingham customer base.** The Woodstock site is too distant from the metropolitan Birmingham customer base to optimize the Purpose and Need for the Project compared to the Build Alternative. The site is 7 interstate miles farther from the I-459 interchange, the primary entry point to the Birmingham interstate network, and 2.3 local road miles farther from interstate access than the Build Alternative. This additional round-trip distance of 18.6 miles to reach the southern end of the metropolitan Birmingham customer base would require more time-consuming truck access to and from the BRIMF, and this would compromise the Project Purpose and Need for ensuring fast, reliable, and time-competitive service. Compared to the Build Alternative, the additional cost per year for NSR rail operating costs and highway drayage costs would be $1.6 million.
- **Topography and constructability.** Alternative 7 would pose major construction and drainage design challenges as a result of its steep topography. The terrain slopes upward from the NSR mainline to an elevation nearly 100 ft higher at the northern (back) edge of the site. Site grading would be difficult and protracted because of the need for deep cuts, an imbalance of available fill areas, the likelihood of encountering rock, and the need to remove a substantial amount of excavated earth to a suitable offsite location for disposal. The drainage design would be complicated by the slope of the site toward the mainline and any modifications required to the existing series of culverts beneath the mainline. Thus, the site grading and drainage costs required to construct an IMF at this site would be substantially higher than those of the Build Alternative.
- **Potential grade crossing impacts.** Alternative 7 would not provide for a sufficiently long lead track between the BRIMF and the Strickland Drive grade crossing on the east end of the facility in Woodstock. Maintaining the existing grade crossing would result in the need for slower train approach speeds, increased time for intermodal trains to enter the facility, and extended traffic disruptions during normal BRIMF operations. Closure of the Strickland Drive grade crossing would likely be required for efficient operation of the facility because the construction of an overpass would not be feasible due to the existing roads, structures, and topography of the area.

As an additional practical siting consideration limiting the favorability of the Woodstock site, NSR field observations and measurements indicate the likely need to either realign the mainline track or replace two existing overpasses toward the eastern end of the site due to limiting horizontal clearances with the existing track configuration. These modifications would substantially increase the construction costs and extend the construction schedule.

3.5 Proposed Action

NSR proposes to construct and operate the BRIMF at the Build Alternative site (Alternative 3) located in the area of McCalla in southwestern Jefferson County and eastern Tuscaloosa County (see Section 3.3.2).

3.5.1 Project Facilities

The proposed BRIMF, including its running track next to the NSR mainline, would span a distance of approximately 4.3 miles along the mainline between mileposts 161 and 166. The main facility infrastructure would encompass approximately 261 acres oriented lengthwise along the mainline with dimensions of about 6,600 ft by 1,500 ft. All of the site would be in Jefferson County with the exception of an approximately 840-ft segment of lead track extending into Tuscaloosa County within the existing NSR mainline operating ROW.

To meet operational requirements for efficiently performing 165,000 annual lifts, the proposed BRIMF would consist of the following components (Figure 3-6 a,b):

- Three intermodal tracks (pad tracks) totaling 13,000 ft total clear length
- 1,474, 53-ft by 12-ft trailer spaces, including utilizing container stacking area
- Support yard with four storage tracks totaling 18,900 ft clear length
- Replacement siding totaling 21,070 ft clear length
- Running track, including 7,050 ft of tail tracks (lead tracks) on the northeast end and 5,860 ft on the southwest end of the facility
- 1,000-ft engine track
- AGS capable of handling 165,000 lifts per year
- Administration, transportation, and mechanical buildings
- Equipment maintenance pad and other related facilities
- 0.6-mile entrance road from McAshan Drive to AGS
- 16-ft high visual barrier wall along the south side of the entrance road
- 5-ft high landscaped berm with vegetation planted on top at the entrance to the facility along McAshan Drive
- Two landscaped berms (15 ft above pavement) at the AGS
- Two landscaped berms (15 ft above pavement) at the southwest facility boundary

3.5.2 Project Operations

The BRIMF would be operated to provide 165,000 container or trailer lifts per year, with a daily average of 452 lifts. An average of 407 trucks would visit the facility each weekday to deliver or pick up a container or trailer, and these visits would average less than 25 minutes. Trucks would enter and exit the facility using the entrance road from McAshan Drive, passing through a security-based AGS that would control entry and egress. Trucks would access McAshan Drive almost exclusively from I-20/I-59. The design of the entrance road intersection and prominent roadway signage would direct trucks to turn north on McAshan Drive toward the interstate and discourage turns to the south toward Eastern Valley Road

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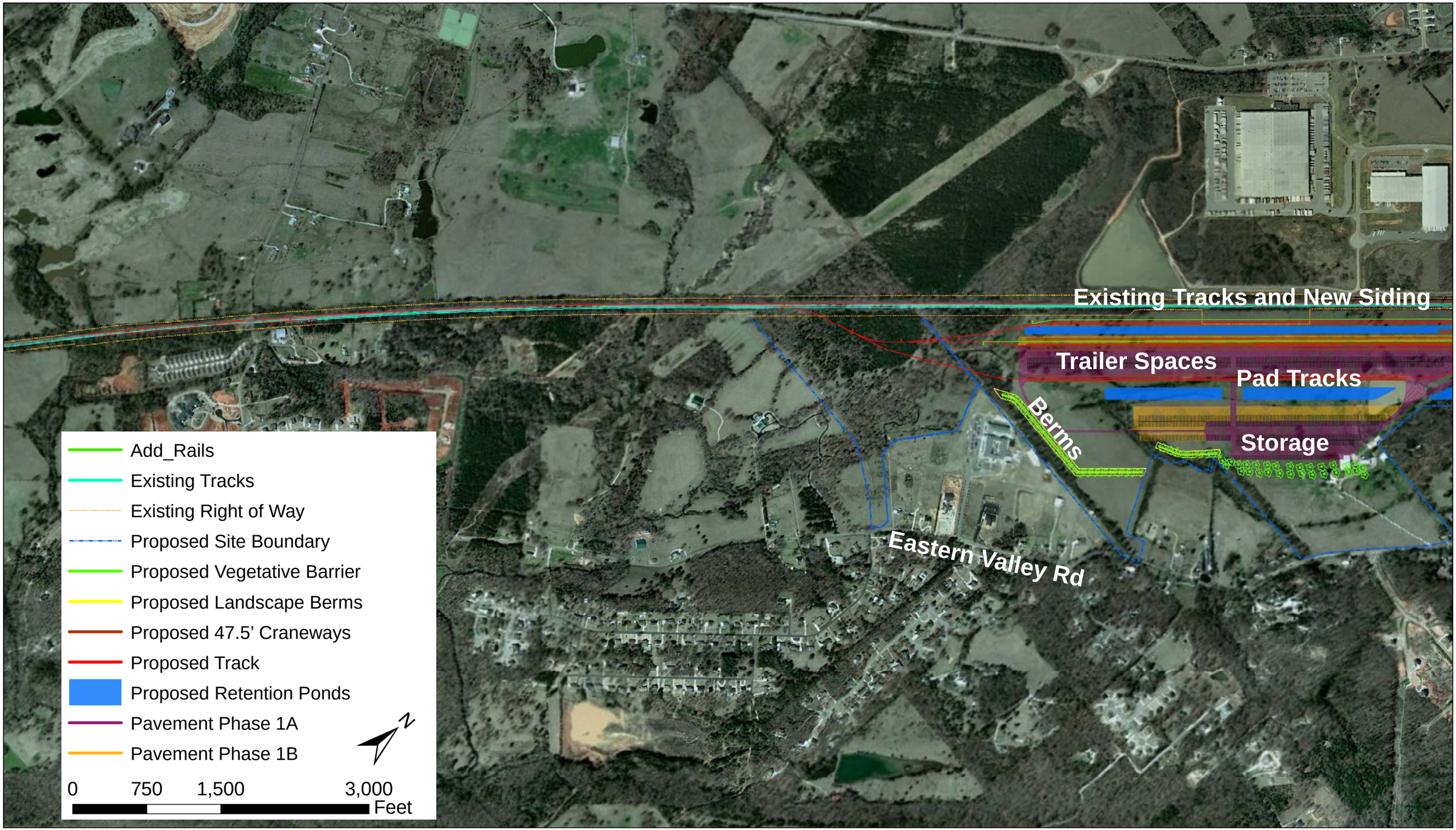

FIGURE 3-6a
PROPOSED BRIMF CONCEPTUAL DESIGN - FIRST HALF (SOUTHWEST)
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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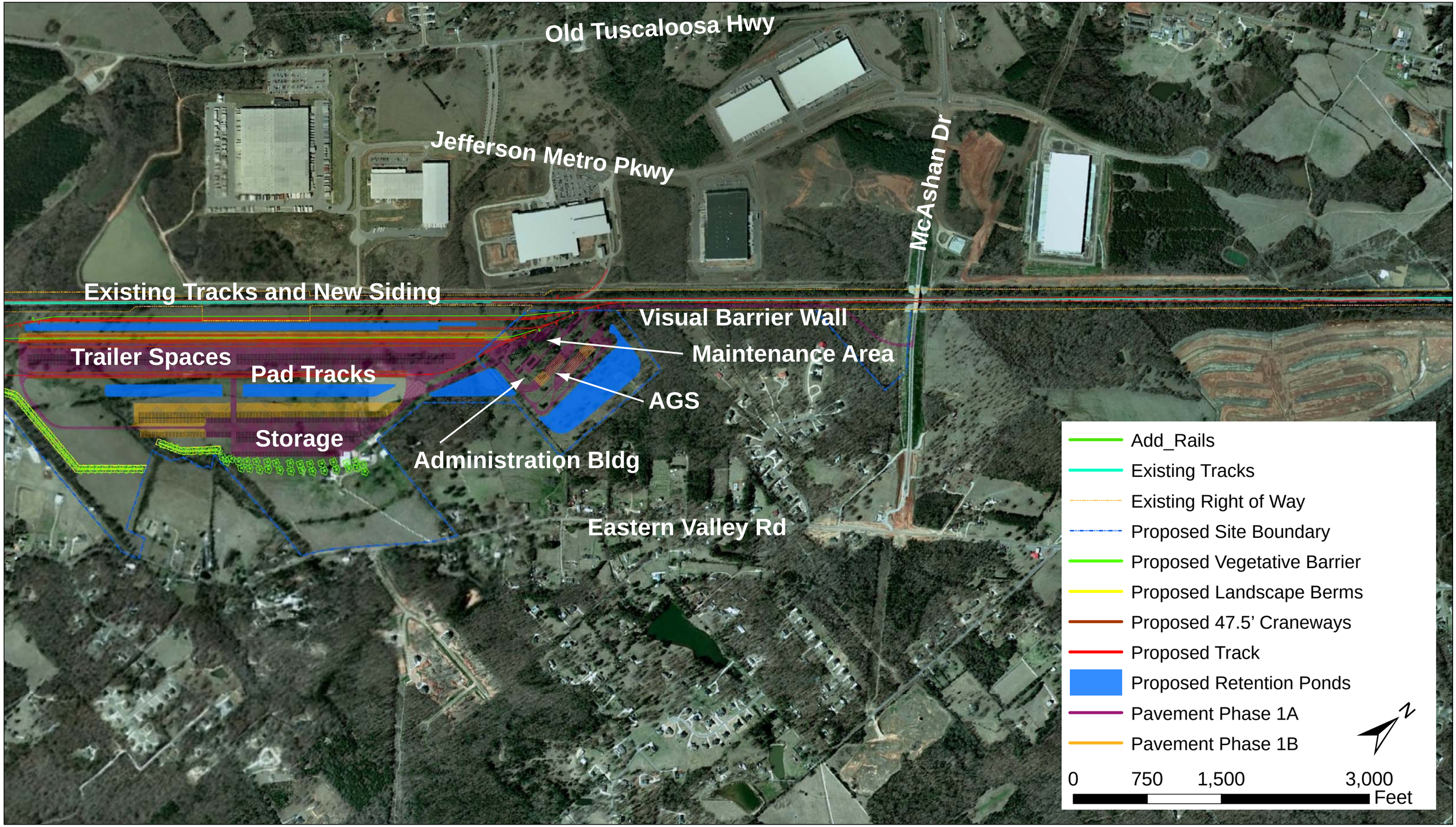

FIGURE 3-6b
PROPOSED BRIMF CONCEPTUAL DESIGN - SECOND HALF (NORTHEAST)
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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Locomotives for trains servicing the BRIMF would be line haul engines operating at low power settings during rail car delivery and pickup. Additionally, local or switcher locomotives would operate at the facility at low power settings to assist in moving rail cars from one track to another as required in the course of normal operations. Approximately six trains per day would visit the facility. Onsite equipment for intermodal operations would consist of: 3 Modern Tier 4 compliant rubber-tired 47.5-ft cranes for lifting/transferring containers and trailers; 15 Modern Tier 4 compliant hostler trucks for moving/staging containers and trailers on the site; 1 side loader; 1 switch engine/locomotive; 5 supervisor/ maintenance light duty diesel trucks; 1 fork lift and 1 emergency generator.

Site design would be coordinated with Alabama Power Company relative to the existing 115-kV power line crossing the site to ensure proper ground clearance, access to structures, and after hour access, and to avoid impacts from intermodal equipment operation.

3.5.3 Design Modifications in Response to Public and Agency Comments

This section describes several design modifications that were incorporated into the Build Alternative design in response to public and agency input. As with any project of this magnitude, the conceptual planning phase is critical to meeting the shared objectives of economic and operational feasibility as well as meeting the accepted standards for human and environmental protection. This process is typically iterative and plans that are developed to meet engineering needs are simultaneously reviewed to balance consequences of the Proposed Action on the environment or the public, including impacts from construction and operation.

As the conceptual planning for the BRIMF has proceeded, there have been several opportunities for the public, agencies, and Nongovernmental Organizations (NGOs) to review and comment on the proposed original conceptual design. These reviews have resulted in several comments and recommendations for improving the design and operation of the BRIMF. To the fullest extent feasible, the NSR engineers and environmental teams have revised original conceptual plans for the Build Alternative as several sub-alternatives to respond to these concerns. The following sections discuss the issues of interest and sub-alternatives that have been developed through the conceptual planning phase to respond to each of these issues of interest. These sub-alternatives have been incorporated into the design of the Build Alternative and are shown in Figure 3-7 and are summarized in Table 3-2.

3.5.3.1 *Issues of Interest*

Sensitive Habitats. The majority of the Build Alternative site has been used for agricultural and livestock activities by the previous owner. For example, natural streams have been straightened and riparian vegetation removed to more efficiently drain the area or manage for crops; other streams and wetlands onsite have been impacted by cattle crossings or other human-related activities.

Impacts of the proposed BRIMF on surface waters and wetlands that are determined to be waters of the U.S. under the Clean Water Act (CWA) would be avoided or minimized to the extent practical. Similarly, species of plants or animals listed as threatened or endangered under the Endangered Species Act (ESA), or unique habitats that are required for these species, would also be avoided to the extent practical.

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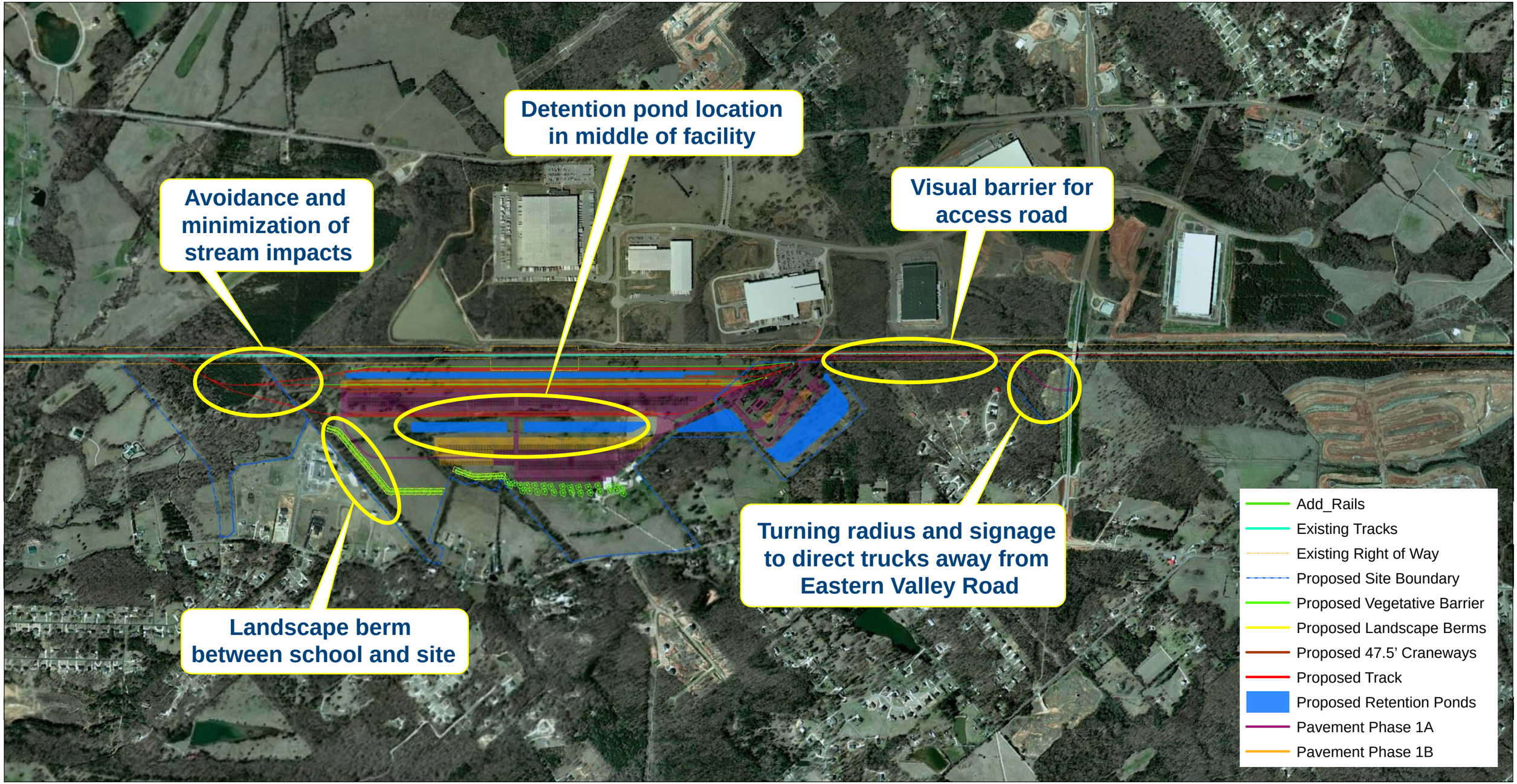

FIGURE 3-7
SUB-ALTERNATIVES WITHIN THE BUILD ALTERNATIVE
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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Surveys for protected species in and around the preferred site determined that there are no State or Federally protected species likely to be affected by the Project, so no modifications of site plans or operations are required or proposed relative to protection of State or Federally protected species.

Within the areas of potential impacts from construction or operation at the preferred site, there are several wetlands within the Project boundaries and ephemeral, intermittent, and perennial streams that cross the property and drain to a tributary of Mill Creek, a tributary that flows through Tannehill State Park and ultimately to the Cahaba River approximately 16 miles downstream.

The original conceptual plan for the preferred site was developed to most efficiently meet the criteria for construction and operation of the facility. Field studies were completed to delineate wetlands, streams, or other habitats that may be of concern and also likely to be affected by the Project construction or operation (Section 4.6). From these studies, an overlay was prepared over the preliminary conceptual plan. A review of this overlay found several areas where the proposed project layout could directly impact streams and wetlands, including perennial streams that drain to the unnamed tributary to Mill Creek. After continued refinement from other field surveys, a final overlay was used for these sensitive areas to develop a modification of the site plan that was able to greatly reduce the area of wetlands and stream lengths affected. This modification included shortening the length of the pads and tracks along the affected area and relocation of the lead tracks that crossed these wetlands. These reductions are summarized in Table 3-2 and include avoiding 0.5 acre of wetlands and 270 ft of perennial stream from these two sub-alternatives while conserving most of the original design plan for the BRIMF.

Within the proposed conceptual design, the tributary to Mill Creek that enters from the northwest under the mainline tracks would be crossed by the lead tracks that would enter the BRIMF from the mainline. The original design included a closed culvert from the mainline tracks straight through to a point downstream where these flows would intersect the stormwater releases and then reenter the tributary to Mill Creek. Concerns expressed about the level of disturbance of the stream bottom and closed canopy over the stream resulted in a modification of this design to another sub-alternative. This sub-alternative included slight rerouting of the proposed culvert to avoid wetlands, as noted above, converting the design to include two bridge crossings and a bottomless culvert, which would reduce the impacts to stream bottoms where practical. This design would also increase the areas of daylight along the stream crossings. A redesign of the entrance of the outfall from the stormwater pond and the entry of these combined flows into the tributary to Mill Creek would reduce the impact of these flows on shoreline erosion. The overall effect would be to reduce impacts to 436 ft of stream bottom.

TABLE 3-2
Summary of Sub-Alternatives Evaluated for the BRIMF

Area of Interest	Original Impacts	Change	Benefits from Change
Wetlands	Loss of 0.79 acre of wetland	Relocated pad and tracks to avoid or reduce impact to wetlands	Reduced impacts to wetlands by 0.45 acre
Wetlands	Loss of 0.07 acre of wetland.	Southwest end of siding track was shortened to avoid stream.	Avoided 0.07 acre of wetland impacts.
Wetlands	Loss of 0.30 acre of wetlands.	Redesigned rail and pad configuration and incorporated two bridge crossings.	Reduced impacts to wetlands by 0.10 acre
Streams	Loss of 926 linear feet of tributary to Mill Creek.	Relocated pad and tracks to avoid or reduce impact to tributary to Mill Creek.	Reduced impact to tributary to Mill Creek by 270 linear feet.
Streams	Loss of 656 linear feet of tributary to Mill Creek.	Redesigned rail and pad configuration incorporating two bridge crossings and a bottomless culvert to reduce impacts to tributary to Mill Creek.	Reduced impact to stream channel bottom and reduced loss of tributary to Mill Creek by 436 linear feet.
Streams	Impacts to 123 linear feet of perennial stream.	Southwest end of siding track was shortened to avoid stream.	Avoided 123 linear feet of impacts to a perennial stream.
Stormwater management	Retention pond location near Eastern Valley Road and loss of 680 linear feet of perennial stream.	Relocated retention pond and added three ponds to area within pads and tracks.	Reduced impact to perennial stream by 680 linear feet and removed pond from viewshed of residents.
Stormwater management	Potential impacts of high release of water following storm events with scouring or sediment transport within tributary to Mill Creek.	Designed spray irrigation field to manage water volume and reduce potential impacts to tributary to Mill Creek.	Expanded flexibility for stormwater management to minimize or avoid impacts to tributary to Mill Creek.
Stormwater management	Loss of 933 linear feet of perennial or intermittent stream.	Relocated outfall in the design.	Reduced impact to perennial or intermittent streams by 179 linear feet.
Traffic	Potential truck movement onto Eastern Valley Road.	Redesigned access road exit to lead trucks toward Interstate I-20/59 and added signage directing trucks away from Eastern Valley Road.	Further restricted potential movement of trucks on Eastern Valley Road.
Visual and Aesthetics	View of site.	Addition of 2,238 linear feet of visual barriers between the BRIMF and (a) McAdory Elementary School and (b) Eastern Valley Road.	Replaced view of facility with view of vegetated earthen landscape features and/or architectural walls. Provided added benefit of sound reduction.
Visual and Aesthetics	View of trucks on access road.	Addition of 3,000 linear feet of visual barriers between the access road and residents in Sadler Ridge community.	Replaced view of access road with view of vegetated earthen landscape features and/or architectural walls. Provided added benefit of sound reduction.

Stormwater management and water quality. NSR proposes to construct four retention/ detention ponds within the facility footprint to receive runoff water from the pads and tracks, pads designed to route stormwater into the pond(s), and outlet control features for alternating releases from the pond(s) to a nearby stream. The proposed stormwater treatment system is designed to provide adequate storage to allow discharges to mimic pre-development hydrology and minimize peak flows and initial flows following rain events.

This stormwater management system provides substantial water quality benefits, but is not required under CWA National Pollutant Discharge Elimination System (NPDES) provisions, as most stormwater discharged from the proposed BRIMF would not fall within the category of industrial stormwater from transportation, which USEPA determined to require regulation.

The stormwater preliminary design included a retention pond that would be located in an open field east of the pads and tracks, and a culvert that would extend from there directly into the tributary to Mill Creek. This location of the pond would remove a perennial stream that flows from springs in the area to the Mill Creek tributary. The pond also would be within the viewshed and in the vicinity of homes near Eastern Valley Road. The proposed culvert also would further impact the perennial stream along much of its length to the tributary to Mill Creek.

Following public meetings where concern was expressed about the location of the pond, this pond was relocated to an area within the proposed parking pads and tracks entirely enclosed by the facility operations. The effect of this change was to avoid removal of approximately 680 linear feet of perennial stream. In addition, the relocation removed the pond from the viewshed of the homes near Eastern Valley Road.

This sub-alternative also included a conveyance that would exit the pond and extend through a long culvert into the tributary to Mill Creek. Discussion with the U.S. Army Corps of Engineers (USACE) and the Cahaba River Society indicated a desire to further minimize the impacts of both the operation of the stormwater management system to reduce the amount of water during major storm events and, to the extent feasible, reduce the impact of the outfall. These concerns and further design review resulted in two substantive changes in the stormwater design and operation of the BRIMF.

Another sub-alternative includes a spray irrigation network that would be designed and operated as needed to irrigate vegetated areas of the site, including the vegetated berms. In addition, spray irrigation would reduce the volumes of stormwater that might otherwise be routed directly into the Mill Creek tributary.

A final sub-alternative that would provide a positive effect by reducing impacts to surface waters. This includes relocation of the outfall pipe to reduce impact to the natural perennial stream leading to the tributary of Mill Creek and to provide a more desirable entry into the tributary where energy from the flow is less likely to result in streambed scour or carry sediments downstream. This modification in design also avoids an impact to 179 linear feet of perennial or intermittent stream.

Traffic. As noted above, access was a primary criterion for assessment of various alternative locations. NSR has proposed to create a facility entrance that, as noted in the Traffic Operations Study (Skipper Consulting Inc., 2009), would result in minimal impact to local traffic. The operation of the facility includes a movement of approximately 407 trucks, with

and without truck chassis and containers or trailers, into and out of the facility each weekday. The original design included a simple entryway from McAshan Road into and out of the proposed access road to the AGS. The public and some agencies expressed concerns that these trucks could potentially add traffic along Eastern Valley Road, a road that is used by local residents.

Although drivers of all trucks entering and leaving the facility would prefer to follow the shortest route to and from the I-20/59 interstate connection at Exit 104, NSR reviewed options for further reducing the likelihood that trucks would turn on McAshan Drive toward Eastern Valley Road. A sub- alternative modification was developed that included a change in the angle of the turn for trucks leaving the facility such that the access road exit would guide trucks toward the interstate, making it very difficult to turn in the direction of Eastern Valley Road. In addition, appropriate signage would be added directing all truck traffic away from Eastern Valley Road. Also, a recent ordinance now restricts all but local delivery trucks from using Eastern Valley Road.

Visual and aesthetics. The site for the proposed BRIMF is in a viewshed of residences and the McAdory Elementary School. The facility would likely not be visible from most of the residences along Eastern Valley Road during operation, since there is an existing heavily wooded buffer between the school and the proposed BRIMF that would remain largely undisturbed by the proposed project. If construction activities require clearing of some of this existing buffer, NSR would maintain, at a minimum, 50 feet of the existing vegetative buffer from the property line of the McAdory Elementary School immediately adjacent to the school, with the exception of the far northwest corner of the McAdory Elementary School property. A portion of the existing vegetation inside this 50-foot zone would be temporarily impacted during construction to install appropriate erosion control devices. There are some areas where students in the school and others near the proposed BRIMF could see the Project within their viewshed under the original site design.

Following review of these viewsheds, NSR modified the original design to include proposed architectural walls and/or earthen berms that would be built to block these views of the facility, a total length of approximately 2,422 ft. The earthen berms also would provide a vegetated topographic feature.

In response to public concerns about visual impacts from the trucks moving along the access road, NSR also has modified the access road design to include a visual barrier along the access road to ensure that the nearby residents, particularly in the Sadler Ridge community, would not have a viewshed of the trucks moving along this road (Figure 3-6b). Although modeling data indicate that noise from these trucks would not be a major impact to these residents, the presence of the visual barrier would have an added benefit of further reducing vehicular noise during passage of trucks along the access road. This landscape barrier would be approximately 3,000 ft long and 16 ft high. Additionally, an 80-ft long and 5-ft high aesthetic berm would be installed at the south side of the access road along the McAshan Drive entrance to the facility. NSR would plant vegetation on the top of this berm, which would minimize impacts to adjacent residences from headlights as trucks enter the facility.

The sub-alternatives discussed above were considered and incorporated into the development of the proposed facility at the Build Alternative site location. As noted above, these sub-alternatives were developed in order to avoid or minimize impact to resources of

interest, and in some cases to enhance environmental resources regardless of the level of impact. NSR is also proposing mitigation measures for impacts to resources of interest discussed later in this EA.

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4.0 Affected Environment and Environmental Consequences

4.1 Physical Setting

4.1.1 Affected Environment

The proposed BRIMF site is in McCalla, Alabama, an unincorporated area southwest of Bessemer, in the greater Birmingham area of Jefferson County (Figure 4.1-1). While nearby Bessemer was founded on iron ore mining and smelting, and the manufacture of iron and coke, McCalla was a rural community with many small farms. In recent years new subdivisions have been replacing farms, as workers commuting to jobs in Jefferson, Tuscaloosa, and Shelby Counties have taken up residence. Section 3.3.2 provides a detailed description of the proposed site.

4.1.2 Environmental Consequences

The BRIMF would occupy an area of approximately 261 acres of the 311 acres available for development. The construction, including grading, would include approximately 90 acres that are paved, 40 acres developed for the railroad bed, 27 acres used for retention ponds, and 66 acres maintained as landscaped vegetated areas. The remaining land area (38 acres) would be disturbed during construction only and would remain undeveloped.

An area of forest land would be converted to intermodal terminal land, a negligible impact on forest land in unincorporated Jefferson County.

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Legend

- Proposed Pavement
- Stormwater Pond
- Proposed New Track

0 1,500 3,000 6,000 Feet

FIGURE 4.1-1
PROPOSED RAIL, PAVEMENT AND STORMWATER PONDS
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

CH2MHILL — NORFOLK SOUTHERN

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4.2 Air Quality

4.2.1 Affected Environment

4.2.1.1 *Meteorology and Climatology*

The site is located in north-central Alabama (Figure 4.2-1) in the foothills of the Appalachian Mountain Range about 300 miles inland from the Gulf of Mexico. The site is close enough that the Gulf has a pronounced modifying effect on the climate. The climate of the proposed site and surrounding area is best characterized by historical observations made at the National Weather Service (NWS) meteorological observing station at the Birmingham-Shuttlesworth International Airport, which is located northeast of central Birmingham. The airport is located approximately 24 miles northeast of the proposed project site in an area of similar terrain features that include southwest to northeast valleys and ridges. While there are other airports in the area where the NWS makes weather observations (i.e., Tuscaloosa, Alabaster, and Montgomery), an assessment of those locations indicated that they are located in different topographic regions that are not representative of the topography of the area surrounding the proposed site. Five years of historical meteorological observations from the Birmingham-Shuttlesworth International Airport were obtained from the NWS and used in a comprehensive air quality dispersion modeling analysis of the proposed BRIMF that is described in this section. A composite wind rose of these meteorological observations, which illustrates the predominant wind directions and wind speeds observed at the Birmingham Airport (calendar years 2003 through 2007), is shown in Figure 4.2-2 (National Climatic Data Center, 2009).

4.2.1.2 *National Ambient Air Quality Standards*

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. USEPA has set standards for six principal pollutants, which are called "criteria" pollutants, including carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter less than 10 microns in diameter (PM_{10}), fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), ozone (O_3), and sulfur dioxide (SO_2). The Federal standards developed by USEPA set allowable concentrations and exposure limits for the various pollutants.

Title I of the CAA establishes criteria for attaining and maintaining the NAAQS. The NAAQS include two types of air quality standards. Primary standards are established to protect public health. Secondary standards are established to protect public welfare and the environment (USEPA, 2009a). In promulgating the primary standards for protection of public health, USEPA evaluated environmental health effects including establishing an adequate margin of safety to protect children, other sensitive populations, and taking into consideration assessment of risk of mortality (total non-accidental, cardiovascular and respiratory), morbidity (hospital admissions for cardiovascular and respiratory causes), and respiratory symptoms (not requiring hospitalization) associated with short-term (daily) ambient $PM_{2.5}$ levels and risks of total, cardiopulmonary, and lung cancer mortality associated with long-term exposure to $PM_{2.5}$ in a number of example urban areas (USEPA, 2006a, 2009a). Secondary standards include protection against decreased visibility, and damage to animals, crops, vegetation, and buildings (USEPA, 2009a).

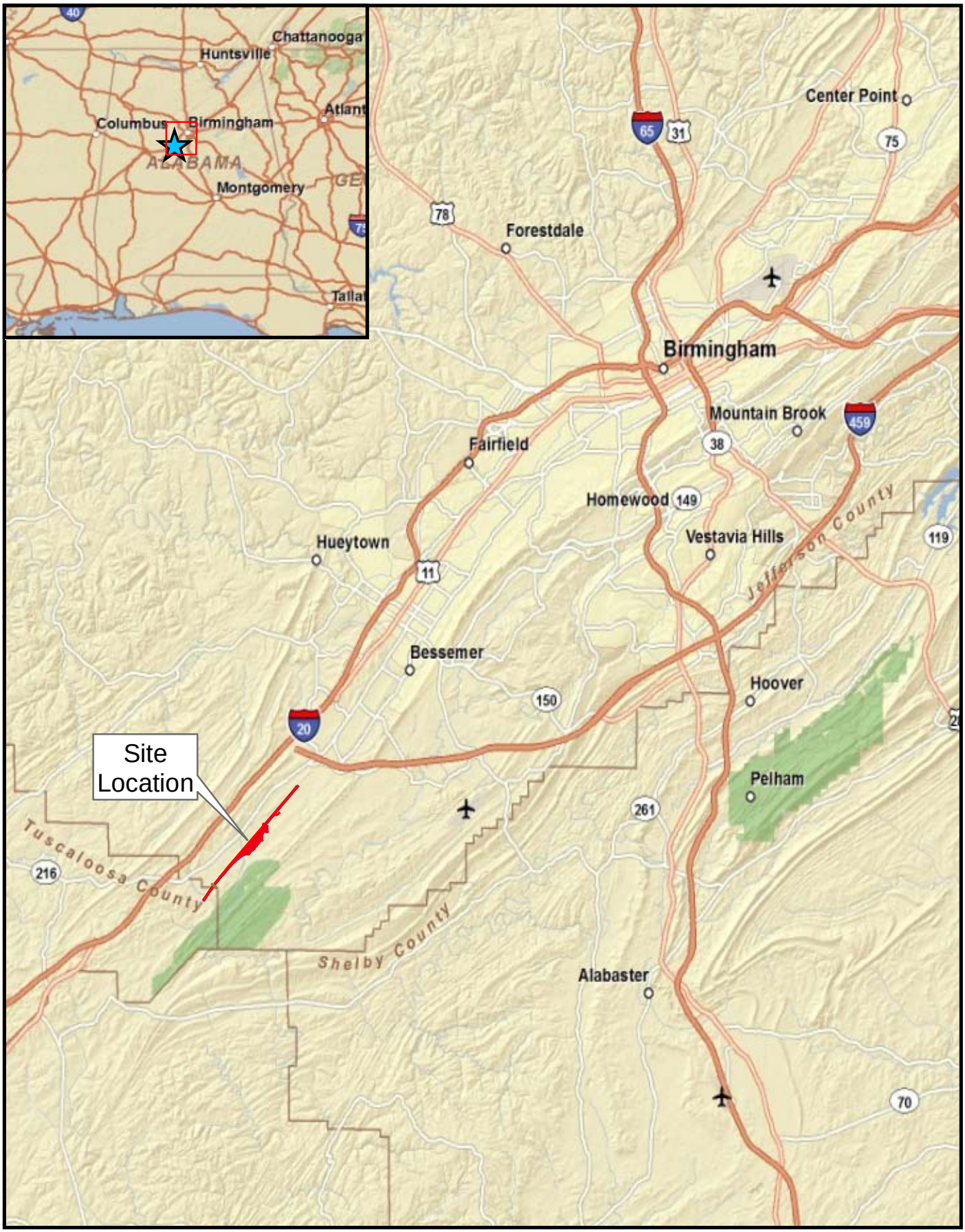


FIGURE 4.2-1
SITE LOCATION MAP
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

FIGURE 4.2-2
2003 – 2007 Wind Rose from Birmingham Airport

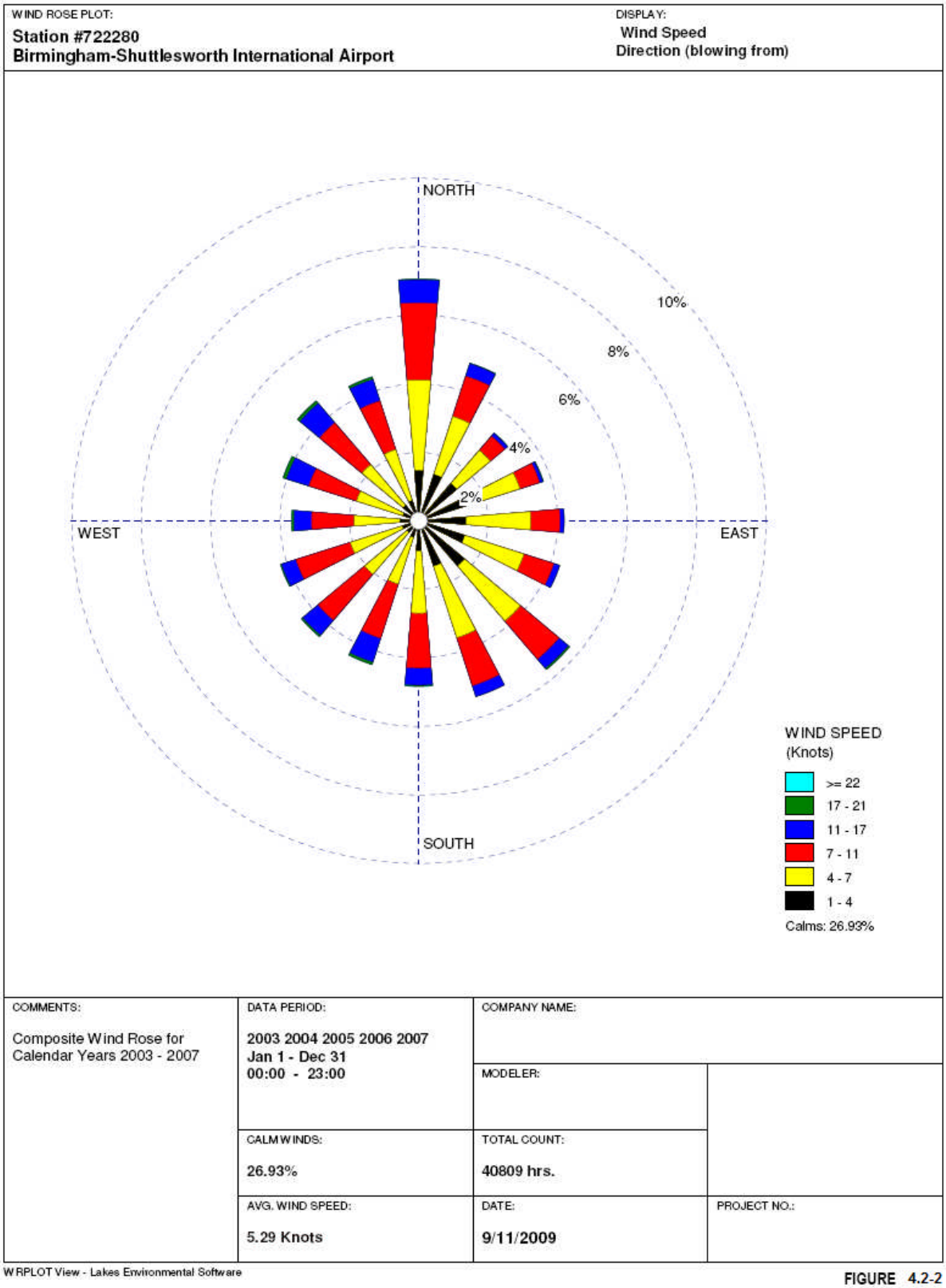


FIGURE 4.2-2
Birmingham Airport Composite Wind Rose (Calendar Years 2003 - 2007)
Source: National Climatic Data Center, 2009

As noted above, USEPA has established NAAQS for six primary pollutants, also referred to as "criteria pollutants." Table 4.2-1 contains a summary of the NAAQS for these pollutants. Areas that meet the air quality standard for the criteria pollutants are designated as being in "attainment" of the NAAQS. Areas that do not meet the air quality standard for one of the criteria pollutants may be subject to the formal rule-making process and designated as being in "nonattainment" of that NAAQS. Jefferson County is currently classified by the USEPA as being in attainment for all pollutants except $PM_{2.5}$ (current area classification is nonattainment) and ozone (current area classification is maintenance). Both of these pollutants are discussed in more detail in the sections below.

TABLE 4.2-1
National Ambient Air Quality Standards

Pollutant	Primary Standards	Averaging Times	Secondary Standards
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour[a]	None
	35 ppm (40 mg/m^3)	1-hour[a]	None
Lead	0.15 µg/m^3	Rolling 3-month average[b]	Same as Primary
	1.5 µg/m^3	Quarterly Average	Same as Primary
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary
	0.100 ppm (189 µg/m^3)	1-hour[c]	None
Particulate Matter (PM)			
PM_{10}	150 µg/m^3	24-hour[d]	Same as Primary
$PM_{2.5}$	15.0 µg/m^3	Annual (Arithmetic Mean)[e]	Same as Primary
	35 µg/m^3	24-hour[f]	Same as Primary
Ozone	0.075 ppm	8-hour[g]	Same as Primary
	0.08 ppm	8-hour[h]	Same as Primary
	0.12 ppm	1-hour[i]	Same as Primary
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	None
	0.14 ppm	24-hour[a]	None
		3-hour[a]	0.5 ppm (1,300 µg/m^3)

[a] Not to be exceeded more than once per year.
[b] Final rule signed October 15, 2008.
[C] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010)
[d] Not to be exceeded more than once per year on average over 3 years.
[e] To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3 (USEPA, 2006a).
[f] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006) (USEPA, 2006a).
[g] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective 27 May 2008).
[h] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(b) The 1997 standard—and the implementation rules for that standard—would remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
[i] (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is $\leq$ 1.
(b) As of June 15, 2005 USEPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone nonattainment Early Action Compact (EAC) Areas.

mg/m^3 = milligrams per cubic meter; µg/m^3 = micrograms per cubic meter; ppm = parts per million

Source: http://www.epa.gov/air/criteria.html (USEPA, 2009a).

4.2.1.3 *Existing Air Quality*

The existing air quality at the proposed project site can be characterized in terms of whether the existing baseline air quality conditions comply with the NAAQS. Baseline conditions are used in conjunction with an analysis of the predicted impacts from the proposed new facility to determine whether the fully operational facility would cause or contribute to a violation of any NAAQS. The site is in Jefferson County, located in the southern-most portion of the county only a few miles from the borders of Shelby, Bibb, and Tuscaloosa Counties. A small portion of the Project (i.e., the westernmost lead track that would be constructed adjacent to the existing mainline track) would extend into Tuscaloosa County.

Air quality in Jefferson County is monitored and managed by the Jefferson County Department of Health (JCDH). In 2006, USEPA approved a request for the redesignation of the Birmingham area 8-hour ozone nonattainment area to attainment (USEPA, 2006b). In 1999, the Alabama Department of Environmental Management (ADEM) requested that USEPA approve a State Implementation Plan (SIP) revision containing a 10-year ozone maintenance plan for the Birmingham area (1-hour standard), to include all of Jefferson and Shelby Counties (USEPA, 1999). As a result of this designation, both counties are currently considered to be an ozone "maintenance area" for the 1-hour standard, meaning that the area is considered to be in attainment of the 1-hour ozone NAAQS, but would continue to be monitored to ensure that the air quality does not deteriorate and actually improves over time.

In 2005, USEPA designated Jefferson County and adjacent Shelby County (and a small portion of Walker County) as nonattainment for the annual standard for $PM_{2.5}$. On October 8, 2009, USEPA designated these same areas as nonattainment for the 24-hour standard for $PM_{2.5}$ (Source: http://www.epa.gov/pmdesignations/2006standards/documents/2009-10-08/factsheet.htm). Those areas are still classified as nonattainment for $PM_{2.5}$.

Although Jefferson and Shelby Counties in their entirety have been designated nonattainment areas for $PM_{2.5}$ (based on the annual and 24-hour standards), and a portion of Walker County has also been included in the nonattainment designation, data from air monitors established to monitor air quality demonstrate localized differences relevant to the Project and air quality baseline.

The entire area of these two counties is classified on the basis of the monitoring results obtained at any of the eight $PM_{2.5}$ monitors in Jefferson County or the one $PM_{2.5}$ monitor that is operated in Shelby County (Source: http://www.adem.alabama.gov/AirDivision/Air%20Quality/PMData1207.htm (ADEM, 2009).

To evaluate the ambient air quality in the vicinity of the proposed project site, data from the three monitors closest to the proposed project site (in Jefferson, Shelby, and Tuscaloosa Counties) were evaluated. These data demonstrate attainment of the annual and 24-hour NAAQS for $PM_{2.5}$. The ambient monitors indicating nonattainment in Jefferson County are located in the central portion of Jefferson County in the City of Birmingham. All of these monitors are more distant from the proposed project site and located in a concentrated urban area. The $PM_{2.5}$ monitor closest to the site is located approximately 3 miles to the northeast at the McAdory High School in Jefferson County. The results of the three most recent years of available monitoring data for $PM_{2.5}$ (2006 – 2008) at this monitor demonstrate

compliance with the NAAQS for $PM_{2.5}$ for both the annual and 24-hour averaging periods. The NAAQS for $PM_{2.5}$ is achieved when the 3-year average of the 98th percentile 24-hour concentrations is less than 35 $\mu g/m^3$, and when the 3-year average of the annual average concentrations is less than 15 $\mu g/m^3$. To attain the 24-hour standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 $\mu g/m^3$ (effective December 17, 2006) (USEPA, 2006a). The 3-year average monitoring results at the McAdory High School monitoring site are 32.5 $\mu g/m^3$ (24-hour) and 14.4 $\mu g/m^3$ (annual), both of which are below the NAAQS.

The only $PM_{2.5}$ monitor in Shelby County is located at Pelham High School (approximately 15 miles east of the proposed BRIMF project site), and data from that monitor demonstrate compliance with the NAAQS for $PM_{2.5}$ (annual and 24-hour) based on the three most recent years of data (2006 – 2008). The 3-year average monitoring results at the Pelham High School monitor are 28.6 $\mu g/m^3$ (24-hour) and 13.3 $\mu g/m^3$ (annual). Tuscaloosa County is officially designated as being in attainment of the NAAQS for $PM_{2.5}$ and data from the only monitor in the county (located in the City of Tuscaloosa) demonstrate that the NAAQS are achieved. Three-year monitoring results at the Tuscaloosa monitor are 28.2 $\mu g/m^3$ (24-hour) and 12.8 $\mu g/m^3$ (annual). Bibb County (approximately 3 miles south of the site) is officially designated as being in attainment of the $PM_{2.5}$ standards; however, there are no ambient $PM_{2.5}$ monitors operated by ADEM in that county.

Based on the results of ambient monitoring for $PM_{2.5}$ within 3 miles of the site (at McAdory High School), and in adjacent counties (Shelby and Tuscaloosa), it is evident that the air quality at and in the vicinity of the proposed project site is such that the NAAQS for $PM_{2.5}$ is being consistently achieved (USEPA, 2009b).

4.2.1.4 *General and Transportation Conformity Applicability*

General Conformity

General Conformity is a way to ensure that Federally funded major projects of a general nature are consistent with air quality goals in areas that are designated as either "nonattainment" or "maintenance" areas. It is intended to ensure that proposed activities do not worsen air quality or interfere with the purpose of the SIP, which is to meet NAAQS. The CAA requires Federally assisted projects above pre-defined thresholds to be consistent with or "conform to" the purpose or intent of the SIP for a given area.

The General Conformity Rule pursuant to Section 176(c)(4) of the CAA plays an important role in helping states and tribal regions improve air quality in those areas that do not meet the NAAQS. Under the General Conformity Rule, Federal agencies must work with State, Tribal and local governments in a nonattainment or maintenance area to ensure that Federal actions conform to the initiatives established in the applicable State or tribal implementation plan. The purpose of the General Conformity Rule is to:

- Ensure that Federal activities do not interfere with the budgets in the SIPs
- Ensure that actions do not cause or contribute to new violations
- Ensure that the NAAQS are attained and maintained

USEPA has promulgated regulations which establish pollutant-specific emission thresholds for projects that will trigger General Conformity, including a conformity analysis and conformity determination. Jefferson County is currently designated nonattainment for

$PM_{2.5}$. The General Conformity emission thresholds for a project in a nonattainment area (as defined by 40 Code of Federal Regulations [CFR] 51.853(b)) are summarized in Table 4.2-2.

TABLE 4.2-2
General Conformity Emission Thresholds for Nonattainment Areas

Pollutant	Conformity Threshold (tons/year)
Ozone (VOC's or NO_X):	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other ozone NAA's outside an ozone transport region	100
Other Ozone NAA's inside an ozone transport region:	
VOC	50
NO_X	100
Carbon Monoxide: All NAA's	100
SO_2 or NO_2: All NAA's	100
PM–10:	
Moderate NAA's	100
Serious NAA's	70
$PM_{2.5}$:	
Direct emissions	100
SO_2	100
NO_X(unless determined not to be a significant precursor)	100
VOC or ammonia (if determined to be significant precursors)	100
Pb: All NAA's	25

Source: 40 CFR 51.853(b)

Jefferson County is currently designated as a maintenance area for ozone. The General Conformity emission thresholds for a project in a maintenance area are summarized in Table 4.2-3.

TABLE 4.2-3
General Conformity Emission Thresholds for Maintenance Areas

Pollutant	Conformity Threshold (tons/year)
Ozone (NO_X, SO_2or NO_2):	
All Maintenance Areas	100
Ozone (VOC's):	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100

TABLE 4.2-3
General Conformity Emission Thresholds for Maintenance Areas

Pollutant	Conformity Threshold (tons/year)
Carbon monoxide: All Maintenance Areas	100
PM–10: All Maintenance Areas	100
$PM_{2.5}$:	
Direct emissions	100
SO_2	100
NO_X (unless determined not to be a significant precursor)	100
VOC or ammonia (if determined to be significant precursors)	100
Pb: All Maintenance Areas	25

Source: 40 CFR 51.853(b)

In 2005, USEPA designated Jefferson County and adjacent Shelby County (and a small portion of Walker County) as nonattainment for the annual standard for $PM_{2.5}$. On October 8, 2009, USEPA designated these same areas as nonattainment for the 24-hour standard for $PM_{2.5}$. Both Jefferson County and Shelby County are ozone "maintenance areas" for the 1-hour ozone standard.

As noted in Tables 4.2-4 and 4.2-5, the maximum potential emissions from the BRIMF are well below applicable thresholds in 40 CFR 51.853(b). Therefore, General Conformity requirements would not be triggered by the construction or operation of the BRIMF.

Transportation Conformity

For projects that are not subject to the requirements for General Conformity, the CAA requires that certain highway and transit transportation projects requiring funding, approval, or implementation by FHWA or FTA be evaluated in accordance with the requirements for Transportation Conformity (40 CFR 93.102(a)). An evaluation of the Project has been performed to demonstrate that it would be compliant with the requirements of Transportation Conformity. Similar to the General Conformity requirements, Transportation Conformity is a way to ensure that Federal funding and approval are given only to subject transportation related projects that are consistent with air quality goals in areas that are designated as "nonattainment" or "maintenance" areas. It is intended to ensure that Federally funded highway and transit transportation projects (as defined by 40 CFR 93.102(a)) do not worsen air quality or interfere with the purpose of the SIP, which is to meet NAAQS (FHWA, 2006). The CAA requires Federally assisted transportation plans, transportation improvement programs, and transportation projects to be consistent with or "conform to" the purpose or intent of the SIP for a given area. A $PM_{2.5}$ hotspot analysis has been completed and demonstrates that the Project would be in compliance with Transportation Conformity requirements for $PM_{2.5}$ if those regulations were applicable. In addition, FHWA guidance for FHWA or FTA funded projects also requires that a hotspot analysis for carbon monoxide (CO) be performed to ensure that the NAAQS are maintained. Since the BRIMF is a rail project, the FHWA hotspot analysis requirements are not

applicable to this project. However, the CO modeling performed for this project (as described below) is an effective hotspot analysis that is representative of the immediate site vicinity where facility impacts would be greatest. This analysis adequately demonstrates that the NAAQS for CO would not be exceeded as a result of the operation of the BRIMF.

For this proposed Project, an analysis of $PM_{2.5}$ impacts, consistent with these regulations and applicable guidance, was prepared and documented in a report entitled *Air Quality Technical Report, Birmingham Regional Intermodal Facility*. A copy of this report is included in Appendix A.

4.2.2 Environmental Consequences

The proposed new BRIMF would be designed to meet demand for freight transportation, and to optimize intermodal freight service operations and efficiency in the Birmingham region. This section specifically addresses the impacts of the construction and operation of the facility on ambient air quality.

Construction activities would occur beginning in 2010, with a total duration of approximately 18 months. Operations would be expected to begin in 2012, with maximum operation expected to occur beginning in 2015. The analysis of air quality and related impacts during the construction and operation of the proposed Project is discussed in two sections, namely Potential Impacts During Construction and Potential Impacts During Operation.

4.2.2.1 *Potential Impacts During Construction*

The construction of the proposed Project would include numerous phases, each with the potential to produce air pollutants. The primary emissions during construction would be fugitive in nature, consisting mainly of fugitive dust (i.e., particulate matter, either PM_{10} or $PM_{2.5}$) resulting from construction activities at the site, and exhaust emissions from diesel powered construction equipment that would be operating on the site during construction. Activities would include land clearing, grading, construction of facility infrastructure, and concrete paving. The construction of the facility would be short-term and temporary in nature, with a total construction time of approximately 18 months. Table 4.2-4 summarizes the basic construction phases and the types of emissions that would be associated with each phase of the work.

Emission estimates for the construction phase of the proposed Project were developed based on recent estimates for a similar NSR IMF project at the Charlotte Douglas International Airport in Charlotte, North Carolina (Landrum & Brown, 2008). Both projects have similar construction requirements (such as site clearing and grading), terrain characteristics, and climate. The construction emission estimates that were developed for the Charlotte IMF were used to estimate the construction emissions for the proposed BRIMF.

TABLE 4.2-4
Types of Emissions Generated During Construction Activities

Construction Phase	Source of Emissions	Emissions
Site clearing	Track/wheel loaders, bulldozers, graders, and excavator	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Grading of site	Track/wheel loaders, bulldozers, graders, and excavator	Fugitive dust and mobile source exhaust emissions from diesel powered equipment

TABLE 4.2-4
Types of Emissions Generated During Construction Activities

Construction Phase	Source of Emissions	Emissions
Installation of new trenches for utilities	Backhoes, excavators, and gravel trucks	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Construction and relocation of rail track	Backhoes, excavators, gravel trucks, construction worker vehicles, ballast, regulators, and tampers.	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Construction of new buildings and support facilities	Backhoes, excavators, onsite concrete batch plant, concrete trucks, crane, and construction worker vehicles.	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Construction of new access road between the site and McAshan Drive	Track/wheel loaders, bulldozers, graders, excavators, concrete batch plant, concrete trucks, roller compacted concrete paving machines	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Paving of work surfaces and storage areas (roller compacted concrete)	Concrete mix plant, concrete transport trucks, roller compacted concrete paving machines, and support equipment.	Fugitive dust, mobile source exhaust emissions from diesel powered equipment,
Striping of roadways and painting of buildings	Paint trucks and spray painting equipment.	Mobile source exhaust emissions from diesel powered equipment, paint application evaporative emissions

The Charlotte IMF was developed on approximately 278 acres, whereas the proposed BRIMF would be developed on approximately 311 acres. The construction emissions for the Charlotte IMF were therefore scaled upwards on the basis of the ratio of project acreage to be representative of the emissions for construction of the BRIMF. The estimated construction emissions for the proposed BRIMF are summarized in Table 4.2-5.

TABLE 4.2-5
Estimated Potential Construction Emissions (tpy)[(a)]

Year of Construction	CO	VOCs	NO_x	SO_2	PM_{10}	$PM_{2.5}$
2010	37.1	4.97	66.0	1.20	3.17	2.91
2011	12.4	1.66	22.9	0.40	1.05	0.984

[(a)] Construction is anticipated to take approximately 18 months to complete; second year of construction is a partial year.
tpy = tons per year; VOCs = volatile organic compounds

The estimated construction emissions in Table 4.2-5 are intended to represent the annualized emissions of fugitive dust and mobile source exhaust attributable to the construction activities associated with development of the proposed project site and construction of the facility infrastructure. It is noted that the emissions would be short-term in nature and limited to the construction phase of the Project only. Once construction is complete, emissions associated with the proposed facility would consist of emissions associated only from facility operations.

The emissions during the short-term construction period would be typical of large construction projects. While there would be air quality impacts during construction, they would be expected to be primarily limited to areas where construction activities are occurring on the project site. To minimize the air quality impacts of construction, NSR would require that mitigation measures be taken during construction by the contractor, including the implementation of BMPs designed to minimize dust generation and emissions from equipment operation. These measures and activities are expected to include the following:

- Site grading would promote good drainage and minimize the accumulation of mud on equipment tires that could be transferred to road surfaces, which could generate fugitive dust from wind erosion, traffic, or heavy equipment operation.
- Ground surfaces would be stabilized as soon as practicable to prevent wind erosion. BMPs would be used to prevent sediments from settling on roads and mud would be removed as necessary.
- Those areas that would revert to maintained grounds would be reseeded as soon as practicable to reduce the potential for fugitive dust generation.
- Bare ground in the construction area and on construction roads would be wetted to minimize fugitive dust from vehicle traffic during dry conditions.
- Roadways used to access the site during construction would be wetted to minimize fugitive dust from traffic or heavy equipment operation.
- Applicable air pollution control regulations with regard to open burning and the operation of fueled vehicles would be strictly adhered to.
- Fuel burning construction equipment would be maintained in proper mechanical order to minimize emissions.
- Reasonable precautions would be implemented to prevent accidental brush or forest fires.

The contractors responsible for construction would also be required to develop and implement a comprehensive fugitive dust control plan.

4.2.2.2 *Potential Impacts During Operation*

NSR is designing the BRIMF to have the capacity to perform up to 165,000 lifts of trailers and containers from and to rail cars annually. This section addresses the emissions and impacts attributable to facility operation. The analyses described herein were conducted conservatively, based on the assumption that the facility would be operating at maximum projected design capacity.

4.2.2.3 *Criteria Pollutant Emissions*

USEPA regulates emissions from on-road and off-road mobile sources (e.g. gasoline and diesel engine vehicles and equipment including passenger cars, light and heavy duty trucks, locomotives, engines used in off-road equipment) through limitations and performance standards based on the year the vehicles or engines are manufactured. USEPA has and continues to establish progressively more stringent emission standards for NOx, PM, CO,

and VOCs since the mid-1970s for on-road vehicles. Non-road vehicles and engines have been regulated since the early 1990s. These emissions standards have substantially reduced emissions from these vehicles and equipment for several decades and substantial future reductions are projected to continue for the next several decades as a result of these regulations. Vehicle and engine manufacturers responded to these more stringent emission standards by substantially improving the technologies associated with emission controls, engine efficiency, and on-board engine management systems, including:

- Development of post-combustion emission control devices (i.e., catalytic convertors, particulate traps)
- Incorporation of closed-loop vapor recovery systems that reduce or eliminate evaporative losses from vehicle fuel systems
- Development of considerably more efficient gasoline and diesel engines that generate more power using less fuel
- Development of more efficient engine combustion management systems designed to maximize engine power while simultaneously minimizing exhaust pollution

Simultaneous to the development of these technologies, USEPA also established a number of fuel quality standards resulting in the development and use of clean fuels such as unleaded gasoline (elimination of lead in fuel), ultra low sulfur diesel (99 percent reduction in sulfur in fuel), oxygenated fuels (CO emission reductions), and the reformulated gasoline program (RFG). The implementation of these fuel standards has further resulted in substantial reductions in air pollution from mobile sources.

Emissions from the activities associated with BRIMF operation are predominantly a result of exhaust emissions from diesel powered equipment, including locomotives, container/trailer delivery trucks, IMF dedicated container/trailer handling equipment, and support equipment. Maximum potential emissions of $PM_{2.5}$, CO, VOC, and NO_X emissions for the first full year of maximum operation (2015) are summarized in Table 4.2-6. Since the diesel powered equipment and trucks that would be operated at the facility would be using transportation grade diesel fuel (i.e., ultra-low sulfur fuel), SO_2 emissions from the facility would be expected to be minimal and were not estimated. There would also be no measurable amount of lead (Pb) emitted from the facility since all fuel to be used is lead-free. An analysis of projected maximum operational emissions from the facility is provided in a report entitled *Air Quality Technical Report, Birmingham Regional Intermodal Facility*. A copy of this report is included in Appendix A.

TABLE 4.2-6
Estimated Potential Operational Emissions (tpy)

Onsite Activity	Annual Emissions for 2015 (tpy) [a]			
	$PM_{2.5}$ [b]	CO	VOC	NO_X
Intermodal Terminal Operation [c]	0.16	8.68	1.44	19.63
Onsite Rail Operations [d]	1.53	6.11	2.29	41.08
Emergency Generator [e]	0.0004	0.0011	0.0004	0.0050
Refrigeration Units [f]	0.11	0.93	0.12	1.96
Trucks [g][h]	0.028	0.91	0.27	1.60
Total Emissions	1.83	16.6	4.13	64.3

[a] Annual emissions are based on the facility operating at design capacity (165,000 lifts/year). First year of maximum operation

TABLE 4.2-6
Estimated Potential Operational Emissions (tpy)

Onsite Activity	Annual Emissions for 2015 (tpy) [a]			
	$PM_{2.5}$ [b]	CO	VOC	NO_X

is projected to be 2015.
[b] All PM emissions are assumed to be $PM_{2.5}$.
[c] Intermodal Terminal Operation emissions are based on USEPA Tier 4 emission factors for side loaders, cranes, and hostler trucks (Electric Power Research Institute [EPRI], 2009). Emission calculations were based on EPRI emission factors for Tier 3 engines, scaled to reflect the use of Tier 4 engines, which would be used at the site in this equipment.
[d] Onsite rail emissions are based on line haul engines operating at reduced power levels (for switching and idling activities) and USEPA emission factors (USEPA, 2009c).
[e] Emergency generator emissions are based on one 35-kilowatt (kW) generator operating 2 hours/quarter (maintenance) (USEPA, 1996).
[f] Refrigerated container emissions are based on 3% of lifted containers per day, each operating 12 hours/day USEPA small engine emission factors (USEPA, 2009d).
[g] Truck emissions include 290 tractor trailers and 117 bob-tail trucks (no trailers) visiting the site (typical day), plus 5 BRIMF-owned supervisor/maintenance light duty (pickup) trucks (each travelling 20 miles/day) (USEPA, 2004a).
[h] Each visiting truck is assumed to travel approximately 2 miles onsite and idle 13 minutes (25 total minutes onsite, based on NSR's operation experience at other facilities).

The facility's maximum projected emissions are considered to be relatively small compared to the emissions of similarly sized industrial facilities. Although this facility is not considered to be an "industrial facility," it is noted that an industrial facility with similar emissions would be considered a "minor source" of emissions by ADEM, JCDH, and USEPA. A "major source" of emissions is defined as a source that has the potential to emit 100 tpy or more of any regulated air pollutant (40 CFR 52.21(a)(2)(v)(b)). Since the facility would not have total emissions that exceed 100 tpy of any regulated pollutant, it would therefore be a minor source of air emissions. As a minor source of emissions, the air pollution control agencies noted above would not consider the emissions from this facility to result in an adverse impact (as defined by the regulations) on ambient air quality.

The projected maximum operational emissions of $PM_{2.5}$, CO, VOC, and NO_X for the BRIMF are also very small compared to the 2002 countywide emissions inventory for Jefferson County, as shown in Table 4.2-7. The proposed facility's percentage of countywide emissions of $PM_{2.5}$, CO, VOC, and NO_X would be approximately 0.016 percent, 0.0052 percent, 0.0083 percent, and 0.093 percent, respectively. As a result, the impact of facility emissions on ambient air quality in the region would be expected to be negligible.[4]

TABLE 4.2-7
Comparison of Proposed BRIMF Operational Air Emissions with Existing Jefferson County Air Emissions

	Jefferson County Emissions (tpy) [a]			BRIMF Emissions [b]	
Pollutant	Highway	Off-Road	All Sources	Onsite Emissions (tpy)	% of All County Sources
$PM_{2.5}$	379	591	11,476	1.83	0.016
CO	181,846	47,931	317,392	16.6	0.0052
VOC	15,372	4,504	49,958	4.13	0.0083
NO_X	20,609	8,651	69,154	64.3	0.093

[a] Source: http://www.epa.gov/air/data/index.html. (USEPA, 2009e). The data are for 2002 (most recent year available).
[b] Maximum emissions attributable to maximum potential operation for 2015 (first year of maximum operation).

[4] The development of USEPA's mobile source air toxics rule development estimated that, at 2030 exposure levels, highway vehicle contributions to cancer risk attributable to MSAT emissions would be reduced by an average of 36% across the U.S., and the highway vehicle contribution to benzene cancer risk will be reduced an average by 43% across the U.S. USEPA also estimated that the mobile source contribution to the respiratory hazard index would be reduced by 23% nationwide by 2030.

Indirect sources of emissions include rail and truck traffic outside of the proposed project site. An advantage of the project is that highway truck traffic between the Birmingham area and the Northeast, the Southeast, and western destinations would be substantially reduced as a result of the development and operation of the BRIMF. This would produce an overall reduction in traffic-related emissions.

An ambient air quality dispersion modeling analysis was performed to evaluate the potential impacts of facility operation on ambient air quality for the criteria pollutants $PM_{2.5}$, CO, and NO_X. Modeling was performed in the immediate vicinity of the proposed facility for these pollutants using USEPA-developed models and modeling approaches. SO_2 and Pb emissions from the facility were not modeled since transportation grade diesel fuel (0.0015 percent sulfur content, unleaded) would likely be used in onsite equipment, which would limit SO_2 emissions to only trace amounts, with no discernible impact on ambient air quality.

The methodology and results of the dispersion modeling analysis are provided in a report entitled *Air Quality Technical Report, Birmingham Regional Intermodal Facility,* a copy of which is provided in Appendix A. The modeling analyses were designed to assess the potential impact on ambient air quality at the nearest residences and at the McAdory Elementary School, which is adjacent to the southwest boundary of the proposed project site. The dispersion modeling analysis was primarily focused on $PM_{2.5}$ emissions, since Jefferson County has been designated as a nonattainment area for this pollutant. Although the area is classified as a "maintenance area" for ozone, modeling of ozone was not performed because the emissions of ozone precursor pollutants from this facility (VOC and NO_X) are minor and would not be expected to have a measurable impact on local or regional ozone concentrations. It should also be noted that there are currently no NAAQS for VOCs; therefore, an ambient air quality dispersion modeling analysis of VOC emissions is not required for this analysis and was not performed.

The results of the modeling analysis demonstrate that the emissions from the proposed facility (conservatively assuming maximum operation at design capacity) would not interfere with attainment of the annual $PM_{2.5}$ standard, nor would they cause or contribute to predicted violations of the NAAQS for $PM_{2.5}$. The maximum predicted impact of the facility on ambient $PM_{2.5}$ concentrations (assuming maximum continuous operation) is less than 2 percent of the annual NAAQS of 15 $\mu g/m^3$, and less than 5 percent of the 24-hour NAAQS of 35 $\mu g/m^3$. To further assess compliance with the NAAQS for $PM_{2.5}$, the modeling results were conservatively added to the existing background air quality level for $PM_{2.5}$, which was obtained from the maximum observed ambient concentrations of $PM_{2.5}$ at the closest $PM_{2.5}$ monitor in Jefferson County. This monitor is operated by the JCDH and is located at the McAdory High School, approximately 3 miles northeast of the proposed project site (see Section 4.2.3). This highly conservative approach demonstrates that even a worst-case impact of the facility operations would not result in an exceedance of the NAAQS for $PM_{2.5}$ when combined with the existing ambient background concentrations in the area. The highly conservative nature of this conclusion is based on the fact that meteorological conditions that are conducive to maximum observed ambient concentrations at the McAdory High School monitor are unlikely to coincide with the same meteorological conditions that are conducive to maximum predicted concentrations.

The modeling analysis of CO and NOx emissions (conservatively assuming maximum facility operation at design capacity) also demonstrates that the NAAQS for those pollutants would not be threatened or exceeded. The maximum predicted impact of the facility is less than 1 percent of the NAAQS for CO (1-hour and 8-hour) and less than 15 percent of the NAAQS for NOx (annual). Although there are no nearby ambient monitors for CO and NOx, Jefferson County and the surrounding counties (i.e., Shelby, Bibb, and Tuscaloosa) are all designated as being in attainment of the NAAQS for these pollutants. Given the attainment status of these counties for CO and NOx, and the very low predicted impacts of CO and NOx attributable to facility operation, the facility would not be expected to cause or contribute to a violation of the NAAQS for these pollutants, and an increase in ambient levels of CO and NOx would likely not be discernible at any location.

4.2.2.4 *Mobile Source Air Toxic Emissions*

In addition to the criteria air pollutants for which the NAAQS have been established to protect public health, USEPA also regulates the emissions of air toxic emissions. Most air toxics emissions originate from man-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes, construction equipment), area sources (e.g., dry cleaners) and stationary sources (e.g., industry in general). Mobile Source Air Toxic (MSAT) emissions are a subset of the 187 air toxics defined by the CAA (Source: http://www.epa.gov/ttn/atw/pollsour.html) (USEPA, 2009f). MSAT emissions are compounds emitted from highway vehicles (passenger cars and light and heavy duty trucks) and non-road equipment (i.e., construction equipment, all terrain vehicles). Some air toxic compounds are present in fuel and are emitted to the air when fuel evaporates or passes through the engine unburned.

USEPA is the lead Federal Agency for administering the CAA and has certain responsibilities regarding the health effects of air pollutants including MSATs. In 2001, USEPA issued its first regulations to control MSAT emissions from mobile sources (USEPA, 2001). USEPA has assessed this expansive list in its latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (FR, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (USEPA, 2009g). In addition, USEPA identified seven compounds with the most considerable contributions from mobile sources as a result of their 1999 National Air Toxics Assessment (NATA) (USEPA, 2009h). These are acrolein, benzene, 1, 3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter (POM). While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future USEPA rules.

The 2007 USEPA MSAT rule mentioned above requires the phased implementation of emission standards and controls in the future that will dramatically decrease MSAT emissions through the use of cleaner fuels and cleaner more efficient engines. According to an FHWA analysis using USEPA's MOBILE6.2 emissions model (USEPA, 2004a), even with a projected increase in vehicle activity (VMT) of 145 percent, a reduction of 72 percent in the priority MSAT emissions is projected from 1999 to 2050, as shown in Figure 4.2-3 (FHWA, 2009d).

The development of USEPA's MSAT rule development estimated that, at 2030 exposure levels, highway vehicle contributions to cancer risk attributable to MSAT emissions would be reduced by an average of 36 percent across the U.S., and the highway vehicle contribution to benzene cancer risk will be reduced an average by 43 percent across the U.S. USEPA also estimated that the mobile source contribution to the respiratory hazard index would be reduced by 23 percent nationwide by 2030.

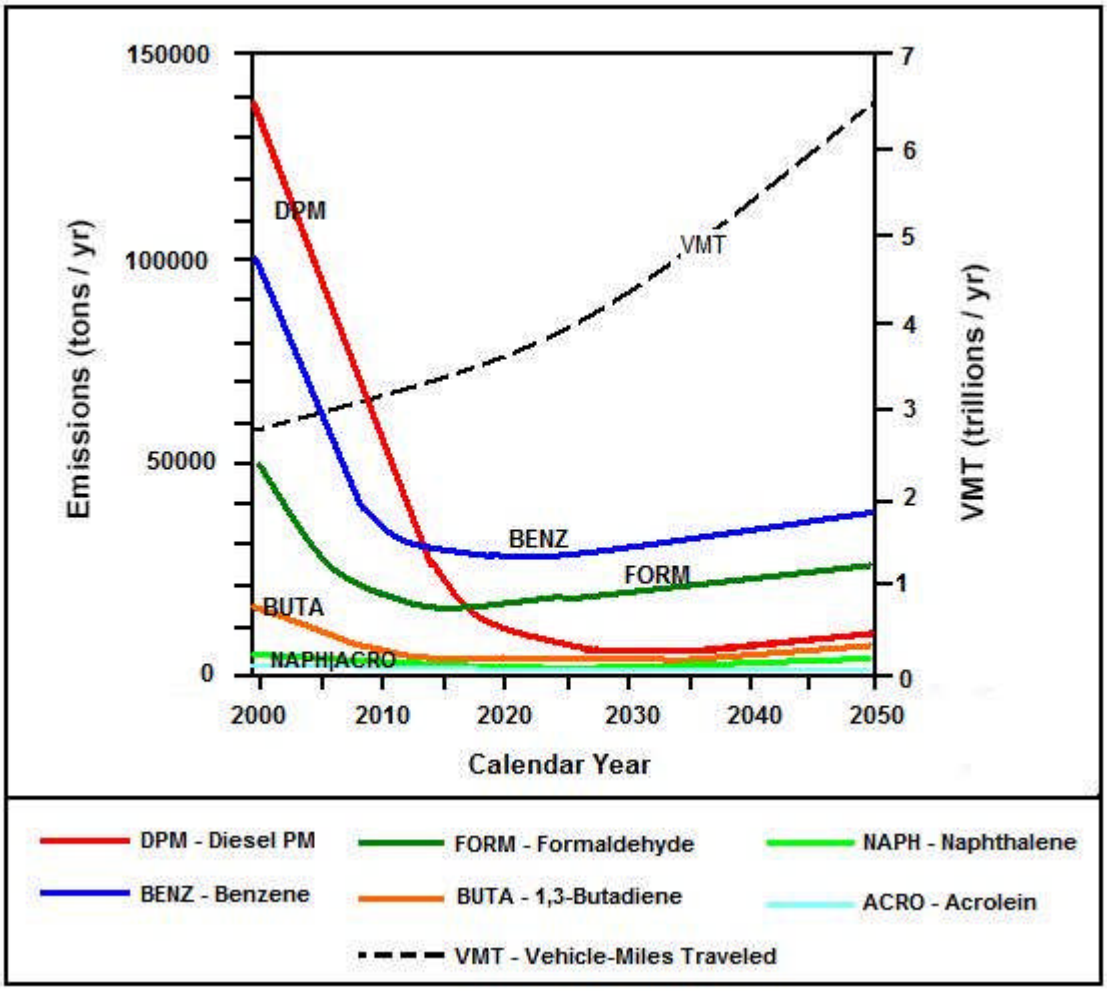
To meet increased demand for rail intermodal capacity in the Birmingham region, NSR estimates the need for a new facility that can perform 165,000 annual lifts of trailers and containers from and to rail cars. The operation of the BRIMF is estimated by NSR to result in a reduction of more than 81 million VMT annually as a result of the diversion of trucks from highways between the BRIMF, the Northeast, western destinations, and various markets in the Southeast.

MSAT emissions from activities associated with the proposed BRIMF operation are predominantly exhaust emissions from visiting locomotives, visiting trucks, and IMF dedicated support equipment. Acrolein, benzene, 1, 3-butadiene, diesel PM, formaldehyde, naphthalene, and POM emissions for 2015 (the first year of full operation) have been estimated and are summarized in Table 4.2-8. An analysis of maximum projected operational emissions from the facility is provided in Appendix A.

BRIMF emissions of acrolein, benzene, 1, 3-butadiene, diesel PM, formaldehyde, naphthalene, and POM were compared to published 2002 Jefferson County emissions of those pollutants, as shown in Table 4.2-9. The proposed facility's maximum estimated emissions of acrolein, benzene, 1, 3-butadiene, diesel PM, formaldehyde, naphthalene, and POM would represent only a very small percentage (0.0054 to 0.11 percent) of county-wide emissions.

As shown in Table 4.2-9, the proposed Project would represent a very small percentage of county-wide air toxics emissions compared to Jefferson County air toxics emissions in 2002 (most recent data available). While the facility emissions in Table 4.2-9 would represent a very small increase in MSAT emissions in Jefferson County, it is also noted that the proposed Project would effectively divert a large number of trucks to rail that would otherwise provide long-haul trucking services from the region to the Northeast and other regions in the U.S. This diversion would result in substantial reductions in fuel usage (estimated by NSR to be more than 10.8 million gallons/year by 2020). By reducing the combustion of diesel fuel, MSAT emissions (acrolein, benzene, 1, 3-butadiene, diesel PM, formaldehyde, naphthalene, and POM) would therefore be reduced considerably on a national and regional basis. Therefore, the proposed Project would be expected to result in an overall net air quality benefit on a large-scale basis, with a net reduction in MSAT emissions.

FIGURE 4.2-3
National MSAT Emission Trends 1999- 2050 for Vehicles Operating on Roadways Using USEPA's MOBILE6.2 Emissions Model



Notes:
(a) Source: http://www.fhwa.dot.gov/environment/airtoxic/100109guidmem.htm (FHWA, 2009d)
(b) Annual emissions of POM are projected to be 561 tpy for 1999, decreasing to 373 tpy for 2050.
(c) Trends for specific locations may be different, depending on locally derived information representing VMT, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

TABLE 4.2-8
Summary of Estimated Operational MSAT Emissions for 2015

	Annual Emissions for 2015 (tons/year) [a][b]						
Activity	**Acrolein**	**Benzene**	**1, 3 Butadiene**	**Diesel PM [i]**	**Formaldehyde**	**Naphthalene**	**POM**
Intermodal Terminal Operation [c]	0.0053	0.0167	0.0095	0.16	0.114	0.000208	0.000013
Onsite Rail Operations [d]	0.0084	0.0266	0.0150	1.53	0.181	0.000330	0.0000206
Emergency Generator [e]	0.000002	0.000005	0.000003	0.0004	0.00003	0.000000584	0.00000000365
Refrigeration Units [f]	0.00046	0.00145	0.00082	0.11	0.00985	0.0000179	0.00000112
Trucks [g][h]	0.0001	0.0032	0.002	0.028	0.022	0.00003.91	0.00000245
Total Emissions	0.0151	0.0480	0.0271	1.83	0.326	0.0005.95	0.0000372

[a] Annual emissions are based on the facility operating at maximum design capacity (165,000 lifts/year).
[b] With the exception of visiting trucks and diesel PM, MSAT emissions are based on the ratio of onsite activity VOC emissions to truck VOC emissions multiplied by the air toxic emission rate estimated for trucks. Truck air toxic emission rates were estimated using USEPA's MOBILE6.2 emissions model (USEPA, 2004a). It is assumed that all $PM_{2.5}$ is Diesel PM.
[c] Intermodal Terminal Operation emissions are based on USEPA Tier 3 emission factors for container/trailer handling equipment (Side Loaders, Cranes, and Hostler Trucks) (EPRI, 2009), and revised to reflect NSR's commitment to use only equipment fitted with Tier 4 diesel engines.
[d] Onsite rail emissions are based on the use of visiting line haul engines and USEPA emission factors (USEPA, 2009a).
[e] Emergency generator emissions are based on one 35 kW generator operating 2 hours per quarter (maintenance) (USEPA, 1996).
[f] Refrigerated container emissions assume that 3% of lifted containers are refrigerated, each operating 12 hours per day, and USEPA small engine emission factors (USEPA, 2009b).
[g] Truck emissions include 290 tractor trailers and 117 bob-tail trucks (no trailers) visiting the site (typical day), plus 5 BRIMF owned supervisor/maintenance trucks (light duty diesel pickup trucks).
[h] Each visiting truck would travel approximately 2 miles onsite and idle 13 minutes (25 total minutes). Each BRIMF maintenance truck would travel 20 miles/day
[i] All $PM_{2.5}$ is assumed to be diesel PM for purposes of this analysis

TABLE 4.2-9
Comparison of Proposed Birmingham Regional IMF Operational MSAT Emissions with Existing Jefferson County Air Emissions

	Jefferson County Emissions	Birmingham Regional IMF [b]	
Pollutant	All County Sources (tons/yr) [a]	Onsite Emissions (tons/yr)	% of All County Sources
Acrolein	16.1	0.0151	0.094
Benzene	893	0.0480	0.0054
1, 3 Butadiene	88.3	0.0271	0.031
Formaldehyde	313	0.3260	0.10
Naphthalene	31.8	0.0006	0.0019
POM	2.83	0.00004	0.0013
Diesel PM[d]	- [c]	1.83	- [c]

[a] Source: http://www.epa.gov/air/data/index.html. (USEPA, 2009e), data are for 2002 (most recent year available).
[b] Maximum emissions attributable to maximum potential operation for CY2015 (first year of maximum operation).
[c] All $PM_{2.5}$ emissions are assumed to be diesel PM for this analysis
[d] Data not available for diesel PM emissions for Jefferson County

4.2.2.5 *Effects of the Project on Climate Change*

GHGs trap heat in the atmosphere. Some GHGs such as CO_2 occur naturally and are emitted to the atmosphere through natural processes. Other GHGs are created and emitted solely through human activities associated with fuel combustion and industrial activities. The principal GHGs that are introduced into the atmosphere because of human activities are:

- CO_2: Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). CO_2 is also naturally removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- Methane (CH_4): Methane is emitted during the processing and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills.
- Nitrous Oxide (N_2O): Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- Fluorinated Gases: Hydrofluorocarbons (HCFCs), perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (ODSs), such as chlorofluorocarbons (CFCs), HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High Global Warming Potential Gases ("High GWP Gases") (USEPA, 2009i).

NSR estimates that the proposed BRIMF would result in a reduction of more than 81 million truck miles to rail that would otherwise provide long-haul transport from the Birmingham region to the Northeast and other areas of the United States (Cambridge Systematics, 2010). The estimated nationwide reduction in CO_2 emissions due to the implementation of this Project has been estimated by NSR to be more than 120,000 tpy, resulting directly from an estimated reduction in diesel fuel usage of more than 10.5 million gallons/year by the year 2020. By reducing the combustion of diesel fuel, the proposed Project would reduce GHG emissions (primarily CO_2) that result from the combustion of fossil fuel. Aside from diesel fuel combustion, there would be no processes or activities that would result in GHG air emissions from the Project. Therefore, the Project would have a substantial positive impact on air quality by effecting a net reduction in national and regional emissions, including GHGs. The reduction of fossil fuel combustion and the corresponding reduction in GHG emissions as a result of the operation of the proposed facility are consistent with national policy objectives for climate change and energy-independence.

4.3 Cultural, Historic, and Archaeological Resources

4.3.1 Affected Environment

In order to assess potential impacts to historic properties, an intensive survey for cultural, historic, and archaeological resources (also including architectural structures of historic significance) was performed for the proposed site of the BRIMF in McCalla, Alabama between June 8 and July 19, 2009, and January 25, 2010 and is detailed in the Phase I Cultural Resources Survey of the Norfolk Southern Railway Company Birmingham Regional Intermodal Facility near McCalla (Brockington and Associates, Inc., 2010). This survey area coincides with the Project's Area of Potential Effect (APE) that was agreed to with the State Historic Preservation Office's (SHPO). Prior to the field work, a search of the Alabama Online Cultural Resources Database (The University of Alabama, Office of Archaeological Services, Moundville) revealed that no cultural resources have been previously recorded within the APE.

The Phase I Survey included an archival literature search and pedestrian surveys for both archaeological and architectural resources. Furthermore, the entire proposed construction footprint was systematically shovel tested and/or subjected to intensive pedestrian survey in order to identify prehistoric and historic cultural resources (including properties of traditional religious and cultural importance to Native American groups). Survey tasks were completed in accordance with criteria defined under Section 106 of the National Historic Preservation Act of 1996 (as amended) (NHPA), and its implementing regulations (36 CFR Part 800), and the Alabama Historical Commission's (AHC) regulations regarding archaeological and architectural surveys (Alabama Administrative Code, Chapter 460-X-9).

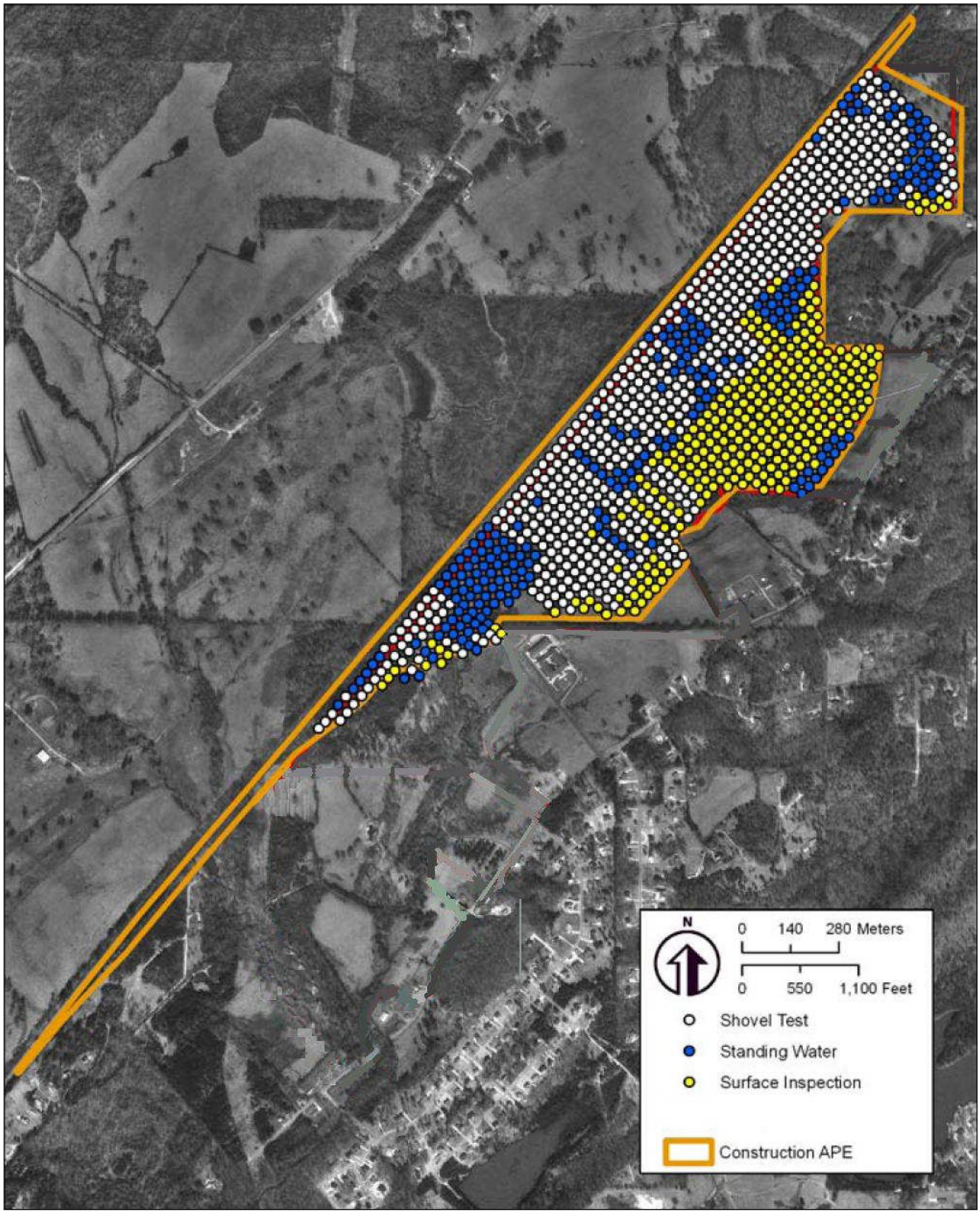
According to 36 CFR Part 60.4 (Criteria for Evaluation), historic resources (referred to as "properties" in the regulations) can be defined as significant (i.e., eligible for the National Register of Historic Places [NRHP]) if they "possess integrity of location, design, setting, materials, workmanship, feeling, or association, and if they:

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

As a result of the Phase I survey (Figure 4.3-1), five isolated artifacts were identified (Brockington and Associates, 2010). These five isolated finds each failed to satisfy NRHP criteria and have been determined ineligible for listing on the NRHP.

Detailed information regarding the five isolated finds is located within the Phase I Survey report (Brockington and Associates, Inc., 2010).

FIGURE 4.3-1
Cultural and Archeological Field Surveys Performed at the Proposed BRIMF Site



An architectural resources survey was also performed consisting of both background research and reconnaissance survey. The purpose of the reconnaissance survey was to identify all architectural resources of or exceeding 50 years of age that might be eligible for the NRHP. For architectural resources, the relevant APE was presumed to be the area within which resources would be physically or visually affected by the presence of the BRIMF (Figure 4.3-2). However, the Project viewshed varied due to topography and vegetation.

Background research focused primarily on documenting previously recorded resources within the Project APE. Research was conducted at the AHC in Montgomery. At the AHC, the NRHP files, the Alabama Register of Landmarks and Heritage, the Alabama Historic Cemetery Register files, the Alabama Historic Bridge Inventory, and Jefferson County survey files were reviewed to determine if any NRHP eligible, nominated, or listed resources are within or adjacent to the Project footprint. Additional research was undertaken using the online Jefferson County Tax Assessor's Records.

Background research revealed that there were no previously recorded properties within the APE. The architectural reconnaissance identified one previously unrecorded resource (the Rosser Farm) greater than 50 years of age within the Project APE. The farm does not satisfy NRHP criteria and was determined ineligible by the Alabama SHPO (Brown, 2010). The farm does not meet NRHP criteria because it is not associated with an event or person that has made a significant contribution to the history of the U.S. and it is unlikely to yield information that was or would be considered significant to prehistory or history.

4.3.2 Environmental Consequences

The Phase I Survey of the proposed APE identified five isolated finds, as well as one architectural resource more than 50 years of age, the Rosser Farm. The five isolated finds fail to satisfy NRHP criteria and are thus ineligible for listing on the NRHP. The Rosser Farm (Resource 073-0001-000) is a 1954 Ranch house with four associated historic outbuildings. The Rosser Farm does not satisfy NRHP criteria; therefore, it was determined to be ineligible by SHPO (Brown, 2010).

The survey area was found to be largely low-lying and poorly drained and devoid of intact topsoils in many areas. As the entire APE has been scrutinized through intensive pedestrian survey and shovel testing, the potential for additional, undocumented cultural resources to be located within the project area is considered low. The undertaking is not expected to affect historic properties (Brockington and Associates, 2010). The Phase I Cultural Resources Survey Report was provided to the AHC (SHPO) in February 2010. Revisions to this report, which provide a more detailed analysis of the Rosser farm, were submitted in May 2010. Concurrence was received in July 2010 and is provided in Appendix C.

An Unexpected Discoveries and Emergency Procedures Plan would be provided to workers as part of the Environmental Compliance Manual. This plan would establish procedures to be followed if previously unidentified cultural resources, such as archeological sites, historic features, or human remains are encountered during project construction.

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0 750 1,500 3,000 Feet

FIGURE 4.3-2
AREA OF POTENTIAL EFFECT FOR THE HALF-MILE VIEWSHED OF ARCHITECTURALLY HISTORIC STRUCTURES
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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4.4 Fish, Wildlife, and Vegetation

4.4.1 Affected Environment

The proposed BRIMF project site is located within the Birmingham-Big Canoe Valley District of the Valley and Ridge region. The district is a narrow limestone valley developed on shale, sandstone, and chert, and characterized by numerous springs originating in the carbonaceous terrain (Mettee et al., 1996).

Nearly all of the proposed project site drains south to headwater tributaries of Mill Creek in the Shades Creek watershed within the Cahaba River basin. All of the proposed site located southwest of McAshan Drive (entrance road, automated gate system, administration building, maintenance area, pad tracks, storage tracks, trailer spaces, siding, and southwest lead track) drains to Mill Creek tributaries (Figure 4.4-1), with the exception of a small ditch at the toe of McAshan Drive. The small ditch along McAshan Drive and about 1 mile of the proposed lead track located northeast of McAshan Drive (within the NSR mainline ROW) drain northeast to headwater tributaries of Fivemile Creek in the Valley Creek system of the Black Warrior River basin.

The Cahaba River is a major tributary of the Alabama River and is the longest of the remaining free-flowing rivers in Alabama. Despite the impaired nature of substantial stretches of the river and its tributaries, the watershed is considered a biodiversity hotspot by The Nature Conservancy (Master et al., 1998). The Cahaba River supports about 69 rare and imperiled species, including 10 fish and mussel species protected by the Federal ESA (Cahaba River Society, 2009).

The Black Warrior River basin drains the southwest part of the Birmingham-Big Canoe Valley District and contains some distinctive spring-fed tributary habitats supporting rare aquatic species. The basin lies mostly within the adjacent Cumberland Plateau physiographic region and has been adversely affected by urban and industrial development in the Birmingham Valley.

4.4.1.1 *Common Terrestrial Flora and Fauna*

The area around McCalla is predominantly open farmland and mixed pine-hardwood forest. Trees and shrubs common to the area include loblolly pine, slash pine, hackberry, oaks, hickories, flowering dogwood, red bud, northern red oak, sycamore, red maple, sweet gum, black cherry, persimmon, sourwood, wax myrtle, American holly, and blackberries. Chinese privet, an invasive species, pervades the region.

Typical terrestrial fauna in the project area includes whitetail deer, raccoon, opossum, beaver, harvest mouse, eastern mole, gray squirrel, chipmunks, and eastern cottontail rabbit. Common bird species include red-shouldered hawk, wild turkey, Canada goose, sparrows, warblers, and other songbirds. The region is rich in amphibian and reptile species.

Wildlife associated with the project site includes small mammals, birds, and reptiles. A variety of common small mammals and birds were observed during field investigations. Evidence of white-tailed deer activity was also noted.

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Perennial Stream
Pond
Proposed Facility Footprint
Ephemeral/Stormwater Conveyance Stream
Ephemeral Stream
Intermittent Stream
Wetland

Perennial: Water flow typically occurs year round.
Intermittent: Seasonal water flow typically provided by groundwater.
Ephemeral: Water flow typically present for a short duration following a storm event.

0 800 1,600 3,200 Feet

FIGURE 4.4-1
POTENTIALLY IMPACTED WATERBODIES AND WETLANDS
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

CH2MHILL NORFOLK SOUTHERN

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4.4.1.2 *Fish and Aquatic Resources*

The proposed BRIMF project site drains to three small tributaries of Mill Creek flowing south and southeast from the NSR mainline toward Eastern Valley Road (Figure 4.4-1):

- An eastern (unnamed) tributary to Mill Creek, a perennial spring-fed stream located immediately southwest of the proposed facility site in Jefferson County. This tributary is fed by Hicks Spring, located about 2,300 ft (0.4 mile) upstream of the existing NSR mainline. In the project area, the eastern tributary receives flow from a smaller unnamed stream that drains southwest from the central portion of the proposed facility, as well as two unnamed spring tributaries.
- A western (unnamed) tributary to Mill Creek, located southwest of the proposed facility site in Jefferson County, flows under the existing NSR mainline where construction of the southwest lead track would occur. This perennial creek joins the eastern tributary just upstream of Eastern Valley Road to form Mill Creek.
- Cooley Creek, a perennial tributary to Mill Creek located farther southwest of the proposed facility site in Tuscaloosa County, flows under the existing NSR mainline where construction of the southwest lead track would occur. Cooley Creek flows into Mill Creek downstream of Eastern Valley Road.

Downstream of the project area, Mill Creek flows into Mud Creek at Tannehill State Park in Tuscaloosa County, about 2.2 air miles south-southwest of the Eastern Valley Road crossing of Mill Creek. Mud Creek flows into Shades Creek in Bibb County about 1.9 air miles east-southeast of the confluence of Mill Creek and Mud Creek. Shades Creek is a large tributary to the Cahaba River (Figure 4.4-2). Several Federally listed aquatic species, including fish and aquatic mollusks (mussels and snails), are known to occur in the Cahaba River within the Valley and Ridge physiographic region, including the lower reaches of Shades Creek.

Aquatic species surveys conducted in tributaries to Mill Creek in June and August 2009 documented the occurrence, distribution, and relative abundance of native fish (Dinkins Biological Consulting, 2009) and mollusk (Gangloff, 2009) species in the vicinity of the proposed BRIMF project. No aquatic species surveys were conducted in the headwaters of Fivemile Creek (Valley Creek system of the Black Warrior River basin) northeast of McAshan Drive because wetland field surveys determined that potentially affected waterbodies were ephemeral in their flow characteristics and lacked suitable persistent habitat for fish and mollusk populations. Moreover, no spring habitats were observed along the existing NSR mainline ROW.

The following sections summarize the aquatic species survey findings for the Mill Creek tributaries and associated springs in the Shades Creek watershed.

Fish

The Mill Creek perennial tributaries draining the project area support relatively diverse small-stream fish communities. The fish survey documented the occurrence of 24 species, mostly sunfish and bass (10 species), minnows (5 species), and darters (4 species) (Dinkins Biological Consulting, 2009). The eastern tributary to Mill Creek contained the most diverse assemblage of species: 20 species were collected in the mainstem, 8 were collected in the lower perennial reach of the smaller tributary; and 8 were collected in the spring tributary

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Stormwater Pond

0 750 1,500 3,000 Feet

FIGURE 4.4-2
CAHABA RIVER TRIBUTARY MAP
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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(Dinkins Biological Consulting, 2009). The mainstems of the western tributary to Mill Creek and Cooley Creek yielded 17 and 16 species, respectively. Habitats present in the upstream sections of these streams near the proposed project site include runs, pools, and riffles, with substrates dominated by bedrock, gravel, sand, or silt. Submerged and emergent vegetation is abundant in some areas. Habitats in the downstream sections of the eastern and western tributaries to Mill Creek include larger proportions of good quality riffle habitats.

No Federally listed threatened, endangered, or candidate fish species, State protected fish species, or Alabama fish species of high conservation concern were detected in the survey (Dinkins Biological Consulting, 2009).

The proposed site is located above the Fall Line and the BRIMF would not affect essential fish habitat (EFH) for the maintenance of suitable marine fishery habitat quality and quantity under the Magnuson-Stevens Fishery Conservation and Management Act. The Gulf of Mexico Fishery Management Council has not designated EFH for any species of fish or shellfish found in the vicinity of the proposed project site (National Marine Fisheries Service, 2008).

Mollusks

The Mill Creek perennial tributaries in the proposed project area also support native communities of mollusks (snails and mussels). The mollusk survey conducted by Gangloff (2009) documented the occurrence of native snail species (genus *Elimia*), five native mussel species of the family Unionidae, and one non-native introduced mussel species. The most favorable habitat conditions for native mollusks primarily occur in the lower sections of the eastern tributary and western tributary and in the mainstem of Mill Creek near Eastern Valley Road. No evidence was found for the occurrence of Federally listed threatened, endangered, or candidate species or State protected species of mollusks in Mill Creek tributaries in the vicinity of the proposed BRIMF. However, three mussel species of conservation concern in Alabama were detected including:

- *Toxolasma corvunculus* (Southern purple lilliput) - considered a Priority 1 (P1) species of highest conservation concern in Alabama (Garner et al., 2004). A single individual of this species was found in the eastern tributary to Mill Creek about 3,800 ft (0.7 mile) downstream of the existing NSR mainline.

- *Lasmigona etowaensis* (Etowah heelsplitter) - considered a Priority 2 (P2) species of high conservation concern (Williams et al., 2008; Garner et al., 2004). A single individual of this species was found in the eastern tributary about 4,800 ft (0.9 mile) downstream of the NSR mainline (Survey Site 12). A single individual of *L. etowaensis* also was found in the western tributary about 2,900 ft (0.5 mile) downstream of the mainline.

- *Villosa umbrans* (Coosa creekshell) - considered a P2 species of high conservation concern (Garner et al., 2004). This species was found throughout the survey area in both the eastern and western tributaries to Mill Creek but was not found in Cooley Creek.

All three species of conservation concern are known to occur primarily in small isolated populations in high-quality tributary streams in the Mobile basin of Alabama and Georgia (Williams et al., 2008). However, due to the large number of small un-surveyed streams within the Mobile basin, the extent of these species' distributions remains poorly known (Gangloff, 2009).

4.4.1.3 *Protected Species*

Lists of Federal and State protected species potentially occurring in the vicinity of the proposed BRIMF in Jefferson and Tuscaloosa Counties were obtained from the rare species databases maintained by the Alabama Natural Heritage Program (ANHP, 2009) and the U.S. Fish and Wildlife Service (USFWS, 2009) Alabama Ecological Services Field Station, Daphne, Alabama. Following review and analysis of the species and their distribution and habitat requirements, field surveys were performed within the proposed project area May 13 – 20, June 12 and 24-25, August 3-5, and August 11-12, 2009 to evaluate the occurrence of protected species and their habitats. Fish surveys conducted in August 2009 (Dinkins Biological Consulting, 2009) and aquatic mollusk surveys conducted in June and August 2009 (Gangloff, 2009) did not detect the occurrence of Federally listed threatened, endangered, or candidate aquatic species, or State protected aquatic species in the Mill Creek tributaries in the project area (see Section 4.4.1.2).

Wetland field surveys conducted by biologists in May, June, and August 2009 did not identify potentially suitable habitats for Federally listed threatened, endangered, or candidate aquatic species, or State protected aquatic species in the headwaters of the Valley Creek system (Black Warrior River basin) at the northeast end of the site. The potentially affected waterbodies in this basin were determined to be ephemeral in their flow characteristics and lacked suitable persistent habitat for fish and mollusk populations. Moreover, no spring habitats were observed along the NSR mainline ROW.

Terrestrial field surveys conducted by biologists in May, June, and August 2009 did not identify potentially suitable habitats for Federally listed threatened, endangered, or candidate plant and wildlife species, or State protected wildlife species in the project area. One Federally endangered plant species, the leafy prairie clover (*Dalea foliosa*), historically occurred in northern Jefferson County, but the limestone glades or limestone barrens habitats this species is known to occupy are not found in the project area.

Appendix B provides a list of the Federally threatened, endangered, and candidate species and Alabama State protected species that potentially occur in Jefferson and Tuscaloosa Counties. The list includes habitat and distribution notes, which also summarize the findings of the field surveys conducted at the proposed BRIMF site. Literature review included the Alabama Wildlife volumes published for the Alabama Department of Conservation and Natural Resources (ADCNR) comprehensive wildlife conservation strategy (Mirarchi, 2004; Mirarchi, Garner, et al., 2004; Mirarchi, Bailey, et al., 2004); NatureServe Explorer Species Reports (NatureServe, 2009); USFWS (2004) designation of critical habitat for mussels in the Mobile River basin; the Alabama freshwater mussels book by Williams et al. (2008); Alabama fishes books by Boschung and Mayden (2004) and Mettee et al. (1996); recent species evaluations completed for Federally listed and candidate species by USFWS; and other regional texts and scientific literature.

4.4.2 Environmental Consequences

4.4.2.1 *Common Flora and Fauna*

Tree removal within the proposed facility footprint would be a permanent impact to vegetation and plant communities. However, the number of mature trees to be removed would be minimal as the proposed site was chosen with the intent of avoiding clearing

activities within forested areas to the greatest extent practical. The majority of vegetation that would be cleared and permanently converted to industrial space would be non-native ryegrass that was planted for hay production.

It is expected that wildlife would be displaced from the construction area and immediately adjacent lands during construction. The number of animals displaced by the facility would be minimal, as the majority of the land that would be used for the facility has been previously cleared and provides poor habitat value for native wildlife species. At the proposed BRIMF site, displaced animals would be able to relocate to suitable habitat because connected riparian and forested areas would be preserved and would provide travel corridors for wildlife. Because sufficient suitable habitat is expected to be available for assimilation of displaced animals, any secondary impacts to animal populations in the area surrounding the BRIMF would likely be negligible.

Once the BRIMF is operational, the disturbance from constant activity at the facility could prevent some recolonization of adjacent areas where suitable habitat remains, but some animals would be expected to adjust to the disturbance and resume use of adjacent areas. No other impacts to wildlife would be expected from operation of the facility.

4.4.2.2 *Fish and Aquatic Resources*

The potential impacts to fish and aquatic resources in the proposed project area would be minimal for the region given the amount of suitable habitat available nearby in the same stream systems. The streams in the proposed project area are typical headwater streams for the Valley and Ridge region in the Cahaba River and Black Warrior River basins. The fish species occurring in the project area streams are widespread and common in these watersheds. There are no unique species associated with the stream segments that would be affected by project construction and operation. Impacts would be localized to the immediate project area and would be unlikely to result in the elimination of local populations of aquatic species from the affected tributary systems.

Implementation of the proposed project would result in the permanent alteration of approximately 1,230 linear feet of perennial, 2,026 linear feet of intermittent, and 1.1 acres of ephemeral streams. These streams would be either piped, crossed by new track, or relocated during construction. These changes would permanently alter these waterbodies and likely change the fish population dynamics locally. Construction BMPs and the installation of bridge crossings and a bottomless culvert would reduce potential impacts resulting from construction and operations. However, given the size of the watershed and available nearby suitable habitats, fish species would likely relocate away from the immediate project site, at least temporarily during construction. Any detrimental impacts to the overall fisheries of the region associated with the implementation of the Proposed Action would be minor and would be mitigated through the purchase of commercial mitigation credits to offset the impacts to these streams. The perennial and intermittent stream impacts would be mitigated through the purchase of stream mitigation credits. Wetland mitigation credits would be purchased to offset the impacts to ephemeral streams.

Operation of the proposed BRIMF could affect downstream habitat for fish, mollusks, and other aquatic resources as a result of altered surface water hydrology related to the conversion of rural agricultural land to impervious surfaces. Increases in surface flow volume and peak stormwater runoff from the project site could increase the potential for

stream channel erosion and downstream transport of sediment in the eastern tributary to Mill Creek. However, the proposed stormwater management system, including the retention pond system and its outlet control features, would minimize changes in flow volume discharging from the site and retain peak stormwater for gradual release. Moreover, the retention pond system would treat stormwater from the impervious surfaces to prevent or minimize changes in downstream water quality.

4.4.2.3 *Protected Species*

Construction and operation of the proposed BRIMF would not be expected to adversely affect Federally or State protected species based on the field surveys, literature review, and consultation with USFWS and ADCNR. The aquatic, wetlands, and terrestrial surveys did not identify potentially suitable habitats for, or detect the occurrence of, Federally or State protected species in the project area.

In a letter to ALDOT dated August 4, 2009, ADCNR indicated that the Project is unlikely to impact State protected species (Marshall, 2009a, personal communication). The letter identified that the Federally threatened round rocksnail (*Leptoxis ampla*) is known to inhabit Mud Creek downstream of the project area in Bibb County. However, the mollusk surveys conducted in the project area in Jefferson and Tuscaloosa Counties did not detect this species (Gangloff, 2009). ADCNR also identified that Tannehill Spring in Tuscaloosa County, located near the NSR mainline about 0.6 mile southwest of the proposed project footprint in Tuscaloosa County, supports cockle elimia (*Elimia cochliaris*), a snail species of highest conservation concern (P1) in Alabama but which is not listed as Federal or State protected (Marshall, 2009b, personal communication). The proposed project would not affect Tannehill Spring, and the mollusk surveys in the project area did not detect this species.

Project team biologists met with USFWS biologists in Daphne, Alabama on October 22, 2009 to present the findings of the protected species surveys for fish and aquatic mollusks and to discuss USFWS interests relative to the proposed project. On February 2, 2010, ALDOT forwarded to USFWS the final protected species survey reports (Dinkins Biological Consulting, 2009; Gangloff, 2009) and a technical memorandum (dated February 1, 2010) evaluating the potential for occurrence of Federal and State protected species at the proposed project site (Adams, 2010). In its letter to ALDOT dated February 12, 2010, USFWS documented its concurrence with the findings and reports for this project, concluding that the proposed BRIMF would be unlikely to adversely affect Federally threatened, endangered, or candidate species (Pearson, 2010). The USFWS letter is provided in Appendix B.

No impacts to Federally or State protected species would likely result from project implementation. As such, no significant impacts are anticipated. Three mussel species of conservation concern in Alabama occur in the area. Two of these species (southern purple lilliput and Etowah heelsplitter) were found in habitats located 0.5 creek mile or more downstream from the proposed facility footprint. One of the species (Coosa creekshell) occurs throughout the project area in the eastern and western tributaries to Mill Creek. It is anticipated that project implementation would not result in adverse impacts to these species' populations in the Mill Creek system. BMPs would be implemented during construction and operations to avoid and minimize the risk to potentially sensitive species that may be located within and downstream of the proposed project area.

4.5 Water Resources

4.5.1 Affected Environment

4.5.1.1 *Groundwater*

Springs in the project area include Hicks Spring, located about 2,300 ft (0.4 mile) northeast and upstream of the proposed project site along the unnamed eastern tributary to Mill Creek (Cahaba River basin). Two small unnamed springs enter the same eastern tributary southwest of and adjacent to the proposed project site (Figure 4.4-1). Other springs in the project area but located farther from the proposed site include: Tannehill Spring in Tuscaloosa County located about 0.6 mile southwest of the southwest extent of the proposed lead track near the intersection of the NSR mainline and Tannehill Parkway (Cahaba River basin, Figure 4.4-2) (Marshall, 2009a, personal communication); and Cox Spring, located about 2 miles north of the site in the Fivemile Creek system of Valley Creek (Black Warrior River basin). Groundwater sources in the Red Mountain formation southeast of the project site yield approximately 10 gallons per minute.

A desk-top review was performed to identify potential water wells located within a 1-mile radius of the proposed site. The databases searched included the following:

- Federal Public Water Systems
- Public Water Systems Violations and Enforcement Data
- USGS National Water Inventory System (NWIS)
- Alabama Wells Data
- Alabama Oil and Gas Board and the Geological Survey of Alabama

The above databases did not locate any public water supply or private wells within a 1-mile radius of the proposed site.

Hard copy files were also reviewed at the Geological Survey of Alabama to identify potential wells within Township 20 South, Range 5 West. Since the proposed site crosses multiple Township/Range/Sections, a 1-mile radius search was performed on Sections 9, 10, 11, 14, 15, 16, 21, 22, and 23. As shown on Figure 4.5-1, two private wells were identified within the same Section as the proposed site (Section 15); however, their coordinates were not available. An additional 18 private wells were identified in the other Sections, but it is unknown whether they are located within a 1-mile radius of the proposed site. As shown in Figure 4.5-1, the number of wells within each section is available; however the exact location of the private wells is not publically available.

4.5.1.2 *Surface Water*

The proposed BRIMF project site is located almost entirely within the Cahaba River basin. A portion of the proposed lead track extending northeast of McAshan Drive drains to unnamed, ephemeral headwater tributaries to Fivemile Creek within the Valley Creek system of the Black Warrior River basin (Figure 4.5-2).

Streams draining the project site to the Cahaba River basin flow south to headwater tributaries of Mill Creek in the Shades Creek watershed (Figure 4.5-2). These tributaries join near Eastern Valley Road to form Mill Creek. Mill Creek drains an area of about 15 square

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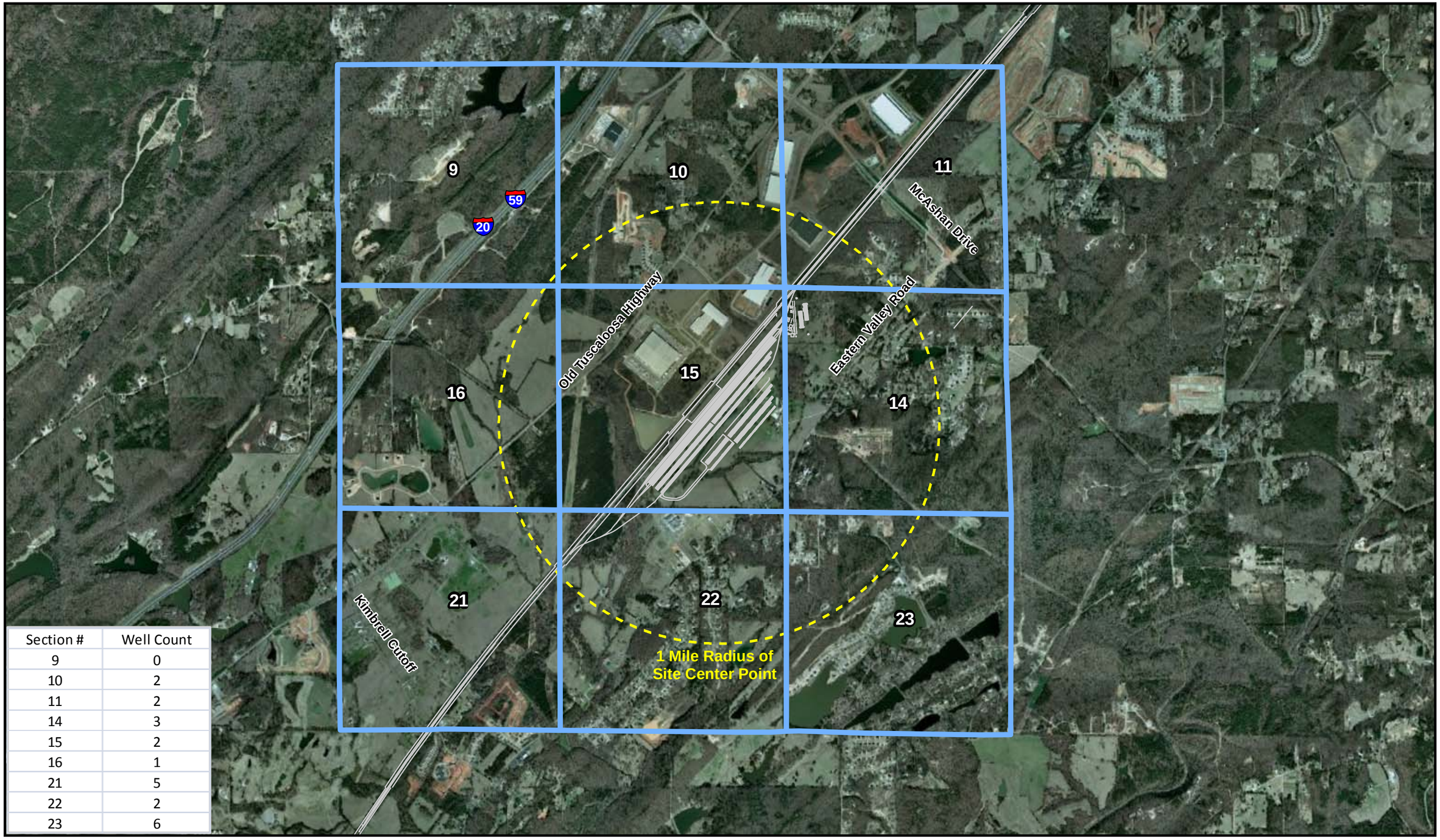

Section #	Well Count
9	0
10	2
11	2
14	3
15	2
16	1
21	5
22	2
23	6

PLSS Section Included in Survey
1 Mile Radius of Site Center Point
Proposed Facility Footprint

Source: Geological Survey of Alabama (2009)
US Forest Service (2009)

N
0 2,000 4,000
Feet

FIGURE 4.5-1
PRIVATE WATER WELL OCCURENCE BY SECTION
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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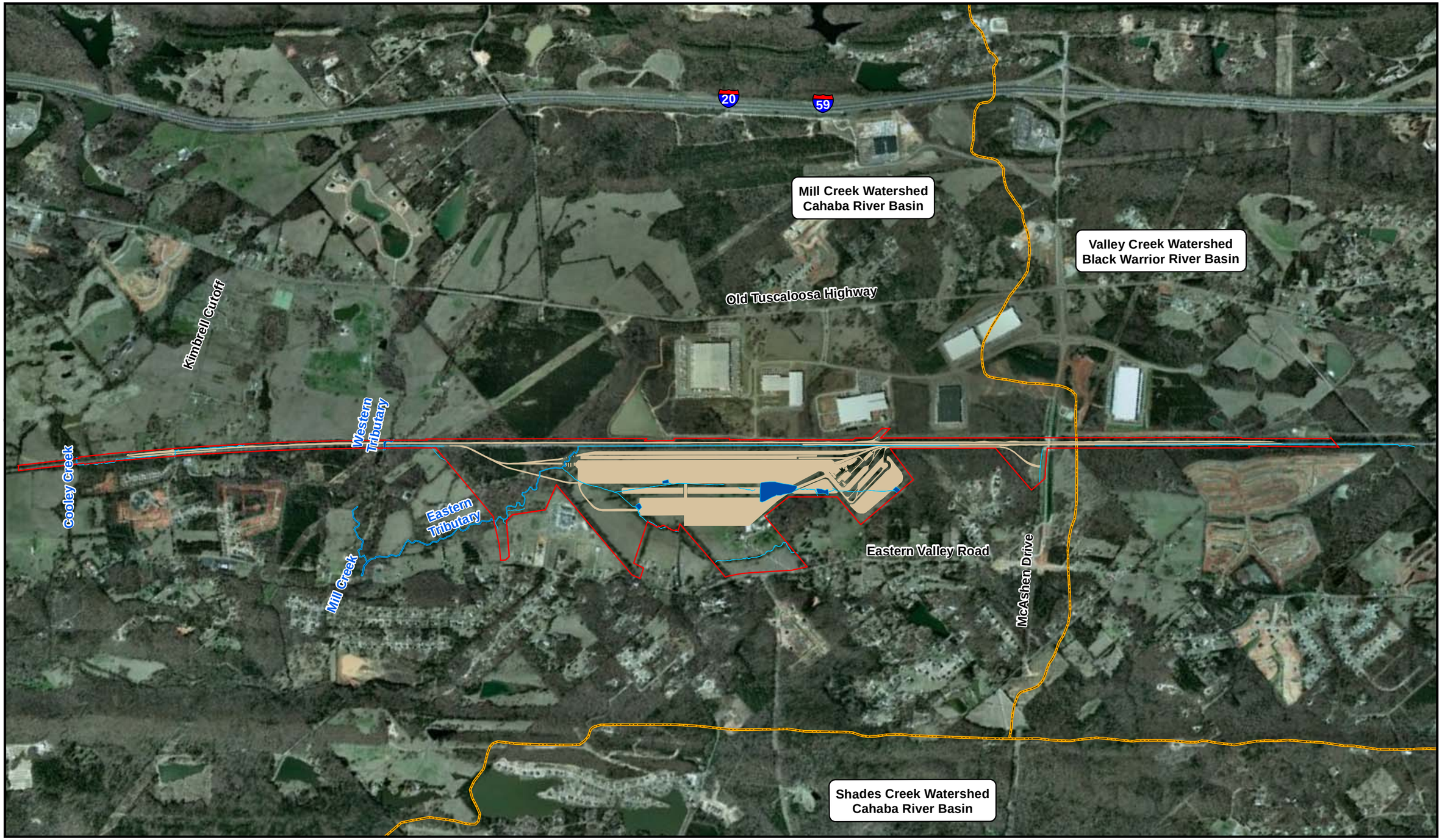

Review Area

Surveyed Waterbody

Proposed Facility Footprint

Watershed Boundary

0 1,750 3,500 Feet

FIGURE 4.5-2
CONCEPTUAL PLAN/WATERSHED BOUNDARIES
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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miles (USEPA, 2003) and flows south into Mud Creek at Tannehill State Park. Mud Creek drains an area of about 28 square miles and flows southeast into lower Shades Creek, a major tributary to the upper Cahaba River (Figure 4.4-2). Shades Creek is 56.4 miles long and drains 138 square miles of watershed. Shades Creek flows through several major urban and residential areas in the Birmingham region, including Irondale, Mountain Brook, Birmingham, Homewood, Hoover, and Bessemer (Friends of Shades Creek, 2009). Portions of the upper Shades Creek watershed have experienced substantial residential expansion and development in recent years, which have contributed to increased stormwater runoff and associated siltation, turbidity, and aquatic habitat alteration (USEPA, 2004b).

ADEM (2008) classifies the water uses of Shades Creek to its source (including Mill Creek and its tributary Cooley Creek) as Fish and Wildlife (F&W). Best usages of F&W waters are fishing, propagation of fish, aquatic life, and wildlife, and any other usage except for swimming and water-contact sports or as a source of water supply for drinking or food-processing purposes. In addition to conditions applicable for all water quality criteria of Alabama waters, specific water quality criteria apply to these uses for pH, temperature, dissolved oxygen, fecal coliform, turbidity, and other parameters as set forth in ADEM Administrative Code Regulations, Chapter 335-6-10 (Water Quality Criteria) (ADEM, 2008).

Several streams draining the project area only partially support their designated uses due to elevated densities of fecal coliform bacteria. USEPA (2003) developed a Total Maximum Daily Load (TMDL) for Mill Creek, Cooley Creek, Mud Creek, and Shades Creek in the Cahaba River basin to address both wet-weather and continuous sources of fecal coliform bacteria through the implementation of Best Management Practices (BMPs). Fecal coliform violations in the project area streams (Mill and Cooley Creeks) typically occur during wet-weather conditions, and probable sources of impairment in these streams have been identified by ADEM as pastures/grazing (USEPA, 2003). The TMDL recommends that load allocations for such nonpoint sources be achieved through voluntary application of BMPs, and that waste load allocations for point sources (Mud and Shades Creeks) be implemented through the State's NPDES program.

Table 4.5-1 summarizes ADEM's categorization of surface waters with respect to the degree existing water quality supports designated uses. project area streams Mill Creek and Cooley Creek in the Cahaba River basin are in attainment with all applicable water quality standards with the exception of fecal coliform bacteria, which is being addressed through the established TMDL (USEPA, 2003). Downstream beyond the project area, Shades Creek is impaired not only by fecal coliform but also by siltation, turbidity, and habitat alteration associated with excessive amounts of sediment loading from urban development. USEPA (2003) established a TMDL for Shades Creek to address sediment loadings from both point and nonpoint sources. Jefferson County has developed a Comprehensive Plan (The Shades Creek Watershed Plan*)* that addresses many of these issues and focuses on road and sewer development in addition to economic and recreational issues.

Based on the more limited water quality data available for project area streams in the Black Warrior River basin, the headwater tributaries of Fivemile Creek (Valley Creek system) are considered likely to be attaining their designated F&W uses (Table 4.5-1).

TABLE 4.5-1
Categorization of Project Area Waterbodies with Respect to the Degree Existing Water Quality Supports Designated Uses

Waterbody	Classification[a]	From	To	Category[b]	Length (miles)	TMDL(s)[c]
Cahaba River Basin:						
Mill Creek	F&W	Mud Creek	Its source	4A	6.65	Fecal coliform
Cooley Creek	F&W	Mill Creek	Its source	4A	2.83	Fecal coliform
Mud Creek	F&W	Tannehill Iron Works	Its source	4A	4.08	Fecal coliform
Mud Creek	F&W	Shades Creek	Tannehill Iron Works	1	3.68	Not applicable
Shades Creek	F&W	Cahaba River	Its source	4A	56.38	Fecal coliform Siltation, turbidity, and habitat alteration
Black Warrior River Basin:						
Valley Creek	F&W	Opossum Creek	Its source	2B	13.53	Not applicable

Source: ADEM (2008b).

[a] Water use classification: F&W = Fish and Wildlife

[b] Category definitions:

1: waters that are attaining all applicable water quality standards.

2B: available data do not satisfy minimum data requirements but there is a low potential for use impairment based on the limited data.

4A: waters for which all TMDLs needed to result in attainment of all applicable water quality standards have been approved or established by USEPA.

[c] Approved or established TMDLs:

Fecal coliform in the Shades Creek watershed (USEPA, 2003).

Siltation, turbidity, and habitat alteration in Shades Creek (USEPA, 2004b).

Environmental surveys of the proposed BRIMF site and adjacent parcels were conducted May 13-15, June 12 and 25, August 3-5 and 11-12, 2009, for the purpose of identifying streams, wetlands, and potential habitat for protected species and Alabama species of conservation concern. To the north of the proposed BRIMF site, areas of potential impact were surveyed to approximately 0.75 mile north of McAshan Drive. The surveys in this area primarily paralleled the NSR tracks in areas proposed for widening, as well as the area along the proposed access to the site from McAshan Drive. To the south, surveys paralleled the NSR tracks for about 1.5 miles in areas proposed for widening, and within the Mill Creek watershed between the NSR tracks and Eastern Valley Road. The proposed construction would be within the existing ROW, but clearing, grading, and construction would be performed adjacent to the tracks. The entire area proposed for development of the BRIMF was surveyed for wetlands, waterbodies, protected species, and other environmental features.

Streams are classified based on flow characteristics as one of three types: ephemeral, intermittent, or perennial. Ephemeral streams are features that have flowing water in direct response to precipitation for a short duration after precipitation events in a typical year. Ground water is not a source of water for the stream and runoff is the primary source of water for stream flow.

Intermittent streams have flowing water that is provided by groundwater for part of the year in years with normal rainfall, typically in winter and spring in Alabama when the stream bed is

below the seasonal water table. Runoff from precipitation provides a supplemental source of water for stream flow. Aquatic species present include species that are aquatic for a part of their life history or move to perennial waters.

Perennial streams typically contain a well-defined channel with flow occurring year round during years of normal rainfall and with the stream bed below water table for most of the year. These streams generally support a diverse aquatic area of organisms.

Twenty-six waterbodies (21 streams, 5 ponds) were identified within the area with potential to be developed for the BRIMF (Figure 4.4-1). Eight of the streams were identified as ephemeral during field investigations, and six were described as drainage ditches or stormwater conveyances of low quality, with little or no wildlife habitat value. These man-made drainages were built to manage water associated with the railroad tracks. The ponds on the site are stream impoundments with turbid water typical of farm ponds. The remaining intermittent and perennial streams were described as medium to high quality with wide flood zones and riparian vegetation in areas, providing wildlife habitat within and adjacent to the streams. Many of the streams on the site have been affected by agricultural uses, including grading, clearing, and straightening.

4.5.2 Environmental Consequences

4.5.2.1 *Groundwater*

The proposed BRIMF site would not require removal of groundwater during construction or operation. There is no planned extraction of groundwater, nor would the Project be expected to deplete nearby surface waterbodies. The predominant soils in the area of the proposed project are classified as somewhat poorly drained silt loams, which may reduce potential impacts to the surficial aquifer from spills of facility fluids, such as petroleum products, used in the operation of machinery at the facility. The geotechnical study completed for this Project (TTL, 2009) has also determined that the site is underlain by an expansive clay layer further reducing the potential for spills to reach groundwater. The BRIMF would have operational policies and procedures to manage such materials, so that an accidental petroleum spill should not occur. However, if such a spill were to occur, the facility's Spill Prevention, Control, and Countermeasures (SPCC) Plan would be used to contain, manage, and clean up the spill. The procedures outlined in the ADEM-approved SPCC Plan would be expected to minimize, to the extent practical, potential impacts to the surficial aquifer.

Public water supply wells in the area would not be impacted since they are distant (greater than 1 mile) from the proposed BRIMF site (EDR, 2009). Two private wells were identified within the same Section as the proposed site; however, their coordinates were not available. An additional 18 private wells were identified in the other Sections, but it is unknown whether they are located within a 1-mile radius of the proposed site (Figure 4.5-1). Typically, water supply wells are installed in deeper, high-producing aquifers; therefore, it is not anticipated that the proposed BRIMF would impact these private wells. Historically, well owners have been allowed to place wells at their discretion without registering or publicizing the locations.

The construction footprint of the proposed BRIMF would avoid two small unnamed springs entering the eastern tributary to Mill Creek near the southwestern end of the main facility, where new tracks would cross the creek. One small spring and its associated wetland are located between the proposed stream crossings and would not be directly affected by the

construction of the stream crossings. Construction BMPs would be implemented to control and minimize erosion and sedimentation in the vicinity of the spring. A second short spring-fed tributary enters the eastern tributary to Mill Creek about 1,300 ft downstream of the Project footprint on land outside of the facility boundary that would not be directly affected by construction or operation. Neither small spring serves as a drinking water source or supports unique or sensitive aquatic species based on the protected species surveys conducted in June and August 2009 (Gangloff, 2009; Dinkins Biological Consulting, 2009).

Other larger known springs in the project area are located either substantially upstream of the project site (Hicks Spring) or farther away in another tributary system (Tannehill Spring) and would not be affected by construction and operation of the Project.

4.5.2.2 *Surface Water*

The proposed BRIMF and its supporting infrastructure would encroach upon surface waters because of the need for the intermodal pad and track to be in a contiguous configuration adjacent to the mainline as described in Section 3.2.2.1; however, the facility design has been modified and refined, as shown in the sub-alternatives discussion, to avoid and minimize impacts to surface waters to the extent practicable. The Proposed Action would result in permanent impacts to 3,256 linear feet of perennial and intermittent streams, 1.1 acres of ephemeral streams, and approximately 4.9 acres of ponds (Table 4.5-2). The Proposed Action would result in the conversion of approximately 261 acres of the 311 acres available for development. The current land use includes undeveloped pasture land, old field habitat, and mixed forest.

TABLE 4.5-2
Waterbodies Impacts Associated with the Proposed BRIMF Site

Feature ID	Waterbody Type	Project Facility	Permanent Impact Area (Linear Feet)	Temporary Impact Area (Linear Feet)	Permanent Impact Area (Acres) [c]	Temporary Impact Area (Acres) [d]
Cahaba River Basin Waterbodies:						
A-WB-004	Perennial stream (eastern tributary of Mill Creek)	Track	220	91	n/a	n/a
B-WB-001	Pond		n/a	n/a	0.20	0.00
B-WB-002	Ephemeral	Entrance/Exit gates	n/a	n/a	0.03	0.00
B-WB-003	Pond	Switching Track/Trailer Storage	n/a	n/a	3.94	0.00
B-WB-005	Ephemeral	Switching Track	n/a	n/a	0.01	0.00
B-WB-006	Intermittent stream		2,026	104	n/a	n/a
B-WB-007	Perennial stream (unnamed tributary to eastern tributary of Mill Creek)	Track/Trailer Storage	939	851	n/a	n/a
B-WB-008	Pond	Trailer Storage	n/a	n/a	0.19	0.00

TABLE 4.5-2
Waterbodies Impacts Associated with the Proposed BRIMF Site

Feature ID	Waterbody Type	Project Facility	Permanent Impact Area (Linear Feet)	Temporary Impact Area (Linear Feet)	Permanent Impact Area (Acres) [c]	Temporary Impact Area (Acres) [d]
B-WB-024	Ephemeral	Track	n/a	n/a	0.29	0.09
B-WB-031	Ephemeral[b]	Inbound/Outbound Track	n/a	n/a	0.00	<0.01
B-WB-032	Perennial stream (western tributary of Mill Creek)	Inbound/Outbound Track	71	223	n/a	n/a
B-WB-033	Ephemeral[b]	Inbound/Outbound Track	n/a	n/a	0.05	0.05
B-WB-034	Ephemeral[b]	Trailer Storage	n/a	n/a	0.04	0.00
B-WB-035	Pond		n/a	n/a	0.41	0.00
B-WB-036	Ephemeral[b]		n/a	n/a	<0.01	0.00
B-WB-038	Ephemeral[b]	Inbound/Outbound Track	n/a	n/a	<0.01	<0.01
B-WB-040	Pond	Switching Track	n/a	n/a	0.16	0.00
B-WB-041	Ephemeral[b]	Switching Track	n/a	n/a	<0.01	0.00
Black Warrior River Basin Waterbodies:						
B-WB-023	Ephemeral[b]	Access Road	n/a	n/a	0.01	0.01
B-WB-025	Ephemeral[b]	Inbound/Outbound Track	n/a	n/a	0.65	0.00
		Perennial Stream Length Subtotal	**1,230**	**1,165**	**--**	**--**
		Intermittent Stream Length Subtotal	**2,026**	**104**	**--**	**--**
		Ephemeral Area Subtotals	**--**	**--**	**1.11**	**0.17**
		Pond Area Subtotal	**--**	**--**	**4.90**	**0.00**
		Totals[a]	**3,256 ft (Intermittent and Perennial Only)**	**1,269 ft (Intermittent and Perennial Only)**	**6.01 acres (Ephemeral and Ponds Only)**	**0.17 acres (Ephemeral and Ponds Only)**

[a] The USACE Mobile District (USACE, 2009) treats ephemeral streams as wetlands for mitigation purposes. n/a = not applicable

[b]Ephemeral streams: In accordance with Section 404 and USACE regulations at 33 CFR Part 328, rail ditches constructed for management of stormwater would not constitute waters of the United States. See, e.g. 33 CFR § 328.3(a); 51 Fed Reg 41206. Stormwater management systems and conveyances, including rail ditches, do not constitute waters of the United States

[c] Impacts in this column represent the permanent fill and dredge impacts of waterbodies as a result of fill and grading activities.

[d]Impacts in this column represent the temporary construction footprint. The temporary construction footprint would be restored to pre-existing contours and conditions.

As noted in Section 4.6 the proposed site contains a small percentage of wetlands and streams. Figure 4.4-1 depicts waterbodies potentially impacted by the Proposed Action. Construction activities would result in soil disturbance, exposed soil, and loss of vegetative cover, which would create the possibility for transport of sediment and soil-bound pollutants into streams. These activities also could result in modified surface water runoff patterns and volumes, which could result in reduced water quality from increased sediment transport, and degradation of stream habitat and bank stability as a result of erosion.

NSR would seek authorization to impact these streams and other waterbodies within the BRIMF site for which impact could not be avoided or further minimized under Section 404 of the CWA. NSR has consulted with the USACE, Mobile District, regarding impacts to waters of the U.S. NSR proposes to mitigate for unavoidable impacts to waterbodies (intermittent and perennial streams) on the site through the purchase of stream credits at an approved mitigation bank in accordance with USEPA and USACE guidance (FR, 2008). Because the Mobile District's Standard Operating Procedure (SOP) (USACE, 2009) only accounts for impacts to perennial and intermittent streams, ephemeral waterbodies onsite that are determined to be jurisdictional waters of the U.S. would be treated as wetlands for mitigation purposes.

Impacts on water quality could result from construction activities that lead to soil disturbance and exposed soil, which would create the possibility for the transport of sediment and soil-bound pollutants into adjacent or downslope streams. The potential water quality impacts would be temporary and could extend downstream of the construction footprint; however, the proposed implementation and maintenance of construction BMPs would minimize the potential for such impacts and prevent substantial construction-related impacts. Turbidity monitoring at stormwater discharge locations would be performed if required as a condition of the NPDES construction general permit (Permit No. ALG16XXXXX) to confirm that no adverse impacts to water quality would result.

Operation of the proposed BRIMF could affect downstream surface water quality and flow characteristics as a result of altered hydrology related to the conversion of rural agricultural land to impervious surfaces and stormwater runoff from the facility. Approximately 130 acres of the site would be converted to impervious surfaces within the watershed of an intermittent tributary to the eastern tributary of Mill Creek. Substantial portions of the site would be maintained as pervious landscaped areas (66 acres) and ponds (27 acres), which would allow for infiltration of precipitation in these areas. Reduced natural infiltration and retention of precipitation and increased surface flow volume and peak stormwater runoff from this tributary watershed would increase the potential for stream channel erosion and downstream transport of sediment in tributary reaches downstream of the project site. However, implementation of the proposed drainage and stormwater management system, including the retention ponds, spray irrigation network, and outlet control features, would retain and treat stormwater runoff from the site and attenuate stormwater releases to the downstream tributaries.

Runoff from lesser rain events also would be retained within the ponds to minimize changes in flow volume characteristics discharging from the site under normal hydrologic conditions. The potential changes in surface water flow volume discharging from the site under normal hydrologic conditions would be incrementally small and diminish as other tributaries enter the system downstream (e.g., western tributary to Mill Creek) and watershed area increases.

NSR proposes to construct four retention/detention ponds within the project area to receive runoff water from the pads and tracks, pads designed to route stormwater into the pond(s), and outlet control features for alternating releases from the pond(s) to a nearby surface water stream. The proposed stormwater treatment system is designed to provide adequate storage to allow discharges to mimic pre-development hydrology and minimize peak flows and initial flows following rain events. The stormwater treatment system features a detention basin which would capture and treat rain volumes from impervious areas. To prevent excessive runoff into receiving streams during and following rainfall events, NSR has designed and would implement a stormwater detention system that would operate during both facility construction and operation. The stormwater detention system would be designed so that post-construction flows do not exceed pre-construction flows (designed for the 100-year event).

The proposed ponds would be designed to also limit the release of discharges at a rate equal to or below the 2-year predevelopment rate for 2-, 5-, 10-, 25-, 50-, and 100-year storm events. By designing the ponds for a 100-year event, NSR was able to increase the retention volume to ensure that there would be enough volume of water for irrigation purposes. A spray irrigation network would be designed and operated as needed to both irrigate landscaped areas of the site and reduce the volumes of stormwater that might otherwise be routed directly into the Mill Creek tributary, thus further enhancing the water quality of the facility. This stormwater recycling, through the irrigation network, would encourage evapotranspiration, ultimately reducing the outflow volumes from the site that might otherwise be routed to the Mill Creek tributary. The stormwater management system would serve a dual function. NSR proposes to install valves at the outlets to the stormwater management system to allow the detention basin outfall to be closed under certain circumstances. The valve closures would allow the onsite detention to serve a secondary function for spill control in the unlikely event that a release of materials onsite were to exceed the containment capacity of the large concrete pad.

This stormwater management system would provide substantial water quality benefits and would provide stormwater treatment above and beyond the requirements of the ADEM Permit Number 1400, discharges associated with transportation industries and warehousing consisting of stormwater, non-contact cooling water, cooling tower blowdown, boiler blowdown, demineralizer wastewater, vehicle and equipment washwater, and stormwater from petroleum storage and handling and equipment storage and maintenance areas (ADEM, 2006). NSR would develop a Stormwater Pollution Prevention Plan (SWPPP) applicable to the entire facility, not just those vehicle maintenance and equipment cleaning operations addressed by the NPDES program.

Surface water runoff from the equipment maintenance pad, which would be self-contained and dedicated to the maintenance, repair, and servicing of onsite equipment, would be managed separately from runoff from the rest of the facility. Surface water outflow from the maintenance pad would be routed first to an oil-water separator system and from there would be discharged to either the sanitary sewer system when maintenance activities are occurring to provide additional treatment and containment or to the site drainage system at other times. NSR would obtain authorization from the local sewer authority prior to discharging to the sewer or drainage system.

In summary, as a result of implementing the proposed drainage and stormwater management system and the oil-water separator system for the maintenance pad, operation of the facility

would not be expected to adversely affect surface water quality and flow characteristics downstream of the Project. As such, no significant impacts are anticipated.

4.5.2.3 *Coastal Zone Management*

Alabama's Coastal Area Management Program is managed by the State Lands Division. The State of Alabama's coastal zone extends inland to the 10-ft elevation contours in Mobile and Baldwin Counties (ADEM, 2010). Neither Jefferson nor Tuscaloosa Counties are located within Alabama's coastal zone. NSR does not propose to conduct activities within Alabama's coastal zone; therefore, waterbodies associated with the coastal zone management program would not be adversely impacted by the construction or operation of the proposed BRIMF.

4.6 Wetlands

4.6.1 Affected Environment

Environmental surveys of the proposed BRIMF site and adjacent areas included in the study area were conducted May 13-15, June 12 and 25, August 3-5, and August 11-12, 2009, for the purpose of identifying streams, wetlands, and potential habitat for protected species and Alabama species of conservation concern. Within the 311-acre study area, 11 wetland areas were identified (Figure 4.6-1). The wetland boundaries delineated during the surveys were limited to the study area. The wetlands may extend beyond the study area but would not be impacted by construction of the Project. Two forested wetlands comprising 1.28 acres and 9 emergent wetlands comprising 2.79 acres were identified during the surveys. Of the 4.07 acres of potential wetland impact, NSR successfully avoided or minimized impacts to the wetland areas within the study area during site design, as indicated in Table 4.6-1.

4.6.1.1 *Floodplains*

A floodplain is defined as any land area susceptible to being inundated by floodwaters from any source (44 CFR 59), whereas the 100-year floodplain is the area of land inundated by a flood event that has a 1 percent chance of being equaled or exceeded in any given year. The 100-year flood event is typically used as a benchmark in engineering design for projects located in a floodplain. Figure 4.6-2 illustrates the proposed BRIMF site relative to the 100-year floodplain as mapped by the Federal Emergency Management Agency (FEMA) on Panel 666 of the Flood Insurance Rate Map (FIRM) dated September 2006. A portion of the site is in an area designated as a Zone A "Special Flood Hazard Area (SFHA)." Zone A areas indicate approximate floodplain boundaries mapped by FEMA in the 1970s and early 1980s without the benefit of detailed studies or hydraulic analyses. NSR is in the process of doing a site-specific floodplain analysis to determine detailed base flood elevations as they relate to the proposed BRIMF.

Jefferson County is a participating community in the National Flood Insurance Program (NFIP) and must make sure that all development meets the requirements of the NFIP with regard to minimizing the risk of flood damage. The County Office of Land Development administers the Higher Regulatory Standards Floodplain Management Ordinance adopted in September of 2006 and coordinates the review of Floodplain Development Permits.[5]

Short periods of minor flooding may occur in areas adjacent to drainages and waterbodies during and immediately following heavy rain events. Although these areas are not identified by FEMA as flood zones, they are commonly present among the many perennial and intermittent streams throughout the southeastern U.S. The perennial and intermittent streams associated with the proposed BRIMF likely have non-FEMA documented floodplains.

[5] As noted in Section 1, note 2, local floodplain permitting requirements are inapplicable by virtue of ICCTA and FRSA.

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Perennial Stream
Pond
Proposed Site Footprint
Wetland
Ephemeral Stream
Intermittent Stream
Ephemeral/Stormwater Conveyance Stream

Perennial: Water flow typically occurs year round.
Intermittent: Seasonal water flow typically provided by groundwater.
Ephemeral: Water flow typically present for a short duration following a storm event.

N W E S

0 800 1,600 3,200 Feet

FIGURE 4.6-1
POTENTIALLY IMPACTED WATERBODIES AND WETLANDS
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

CH2MHILL — NS NORFOLK SOUTHERN

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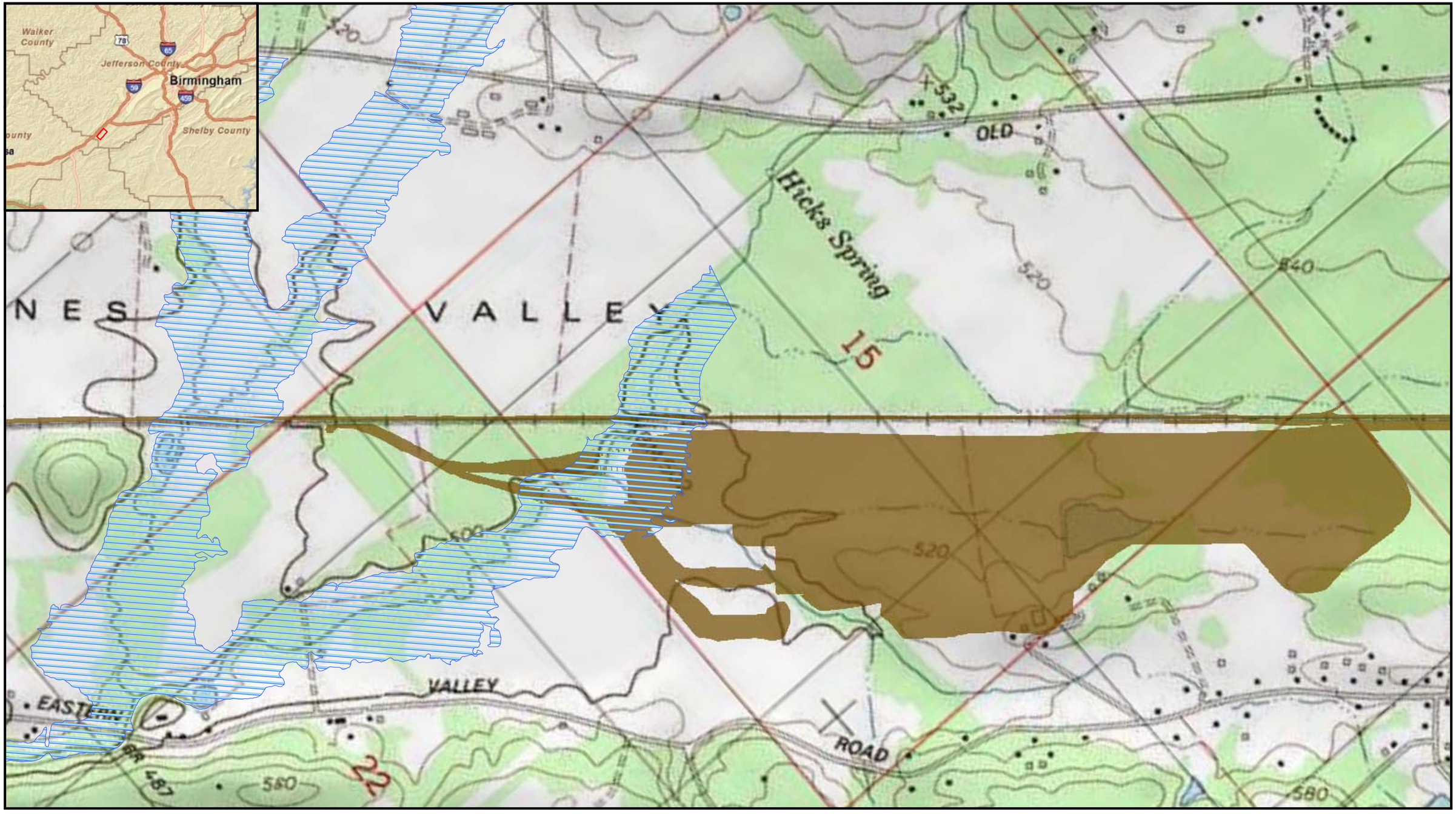

FEMA 100-Year Floodplain
Grading Plan Limits

0 550 1,100 2,200 Feet

FIGURE 4.6-2
FEMA 100-YEAR FLOODPLAIN
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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CH2MHILL NS NORFOLK SOUTHERN

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4.6.2 Environmental Consequences

After careful consideration of avoidance, minimization, and mitigation during the project planning process, seven wetland areas (Table 4.6-1 and Figure 4.4-1) would be within the construction boundaries of the proposed BRIMF site. All of the wetlands would be subject to regulation under Section 404 of the CWA (jurisdictional), which is administered by USACE. Development of the site would require grading and placement of fill, and would permanently affect approximately 1.44 acres within the identified wetland areas. Mitigation, as appropriate, would follow the USACE Mobile District SOP (USACE, 2009) and the guidance on Compensatory Mitigation for Aquatic Resources from USACE and USEPA (Federal Register [FR], 2008). The wetlands associated with development of the proposed BRIMF are described in Table 4.6-1.

TABLE 4.6-1
Wetlands Associated with Development of Proposed BRIMF

Wetland ID	Wetland Type[a]	Quality	Class of Aquatic Resource	Watershed	Permanent Wetland Impact (acres) [b]	Temporary Wetland Impact (acres) [c]
A-WL-001	PEM	Low	Non-Section 10-Wetland	Cahaba	0.20	0.10
A-WL-002	PEM	Medium	Non-Section 10-Wetland	Cahaba	0.17	0.05
A-WL-003	PEM	Medium	Non-Section 10-Wetland	Cahaba	<0.01	0.02
B-WL-006	PFO/PSS	High	Non-Section 10-Wetland	Cahaba	0.25	0.14
BWL-008	PEM	Low	Non-Section 10-Wetland	Cahaba	0.50	0.00
BWL-009	PEM	Medium	Non-Section 10-Wetland	Cahaba	0.17	0.09
				Totals	**1.30**	**0.40**

[a]Wetland types based on USFWS Classification System (Cowardin et al., 1989):
PEM - Palustrine Emergent
PFO - Palustrine Forested
PSS – Palustrine Scrub-Shrub
[b] Impacts in this column represent the permanent fill and dredge of wetlands as a result of fill and grading activities.
[c]Impacts in this column represent the temporary construction footprint. The temporary construction footprint would be restored to pre-existing contours and conditions.

A-WL-001. This wetland is located southeast of the existing NSR tracks (Figure 4.4-1). A-WL-001 is a PEM wetland, as categorized by the USFWS (Cowardin et al., 1989). This wetland was determined to be of low quality based on its size and type and prior plowing of the area. The dominant vegetation included torpedograss (*Panicum repens*), willow oak (*Quercus phellos*), and water oak (*Quercus nigra).* Wetland hydrology at this site was indicated by soil saturation. Hydric soil was indicated by soil type and oxidized root channels. Positive indicators of the three wetland parameters specified in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) were confirmed. A-WL-001 is within the area that would be cleared for access and administration or other buildings.

A-WL-002. This wetland is southeast of the existing NSR tracks (Figure 4.4-1). A-WL-002 is a PEM wetland, as categorized by the USFWS (Cowardin et al., 1989). This wetland was determined to be of medium quality based on is size and type. The dominant vegetation

included common rush (*Juncus effusus*), two undetermined species of sedge *(Cyperus spp*), and poison ivy (*Toxicodendron radicans*). There was no dominant woody vegetation. Wetland hydrology at this site was indicated by soil saturation and inundation. Hydric soil was indicated by organic streaking and a low-chroma matrix with high-chroma mottles. Positive indicators of the three wetland parameters specified in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) were confirmed. A-WL-002 is within the area that would be cleared for an access road.

A-WL-003. This wetland is southeast of the existing NSR tracks (Figure 4.4-1). A-WL-003 is a PEM wetland, as categorized by the USFWS (Cowardin et al., 1989). This wetland was determined to be of medium quality based on its size and type. The dominant vegetation included common rush, three undetermined species of sedge *(Carex spp*), and creeping buttercup (*Ranunculus repens*). There was no dominant woody vegetation. Wetland hydrology at this site was indicated by soil saturation, inundation, and drainage patterns. Hydric soil was indicated by oxidized root channels and a low-chroma matrix with high-chroma mottles. Positive indicators of the three wetland parameters specified in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) were confirmed. A-WL-003 is within the area where the pad for Track 2 would be placed.

B-WL-006. This wetland is northwest of the existing NSR tracks and south of a large offsite detention pond serving the industrial park (Figure 4.4-1). B-WL-006 is characterized as a large open water and inundated wetland created by a beaver dam across a tributary to Mill Creek. B-WL-006 was determined to be of high quality due to its size, type, and integrity. B-WL-006 has been mapped and classified by USFWS through the National Wetlands Inventory (NWI) Program as a semi-permanently flooded, impounded palustrine forested wetland containing dead and deciduous vegetation (PFO6/5Fh). However, field investigation determined that the wetland includes PFO and palustrine scrub-shrub (PSS) areas. The portion of the wetland that is within the potential impact area consists of equal amounts of both PFO and PSS.

The dominant vegetation within the proposed project area was cat-tail (*Typha latifolia*), red maple (*Acer rubrum*), buttonbush (*Cephalanthus occidentalis*), and black willow (*Salix nigra*). Wetland hydrology was indicated by soil saturation, inundation, and drainage patterns. Hydric soil was indicated by oxidized root channels and a low-chroma matrix. Positive indicators of the three wetland parameters specified in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) were confirmed. B-WL-006 is in the area where the existing track corridor would be expanded.

BWL-008. This wetland is northwest of the existing NSR tracks (Figure 4.4-1). BWL-007 is characterized as a low quality emergent wetland. BWL-008 has a direct surface connection with Stream B-WB-005. The dominant vegetation was swamp smartweed (*Polyganum hydropiperoides*), flatstem spikerush (*Eleocharis compressa*), floating primrose-willow (*Ludwigia peploides*), and greater bladder sedge (*Carex intumescens*). Wetland hydrology was indicated by soil saturation, inundation, and drainage patterns. Hydric soil conditions were indicated by oxidized root channels and a low-chroma matrix. Positive indicators of the three wetland parameters specified in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) were confirmed. B-WL-008 is within the area where the existing track corridor would be expanded.

BWL-009. This wetland is northwest of the existing NSR tracks (Figure 4.4-1). BWL-009 is a PEM of medium quality. The quality determination was based on the size and type of the wetland. The dominant vegetation included common rush, three undetermined species of sedges, and creeping buttercup. Wetland hydrology was indicated by soil saturation, inundation, and drainage patterns. Hydric soil was indicated by oxidized root channels and a low-chroma matrix with high-chroma mottles. Positive indicators of the three wetland parameters specified in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) were confirmed. BWL-009 is within the area where the pad for Track 2 would be placed.

The original site design was modified following the site wetland delineation to avoid and minimize impacts to wetlands to the extent practicable in light of the facility's purpose and operational and locational needs. Specific avoidance and minimization measures are identified in the alternatives analysis section and are identified and assessed herein. The proposed project would have unavoidable impacts to wetlands from construction of the proposed BRIMF and its supporting infrastructure; however, under the CWA and USACE policies, these impacts would be mitigated through restoration and enhancement at a mitigation site approved by the Mobile District Interagency Review Team (IRT).[6]

The IRT has memorandums of agreement with Federal, State, and Local governments. Construction would permanently impact six wetlands, resulting in the loss of 1.15 acres of emergent wetland (Table 4.6-1, Figure 4.5-2); 0.39 of PFO; for a total impact of 1.44 acres.

Wetland B-WL-008 would be lost through grading and filling to develop the BRIMF, but this loss would be mitigated. Wetlands A-WL-002, A-WL-003, B-WL-006, and B-WL-009 would be partially lost as a result of expansion of the mainline and installation of project facilities. Wetland B-WL-006 would be partially lost and partially converted from forested to emergent wetlands. These partial losses would also be mitigated. The portions of these wetlands outside the impact area would not be affected by construction of the passing track because the underlying hydrology supporting these wetlands would not be altered. Following construction, wetland areas temporarily impacted would be restored to pre-construction contours, stabilized, and allowed to revegetate.

NSR has requested authorization to develop wetland areas under Section 404 of the CWA, has consulted with the USACE, Mobile District, and submitted its application for authorization. NSR proposes to mitigate unavoidable impacts to wetlands through purchase of credits at an approved mitigation bank within the watershed. Under USACE policy, the mitigation banking approach would be approved by an interagency wetlands panel which would approve the mitigation approach based upon assessment of potential for enhancement and restoration. Accordingly, the approach would mitigate for project impacts and result in no net loss of wetlands. Mitigation as appropriate would follow the USACE Mobile District SOP (USACE, 2009) and the guidance on Compensatory Mitigation for Aquatic Resources from USACE and USEPA (FR, 2008).

An undisturbed buffer of 25 ft or more in width would be maintained around the non-impacted wetlands on the site to minimize the potential for indirect impacts from stormwater runoff. With implementation of appropriate mitigation, as specified in the

[6] The IRT consists of representatives from the following agencies:
USACE, ADEM, ADCNR, USFWS, USEPA; Mississippi Department of Environmental Quality (MSDEQ); Mississippi Department of Wildlife, Fisheries, and Parks (MSDWFP) Mississippi Department of Marine Resources

Section 404 permit, impacts to wetlands would minimal. A table of NSR's environmental commitments is provided in Section 6.

In addition to the wetlands described above, there are 11 ephemeral streams that would be impacted by the proposed development (Figure 4.4-1, Table 4.6-2). NSR has consulted with the USACE, Mobile District, regarding impacts to waters of the U.S. Because the Mobile Regulatory District SOP only accounts for impacts to perennial and intermittent streams, ephemeral waterbodies that are determined to be jurisdictional would be treated as wetlands for mitigation purposes.

TABLE 4.6-2
Ephemeral Streams within the Proposed BRIMF Site

Feature ID	Waterbody Type	Waterbody Name	Permanent Impact Area (acres)
Cahaba River Basin Waterbodies:			
B-WB-002	Ephemeral	Unnamed Tributary to Mill Creek	0.03
B-WB-005	Ephemeral	Unnamed Tributary to Mill Creek	0.01
B-WB-024	Ephemeral	Unnamed Tributary to Mill Creek	0.29
B-WB-031	Ephemeral	Unnamed Tributary to Mill Creek	0.00
B-WB-033	Ephemeral	Unnamed Tributary to Mill Creek	0.05
B-WB-034	Ephemeral	Unnamed Tributary to Mill Creek	0.04
B-WB-036	Ephemeral	Unnamed Tributary to Mill Creek	<0.01
B-WB-038	Ephemeral	Unnamed Tributary to Mill Creek	<0.01
B-WB-041	Ephemeral	Unnamed Tributary to Mill Creek	<0.01
Black Warrior River Basin Waterbodies:			
B-WB-023	Ephemeral	Unnamed Tributary to Five Mile Creek	0.01
B-WB-025	Ephemeral	Unnamed Tributary to Five Mile Creek	0.65
		Totals	**1.11 acres**

4.6.2.1 *Only Practicable Alternative Finding*

As required by Executive Order 11990, no practicable alternative could be developed that would avoid impacts to wetlands. No other alternative would provide a lower-impact practicable alternative than the Build Alternative.

As described in Section 3, seven alternative sites were analyzed through a two-step screening process to select a preferred or Build Alternative for the proposed BRIMF. The analytical approach used was developed in accordance with NEPA and the President's Council on Environmental Quality (CEQ) regulations and guidance, as well as guidance from FHWA and other Federal agencies. The first level of screening eliminated from further consideration those alternative sites that would not meet the Purpose and Need for the Project, and therefore fail to meet the basic purpose of the proposed activity. The Purpose and Need is described Section 2 and generally requires that the Project meet current and

future demand for efficient intermodal (rail/truck) freight transportation in the Birmingham region through expanded capacity. Alternatives not satisfying the Purpose and Need would not fulfill the basic purposes of the IMF from the standpoint of the Section 404(b)(1) Guidelines.

The second level screening applied criteria which were also significant in the analysis, including construction logistics, cost, operational, and environmental attributes. This second level screening further addressed the practicability of the remaining alternatives and resulted in the elimination of two additional alternative sites as being impracticable after taking into consideration cost, existing technology, and logistics in light of the overall project purposes. Finally, the No Build Alternative was analyzed against the practicability criteria of the Section 404(b)(1) guidelines.

NSR has undertaken measures to avoid and minimize to the extent practicable impacts to wetlands, and would implement compensatory mitigation for the unavoidable impacts following USACE rules and guidance, with the goal of no net loss of wetland functions and values. An overview of the measures undertaken to avoid, minimize, and mitigate for waters of the United States is detailed Table 3-2.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the Proposed Action includes all practicable measures to minimize impacts to wetlands which may result from such use.

4.6.2.2 *Floodplains*

Figure 4.6-2 illustrates that the proposed BRIMF would cross two Special Flood Hazard Areas: one along Shades Creek and one along Mill Creek. Construction of the proposed switching track within the existing ROW (to the southwest of the proposed BRIMF site) would cross approximately 1,694 linear feet of the floodplain of Shades Creek. Impacts associated with the construction and operation of this portion of the proposed BRIMF would likely be minor and temporary since activity would be limited to the existing ROW, which is elevated above the actual floodplain and appropriate BMPs would be used. A second floodplain corridor along Mill Creek would be traversed by the proposed storage and pad tracks as they exit the proposed BRIMF to meet the ROW of the main rail line. Figure 4.6-2 also illustrates that the western edge of the proposed BRIMF, including small portions of the elevated landscape berm, concrete drop pad, and trailer spaces are also within the Mill Creek floodplain. As FRA is aware, Section 404 of the CWA requires assessment of compliance with EO 11988 as part of the public interest review prior to issuance of a Section 404 permit for the Project (USACE, 2009). NSR has received confirmation that the 404 permit application is complete. The USACE is awaiting completion of the NEPA process to proceed with its final permitting assessment under Section 404 and issuance of a permit as appropriate. The floodplain assessment information will be submitted to the appropriate governmental entity as information upon which a letter of map amendment or map revision under the National Flood Insurance Act of 1968, as amended (Pub. L. 90-488); the Flood Disaster Protection Act of 1973, as amended (Pub. L. 93-234) may be processed as appropriate.

Minor short-term flood events may occur during periods of heavy rain in non-FEMA floodplains within the proposed BRIMF property. Due to the presence of multiple retention and detention ponds within the facility boundaries, impacts are not anticipated to adversely

affect the existing floodplain elevations. No impacts to floodplains outside of the proposed BRIMF are anticipated.

The ALDOT floodplain form for the proposed BRIMF is shown in Appendix D.[7]

[7] As noted in Section 1, note 2, local floodplain permitting requirements are inapplicable by virtue of ICCTA and FRSA.

4.7 Soils and Geology

4.7.1 Affected Environment

4.7.1.1 *Soils*

A summary of soil series characteristics within the proposed BRIMF project site is provided in Table 4.7-1. Project soil mapping depicting soil map units (Figure 4.7-1), prime farmland (Figure 4.7-2), and erosion potential (Figure 4.7-3) is provided below.

Approximately 3.0 acres within the proposed BRIMF project site is classified as prime farmland soils (Figure 4.7-2) (Etowah loam and Decatur loam map units) by the United States Department of Agriculture (USDA). Soils classified as prime farmland have a combination of physical and chemical characteristics that are highly suitable for producing food, feed, forage, fiber, and oilseed crops (7 CFR § 657.5(a)). Soils classified as unique farmland by the USDA are those lands other than prime farmland that are used for the production of specific high value food and fiber crops (7 CFR § 657.5(b)). No soils within the proposed BRIMF project site are classified by the USDA as unique farmland. Soils of statewide importance, as classified by the USDA, are those that are nearly prime farmland and economically produce high yields of crops when treated and managed according to acceptable farming methods (7 CFR § 657.5(c)). No soils within the proposed BRIMF project site are classified by the USDA as soils of statewide importance.

The American Farmland Trust (AFT) has identified high-quality farmland throughout the United States by combining the USDA's prime farmland designation with an AFT unique farmland definition. The AFT unique farmland definition varies slightly from the NRCS unique farmland definition to include land that has unique soil and climatic requirements and is used to grow vegetables, grapes and horticultural crops, including fruits, nuts and berries. No land within the proposed BRIMF project site is classified by the AFT as high-quality farmland. To provide a relative measure of high-quality farmland by county, the AFT compares the areal extent of high-quality farmland in each county to the respective State average. For Jefferson County, the AFT found that the amount of high-quality farmland was below that of the Alabama State average (AFT, 2003). No land within the proposed BRIMF project site is currently utilized as active agricultural or farmland; however, there are areas of pasture land presently utilized for cattle grazing. Current land uses in the proposed BRIMF project site are discussed further in the Land Use section.

Most of the soils within the upland portions of the proposed BRIMF project site are rated as potentially highly erodible or highly erodible (Figure 4.7-3) by the NRCS following the Universal Soil Loss Equation (USLE). NRCS rates the soils along the tributary floodplains to Mill Creek at the southwest end of the site and along the mainline crossings of these streams as not highly erodible land. A USLE rating for a given soil is calculated based on average rainfall, general soil characteristics, and length and steepness of slope for a given area (7 CFR § 610). The USLE is calculated without consideration of conservation practices, which can greatly decrease the actual erosion potential. Soils generally have increased erosion potential when exposed, excavated, or stockpiled. Soils within the proposed BRIMF project site are rated by the USDA as having fair or good revegetation potential.

Approximately 62 percent of the soils associated with the proposed BRIMF, are classified as somewhat poorly drained, leaving the remaining 35 percent well drained. Although

38 percent of the top layer of soils are classified as well drained, field surveys indicated that a thick layer of clay underlies this area, slowing local drainage immediately following rain events.

4.7.1.2 *Geology*

The proposed BRIMF project site is located within the Ridge and Valley physiographic province, which comprises the southern-most extent of the Appalachian Highlands region as identified by Kidd and Shannon (1978). This region developed on tightly folded and thrust-faulted rock layers forming a series of northeast-oriented folded ridges separated by deep steep-sided valleys (USGS, 2009). The landscape formed on Paleozoic sedimentary rocks that range in age from Cambrian to Pennsylvanian. The ridges are composed of Pennsylvanian sandstone belonging to the Pottsville Formation, whereas the valleys cut through shale, limestone, and dolomite.

The proposed BRIMF project site is underlain by Cambrian limestone, which is generally susceptible to dissolution associated with karst development. The presence of karst features could create a pathway for surface releases to enter the underlying groundwater. The area is classified by the GSA as potentially having fissures, tubes, and caves over 1,000 ft long and 50 ft vertical extent (GSA, 2009). However, the recently completed geotechnical survey report for the site (TTL, 2009) determined that the area is underlain by an expansive layer of clay and would likely reduce or avoid the probability of substantive surface water penetration into the underlying groundwater.

The proposed BRIMF project site is located within the Southern Appalachian Seismic Zone (SASZ), which is considered a zone of moderate risk by the USGS. The hypocenters of earthquakes in the SASZ are believed to be on deeply buried faults (GSA, 2009). Jefferson County is rated by the USGS as having a 4 percent peak acceleration (%g) with a 10 percent probability of exceedance in 50 years (Peterson et al., 2008). The BRIMF would be constructed with appropriate measures to ensure structural integrity under these considerations.

No rare geologic formations or protected aquifers are located in the vicinity of the proposed BRIMF project site.

4.7.2 Environmental Consequences

4.7.2.1 *Soils*

Construction of the proposed BRIMF would require land-disturbing activities to approximately 261 acres of land, which would increase the potential for long-term and temporary impacts to the topography and soils in the project area. Long-term impacts could result from minor leveling and grading activities as necessary to ensure safe facility construction and operation. The footprint of the facility would comprise approximately 223 acres of the approximately 261 acres of construction impacts. Table 4.7-1 quantifies the areal extent of each individual soil map unit within the proposed BRIMF project site and the areal extent impacted that would be impacted by construction.

Potential temporary impacts include soil compaction and erosion. Movement of construction equipment could cause excessive soil compaction, which could result in restricted water penetration, restricted vegetation root development, and reduced oxygen

diffusion rates. The potential for excessive soil compaction would be minimized through limiting the duration of construction to the greatest extent practicable, decreasing the frequency of construction equipment traffic in areas that would not be paved, and decreasing construction traffic in areas with soils that are susceptible to compaction. Severely compacted areas that would be revegetated would be mitigated through plowing or tilling to loosen the soils prior to revegetation efforts. Soil erosion would be mitigated through temporary erosion and sedimentation control measures during construction and implementation of permanent measures, such as revegetation, following construction.

Congress passed the Agriculture and Food Act of 1981 containing the Farmland Protection Policy Act (FPPA) (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. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. No land within the proposed project site is classified as unique farmland or land of statewide importance by the NRCS. The current proposed site design would impact approximately 3.0 acres of prime farmland soils; however, the design continues to undergo modifications. The NRCS utilizes a standardized Farmland Conversion Impact Rating Form (NRCS Form AD1006) to determine whether alternative sites for an individual project should be considered if the potential adverse impacts to farmland soils exceed a recommended allowable level.

The primary variables in calculating the Farmland Conversion Impact Rating are the current and projected surrounding land uses, the areal extent of the impacted prime farmland soils compared to the average farm unit in the respective county, the amount of on-farm investments, and the current utilization of the farmland soils for agriculture. An NRCS Form AD1006 for the BRIMF project site following CFR § 658.5 (b) is provided in Appendix E. The proposed site scored 40 of a possible 160. For sites that score below 60, no further analysis is required. The Farmland Conversion Impact Rating for the BRIMF project site is well below recommended allowable levels, indicating that the impacts of converting prime farmland soils would be minimal. The low impact rating is due primarily to the total areal extent of prime farmland soils on the BRIMF project site (3.0 acres) being well below the average farming unit in Jefferson County (86 acres; USDA, 2007), the proximity of non-farm land uses, the absence of on-farm investments (e.g., barns or other storage buildings, irrigation), and the fact that the prime farmland soils are not currently used for agriculture.

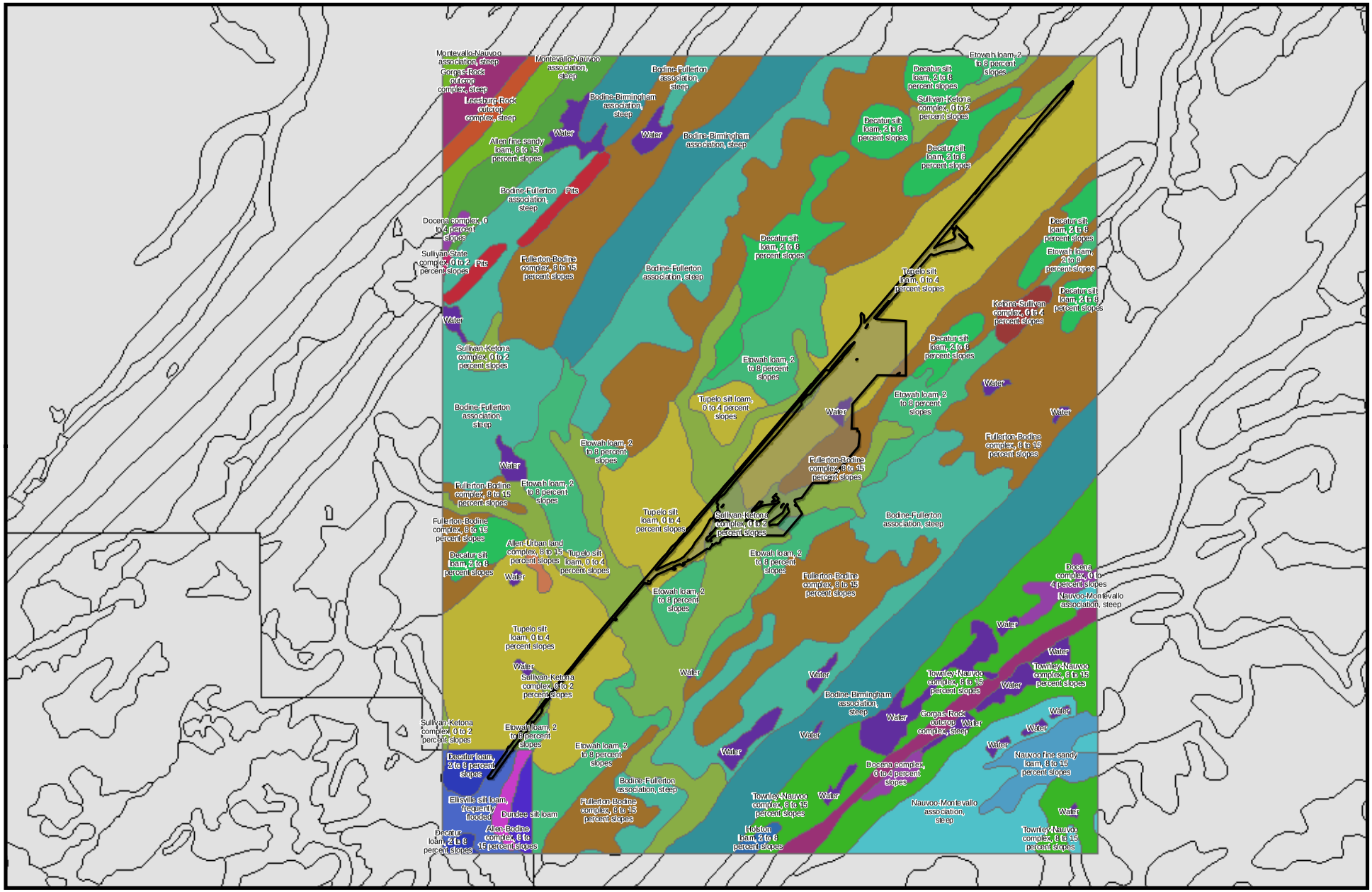
4.7.2.2 *Geology*

Construction and operation of the proposed BRIMF would be unlikely to substantially alter the physiography and geology of the project area. The geotechnical study completed for this Project (TTL, 2009) has also determined that the site is underlain by an expansive clay layer further reducing the potential for releases to reach groundwater. As discussed in the Water Resources section, the BRIMF would have operational policies and procedures to manage such materials, so that an accidental petroleum spill should not occur. However, if such a spill were to occur, the facility's SPCC Plan would be used to contain, manage, and clean up the spill. These procedures would be expected to minimize, to the extent practical, potential impacts to the surficial aquifer. In addition, the geotechnical survey for the site found that there is an expansive underlying layer of clay that would further restrict movement of surface water or releases into groundwater below this layer.

Appropriate measures would be considered during project design in consideration of the low-probability seismic zone within which the proposed BRIMF site is located.

TABLE 4.7-1
Soil Series within the BRIMF Project Boundary

Soil Series	Taxonomic Class	Drainage	Hydric Status	Prime Farmland	Erosion Potential	Revegetation Potential	Compaction Potential	Impact (acres)
Etowah loam, 2 to 8 percent slopes	Typic Paleudults	Well drained	Partial	Yes	Potentially highly erodible	Good	No	2.8
Fullerton-Bodine complex, 8 to 15 percent slopes	Typic Paleudults	Well drained	Partial	No	Highly erodible	Fair	No	39.4
Sullivan-Ketona complex, 0 to 2 percent slopes	Fluventic Eutrudepts	Well drained	Partial	No	Not highly erodible	Good	No	49.9
Tupelo silt loam, 0 to 4 percent slopes	Aquic Hapludalfs	Somewhat poorly drained	Partial	No	Potentially highly erodible	Good	Yes	162.8
Decatur loam, 2 to 8 percent slopes	Rhodic Paleudults	Well drained	Not hydric	Yes	Potentially highly erodible	Good	No	0.02
Ellisville silt loam, frequently flooded	Fluventic Eutrudepts	Well drained	Partial	No	Not highly erodible	Good	No	1.9
(Water)	--	--	--	--	--	--	--	4.4
						Total Construction Impacts		**261**



LEGEND

- Proposed Site Footprint
- Proposed Site Footprint
- Allen fine sandy loam
- Allen-Bodine complex
- Allen-Urban land complex
- Bodine-Birmingham association
- Bodine-Fullerton association
- Decatur loam
- Decatur silt loam
- Docena complex
- Dundee silt loam
- Ellisville silt loam
- Etowah loam
- Fullerton-Bodine complex
- Gorgas-Rock outcrop complex
- Holston loam
- Ketona-Sullivan complex
- Leesburg-Rock outcrop complex
- Montevallo-Nauvoo association
- Nauvoo fine sandy loam
- Nauvoo-Montevallo association
- Pits
- Sullivan-Ketona complex
- Sullivan-State complex
- Townley-Nauvoo complex
- Tupelo silt loam
- Water

N

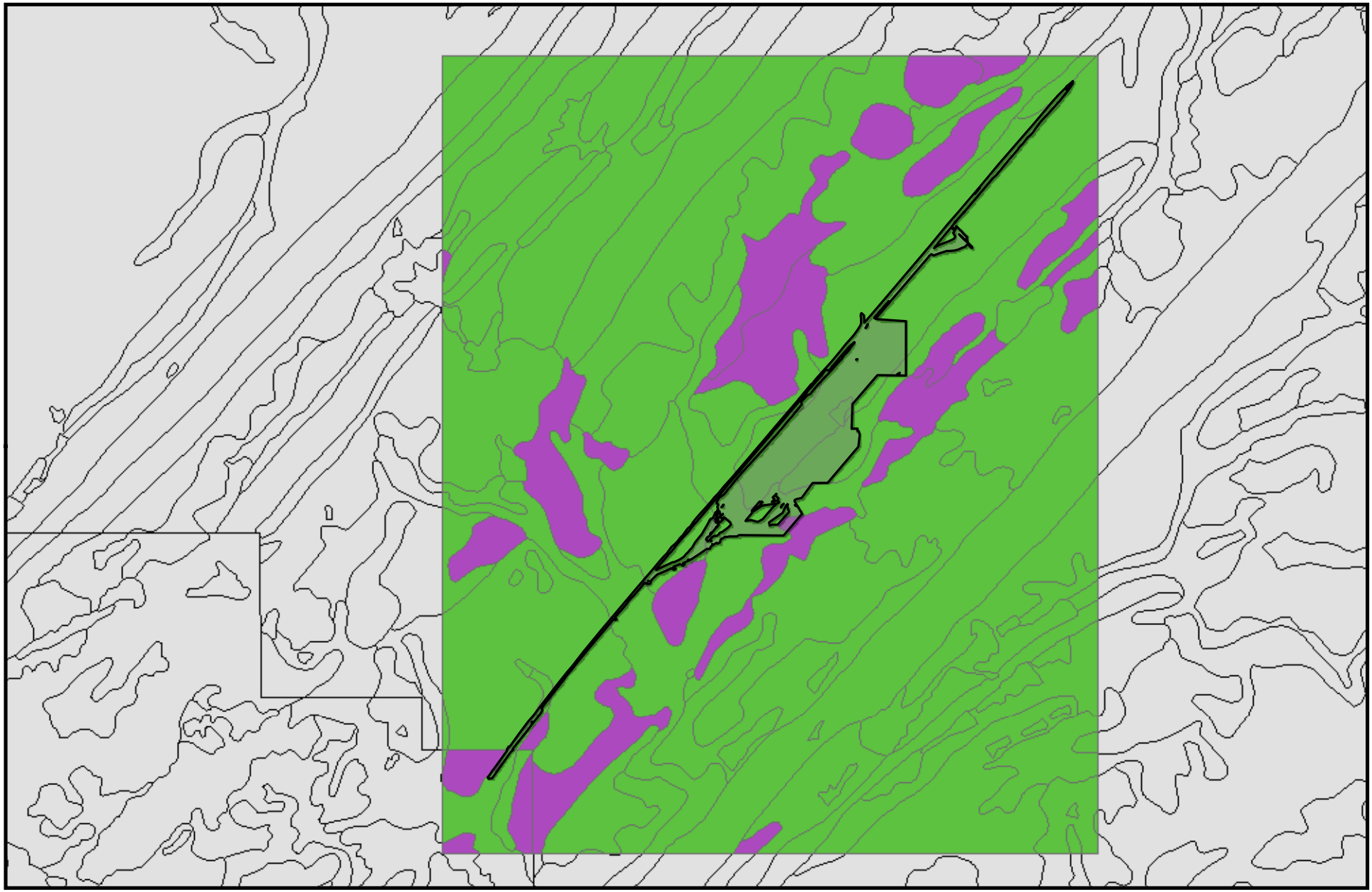
0 2,000 4,000 Feet

FIGURE 4.7-1
SOIL CLASSIFICATIONS
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

Source: USDA Natural Resouces Conservation Service - SSURGO Soils Database, 2009

\\GALILEO\PROJ\NORFOLKSOUTHERN_389982\MAPFILES\SOILS_GENERAL.MXD LSUBER1 6/3/2010 10:34:46

CH2MHILL NORFOLK SOUTHERN



LEGEND

Proposed Site Footprint

Proposed Site Footprint

Soil Farmland Classification

All areas are Prime Farmland

Not Prime Farmland

N

0 2,000 4,000

Feet

FIGURE 4.7-2
PRIME FARMLAND SOILS
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

Source: USDA Natural Resouces Conservation Service - SSURGO Soils Database, 2009

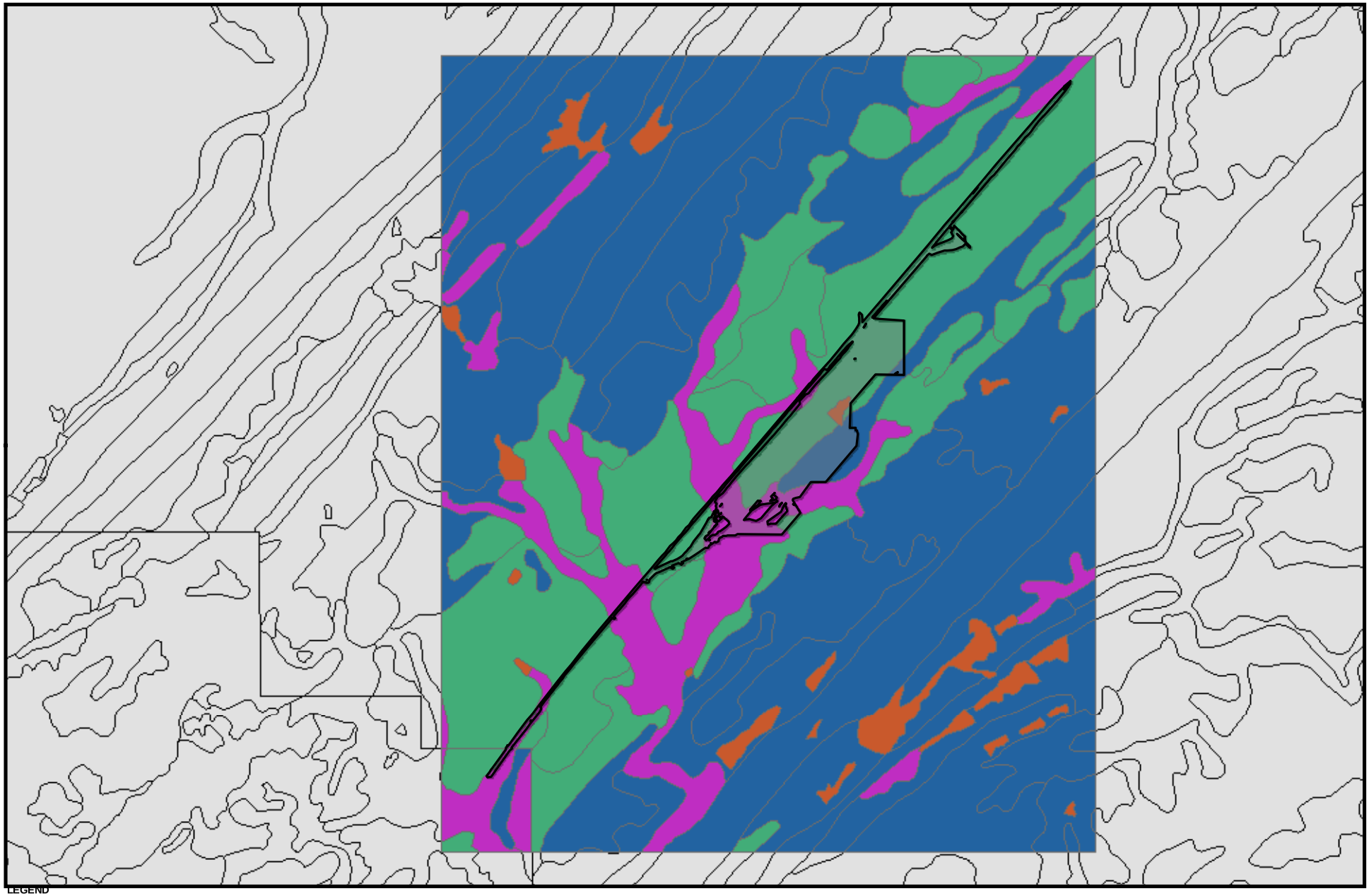


FIGURE 4.7-3
SOIL ERODIBILITY
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

Source: USDA Natural Resouces Conservation Service - SSURGO Soils Database, 2009

4.8 Hazardous Materials

4.8.1 Affected Environment

No existing hazardous materials or areas of contamination were identified within the proposed BRIMF boundary during surveys conducted in June, July, and September 2009. Additionally, no contaminated material sites were identified within 1 mile of the proposed BRIMF boundary (AMEC, 2009). A copy of the hazardous materials clearance letter is provided in Appendix F.

4.8.2 Environmental Consequences

Currently, 27 trains operate each day on the existing NSR mainline through the project area. It is anticipated that the proposed BRIMF would bring an additional two intermodal trains to the area. Once in operation, an estimated six trains (existing and new) are projected to serve the facility. Examples of commodities in the container and trailer shipments that would be transferred between and trucks and trains at the IMF include electronics, mail, toys, paper products, clothes, appliances, textiles, and auto parts. Only 3 to 4 percent of the intermodal shipments currently transported by NSR contain commodities that are considered hazardous materials under comprehensive hazardous materials transportation laws (e.g., 49 U.S.C. 5101 et seq.) and USDOT regulations, 49 CFR Parts 171-180, administered through the Pipeline and Hazardous Materials Safety Administration (PHMSA).

Federal hazardous materials transportation laws and regulations limit freight that can and cannot be shipped through intermodal service. Additionally, NSR enforces its own limits and regulations that are more stringent than Federal regulations regarding the intermodal shipment of hazardous materials. Before freight is accepted for transport, shippers of hazardous materials are required by Federal law to classify the material, describe the material in shipping papers, meet USDOT packaging requirements, ensure the freight is marked and labeled as required, and ensure that the freight is in proper condition for transportation. Federal regulations specify packaging and container requirements. Containers and trailers remain sealed during their movement through the facility. Based on the American Association of Railroads (AAR) guidelines entitled *United States Hazardous Materials Instructions for Rail* (AAR, 2008) and rules cited within 49 CFR, NSR has created a hazardous materials document that is unique to NSR. NSR's hazardous materials document incorporates additional procedures such as addressing rail security sensitive shipments. Additionally, NSR's position-in-train and switching charts have been enhanced beyond the industry standard.

USDOT's list of materials considered hazardous includes items such as paint, liquids that are flammable or corrosive, batteries, materials under pressure such as gases, fire extinguishing equipment, auto parts including air bags, as well as the types of materials more traditionally considered hazardous.

Certain hazardous commodities are strictly forbidden from intermodal shipment. "Forbidden" commodities are never accepted for transportation through intermodal containers by NSR or its railroad subsidiaries, and may not be loaded by a shipper or under instruction of a rail services buyer in trailers or containers moved via NSR rail lines. Such "forbidden" commodities include:

- Toxic inhalation hazards (TIH)
- Asbestos of any form
- Class 7 radioactive materials (except small items such as watch dials)
- Division 4.2 spontaneously combustible materials, including sodium dithionite and sodium hydrosulfite
- Temperature controlled organic peroxides (Division 5.2)
- Medical wastes/infectious substances
- Explosives (Division 1.1, 1.2, or 1.3)
- Batteries for reclamation of material

Petroleum and equipment fluids necessary for the facility's operations would normally be present at the maintenance area of the proposed BRIMF. As discussed below, these areas are designed to provide secondary containment and other measures to protect against spills and threat to human health or the environment, in accordance with State and Federal environmental regulatory requirements pertaining to the handling of such materials.

It is anticipated that the proposed BRIMF would have the following above ground tanks onsite as needed for operation and maintenance of facility vehicles and equipment:

- 3,000-gallon diesel fuel tank
- 300-gallon gasoline tank (for terminal vehicles other than hostlers)
- 300-gallon tank of 40W motor oil
- 300-gallon tank of anti-freeze
- 300-gallon tank of transmission fluid
- 300-gallon tank of used oil
- 500-gallon tank of hydraulic oil

Of these seven containers, only the 3,000 gallon diesel fuel tank would require a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan). NSR would provide a SPCC Plan to applicable State and Federal regulatory agencies, as needed, prior to the operation of the proposed BRIMF.

On an annual basis, NSR typically transports approximately 2.2 to 2.7 million shipments or containers through their existing IMFs across the eastern United States, of which only 3 to 4 percent contain hazardous materials[8]. Very few spills have occurred at NSR's IMF facilities involving transported materials classified as hazardous, and the majority of those few spills that have occurred have been no greater than several gallons or less in volume, an amount which would not escape the immediate area upon the concrete structure on which intermodal containers are stored. During the period 2004 through 2009, NSR's existing intermodal system transported 16,070,989 intermodal units. During that same time, there were 25 spills from intermodal units inside IMFs, or 0.000156 percent for each shipment. Additionally, the trend has been toward fewer spills each year (2004-10, 2005-5, 2006-2,

[8] NS Technical Memo, Subject Memphis Regional Intermodal Facility – HazMat Traffic, dated January 15, 2010.

2007-4, 2008-1, and 2009-3). Of these 25 spills, 17 were 1 gallon or less and only one spill was over 25 gallons. NSR owns and operates 27 IMFs.

The BRIMF is designed such that fluid materials which leave the large concrete pad are directed to four retention ponds which would be equipped with emergency valves and gates to prevent materials from leaving the BRIMF. Due to the low percentage of shipments containing hazardous materials, the prohibitions on the most hazardous commodities and the low incidence of even very minor spills of transported hazardous commodities, the potential risks of transporting restricted hazardous materials through an IMF are considered to be very low.

In the unlikely event of a hazardous material spill, emergency protocols for response and recovery would go into immediate effect and a variety of emergency response resources are available as necessary, including facility personnel, Local, State, and Federal emergency responders, as well as emergency response contractor resources. Emergency protocols for the IMF would provide for employees onsite to handle hazardous materials release or emergency spill response. Additionally, under facility response protocols, facility employees, working with NSR environmental staff and local emergency first responders as necessary, have around the clock access to emergency response resources (local first responders, USEPA, USACE, and environmental contractors) accessible through a telephone call to the dispatch office which is staffed 24 hours a day, 7 days a week.

The facility has ample resources to immediately respond to ensure protection of human health and the environment, and has an industry-recognized track record of safety. It is not anticipated that the proposed BRIMF would have materials triggering the inventory provisions of Federal laws such as the Emergency Response and Community Right-to-Know Act (EPCRA), 42 U.S.C. § 11001 et seq., but all applicable emergency response protocols and notifications would be implemented in case of a spill event. EPCRA regulates "extremely hazardous substances" as identified by the USEPA, "hazardous chemicals" as defined at 29 CFR 1910.1200(c), "toxic chemicals" as identified in the Committee Print Number 99-169 of the Senate Committee on Environment and Public Works, and finally, "toxic chemicals subject to Section 313 of the Emergency Planning and Community Right to Know Act of 1986" as amended. Petroleum and equipment fluids necessary for the facility's operations would be handled and enclosed within appropriately designed containment equipment in the maintenance area of the facility and would be handled in compliance with applicable State and Federal regulatory requirements for spill control.

The BRIMF would be governed by the NSR Alabama Division Emergency Action Plan, which specifies response protocols and notifications. In addition, guidelines established by nationally recognized bodies (such as USEPA, PHMSA, the Occupational Safety and Health Administration [OSHA], and USDOT) assist emergency response service organizations. For transportation incidents, detailed procedures are found in the *2008 Emergency Response Guidebook* (USDOT, 2008). The *2008 Emergency Response Guidebook* provides emergency detailed procedures for a variety of types of spills and releases.

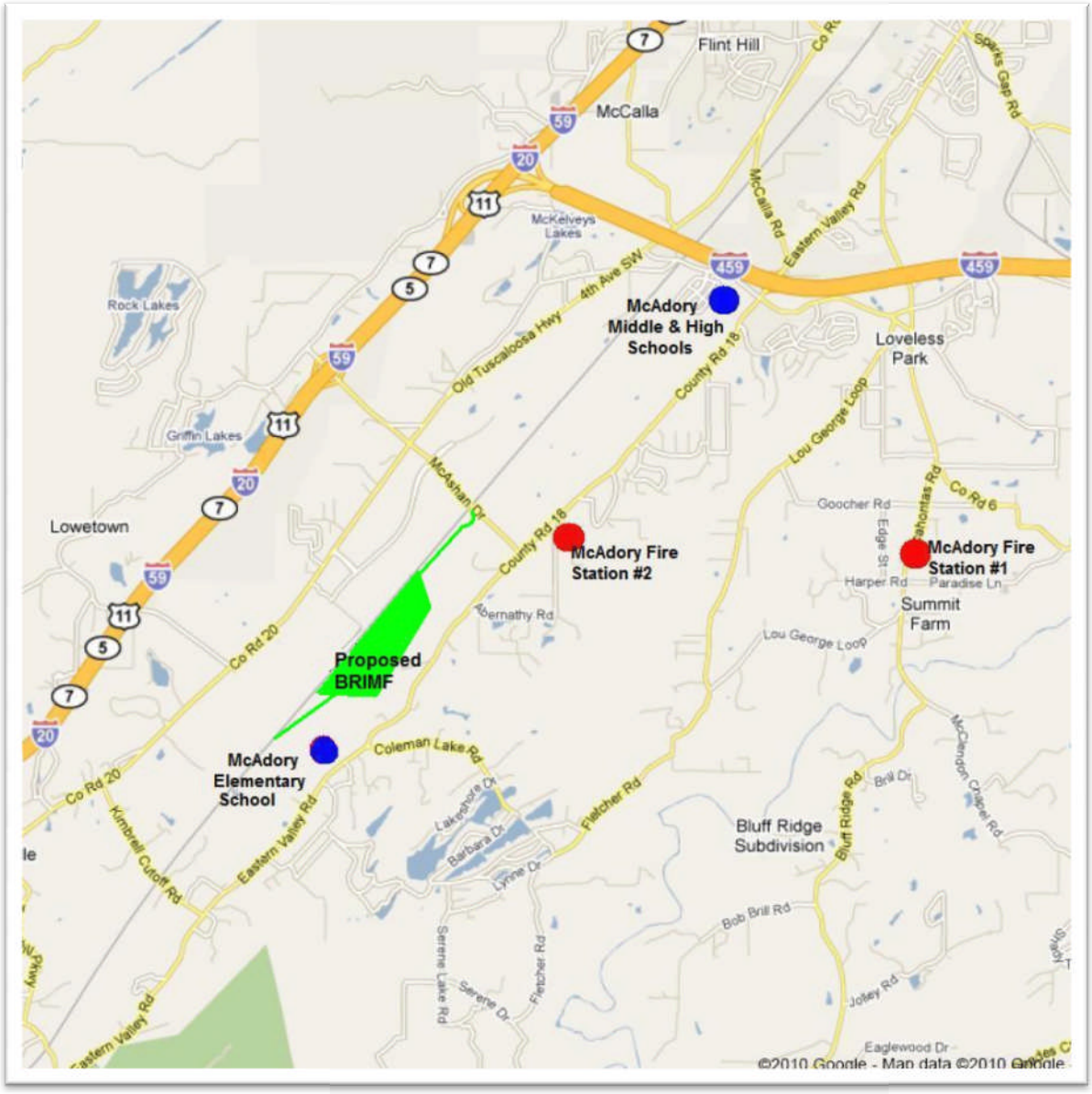
NSR has been recognized for its safety community outreach and interaction with communities and first response organizations through the Transportation Community Awareness and Emergency Response (TRANSCAER) program, receiving National Achievement Awards for 2002 through 2008. In partnership with TRANSCAER and local

community responders, NSR regularly conducts first responder training programs through its "Whistle Stop Tour" program which brings emergency preparedness training to first responders in local communities along NSR rail lines. NSR has sponsored 10 "Whistle Stop Tours" since 1994. Participants in the "Whistle Stop Tour" share information regarding the hazardous materials transportation program under USDOT regulations, safety features of rail equipment and facilities, emergency response, planning and communication, and resources available during the unlikely event of a spill of a transported hazardous material. The USEPA has presented NSR with its prestigious Partnership Award for Emergency Preparedness and Prevention recognizing NSR's efforts in providing rail emergency response, hazardous materials awareness, and railroad familiarization to emergency responders throughout the country (USEPA, 2003).

In addition to NSR's safety record, the BRIMF is located near local response entities. Station #2 of the McAdory Fire Department is less than 1 mile away from the proposed entrance to the BRIMF. Figure 4.8-1 shows the locations of both McAdory Fire Stations near the proposed BRIMF site.

Given NSR's safety record, USDOT's comprehensive regulatory program governing hazardous materials shipments, emergency response planning and preparedness measures noted above, and the proposed BRIMF's design, a spill of a hazardous material at the proposed BRIMF is extremely unlikely. Based upon historical information on spills at IMFs, any spill would likely be a very small volume and be contained on the concrete pad where IMF containers are parked. The BRIMF is designed such that fluid materials which leave the large concrete pad would be directed to four retention ponds, which are equipped with emergency valves and gates to prevent materials from leaving the BRIMF. With the emergency response training of onsite personnel, the availability of additional response personnel on an around the clock basis, the protocols established for local emergency response and the notification provisions for additional emergency response resources, the proposed BRIMF would achieve a very high level of safety and protection from hazardous materials spills.

FIGURE 4.8-1
McAdory Fire Stations in Proximity to the Proposed BRIMF



4.9 Land Use

4.9.1 Affected Environment

This section characterizes the land use at the proposed BRIMF project site in McCalla and the vicinity, including existing land use, local comprehensive plans, zoning, planned new developments, and special land uses. The main components of the proposed project are described in the Proposed Action and Alternatives section, which includes a footprint of these components as illustrated on Figures 3-6a,b. This footprint was used in assessing potential impacts to the resource areas described below.

4.9.1.1 *Existing Land Use*

The proposed BRIMF would be located within a 311-acre site in the southwestern portion of unincorporated Jefferson County, less than 2 miles southwest of the southernmost extent of the City of Bessemer (Figure 4.2-1). It would represent a fraction of a percent of the overall 1,124 square mile area of Jefferson County. Associated BRIMF improvements to the main rail line would extend approximately 1.3 miles to southwest into adjacent Tuscaloosa County and 1.1 miles to the northeast; however, all construction activities would be located within the existing ROW and no change in land use would occur. Development associated with the proposed BRIMF would likely affect approximately 261 of the overall 311 acres, or 84 percent of the site. Figure 4.9-1 illustrates the existing land use within a half-mile of the Project boundary, while Table 4.9-1 quantifies these uses.

Historically, the area of the Proposed Action has primarily been in agricultural use, specifically as pasture (USEPA, 2003). Limited areas of wetlands occurs onsite; these areas are discussed in the Wetlands discussion. Current land use within a half-mile vicinity of the site is predominantly (76 percent) rural (pasture or mixed forest) or low density residential to the east and south along Eastern Valley Road. The balance of the vicinity (20 percent) to the north and west of the site is a mix of transportation ROW and industrial/commercial uses, with a small pocket of institutional lands associated with a church, school, and daycare to the south.

TABLE 4.9-1
Existing Land Use within 0.5-Mile Vicinity of Project Boundary

Land Use Category	½-Mile Vicinity (acres)	Percent of Total Area
Industrial/Commercial	684	19%
Mixed Forest	414	11%
Open Land	69	2%
Open Water	12	Less than 0.4%
Pasture	1,295	36%
Residential	1,070	29%
Roadway	17	Less than 0.6%
Right of Way (ROW)	70	Less than 0.2%
Wetland	8	Less than 0.3%
Total	3,639	100%

4.9.1.2 *Special Land Uses*

The primary special land use near the proposed site is Tannehill Ironworks Historical State Park, approximately 3 driving miles to the south. Comprising more than 1,500 acres in three counties, the park provides opportunities for hiking, camping, and other forms of outdoor recreation. Tannehill Ironworks Historical State Park includes the following features:

- Tannehill Furnaces, (well preserved Civil War landmarks)
- Gristmill, cotton gin, and more than 45 other historical buildings of the 1800s
- Pioneer farm
- Miniature railroad
- Iron and Steel Museum
- Learning center
- Restaurants and shops
- 195 improved campsites and cabin rentals (Alabama State Parks Division [AL SP], 2009)

Adjacent land uses include the rail corridor to the north, which separates the proposed project site from an industrial development, the Jefferson Metropolitan Park at McCalla, and its associated stormwater detention pond (Figure 4.9-1). The main rail lines adjacent to the proposed BRIMF site have facilitated the use of freight in interstate commerce since being constructed by the Alabama & Chattanooga Railway Company in 1871. The line is currently operated by Alabama Great Southern Railroad Company as a subsidiary of NSR. Location of facilities such as the BRIMF must be in close proximity to existing rail lines and established infrastructure, to be effectively utilized for interstate commerce.

Figure 4.9-2 illustrates the current tenants of Jefferson Metropolitan Park; an OfficeMax distribution center and Plastipak Packaging facility are the tenants nearest to the proposed BRIMF site (physical distance as opposed to driving distance). Other tenants include the recently opened Home Depot distribution center, Johnson Controls, Graham and Company, McKesson, and Gulf States.

Institutional land uses directly south and adjacent to the site include a church, the McAdory Elementary School, and the Tannehill Child Development Center. At its closest points, the elementary school property boundary is 211 ft from the proposed onsite road (connecting the pad track to the trailer parking) and 319 ft from the pad track. These distances include an existing vegetative barrier of which a minimum of 50 ft would be maintained in addition to a landscaped berm proposed for construction. This berm would be elevated 15 ft above the pad track and road to provide a visual barrier between the school and the BRIMF (Figure 4.9-3). The elementary school building is 454 ft from the closest proposed rail component, the lead track to the #3 pad track (Figure 4.9-3).

The Tannehill Child Development Center is a licensed daycare and pre-school facility that accommodates children from 6 weeks of age through 10 years of age and is open from 6 a.m. to 6 p.m. (Tannehill Child Development Center, 2009). At its closest point, the Tannehill Child Development Center building is approximately 1,158 ft from the proposed onsite road and 1,308 ft from the pad. Low density, rural residential land uses parallel the proposed project site to the east, between the site and Eastern Valley Road. The closest residence is approximately 367 ft south of the site access road near its intersection with McAshan Drive (Sadler Ridge Subdivision).

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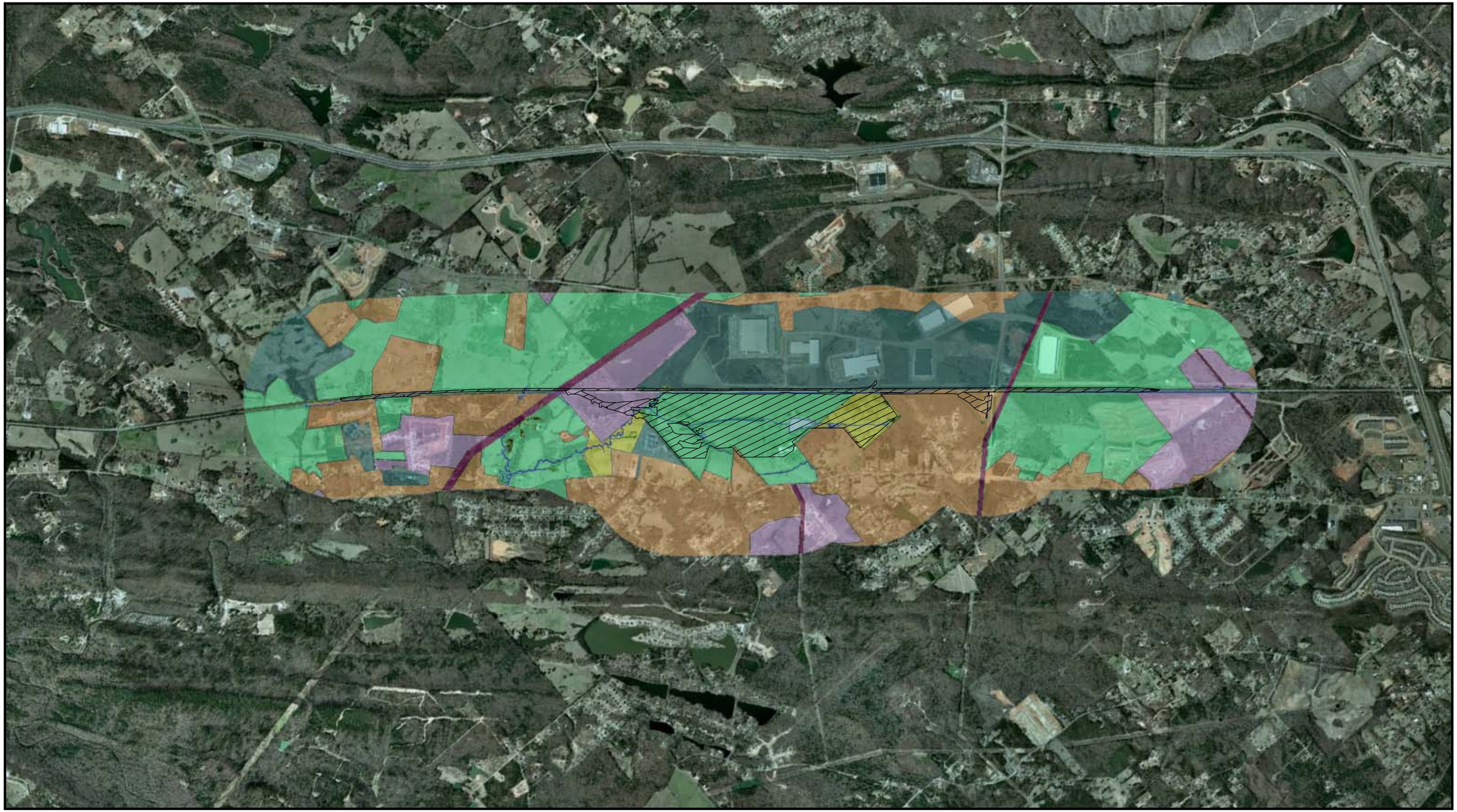

FIGURE 4.9-1
EXISTING LAND USE WITHIN A HALF-MILE
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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FIGURE 4.9-2
Jefferson Metropolitan Park, McCalla (Jefferson County Economic and Industrial Development Authority ([JCEIDA])
Source: JCEIDA, 2009a

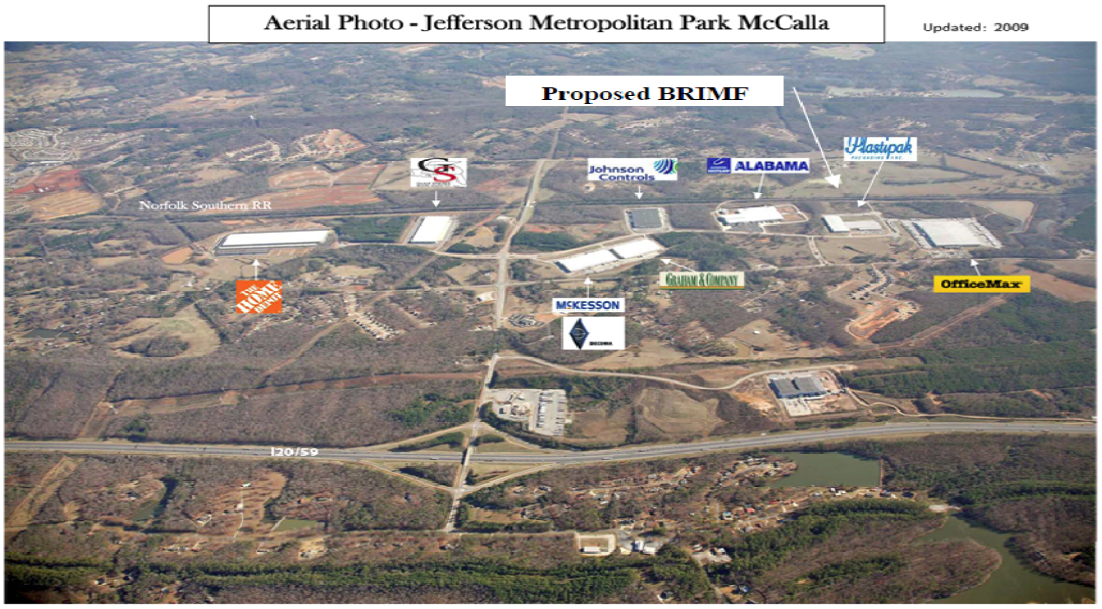
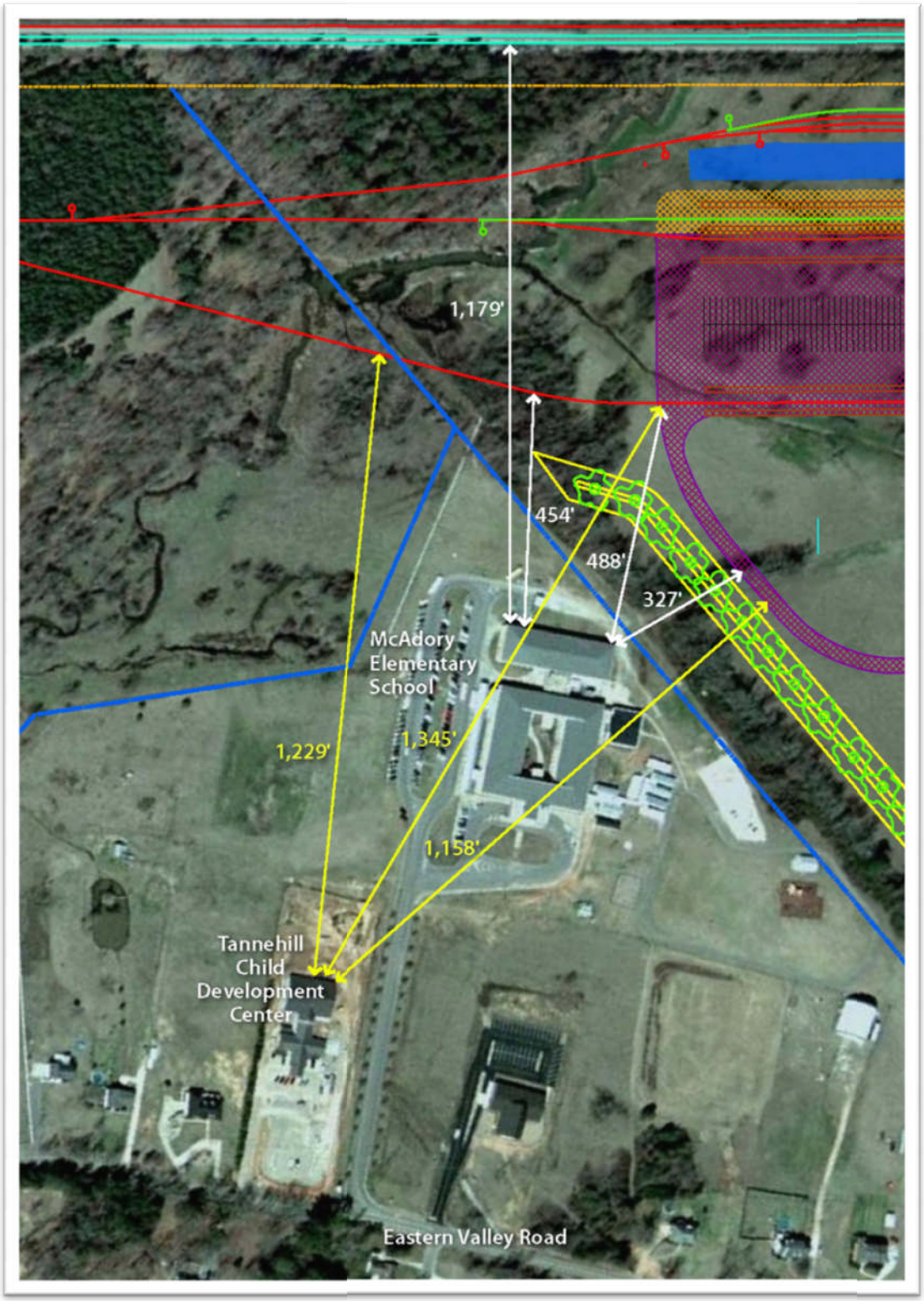


FIGURE 4.9-3
Proximity of McAdory Elementary School and Tannehill Child Development Center to Intermodal Activities at the Proposed BRIMF



Associated BRIMF improvements to the main rail line, after crossing a utility ROW corridor to the southwest, would be generally adjacent to agricultural and residential lands (Figure 4.9-1). Northeast of McAshan Drive, these additions and improvements would cross another utility corridor, beyond which they would be adjacent to agricultural lands and mixed forest lands. However, all mainline improvements are expected to occur within the existing ROW; additional discussion of parcels that could be directly affected by the Proposed Action is provided in the Impacts discussion of this EA.

4.9.1.3 *Comprehensive Plans*

The plans noted below were evaluated to determine whether the BRIMF is consistent with local zoning ordinances. Consistency with the local regulations is considered in the NEPA analysis, but is not required for the construction and operation of facilities like the BRIMF[9].

Jefferson County began a new integrated comprehensive planning effort in 2006 to provide a framework for the development of roads, sewers, public facilities, and private development in the unincorporated portions of the county and divided the county into Watershed Planning Areas (Figure 4.9-4). The planning process was guided by development policies adopted by the Jefferson County Commission and coordinated by the Jefferson County Department of Land Planning and Development Services (JCDLPDS) and resulted in the development of the Jefferson County Comprehensive Plan (JCDLPS, 2008a).

The first components of the new Comprehensive Plan were adopted in 2008, including a General Development Plan for the Shades Creek Watershed (Shades Creek Watershed Plan), which includes the proposed project site and vicinity. In addition to the Shades Creek Watershed Plan, the County has also developed a village plan for the area around the intersection of Pocahontas Road and Eastern Valley Road, approximately 5 miles northeast of the proposed project area. A Village is a concentration of residences of various types that surround a core of commercial or civic properties that are used primarily by the people who live near them. Villages are typically small enough that all areas within them are within walking distance of most residents. These Village boundaries do not extend south of Interstate 459; however, other Village areas planned near the area of the Proposed Action include the intersection of Eastern Valley Road with McAshan Drive, the intersection of 4th Avenue with McAshan Drive, and the intersection of 4th Avenue with Lowetown Road.

The area of the Proposed Action was also included in the Upper Cahaba Watershed Study completed by a Consortium made up of Jefferson and Shelby Counties, Birmingham, Hoover, Vestavia Hills, Trussville, Leeds, Mountain Brook, Homewood, Pelham, Irondale, and the Birmingham Water Works and Sewer Board (JCDLPDS, 2008b). Figures 4.9-5 and 4.9-6 show locations considered for Village developments near the proposed BRIMF site.

[9] As noted in Section 1, note 2, ICCTA and FRSA preempt application of local laws and ordinances.

FIGURE 4.9-4
Jefferson County, Alabama Watershed Planning Areas (JCDLPDS, 2008c)

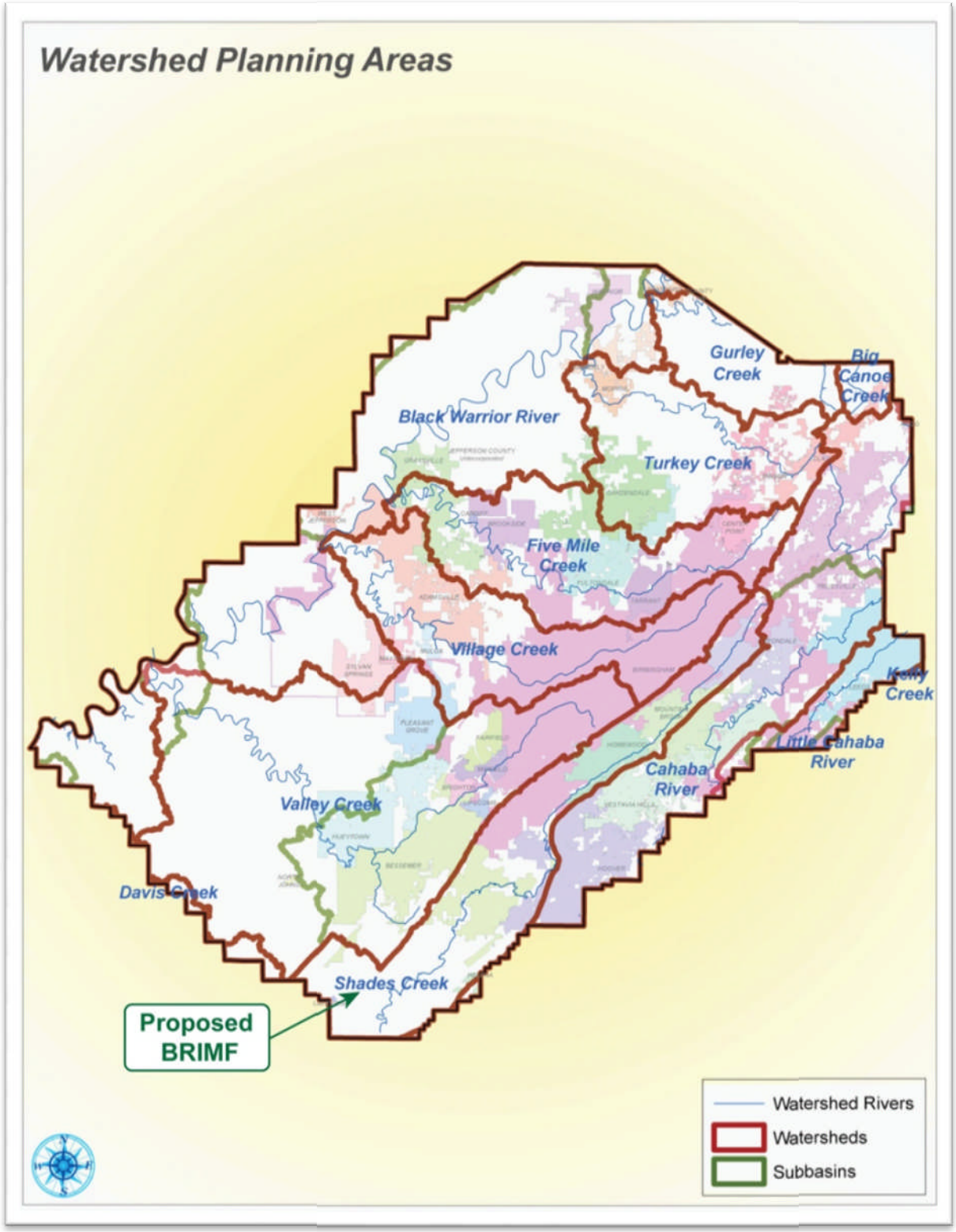
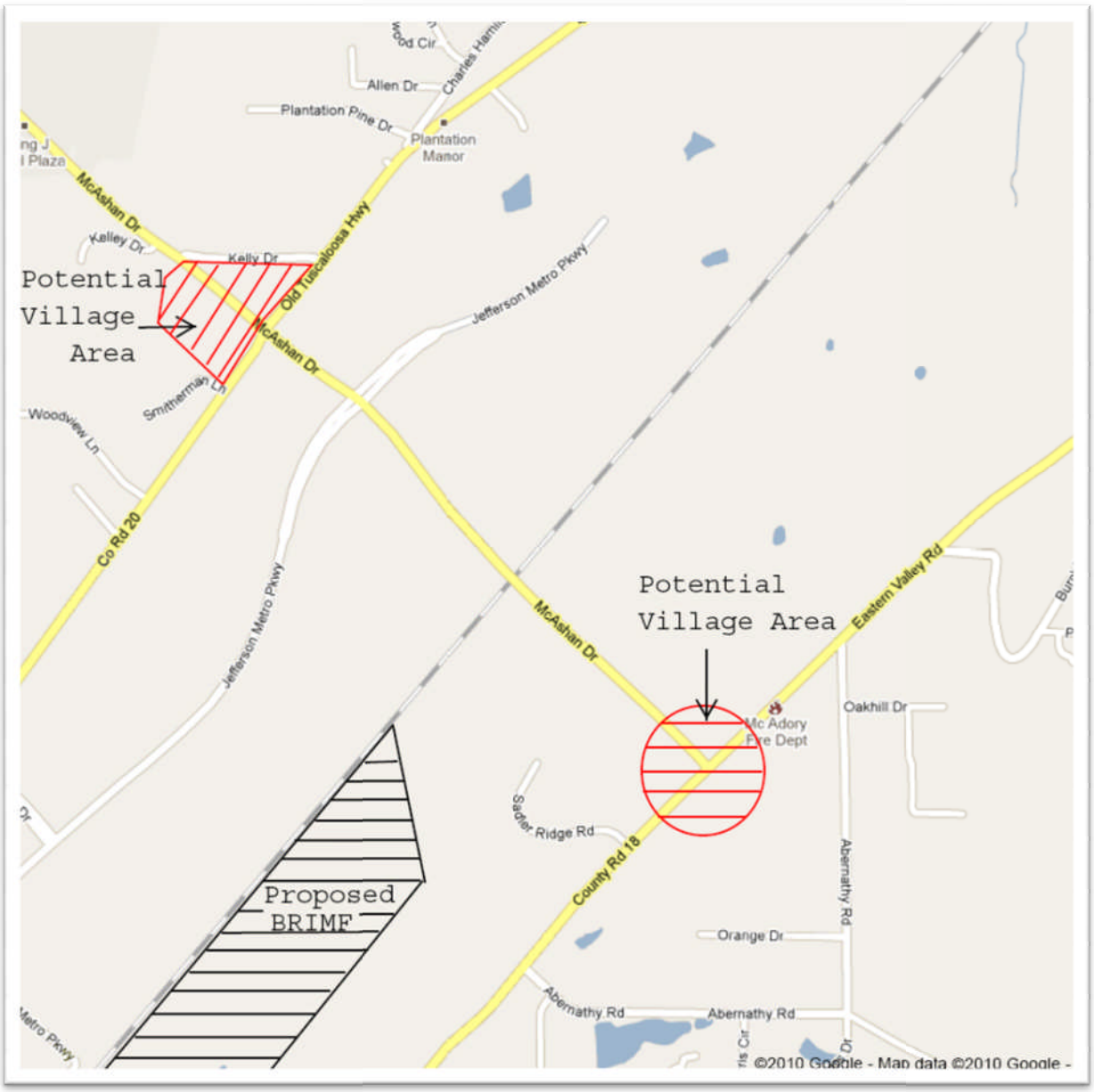


FIGURE 4.9-5
Lowetown Road – Area Considered for Village Development

FIGURE 4.9-6
McAshan Road – Areas Considered for Village Developments



4.9.1.4 *Zoning and Future Land Use*

Section 4 of the Comprehensive Plan, the Shades Creek Watershed Plan, addresses future land use and zoning for the proposed project site, since it is located in the southwestern corner of the Shades Creek watershed and therefore was included in the County's corresponding comprehensive planning effort (JCDLPDS, 2008a). Jefferson County is in the process of developing its own customized version of the SmartCode, a new approach to integrating planning, zoning, subdivision regulations, urban design, public works standards and basic architectural controls into one compact document, and adopting it into the zoning ordinance as a "floating" overlay zoning district, which has tentatively been named the "FlexZone Floating Overlay District." Under the County's current zoning ordinance, the proposed project site is currently zoned A-1, Agriculture District, which limits its future development to residential or low density, mixed residential/commercial uses (Jefferson County Commission, 2005).

The Jefferson County Comprehensive Plan Proposal map designates a corridor including the proposed project site (bracketed by Eastern Valley Road, NSR rail corridor, McAshan Drive, and south to the County line) as a G2 sector targeted for controlled growth of medium density development based on the level of infrastructure planned for the area. These sectors are further refined by the plansect classifications which specify density and serve as the framework the Comprehensive Plan uses to identify which of Jefferson County's existing zoning districts can be considered at any particular location. The project site is within a P2 plansect, which indicates a Rural Zone (JCDLPDS, 2008a).

While local zoning ordinances appear to conflict with the construction of a rail facility such as the BRIMF, the ICCTA would preempt local governments from imposing local zoning or ordinance requirements on construction and operation of the BRIMF because this would impede interstate commerce. ICCTA is a United States Federal law that replaced the Interstate Commerce Commission with the Surface Transportation Board and included provisions to prevent impediments to interstate commerce. Under ICCTA, changes to the current zoning would not be required to construct the BRIMF at the proposed location[10].

4.9.1.5 *Planned Developments*

The Regional Planning Commission of Greater Birmingham (RPCGB) identifies planned residential and commercial developments for the Birmingham MPO, which consists of Jefferson and Shelby Counties, for use in its LRTP and associated regional traffic assignment models. While the MPO has not identified substantial new or proposed residential or commercial developments in the vicinity of the proposed project area that would affect the LRTP, the Birmingham Regional Chamber of Commerce (BRCC) (as of July 2009, the BRCC is known as the Birmingham Business Alliance [BBA]) notes a variety of industry-specific expansion plans announced for the counties around the proposed BRIMF. Approximately 280 acres of the Jefferson Metropolitan Park, adjacent to the proposed BRIMF site, remain available for new development and all parcels have been zoned for light industrial use, with infrastructure designed to support the requirements of large manufacturing facilities (JCEIDA, 2009b). Additionally, the Shades Creek Watershed Plan identifies planned road improvements along each of the roads bracketing the area of the Proposed Action (JCDLPDS, 2008a).

[10] As noted in Section 1, note 2, ICCTA and FRSA preempt application of local laws and ordinances.

4.9.2 Environmental Consequences

This section describes the direct impacts to land use that could occur as a result of the development of the proposed BRIMF. Impacts to land use could result since the proposed BRIMF would alter the character and use of the land at the project site despite being consistent with the rail corridor and industrial uses to the northwest.

4.9.2.1 *Impacts to Existing Land Use*

As summarized in Table 4.9-2, a diverse range of land uses is present within a half-mile of the proposed BRIMF site, with pasture land, residential and industrial/commercial mix being the most abundant. The proposed BRIMF would directly impact 261 acres of unincorporated Jefferson County. The majority, or 93 percent, of the acreage that would be impacted is currently undeveloped as pasture lands, open lands, or mixed forests which are not unique to the vicinity. The one house on the property has been acquired by NSR; and this house would ultimately be removed. No special land uses, such as the Tannehill Ironworks Historical State Park, located approximately 3 driving miles to the south of the proposed BRIMF site, would be impacted. Thus, the primary direct impact would be the conversion of this acreage from undeveloped to intensively developed and industrial in character. Construction would also convert portions of the site to waterbodies as drainage/stormwater ponds would be created near the AGS and through the center of the proposed BRIMF site; impacts to wetlands are specifically addressed in Wetlands section.

TABLE 4.9-2

Direct Impacts to Existing Land Use as Compared to Vicinity Land Uses

Land Use Types	Vicinity (0.5 mile) Land Uses		Direct Impacts (Acres)	%
	(Acres)	%		
Mixed Forest	414	11%	36.0	13.8%
Industrial /Commercial	684	19%	0.4	0.2%
Open Land	69	2%	0.9	0.3%
Open Water	12	Less than 0.4%	6.7	2.6%
Pasture	1,295	36%	205.2	78.5%
Residential	1,070	29%	1.6	0.06%
Roadway	17	Less than 0.6%	4.9	1.9%
Right of Way	70	Less than 0.2%	3.9	1.5%
Wetland	8	Less than 0.3%	1.7	0.7%
	3,639	100%	261.3	

In addition to the 15-ft landscape barrier to be placed between the school and the BRIMF, a 50-ft vegetative buffer, at a minimum, between the proposed BRIMF site and the McAdory Elementary School and the Tannehill Child Development Center would be maintained during construction, further blocking the view of the site from the school. Taken collectively, the newly constructed 15-ft landscape barriers; the areas of existing vegetation along with additional trees and landscaping to be planted by NSR; and the spatial distances between the facility and surrounding homes, the school, and the daycare center, provide a buffering zone between the BRIMF and the surrounding area.

4.9.2.2 *Comprehensive Plans and Zoning*

The Shades Creek Watershed Plan, developed by the Jefferson County Planning & Zoning Commission and the Department of Land Development, established future land use and zoning for the proposed BRIMF site (JCDLPDS, 2008a). The Shades Creek Watershed Plan designates the corridor including the site (bracketed by Eastern Valley Road, NSR rail corridor, McAshan Drive, and south to the County line) as targeted for controlled growth of medium density development; however, the Plan "translates" the permitted uses of the County's existing zoning districts into the different *types* or "character" of development which, for this area, indicates a Rural Zone (JCDLPDS, 2008a). The proposed BRIMF site is currently zoned A-1, Agriculture District, by Jefferson County, which limits its future development to residential or low density, mixed residential/commercial uses. As a result, despite adequate infrastructure being planned for the area, the proposed BRIMF would not be consistent with Jefferson County's current comprehensive plan, zoning, or rural plansect[11].

4.9.2.3 *Section 4(f) Applicability*

Section 4(f) of the Department of Transportation Act of 1966 requires an evaluation if a transportation project uses publicly owned land (park, recreation area, wildlife, and waterfowl refuge) and/or a publicly/privately owned historic site.[12] A "use" occurs when (1) land from a Section 4(f) site is acquired for a transportation project, (2) there is an occupancy of land that is adverse in terms of the statute's preservationist purposes, or (3) the proximity impacts of the transportation project on the Section 4(f) sites, without acquisition of land, are so great that the purposes for which the Section 4(f) site exists are substantially impaired (normally referred to as a "constructive use").

No public park, recreation land, wildlife refuge, or historic or archaeological site listed or eligible for listing on the NRHP was identified in the project area. Therefore, analysis revealed that the proposed BRIMF would not involve, impact, or use any Section 4(f) resources.

[11] As noted in Section 1, note 2, this environmental analysis includes assessment of Jefferson County zoning provisions, which are inapplicable by virtue of ICCTA and FRSA.

[12] 49 U.S.C. 303.

4.10 Noise and Vibration

4.10.1 Affected Environment

4.10.1.1 *Noise*

A detailed noise report has been completed and is included as Appendix G. The report provides greater detail on the acoustics of sound and specific monitoring and modeling data that were used to support the following section on the affected environment.

Fundamentals of Acoustics

Acoustics is the study of sound, and noise is defined as unwanted sound. Definitions of acoustical terms used in this section are summarized in Table 4.10-1.

TABLE 4.10-1
Definitions of Acoustical Terms

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise or sound at a given location. The ambient level is typically defined by the L_{eq} level.
A-Weighted Sound Pressure Level (dBA)	The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Equivalent Noise Level (L_{eq})	The average A-weighted noise level, on an equal energy basis, during the measurement period.
Day/Night Equivalent Noise Level (L_{dn} or DNL)	The average sound level, on an equal energy basis, over a 24-hour period, with a 10 dBA “penalty” factored into the night time (10 p.m. to 7 a.m.) to account for the greater disturbance typical of noise at night.
Minimum Noise Level (L_{min})	The minimum A-weighted noise level recorded for a single noise event.
Maximum Noise Level (L_{max})	The maximum A-weighted noise level recorded for a single noise event.
Sound Exposure Level (SEL)	A logarithmic expression of all sound energy for a single noise event.

The most common noise descriptor is the overall A-weighted decibel (dBA) sound pressure level measurement, which has been adopted by regulatory agencies worldwide. The A-weighted value measures sound in a manner that is similar to how a person perceives or hears sound.

Table 4.10-2 shows the relative A-weighted noise levels of common sounds measured in the environment and in industry for various sound levels.

TABLE 4.10-2
Typical Sound Levels Measured in the Environment and Industry

Noise Source at a Given Distance	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
Shotgun (at shooter's ear)	140	Carrier flight deck	Painfully loud
Civil defense siren (100 ft)	130		
Jet takeoff (200 ft)	120		Threshold of pain
Loud rock music	110	Rock music concert	
Pile driver (50 ft)	100		Very loud
Ambulance siren (100 ft)	90	Boiler room	
Pneumatic drill (50 ft)	80	Noisy restaurant	
Busy traffic; hair dryer	70	Freeway traffic	Intrusive
Normal conversation (5 ft)	60	Data processing center	
Light traffic (100 ft); rainfall	50	Typical suburban background	Quiet
Bird calls (distant)	40	Average living room or library	
Soft whisper (5 ft)	30	Quiet bedroom	
	20	Recording studio	
Normal breathing	10	Rustling leaves	Threshold of hearing

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

Local Land Use and Noise Sources

The BRIMF is located within a 311-acre, roughly triangular site in McCalla approximately 3 miles south of the I-20/I-59 and I-459 interchange. The proposed location is adjacent to McAshan Drive, which provides direct access to and from I-20/I-59 approximately 1.6 miles south of the I-459 interchange. Both truck and employee vehicle traffic would use McAshan Drive to access the proposed BRIMF through a new 0.6-mile permanent access road from the BRIMF to McAshan Drive. However, trucks entering and leaving the facility would be directed to only transit on the 1.4 mile segment of McAshan Drive to and from I-20/I-59.

The proposed site is in pasture, and is bounded by the NSR mainline corridor, Eastern Valley Road, and a mix of small farms and woodlands. There are a number of single family residences along both sides of Eastern Valley Road in the vicinity of the site. Additionally, several nearby parcels have been subdivided for housing and small businesses. To the west of the NSR tracks, directly across from the proposed BRIMF site, are several manufacturing/ light industrial facilities of the Jefferson Metropolitan Park. McAdory Elementary School is adjacent to the south side of the proposed site. Tannehill State Park is located to the southeast, separated from the proposed BRIMF site by a series of small subdivisions.

The primary existing man-made noise sources are traffic on local roads and highways; trains on the existing NSR tracks; and activities at the nearby Jefferson Metropolitan Park facilities.

Ambient Noise Survey

Ambient noise monitoring was conducted at representative locations on site to determine the current level of noise in the project area. Ten monitoring sites were established as shown

in Figure 4.10-1. The noise monitoring locations were selected because they were near residences, McAdory Elementary School, or other potentially sensitive receptors. Monitoring at each location was conducted either for long-term continuous periods of at least 24 hours or for multiple short term 15-minute periods.

Table 4.10-3 presents a summary of the monitoring results obtained at all of the long-term (24-hour) and short term (15-minute) locations. The L_{eq} levels presented for the long-term monitoring locations (locations 1, 2, 9, and 10) are the range of the hourly values during the monitoring period. The L_{min} and L_{max} levels for the long-term monitoring locations are the minimum and maximum values observed over the entire monitoring period. The L_{dn} descriptor is also presented for each location where monitoring was conducted continuously for at least 24 hours. An approximate L_{dn} level is presented for each short-term monitoring location (locations 3, 4, and 5) at which at least one measurement was conducted during nighttime hours (10:00 p.m. to 7:00 a.m.). These approximations are probably lower than actual since no passing trains occurred during the monitoring.

TABLE 4.10-3
Results for Noise Monitoring Locations

Location	Run #	Monitoring Start Date	Monitoring Start Time[1]	Duration	Overall			
					L_{eq} (dBA)	L_{dn} (dBA)	L_{min} (dBA)	L_{max} (dBA)
1	1[2]	July 21, 2009	11:08	27 hours	47 - 69	62-63	38	91
2	1[2]	July 21, 2009	11:35	26 hours	47 - 60	60	43	72
3	1	July 21, 2009	14:14	15 minutes	48	n/a	46	59
	2	July 21, 2009	23:37	15 minutes	55	n/a	49	58
	3	July 22, 2009	12:42	15 minutes	52	n/a	49	58
	4	July 23, 2009	10:14	15 minutes	54	~60	52	57
4	1	July 21, 2009	15:11	15 minutes	51	n/a	45	59
	2[3]	July 21, 2009	22:45	11 minutes	53	n/a	50	58
	3	July 22, 2009	11:49	15 minutes	52	n/a	49	60
	4	July 23, 2009	10:52	15 minutes	54	~58	49	63
5	1	July 21, 2009	15:56	15 minutes	54	n/a	40	67
	2[3]	July 22, 2009	0:06	5 minutes	51	n/a	46	58
	3	July 22, 2009	0:18	20 minutes	50	n/a	46	60
	4	July 22, 2009	14:11	15 minutes	56	n/a	46	71
	5	July 23, 2009	9:42	15 minutes	54	~59	48	67
6[4]	1	July 21, 2009	16:59	15 minutes	47	n/a	44	56
	2	July 22, 2009	16:37	15 minutes	44	n/a	43	54
7[4]	1	July 21, 2009	17:46	15 minutes	45	n/a	42	52

TABLE 4.10-3
Results for Noise Monitoring Locations

Location	Run #	Monitoring Start Date	Monitoring Start Time[1]	Duration	Overall			
					L_{eq} (dBA)	L_{dn} (dBA)	L_{min} (dBA)	L_{max} (dBA)
8[5]	1	July 21, 2009	18:49	15 minutes	54	n/a	44	82
	2	July 22, 2009	11:03	15 minutes	59	n/a	49	73
	3	July 23, 2009	13:13	15 minutes	46	n/a	43	53
9	1[2]	July 22, 2009	15:32	25 hours	46 - 70	72	40	93
10	1[2]	July 22, 2009	16:25	25 hours	44 - 64	66	39	92

Notes:
n/a: not applicable since readings were not taken between 10 p.m. and 7 a.m.
[1] Time is based on a 24 hour clock.
[2] Only one run was conducted for the 24-hour monitoring locations.
[3] Runs were cut short because sound of increasing rainfall intensity would have affected average sound levels for the run and because of potential for damage to the noise meter from the rainfall.
[4] Fewer runs were conducted at locations 6 and 7 because 24-hour monitoring locations were located in the vicinity of these receptors.
[5] Only three runs were conducted at Receptor 8 because of potential for vandalism near site.

As the data in Table 4.10-3 indicate, the hourly average values (Leq(h)) range from 44 to 70 dBA. Calculating the 24-hour energy average noise levels for the long-term monitoring locations, including adding the 10-dBA weighting for day-night sound levels, shows the L_{dn} levels for this period to vary from 60 to 72 dBA.

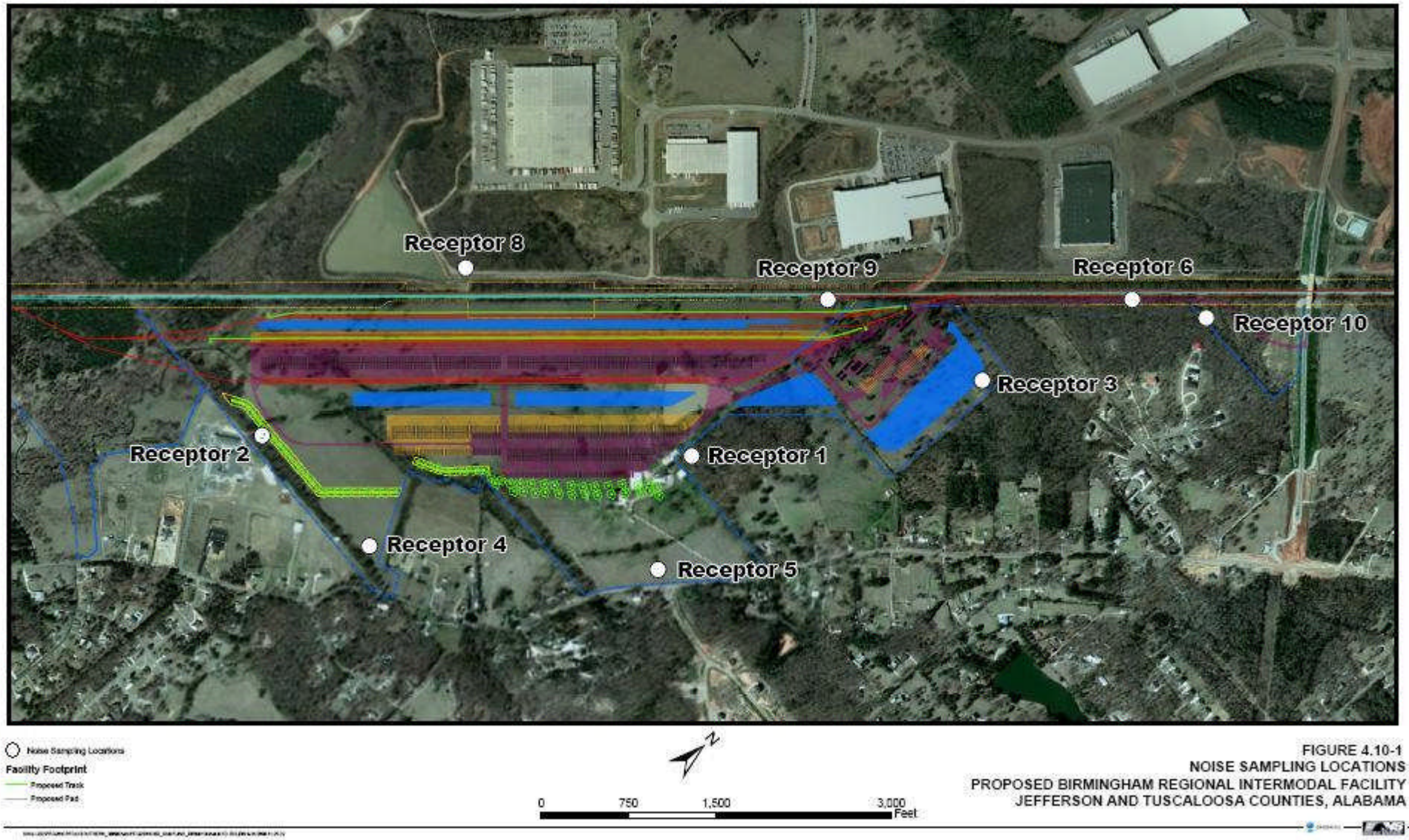
The results of the ambient monitoring for the proposed BRIMF site are typical for what may be expected in a rural landscape with scattered residences and open fields with periodic sounds of trains passing by on the mainline tracks.

4.10.1.2 *Vibration*

Vibration, typically described as ground-borne vibration, is normally induced by repetitive energy generated at sources which are directly coupled to the ground. The magnitude of the vibration varies with distance from the source and is dependent on soil and rock strata and building foundation and floor design. Ground-borne vibration occurs when the vibration of an object excites the ground creating vibration waves that spread through the various soil and rock strata to the foundation of nearby buildings, moving from the foundation throughout the building structure. Common sources of ground-borne vibration are construction activities, such as pile-driving, blasting and moving of heavy equipment; buses/trucks on rough roads; and trains (FTA, 2006).

Existing ground-borne vibration in the BRIMF project area may occur in from passing trains on the NSR tracks and from rough roads that carry buses, trucks, construction equipment, and other larger transportation loads.

FIGURE 4.10-1
Noise Sampling Locations



Receptors in the project area are classified as vibration Category 2 and vibration Category 3 (FTA, 2006). Residences are placed in vibration Category 2, where vibrations above 72 vibration decibels (VdB) for frequent events are considered to cause an impact (FTA, 2006). Churches, schools, and daycare facilities are classified as vibration Category 3, where vibrations above 75 VdB for frequent events are considered to cause an impact (FTA, 2006).

4.10.2 Environmental Consequences

4.10.2.1 *Noise*

The following sections summarize the predicted effects of noise during construction and operation of the BRIMF.

Significance Criteria

No Local or State regulations exist that limit the levels of environmental noise from either construction or operation of the BRIMF. To evaluate the potential significance of noise associated with the proposed BRIMF, criteria were applied that are used by several agencies including the FHWA and ALDOT, for typical peak periods of daytime traffic, and the FTA and the FRA for either 24-hour exposures or periods other than peak traffic.

Traffic

The Federal-Aid Highway Act of 1970 established the requirement that noise control be a part of the planning and design of all Federally aided roadways. The FHWA developed guidelines for conducting noise studies and has established noise abatement criteria (NAC) for various land use activity categories. FHWA guidelines are set forth in 23 CFR 772. ALDOT subsequently developed its Highway Traffic Noise Analysis and Abatement Policy and Guidance based on the FHWA policy. The noise criteria established by FHWA and as adopted by ALDOT for different activity categories are shown in Table 4.10-4. A traffic noise impact occurs when predicted traffic noise levels approach or exceed the NAC. A noise level approaching the NAC is usually considered to be 1 dBA below the NAC. An impact also occurs when the predicted traffic noise levels substantially exceed the existing noise levels. An increase of 15 dBA is considered to be substantial.

TABLE 4.10-4
FHWA/ALDOT Noise Abatement Criteria

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

[a] Leq (h) is the hourly average noise level.
Source: 23 CFR 772

For the proposed BRIMF site, Activity Category B (Noise Abatement Criterion of 67 dBA) would be the appropriate basis for comparison of the proposed project noise impacts, reflecting schools, churches, and residences as key components of this category that may be affected by noise impacts. A traffic noise level of 66 dBA or greater would be considered an impact.

Rail and Facility Operations Noise

Onsite operations, including rail car switching and rail train traffic can occur at times other than peak-hour traffic noise. Therefore, additional criteria for evaluating impacts during other time periods or total 24-hour exposure are useful. Such criteria are available in guidance (FTA, 2006) published by the FRA and the FTA. The FRA/FTA guidance criteria vary, depending upon the receptor land use category as shown in Table 4.10-5.

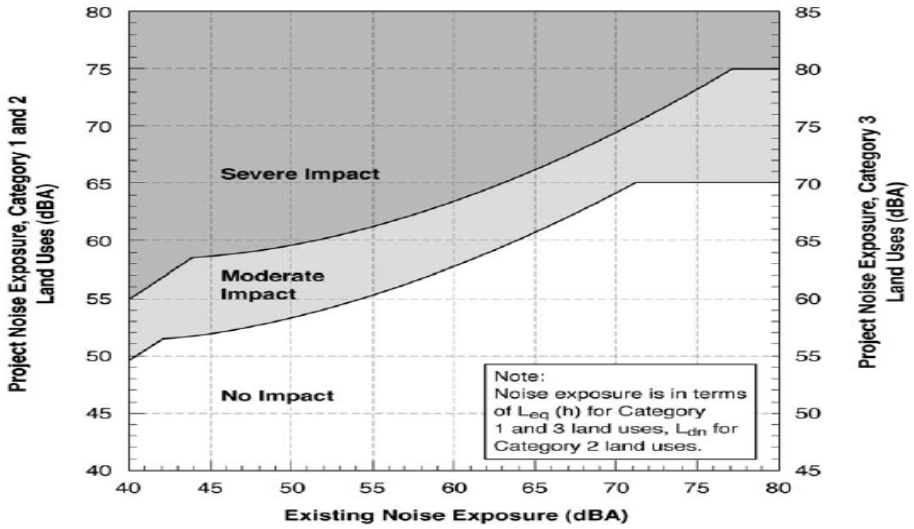
TABLE 4.10-5
FRA/FTA Land Use Category Descriptions

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

Source: FTA 2006

The application of these categories for specific existing noise exposures using the FRA/FTA guidance criteria are shown in Figure 4.10-2. Land Use Category 2 is the appropriate category to use to assess night time noise impacts of the proposed BRIMF reflecting primarily impacts that might affect sleep in nearby residences. Land Use Category 3 is the appropriate category to use to assess the impact at McAdory Elementary School.

FIGURE 4.10-2
FRA/FTA Noise Guidance Criteria



Source: FTA 2006

Identification of Noise Sensitive Receptors

Within 0.5 mile of the proposed BRIMF there are residences, churches, and a school. These all would be included in Category B of the FHWA/ALDOT classification of activities (Table 4.10-4), with a peak hour criterion of 67 dBA. There are also commercial and industrial activities within 0.5 mile with a peak hour criterion of 72 dBA. The same receptors would be subject to the FRA/FTA criteria, which would vary depending upon existing noise levels.

Construction Noise

Construction of the BRIMF is expected to be typical of other light industrial and commercial facilities in terms of schedule, equipment used, and other types of activities. The noise level and duration would vary during the construction period, depending on the construction phase. The overall construction phase is expected to last approximately 18 months and activities would be spread broadly over the site rather than concentrated in one location. Therefore, there should be no concentration of noise emitting equipment in one localized area except for very brief periods. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as proper maintenance of muffler systems.

Determination of Future Operational Noise

Operational noise would be generated by:

- Motor vehicle traffic to and from the facility.
- Additional rail activity on the mainline and on the IMF site.
- Equipment used onsite to move the containers and trailers to and from the rail cars.

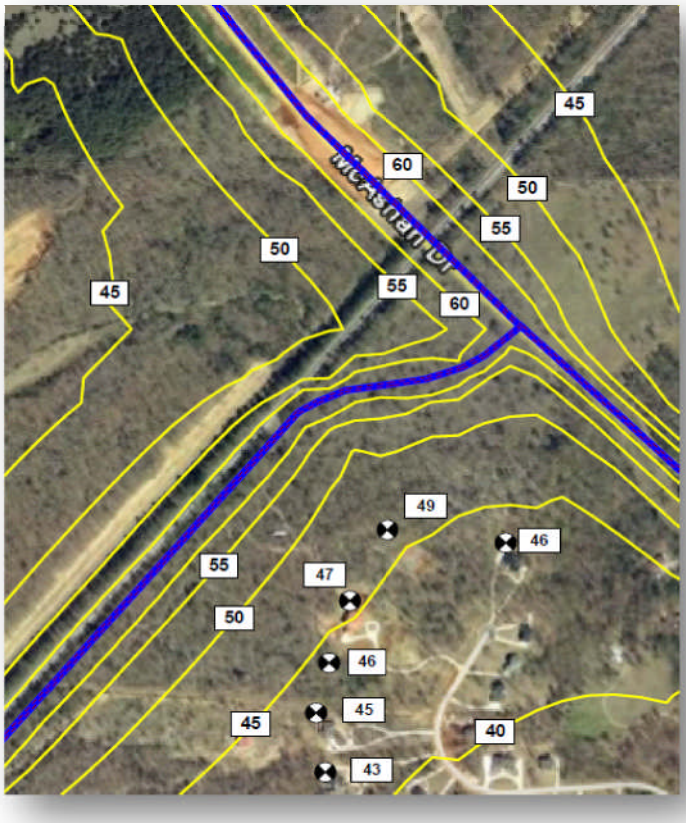
Noise levels from each of these noise source categories were estimated through the use of a computer model incorporating accepted noise estimation techniques. Noise levels were also

monitored at the NSR J. W. Whitaker Intermodal terminal facility in Austell, Georgia. These were used to check the reasonableness of the estimated noise levels for the BRIMF.

Motor Vehicle Traffic Noise

Heavy trucks would be the primary source of motor vehicle traffic noise associated with the facility. All trucks would enter and leave the site on an access road to be built on the north end of the site. This road would be located parallel to the railroad tracks. Trucks would connect with I-20/I-59 by using McAshan Drive. Truck traffic volume would vary widely throughout the day. The peak truck hour is estimated to occur in the 1:00 p.m. to 2:00 p.m. period. This time period was evaluated for traffic noise levels using the FHWA's Traffic Noise Model (TNM) equations as incorporated in the Cadna/A® computer noise model. The estimated traffic noise levels, without a barrier or berm adjacent to the access road are shown in Figure 4.10-3. The heavy blue line shows the planned location of the access road and McAshan Drive. The solid yellow lines are contours of hourly L_{eq} traffic noise. The target symbols are estimated noise levels at specific locations.

FIGURE 4.10-3
Estimated Facility Peak Hour L_{eq} Traffic Noise – Without Visual Barriers

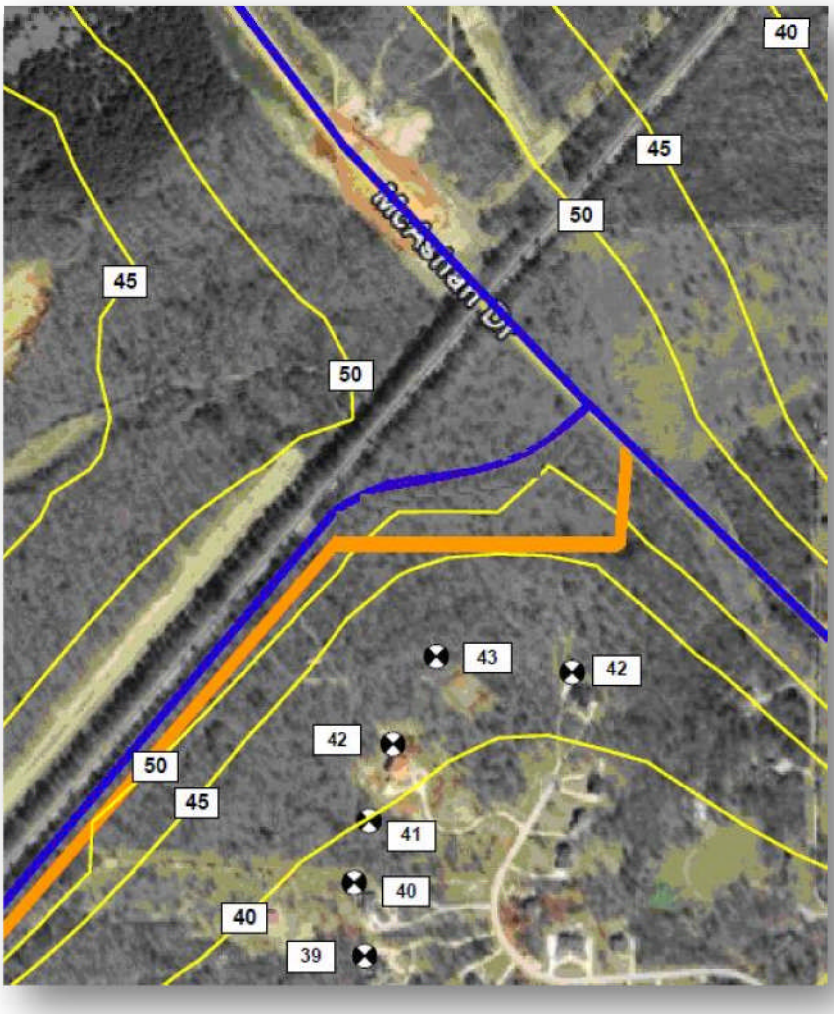


As can be seen in Figure 4.10-3, the highest estimated peak hour traffic L_{eq} noise level at the Sadler Ridge subdivision to the south of the access road is 49 dBA. This level for truck movement along the access road is well below the FHWA highway criterion of 67 dBA. The measured L_{eq} noise level at Location 10 in the same general area for the 1:00 p.m. to

2:00 p.m. period was 53 dBA. The combined L_{eq} noise level (existing plus project-related traffic) would be 55 dBA. The 2-dBA increase would not be substantial.

In addition, visual screening barriers are planned to be incorporated into the Project that would further attenuate the sound from trucks moving along the access road. These barriers would include a visual landscape barrier (minimum height of 15 ft) would be built on the south side of the access road where it is immediately adjacent to the railroad tracks. A 15-ft high visual barrier would be built from that point to the intersection with McAshan Drive. Also, at the intersection of McAshan Drive and the entrance to the facility, an 80-ft long 5-ft high earthen berm with vegetation planted on top would be installed to minimize impacts to adjacent residences from headlights of trucks entering the facility. In addition to the intended benefit of visual screening, the berm and barrier would also block the direct transmission of noise to the Sadler Ridge residences as shown in Figure 4.10-4. The heavy orange line shows the planned locations of the barrier and berm.

FIGURE 4.10-4
Estimated Facility Peak Hour L_{eq} Traffic Noise – With Visual Screening Barrier



As can be seen in Figure 4.10-4, the visual screening barrier is estimated to provide a further reduction in traffic noise levels at the Sadler Ridge residences of 4 to 6 dBA. The highest estimated peak hour traffic L_{eq} noise level at the Sadler Ridge subdivision to the south of the access road with the visual screening barrier is 43 dBA. This level for truck movement along the access road is well below the FHWA highway criterion of 67 dBA. The measured L_{eq} noise level at Location 10 in the same general area for the 1:00 p.m. to 2:00 p.m. period was 53 dBA. The combined L_{eq} noise level (existing plus project-related traffic) would be 53 dBA (rounded to the nearest decibel). The increase of less than 1 dBA would not be substantial.

Rail Activity and IMF Operations Noise

An estimated six trains would arrive or depart from the BRIMF daily. Three of these arrivals/departures are scheduled to occur during nighttime (10:00 p.m. to 7:00 a.m.) hours. The other three are scheduled during the daytime. Train operations at each facility are estimated to last for approximately one hour each. It is assumed that the average speed during movement of these trains on the BRIMF site would be 15 miles per hour.

The noise levels for locomotive and rail car movements were calculated from information provided by Harris Miller Miller & Hanson, Inc. (2006). This information, along with data on the schedule of arrivals and departures, was used to allocate the noise generated between daytime and nighttime and was input to the Cadna/A® computer noise model.

Similarly, the noise levels were determined for cranes, hostlers, side loaders, and refrigeration units from an evaluation of the technical literature and onsite measurements made at the Austell facility. The number of each type of equipment was known and the equipment was assumed to be distributed throughout the IMF. The L_{dn} 24-hour descriptor for noise from future traffic, rail activity, and onsite operations was estimated as shown in Figure 4.10-5, where the contours represent the conservative estimate of day-night sound values with operating equipment distributed over the facility. As the data in the figure illustrate, sound from operating equipment and trains would result in L_{dn} noise levels at the edge of the facility that are approximately 60 dBA.

The L_{dn} 24-hour descriptor for noise from future traffic, rail activity, and onsite operations was estimated as shown in Figure 4.10-5, where the contours represent the conservative estimate of day-night sound values with operating equipment distributed over the facility. As the data in the figure illustrate, sound from operating equipment and trains would result in L_{dn} noise levels at the edge of the facility that are approximately 60 dBA.

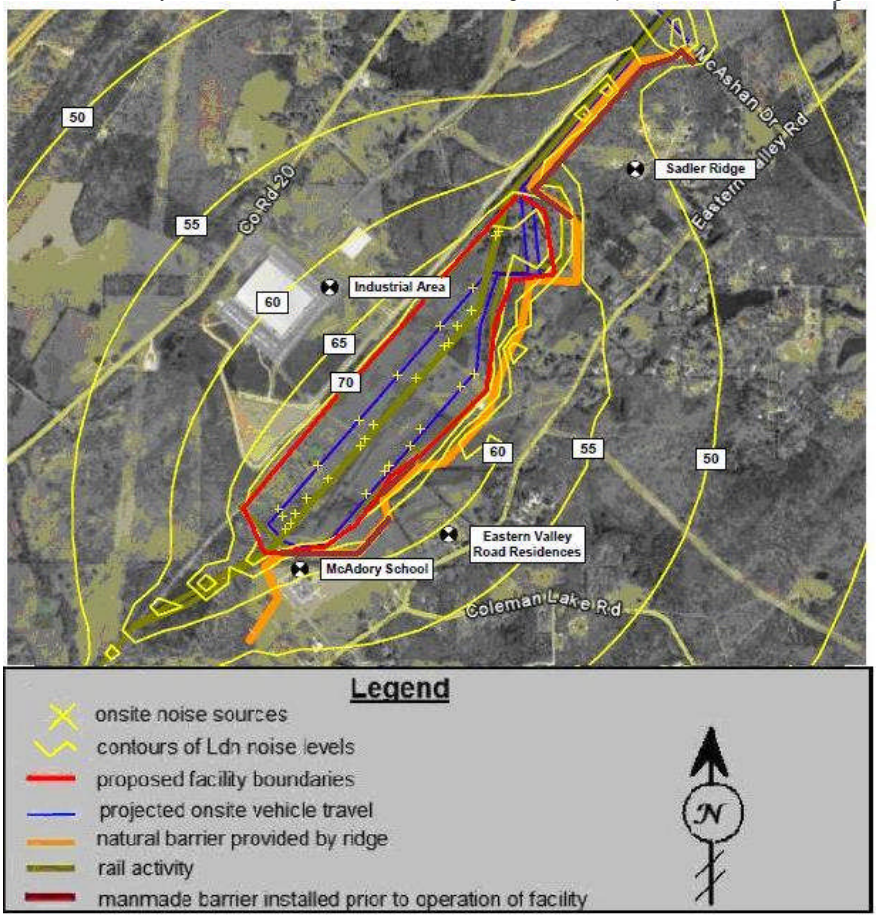
Table 4.10-6 summarizes the results of applying the FRA/FTA criteria to sensitive receptors in the area that may be affected by the operation of the BRIMF. Locations near the existing industrial facilities are not considered areas of sensitive receptors, have no applicable FRA/FTA impact criteria, and therefore are not included in the evaluation.

TABLE 4.10-6
Comparison of Projected Operational Noise with FRA/FTA Criteria

Location	Estimated or Measured Existing Noise Exposure	Category and Project Noise Exposure	Impact
Near McAdory Elementary School	47 dBA L_{eq} min 53 dBA L_{eq} max	Category 3 55 dBA L_{dn}	Minimum Existing - No Impact Maximum Existing – No Impact
Near Eastern Valley Road Residences	58 to 59 dBA L_{dn}	60 dBA L_{dn}	Moderate
Near Sadler Ridge	60 to 66 dBA Ldn	Category 2 52 dBA L_{dn}	No Impact

The hourly L_{eq} noise from operation of the proposed BRIMF at McAdory Elementary School is projected to be 55 dBA. The existing hourly Leq noise levels measured near the school during normal school hours varied from 47 dBA to 53 dBA. Evaluation of these existing and projected noise exposures for Category 3l and uses per the FRA/FTA guidance (Figure 4.10-2) concludes that there would be no impact.

FIGURE 4.10-5
Estimated Facility L_{dn} Noise Level – With Natural Ridge and Proposed Visual Screening Barrier



The L_{dn} noise from operation of the proposed BRIMF at the Sadler Ridge residences is projected to be 52 dBA. The existing Ldn noise levels, based on measured noise at several locations in the area, are estimated to be in the range of 60 to 66 dBA. Evaluation of these existing and project noise exposures for Category 2 land uses per the FRA/FTA guidance concludes that there would be no impact. It should be noted that the noise levels for Ldn shown in Figure 4.10-5 include a weighting penalty to reflect the more sensitive receptors during the evening hours (10 PM to 7 AM) and therefore do not apply to the school, which is not occupied during these hours.

The L_{dn} noise from operation of the proposed BRIMF at the residences along Eastern Valley Road is projected to be 60 dBA. The existing Ldn noise levels, based on measured noise at several locations in the area, are estimated to be in the range of 58 to 59 dBA. Evaluation of these existing and project noise exposures for Category 2 land uses per the FRA/FTA guidance concludes that there would be moderate impact.

All estimated noise levels from operation of the proposed BRIMF include the effects of noise reduction by the visual screening berms and the natural terrain.

4.10.2.2 *Vibration*

Vibration during construction is expected to be minimal with the exception of limited periods when blasting would occur. When blasting occurs, however, the vibration would not likely be greater than the vibration currently associated with passing trains in the area. NSR has specific guidelines for blasting that would be applied by the contractor to comply with appropriate safety and other local or regional requirements.

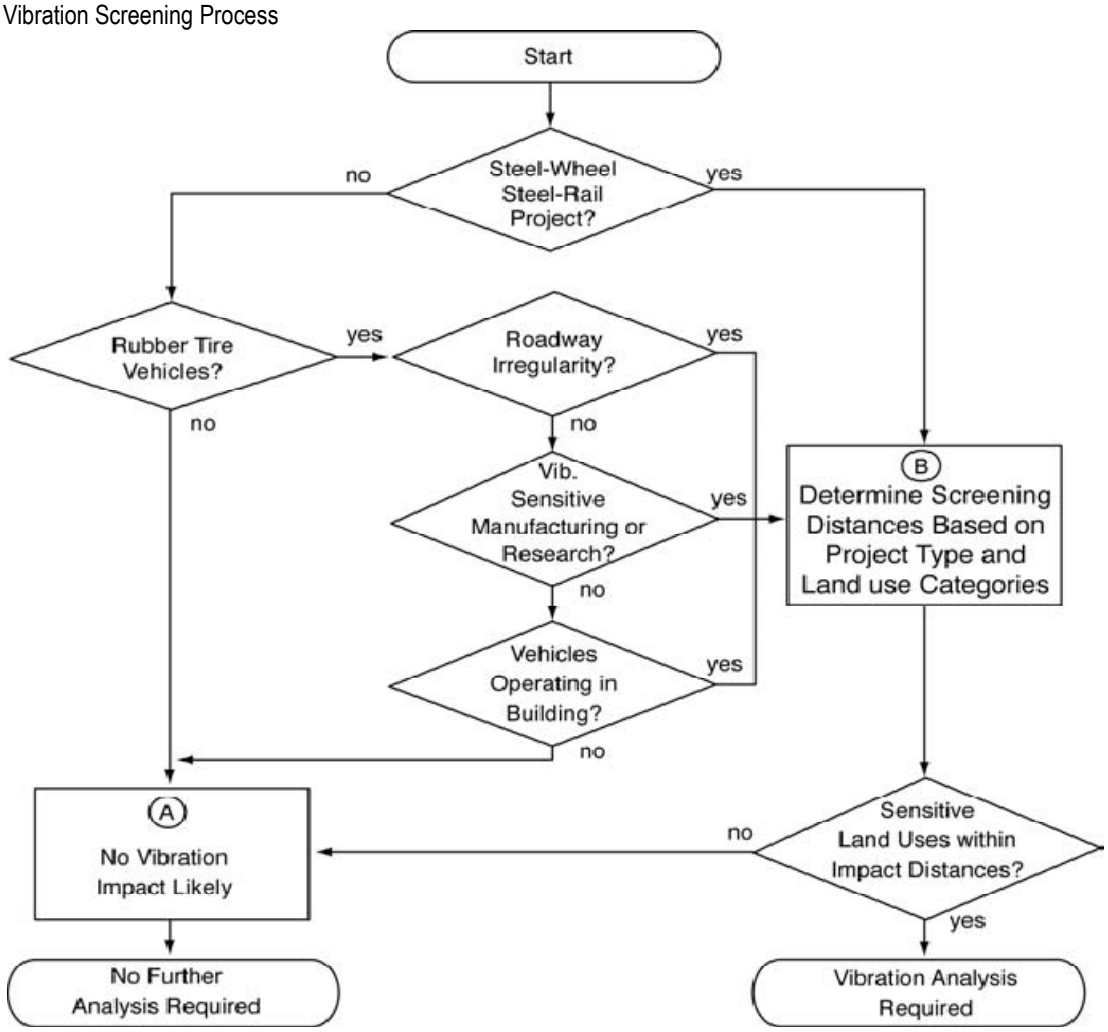
Ground-borne vibration screening analyses related to operations (Figure 4.10-6) were conducted to determine if the proposed BRIMF and its supporting infrastructure would result in increased ground-borne vibration in nearby buildings and structures. The screenings were conducted in accordance with the FTA Transit Noise and Vibration Impact Assessment, Vibration Screening Procedure (FTA, 2006). The screening procedure was used to evaluate rubber-tired vehicles (buses and trucks) and steel-wheel rail.

According to the vibration screening results, vibration from trucks serving the proposed BRIMF is expected to be minimal. Vibration caused by trucks that would be perceptible to receptors would be limited to trucks traversing potholes or some other roadway irregularity (FTA, 2006). However, because there are no vibration Category 1 receptors (to include highly sensitive research equipment such as electron microscopes), vibrations from rubber-tired vehicles would not be expected to cause an impact and no further analysis is required.

A vibration screening was also conducted for the steel-wheel rail that would be part of the proposed BRIMF. No specific impact criteria exist for freight railroads (FTA, 2006). However, FTA recommends and has conducted vibration screening for freight trains using the most similar identified category where impact criteria have been defined. The analysis described herein utilized the most conservative project category--conventional commuter railroad--to approximate freight rail impacts and the most sensitive receptors were considered vibration Category 2, as discussed above. Under the given assumptions, receptors would have to be within 200 ft of the ROW or property line of the proposed BRIMF to require further vibration assessment (i.e., potential vibration impact) (FTA, 2006). The nearest residence is approximately 320 ft from the property line of the proposed BRIMF

and the effects of vibration are attenuated with distance. Additionally, at its closest point, McAdory Elementary School would be 327 ft from facility activities involving rubber-tired vehicles and 454 ft from train movements. Therefore, ground-borne vibration impacts are not expected from the steel-wheel rail associated with the proposed BRIMF.

FIGURE 4.10-6
Vibration Screening Process

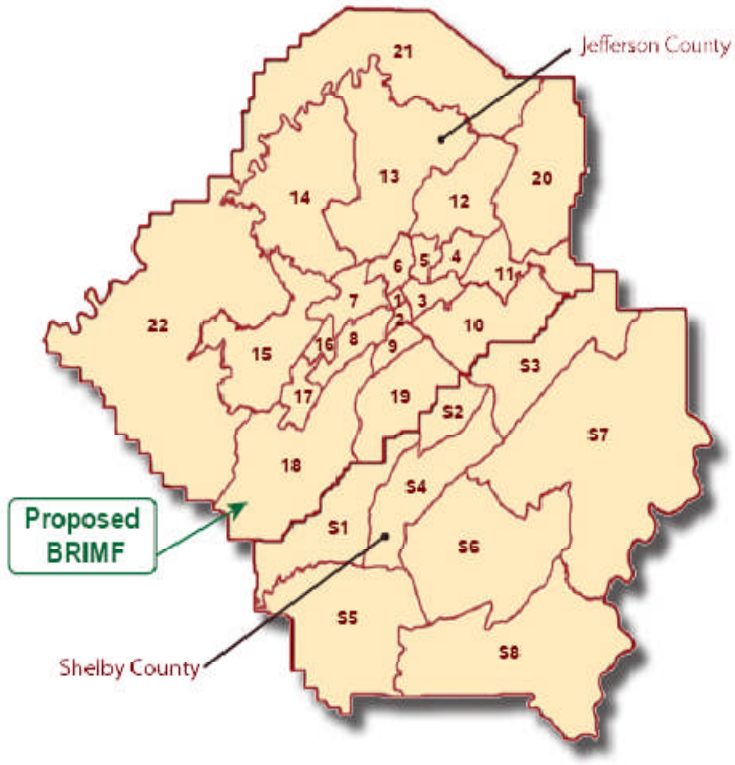


4.11 Social Elements and Environmental Justice

4.11.1 Affected Environment

This section describes the existing social and economic characteristics of the area around the proposed BRIMF site in the southwest corner of unincorporated Jefferson County, Alabama (Figure 4.2-1). The RPCGB has developed population, housing, and employment projections for the Birmingham MPO, which consists of Jefferson and Shelby Counties. These counties are subdivided into areas called planning districts which are defined as aggregated census tracts, grouped according to similar geographic and demographic characteristics. Jefferson County has 22 planning districts, and Shelby County has 8 (Birmingham MPO, 2008). The proposed BRIMF is located in the southwest corner of the Birmingham MPO within the South Bessemer/Oxmoor Planning District, also known as Planning District 18.
Figure 4.11-1 illustrates the location and extent of the South Bessemer/Oxmoor Planning District relative to the County boundaries and other Planning Districts in the Birmingham MPO.

FIGURE 4.11-1
Birmingham MPO Planning Districts (Birmingham MPO, 2008).



Note: Numbers indicate planning districts. The proposed BRIMF is located in the southwest corner of Planning District 18, also known as the South Bessemer/Oxmoor Planning District.

The South Bessemer/Oxmoor Planning District is bound by the Shelby/Jefferson County border to the southeast and the Tuscaloosa/Jefferson County border to the southwest. It extends to the east to include a small portion of the City of Hoover and to the northwest into the City of Birmingham (see Figure 4.11-2). The Planning District is traversed by I-20 and I-459 as well as multiple rail corridors.

The Birmingham MPO projections were developed using a combination of secondary sources, historical trend analysis, and evaluations of existing and planned developments. A variety of State and nationally based demographic and economic sources were used by the RPCGB to compute the county-wide projections, while sub-county projections for planning districts, census tracts, and traffic analysis zones were developed by the RPCGB staff based predominantly upon historical trends and known and probable residential and commercial developments identified by the public and private sectors (Birmingham MPO, 2008). The RPCGB employment projections were augmented by more recent data from the Alabama Department of Industrial Relations to better reflect current conditions in the region.

4.11.1.1 *Population and Housing*

Population growth between 2005 and 2035 in Jefferson County is projected to remain relatively stable, increasing only approximately 2 percent over the next 30 years (see Table 4.11-1). However, it is important to note that this lack of a substantial percentage growth is due to decreases in the urban population being offset by increases in population in the suburban areas of the county. In contrast, Shelby County is projected to add about 146,500 residents, growing from 170,807 in 2005 to 317,342 by 2035, an increase of almost 86 percent, primarily expected to occur along the major transportation routes.

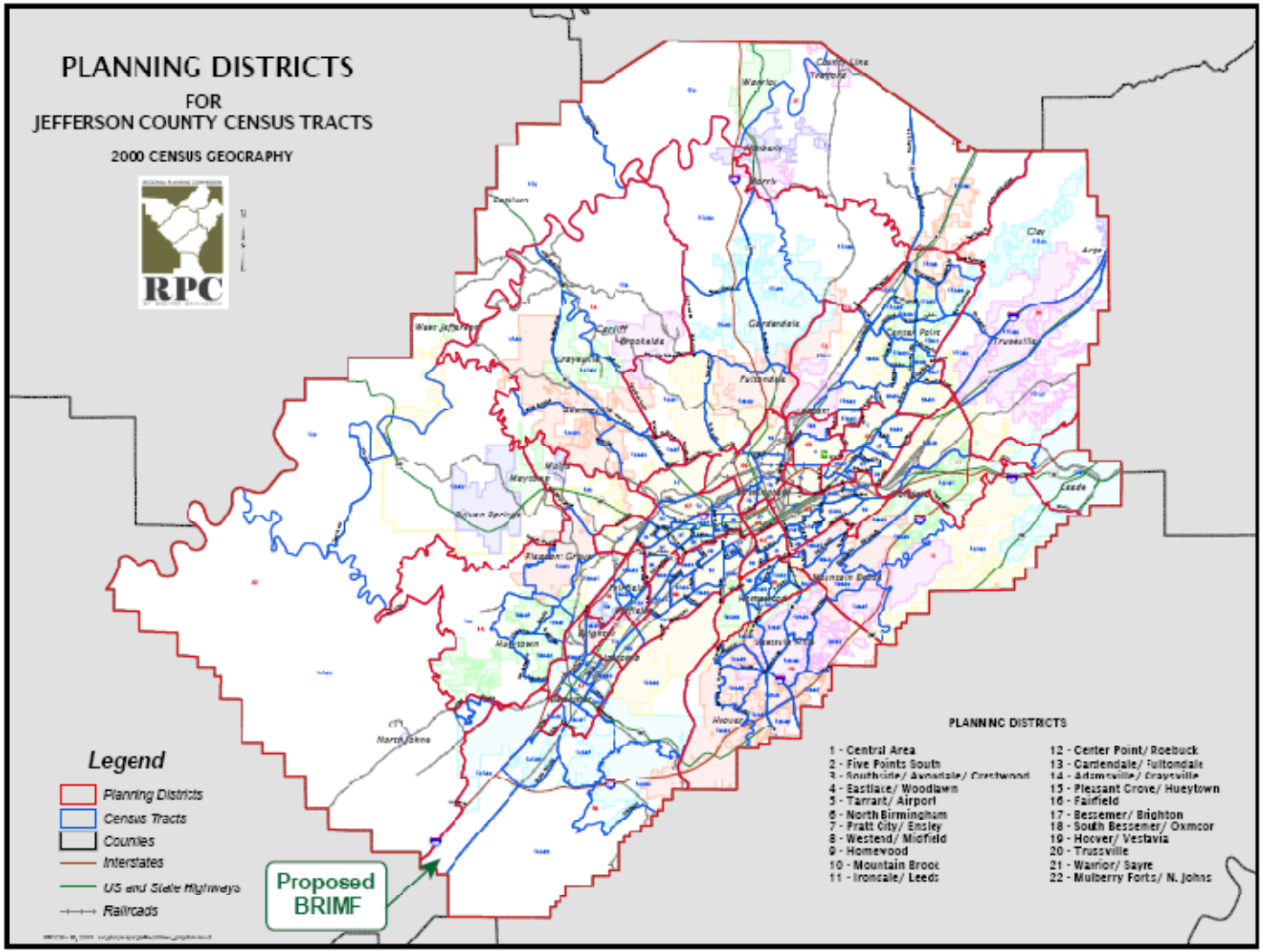
TABLE 4.11-1
Current and Projected Population Characteristics (Birmingham MPO, 2008)

Geography	2005	2035	Percent Change
Jefferson County	659,397	671,306	1.8%
Shelby County	170,807	317,342	85.8%
South Bessemer/Oxmoor Planning District 18	30,542	45,065	47.6%

These trends are illustrated by Figure 4.11-3, which shows continued population growth and increases of density near the project area along the Jefferson County/Shelby County line, particularly in the corridor bracketed by Interstate 20/59 to the northwest and Interstate 65 to the east. The area of the Proposed Action, in the southwestern portion of the South Bessemer/Oxmoor Planning District (Number 18), is projected to grow by approximately 48 percent between 2005 and 2035 (Table 4.11-1).

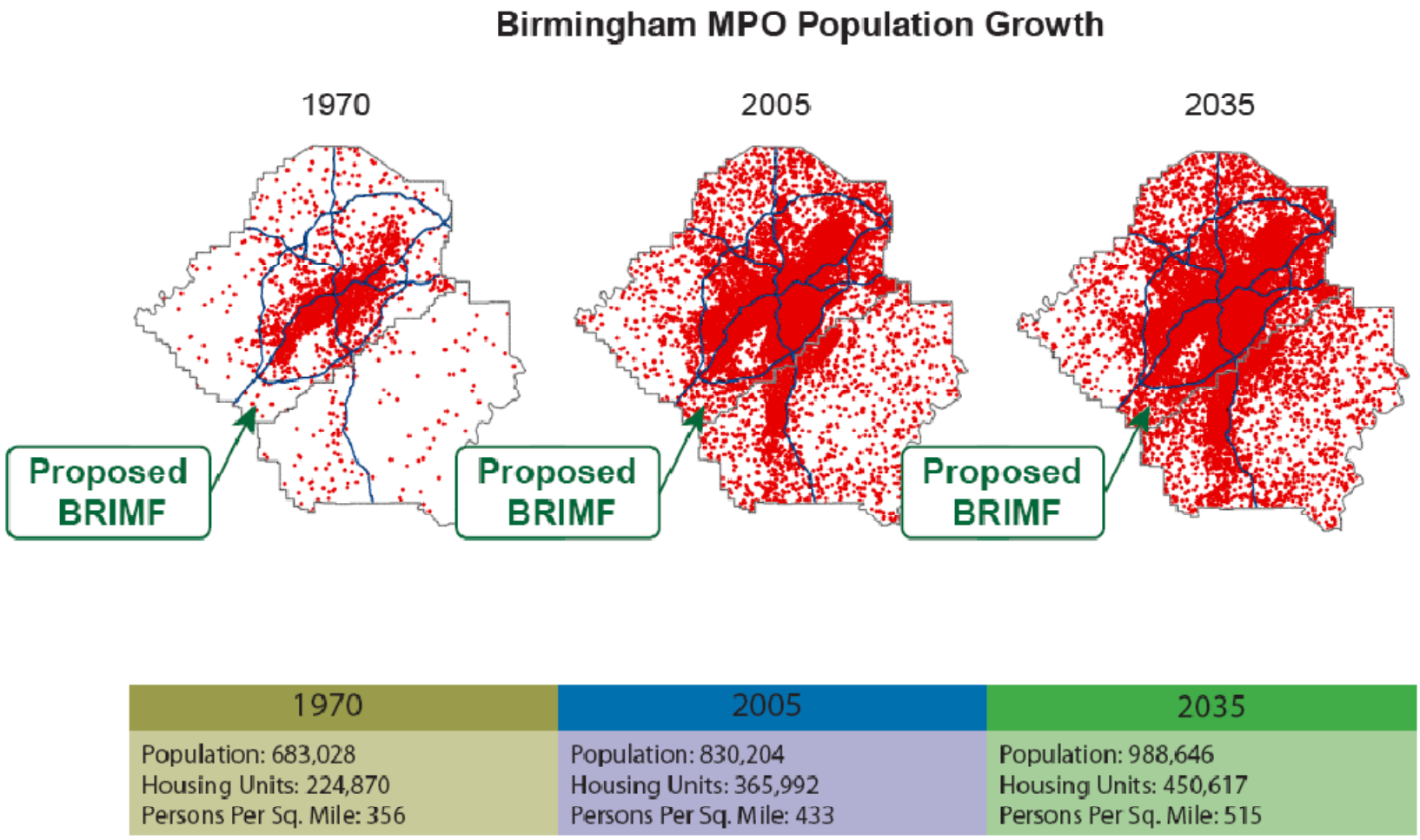
Figure 4.11-3 also illustrates that the number of housing units has steadily increased within the Birmingham MPO area since 1970 and is projected to continue increasing by approximately 23 percent by 2035. Table 4.11-2 illustrates that the Planning District containing the area of the Proposed Action, the South Bessemer/Oxmoor Area, is expected to remain a high growth area and, from the year 2005, is projected to add another 7,000 housing units by 2035, an increase of approximately 58 percent.

FIGURE 4.11-2
South Bessemer/Oxmoor Planning District (Birmingham MPO, 2008)



Note: The proposed BRIMF is located in the southwest corner of Planning District 18, also known as the Bessemer/Oxmoor Planning District.

FIGURE 4.11-3
Population Growth within the Birmingham MPO



(Source: Birmingham MPO, 2008)

TABLE 4.11-2
Current and Projected Housing Characteristics (Birmingham MPO, 2008)

Geography	2005 Housing Units	2035 Housing Units	Percent Change
Jefferson County	294,843	317,823	7.8%
Shelby County	71,149	132,794	86.6%
South Bessemer/Oxmoor Planning District 18	12,195	19,247	57.8%

4.11.1.2 *Local Economy and Employment*

The economy of the Birmingham-Hoover Metropolitan Area (MA), Jefferson and Shelby Counties, includes a diverse mixture of professional, health, education, distribution, and manufacturing jobs. Table 4.11-3 lists the largest employers in the MA; the University of Alabama at Birmingham is by far the largest employer with almost 19,000 employees. Local governments, school systems, and health care systems are also large employers. Automobile manufacturing has been the key to recent growth in Alabama, beginning with Mercedes-Benz USI in 1997 (12th largest employer, see Table 4.11-3) and continuing with Honda (8th largest employer) in 2001 and Hyundai in 2005. Mercedes-Benz USI is 35 miles to the west of Birmingham, Honda 40 miles to the east, and Hyundai 100 miles to the south.

This employment sector in Alabama (including motor vehicle parts) has grown from fewer than 1,000 in 1995 to 30,000, which is 3.4 percent of the U.S. automobile and parts employment. While the auto plants are in counties just outside the Birmingham-Hoover MSA, also referred to as the region, which includes Bibb, Blount, Chilton, Jefferson, Shelby, St. Clair, and Walker Counties, many of their employees live within the region, as do those of many supplier firms (BRCC, as of July 2009, BBA, 2009).

TABLE 4.11-3
Largest Employers in Birmingham-Hoover MA (BBA, 2009)

	Employer	Employees
1	University of Alabama at Birmingham	18,750
2	Regions Bank	6,000
3	AT&T	5,750
4	Birmingham Board of Education	5,000
5	City of Birmingham	4,989
6	Jefferson County Board of Education	4,800
7	St. Vincent's Health System	4,703
8	Honda Manufacturing of Alabama	4,500
9	Baptist Health Systems	4,000
10	Jefferson County Commission	3,875
11	Shelby County Board of Education	3,625
12	Mercedes Benz U.S. International	3,500
13	Children's Health System	3,200
14	Wells Fargo	3,094
15	Alabama Power Company	3,000

An extensive rail and interstate transportation network traverses the region with six interstate axes converging near downtown Birmingham, providing interstate access to most regions of the United States. Birmingham is also Alabama's largest rail hub; in addition to NSR, two other major freight railroad companies, CSX Transportation and Burlington Northern Santa Fe, have major terminals in the region. Smaller regional railroads such as the Jefferson Western and Birmingham Southern also serve Birmingham's freight customers (BBA, 2009).

This transportation network and its central location in the Southeast make Birmingham an attractive logistical choice for major distribution facilities as well as Alabama's growing automotive manufacturing sector, both potential customer bases for the proposed BRIMF. Home Depot, Office Max, Sysco Food Services, Wood Fruitticher, and Custom Marketing (division of Southern Living magazine) have located regional distribution facilities to the Birmingham region over the past decade.

Employment totals within the Birmingham MPO area have remained strong, steadily increasing in the region to 403,500 in 2005 (Table 4.11-4). Overall, the Birmingham MPO is projected to add another 142,270 jobs, a 35 percent increase, from 2005 to 2035. Similarly, Table 4.11-4 illustrates that employment within the South Bessemer/Oxmoor Planning District, the location of the proposed BRIMF site, is also projected to increase by approximately 35 percent.

TABLE 4.11-4
Current and Projected Employment Characteristics (Birmingham MPO, 2008)

Geography	2005 Number Employed	2035 Number Employed	Percent Change
Jefferson County	331,625	421,710	27.1%
Shelby County	67,576	123,965	83.4%
South Bessemer/Oxmoor Planning District 18	15,969	21,599	35.3%

The Virginia Inland Port (VIP) IMF illustrates the job creation potential of IMF development. The Virginia Port Authority estimates that the VIP has indirectly contributed to the creation of approximately 7,000 new jobs since it was constructed in 1989. While only a quarter of the size of the proposed BRIMF, it has helped attract 6 million square feet of buildings and $600 million in local investments to the Front Royal, Virginia area. The Virginia Inland Port makes a good case study of the development that results from the siting of an intermodal terminal as the Front Royal, VA area is relatively rural. There was little else in the area to stimulate the development that occurred following the opening of this facility.

Table 4.11-5 provides recent unemployment information for Jefferson and Shelby Counties as compared to the overall State of Alabama; these numbers have not been seasonally adjusted. The current (10.3 percent in October 2009) and recent (5.3 percent in October 2008) unemployment rates for Jefferson County have tracked closely to those of the State while Shelby County's unemployment tends to be approximately 2 percentage points below that of the State (Alabama Department of Industrial Relations ([AL DIR] 2009). Neither of the counties are considered "Economically Distressed Areas" as defined by 42 U.S.C. 3161 to indicate locales where the unemployment is 1 percent or more above the national average or the per capita income is 80 percent or less than the national average (FHWA, 2009c).

TABLE 4.11-5
Current and Projected Unemployment Characteristics (AL DIR, 2009)

Geography	October 2009 Unemployed	October 2009 Percent Unemployed	October 2008 Percent Unemployed
State of Alabama	223,280	10.7%	5.6%
Jefferson County	31,180	10.3%	5.3%
Shelby County	6,898	7.4%	3.6%

4.11.1.3 *Environmental Justice*

Federal EO 12898 stipulates that Federal actions, or projects funded by Federal monies, should not result in disproportionately high and adverse impacts to low-income or minority populations, referred to as Environmental Justice. Low-Income means a household income at or below the Department of Health and Human Services poverty guidelines while minority indicates a person who is Black, Hispanic, Asian American; or American Indian and Alaskan Native. EO 12898 directs Federal agencies to consider Environmental Justice by identifying and mitigating disproportionately high and adverse human health and environmental effects. This includes the interrelated social and economic benefits of their programs, policies, and activities on low-income and minority populations.

The RPCGB Transportation Planning Division must regularly evaluate potential Environmental Justice issues across Jefferson and Shelby Counties using FWHA procedures due to its receipt of Federal funding for transportation projects. As a result, it has developed a scaled and tailored comparative process for assessing the potential impacts of its transportation planning process on Environmental Justice populations at the U.S. Census Bureau block group level (Birmingham MPO, 2005). Block groups generally contain between 600 and 3,000 people, with an optimum size of 1,500 people, and typically do not cross the boundaries of states, counties, or statistically equivalent entities.

In the 2007-2008 school year, white/non-Hispanic students comprised 70 percent of the student population at McAdory Elementary School. The Alabama State average for white/non-Hispanic students is 59 percent (greatschools.org, 2010). During the same period (2007-2008) only 36 percent of students attending McAdory Elementary School qualified for free or reduced price lunches, whereas, the State average was slightly higher than 50 percent (greatschools.org). The average sales price of a home in the 35311 (McCalla area) zip code in 2009 was $153,900 (zillow.com, 2010).

No residents would be displaced by the construction or operation of the Project; therefore, no Environmental Justice populations would be displaced by the Project.

4.11.2 Environmental Consequences

Section 4.11.1 describes the population, housing, employment, and Environmental Justice characteristics of Jefferson and Shelby Counties. Social and economic impacts are generally a function of the size of the construction and operational work forces relative to the local economy, as well as through wages, output, and potential property tax revenue. In addition to the substantial capital investments that would occur locally, construction is estimated to create 1,042 work-years of employment, while operation of the proposed BRIMF would

provide employment for approximately 230 persons (terminal employees and local truck delivery drivers) with an estimated average salary of $51,800 in 2008 dollars, yielding a total annual payroll of $11.9 million. At its peak, the construction workforce would represent less than 3 percent of the total 2005 population of the South Bessemer/Oxmoor Planning District while the operation workforce would represent less than 1 percent.

As noted in Section 4.11.1, current (2005) employment in the South Bessemer/Oxmoor Planning District, the location of the Proposed Action, was estimated at approximately 16,000 while the current (2009) unemployment rate for Jefferson County is 10.3 percent (AL DIR, 2009). Based on these numbers, adverse impacts to socioeconomic resources associated with the construction and operation of the proposed BRIMF are expected to be minimal because of the ability of the greater metropolitan Birmingham market to absorb local employment and housing fluctuations. Additionally, since the workforce employed onsite during construction and operation of the proposed BRIMF would likely come from within the Birmingham region, local infrastructure and community services are not anticipated to be noticeably affected. The Birmingham regional economic benefits study (Insight Research Corporation, 2009) estimates that, due to freight transportation demand in the region, the BRIMF could contribute a cumulative economic impact of $4 billion by 2020, and create or benefit more than 8,000 jobs in the same period.

Impacts to Environmental Justice populations are considered measurable if a disproportionate share of the adverse socioeconomic impacts is borne by minority and low-income communities compared with those of a comparison population, in this case Jefferson and Shelby Counties (USEPA, 1998). As noted in Section 4.11.3, there is not a substantial concentration of low-income populations in the area around the proposed BRIMF, while minority groups represent approximately 0 to 10 percent of the nearby population as compared with 36 percent of Jefferson and Shelby Counties' overall population. The development of the proposed BRIMF is not anticipated to have a disproportionate impact on Environmental Justice populations.

During construction, area roads would remain unimpeded in order to provide safe and uninterrupted passage for area residents to local destinations, such as places of worship, community services, government assistance offices, and hospitals. Social interactions within the community would continue unhindered. There are no anticipated impacts associated with the BRIMF concerning social isolation, segmentation, or disruption of local communities. Since the Project would avoid community segmentation and relocations, no adverse impacts are anticipated on local communities and the effects of the Project on Environmental Justice populations would be expected to be the same as those on non-Environmental Justice populations. Consequently, the Project would not have a disproportionately high or adverse effect on Environmental Justice populations. Additionally, all the people living in the project area would potentially share the benefits of the proposed project.

4.11.2.1 *Safety*

NSR operates 21,000 miles of railroad in 22 states across the nation in a safe, efficient, and dependable manner. Safety has been embraced as a core value, and NSR is committed to the safety of its communities, customers, and team members. The current affected environment related to human health and safety relates primarily to air quality, as described in the Air Quality section. Other potential impacts to human health and safety are discussed below.

For the past 20 years, NSR has received the Harriman Gold Medal for U.S. railroad with the best employee safety record. Only NSR employees and contractors who have completed the required training, to work within close proximity to moving rail cars, would be authorized to access the tracks and storage yards within the BRIMF. Those persons accessing these areas who have not completed the training would require an approved escort. Only trained, qualified crane operators would be authorized to transfer containers from the rail cars to truck beds. Industry approved reversing signals would be utilized on all moving trucks and cranes.

Construction

Access to the construction site would be strictly prohibited to non-NSR workers or contractors unless special circumstances warranted entry, which would require pre-approval from the NSR Project Engineer.

Operation

Eight-ft high security fences topped with security wire would be installed around the BRIMF to prevent trespassing. As discussed within the Traffic and Transportation section, a tapered lane would be constructed at the entrance to the BRIMF on the southwest side of McAshan Drive. This lane would allow trucks a safe distance for slowing down prior to entering the facility; and, would allow for vehicular traffic continuing down McAshan Drive to safely pass trucks turning into the facility. As trucks exit the facility, the exit lane would be designed to deter right turns, as to prevent trucks from accessing Eastern Valley Road (Figure 4.12-1). Signs would also be posted at the exit of the facility, to warn drivers that trucks are prohibited from turning right. As an additional safety precaution, NSR would install signs on McAshan Drive that would notify drivers in both directions when a truck is approaching the exit lane of the facility. The caution sign would read "Trucks Entering Highway" and would flash as trucks approach the exit prior to pulling out (turning left) onto McAshan Drive.

Annually, NSR provides rail training to approximately 5,000 emergency responders across its network. For the past 7 years, NSR has won the TRANSCAER National Achievement Award for community outreach and interaction with communities and first response organizations.

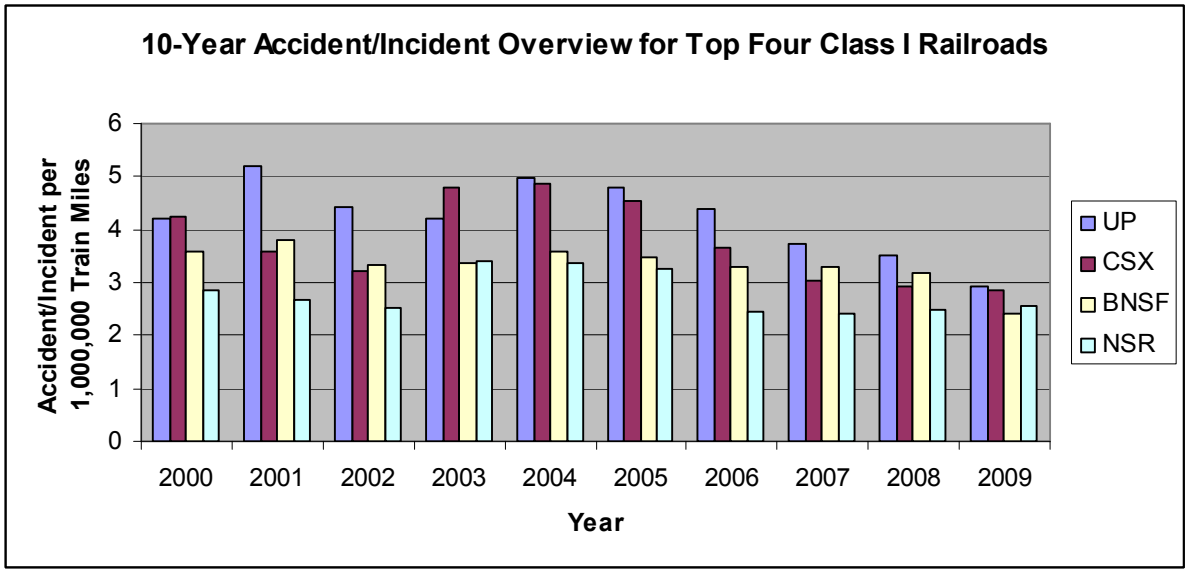
In addition to the safety practices and procedures discussed above, NSR has established the following programs designed to minimize the probability of an incident:

- *IMF Surveillance Program* – This includes the patrol of IMFs by NSR police to identify items of concern that might impact the facility or railroad and/or areas adjacent to the facility or railroad. In addition to the driving patrol, the BRIMF would be under 24-hour video surveillance by NSR personnel.
- *Liaison with Public Officials* - NSR personnel would implement a communication program with public officials in the McCalla area. This program would inform public leaders of NSR safety practices and inform them of company emergency response procedures, characteristics of IMFs, and methods for communicating with NSR in the event of an emergency. NSR would obtain information from public leaders that could be utilized in emergency response at the BRIMF.

- *Public Education Program* - Persons living and working in the McCalla area and surrounding area would be informed by NSR of railroad education programs that would be periodically offered to children and adults. The programs would outline the benefits of rail transportation, the dangers of approaching the track or ROW, and rules and regulations regarding grade crossings (railroad crossings at roads).

For 8 out of the last 10 years, NSR has experienced fewer accidents and/or incidents per 1,000,000 train miles as compared to other freight Class I Rail Companies. Figure 4.11-4 provides a 10-year accident/incident overview for the four largest Class I rail companies. The four largest Class I rail companies are Union Pacific (UP), Burlington Northern Santa Fe Railway (BNSF), CSX Corporation (CSX), and NSR.

FIGURE 4.11-4
10-Year Overview of Accidents/Incidents per 1,000,000 Train Miles



Excludes highway – rail
Source: FRA, 2010

Protection of Children

EO 13045, Protection of Children from Environmental Health Risks and Safety Risk (FR: April 23, 1997, Volume 62, Number 78), specifies guidelines for the protection of children. This EO requires that Federal agencies make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and to ensure that policies, programs, and standards address disproportionate risks to children that result from environmental health or safety risks.

For the purposes of this section, the area to be considered for potential impacts to children is the immediate location of the BRIMF site. An elementary school, daycare facility, and multiple residential structures are located adjacent to the proposed site boundary. In the portion of the BRIMF property that is closest to the McAdory Elementary School, in addition to a-50 ft vegetative buffer zone, a 15-ft earthen berm would be constructed as a visual barrier. In addition, 8-ft high security fences would be installed on either side of the berm. The fence farthest from the school would be equipped with security wire along the top.

These man-made and natural barriers, coupled with the distances between these homes, schools, and daycare center, provide a buffering zone between them and the BRIMF.

Approximately 960 students attended McAdory Elementary during the 2007–2008 school year (Alabama Department of Education, 2009). This Safety section, as well as Facility Security, and Emergency Preparedness, describe the proactive steps NSR is taking to protect children, as do the Visual and Lighting Conditions section, which discusses the vegetated berms that would provide a visual barrier between the school and the daycare center from the main site.

Additionally, as discussed in the Air Quality section, emissions from the BRIMF would fall within CAA air quality standards, including those established to protect sensitive populations, such as children. The BRIMF would not cause an environmental risk that would disproportionately affect the health of children. As requested by the public, NSR would install "No Standing Any Time" signs along the access road that connects the east trailer storage lot to the track area on the southern end of the facility. The sign would be intended to keep vehicles moving along this road and to discourage idling.

4.11.2.2 *Facility Security*

The BRIMF would operate under 24-hour camera surveillance, and NSR police would patrol the facility intermittently. NSR railway police coordinate their patrols and security measures with local law enforcement agencies. Additionally, NSR railway police participate in joint training and exercises with local law enforcement agencies.

The AGS would be located at the entrance to the BRIMF, and would control access into and out of the facility. With this system, NSR can keep track of who is inside the facility at all times. Only drivers who are registered and approved in the facility's Strategic Intermodal Management System (SIMS) would be authorized to access the BRIMF. The following is the sequence for entering and exiting the facility:

- The driver enters a camera portal that inspects the truck at all angles using several cameras.
- Once cleared at the camera portal, the driver pulls forward to a kiosk where he enters his personal SIMS code as well as any information regarding the shipment being delivered to the facility.
- The SIMS would accept the driver's information, and the gate at the kiosk would open, allowing the diver to enter the facility.
- When exiting the facility, the driver would drive through a second camera portal building where several cameras would inspect the truck at multiple angles.
- Similar to the entry process, after clearing the camera portal, the driver would enter a kiosk where he provides his personal SIM code and information regarding the shipment that the driver has picked up.
- If there are no issues, and the system accepts the information provided by the driver, the gate of the kiosk would open and the driver would be authorized to exit the facility.

- If an issue is identified, a resolution would be required prior to the driver exiting the facility, the system would stop processing all other trucks, and the truck that has a problem would be directed to return back to the facility. Once that truck is out of the gate area and inside the facility, the AGS would resume processing other trucks that are in the process of exiting the facility.
- There would be a tire spike system installed at both the facility entrance and exit to prevent drivers from making an unauthorized entrance or exit. In the event that an AGS detects an issue with either the credentials of a driver, the contents of a container, or the physical condition of the container, tire spikes would be deployed to prevent the driver from entering or exiting the facility.
- All employees and guest would be required to undergo a separate kiosk system to access or leave the facility.

NSR employees and its contractors would be required to wear photo identification badges at all times within the boundaries of the BRIMF. Additionally, 8-ft high security fencing topped with security wire would be installed around the boundaries of the facility.

Select NSR staff would receive Homeland Security training. In addition, contractors working near rail lines would be required to complete e-RAILSAFE certification.

4.11.2.3 *Emergency Preparedness*

The BRIMF would be governed by the NSR Alabama Division Emergency Action Plan, which specifies response protocols and notifications. This plan would cover the full range of incidents that could occur on the site, including responses to spills or releases, fire, trespass, vehicular incident, need for evacuation, and other events that warrant special attention of onsite and, if needed, offsite emergency response personnel. Training of appropriate staff to meet requirements for any of these unlikely events would be a normal and routine process for NSR staff operating the facility. Coordination with local and regional emergency response professionals would also be conducted periodically to update site changes or contact information that may be required. NSR has developed a *Railroad Emergency Response Planning Guide* which is made available to local emergency services. NSR has been nationally recognized for community outreach and interaction with communities and first response organizations through the TRANSCAER (Transportation Community Awareness and Emergency Response) program.

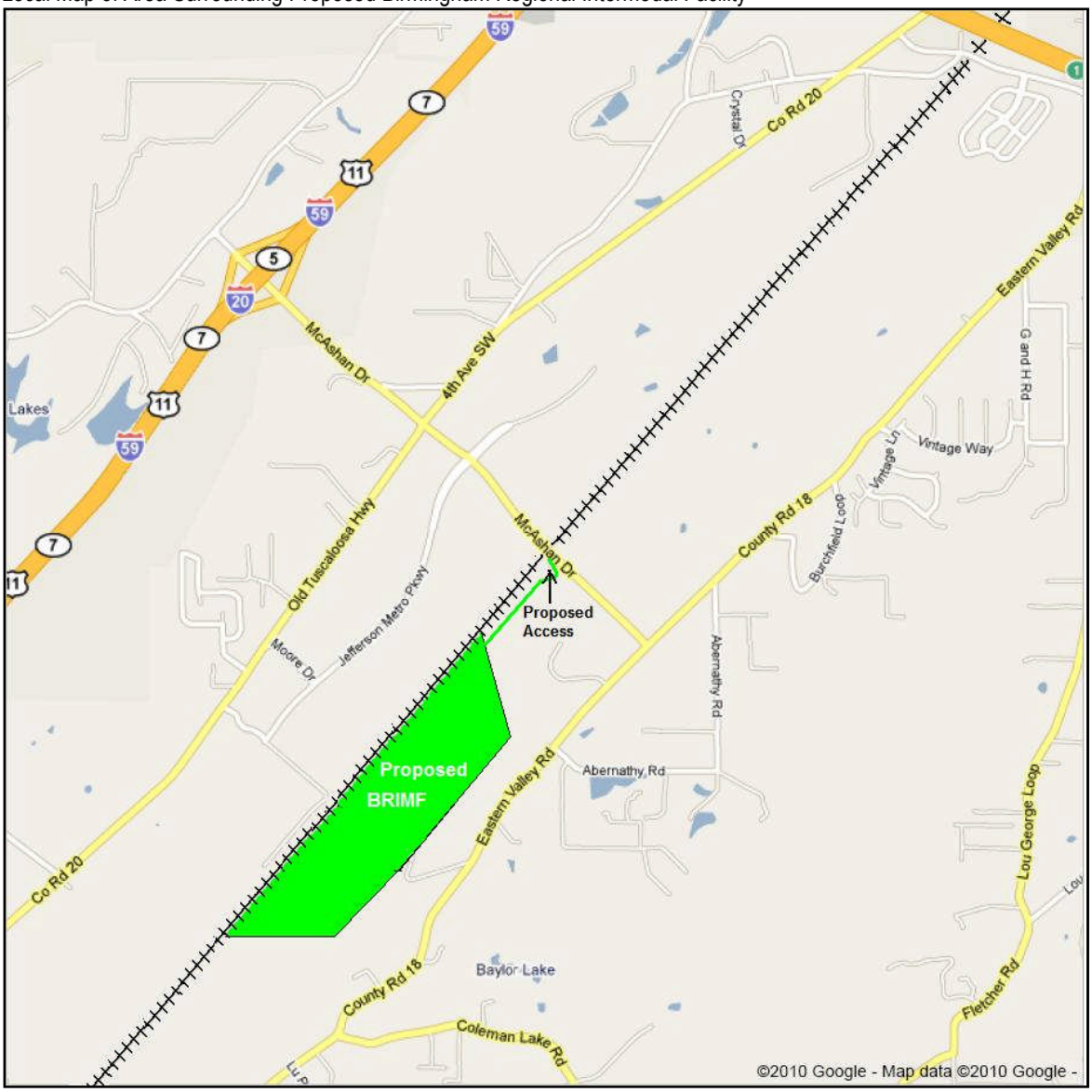
4.12 Traffic and Transportation

4.12.1 Affected Environment

This section characterizes traffic and transportation in the areas surrounding NSR's proposed BRIMF project site in McCalla.

The road that would be utilized for accessing the proposed BRIMF is the existing McAshan Drive (Figure 4.12-1). McAshan Drive is a two-lane roadway which intersects Interstate 20/59 (I-20/59) approximately 1.4 miles northwest of the proposed access point of the BRIMF. Both of the I-20/59 ramp terminals with McAshan Drive are controlled by stop signs.

FIGURE 4.12-1
Local Map of Area Surrounding Proposed Birmingham Regional Intermodal Facility



Jefferson Metropolitan Parkway and Old Tuscaloosa Highway also intersect McAshan Drive between the existing NSR railroad and I-20/59 (Figure 4.12-1). Jefferson Metropolitan Parkway is controlled by stop signs at McAshan Drive, and the intersection of Old Tuscaloosa Highway and McAshan Drive is controlled by traffic signalization. Jefferson Metropolitan Parkway is an access roadway to the Jefferson Metropolitan Park, which is located on both the northeast and southwest sides of McAshan Drive.

McAshan Drive terminates to the southeast of the proposed BRIMF site at Eastern Valley Road, approximately 0.4 mile southeast of the NSR railroad. This intersection is controlled by a stop sign at the end of McAshan Drive. Eastern Valley Road is a two-lane roadway that widens to provide a northbound left turn lane at its intersection with McAshan Drive. It should be noted that an ordinance was recently enacted by the Jefferson County Commission to restrict truck traffic on Eastern Valley Road.

The proposed site access is planned along McAshan Drive approximately 200 to 300 ft south of the existing railroad overpass. The nearest schools to the proposed site access for the BRIMF are McAdory Elementary School and the combined McAdory Middle and High School. The elementary school is located along Eastern Valley Road, south of McAshan Drive, which is approximately 2.3 miles from the site access for the proposed BRIMF. The middle and high school is located on McAdory School Road, which is to the north off of Eastern Valley Road and approximately 2.7 miles from the site access for the proposed BRIMF.

4.12.1.1 *Existing Traffic Conditions*

Turning movement traffic counts were conducted during the morning peak, afternoon-school peak, and afternoon (evening) peak traffic periods on May 21, 2009, at the following locations:

- 1-20/59 northbound and southbound ramps at McAshan Drive
- Old Tuscaloosa Highway at McAshan Drive
- Jefferson Metropolitan Parkway at McAshan Drive
- Eastern Valley Road at McAshan Drive

As shown in Figure 4.12-2, traffic counts were conducted for a 24-hour period on McAshan Drive between the NSR railroad bridge and Eastern Valley Road on May 21, 2009 and on McAshan Drive between the I-20/59 northbound ramps and the "Flying J" truck stop on July 29, 2009.

The morning peak period includes the commuter and school traffic peaks for the hours between 7:00 a.m. and 9:00 a.m. The afternoon-school peak traffic period includes the hours between 2:00 p.m. and 4:00 p.m. The afternoon (evening) peak traffic period for commuter traffic includes the hours between 4:00 p.m. and 6:00 p.m. In general, acceptable traffic flows and operations were observed along McAshan Drive during the three peak periods. Some minor delays were observed in the left turn movement from McAshan Drive onto northbound Eastern Valley Road during the morning peak hour. Such delays are not unusual for left turn movement from stop sign controlled side streets. The delays did not appear to be excessive and sufficient gaps appeared to be available in the traffic flows on Eastern Valley Road to satisfy the demand for the left turn movement from McAshan Drive.

FIGURE 4.12-2
Locations for Traffic Data Collections

On August 13 – 14, 2009, bus traffic counts were conducted on McAshan Drive at the Eastern Valley Road intersection. The counts were conducted from 7:15 to 8:30 a.m. and 2:30 to 3:45 p.m. The bus counts indicated that a total of 28 buses were present on Eastern Valley Road during the morning period and 23 during the afternoon period. Of these buses, four were noted on McAshan Drive during the morning period and no buses were counted on McAshan Drive during the afternoon period.

Additional traffic counts were conducted during peak traffic periods on July 29, 2009 for both cars and trucks accessing the "Flying J" truck stop on McAshan Drive near the I-20/59 interchange. Local congestion was observed in this area as a result of the accesses associated with the "Flying J" and its proximity to the northbound ramps of I-20/59. Truck and passenger car traffic accessing the "Flying J," along with heavy traffic flows to the entrance ramp of I-20/59, creates congestion in this area of McAshan Drive.

In April 2010, after the opening of a new Home Depot warehouse in the Jefferson Metropolitan Park, additional traffic surveys were performed to account for the additional traffic serving the new warehouse. Daily variations in traffic volumes can range as much as 5 to 10 percent from one day to the next, which accounts for a percentage of the difference in the traffic volumes. The April counts recorded reflect an increase of approximately 170 heavy truck trips per day between the "Flying J" truck stop and I-59/20, which is equivalent to approximately 85 new trucks (1 trip inbound and 1 trip outbound per truck) on McAshan Drive on the survey day. Consequentially, truck traffic on McAshan Drive between the railroad and Eastern Valley Road has been noticeably reduced, likely as a result of the recent truck restrictions on Eastern Valley Road. It is also likely that trucks previously using Eastern Valley Road to access Jefferson Metropolitan Park, and other destinations on McAshan Drive, have been rerouted away from Eastern Valley Road and now use McAshan Drive. This reduction accounts for 31 truck trips per day or approximately 15 trucks (1 trip in and 1 trip out per truck) on a daily basis.

NSR proposes to install warning signs on McAshan Drive equipped with yellow flashing lights that would be sensor-activated to flash when a vehicle is about to pull out of the BRIMF onto McAshan Drive. These signs would assist in alerting north- and southbound drivers on McAshan Drive that a truck is approaching the exit of the BRIMF.

4.12.2 Environmental Consequences

The proposed BRIMF site access is planned along McAshan Drive approximately 200 to 300 ft south of the existing railroad overpass. The nearest schools to the proposed site access are McAdory Elementary School and the combined McAdory Middle and High School. The elementary school is located along Eastern Valley Road, south of McAshan Drive, which is approximately 2.3 miles from the proposed site access. The middle and high school is located on McAdory School Road, which is to the north off of Eastern Valley Road and approximately 2.7 miles from the proposed site access.

A comprehensive traffic study was conducted to assess existing and future traffic conditions in the vicinity of the proposed Project (Skipper Consulting, Inc., 2010). The objectives were to:

- Assess existing traffic conditions in the vicinity of the proposed Project.

- Project 2015 traffic growth for the study roadways without the proposed BRIMF in operation.
- Forecast traffic expected to be generated by the proposed BRIMF.
- Predict the directional distribution of traffic generated by operation of the BRIMF.
- Determine the geometric roadway and traffic control improvements, if any, that would be appropriate for consideration to accommodate the BRIMF.
- Evaluate the study intersection and the proposed access intersection with McAshan Drive to determine if acceptable access would be provided.

The projected year for the proposed BRIMF to begin operations is 2012. Future traffic conditions for 2015 have been assessed to reflect anticipated traffic increases that would occur without the construction of the BRIMF plus the additional traffic that would be generated by the proposed BRIMF.

4.12.2.1 *Trip Generation Estimates*

Table 4.12-1 provides an estimate of daily passenger car and truck trips and the number of trips anticipated during the three peak traffic periods discussed above. Trip generation estimates were derived from the maximum number of lifts projected for the proposed BRIMF and the trips to lifts ratio for similar existing IMFs.

Trucks and trailers delivering or picking up containers from the BRIMF would be required to use McAshan Drive as their only available access to the facility from I-20/59. As previously noted, an ordinance was recently enacted by the Jefferson County Commission to restrict truck traffic on Eastern Valley Road. Signs placed around the entrance and exit of the proposed BRIMF would clearly indicate that no trucks with containers or trailers from the BRIMF are permitted on Eastern Valley Road (Figure 4.12-3).

TABLE 4.12-1
Proposed BRIMF Trip Generation Estimates

	Daily Trips		a.m. Peak		p.m. School Peak		p.m. Peak	
Vehicle Type	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Passenger Cars	77	77	15	24	13	15	13	15
Trucks	407	407	7	8	28	28	28	28
Total Vehicles	484	484	22	32	41	43	41	43

Source: Skipper Consulting, Inc., 2009

The following key mitigation measures for regulating traffic on McAshan Drive near the proposed entrance would be implemented:

- A tapered lane on eastbound McAshan Drive for access into the BRIMF would be constructed with a radius for the right turn to accommodate WB-50 design trucks and to enable traffic to exit McAshan Drive as expeditiously and safely as feasible.
- Construction of the BRIMF site entrance/exit would provide one inbound and one outbound lane. A single outbound lane, with a reduced radius for right turning traffic

movements, would assist in preventing trucks from turning right out of the facility toward Eastern Valley Road, where trucks are prohibited. The radius would be designed to accommodate passenger cars only and discourage truck traffic.

As indicated Figures 4.12-4 and 4.12-5, the level of service on McAshan Drive would be acceptable in 2015 with or without the presence of the proposed BRIMF.

The term "level of service" (LOS) refers to a grading system for determining the amount of congestion, using the letter "A" to represent the least amount of congestion and "F" to represent the greatest amount of congestion.

A Free flow with low volumes and vehicles traveling at the speed limit.

B Reasonably free flow, but speeds beginning to be restricted by traffic conditions.

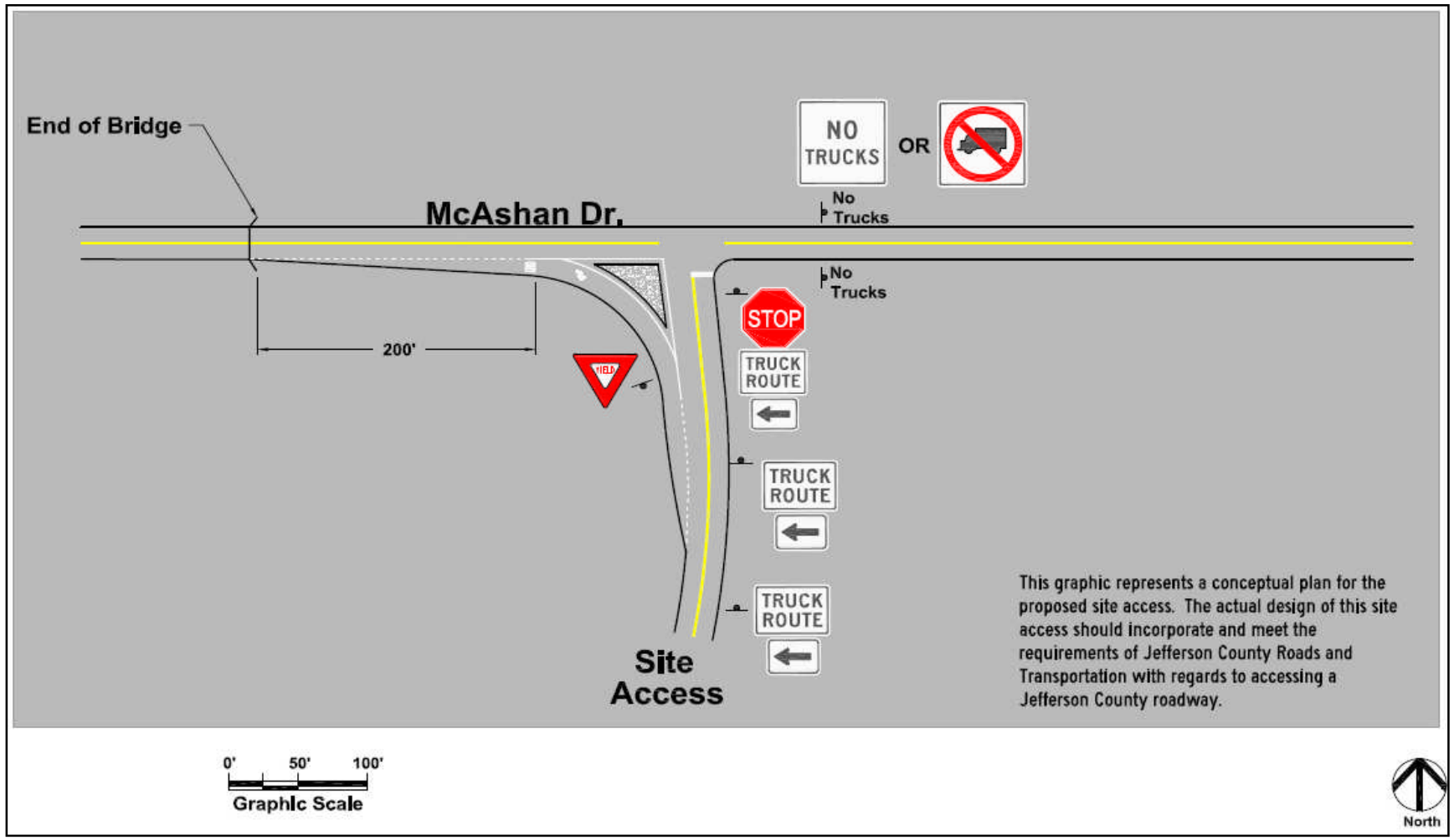
C In stable flow zone, but most drivers are restricted in the freedom to select their own speeds.

D Approaching unstable flow; drivers have little freedom to select their own speeds.

E Unstable flow; may be short stoppages.

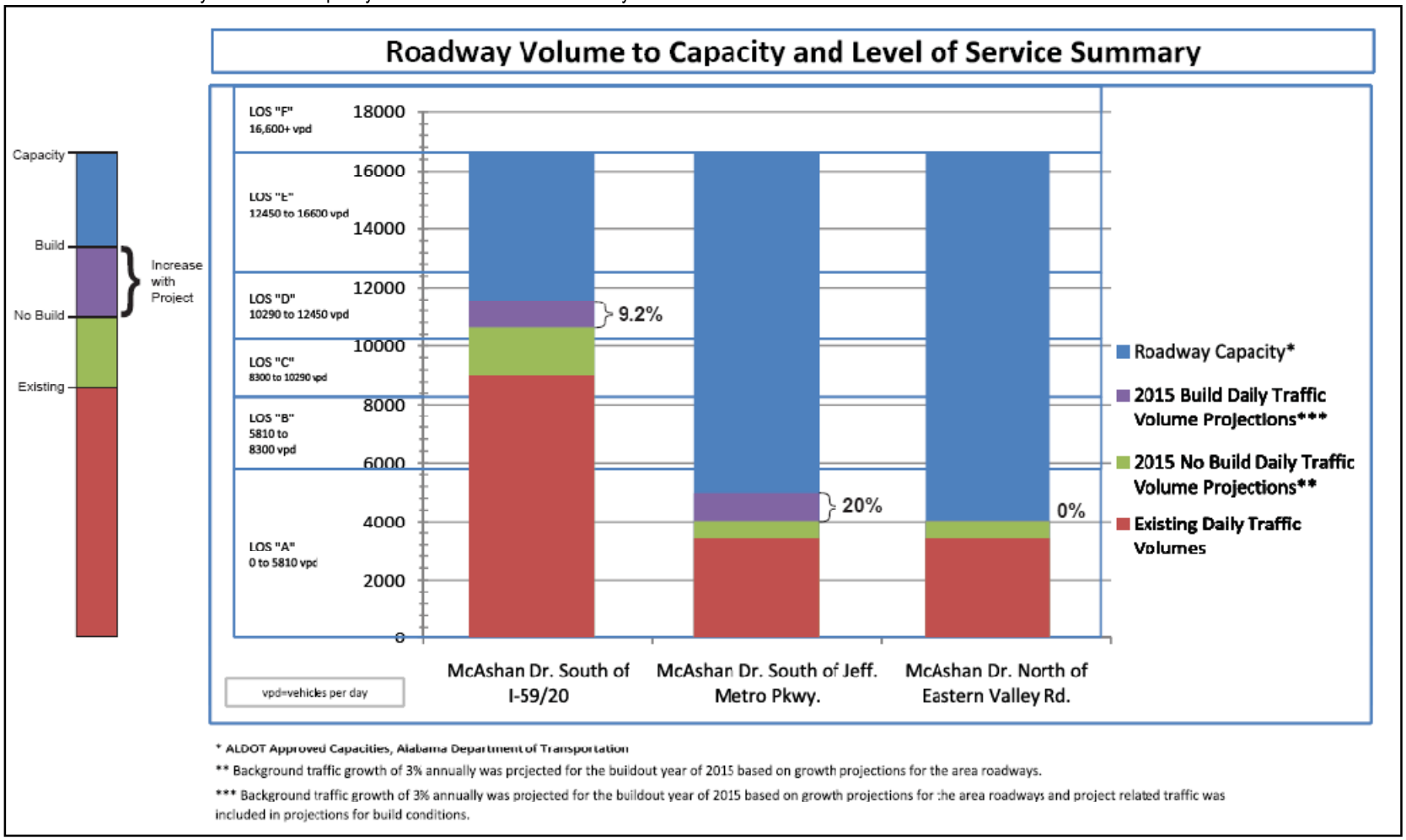
F Unacceptable congestion; stop-and-go; forced flow.

FIGURE 4.12-3
Proposed Access to BRIMF at McAshan Drive



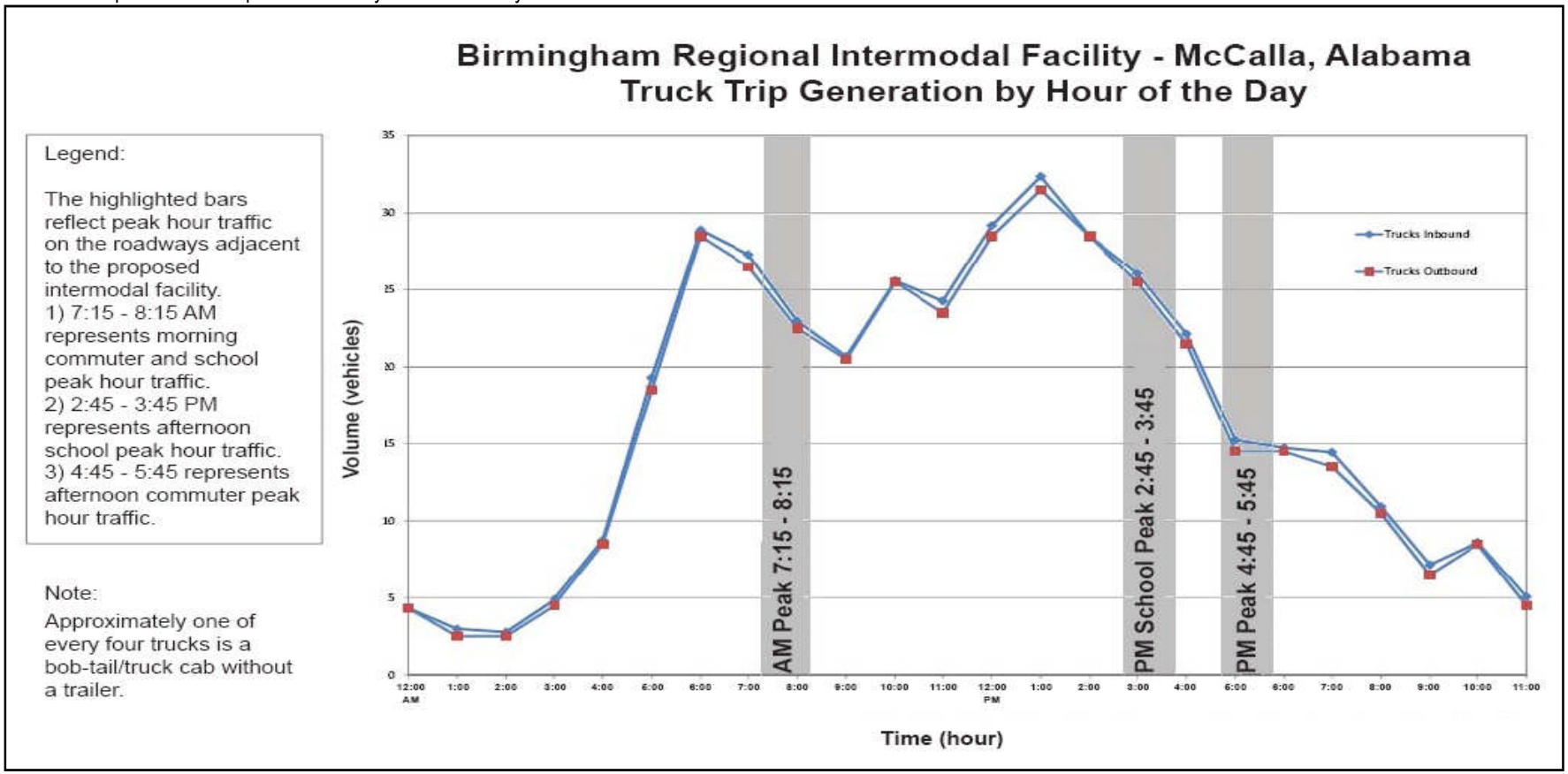
Source: Skipper Consulting, Inc, 2010

FIGURE 4.12-4
McAshan Drive Roadway Volume to Capacity and Level of Service Summary



Source: Skipper Consulting, Inc, 2010

FIGURE 4.12-5
BRIMF Anticipated Truck Trip Generation by Hour of the Day



The projected conversion of freight from all-highway to rail intermodal service would reduce future highway truck traffic by an estimated 55.7 million loaded truck miles per year on the interstate highways between Birmingham and the Northeast. This conversion to rail intermodal transport would produce substantial safety and environmental benefits and relieve highway congestion. An additional 25.5 million loaded truck miles would be avoided with the conversion of southeast seaport and other traffic to intermodal.

4.12.2.2 *Bicycle and Pedestrian Considerations*

Consideration has been given to bicycle and pedestrian facilities near the entrance to the proposed BRIMF and along McAshan Drive, including future facilities. Currently, McAshan Drive does not have bicycle lanes or recreational trails. There are no parks, shopping centers, or recreational areas along McAshan Drive between I-20/59 and the proposed entrance to the BRIMF that would attract cyclists or pedestrians; therefore, the Project is not expected to adversely affect existing or future bicycle or pedestrian facilities. Although the proposed BRIMF is near McAdory Elementary School, the proposed entrance to the facility is more than a mile from the entrance to the school. Because facility trucks would be prohibited from driving on Eastern Valley Road, no impacts to children or adults who cycle or walk to McAdory Elementary School are anticipated. Additionally, there are no existing bicycle or pedestrian facilities along Eastern Valley Road.

4.13 Visual and Lighting Conditions

4.13.1 Affected Environment

The current visual quality of the proposed BRIMF site varies depending on onsite location. Overall, except for a ridge along the eastern boundary, the terrain is moderately level, and some locations feature vegetative areas (mix of mature hardwoods and shrubs).
Figure 4.13-1 provides an overview the proposed site with numbers corresponding with the photographs in this section to show different perspectives of the site. Figures 4.13-2 through 4.13-6 illustrate the current visual quality of the site from McAshan Drive south to the area behind McAdory Elementary School. The site is relatively level overall, with a slightly elevated ridge along the eastern property line extending approximately parallel to Eastern Valley Road. The only existing onsite residence is situated on this ridge, which ranges from 15 to 20 ft in elevation above Eastern Valley Road and is approximately 20 ft above the existing rail corridor. McAdory Elementary School is 1,179 ft from the existing rail corridor, which has an elevation change of approximately 10 ft. In general, the undeveloped site provides views of pasture lands and mixed forested lands along the riparian corridors, neither of which are unique to the vicinity.

Figure 4.13-1 shows an overview of the conceptual plan and the approximate locations of the photos in this section. Figure 4.13-2 shows the current viewshed from the site toward the McAdory Elementary School illustrating the vegetated area that would remain in place after construction and include double fences on either side for added security. Figure 4.13-3 shows the pastures and mixed forests at the approximate location of where the containers would be stored. Figure 4.13-4 shows the approximate location of the proposed access road to the facility from the perspective of McAshan Drive. This photo further illustrates the rural nature of the site. Figure 4.13-5 shows the general area and landscape for the area that is proposed for future trailer storage. This area is currently in pasture for cattle grazing. Figure 4.13-6 shows the general area in the distance proposed for future administrative and maintenance buildings.

FIGURE 4.13-1
Overview of Photo Locations within and Near the Proposed Facility

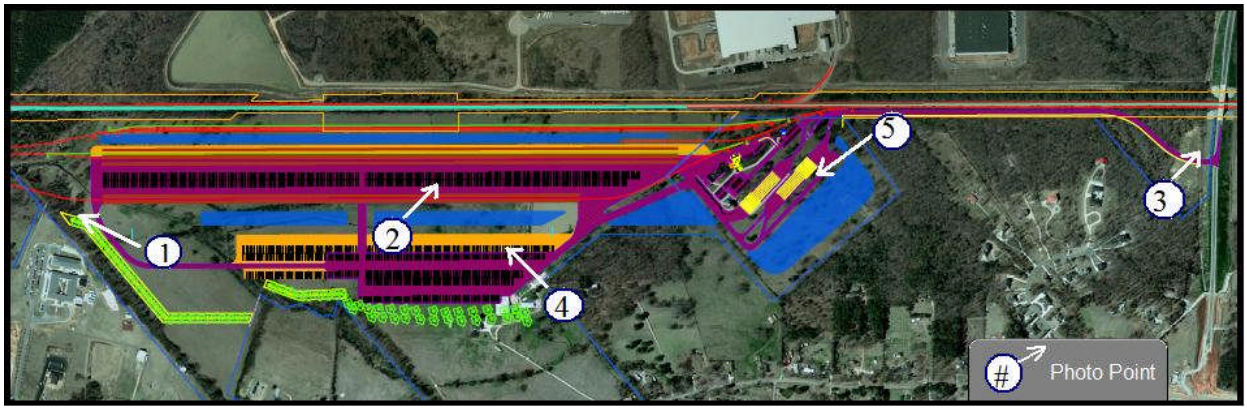


FIGURE 4.13-2
View from Northeast toward the Corner of McAdory Elementary School, May 2009

FIGURE 4.13-3
View toward the Proposed Facility Container Storage Area to the Northeast, May 2009

FIGURE 4.13-4
Looking to the South from McAshan Drive to Area Proposed for Entrance to the Facility, May 2009

FIGURE 4.13-5
Looking to the Northwest toward Area Proposed for Trailer Storage, May 2009

FIGURE 4.13-6
View from Northeast toward Area Proposed for Facility Administration Building, May 2009

The proposed BRIMF site is currently in pasture land and bounded by a mix of land uses, including the existing NSR corridor, a blend of small farms and woodlands, the McAdory Elementary School, Tannehill Child Development Center, several manufacturing/light industrial facilities, and small residential subdivisions. Existing light emissions in the area include street lighting and lighting associated with residences, the McAdory Elementary School, and manufacturing/light industrial facilities.

4.13.2 Environmental Consequences

The undeveloped site provides views of pasture lands and mixed forested lands along the riparian corridors from McAdory Elementary School, McAshan Drive, and adjacent residences to the east. Much of the site is not readily visible from Eastern Valley Road due to the ridge across the center of the property and the presence of trees blocking the viewshed in some locations. While the landscape at the proposed BRIMF is not unique in the area, the proposed BRIMF would change the visual quality of the project area in terms of loss of undeveloped land (such as cropland, old fields, and forests) and the modification of wetlands and other waterbodies. The final design also would feature a slightly elevated footprint of the pads and tracks, but these should still be largely obscured by the ridge, existing wooded areas that would be maintained to the extent practical, and the addition of visual barriers such as berms along several parts of the Project boundary.

NSR would mitigate (to the extent practical) visual impacts by routing all traffic via a site access road to McAshan Drive instead of Eastern Valley Road, as discussed further in the Transportation section, as well as through the use of berms and other visual barriers. The planning and installation of these visual barriers would be one of the first tasks completed during construction to ensure that vegetation and other measures are established as soon as

practical prior to operation. Additionally, a 50-ft vegetative buffer zone between the proposed BRIMF site and the McAdory Elementary School and the Tannehill Child Development Center would remain undisturbed during and after construction (Figure 4.9-3).

Jefferson County's Zoning regulations were reviewed to determine whether they are consistent with the standards necessary to ensure safe operation of the BRIMF. In the interest of safety, security, and operational efficiency, the BRIMF would feature 100-ft light poles mounted on 3.5-ft tall foundations. ICCTA preempts application of local zoning or ordinance requirements on construction and operation of the BRIMF.[13] Thus, Jefferson County's limitation on the height of exterior lighting to 20 ft would not apply to the BRIMF. However, outdoor lighting would include downward-facing or cut-off lamps only, with illumination ranging from 0.3 to 6 foot-candles (FC), depending on onsite location, and minimal or no illumination of adjoining properties. Cut-off lamps have shields over their tops and sides to prevent the light source from projecting upwards or to adjacent areas. The lighting at the proposed BRIMF would be of lower strength than that of a typical parking lot and would be installed and operated to provide the minimal lighting necessary to assure the safety of workers and to provide for the safe and proper circulation of motor vehicles within the parking area. Lighting along the entrance road from McAshan Drive would be 25 ft high on 100-ft centers to provide reasonable uniformity in lighting and to reduce glare.

NSR would develop an exterior lighting plan to safely illuminate the proposed project site that would adhere to the following Jefferson County standards pertaining to exterior lighting, to the extent that such standards do not impede interstate commerce, are not in conflict with Federal safety regulations on rail operations and are not preempted under ICCTA (Jefferson County Zoning Resolution, 2005):

- The intensity, location, and design of lighting would be such that not more than 0.5 FC of light is cast upon adjacent property or the public ROW in association with the high mass light fixtures. Light fixtures would be designed to cast light downward; and, where necessary, cut-off devices would be used to minimize glare off of the premises.
- Design of the lighting system would follow the fullest extent feasible, in compliance with safety and operational requirements, the guidelines and objectives of the International Dark-Sky Association (http://www.darksky.org/) to avoid or minimize stray light off the site.

The proposed BRIMF would result in minimal light emissions. Lighting associated with trains or trucks would have little or no impact on residential areas or the McAdory Elementary School and would have minimal impact on the visual quality of the area. Figure 4.13-7 shows areas highlighted in red that would be illuminated from the facility lights. Very few areas beyond the facility boundaries would be exposed to the facility lights.

[13] As noted in Section 1, note 2, this environmental analysis includes assessment of Jefferson County zoning provisions, which are inapplicable by virtue of ICCTA and FRSA.

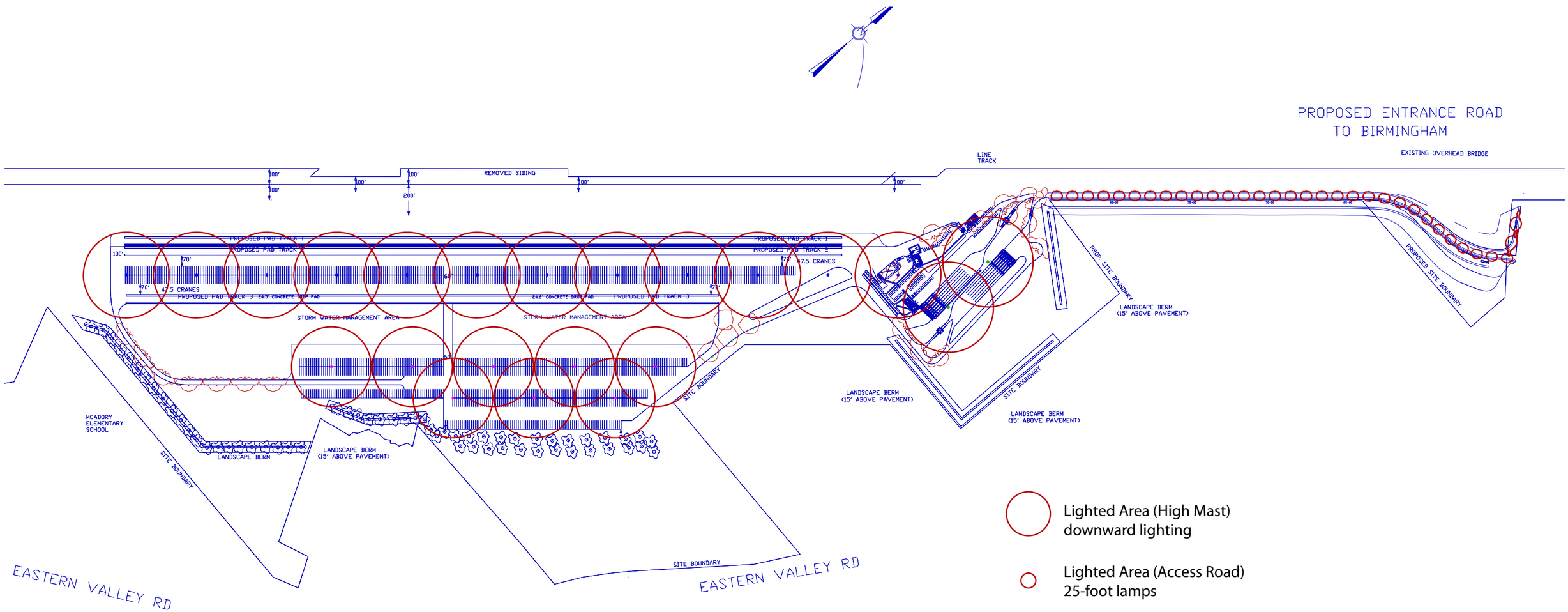


FIGURE 4.13-7
PROPOSED BRIMF LIGHTING PLAN
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

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5.0 Indirect and Cumulative Impacts

This section describes the Project's indirect and cumulative impacts associated with the proposed Build Alternative for the BRIMF for specific resource areas.

5.1 Definitions and Methodology

The President's Council on Environmental Quality (CEQ) defines indirect or secondary impacts as:

> *"…those that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."*
>
> *"Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR § 1508.8) [CEQ, 1977].*

Indirect effects can occur within a full range of impact types, such as changes in land use, economic vitality, neighborhood character, traffic congestion, air quality, noise, vibration, and water and natural resources. Indirect effects that may occur as a result of the BRIMF are described further in Section 5.2.

The CEQ defines a cumulative impact as:

> "*…the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*" (40 CFR § 1508.7 [CEQ, 1977])

For a cumulative impact to occur, the action (i.e., construction or operation of the BRIMF) must have the potential to interact with other actions with regard to a resource area, either directly or collectively. Cumulative impacts must be considered over a time period to assess the influence of an action. Cumulative impacts may carry forward for decades and the actual time of influence attributable to a single project generally diminishes through time (FHWA, 1992). The CEQ NEPA regulations and guidance on cumulative effects do not require development of a catalog of specific past actions or quantification of these actions in a cumulative effects analysis. In accordance with CEQ guidance, past actions are considered collectively in describing the existing conditions within a geographic area and time frame for analysis of each resource. The cumulative impact assessment also includes identification of "reasonably foreseeable future actions" or RFFAs. For analysis of cumulative impacts related to the BRIMF, local and regional planning agencies and documents outside the immediate area were referenced for information relating to future land use, growth, and traffic projections and measures.

Two key steps for conducting the indirect and cumulative impacts analysis are identifying resources to be considered and establishing the time frame and geographic boundaries for the analysis.

5.1.1 Resources to be Considered in the Analyses

Resources to be considered are those that are the subject of regulatory or public concern. This analysis followed CEQ guidance directing that the assessment focus only on the effects and resources within the context of the Build Alternative, that also have been identified as a concern by the public, agencies, or other stakeholders. Selected resources evaluated in Section 4, including Groundwater, Floodplains, Geology, Hazardous Materials, Vibration, Environmental Justice, and Visual and Lighting, have not been included in either the indirect or cumulative effects analysis because for those areas, it is anticipated that no effects would occur or that minimal adverse effects might occur but would be fully mitigated.

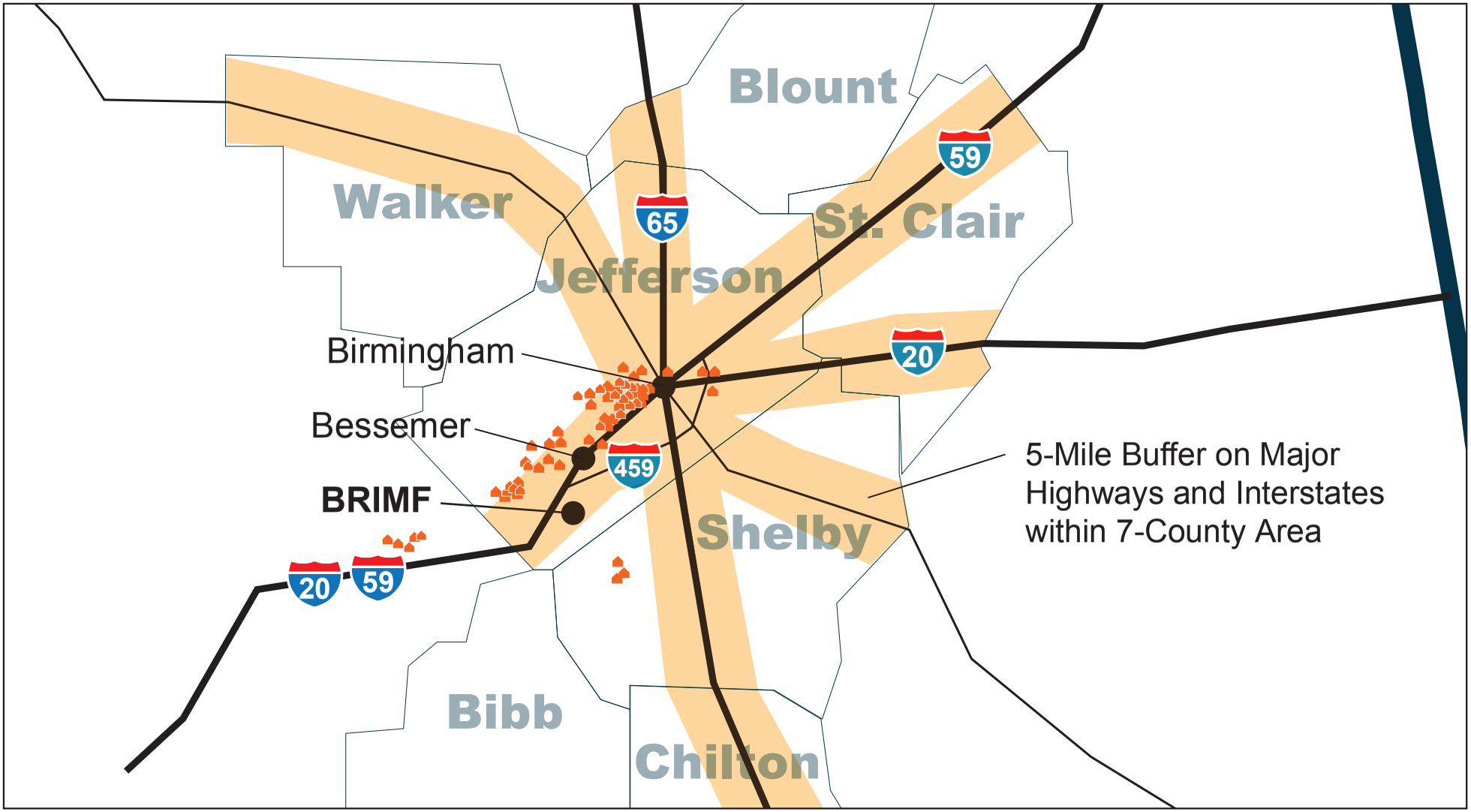
5.1.2 Boundaries for the Analyses

Indirect and cumulative impacts must be assessed within geographic boundaries at which the Project may impact given resources, and the scope of the impacts analysis may vary among resources (FHWA, 1992). Resources have been considered within a resource-appropriate study area, and are described below in each resource section.

The Build Alternative geographic (or forecasting) area for indirect impacts is defined by the Birmingham-Hoover MSA, which includes seven counties: Jefferson, Blount, St. Clair, Walker, Shelby, Bibb, and Chilton. For purposes of assessing indirect impacts, it was assumed that the potential effects encompassed a width of approximately 5 miles on either side of major highways and interstates that pass through these counties. This boundary, or multi-county region, is illustrated in Figure 5-1. Although no reliable quantitative estimates can be provided that reflect specific locations within this boundary where impacts may be greater or less than other areas, existing patterns of growth shown by the current warehouses and industrial parks in the region (Figure 5-1) indicate probable areas of greatest expansion that might indirectly result from the development of the BRIMF or areas of RFFAs that affect cumulative impacts.

The geographic area used to assess cumulative impacts is specific to the resource area of interest. Thus, for cumulative air quality impacts the area of interest is the non-attainment area, and for water resources the areas of interest are the affected watersheds. Other resource areas are not likely to be affected by cumulative impacts.

Growth has been steady among the counties within the boundaries considered for this analysis. The indirect and cumulative impacts of the BRIMF are primarily related to stimulating more growth in the region. This growth, whether included in indirect or cumulative effects, and wherever it may occur in the region, would generally have positive impacts on economic opportunities, with new jobs and an expanded tax base associated with new businesses that are developed because of the facilitated access to competitive intermodal transport of products and supplies. Negative impacts that may be associated with this growth include increased pressure on infrastructure to support transportation and utilities, additional vehicle traffic and related air and noise impacts, and potential environmental effects to local facility construction that may increase stormwater releases into surface water.



LEGEND

Existing warehouses and available industrial sites

Growth forecasting area

N

20 miles

FIGURE 5-1
GROWTH FORECASTING AREA
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY

CH2MHILL

NORFOLK SOUTHERN

The assessment of indirect and cumulative effects of the Build Alternative are considered on a time frame through 2020 based on the study by Insight (2009) completed for the Project.

The following sections describe the potential indirect (Section 5.2) and cumulative impacts (Section 5.3) that may be associated with the construction and operation of the BRIMF.

5.2 Indirect Impacts

This section describes the effects that are secondary to the development and operation of the BRIMF but are likely to occur because of the Project. Unlike direct effects, these indirect impacts may occur somewhat farther out in time and typically relate to growth in industries and population that would occur because of access to IMF operations in the region.

The resource areas for which there may be indirect effects are air quality; cultural, archeological, and historic resources; surface water quality, aquatic ecology, and wetlands; protected species; soils; land use; noise; social and economic; traffic and transportation; and energy.

5.2.1 Air Quality

Indirect effects of the BRIMF would be expected to include additional truck traffic in the Birmingham region with associated emissions from exhausts. Indirect effects of the BRIMF are not expected to result in an exceedance of the NAAQS at any location in the region. The maximum number of trucks that would visit the BRIMF would be only 407 trucks/day at maximum projected design capacity, and a comprehensive ambient air quality analysis of facility operation in the area surrounding the site (see Section 4.2) has demonstrated that the NAAQS would not be threatened or exceeded in the immediate vicinity of the project site for any pollutant. The increase in truck traffic at the closest and most heavily travelled major roadway (Interstate 20/59 at its intersection with McAshan Drive, approximately 1.5 to 2 miles north of the facility) would represent a substantial increase but there would be no change in the level of service predicted on any roadway. This increase in traffic is not expected to result in a measurable or perceptible change in air quality on any roadway that would be used by truck traffic accessing the site.

Indirect benefits to air quality would occur more regionally outside of Birmingham through reduction of long-haul truck air emissions.

5.2.2 Cultural, Archeological, and Historic Resources

The majority of the areas that may have indirect impacts associated with the extended development and growth in the multi-county region are likely to be located near adjacent interstate highways and other areas already planned for development or already part of expanded urban infrastructure. The likelihood that these areas would have undisturbed archeological or cultural resources is low as a result of prior development in these areas. A review of recorded historical sites by the Alabama Historical Commission (AHC, 2010), for example, indicates that there are no sites in or around the study area.

5.2.3 Surface Water, Aquatic Ecological Resources, and Wetlands

The types of developments that might result in indirect impacts to surface water and related resources from the development of the BRIMF include primarily warehouses, distribution

centers, and residences. These facilities are typically not considered major sources of pollutants and accordingly the agencies do not require operational permits or set regulatory provisions for individual residences or these types of industrial activities (40 CFR 122.26). The primary effects of these developments would be related to potential nonpoint source pollutants during construction, with associated transport of suspended solids into surface waters. Required SWPPPs would minimize these effects. In addition, an NPDES Stormwater Permit for Construction would be required for these developments if more than 1 acre of land would be disturbed during construction activities. There would be similarly minimal surface water pollution expected from these types of facilities during operations.

5.2.4 Protected Species

The Cahaba River and Black Warrior River watersheds include segments where there are species that are protected under the Endangered Species Act (ESA). Potential impacts to protected species from expanded development would be primarily related to stormwater runoff into these watersheds from construction or operation of these facilities. The ESA contains provisions for the protection of threatened and endangered species and their habitat, and it is anticipated that through these provisions, adequate protection and mitigation for potential impacts to threatened and endangered species and their habitat would be provided. Future build-out of the Jefferson Metropolitan Park is unlikely to have indirect impacts on these or other protected species in these areas. Any development in the multi-county region where protected species may occur would be expected to take place with coordination through the USFWS to confirm that impacts could be avoided or mitigated. Most of the indirect effects of growth in the multi-county region are likely to be in developed or urbanized areas, which are unlikely to provide habitat for protected species. Appropriate stormwater management protocols and coordination with State and Federal natural resource agencies should minimize or avoid impacts in the region to protected species related to stormwater releases from expanded development.

5.2.5 Soils

Indirect impacts to soils of primary importance would be those that are identified as prime farmland soils. Indirect effects of the BRIMF are likely to include developments in areas that have already been cleared or are under some stage of urban expansion and development, since most of these secondary projects would be near major highways. The likelihood that prime farmlands exist in these areas that have not already been disturbed is minimal, and impacts to these soils from indirect effects are very unlikely.

5.2.6 Land Use

Although specific location information for projected development is not available based upon existing patterns of growth shown by warehouses and industrial parks in the region (Figure 5-1), continued changes in land use are anticipated through development of commercial and industrial resources within the Birmingham-Hoover MSA. Impacts are expected to be minor since they would preferentially develop in areas already zoned for or part of existing commercial and industrial land uses. Such changes are not typically considered to be adverse effects.

There are 15.6 million additional square feet of development already planned for the area, without the BRIMF being considered. Based on the previous types of development in the

region, it is assumed that approximately 50 percent of that would be rail-dependent. Indirect impacts related to the BRIMF that could be collectively important over time would be affected by such factors as current and future planning guidelines of each county, municipality, or other planning entity; economic changes that provide opportunities for an underutilized labor force to meet demands for construction and operation of new warehouses or distribution centers; proximity to interchanges on major highways (interstate system) along the I-20/I-59, I-65, or I-459 corridors; physiographic barriers related to the Ridge and Valley province that limit construction and access; and Federal or State regulations that affect protection of watersheds, wetlands, and other natural resources.

Indirect impacts associated with growth that would be expected from secondary jobs in the region would likely fall within the existing growth projections (population, housing, and employment) for the region and would be aligned with current planning efforts to minimize the potential for incompatible land uses. The new jobs created by the facility, including secondary jobs, would likely result in an increased demand for housing, which could lead to additional conversion of undeveloped land for residential use and associated small businesses that are typical of suburban settings. However, this indirect growth is expected to be compliant with local zoning and comprehensive planning efforts, which would minimize the potential for incompatible land uses occurring nearby.

Within the immediate project area, the Shades Creek Watershed Comprehensive Plan would guide secondary development. This Plan designates a corridor, including the proposed project site (bracketed by Eastern Valley Road, the NSR rail corridor, McAshan Drive, and south to the County line), as a G2 sector, meaning that it is targeted for controlled growth of medium density development based on the level of infrastructure planned for the area (Figure 5-2) (JCDLPDS, 2008c). Figure 5-2 also illustrates that the sectors immediately adjacent to the proposed BRIMF site are already being targeted either for future industrial or infill development by the Shades Creek Plan. As a result, the presence of the BRIMF is not expected to have a negative impact on the continued implementation of the Shades Creek Plan and the County can address potential changes in these anticipated development patterns through future updates to the Plan. Figure 5-3 shows the location of the Shades Creek watershed within the Birmingham-Hoover MSA. Potential indirect positive impacts could occur to the northwest of the existing NSR rail corridor in the Jefferson Metropolitan Park at McCalla as the park and adjacent acreage become even more attractive to similar facilities due to their proximity to the BRIMF.

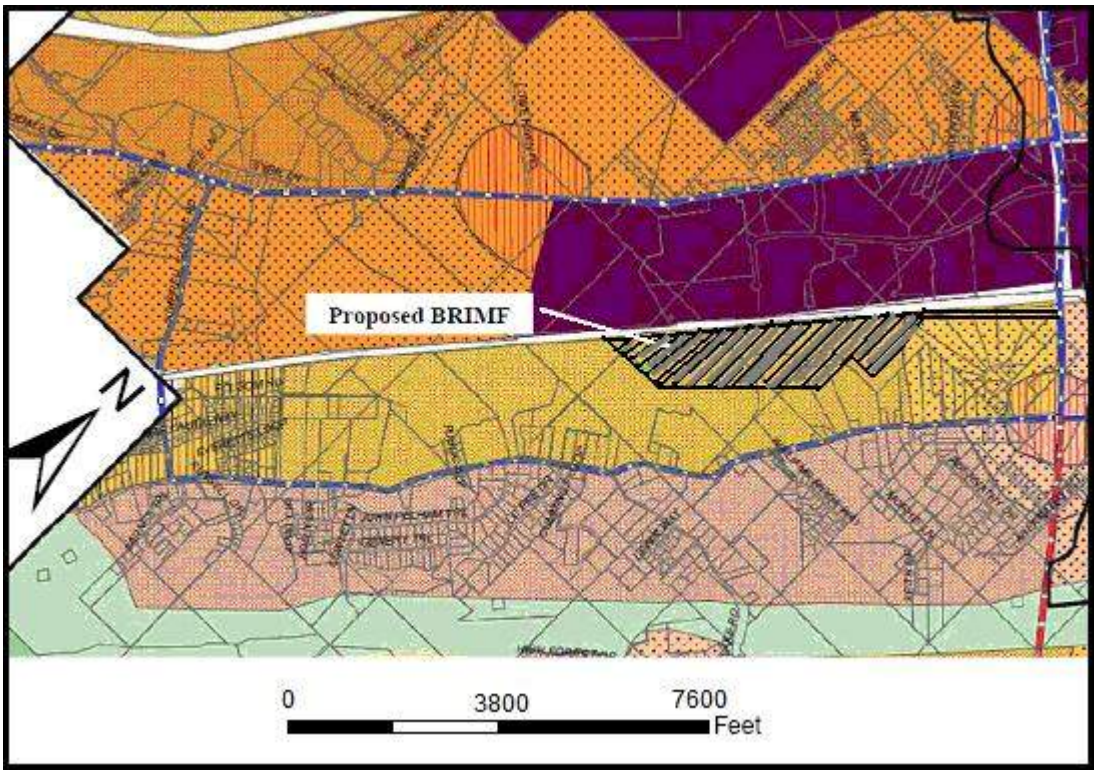
Outside the immediate area, changes in land use would vary based on other local planning and regulatory guidance, such as the local municipal zoning and development ordinances of the cities of Hoover, Tuscaloosa, and Bessemer and, in the more rural areas, land use guidelines of the West Alabama Rural Planning Organization (WARPO) and other regional planning agencies. Future growth in Shelby County would be guided by the County's Strategic Development Plan, part of the 2004 Comprehensive Plan and Zoning Regulations (Shelby County Department of Planning and Development [SC DPD], 2002 and Shelby County Department of Development Services ([SC DDS], 2004).

To the southwest of the Birmingham-Hoover MSA is Tuscaloosa County, which is a member of the seven-county West Alabama Regional Commission (WARC). The WARC is responsible for coordinating region-wide projects and services, promoting cooperation among the local governments, and managing State and Federal programs on a regional

basis. WARC is also the regional clearinghouse for Federal projects and programs and regularly reviews applications for Federal assistance to confirm that proposed projects do not conflict with adopted regional plans or duplicate existing or proposed projects. Transportation planning for Tuscaloosa County is facilitated through the Tuscaloosa MPO, while the balance of the WARC region is represented by WARPO. WARPO is an integral part of ALDOT's consultation process with non-metropolitan local officials in west Alabama, including Bibb County. Collectively, these organizations provide the support that adjacent local governments need to plan for, prevent, or minimize potential secondary land use impacts from the proposed BRIMF.

FIGURE 5-2

Shades Creek Watershed Comprehensive Plan Proposal Map (JCDLPDS, 2008a)



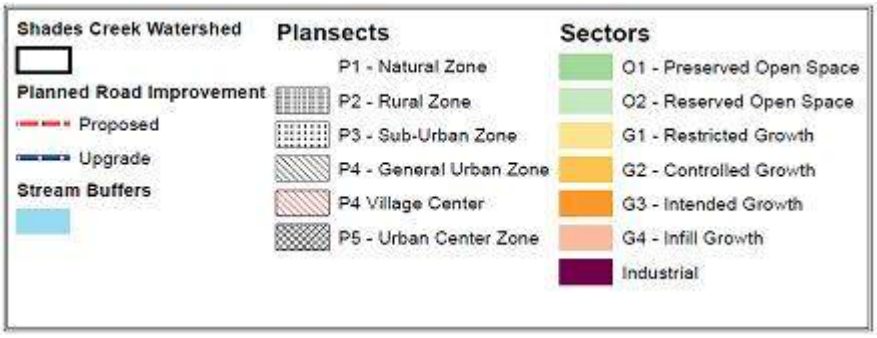
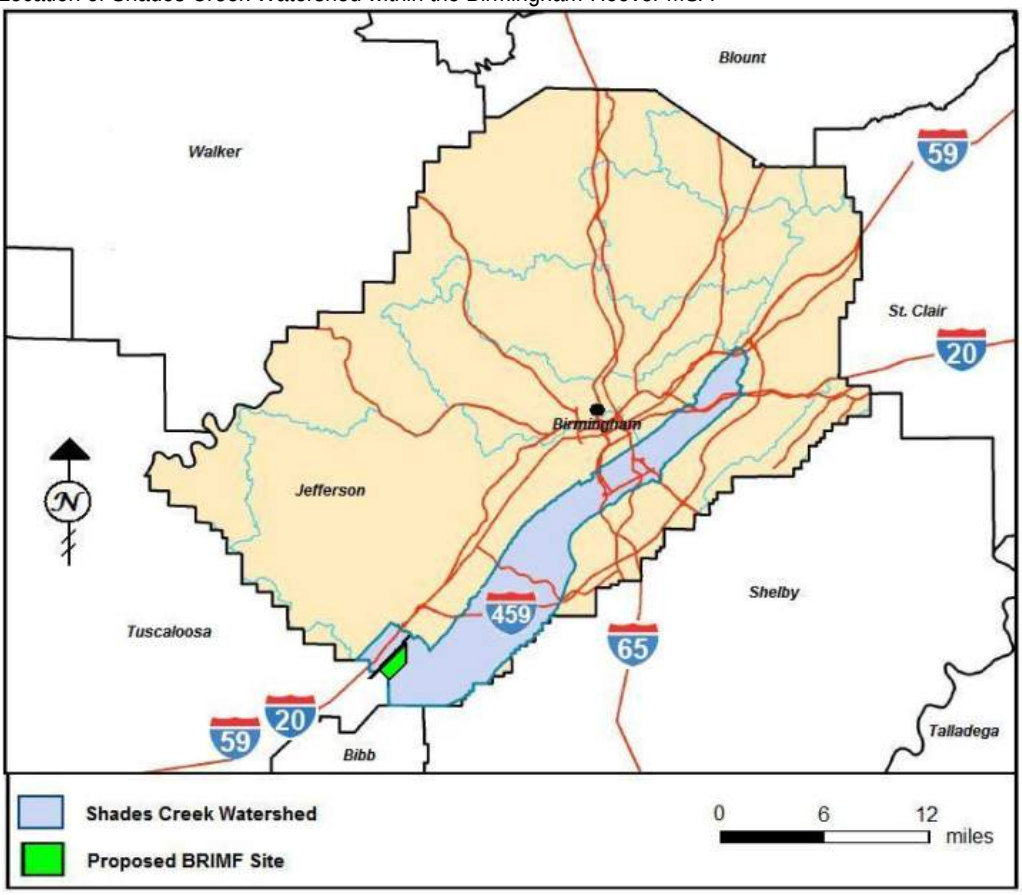


FIGURE 5-3
Location of Shades Creek Watershed within the Birmingham-Hoover MSA



5.2.7 Noise

The No Truck Zone established for Eastern Valley Road south and east of the project site, along which most of the nearby sensitive receptors are located, would not be expected to experience noise impacts associated with additional truck traffic that may occur with build-out of the Jefferson Metropolitan Park.

The balance of the multi-county region is expected to continue to experience continued growth with an associated moderate increase in traffic noise, with or without the BRIMF. Indirect noise effects related to this growth should result in only minor adverse impacts because additional traffic activity would occur beyond the boundaries of the BRIMF toward the interstates north and west of the site. Assuming the expanded growth in the multi-county region occurs as projected along major interstates and major intersections, these areas are already in urbanized locations with existing traffic noise. No substantial increase above existing ambient noise is likely to result from secondary development, and would not likely occur near sensitive receptors that would be affected by increased noise.

5.2.8 Social and Economic

Indirect effects on social and economic patterns in the multi-county region would mirror the land use changes that already occur throughout the Birmingham-Hoover MSA. Indirect economic benefits that are likely would be related to the construction and operation of

facilities that may develop through the year 2020. In the immediate area, indirect impacts may include temporary negative economic effects on residential property values during construction; however, as the project nears operation in 2012 and landscape features, such as berms, are completed, these values may be expected to return to normal for the region.

Long-term development of warehouses and related facilities that would benefit from the BRIMF would cause localized and temporary impacts during construction of those facilities, but these are expected to be distributed widely over the multi-county region around Birmingham and to follow existing or future development and zoning plans. Overall effects are expected to be a net economic benefit to the region and overall property values for expanded industrial and commercial developments would be expected to increase as a result of the BRIMF.

The economic projections described in the Insight Report (Insight, 2009) reflect a reasonable summary of the potential jobs, including new and at-risk positions, and associated economic benefits that may be expected.

5.2.9 Traffic and Transportation

The build-out of the adjacent Jefferson Metropolitan Park may occur more rapidly than without the BRIMF's additional truck traffic along McAshan Drive between the BRIMF and the I-20/59 interchange. Continued expansion of warehouses and related facilities in the multi-county region to accommodate access to the BRIMF would add localized impacts to traffic where these facilities are developed. The anticipated secondary industrial and residential development should be consistent with land use and planning in the region, and accordingly any indirect impacts on traffic would be addressed within the region's larger transportation planning.

The BRIMF would reduce the number of long-haul trucks along the major interstate highway corridors that currently serve the Birmingham area. This would provide overall regional changes outside the Birmingham area that would contribute to reducing long-haul truck traffic on congested highways, reduced damage to highways from heavy trucks, and improved air quality. Associated with congestion mitigation would be improvements in safety and fuel efficiency (Cambridge Systematics, 2010).

5.2.10 Energy

The additional trucks using the facility would use fuel as part of their day-to-day operations. Their refueling demands, however, would be spread out broadly over the region where trucks would make their short-haul runs, driven by competitive costs for fuel in the area, and not be expected to impose an unusual indirect impact on local service stations or suppliers. Any fuel demand locally would be measurably offset by the fuel savings associated with reducing the demand for long-haul trucks and greater efficiency in fuel use by intermodal operations and rail transport.

Transport using the BRIMF would be more energy-efficient than direct transport by truck. The proposed BRIMF would have the potential to interact positively with future transportation improvement projects to reduce demand for fossil fuels through increasingly efficient transportation of goods and materials. The operation of the proposed BRIMF is expected to result in substantial energy savings on both a regional and national basis. These

energy savings would be a direct result of the reduction in fuel consumption that would be associated with the diversion of large quantities of freight from truck to rail. Additional energy savings would be associated with reducing highway congestion, thereby improving fuel efficiency of other vehicles on the highways. These energy-related benefits of the proposed BRIMF are consistent with national goals for achieving energy-independence through reductions in fuel use.

The operation of the BRIMF is estimated to result in a reduction of more than 81 million VMT annually as a result of the diversion of trucks from highways between the BRIMF, the Northeast, western destinations, and various markets in the Southeast, including seaports. The corresponding net reduction in diesel fuel use (i.e., including consideration of the fuel used in the locomotives) would be approximately 10.6 million gallons annually. This amount of fuel savings represents an equivalent of more than 200 million passenger car miles of travel. These fuel savings estimates are conservative and do not account for any additional fuel use reductions that would occur as an indirect result of congestion mitigation, increased car and light truck operating efficiency, reduced needs for infrastructure development, or air pollution reductions.

5.3 Cumulative Impacts

This analysis considers only resources likely to reflect impacts related to cumulative effects. The geographic boundaries vary with each resource area considered. For air quality the spatial area includes the non-attainment area in the region and for water resources the spatial area includes the potentially affected watersheds. In this analysis, the past, present, and RFFAs are considered to determine the cumulative effect on each resource.

It is difficult to determine all past, present, and RFFAs because mapped information for many prior actions is not available. In many cases, historical quantitative or geographically referenced (mapped) information on the various resources for prior years is not available. Therefore, past actions were considered collectively as the development that had occurred as of 2009, and these actions are considered in describing the existing conditions for each resource.

The RFFAs affecting cumulative impacts are primarily associated with projected growth in this multi-county region. This growth is expected to be greatest in the immediate Birmingham Metropolitan Area where, as of 2006, population growth is estimated at 17 percent through 2030 and a 29 percent growth in employment is projected in the immediate Birmingham region during that same period (Birmingham MPA, 2006). Cumulative impacts to resources in the region considered likely to be relevant to the development of the BRIMF include air quality and surface water quality, wetlands, and aquatic ecological resources.

5.3.1 Air Quality

Past, present, and RFFAs, together with the Build Alternative, are not expected to result in an adverse cumulative impact to local or regional air quality. Historically, air quality in the Birmingham area has been dominated by large industrial facilities (such as steel mills and other heavy industry); however, much of this industry has either ceased operations or significantly reduced its air emissions, which has significantly improved the air quality in the region over the past 20 years. Measurable or discernible indirect effects on air quality

would be expected to result from area-wide growth of other residential, commercial, and industrial projects that are not related to the development of the BRIMF, all of which could affect region-wide air emissions or local traffic levels. Although these ongoing and future projects would result in an increase in traffic and associated emissions, continued improvement in the regional transportation system and facilities that are included in the long-range transportation planning for the region (Birmingham MPA, 2006) should also serve to reduce congestion on a regional scale, which would eventually have beneficial effects on air quality.

Major transportation network improvements may be anticipated to occur within 20 years after the IMF opening, which would reduce traffic congestion, based on projections of the Birmingham Metropolitan Plan (Birmingham MPA, 2006). These improvements would have a beneficial effect on regional air quality. Rapidly improving fuel and vehicle technology and vehicle turnover (i.e., replacement of lower fuel efficiency cars with higher fuel efficiency cars) in the future should also have a beneficial effect on air quality. For example, automobile manufacturers must meet corporate average fuel economy (CAFE) standards, which not only conserve fuel, but also reduce the motor vehicle tailpipe emissions of CO_2, the principal GHG emitted by motor vehicles. These standards are gradually improving over time as stricter fuel economy and environmental standards are enacted.

New businesses and industries that develop along major interstate corridors in the region, such as I-20, I-59, and I-459, could generate additional air emissions that affect local or regional air quality. However, these businesses and industries would be required to comply with all applicable air quality laws and regulations. The potential cumulative effects on air quality in the area would be mitigated, in part, by the enforcement of numerous USEPA rules and regulations that limit the emissions from on-road and off-road vehicles and industrial facilities. These rules and regulations are gradually reducing nationwide air pollutant emissions (including air toxics) from mobile sources and industrial facilities such as power plants and they are expected to continue the long-term trend of air emission reductions over time.

These emission reductions and associated air quality improvements have been occurring for more than two decades, including large urban areas that have experienced substantial growth. As documented in the *Air Quality Technical Report* (Appendix A), substantial reductions in per-vehicle emissions from on-road, locomotive, and non-road vehicle engines are expected to continue for several decades after the proposed BRIMF begins operation in 2012. These reductions are projected to occur despite substantial regional growth over this same period. Ambient air quality is continually monitored and managed by Alabama's State and local air pollution control agencies and USEPA to ensure that the NAAQS are enforced and air quality is protected. This management is accomplished through the comprehensive State Implementation Plan (SIP) and the Transportation Implementation Plan (TIP), both of which are regionally focused and designed to account for future growth.

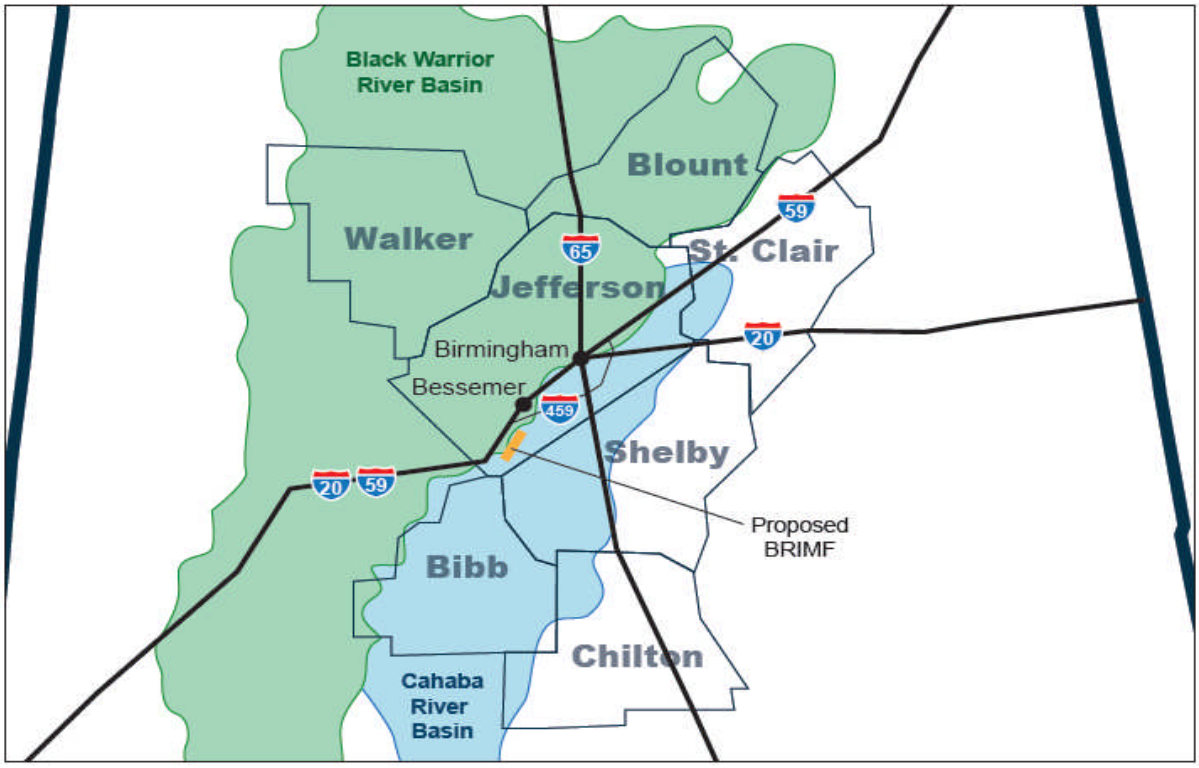
The transportation sector is estimated to be responsible for approximately one-third of the nation's GHGs, primarily as CO_2. Because railroads are nearly four times more fuel-efficient than trucks on a ton-mile basis, the shipment of freight by rail has been shown to result in substantial reductions in carbon and other emissions. The BRIMF would handle a great number of containers and trailers per year, freight that would have otherwise been transported by long-haul trucks between the Birmingham region and the Northeast. The

associated reductions in CO_2 and other emissions on a national basis would be a direct result of the increased efficiency of freight travel, and the associated reduction in fuel use that would be directly attributable to the operation of the BRIMF. All of these benefits are consistent with national goals for energy-independence, environmental improvement, and congestion mitigation.

5.3.2 Surface Water Quality, Wetlands, and Aquatic Ecological Resources

The cumulative effects on surface water resources, which include the wetlands and aquatic ecology that may be affected by changes in water quality for these resources, were analyzed within the boundaries of the Cahaba and Black Warrior River watersheds, as depicted on Figure 5-4.

FIGURE 5-4
Cahaba River and Black Warrior River Watersheds within the Birmingham-Hoover MSA Growth Forecasting Area



These watersheds include approximately 1,820 and 6,276 square miles, respectively, of drainage area. It is difficult to quantify anticipated development in the entire watersheds, although most of the past, present, and future development relevant to the regional projections for growth is anticipated to occur in the Middle Black Warrior River watershed and secondarily in the Upper Cahaba River watershed. The time frame considered in the cumulative impacts analysis corresponds to the period of much of the industrial growth of the Birmingham-Hoover MSA, through 2020, which corresponds to the current available data on projected growth of the region. Historical development practices have affected streams, wetlands, and the aquatic biology of these ecosystems within the study area by channel modification, sediment transport into these areas, and nonpoint source pollution. As a result of these historical practices, many of the streams and wetlands in the study area have been, and continue to be, impacted as indicated in Table 5-1, which summarizes 303(d)

listed impaired streams. As noted in an inventory of these watersheds conducted in 2002 (ADEM, 2004) the major causes of these impairments are related to mining, urban development, pasture grazing, and septic tank failures

TABLE 5-1
Streams Currently Included on the CWA 303(d) List as Impaired and Basis for Their Impairment

County	Stream Name	Basis for Impairment
Blount & Cullman	Mulberry Fork	Nutrients & Siltation
Walker	Lost Creek	Siltation
Walker	Cane Creek (Oakman)	Metals (Aluminum, Iron) Nutrients pH Organic Enrichment Siltation
Walker	Black Branch	Metals (Aluminum, Iron) pH Siltation
Walker	Wolf Creek	Siltation
Walker	Old Town Creek	Nutrients Siltation
Walker	Baker Creek	Siltation
Blount & Jefferson	Locust Fork	Nutrients Siltation
Blount	Dry Creek	Nutrients Ammonia Organic enrichment
Jefferson	Newfound Creek	Siltation
Jefferson	Village Creek	Pathogens Pesticides
Jefferson	Valley Creek	Metals (Mercury)
Jefferson	Opossum Creek	Metals (Mercury)
Jefferson	Mud Creek	pH Siltation
Bibb	Cahaba River	Siltation
Shelby	Cahaba River	Siltation Pathogens
Shelby	Lee Branch	Pathogens
St. Clair & Talladega	Coosa River (Logan Martin Lake)	Priority organics (PCBs)
St. Clair	Broken Arrow Creek	Siltation
Shelby & St. Clair	Wolf Creek	Siltation Turbidity
Shelby, Chilton, Coosa, Talladega	Coosa River (Lay Lake)	Priority organics (PCBs)
Shelby & Talladega	Coosa River (Lay Lake)	Metals (Mercury)
Chilton	Yellow Leaf Creek	Siltation
Shelby	Unnamed Trib. To Dry Branch	Nutrients

Approximately 15.5 million square feet of additional commercial or industrial space is expected to be developed by 2020, without including the BRIMF, over and above the estimated 105 million square feet currently in place. About 6 million square feet of this space was vacant as of 2007. The additional commercial, industrial, and community development anticipated through 2020 would still result in increased impervious surfaces within the region, which would increase stormwater runoff and potentially affect water quality and wetlands in the area and, in turn, aquatic ecological resources such as fish and macroinvertebrates.

If water quality issues are identified with respect to the operation of these future developments, the relevant agencies have authority to specifically address these issues by requiring NPDES permits. Some municipal stormwater discharges related to development and/or operation are likely to fall within areas subject to USEPA's and ADEM's municipal separate storm sewer system (MS4) program, which includes BMPs and other conditions to limit impacts on water quality. As a result, only low to moderate cumulative effects to aquatic resources are anticipated.

Due to infrastructure limitations, Jefferson County has faced sewage collection and treatment capacity limitations. As a result, in the 1990s the County entered into a consent decree with USEPA to provide for increased capacity in the sewage collection system and treatment plant facilities. Many portions of planned capacity improvements under the consent decree have been completed; however, environmental impact issues relating to the system have not been eliminated. Compared to other types of industrial development, however, warehousing typically imposes minimal demand on sewage infrastructure.

One result of meeting the mitigation requirements for the BRIMF under Section 404 of the CWA would include buying credits from a new mitigation bank. This bank has been planned and approved by the multi-agency Regional Implementation Team to provide both stream and wetlands mitigation credits for the Cahaba River watershed. However, without credit sales, the bank could not have been completed. The credits required by the U.S. Army Corps of Engineers (USACE) for stream and wetlands mitigation for the BRIMF have provided financial stimulus required to complete the bank and provide watershed protection for a substantial portion of the watershed that might be affected by cumulative impacts of development in this watershed. This new bank would result in the conservation of a corridor along the Cahaba River, providing long-term watershed protection benefits in the future.

Industrial, commercial, and residential developments are also subject to the CWA Section 404 permit program protecting waters of the U.S., including wetlands. This program is administered by USACE, and also requires compliance with water quality standards and a water quality certification from ADEM. The Section 404 program includes protective measures during project design, including avoidance and minimization of impacts to regulated waters and wetlands, as well as comprehensive mitigation requiring the replacement of lost water and wetland ecosystem functions and in some cases enhancement of such functions.

Long-term trends in the region are favorable for continued improvement in water quality in these watersheds. As mining practices have improved in the region for restoration and land stabilization and more oversight and permitting requirements are imposed on nonpoint

surface releases in the region, the trends into the future should be for substantive improvements in water quality and reduced impairments in these watersheds. Since passage of the CWA, improvements have been made in local, State, and Federal programs to monitor and manage these impacts. Increased focus on impaired streams also serves to prevent degradation of these waterbodies. Watershed assessments, water quality management plans, Section 303(d) and 305(b) water quality assessments, and reports provided to USEPA by ADEM are integral parts of the NPDES program. These reports identify water bodies where waters are impaired in the region, as noted in Table 5-1, triggering the process for development of a TMDL and associated waste load allocations for implementation in NPDES permits. The effects of the BRIMF on the overall surface water quality in the watersheds in the region are not expected to result in substantive cumulative impacts to aquatic ecological resources.

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6.0 Agency and Public Involvement

Throughout the process of preparing this EA coordination with public, local, State, and Federal entities was conducted to solicit questions, concerns, and comments on the proposed Project.

Comments, concerns, and questions from local, State, and Federal agencies were received in response to a Views and Comments letter submitted by ALDOT on July 17, 2009. Some comments were received in response to a 30-day public notice of the August 18, 2009 Public Information Meeting, a 30-day public notice of the November 12, 2009 Public Information Meeting, and for 10 business days following each of the Public Information Meetings. A copy of each letter is available in Appendix H.

Public comments were received in response to a 30-day public notice of the August 18, 2009, Public Information Meeting, a 30-day public notice of the November 12, 2009, Public Information Meeting, and for 10 business days following each of the Public Information Meetings. Additionally, comments were submitted through an electronic mail account established in July 2009 for the environmental analysis. The entirety of each comment is available in the administrative record used by ALDOT for the environmental analyses. A copy of all comments submitted may be obtained by contacting ALDOT's Environmental Technical Section (E.T.S) via phone at 334-242-6738.

The sign-in records indicate that approximately 400 members of the public attended the August 18, 2009, Public Information Meeting. In response to this meeting, ALDOT received approximately 275 public comments, which were submitted at the meeting, mailed to ALDOT, or submitted via email. Of these 275 comments, approximately 90 percent were opposed to the BRIMF and approximately 10 percent were in favor. After careful review of all comments, it was determined that among the comments opposing the project, the proposed location of the facility was the reason (or primary reason) for opposition.

The sign-in records indicate that approximately 136 members of the public attended the November 12, 2009 Public Information Meeting. In response to this meeting, ALDOT received approximately 73 public comments which were submitted at the meeting, mailed to ALDOT, or submitted via email. Of these 73 comments, approximately 90 percent were opposed to the BRIMF and approximately 10 percent were in favor. After careful review of all comments, it was determined that among the comments opposing the project, the proposed location of the facility was the reason (or primary reason). For each summarized comment, responses are provided below. When two or more comments raised common issues, questions, or concerns, or provided information also found in another comment, the comment was summarized and combined into one overall comment and a common response is provided. To facilitate analysis and review, the summary of comments is organized into 16 topics which correspond to sub-sections of Sections 4.0 and 5.0 of the EA. Studies and reports referenced in these responses are available upon request by contacting ALDOT.

Based on comments provided and concerns expressed by the public and local, State, and Federal agencies, Table 6-1 provides a brief description of environmental commitments for the construction and operation of the proposed BRIMF.

TABLE 6-1
Environmental Commitments for the Proposed BRIMF

1	An undisturbed area of 25 ft in width would be maintained around the non-impacted wetlands on the site to minimize the potential for indirect impacts from stormwater runoff.
2	Four stormwater ponds would be contained entirely within the facility footprint.
3	Release rates for all-year storm events would be at or less than pre-development 2-year storm events.
4	Spray irrigation technology would be utilized within the facility boundaries as an added measure to minimize stormwater impacts.
5	Tier 4 equipment (cranes and hostlers) would be used in the operation of the BRIMF.
6	Landscape berms would be installed between McAdory Elementary School and the BRIMF to minimize visual impacts.
7	A visual barrier/wall would be installed between the Sadler Ridge subdivision and the BRIMF access road to minimize visual impacts.
8	An oil-water separator would be utilized in the maintenance area.
9	Cut-off lighting (downward-facing lights) would be installed to minimize light emitted beyond the facility boundaries.
10	The exit/entrance (turn-out) from the facility onto McAshan Drive would be designed to discourage truck drivers from turning right (in order to avoid trucks traveling along Eastern Valley Road).
11	Bottomless culverts or bridges would be installed at new rail crossings along the eastern tributary of Mill Creek.
12	NSR would maintain, at a minimum, a 50-ft vegetative barrier composed of the existing tree line between McAdory Elementary School and the proposed BRIMF.
13	Woody landscape vegetation would be planted as visual barriers along the southern boundary of the facility.
14	Double security fencing between the BRIMF and McAdory Elementary School (on either side of the landscape berm) would be installed.

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APPENDIX A

Air Quality Report

AIR QUALITY TECHNICAL REPORT

for

BIRMINGHAM REGIONAL INTERMODAL FACILITY

JEFFERSON AND TUSCALOOSA COUNTIES, ALABAMA

May 2010

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1.0 Background and Project Description

Norfolk Southern Railway Company (NSR) is proposing to construct and operate the Birmingham Regional Intermodal Facility (BRIMF). The project would be built to meet demand for freight transportation and to optimize intermodal freight service operations and efficiency in the Birmingham region. The proposed project site is located near McCalla, Alabama approximately 20 miles southwest of Birmingham, as shown in Figure 1. The site is in the southern-most portion of Jefferson County, with the western portion of the Project extending into neighboring Tuscaloosa County. The closest interstate highway is Interstate 20/59, and the closest major intersection is Interstate 20/59 and McAshan Drive. This interchange is expected to be the primary Interstate highway access point for the facility. The proposed site is located approximately 1.5 to 2 miles south of this interchange, and west of McAshan Drive.

This Air Quality Technical Report ("Report") summarizes the methodology and results of an ambient air quality analysis and assessment of the Project. The purpose of the Report is to quantify the air emissions that would be generated by the project, and to evaluate the potential impact that these emissions would have on ambient air quality levels in the vicinity of the project site. The analyses described in this Report were based on design information for the BRIMF as developed by NSR and provided in the National Environmental Policy Act (NEPA) documentation that has been prepared for the Project. The project design parameters are as follows:

- Site capacity: 165,000 container or trailer lifts per year (maximum of 527/day)
- Visiting truck traffic: At maximum facility design capacity, 407 trucks/day would visit the site, including a peak hourly rate of 46 trucks/hour during the busiest morning and afternoon periods of operation. Truck visit times would average less than 25 minutes/visit and trucks would enter and exit the facility directly from McAshan Drive, passing through a security-based Automated Gate System (AGS) that would control entry and egress. Trucks would access McAshan Drive almost exclusively from Interstate 20/59.
- Onsite diesel powered equipment would consist of:
  - 15 hostler trucks (~150 horsepower [HP]) for moving/staging containers and trailers on the site
  - 4 rubber-tired cranes for lifting/transferring containers and trailers (300 HP)
  - 1 side loader (200 HP)
  - 5 supervisor/maintenance light duty diesel trucks (~20 miles/day each)
  - 1 emergency generator (~35 kW, operation during quarterly maintenance and testing)

  Locomotives servicing the site would be line haul engines operating at low power settings during rail car delivery. Approximately 6 intermodal trains per day would visit the site using a total of approximately 16 locomotive engines. Emission estimates for these locomotives were based on NSR's maximum projected daily onsite locomotive

operations. It should be noted that some of these trains are already passing by the site on the existing mainline track and therefore the net increase in emissions associated with locomotive operation at the site would actually be relatively low and less that what is projected in this Report.

- Refrigeration equipment (~20 HP diesel engines) would be used on a small number of refrigerated containers (3% of total containers transferred would be refrigerated).
- The facility would employ approximately 70 permanent site workers, spread over 3 shifts and weekends. The emissions from the vehicles used by these employees were considered to be minor and were not included in the analysis.

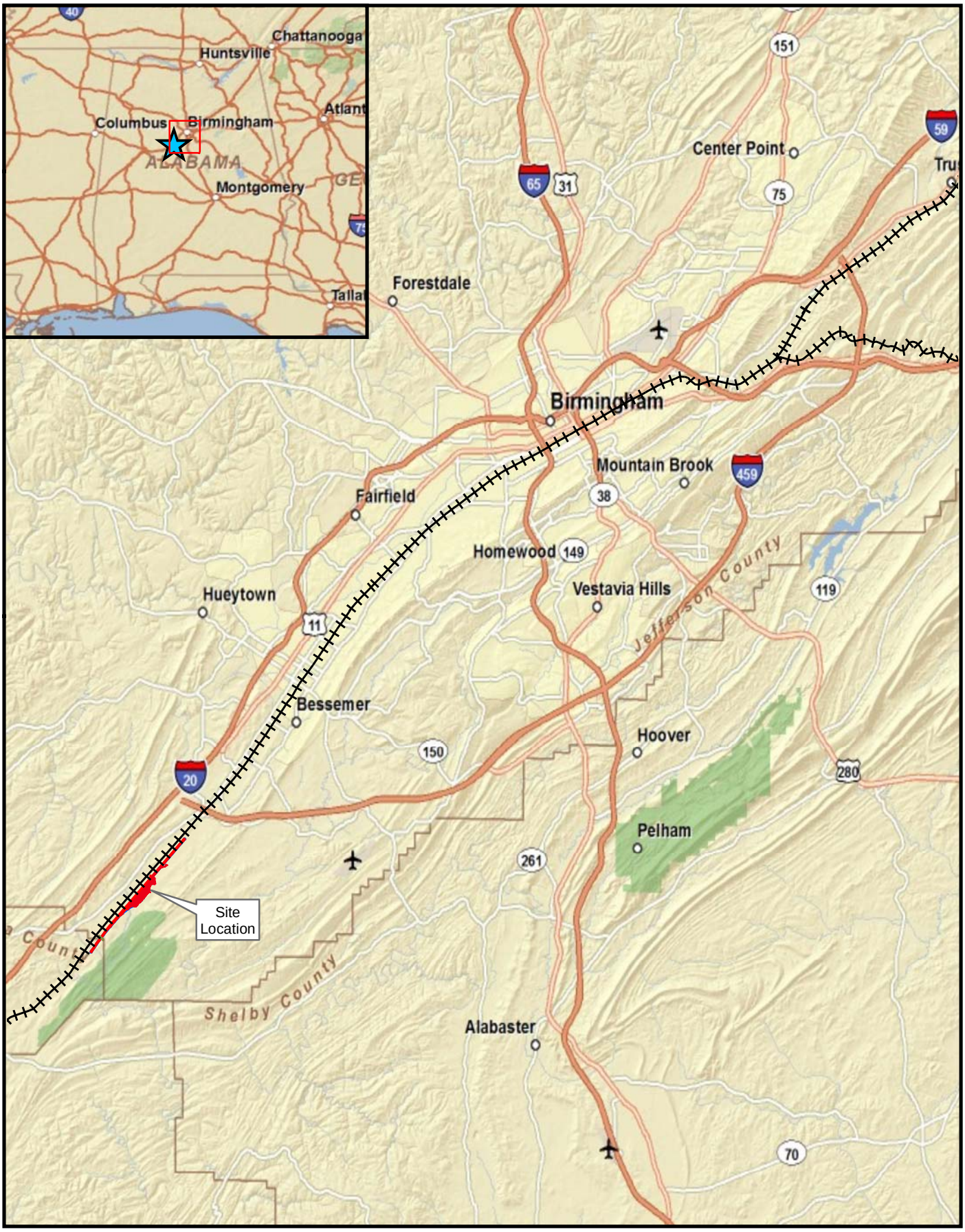

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FIGURE 1
SITE LOCATION MAP
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY
JEFFERSON AND TUSCALOOSA COUNTIES, AL

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2.0 Existing Air Quality

The existing air quality at the project site can be characterized in terms of whether the existing air quality conditions comply with the National Ambient Air Quality Standards (NAAQS). Baseline conditions are used in conjunction with an analysis of the predicted impacts from the proposed new facility to determine whether the fully operational facility would cause or contribute to a new violation of any NAAQS or increase the frequency or severity of any existing violation of any NAAQS. The NAAQS are summarized in Table 1.

The site is in Jefferson County, located in the southern-most portion of the county only a few miles from the borders of Shelby, Bibb, and Tuscaloosa Counties. A portion of the project (i.e., the western-most lead track, which would be constructed adjacent to the existing mainline track) would extend into Tuscaloosa County approximately 1,280 feet.

Air quality in Jefferson County is monitored and managed by the Jefferson County Department of Health (JCDH). In 2006, USEPA approved a request for the re-designation of Jefferson County from an 8-hour ozone nonattainment area to attainment (USEPA, 2006b). In 1999, the Alabama Department of Environmental Management (ADEM) requested that USEPA approve a State Implementation Plan (SIP) revision containing a 10-year ozone maintenance plan for the Birmingham area (1-hour standard), to include all of Jefferson and Shelby Counties (USEPA, 1999). As a result of this designation, both counties are currently classified as an ozone "maintenance area" for the 1-hour standard, meaning that the area is considered to be in attainment of the 1-hour ozone NAAQS, but would continue to be monitored to confirm that the air quality does not deteriorate and actually improves over time.

In 2005, USEPA designated Jefferson County and adjacent Shelby County (and a small portion of Walker County) as nonattainment for the annual standard for $PM_{2.5}$. On October 8, 2009, USEPA designated these same areas as nonattainment for the 24-hour standard for $PM_{2.5}$ (Source: http://www.epa.gov/pmdesignations/2006standards/documents/2009-10-08/factsheet.htm). Those areas are still classified as nonattainment for $PM_{2.5}$.

Although Jefferson and Shelby Counties in their entirety have been designated nonattainment areas for $PM_{2.5}$ (based on the annual and 24-hour standards), and a portion of Walker County has also been included in the nonattainment designation, data from air monitors demonstrate that there are localized differences relevant to the project and air quality baseline. The entire area of these two counties is classified on the basis of the monitoring results obtained at any of the eight $PM_{2.5}$ monitors in Jefferson County or the one $PM_{2.5}$ monitor that is operated in Shelby County (Source: http://www.adem.alabama.gov/AirDivision/Air%20Quality/PMData1207.htm, ADEM 2009).

TABLE 1
National Ambient Air Quality Standards

Pollutant	Primary Standards	Averaging Times	Secondary Standards
Carbon Monoxide (CO)	9 ppm (10 mg/m^3)	8-hour[a]	None
	35 ppm (40 mg/m^3)	1-hour[a]	None
Lead	0.15 µg/m^3	Rolling 3-month average[b]	Same as Primary
	1.5 µg/m^3	Quarterly Average	Same as Primary
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary
	0.100 ppm (189 µg/m^3)	1-hour[c]	None
Particulate Matter (PM)			
PM_{10}	150 µg/m^3	24-hour[d]	Same as Primary
$PM_{2.5}$	15.0 µg/m^3	Annual (Arithmetic Mean)[e]	Same as Primary
	35 µg/m^3	24-hour[f]	Same as Primary
Ozone	0.075 ppm	8-hour[g]	Same as Primary
	0.08 ppm	8-hour[h]	Same as Primary
	0.12 ppm	1-hour[i]	Same as Primary
Sulfur Oxides	0.03 ppm	Annual (Arithmetic Mean)	None
	0.14 ppm	24-hour[a]	None
		3-hour[a]	0.5 ppm (1,300 µg/m^3)

[a] Not to be exceeded more than once per year.
[b] Final rule signed October 15, 2008.
[c] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010)
[d] Not to be exceeded more than once per year on average over 3 years.
[e] To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 micrograms per cubic meter (µg/m^3) (U.S. Environmental Protection Agency [USEPA], 2006a).
[f] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006a) (USEPA, 2006a).
[g] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 part per million (ppm) (effective 27 May 2008).
[h] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
[i] (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is $\leq$ 1.
(b) As of June 15, 2005 USEPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone nonattainment Early Action Compact (EAC) Areas.

Source: http://www.epa.gov/air/criteria.html (USEPA, 2009a).

To evaluate the ambient air quality in the vicinity of the proposed project site, data from the three monitors closest to the proposed project site (in Jefferson, Shelby, and Tuscaloosa

Counties) were evaluated. These data demonstrate attainment of the annual and 24-hour NAAQS for $PM_{2.5}$ at the monitor locations. The ambient monitors indicating nonattainment in Jefferson County are located in the urbanized portion of the City of Birmingham where very high levels of traffic are known to exist.

The $PM_{2.5}$ monitor closest to the proposed site is located approximately 3 miles to the northeast at the McAdory High School in Jefferson County, near the intersection of Interstates 20/59 and 459. The results of the three most recent years of available monitoring data for $PM_{2.5}$ (2006 – 2008) at this monitor demonstrate compliance with the NAAQS for $PM_{2.5}$ for both the annual and 24-hour averaging periods. To attain the 24-hour standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 $\mu g/m^3$ (effective December 17, 2006) (USEPA, 2006a). The 3-year average monitoring results at the McAdory High School monitoring site are 32.5 $\mu g/m^3$ (24-hour) and 14.4 $\mu g/m^3$ (annual), both of which are below the NAAQS (see Table 2).

TABLE 2
$PM_{2.5}$ Background Air Quality Data

Pollutant	Averaging Period	McAdory High School Monitor ($\mu g/m^3$)[(a)] 2006	2007	2008	3-Year Average Concentration ($\mu g/m^3$)
$PM_{2.5}$	Annual	15.58	14.91	12.71	14.4
	24-hr (98^{th} Percentile)	33.9	30.9	32.7	32.5

[(a)] Source: http://www.epa.gov/air/data/index.html. (USEPA, 2009b)

The only $PM_{2.5}$ monitor in Shelby County is located at Pelham High School (approximately 15 miles east of the proposed BRIMF project site), and data from that monitor demonstrate compliance with the NAAQS for $PM_{2.5}$ (annual and 24-hour) based on the three most recent years of data (2006 – 2008). The 3-year average monitoring results at the Pelham High School monitor are 28.6 $\mu g/m^3$ (24-hour) and 13.3 $\mu g/m^3$ (annual). Tuscaloosa County (approximately 2 miles west of the site) is officially designated as being in attainment of the NAAQS for $PM_{2.5}$ and data from the only monitor in the county (located in the City of Tuscaloosa, 27 miles west-southwest) demonstrate that the NAAQS are achieved. Three-year monitoring results at the Tuscaloosa monitor are 28.2 $\mu g/m^3$ (24-hour) and 12.8 $\mu g/m^3$ (annual). Bibb County (approximately 3 miles south of the site) is officially designated as being in attainment of the $PM_{2.5}$ standards; however, there are no ambient $PM_{2.5}$ monitors operated by ADEM in that county.

Based on the results of ambient monitoring for $PM_{2.5}$ within 3 miles of the site (at McAdory High School), and in adjacent counties (Shelby and Tuscaloosa), it is evident that the air quality at and in the vicinity of the proposed project site is such that the NAAQS for $PM_{2.5}$ is being consistently achieved (USEPA, 2009b).

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3.0 Impacts of Facility Construction and Operation

3.1 Impacts During Facility Construction

The construction of the facility is projected to take 1½ years to complete, beginning in early 2011. Construction activities are expected to be the only source of emissions associated with the proposed project during its first year of activity. Construction activities would be completed and facility operations would commence approximately 1½ years after construction begins. After construction is complete, the only emission sources associated with the proposed project would be the routine operations of rail, support, and truck equipment, which would commence in mid-2012.

The BRIMF would be constructed and owned by NSR with the following main facility components:

- Tracks connecting the facility to the NSR mainline, with no grade road crossings on the mainline
- Facility infrastructure dimensions of 6,600 feet by 1,500 feet to include:
  - Three pad tracks averaging 4,000 feet long
  - Support yard with storage tracks at least as long as the pad tracks
  - One engine track 1,000 feet long
  - Paved areas for parking up to 1,468 trailers and containers
- Lead tracks 5,000 feet long (longest yard track + 500 feet) on each end of the facility
- AGS used to monitor and grant ingress to and egress from the facility
- Administration, maintenance, and operations buildings
- Equipment maintenance pad and related facilities
- A new 0.6-mile paved access road (running parallel and adjacent to the existing mainline tracks), connecting the BRIMF to McAshan Drive.

The construction of the proposed project would include numerous phases, each with the potential to produce air pollutants. The primary emissions during construction would be fugitive in nature, consisting mainly of fugitive dust (i.e., particulate matter, either PM_{10} or $PM_{2.5}$) resulting from construction activities at the site, and exhaust emissions from diesel powered construction equipment that would be operating on the site during construction. Activities would include land clearing, grading, construction of facility infrastructure, and concrete paving. The construction of the facility would be short-term and temporary in nature, with a total construction time of approximately 1½ years. Table 3 summarizes the basic construction phases and the types of emissions that would be associated with each phase of the work. Emission estimates for the construction phase of the proposed project were developed based on recent estimates for a similar NSR IMF project at the Charlotte Douglas International Airport in Charlotte, North Carolina (Landrum & Brown, 2008). Both projects have similar construction requirements (site clearing, grading, etc.), terrain characteristics, and climate. The construction emission estimates that were developed for the Charlotte IMF were used to estimate the construction emissions for the proposed BRIMF.

TABLE 3
Emissions Generated During Temporary Construction Activities

Construction Phase	Source of Emissions	Emissions
Site clearing	Track/wheel loaders, bulldozers, graders, and excavator	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Grading of Site	Track/wheel loaders, bulldozers, graders, and excavator	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Installation of new trenches for utilities	Backhoes, excavators, and gravel trucks	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Construction and relocation of rail track	Backhoes, excavators, gravel trucks, construction worker vehicles, ballast regulators, and tampers	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Construction of new buildings and support facilities	Backhoes, excavators, onsite concrete mix plant, roller compacted concrete trucks, cranes, and construction worker vehicles	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Construction of new access road between the site and McAshan Drive	Track/wheel loaders, bulldozers, graders, excavators, roller compacted concrete paving machines	Fugitive dust and mobile source exhaust emissions from diesel powered equipment
Paving of roads and work surfaces (roller compacted concrete)	Concrete mix plant, concrete transport trucks, roller compacted concrete paving machines, and support equipment	Fugitive dust, mobile source exhaust emissions from diesel powered equipment
Striping of roadways and painting of buildings	Paint trucks, and spray painting equipment	Mobile source exhaust emissions from diesel powered equipment, paint application evaporative emissions

The Charlotte IMF was developed on approximately 278 acres, whereas the proposed Birmingham Regional IMF would be developed on approximately 311 acres. The construction emissions for the Charlotte IMF were therefore scaled upwards on the basis of the ratio of project acreage, to be representative of the emissions for the construction of the BRIMF. The estimated construction emissions for the proposed BRIMF are summarized in Table 4.

The estimated construction emissions in Table 4 summarize the maximum potential annual emissions of fugitive dust and mobile source exhaust emissions that would be attributable to the construction activities associated with development of the proposed project site. It is noted that the emissions would be short-term in nature and limited to the construction phase of the project only. Once construction is complete, emissions associated with the proposed facility would consist of emissions from facility operations.

TABLE 4
Estimated Potential Construction Emissions (tons per year)[(a)]

	Annual Emissions (tons/year) [(a)]					
Year of Construction	**CO**	**VOCs**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2010	37.1	4.97	66.0	1.20	3.17	2.91
2011	12.4	1.66	22.9	0.40	1.05	0.984

[(a)] Construction is anticipated to take approximately 1 ½ years to complete; second year of construction is a partial year.

The emissions during the short-term 1½ year construction period would be typical of a large construction project. While there would be air quality impacts during construction, they are expected to be primarily limited to areas where construction activities are occurring on the project site. To minimize the air quality impacts of construction, Norfolk Southern would require that mitigation measures be taken during construction by the contractor, including the implementation of best management practices (BMPs) designed to minimize dust generation and emissions from equipment operation. These measures and activities are expected to include the following:

- Site grading would promote good drainage and minimize the accumulation of mud on equipment tires that could be transferred to road surfaces, which could generate fugitive dust from wind erosion, traffic, or heavy equipment operation.
- Ground surfaces would be stabilized as soon as practicable to prevent wind erosion. BMPs would be used to prevent sediments from settling on roads and mud would be removed as necessary.
- Those areas that would revert to maintained grounds would be reseeded as soon as practicable to reduce the potential for fugitive dust generation.
- Bare ground in the construction area and on construction roads would be wetted to minimize fugitive dust from vehicle traffic during dry conditions.
- Roadways used to access the site during construction would be wetted to minimize fugitive dust from traffic or heavy equipment operation.
- Applicable air pollution control regulations with regard to open burning and the operation of fueled vehicles would be strictly adhered to.
- Fuel-burning construction equipment would be maintained in proper mechanical order to minimize emissions.
- Reasonable precautions would be implemented to prevent accidental brush or forest fires.

The contractors responsible for construction would also be required to develop and implement a comprehensive fugitive dust control plan.

3.2 Impacts During Facility Operation

The primary purpose of the proposed BRIMF is to meet demand for intermodal (rail/truck) transportation in the Birmingham region through expanded capacity. An advantage of the project is that it would effectively divert a large number of trucks to rail that would otherwise provide long haul trucking services from the region to the Northeast and other regions in the U.S. This would result in a substantial net reduction in fuel usage (estimated by NSR to be more than 10.8 million gallons/year by 2020), thereby reducing air emissions considerably within the transportation corridor.

NSR is designing the BRIMF to have the capacity to perform 165,000 lifts of trailers and containers from and to rail cars annually, with up to 527 lifts per day, and a daily average of 452 lifts per day. Air emissions from the IMF would consist almost entirely of exhaust emissions from diesel powered locomotives, trucks, and IMF support equipment. The analyses described herein were conducted conservatively, based on the assumption that the facility would be operating at maximum projected capacity.

3.2.1 Criteria Pollutant Emissions

Emissions from the facility during operation would result from the operation of the following equipment:

- **Delivery trucks**. Up to 290 tractor trailers and 117 bob-tails (trucks without trailers) would access the facility per typical day when operating at maximum design capacity. The posted vehicle speed limit would be 15 miles per hour (mph) on the facility grounds. Consistent with NSR's experience at their other facilities, the tractor trailers/bob-tails would be present at the facility for up to 25 minutes, on average. This would include 13 minutes of potential idling time and 12 minutes of driving across the facility to either pick up or drop off a container or a trailer (traveling at an average speed of 10 mph for an estimated distance of 2 miles). The tractor trailers and bob-tails were conservatively evaluated as heavy-duty diesel vehicles (HDDV) Class 8a (33,001-60,000 pounds GVWR) for the purpose of estimating emissions.

- **Container and trailer handling equipment**. This includes the use of cranes, hostler trucks, and side loaders to load, unload, and stage containers and trailers on the site. Up to 4 cranes, 15 hostler trucks, and 1 side loader would be operating at the facility when it becomes fully operational. The cranes and hostler trucks would be equipped with next-generation Tier 4 engine technology, which is capable of substantially reducing emissions compared to Tier 3 technology engines. As noted previously, it is estimated that there would be up to 527 container/trailer lifts per week day (on average) with a design capacity of 165,000 lifts annually.

- **Refrigerated container units.** Up to 3 percent of the containers/trailers that would pass through the facility are estimated to be refrigeration units that utilize small diesel engines (20 HP) for power.

- **Locomotives**. Emissions would be generated by diesel locomotives moving rail cars into and out of the IMF. Approximately six trains, each with multiple engines, are expected to visit the site each day, arriving mostly at night or during off-peak hours. Total average locomotive operation is estimated to be up to 11.75 engine-hours of operational

movement and up to 21.25 engine-hours of idling time per typical day during maximum operation.

- **Maintenance trucks**. Five light duty maintenance trucks would operate at the facility and each truck is estimated to travel a distance of approximately 20 miles per typical day, traveling at an average speed of 10 mph.
- **Emergency Generator**. Minor emissions would occur as a result of the operation of a small 35 kW diesel fueled emergency generator that would be operated for emergency power only and during testing and maintenance, with very limited operating hours per year.
- **Storage tanks**. Volatile organic compounds (VOCs) would be emitted from aboveground storage tanks (ASTs) used to store diesel fuel and lubricants.

The above-described emissions would be a result of exhaust emissions from diesel powered equipment, including locomotives, container/trailer delivery trucks, IMF dedicated container/trailer handling equipment, and support equipment. Maximum potential emissions of $PM_{2.5}$, CO, VOC, and NO_X for the first full year of maximum operation (2015) are summarized in Table 5. Since the diesel powered equipment and trucks that would be operated at the facility would be using transportation grade diesel fuel (i.e., ultra-low sulphur fuel), SO_2 emissions from the facility are expected to be minimal and were not estimated. There will also not be any measurable amount of lead (Pb) emitted from the facility since all transportation fuel is lead-free. Detailed emission calculations are provided in Attachment A to this Report.

The maximum projected operational emissions of $PM_{2.5}$, CO, VOC, and NO_X from the BRIMF are also very small when compared to the 2002 countywide emissions inventory for Jefferson County, as shown in Table 6. The proposed facility's maximum percentage of countywide emissions of $PM_{2.5}$, CO, VOC, and NO_X would be approximately 0.016 percent, 0.0052 percent, 0.0083 percent, and 0.093 percent, respectively. Based on such a low level of emissions, the impact of facility emissions on ambient air quality in the region is expected to be negligible.

While the facility emissions would result in a very small increase in emissions compared to regional emissions, it is also noted that the project would effectively divert a large number of trucks to rail that would otherwise provide long haul trucking services from the region to the Northeast and other regions in the U.S. This would result in a substantial net reduction in fuel usage (estimated by NSR to be more than 10.5 million gallons/year by 2020). By reducing the combustion of diesel fuel associated with the transportation of freight being transferred through the facility, there would be a net reduction in air emissions on a national and regional basis as discussed in Section 3.2.3.

TABLE 5
Estimated Potential Operational Emissions (tons per year)

	Annual Emissions for 2015 (tons/year) [a][b]			
Onsite Activity	**$PM_{2.5}$ [c]**	**CO**	**VOC**	**NO_X**
Intermodal Yard Operation [d]	0.16	8.68	1.44	19.63
Onsite Rail Operations [e]	1.53	6.11	2.29	41.08

TABLE 5
Estimated Potential Operational Emissions (tons per year)

	Annual Emissions for 2015 (tons/year) [(a)(b)]			
Onsite Activity	**$PM_{2.5}$ [(c)]**	**CO**	**VOC**	**NO_X**
Emergency Generator [(f)]	0.0004	0.0011	0.0004	0.0050
Refrigeration Units [(g)]	0.11	0.93	0.12	1.96
Trucks [(h)(i)]	0.028	0.91	0.27	1.60
Total Emissions	1.83	16.6	4.13	64.3

[(a)] Annual emissions are based on facility operating at full design capacity (165,000 lifts/year). First year of full operation is projected to be 2015.
[(b)] Emission calculations are included in Attachment A.
[(c)] All PM emissions are assumed to be $PM_{2.5}$.
[(d)] IMF Operation emissions are based on USEPA Tier 4 emission factors for Side Loaders, Cranes, and Hostler Trucks (Electric Power Research Institute [EPRI], 2009). Emission calculations were based on EPRI emission factors for Tier 3 engines, scaled to reflect the use of Tier 4 engines which would be used at the site in this equipment.
[(e)] Onsite rail emissions are based on line haul engines operating at reduced power levels (for switching and idling activities) and USEPA emission factors (USEPA, 2009c).
[(f)] Emergency generator emissions are based on one 35 kW generator operating 2 hours per quarter (maintenance) (USEPA, 1996).
[(g)] Refrigerated container emissions are based on 3% of lifted containers per day, each operating 12 hours per day USEPA small engine emission factors (USEPA, 2009d).
[(h)] Truck emissions include 290 tractor trailers and 117 bob-tail trucks (no trailers) visiting the site (typical day), plus 5 BRIMF owned supervisor/maintenance light duty (pickup) trucks (each travelling 20 miles per day).
[(i)] Each visiting truck is assumed to travel approximately 2 miles onsite and idle 13 minutes (25 total minutes onsite, based on NSR's operation experience at other facilities).

TABLE 6
Comparison of Proposed BRIMF Operational Air Emissions with Existing Jefferson County Air Emissions

	Jefferson County Emissions (tons/yr)[(a)]			Birmingham Regional IMF Emissions[(b)]	
Pollutant	**Highway**	**Off-Road**	**All Sources**	**Onsite Emissions (tons/yr)**	**% of All County Sources**
$PM_{2.5}$	379	591	11,476	1.83	0.016
CO	181,846	47,931	317,392	16.6	0.0052
VOC	15,372	4,504	49,958	4.13	0.0083
NO_X	20,609	8,651	69,154	64.3	0.093

[(a)] Source: http://www.epa.gov/air/data/index.html. (USEPA, 2009e). The data are for 2002 (most recent year available).
[(b)] Maximum emissions attributable to maximum potential operation for 2015 (first year of maximum operation).

3.2.2 Ambient Air Quality Dispersion Modeling Analysis

A dispersion modeling analysis was performed to qualitatively assess maximum projected potential emissions relating to the proposed IMF. The modeling analysis was performed to evaluate the potential impacts of maximum facility operation on ambient air quality for the criteria pollutants $PM_{2.5}$, CO, and NO_X. Dispersion modeling was performed in the immediate vicinity of the proposed facility for these pollutants using USEPA-developed models and modeling approaches, discussed below. SO_2 and Pb emissions from the facility were not modeled since transportation grade diesel fuel (0.0015% sulphur content unleaded) would be used in onsite equipment, which would limit SO_2 emissions to only trace amounts, with no discernible impact on ambient air quality.

3.2.2.1 Dispersion Model

Dispersion modeling results were obtained using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 07026 (USEPA, 2007). The model was used exclusively to determine short-term concentrations (i.e., 24-hour averaging period) as well as annual average concentrations of $PM_{2.5}$. The complete AERMOD modeling system consists of three parts: the AERMET pre-processor, the AERMAP pre-processor, and the AERMOD model. The AERMET pre-processor compiles the surface and upper-air meteorological data and formats the data for AERMOD input. The AERMAP pre-processor is used to obtain terrain elevation information and controlling hill heights for AERMOD input.

3.2.2.2 Meteorological Input Data

The meteorological data used in the air quality modeling analyses consisted of 5 years (2003 – 2007) of hourly surface observations from the Birmingham, Alabama Municipal Airport (WBAN # 13876), and twice daily upper-air sounding data from the Shelby County Airport (WBAN # 53823). The Birmingham Airport meteorological observing station is operated by the National Weather Service (NWS) and is located in an area of similar topographic features and in the same southwest-northeast valley as the proposed project site. The site is located approximately 24 miles southwest of the Birmingham Airport station. The base elevation of the Birmingham Airport is 196 meters above mean sea level. The base elevation of the proposed project site is approximately 159 meters above mean sea level.

3.2.2.3 Receptors and Other Modeling Considerations

Nine modeling receptors were placed around the BRIMF at the locations of the nearest residences and the McAdory Elementary School. The locations of these receptors are shown in Figure 2. The purpose of this analysis was to estimate the maximum potential impacts attributable to facility operation. The nearest residences (Receptors 1 – 8) and the McAdory Elementary School (Receptor 9) are located east and south of the facility along Eastern Valley Road and west of McAshan Drive. The AERMOD model assumptions were based upon USEPA's current recommended approach, including the regulatory default option (USEPA, 2009f). For each source of air emissions, the modeling assumed continuous facility operation at maximum design capacity, an assumption that is unlikely to be realistic for the facility during actual operation. The options utilized in the analysis included stack tip downwash, PRIME algorithm for sources influenced by building downwash, default wind profile exponents, default vertical potential temperature gradients, and rural dispersion

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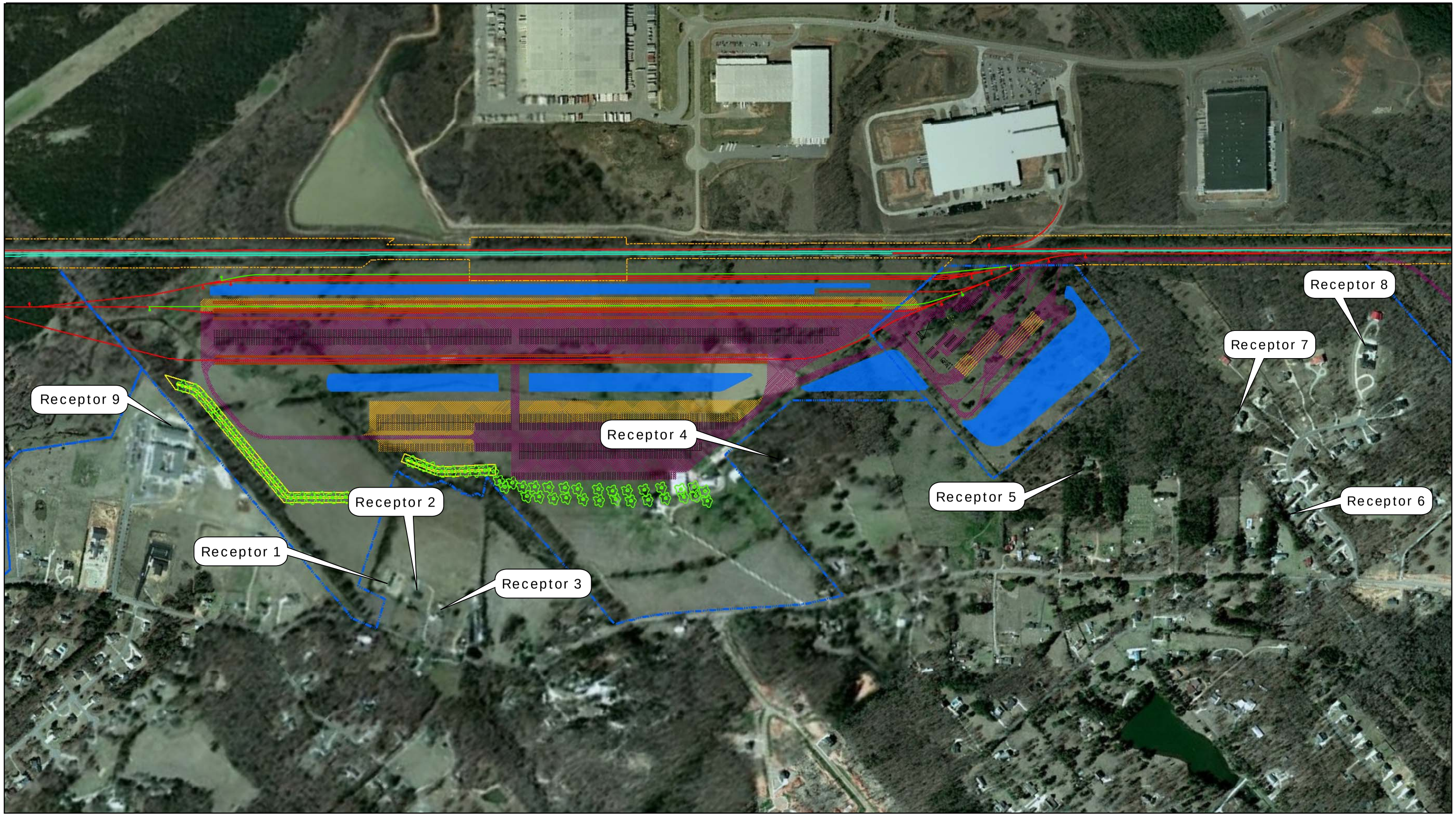

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FIGURE 2
Location of Receptors 1 through 9
Birmingham Regional Intermodal Facility
Jefferson and Tuscaloosa Counties, AL

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coefficient. The population density of Jefferson County is less than 750 people per square km; therefore, the urban modeling option was not selected, consistent with USEPA guidance. Proposed buildings at the site would be small and would not create building downwash effects. Actual terrain elevations were obtained from Micropath Corporation (Golden, Colorado), which supplies U.S. Geological Survey (USGS) 3-meter digital (7.5-minute quad maps). Receptor elevations were determined for all receptor points in order to account for the influence of terrain on the dispersion of pollutants in the area.

3.2.2.4 Dispersion Modeling Methodology and Results

The dispersion modeling results reported in this section are based on the maximum projected daily emissions associated with maximum facility operations. Detailed emission calculations are provided in Attachment A. Table 5 contains a summary of the maximum projected annual emissions (tons/year) that would occur during full operation of the proposed BRIMF. For the purposes of the dispersion modeling analysis, emissions were assumed to occur in five areas of the proposed facility based on design information and projected operations and activities for specific equipment that would be operating on the site within each area. These five areas are shown in Figure 3. Table 7 summarizes the projected equipment operations that are expected to occur in each of the five areas, expressed as a percentage of total equipment operations for each equipment type. The information in Table 7 was used to estimate the emissions that would occur in each area. Because of the expected movement of the vehicles within each of the five areas, and the varying heights of the emissions from the equipment, the emissions in each of the five areas were modeled as volume sources using the assumed emission source characteristics illustrated in Table 8.

The modeling analyses were designed to assess the potential impact on ambient air quality at the nine receptor locations. The dispersion modeling analysis was primarily focused on $PM_{2.5}$ emissions since Jefferson County has been designated as a nonattainment area for this pollutant (see Section 2.0). Although the area is classified as a "maintenance area" for ozone, modeling of ozone was not performed because the emissions of ozone precursor pollutants from this facility (VOC and NO_X) are minor and are not expected to have a measurable impact on local or regional ozone concentrations. It should also be noted that USEPA has not promulgated NAAQS for VOCs; therefore, an ambient air quality dispersion modeling analysis of VOC emissions was not performed.

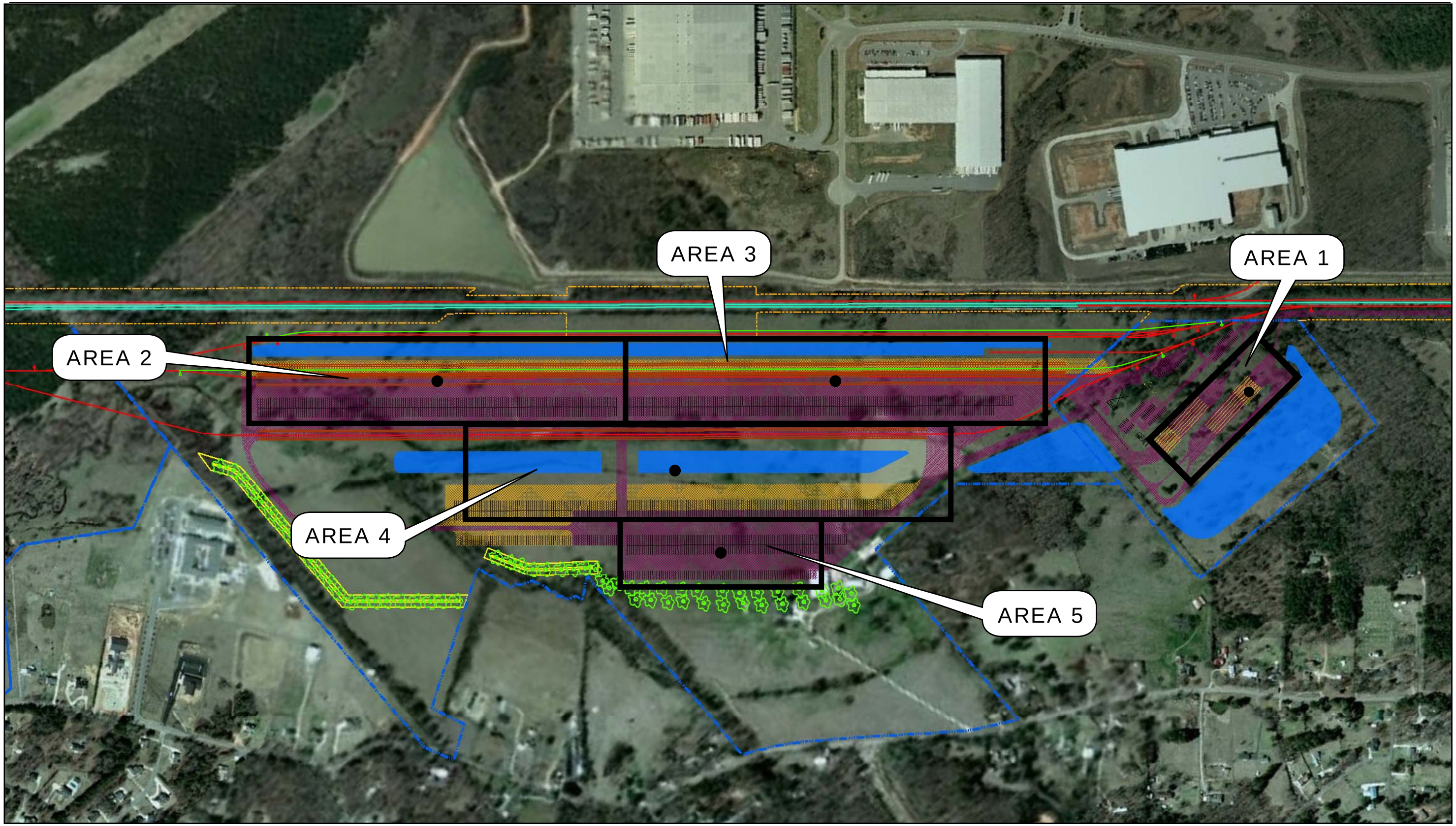
The results of the dispersion modeling analysis for $PM_{2.5}$ are summarized in Table 9. The maximum predicted values for the 24-hr averaging period are the 8th highest concentrations at each of the indicated locations, which correspond to the predicted 98th percentile values consistent with the USEPA standards. The NAAQS states that the standard is based on the average of the 98th percentile values for the 24-hour averaging period (USEPA 2006a). It is also noted that the maximum predicted impacts for the 24-hour and annual averaging periods were obtained using 5 years of meteorological data from the Birmingham Airport.

An assessment of compliance with the NAAQS for $PM_{2.5}$ was based on a conservative summation of the maximum predicted facility impacts as described above (98th percentile 24-hour and annual average concentrations) and the existing background air quality. As noted above, the modeling analysis was based on the facility operating at maximum design capacity. The results presented in Table 9 also represent the worst-case scenario from a meteorological perspective in terms of wind speed, wind direction, and atmospheric

stability conditions. Accordingly, the modeling results provided in Table 9 are considered to be very conservative and unlikely to be realized in practice. The maximum results shown in Table 9 represent the combined occurrence of maximum emissions and worst-case meteorological conditions, which is unlikely to occur. This highly conservative approach appropriately builds in a substantial margin of safety for assessing facility emissions.

The $PM_{2.5}$ background ambient air quality concentrations in the vicinity of the proposed project site are from the monitor located at the McAdory High School and are summarized in Table 2. McAdory High School is located approximately 3 miles to the northeast of the proposed site near the intersection of Interstates 459 and 20/59. This highly conservative approach demonstrates that the maximum impact of the facility operations would not result in an exceedance of the NAAQS for $PM_{2.5}$ or increase the frequency or severity of violation of NAAQS for $PM_{2.5}$, even when added to the background levels observed at the McAdory High School monitor. The highly conservative nature of this conclusion is further supported by the fact that meteorological conditions that are conducive to maximum observed ambient concentrations at the McAdory High School monitor are unlikely to coincide with meteorological conditions that are conducive to the maximum predicted concentrations in the dispersion modeling analysis

The results of the dispersion modeling analysis for CO and NO_X are summarized in Table 10. The modeling analysis of CO and NO_X emissions (conservatively assuming facility operation at design capacity) demonstrates that the NAAQS for those pollutants should not be threatened or exceeded as a result of facility operation, and facility operation should not result in an increase in the frequency or severity of violations of NAAQS. The maximum predicted impact of the facility emissions at the receptor locations is well below 1 percent of the NAAQS for CO for both the 1-hour and 8-hour averaging periods and less than 15 percent of the NAAQS for NO_X (annual). Although there are no nearby ambient monitors for CO and NO_X, Jefferson County and all surrounding counties (i.e., Shelby, Bibb, and Tuscaloosa) are all designated as being in attainment of the NAAQS for these pollutants. Given the attainment status of these counties for CO and NO_X, and the very low predicted impacts of CO and NOx attributable to facility operation, the facility is not expected to cause or contribute to a violation of the NAAQS for these pollutants, and the increase in ambient levels of CO and NO_X is not expected to be measurable or discernible at any location.



LEGEND

Area 1 - Facility Entrance (Trucks and Emergency Generator)
Areas 2 and 3 - Yard Operations (Intermodal Yard Operations, Onsite Rail Operations, Refrigeration Units, and Trucks)
Area 4 - Yard Operations (Intermodal Yard Operations, Refrigeration Units, and Trucks)
Area 5 - Yard Operations (Intermodal Yard Operations and Trucks)

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FIGURE 3
Location of Emission Source Areas
Birmingham Regional Intermodal Facility
Jefferson and Tuscaloosa Counties, AL

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Table 7
Estimated Potential Operational Emissions by Area
Birmingham Regional IMF

Operation	Maximum Daily Emissions	Area 1[a]		Area 2[a]		Area 3[a]		Area 4[a]		Area 5[a]	
	tons/day	Percentage[b]	lb/hr	Percentage[b]	lb/hr	Percentage[b]	lb/hr	Percentage[b]	lb/hr	Percentage[b]	lb/hr
Intermodal Yard Operations[c]		0%		25%		50%		15%		10%	
PM2.5	5.13E-04		0.00E+00		1.07E-02		2.14E-02		6.42E-03		4.28E-03
CO	2.78E-02		0.00E+00		5.79E-01		1.16E+00		3.47E-01		2.32E-01
VOC	4.62E-03		0.00E+00		9.62E-02		1.92E-01		5.77E-02		3.85E-02
NO_X	6.29E-02		0.00E+00		1.31E+00		2.62E+00		7.86E-01		5.24E-01
Onsite Rail Operations		0%		40%		60%		0%		0%	
PM2.5	4.90E-03		0.00E+00		1.63E-01		2.45E-01		0.00E+00		0.00E+00
CO	1.96E-02		0.00E+00		6.53E-01		9.79E-01		0.00E+00		0.00E+00
VOC	7.34E-03		0.00E+00		2.45E-01		3.67E-01		0.00E+00		0.00E+00
NO_X	1.32E-01		0.00E+00		4.39E+00		6.58E+00		0.00E+00		0.00E+00
Emergency Generator		100%		0%		0%		0%		0%	
PM2.5	1.13E-06		9.46E-05		0.00E+00		0.00E+00		0.00E+00		0.00E+00
CO	3.45E-06		2.87E-04		0.00E+00		0.00E+00		0.00E+00		0.00E+00
VOC	1.30E-06		1.08E-04		0.00E+00		0.00E+00		0.00E+00		0.00E+00
NO_X	1.60E-05		1.33E-03		0.00E+00		0.00E+00		0.00E+00		0.00E+00
Refrigeration Units		0%		34%		33%		33%		0%	
PM2.5	3.57E-04		0.00E+00		1.01E-02		9.81E-03		9.81E-03		0.00E+00
CO	2.97E-03		0.00E+00		8.41E-02		8.16E-02		8.16E-02		0.00E+00
VOC	3.99E-04		0.00E+00		1.13E-02		1.10E-02		1.10E-02		0.00E+00
NO_X	6.29E-03		0.00E+00		1.78E-01		1.73E-01		1.73E-01		0.00E+00
Trucks[d]		25%		20%		30%		15%		10%	
PM2.5	8.97E-05		1.87E-03		1.49E-03		2.24E-03		1.12E-03		7.47E-04
CO	2.91E-03		6.06E-02		4.85E-02		7.27E-02		3.63E-02		2.42E-02
VOC	8.71E-04		1.81E-02		1.45E-02		2.18E-02		1.09E-02		7.26E-03
NO_X	5.13E-03		1.07E-01		8.55E-02		1.28E-01		6.41E-02		4.28E-02
Total:											
PM2.5 lb/hr			1.96E-03		1.85E-01		2.78E-01		1.73E-02		5.03E-03
CO lb/hr			6.09E-02		1.36E+00		2.29E+00		4.65E-01		2.56E-01
VOC lb/hr			1.83E-02		3.67E-01		5.92E-01		7.96E-02		4.57E-02
NO_X lb/hr			1.08E-01		5.96E+00		9.50E+00		1.02E+00		5.67E-01

Note:
[a] Refer to Figure 3 for Area locations.
[b] Percentage of total emissions in indicated Area.
[c] Includes Side Loader, Cranes, and Hostler Trucks.
[d] Includes delivery trucks and onsite maintenance trucks.

TABLE 8
Emission Source Characteristics Used in the Modeling Analysis

	UTM (m) (a)		Length	Vehicle Height	Volume Height	Sigma y	Sigma z	Release Height
Source	**Easting**	**Northing**	**(m)**	**(m)**	**(m)**	**(m)**	**(m)**	**(m)**
Area 1	496467	3684890	114	3.67	7.00	26.6	3.26	3.50
Area 2	495561	3683860	617	3.67	7.00	143.5	3.26	3.50
Area 3	496024	3684380	709	3.67	7.00	164.8	3.26	3.50
Area 4	496049	3684250	732	3.67	7.00	170.1	3.26	3.50
Area 5	496125	3684120	408	3.67	7.00	95.0	3.26	3.50

(a) Measured at the center point of each area.

TABLE 9
Summary of $PM_{2.5}$ Modeling Results

		Maximum Predicted Offsite Concentration (µg/m^3) (Years are meteorological data years)				
Location	**Averaging Period**	**2003**	**2004**	**2005**	**2006**	**2007**
Receptor 1	Annual	0.26	0.27	0.30	0.29	0.27
	24-hour (a)	1.14	1.37	1.49	1.28	1.04
Receptor 2	Annual	0.25	0.26	0.29	0.27	0.26
	24-hour (a)	1.05	1.29	1.29	1.18	1.11
Receptor 3	Annual	0.23	0.24	0.26	0.25	0.24
	24-hour (a)	0.97	1.20	1.16	1.10	1.06
Receptor 4	Annual	0.046	0.047	0.048	0.057	0.042
	24-hour (a)	0.29	0.33	0.34	0.32	0.27
Receptor 5	Annual	0.056	0.054	0.055	0.067	0.047
	24-hour (a)	0.32	0.43	0.36	0.40	0.31
Receptor 6	Annual	0.025	0.024	0.024	0.031	0.020
	24-hour (a)	0.15	0.22	0.19	0.19	0.15
Receptor 7	Annual	0.044	0.044	0.042	0.050	0.036
	24-hour (a)	0.30	0.39	0.33	0.33	0.28
Receptor 8	Annual	0.035	0.034	0.028	0.035	0.028
	24-hour (a)	0.25	0.27	0.23	0.23	0.23
Receptor 9 (McAdory Elementary)	Annual	0.36	0.35	0.39	0.38	0.36
	24-hour (a)	1.61	1.58	1.76	1.56	1.52

(a) The indicated maximum predicted values for the 24-hr averaging period are the 98th percentile 24-hour values (7th highest predicted values for a 365-day period).

TABLE 10
Summary of CO and NO_X Modeling Results for BRIMF

Pollutant	Averaging Period	Maximum Predicted Offsite Concentration (µg/m³) (Years are meteorological data years) 2003	2004	2005	2006	2007	NAAQS (µg/m³)	% of NAAQS
CO	1-hr	84.4	85.0	84.8	84.7	84.4	40,000	0.21
	8-hr	44.7	47.6	49.5	49.7	35.9	10,000	0.50
NO_X	Annual [(a)]	10.3	10.2	11.2	10.9	10.5	100	11.2

[(a)] Annual emissions are based on the maximum daily emission rate, scaled to reflect the maximum annual number of lifts (165,000).

3.2.3 Mobile Source Air Toxics

In addition to the criteria air pollutants for which the NAAQS have been established to protect the public health, USEPA also regulates air toxic emissions. Most air toxic emissions originate from man-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes, construction equipment), area sources (e.g., dry cleaners) and stationary sources (e.g., industry in general). Mobile Source Air Toxic (MSAT) emissions are a subset of the 187 air toxics defined by the Clean Air Act (Source: http://www.epa.gov/ttn/atw/pollsour.html) (USEPA, 2009g). MSAT emissions are compounds emitted from highway vehicles (passenger cars and light and heavy duty trucks) and non-road equipment (such as construction equipment, all terrain vehicles). Some air toxic compounds are present in fuel and are emitted to the air when fuel evaporates or passes through the engine unburned.

The USEPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of air pollutants including MSATs. In 2001, USEPA issued its first regulations to control MSAT emissions from mobile sources (USEPA 2001). The USEPA has assessed this expansive list in its latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in the agency's Integrated Risk Information System (IRIS) (USEPA, 2009h). In addition, USEPA identified seven compounds with the most significant contributions from mobile sources as a result of its 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1, 3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter (POM). While the Federal Highway Administration (FHWA) considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future USEPA rules.

The 2007 USEPA rule mentioned above requires the phased implementation of emission standards and controls in the future that will dramatically decrease MSAT emissions through the use of cleaner fuels and cleaner more efficient engines. According to an FHWA analysis using USEPA's MOBILE6.2 emissions model (USEPA, 2004a), even with a projected increase in vehicle activity (vehicle-miles travelled, VMT) of 145 percent, a reduction of 72 percent in the priority MSAT emissions is projected from 1999 to 2050, as shown in Figure 4 (FHWA, 2009).

To meet the increased demand for rail intermodal capacity in the Birmingham region, NSR estimates the need for a new facility that can perform 165,000 annual lifts of trailers and containers from and to rail cars. The operation of the BRIMF is estimated by NSR to result in a reduction of more than 81 million VMT annually as a result of the diversion of trucks from highways between the BRIMF, the Northeast, western destinations, and various markets in the Southeast.

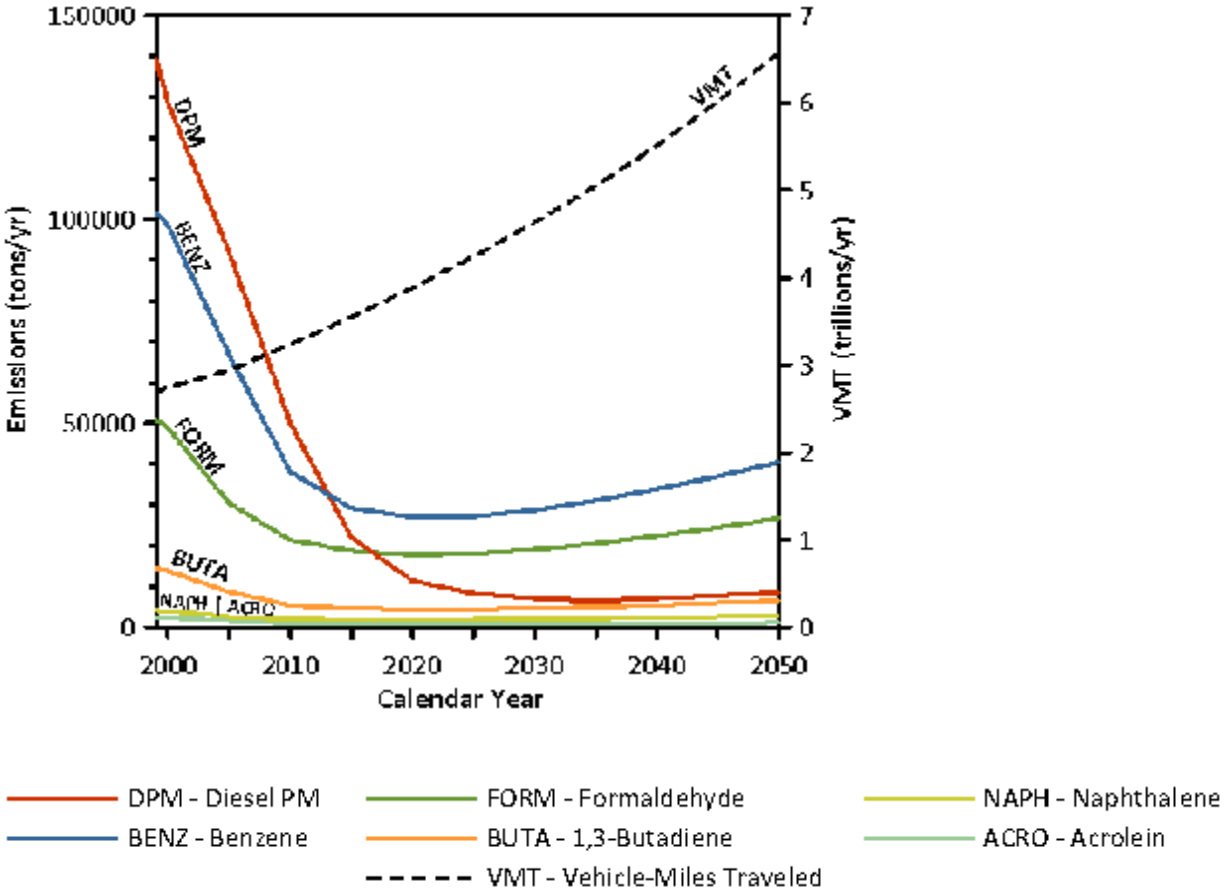
On February 3, 2006, the FHWA released "*Interim Guidance on Air Toxic Analysis in NEPA Documents*." (FHWA, 2006). The purpose of this document was to provide guidance on when and how to analyze MSAT emissions in the NEPA process for transportation related projects. This guidance was updated on September 30, 2009 (FHWA, 2009), but retains its interim status.

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

> 1) Exempt Projects and Projects with no Meaningful Potential MSAT Effects – no MSAT analysis required;
>
> 2) Projects with Low Potential MSAT Effects – these are projects "that serve to improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions" – qualitative MSAT assessment required; and,
>
> 3) Projects with High Potential MSAT Effects – these include projects that "create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location" . . . and are "proposed to be located in proximity to populated areas that concentrate high levels of diesel particulate matter in a single location" . . . and are "proposed to be located in proximity to populated areas".

The proposed Birmingham Regional IMF would be located near the City of McCalla and in the vicinity of residences and the McAdory Elementary School, which is adjacent to the southwest boundary of the proposed project site. MSAT emissions from the activities associated with the proposed BRIMF operation would be predominantly exhaust emissions from visiting locomotives, visiting trucks, and BRIMF dedicated support equipment. Acrolein, benzene, 1,3 butadiene, diesel PM, formaldehyde, naphthalene, and POM emissions for 2015 (the first year of full operation) have been estimated and are summarized in Table 11.

FIGURE 4
National MSAT Emission Trends 1999- 2050 for Vehicles Operating on Roadways Using USEPA's MOBILE6.2 Emissions Model



Notes:
(a) Source: http://www.fhwa.dot.gov/environment/airtoxic/100109guidmem.htm (FHWA, 2009)
(b) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(c) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

TABLE 11
Summary of Estimated Operational MSAT Emissions for 2015

	Annual Emissions for 2015 (tons/year) [a][b]						
Activity	**Acrolein**	**Benzene**	**1, 3 Butadiene**	**Diesel PM [i]**	**Formaldehyde**	**Naphthalene**	**POM**
Intermodal Yard Operation [c]	0.0053	0.0167	0.0095	0.16	0.114E	0.0002	0.00001
Onsite Rail Operations [d]	0.0084	0.0266	0.01150	1.53	0.181	0.0003	0.00002
Emergency Generator [e]	0.000002	0.000005	0.000003	0.0004	0.00003	0.00000006	0.000000004
Refrigeration Units [f]	0.00046	0.00145	0.00082	0.93	0.00985	0.00002	0.000001
Trucks [g][h]	0.0001	0.0032	0.002	0.91	0.022	0.00004	0.000003
Total Emissions	0.0151	0.0480	0.0271	1.83	0.326	0.000595	0.0000372

[a] Annual emissions are based on the facility operating at maximum design capacity (165,000 lifts/year).
[b] With the exception of visiting trucks and diesel PM, MSAT emissions are based on the ratio of onsite activity VOC emissions to truck VOC emissions multiplied by the air toxic emission rate estimated for trucks. Truck air toxic emission rates were estimated using USEPA's MOBILE6.2 emissions model (USEPA, 2004a). It is assumed that all $PM_{2.5}$ is Diesel PM.
[c] Intermodal Yard Operation emissions are based on USEPA Tier 3 emission factors for container/trailer handling equipment (Side Loaders, Cranes, and Hostler Trucks) (EPRI, 2009), and revised to reflect NSR's commitment to use only equipment fitted with Tier 4 diesel engines.
[d] Onsite rail emissions are based on the use of visiting line haul engines and USEPA emission factors (USEPA, 2009c).
[e] Emergency generator emissions are based on one 35 kW generator operating 2 hours per quarter (maintenance) (USEPA, 1996).
[f] Refrigerated container emissions assume that 3% of lifted containers are refrigerated, each operating 12 hours per day, and USEPA small engine emission factors (USEPA, 2009d).
[g] Truck emissions include 290 tractor trailers and 117 bob-tail trucks (no trailers) visiting the site (typical day), plus 5 BRIMF owned supervisor/maintenance trucks (light duty diesel pickup trucks).
[h] Each visiting truck would travel approximately 2 miles onsite and idle 13 minutes (25 total minutes). Each BRIMF maintenance truck would travel 20 miles/day
[i] All PM2.5 is assumed to be diesel PM for purposes of this analysis.

BRIMF emissions of acrolein, benzene, 1,3 butadiene, diesel PM, formaldehyde, naphthalene, and POM were compared to published 2002 Jefferson County emissions of those pollutants as shown in Table 12. Emissions of diesel PM were not compared because county-wide emissions of diesel PM are not available. The proposed facility's maximum estimated emissions of acrolein, benzene, 1,3 butadiene, formaldehyde, naphthalene, and POM represent only a very small percentage (0.0013 - 0.10%) of county-wide emissions.

TABLE 12
Comparison of Proposed BRIMF Operational MSAT Emissions with Existing Jefferson County Air Emissions

	Jefferson County Emissions	Birmingham Regional IMF [b]	
Pollutant	All County Sources (tons/yr) [a]	Onsite Emissions (tons/yr)	% of All County Sources
Acrolein	16.1	0.0151	0.094
Benzene	893	0.0480	0.0054
1, 3 Butadiene	88.3	0.0271	0.031
Formaldehyde	313	0.326	0.10
Naphthalene	31.8	0.0006	0.0019
POM	2.83	0.00004	0.0013
Diesel PM	- [c]	1.83	- [c]

[a] Source: http://www.epa.gov/air/data/index.html. (USEPA, 2009e), data are for 2002 (most recent year available).
[b] Maximum emissions attributable to maximum potential operation for CY2015 (first year of maximum operation).
[c] All PM2.5 emissions are assumed to be diesel PM for this analysis.
[d] Data not available for diesel PM emissions for Jefferson County

As shown in Table 12, the proposed project would represent a very small percentage increase in MSAT emissions compared to Jefferson County air toxic emissions in 2002 (most recent data available). It should also be noted that as a result of its nonroad diesel rules (USEPA, 2004b; USEPA 2004c), USEPA anticipates a significant reduction in air toxic emissions from nonroad engines. This is expected to be directly attributable to the increased use of more efficient engines over time as the fleet of nonroad engines is replaced. Additionally, while the facility emissions in Table 12 would represent a very small increase in MSAT emissions in Jefferson County, it is also noted that the proposed project would effectively divert a large number of trucks to rail that would otherwise provide long haul trucking services from the region to the Northeast and other regions in the U.S. This diversion would result in substantial net reductions in fuel usage (estimated by NSR to be more than 10.8 million gallons/year by 2020). By reducing the combustion of diesel fuel, MSAT emissions (acrolein, benzene, 1,3 butadiene, diesel PM, formaldehyde, naphthalene, and POM) would therefore be reduced considerably on a national and regional basis. Therefore, the proposed project is expected to result in an overall net air quality benefit on a large-scale basis, with a net reduction in MSAT emissions.

It should be noted that construction-related MSAT emissions are not anticipated to be discernible or measurable for this project, as construction is not planned to occur over an

extended period. However, there would be a small temporary increase in MSAT emissions in the immediate vicinity of construction activities.

3.2.4 Greenhouse Gases and Climate Change

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes. Other greenhouse gases are created and emitted solely through human or anthropogenic activities associated with fuel combustion and industrial activities. The principal greenhouse gases that are introduced into the atmosphere because of human activities are:

- Carbon Dioxide (CO_2): Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also naturally removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- Methane (CH_4): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- Nitrous Oxide (N_2O): Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- Fluorinated Gases: Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases") (USEPA, 2009i).

The proposed BRIMF would divert a large number of trucks to rail that would otherwise provide long haul transport from the Birmingham region to the Northeast and other areas of the United States (Cambridge Systematics, Inc., 2010). The estimated nationwide reduction in CO_2 emissions due to the implementation of this project would be approximately 120,691 tons per year, resulting directly from an estimated reduction in diesel fuel usage of more than 10.5 million gallons/year by the year 2020. By reducing the combustion of diesel fuel, the proposed project would effectively provide a net reduction in greenhouse gas emissions (primarily CO_2) that would otherwise result from the combustion of diesel fuel in trucks. Aside from diesel fuel combustion, there would be no processes or activities that would result in greenhouse gas air emissions from the project. Therefore, the project would have a substantially positive impact on air quality by effecting a net reduction in national and regional emissions, including greenhouse gases. The reduction of fossil fuel combustion and the corresponding reduction in greenhouse gas emissions as a result of the operation of the proposed facility are consistent with national policy objectives for climate change and energy independence.

4.0 Conclusions

1. The emission estimates and associated analyses of criteria pollutant emissions presented in this Report demonstrate that the operation of the proposed BRIMF would result in only a small increase in criteria pollutant emissions. When compared to the existing emissions in Jefferson County, the maximum estimated emissions from the project would result in an increase in emissions of less than 0.02 percent of any criteria pollutant.

2. The proposed project would effectively divert a large number of trucks to rail that would otherwise provide long haul trucking services from or through the region to the Northeast and other regions. This reduction would result in substantial net reductions in roadway congestion, fuel usage, and criteria pollutant, MSAT, and greenhouse gas emissions. The proposed project is therefore expected to result in an overall net air quality benefit on a large scale, with a net reduction in both criteria pollutant and MSAT emissions. This is consistent with national goals for congestion mitigation and air pollution reductions.

3. The information contained in this Report was used to qualitatively assess the potential for an adverse impact on ambient air quality levels of $PM_{2.5}$. The results of that analysis demonstrated that the maximum potential emissions of $PM_{2.5}$ from the proposed facility would be very low (1.83 tons/yr and less than 0.02 percent of the existing county-wide emissions inventory).

4. Jefferson County is currently classified as a nonattainment area for $PM_{2.5}$. A dispersion modeling analysis was performed that demonstrated that the emissions from the proposed facility (conservatively assuming facility operation at maximum design capacity) would not interfere with attainment of the annual $PM_{2.5}$ standard, nor would it cause or contribute to predicted violations of the NAAQS for $PM_{2.5}$, or increase the frequency or severity of nonattainment. The maximum predicted impact of the facility on ambient $PM_{2.5}$ concentrations is less than 3 percent of the annual NAAQS and less than 5 percent of the 24-hour NAAQS. When background air quality levels from the closest ambient monitors were included in the analysis, the combined impact was shown to be less than the NAAQS for $PM_{2.5}$, with no expected discernible impact on ambient levels of $PM_{2.5}$ as a result of facility operation.

5. Jefferson County is classified as an attainment area for NOx and CO. A dispersion modeling analysis of NOx and CO emissions from the proposed facility indicated that there should be no threat or exceedance of the NAAQS for those pollutants.

6. The operation of the proposed IMF would result in a minor increase in MSAT emissions in Jefferson County. The impact on ambient air quality levels of MSATs in the vicinity of the site is not expected to be measurable or discernible.

7. The emission estimates and associated analyses of MSAT emissions presented in this report indicate that the BRIMF would result in only a very small increase in MSAT emissions. When compared to the existing emissions in Jefferson County, the project would result in an increase in MSAT emissions of less than 0.1 percent of county-wide emissions. These small local emission increases would be further offset by USEPA mandated emission reductions associated with requirements for cleaner fuels and more stringent engine emission standards that would significantly reduce MSAT emissions as fleet average emissions from cars, trucks, as well as offroad diesel engines continue to improve over time.

8. The operation of the BRIMF would result in an overall reduction in air emissions on a regional and national basis by measurably reducing highway congestion and truck traffic between the Birmingham area and the Northeast and other markets. Therefore, the proposed project would have a substantially positive impact on air quality by effecting a net reduction in national and regional emissions, including greenhouse gases. The reduction of fossil fuel combustion and the corresponding reduction in greenhouse gas emissions as a result of the operation of the proposed facility is consistent with national policy objectives for climate change and energy independence.

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Attachment A
Emission Calculation Spreadsheets

1.0 Calculation of Emissions from Diesel Intermodal Yard Operations for 2015

1.1 Number of Container Lifts at Facility:

527 Container Lifts/week day
165000 Container Lifts/year

1.2 Calculation of Criteria Pollutant Emission Rates for IMF Equipment (Tier 4 Engines)

Type of Unit	Rated HP (hp)	# of Units	Emission Factor (gm/lift) [1] [2]					Emissions (lb/day) [3] [4]				
			CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 hp RTG Crane	300	4	11.4	2.80	38.2	-	2.29	13.3	1.79	24.4	0.00	0.27
150 hp Hostler Trucks	150	15	33.1	7.01	95.4	-	8.40	38.4	6.92	94	0.00	0.68
My-Jack 200 hp Side Loader	200	1	3.33	0.82	11.1		0.67	3.87	0.52	7.1	0.00	0.08
TOTAL EMISSIONS								**55.6**	**9.2**	**126**	**0.00**	**1.0**

(1) Emission factors are from *Green Intermodal Terminal Evaluation and a case study with CSX Railroad* . (EPRI, 2009)
(2) Emission factors are EPA Tier 3 emission rates for nonroad equipment (EPA, 2004; Table A-2, EPA 420-P-04-009, April 2004).
(3) Emissions (lb/day) = Number of Container Lifts/week day x Emission Factor (gm/lift) x 0.002205 (lb/gm) x ***Tier 4 Reduction Factor***
(4) PM reduced by 93% (Hostlers) and 90% (Cranes) to reflect McCalla Tier 4 commitment (see Tier 3/4 worksheets attached)
(5) NOx & VOC reduced by 15% (Hostlers) and 45% (Cranes) to reflect McCalla Tier 4 commitment (see Tier 3/4 worksheets attached)

Tier 4 Reduct. Factor	PM	NOx	VOC
Cranes	0.10	0.55	0.55
Hostlers	0.07	0.85	0.85

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Operation

Type of Unit	Rated HP [1] [2] (hp)	# of Units	Typical Daily Usage (hr/day)	Emission Factor (gm/ bhp-hr) [3]					Emissions (lb/day) [4]				
				CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Switching Engine (Moving)	1000	See Note	11.75	1.28	0.48	8.60	-	0.32	33.2	12.4	223	0.0	8.29
Rail Switching Engine (Idling)	100	See Note	21.25	1.28	0.48	8.60	-	0.32	6.00	2.25	40.3	0.0	1.50
TOTAL EMISSIONS									**39.2**	**14.7**	**263**	**0.0**	**9.79**

Refer to "McCalla Locomotive Operation" Spreadsheet for details on locomotive operation
(1) Road Locomotives when switching are operating in Notch 1,2 or 3 (about one-third each) - when a 4,000 hp road locomotive is in notch 2 it is operating at 1,000 hp.
(2) It is assumed that engines idle at approximately 100 hp (Road Engines).
(3) Emission Factors for Locomotives from Table 1 of "Emission Factors for Locomotives", EPA-420-F-09-025, April 2009.
(4) Rated HP (hp) x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x 0.002205 (lb/gm) = Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Trucks

1.4.1 Calculation of Mileage for Trucks

Vehicle Type[1]	Trucks/day [2]	Miles/Truck/ Day [2]	Total Miles/ Day
Trucks - HDDV (Visiting Trucks)	407	2.00	814
Trucks - LDDT (Onsite Maint. Trucks)	5	20.0	100
TOTAL (Trucks)			914

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds.
LDDT - Light-Duty Diesel Trucks with a GVWR less than 8500 pounds.
(2) Typical HDDV week day truck traffic includes 290 tractor trailers and 117 bob tails.
(3) Trucks - HDDV (miles/day) = 407 trucks x 2 miles/day = 814 miles/day

1.4.2 Calculation of Criteria Pollutant Emission Rates (non-idle operation)

Vehicle Type	Vehicle Model Year [5]	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Trucks - HDDV (Visiting Trucks)	EPA Default	407	814	2.10	0.65	4.16	0.013	0.075	3.76	1.17	7.46	0.024	0.13
Trucks - LDDT (Onsite Maint. Trucks)	EPA Default	5	100	1.10	0.53	0.53	0.0056	0.038	0.24	0.12	0.12	0.0012	0.008
TOTAL EMISSIONS									**4.01**	**1.28**	**7.58**	**0.025**	**0.14**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors (EPA-defined fleet averages for year of operation).
(3) The vehicle emission factors for the Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Emissions (lb/day)
(5) EPA Default represents fleet average emissions for year of interest (2015)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Idling

Vehicle Type	Vehicle Model Year [5]	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Trucks - HDDV	EPA Default	407	88.2	9.31	2.36	13.8	0.033	0.19	1.81	0.46	2.68	0.0064	0.036
TOTAL EMISSIONS									**1.81**	**0.46**	**2.68**	**0.0064**	**0.036**

(1) Each truck will idle 13 minutes onsite in addition to 2 miles of movement (@10 mph) on site (total onsite time: 25 minutes)
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors (EPA-defined fleet averages for year of operation).
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph as representative of idling.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Emissions (lb/day)
(5) EPA Default represents fleet average emissions for year of interest (2015)

1.5 Calculation of Criteria Pollutant Emission for IMF Emergency Generator

	Generator Rating		Heat Input	Run Time [1]	Annual Power Output		Annual Heat Input
Unit	(kw)	(hp)	(MMBtu/hr)	(hr/yr)	(Kw-hr/yr)	(hp-hr/yr)	(MMBtu/yr)
Emergency Generator	35.0	46.9	0.33	8.0	280	375	2.63
Total:	35.0	46.9	0.33	8.0	280	375	2.63

(1) The generator will operate 2 hours per quarter, 8 hours per year.

1.5.1 Calculation of Unit Rating

Unit rating (kw) x 1.341 (hp/kw) = Unit rating (hp)

1.5.2 Calculation of Heat Input

Generator Rating (kw) x 1.341 (hp/kw) x 7000 (BTU/hp-hr) / 1,000,000 (BTU/MMBtu) = Heat Input (MMBtu/hr)

Note: The emission factors in AP-42 take into account the approximately 35% efficiency of internal combustion engines.

1.5.3 Emission Factors for Criteria Pollutants, from AP-42, Section 3.3, Table 3.3-1 (10/96)

Constituent	Emission Factor (lb/hp-hr)
CO 0.0067	
NOx 0.031	
PM	0.0022
SO_2	0.0021
VOC 0.0025	

1.5.4 Calculation of Criteria Pollutant Emissions

Constituent	Annual Emissions (lb/yr)	Emissions [1] (lb/day)
CO 2.51		6.89E-03
NOx 11.6		3.20E-02
PM	0.83	2.27E-03
SO_2	0.77	2.11E-03
VOC 0.94		2.59E-03

(1) Emissions = Annual Emissions (lb/yr) x (yr/52 weeks) x (week/7 days)

1.6 Calculation of Criteria Pollutant Emission for Container Refrigeration Units

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Refrigeration Units	20	15.81	190	3,794	0.43	1.65	0.22	3.50	0.0048	0.20	5.94	0.80	12.6	0.017	0.71
TOTAL EMISSIONS											**5.94**	**0.80**	**12.6**	**0.017**	**0.71**

(1) The refrigeration unit run time will be 12 hour per day for each refrigerated container. The number of refrigerated containers is equal to 3 percent of the total number of container lifts per day.
527 (container lifts/day) x 0.03 x 12 (hours/day/refrigeration truck) = 190 hr/day

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.
Diesel Industrial Equipment, SCC 2270003060, AC/Refrigeration

(4) Emissions (lb/day = Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Emission (lb/day)

Source: 8/12/09 e-mail from Dana Helsley/NSR (757-664-5179) to George Howroyd/CH2M HILL (678-530-4170)

Contractor's expense to substitute "low emissions" hostler trucks at Crescent Corridor facilities

Facility	Expected Annual CC Lifts	Current Facility Assignment	Projected Hostler Purchases	Lifts per Month to Truck	Diesel-engined Standard Replacement Expense at $75,000 per Unit	Diesel-battery "Hybrid" Replacement Expense at $175,000 per Unit	Marginal Expense for Low-emission Hostler Trucks
Harrisburg Expansion	65,000	13	5	1,083	$375,000	$875,000	$500,000
Franklin County IMF	85,000	0	5	1,417	$375,000	$875,000	$500,000
Birmingham Regional	165,000	0	10	1,375	$750,000	$1,750,000	$1,000,000
Memphis Regional	327,000	0	19	1,434	$1,425,000	$3,325,000	$1,900,000
				TOTALS:	$2,925,000	$6,825,000	$3,900,000

NOTES:
1. Contractors' bid one hostler truck per 1,000 (for large IMF) - 1,500 (for compact IMF) lifts per month.
2. Change in facility scope requirements would be needed as contractors provide hostler truck equipment.
3. Current hostler count at Harrisburg is 13, averaged handling at 1,140 lifts per month per unit.

Applicable "Off-Highway" emissions standards for converting to Hybrid Technology from current Tier 3 equipment

	Standard w/ 170-hp Tier 3 Diesel engine	Hybrid w/ 40-hp Tier 3 Diesel engine	PerCent Reductions	Fuel saved at 3,000 hours per year	$$ Savings at $3.00 per gallon
Estimated fuel consumption (gph)	5.0	2.5	50%	7,500	$22,500
Carbon Monoxide (CO)(g/kW-hr)	5.0	5.0	76%	Fuel payback=	4.4 years
NOx and HC (g/kW-hr)	4.0 (Note 1)	7.5 (Note 1)	56%		
Particulate Matter (PM)(g/kW-hr)	0.30	0.30	76%		

Applicable "Off-Highway" emissions standards for converting to Tier 4 equipment from current Tier 3 equipment

	Standard w/ 170-hp Tier 3 Diesel engine	Standard w/ 170-hp Tier 4 Diesel engine	PerCent Reductions	Hybrid w/ 40-hp Tier 3 Diesel engine	Hybrid w/ 40-hp Tier 4 Diesel engine	PerCent Reductions
Carbon Monoxide (CO)(g/kW-hr)	5.0	5.0	0%	5.0	5.0	0%
Nitrogen Oxide (NOx)(g/kW-hr)	4.0 (Note 1)	3.3	15%	7.5 (Note 1)	7.5 (Note 1)	0%
Hydrocarbons (HC)(g/kW-hr)		0.19	15%			
Particulate Matter (PM)(g/kW-hr)	0.30	0.02	93%	0.30	0.03	90%

NOTES:
1. Hydrocarbons and Nitrogen Oxide standards are combined for EPA's Tier 3 compliance..
2. Tier 4 standards begin CY2012 and diesel engine manufacturers are investigating a variety of options for exhaust treatment applications to reach compliance. They are unlikely to commit to technology or pricing until the required emission reductions are achieved. Tier 4 will add treatment application and likely increased fuel usage expense to any diesel engine package, and other alternatives such as rechargeable electric-powered units (with no point source emissions) may become more cost-effective and sufficiently capable to warrant consideration.
3. CO and HC are poisonous if inhaled, NOx causes ozone and smog, PM pollution has been linked to lung cancer and heart disease
4. "GPH" is "Gallons Per Hour"; "g/kW-hr" is "Grams Per Kilowatt-Hour"

Source: 8/12/09 e-mail from Dana Helsley/NSR (757-664-5179) to George Howroyd/CH2M HILL (678-530-4170)

Railway's expense to substitute "low emission" overhead cranes at Crescent Corridor facilities

Facility	Expected Annual CC Lifts	Budgeted CC OH Cranes Estimate	Projected Purchases	Lifts to Overhead Crane	Diesel-engined Standard Replacement Expense at $1,100,000 per Unit	Diesel-battery "Hybrid" Replacement Expense at $1,500,000 per Unit	Marginal Expense for Low-emission Overhead Cranes
Harrisburg Expansion	65,000	$2,550,000	0	N/A	N/A	N/A	N/A
Franklin County IMF	85,000	$4,550,000	2	42,500	$2,200,000	$3,000,000	$800,000
Birmingham Regional	165,000	$4,550,000	3	55,000	$3,300,000	$4,500,000	$1,200,000
Memphis Regional	327,000	$7,250,000	5	65,400	$5,500,000	$7,500,000	$2,000,000
				TOTALS:	$11,000,000	$15,000,000	$4,000,000

NOTES:
1. Other lifting machines - Harrisburg requirement at 2 each $850,000 sideloaders (w/legs); Greencastle, Birmingham, and Memphis requirements at 1 each $500,000 sideloader (wo/legs).
2. Also have possibility of retrofitting standard diesel-powered units with diesel-battery propulsion (no cost estimate).

Applicable "Off-Highway" emissions standards for converting to Hybrid Technology from current Tier 3 equipment

	Standard w/ 315-hp Tier 3 Diesel engine	Hybrid w/ 135-hp Tier 3 Diesel engine	PerCent Reductions	Fuel saved at 3,500 hours per year	$$ Savings at $3.00 per gallon
Estimated fuel consumption (gph)	6.4	2.5	61%	13,650	$40,950
Carbon Monoxide (CO)(g/kW-hr)	3.5	5.0	39%	Fuel payback=	9.8 years
NOx and HC (g/kW-hr)	4.0 (Note 1)	4.0 (Note 1)	57%		
Particulate Matter (PM)(g/kW-hr)	0.20	0.30	36%		

Applicable "Off-Highway" emissions standards for converting to Hybrid Technology from current Tier 3 equipment

	Standard w/ 315-hp Tier 3 Diesel engine	Standard w/ 315-hp Tier 4 Diesel engine	PerCent Reductions	Hybrid w/ 135-hp Tier 3 Diesel engine	Hybrid w/ 135-hp Tier 4 Diesel engine	PerCent Reductions
Carbon Monoxide (CO)(g/kW-hr)	3.5	3.5	0%	5.0	5.0	0%
Nitrogen Oxide (NOx)(g/kW-hr)	4.0 (Note 1)	2.0	45%	4.0 (Note 1)	3.3	15%
Hydrocarbons (HC)(g/kW-hr)		0.19	45%		0.19	15%
Particulate Matter (PM)(g/kW-hr)	0.20	0.02	90%	0.30	0.02	93%

NOTES:
1. Hydrocarbons and Nitrogen Oxide standards are combined for EPA's Tier 3 compliance..
2. Tier 4 standards begin CY2012 and diesel engine manufacturers are investigating a variety of options for exhaust treatment applications to reach compliance. They are unlikely to commit to technology or pricing until the required emission reductions are achieved. Tier 4 will add treatment application and likely increased fuel usage expense to any diesel engine package, and other alternatives such as rechargeable electric-powered units (with no point source emissions) may become more cost-effective and sufficiently capable to warrant consideration.
3. CO and HC are poisonous if inhaled, NOx causes ozone and smog, PM pollution has been linked to lung cancer and heart disease
4. "GPH" is "Gallons Per Hour"; "g/kW-hr" is "Grams Per Kilowatt-Hour"

McCalla Locomotive Operations

Train	Arrive	Activity at BRIMF	Depart	Total Hours at Terminal	Moving Hours	Idle Hours	No. of Engines	Total Switch Moving Time (Engine hrs) (1)	Total Switch Idle Time (Engine hrs) (2)	Locomotive Type	Notes
22Q	02:30	Setout cars (est 1,000+ ft)	03:30	1	0.25	0.75	2	0.50	1.50	Mixed Road Units	
BETBIR01	03:00	TERMINATE - RAMP CARS (8,550 ft)		1	0.75	0.25	3	2.25	0.75	Dash 9	
22R	9:30	Pickup cars (approx 1,550 - 2,000 ft)	10:45	1.25	0.25	1.00	2	0.50	2.00	Mixed Road Units	
225	10:17	Pickup cars (approx 1,000 ft)	11:30	1.25	0.25	1.00	3	0.75	3.00	Distributed Units	UP Power - NS uses 3 of 4 based on rules
22G	20:13	Setout cars (est 2,200 ft)	21:30	1.25	0.25	1.00	3	0.75	3.00	Distributed Units	UP Power - NS uses 3 of 4 based on rules
BIRBET01		ORIGINATE - BUILD TRAIN (8,550 ft)	23:00	2	1.00	1.00	3	3.00	3.00	Dash 9	
		Misc Switching		12	4.00	8.00	1	4.00	8.00	GP38-2	
				19.75	**6.75**	**13**		**11.75**	**21.25**		

Notes:
Note:

Locomotive Operational Information provided by Lee Cochran/NSR (757-629-2735) and Gibson Barbee/NSR (540-981-5108)

Road Locomotives when switching are operating in Notch 1,2 or 3 (about one-third each) - when a 4,000 hp road locomotive is in notch 2 it is operating at approximately 1,000 hp.

NS tests of Gensets with three 700 hp engines are usually using two of the three and operating in the 700 to 1,400 hp range (avg 1,000 hp)

(1) Assume that engines during rail car movement are operating at 1000 HP for emission calculations (Road Engines)
(2) Assume that engines during idle are operating at 100 HP (Road Engines)
Emission Factors: "Emission Factors for Locomotives", EPA-420-F-09-025, April 2009, Table 1 (Tier 0).

APPENDIX B

Threatened and Endangered Species Information and Consultation

1

TABLE B-1
Federal and State Protected Species Potentially Occurring in Jefferson and Tuscaloosa Counties, Alabama

Common Name	Scientific Name	Federal Status [a]	Alabama Status [b]	Habitat & Distribution Notes	County of Occurrence	
					Jefferson County	Tuscaloosa County
Plants						
Leafy prairie clover	*Dalea foliosa*	LE	--	Open limestone glades and barrens with exposure to full sun and periodic fire; habitat for this species does not occur at the proposed BRIMF site; no individuals or habitat observed during field surveys.	X	--
White fringeless orchid	*Platanthera integrilabia*	C	--	Wet, flat, boggy areas at the head of streams or seepage slopes in partially shaded areas; often associated with sandstones; no suitable habitat or individuals observed during field surveys.	--	X
Harperella	*Ptilimnium nodosum*	LE	--	Rocky or gravelly shoals of clear, swift-flowing streams; and the edges of intermittent pineland ponds or low, wet savannah meadows on the Coastal Plain; no suitable habitat or individuals observed during field surveys.	--	X
Georgia aster	*Symphyotrichum georgianum*	C	--	Upland oak-hickory-pine forests, openings, and other early successional habitats such as roadsides and utility rights-of-way; no suitable habitat or individuals observed during field surveys.	--	X
Insects						
Mitchell's satyr	*Neonympha mitchellii*	LE	--	Very spotty distribution in several widely disjunct regions of the eastern U.S.; restricted in occurrence to calcareous fen habitats (wetlands) or sedge meadows; no suitable habitat or individuals observed during field surveys.	--	X
Mussels						
Upland combshell	*Epioblasma metastriata*	LE	SP	Extant populations currently unknown; not found in Black Warrior and Cahaba River systems for several decades; mollusk surveys did not detect this species in the proposed project area.	X	--
Fine-lined pocketbook	*Hamiota altilis*	LT	SP	Sand/gravel/cobble substrates in moderate to swift currents in small creeks and rivers above the Fall Line; potential to find additional populations in small to medium streams; mollusk surveys did not detect this	X	--

TABLE B-1
Federal and State Protected Species Potentially Occurring in Jefferson and Tuscaloosa Counties, Alabama

Common Name	Scientific Name	Federal Status [a]	Alabama Status [b]	Habitat & Distribution Notes	County of Occurrence	
					Jefferson County	Tuscaloosa County
				species in the proposed project area.		
Orange-nacre mucket	*Hamiota perovalis*	LT	SP	Stable sand, gravel, and cobble substrates with moderate to swift current in large streams and small rivers; mollusk surveys did not detect this species in the proposed project area.	X	X
Alabama moccasinshell	*Medionidus acutissimus*	LT	SP	Sand/gravel/cobble shoals with moderate to swift current in streams and small rivers; known populations are small and localized; mollusk surveys did not detect this species in the proposed project area.	--	X
Southern clubshell	*Pleurobema decisum*	LE	SP	Sand, gravel, and cobble substrates in shoals and runs of creeks to large rivers; historically occurred in every major stream system in the Mobile River basin; presently occurs in scattered isolated tributary localities; no extant populations known from the Cahaba River basin; mollusk surveys did not detect this species in the proposed project area.	X	X
Ovate clubshell	*Pleurobema perovatum*	LE	SP	Sand and gravel substrates in riffles, runs, and shoals of small creeks to large rivers; historically widespread in the Mobile River basin, extant populations are localized in tributaries, including some in the Cahaba River, but no known extant populations in the project vicinity; mollusk surveys did not detect this species in the proposed project area.	--	X
Dark pigtoe	*Pleurobema rubellum*	LE	SP	Sand, gravel, and cobble shoals and rapids in large streams and small rivers; known populations are localized and occur above the Fall Line; mollusk surveys did not detect this species in the proposed project area.	--	X
Inflated heelsplitter (=Alabama heelsplitter)	*Potamilus inflatus*	LT	SP	Soft, stable substrates in slow to moderate currents; endemic to Mobile basin primarily below the Fall Line; mollusk surveys did not detect this species in the proposed project area.	--	X
Triangular kidneyshell	*Ptychobranchus greenii*	LE	SP	Sand/gravel shoals and runs in large streams and small rivers; mollusk surveys did not detect this species in the proposed project area.	X	--

TABLE B-1
Federal and State Protected Species Potentially Occurring in Jefferson and Tuscaloosa Counties, Alabama

Common Name	Scientific Name	Federal Status [a]	Alabama Status [b]	Habitat & Distribution Notes	County of Occurrence	
					Jefferson County	Tuscaloosa County
Snails						
Round rocksnail	*Leptoxis ampla*	LT	SP	Cobbles, gravel, and other hard substrates in strong currents of rapids and shoals; currently known from the Cahaba River, the lower reach of Shades Creek, and Mud Creek; mollusk surveys did not detect this species in the proposed project area.	--[c]	--
Plicate rocksnail	*Leptoxis plicata*	LE	SP	Cobbles, gravel, and hard substrates in strong currents of rapids and shoals; presently known only from Black Warrior River basin (Jefferson and Blount Counties, AL); mollusk surveys did not detect this species in the proposed project area.	X	X
Fish						
Alabama shad	*Alosa alabamae*	--	SP	Anadromous species found in larger Gulf Coast rivers; adults live in salt water but migrate upstream into rivers to spawn; no potentially suitable habitat observed or individuals collected during the fish surveys.	--	X
Blue shiner	*Cyprinella caerulea*	LT	SP	Rocky runs and pools of small to medium rivers; in Alabama, currently known only from Weogufka and Choccolocco Creeks and lower Little River; not found in Cahaba River basin since 1971; fish surveys did not detect this species in the proposed project area.	X	--
Vermilion darter	*Etheostoma chermocki*	LE	SP	Gravel-bottomed pools with moderate current in small to medium streams; known only from headwaters of Turkey Creek in the Black Warrior River basin, Jefferson Co., Alabama; fish surveys did not detect this species in the proposed project area.	X	--
Watercress darter	*Etheostoma nuchale*	LE	SP	Vegetated springs; all known sites from the Black Warrior River basin in Jefferson Co., Alabama; potentially suitable habitats were not observed and fish surveys did not detect this species in the proposed project area.	X	--
Rush darter	*Etheostoma phytophilum*	C	SP	Shallow spring runs with emergent vegetation; known only from three disjunct populations in Jefferson and Etowah Counties, Alabama within the Black Warrior	X	--

TABLE B-1
Federal and State Protected Species Potentially Occurring in Jefferson and Tuscaloosa Counties, Alabama

Common Name	Scientific Name	Federal Status [a]	Alabama Status [b]	Habitat & Distribution Notes	County of Occurrence	
					Jefferson County	Tuscaloosa County
				River basin; potentially suitable habitats were not observed and fish surveys did not detect this species in the proposed project area.		
Cahaba shiner	*Notropis cahabae*	LE	SP	Main channels of larger streams and rivers with slow to moderate current and clean, sand or sand/gravel substrates; currently known from the Cahaba River and the lower reach of Shades Creek; fish surveys did not detect this species in the proposed project area.	X	--
Frecklebelly madtom	*Noturus munitus*	--	SP	Rocky riffles of small to large rivers, often in or near aquatic vegetation; fish surveys did not detect this species in the proposed project area.	--	X
Goldline darter	*Percina aurolineata*	LT	SP	Fast rocky runs in small to medium rivers; currently known from the Cahaba River and the lower reach of Shades Creek; fish surveys did not detect this species in the proposed project area.	X	--
Paddlefish	*Polyodon spathula*	--	SP	Occurs primarily in large rivers and reservoirs; in Alabama, found primarily in the Coastal Plain; no potentially suitable habitat observed or individuals collected during the fish surveys.	--	X
Amphibians						
Seal salamander	*Desmognathus monticola*	--	SP	Cool shaded ravines with small permanent to semi-permanent streams; no potentially suitable habitat was identified within the project area; the field surveys did not detect this species in the project area.	X	--
Black Warrior waterdog	*Necturus alabamensis*	C	--	Restricted to upper Black Warrior River basin in medium to large rocky streams; potentially suitable habitat for this species unlikely to occur in the small streams at the proposed BRIMF site; the field surveys did not detect this species in the project area.	X	X
Reptiles						
Alligator snapping turtle	*Macrochelys temminckii*	--	SP	Large streams and rivers; impoundments; river swamps; occurs mainly in Coastal Plain; no potentially suitable habitat or individuals observed during the field surveys.	--	X
Flattened musk turtle	*Sternotherus*	LT	SP	Large creeks and small rivers with deeper pools and	X	X

TABLE B-1
Federal and State Protected Species Potentially Occurring in Jefferson and Tuscaloosa Counties, Alabama

Common Name	Scientific Name	Federal Status [a]	Alabama Status [b]	Habitat & Distribution Notes	County of Occurrence	
					Jefferson County	Tuscaloosa County
	depressus			an abundance of submerged boulders with crevices; endemic to Alabama and restricted to Black Warrior River basin above the Fall Line; no individuals or habitat observed during the field surveys.		
Birds						
Bald eagle	*Haliaeetus leucocephalus*	BGEPA[d]	SP	Edges of inland lakes & large rivers, estuarine areas, and seacoasts; no potentially suitable habitat or individuals observed during the field surveys.	--	X
Wood stork	*Mycteria americana*	LE	SP	Freshwater and brackish wetlands (foraging) and cypress or wooded swamps (nesting); in Alabama, restricted mainly to Coastal Plain; no potentially suitable habitat or individuals observed during the field surveys	--	X
Red-cockaded woodpecker	*Picoides borealis*	LE	SP	Nests in mature, open pine forests with grassy or sparse understory vegetation; extensive pine woodlands required for foraging; no potentially suitable habitat or individuals observed during the field surveys.	--	X
Bewick's wren	*Thryomanes bewickii*	--	SP	Dense undergrowth, overgrown fields, thickets, and brush in open or semi-open habitat; potentially suitable habitat may be present but this species was not identified within the project area at the time of surveys.	X	--

Sources: ANHP (2009); USFWS (1988, 2000, 2004, 2005, 2008a, 2008b, 2008c, 2009a, 2009b, 2009c); Marshall, Matthew D, Alabama Department of Conservation and Natural Resources (ADCNR), August 4, 2009 Letter to Alfedo Acoff, ALDOT; NatureServe (2009); Williams et al. (2008); Boschung and Mayden (2004); Mettee et al. (1996); Dinkins Biological Consulting (2009); Gangloff (2009); Mirarchi (2004); Mirarchi, Garner et al. (2004); Mirarchi, Bailey et al. (2004); Chafin (2007); Black and Vaughan, 2005.

[a] Federal status: LT = listed threatened, LE = listed endangered, C = candidate.

[b] Alabama status: SP = state protected.

[c] Neither ANHP (2009) nor USFWS (2009a) list round rocksnail as occurring in Jefferson or Tuscaloosa Counties but the species is currently known from the Cahaba River and the lower reaches of Shades Creek downstream of the project area in Bibb County.

[d] Although no longer listed as Federally threatened, the bald eagle continues to be protected by the Bald and Golden Eagle Protection Act (BGEPA).

ALABAMA DEPARTMENT OF TRANSPORTATION
1409 Coliseum Boulevard, Montgomery, Alabama 36110

Bob Riley
Governor

Joe McInnes
Transportation Director

February 2, 2010

Mr. William J. Pearson
Field Supervisor
U.S. Fish And Wildlife Service
1208-B Main Street
Daphne, AL 36526

ATTN: Mr. Bruce Porter

RE: Proposed Birmingham Regional Intermodal Facility
Jefferson/Tuscaloosa Counties

Dear Mr. Pearson:

Please find enclosed a Technical Memorandum and the Final Technical Reports discussing the Threatened/Endangered Species survey findings for the above referenced project.

No federally listed species were found in the project corridor. In accordance with Section 7 of the Endangered Species Act, we respectfully request that you concur with the findings and reports for this project.

Your assistance in this matter is appreciated. If further information is needed, please contact Mr. Steve Layman at (678) 530-4227 or Tony Shaddix at (334) 242-6145.

Sincerely,

William F. Adams, P.E.
State Design Engineer

By: Tony Shaddix
for Alfedo Acoff, Coordinator
Environmental Technical Section

ts

Enclosures

cc: FHWA
Mr. James Cherry, USACE
Mr. Steve Layman, CH2M HILL
file 2

2010-TA-0269

ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36110

Bob Riley
Governor

Joe McInnes
Transportation Director

February 2, 2010

Mr. William J. Pearson
Field Supervisor
U.S. Fish And Wildlife Service
1208-B Main Street
Daphne, AL 36526

Post-it® Fax Note 7671 | Date 2/17/10 | # of pages ▶ 1
To Alfedo Acoff | FROM: Sandy M
Co./Dept. ALDOT | Co.: USFWS
Phone # | Phone #: 251-441-5184
Fax # 334-353-6300 | Fax #: 251-441-6222

ATTN: Mr. Bruce Porter

RE: Proposed Birmingham Regional Intermodal Facility
Jefferson/Tuscaloosa Counties

Dear Mr. Pearson:

Please find enclosed a Technical Memorandum and the Final Technical Reports discussing the Threatened/Endangered Species survey findings for the above referenced project.

No federally listed species were found in the project corridor. In accordance with Section 7 of the Endangered Species Act, we respectfully request that you concur with the findings and reports for this project.

Your assistance in this matter is appreciated. If further information is needed, please contact Mr. Steve Layman at (678) 530-4227 or Tony Shaddix at (334) 242-6145.

Sincerely,

William F. Adams, P.E.
State Design Engineer

By: Tony Shaddix
for Alfedo Acoff, Coordinator
Environmental Technical Section

ts

Enclosures

cc: FHWA
Mr. James Cherry, USACE
Mr. Steve Layman, CH2M HILL
file 2

U.S. Fish and Wildlife Service
1208-B – Daphne, Alabama 36526
Phone: 251-441-5181 Fax: 251-441-6222

Based upon our records and the information provided in your letter, we agree with your findings that no federally listed species/critical habitat occur in the project area. **If project design changes are made, please submit new plans for review.**

William J. Pearson 2/12/2010
William J. Pearson, Field Supervisor Date #6

APPENDIX C

State Historic Preservation Office Consultation

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

FRANK W. WHITE
EXECUTIVE DIRECTOR

TEL: 334-242-3184
FAX: 334-240-3477

March 19, 2010

Alfedo Acoff
Alabama DOT
1409 Coliseum Boulevard
Montgomery, Alabama 36110-3050

Re: AHC 10-0458
Birmingham Regional Intermodal Facility
Jefferson & Tuscaloosa Counties, Alabama

Dear ~~Ms. Acoff:~~ Alfedo:

Upon review of the information forwarded by your office, we have determined that the proposed project should not affect any archaeological resources listed on or eligible for the National Register of Historic Places (NRHP). Furthermore, we agree that the railroad bed is not eligible for the NRHP. However, regarding the Roser Farm, the report does not evaluate this resource as a complex. It is our opinion that this resource is eligible for the NRHP as a farm complex under Criterion A, agriculture.

We appreciate your efforts on this project and we look forward to working with you to its conclusion. Should you have any questions, please contact me at (334) 230-2667. Please have the AHC tracking number referenced above available and include it with any correspondence.

Truly yours,

Elizabeth

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/GCR/gcr

ALABAMA DEPARTMENT OF TRANSPORTATION

Design Bureau
1409 Coliseum Boulevard, Montgomery, Alabama 36110
P. O. Box 303050, Montgomery, Alabama 36130-3050
Phone: 334-242-6178 FAX: 334-269-0826

Bob Riley
Governor

Joe McInnes
Transportation Director

May 14, 2010

Ms. Elizabeth Ann Brown
Deputy State Historic Preservation Officer
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama 36130-0900

RE: **AHC 10-0458 Cultural Resources: No Adverse Effect**
ALDOT Project Birmingham Regional Intermodal Facility (BRIMF) in McCalla, Jefferson County (and a portion of Tuscaloosa County.) ALDOT PROJECT # STAAL 100054259

Dear Ms. Brown:

Attached, please find an addendum to the *Phase I Cultural Resource Survey of the Norfolk Southern Railway Company Birmingham Intermodal Facility near McCalla* (Conducted by Brockington and Associates in January 2010) known as ALDOT Project Birmingham Regional Intermodal Facility (BRIMF.) The proposed undertaking will construct a new Birmingham Regional Intermodal Facility (BRIMF) in McCalla, Alabama in southwestern Jefferson County (and eastern Tuscaloosa County.)

The addendum addresses the Rosser Farm as a complex. Based on revised dates of construction and diminished integrity of the farm complex, the addendum to the survey reinforces the original determination.

Therefore, it is our submitted opinion that *ALDOT Project* BRIMF will have **no adverse effect** on any cultural resources listed in or eligible for listing in the *National Register of Historic Places.* As per 36 CFR part 800 we understand that if, after 30 days, our office has not received a response to this information we will assume your agency has no objections and proceed with the project. We appreciate any and all efforts assisting us in expediting this project. If you have any questions please feel free to call Brandon Brazil of our staff at 353-6645.

Sincerely,

William F. Adams, P.E.
State Design Engineer

By: _____
Ms. Alfredo Acoff, Coordinator
Environmental Technical Section

CONCUR: _____ DATE: _____

AA/WBT/bgb
cc: FHWA

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

FRANK W. WHITE
EXECUTIVE DIRECTOR

TEL: 334-242-3184
FAX: 334-240-3477

June 21, 2010

Alfedo Acoff
Alabama DOT
1409 Coliseum Boulevard
Montgomery, Alabama 36110

Re: AHC 10-0458
COE SAM-2009-1522-JSC
Intermodel Facility for Norfolk Southern Railroad
Jefferson County, Alabama

Dear ~~Ms. Acoff:~~ Alfedo:

Upon review of the information forwarded by your office, we continue to state that no archaeological resources listed on or eligible for the National Register of Historic Places (NRHP) should be affected by this project. However, the Roster Farm Complex is eligible for the NRHP and we recommend HABS Level 2 documentation for the complex along with a historic context of dairy farms in Jefferson County as mitigation for the adverse effect to this site.

We appreciate your efforts on this project. Should you have any questions, please contact Joseph Glazer at (334) 230-2653. Please have the AHC tracking number referenced above available and include it with any correspondence.

Truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/RJG/GCR/gcr

cc: James S. Cherry, COE

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

FRANK W. WHITE
EXECUTIVE DIRECTOR

TEL: 334-242-3184
FAX: 334-240-3477

July 8, 2010

Ms. Alfedo Acoff, Coordinator
Environmental Technical Section
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, AL 36130-3050

Re: AHC 10 - 0458, Birmingham Regional Intermodal Facility

Dear Alfedo:

Thank you very much for the additional information about the Rosser Farm, to be affected by the above-referenced project. After review of this information, we concur with your conclusion that the farm complex is not eligible for the National Register of Historic Places.

Truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

APPENDIX D

ALDOT Floodplain Form

LOCATION RISK ASSESSMENT RECORD
FOR
LOCATION OF FLOODPLAIN ENCROACHMENT

Date: 02/18/2010

PROJECT NO. SAM-2009-1522-JSC

PROJECT DESCRIPTION: Norfolk Southern Railway Company - BRIMF

PREPARED BY: HNTB Corporation

NFIP PARTICIPATION
(Fill In)

County Jefferson PARTICIPATING X
NON-PARTICIPATING

CITY McCalla PARTICIPATING
NON-PARTICIPATING X

ENCROACHMENT DETERMINATION:
(Date of Map)

FHBM FBFM

FIRM 9/29/06 HUD STUDY

OTHER SOURCES:

U.S.G.S. TOPO MAPPING FLOOD PRONE AREA MAP

PLAN-PROFILE SHEET X

EXISTING STRUCTURE(S): (FILL IN)

LENGTH: 45 Feet
P.G.: 0.01%
SKEW: 90°
CENTERLINE ELEV.: 493.26 Ft

PROJECT SITE EVALUATION ALTERNATIVE NO.	YES OR NO
LONGITUDINAL ENCROACHMENT?	Yes
SIGNIFICANT ENCROACHMENT?	Yes
ALTERNATIVES TO SIGNIFICANT ENCROACHMENT?	No
ONLY PRACTICABLE ALTERNATIVE (ONLY IF SIGNIFICANT ENCR.)?	Yes
SIGNIFICANT RISK?	No
MEASURES TO MINIMIZE FLOOD PLAIN IMPACTS?	Yes
DIRECT OR INDIRECT SUPPORT TO BASE FLOOD PLAIN DEVELOPMENT?	Yes
POTENTIAL FOR INTERRUPTION OF EVACUATION ROUTE?	No

YES OR NO

IMPACT ON BENEFICIAL FLOOD PLAIN VALUES Yes

IF YES EXPLAIN Proposed project requires total of 1329.50 feet of Perennial stream relocation.

MEASURES TO RESTORE AND PRESERVE BENEFICIAL VALUES? Yes

IF YES EXPLAIN Storm water detention ponds are designed for the site to detain up through the 100-yr storm event and release the water at a rate no greater than the existing 2 year flow rate. Bottomless and submerged culverts are being utilized to accommo--date stream relocation.

TYPE AND DEGREE OF DEVELOPMENT ON THE FLOOD PLAIN One end of the regional inter-modal facility is encroaching on to the flood plain. The development is located to minimize the footprint on the flood plain.

PROPOSAL AFFECTING A REGULATORY FLOODWAY? Yes

Proposed facility will fill in a regulatory floodway.

PROJECT COORDINATION WITH FEMA REQUIRED? No

IF YES WHEN?

OTHER COMMENTS Norfolk Southern will provide Jefferson County with required data to coordinate with FEMA.

CONCLUSION:

Under the guidelines provided in the Alabama Highway Department's "Screening Process for the Design of Flood plains and Federal Aid Projects", this project qualifies for the level of analysis under Category_____.

APPENDIX E

NRCS Prime Farmland Information

CH2MHILL TELEPHONE CONVERSATION RECORD

Attendees:

James Blanding
ETS / Design Section
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, AL 36110
Phone: 334.242.6150
email: blandingj@dot.state.al.us

Date: February 8, 2010

Time: 1000 EST

Notes By: Darren Bishop/CH2M HILL

Subject: Birmingham Regional Intermodal Facility Prime Farmland Soils

Action Items & Due Dates

1. Complete Section IV of the NRCS Form AD1006 - Prime Farmland Conversion Impact Rating Form for the BRIMF project. Revise text in BRIMF EA to reflect impact rating score.

Items Discussed

- Completed Part IV of NRCS Form AD1006 by scoring individual categories based on the location, surrounding land uses, and farm practices of the BRIMF property following CFR § 658.5 (b).
- The resulting BRIMF prime farmland impact rating score was 40 out of a possible 160.
- Blanding noted that there was no need to submit the form to the NRCS. The typical procedure for ALDOT for properties scoring under 60 is to include the form as an attachment to the EA and describe the basis for the scoring in the EA text.

Susemihl, Robyn/ATL

From: Shaddix, Tony [shaddixt@dot.state.al.us]
Sent: Friday, February 05, 2010 2:13 PM
To: Bishop, Darren/TPA
Cc: Blanding, James; Chambless, Jr., Jesse J.
Subject: RE: Norfolk Southern - BRIMF Prime Farmland Soils

I would suggest that y'all rank the site and if it is under 60, then you could document and put the form in the document. James can advise you and send you an example of how to rank one. Unless you have an on-going farming area or timber management area, the project should rank low. But, if your part ranks above 60, then it would need to be sent to NRCS for their ranking.

From: Darren.Bishop@CH2M.com [mailto:Darren.Bishop@CH2M.com]
Sent: Friday, February 05, 2010 1:04 PM
To: Blanding, James
Cc: Shaddix, Tony
Subject: RE: Norfolk Southern - BRIMF Prime Farmland Soils

James,

It was good to talk to you today. As we discussed, attached is the letter and associated attachments that were prepared by CH2M HILL for submittal to the NRCS regarding prime farmlands within the footprint of the BRIMF (note that the attachments are all provided in the .PDF version only). Please review and let me know if ALDOT has provided different information to the NRCS in the past so that we are on the same page with this submittal. Once I receive your comments, I'll revise the letter accordingly and submit it to the NRCS through the appropriate project channels.

Thanks,
Darren

From: Bishop, Darren/TPA
Sent: Thursday, February 04, 2010 3:35 PM
To: 'shaddixt@dot.state.al.us'
Subject: Norfolk Southern - BRIMF Prime Farmland Soils

Tony,

I have been involved on the Norfolk Southern Birmingham Regional Intermodal Facility project from the perspective of soil and geological topics. During the evaluation of the project, it was learned that the project footprint potentially crosses an NRCS map unit classified as Prime Farmland. When this topic was brought up by CH2M HILL during a call that ALDOT was participating in, we were asked to contact you to coordinate our consultation with the NRCS.

I've been in and out of the field over the past week or so - and it sounds as through you have as well. I do not have field work scheduled until late next week and available on my cell phone (listed below) at any time to discuss this topic.

I look forward to talking with you soon.

Thanks,
Darren Bishop, PWS

CH2M HILL
4350 West Cypress Street
Tampa, Fl 33607
813.874.6522 ext.4145
813.476.2652 (mobile)

CH2M HILL
Northpark 400
1000 Abernathy Road
Atlanta, GA
30328
Tel 770.604.9095

January 27, 2010

Milton Tuck
Resource Soil Scientist
Natural Resources Conservation Service - Tuscaloosa MLRA-SSO
PO Box 861482
Tuscaloosa, AL 35486

Subject: Proposed Birmingham Regional Intermodal Facility
Potential Prime Farmland Soil
NRCS Form AD1006 - Completed Part I

Mr. Tuck,

Enclosed is NRCS Form AD1006 with Part I and Part III completed for the proposed Birmingham Regional Intermodal Facility (BRIMF). To facilitate your review, a location map, soil series map, and aerial photograph of the proposed BRIMF project site are also enclosed.

As currently proposed, approximately 2.0 acres within the 280 acre BRIMF project site is classified as prime farmland soils (Etowah loam and Decatur loam map units) by the United States Department of Agriculture (USDA). No soils within the proposed BRIMF project site are classified by the USDA as unique farmland or soils of statewide importance.

The current land use of the Etowah loam and Decatur loam soils is non-irrigated pasture. Current land use in a half mile vicinity of the site is predominantly (79 percent) rural (pasture or mixed forest) or low density residential to the east and south of the site along Eastern Valley Road. The balance of the vicinity (20 percent) to the north and west of the site is a mix of transportation right of way and industrial / commercial uses with a small pocket of institutional lands associated with a school and daycare to the south.

It is our understanding that you would complete Part II, Part IV, and Part V of the enclosed NRCS Form AD1006 and return it to CH2M HILL at the address listed above within 45 days. Part VI and VII of the form would then be completed by the United States Corps of Engineers, which is the Federal permitting agency with jurisdiction over the BRIMF project.

If I can provide any additional information, please do not hesitate to contact me at 678.530.4119 or Darren Bishop at 813.476.2652.

Sincerely,

CH2M HILL

Lillian Furlow
Project Manager

Darren Bishop
Associate Scientist

c: Charlie McMillan/Norfolk Southern Railway Company

Four Copies Provided

Attachments: A - NRCS From AD1006

B - Birmingham Regional IMF Site Location Map

C - Birmingham Regional IMF Soil Map

D - Birmingham Regional IMF Site Vicinity Aerial Photo

Attachment A
NRCS Form AD1006

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 1/4/10
Name Of Project Birmingham Regional Intermodal Facility	Federal Agency Involved United States Corps of Engineers
Proposed Land Use Industrial	County And State Jefferson County, Alabama
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).* Yes ☐ No ☐	Acres Irrigated	Average Farm Size
Major Crop*(s)*	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	2.0			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	2.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

This form was electronically produced by National Production Services Staff

Clear Form

Form AD-1006 (10-83)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 – Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 – Originator will send copies A, B and C together with maps indicating locations of site(s), to the Natural Resources Conservation Service (NRCS) local field office and retain copy D for their files. (Note: NRCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the NRCS State Conservationist in each state).

Step 3 – NRCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step '4 – In cases where farmland covered by the FPPA will be converted by the proposed project, NRCS field offices will complete Parts II, IV and V of the form.

Step 5 – NRCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for NRCS records).

Step 6 – The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 – The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

Part I: In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

Part III: In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.

2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

Part VI: Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in § 658.5 (b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will, be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned relative adjustments must be made to maintain the maximum total weight points at l60.

In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site "A."}$$

Site Assessment Scoring for the Twelve Factors Used in FPPA

The Site Assessment criteria used in the Farmland Protection Policy Act (FPPA) rule are designed to assess important factors other than the agricultural value of the land when determining which alternative sites should receive the highest level of protection from conversion to non agricultural uses.

Twelve factors are used for Site Assessment and ten factors for corridor-type sites. Each factor is listed in an outline form, without detailed definitions or guidelines to follow in the rating process. The purpose of this document is to expand the definitions of use of each of the twelve Site Assessment factors so that all persons can have a clear understanding as to what each factor is intended to evaluate and how points are assigned for given conditions.

In each of the 12 factors a number rating system is used to determine which sites deserve the most protection from conversion to non-farm uses. The higher the number value given to a proposed site, the more protection it will receive. The maximum scores are 10, 15 and 20 points, depending upon the relative importance of each particular question. If a question significantly relates to why a parcel of land should not be converted, the question has a maximum possible protection value of 20, whereas a question which does not have such a significant impact upon whether a site would be converted, would have fewer maximum points possible, for example 10.

The following guidelines should be used in rating the twelve Site Assessment criteria:

1. How much land is in non-urban use within a radius of 1.0 mile from where the project is intended?

More than 90 percent:	15 points
90-20 percent:	14 to 1 points
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the area within one mile of the proposed site is non-urban area. For purposes of this rule, "non-urban" should include:

- Agricultural land (crop-fruit trees, nuts, oilseed)
- Range land
- Forest land
- Golf Courses
- Non paved parks and recreational areas
- Mining sites
- Farm Storage
- Lakes, ponds and other water bodies
- Rural roads, and through roads without houses or buildings
- Open space
- Wetlands
- Fish production
- Pasture or hayland

Urban uses include:

- Houses (other than farm houses)
- Apartment buildings
- Commercial buildings
- Industrial buildings
- Paved recreational areas (i.e. tennis courts)
- Streets in areas with 30 structures per 40 acres
- Gas stations

- Equipment, supply stores
- Off-farm storage
- Processing plants
- Shopping malls
- Utilities/Services
- Medical buildings

In rating this factor, an area one-mile from the outer edge of the proposed site should be outlined on a current photo; the areas that are urban should be outlined. For rural houses and other buildings with unknown sizes, use 1 and 1/3 acres per structure. For roads with houses on only one side, use one half of road for urban and one half for non-urban.

The purpose of this rating process is to insure that the most valuable and viable farmlands are protected from development projects sponsored by the Federal Government. With this goal in mind, factor S1 suggests that the more agricultural lands surrounding the parcel boundary in question, the more protection from development this site should receive. Accordingly, a site with a large quantity of non-urban land surrounding it will receive a greater
number of points for protection from development. Thus, where more than 90 percent of the area around the proposed site (do not include the proposed site in this assessment) is non-urban, assign 15 points. Where 20 percent or less is
non-urban, assign 0 points. Where the area lies between 20 and 90 percent non-urban, assign appropriate points from 14 to 1, as noted below.

Percent Non-Urban Land within 1 mile	**Points**
90 percent or greater	15
85 to 89 percent	14
80 to 84 percent	13
75 to 79 percent	12
70 to 74 percent	11
65 to 69 percent	10
60 to 64 percent	9
55 to 59 percent	8
50 to 54 percent	7
45 to 49 percent	6
40 to 44 percent	5
35 to 39 percent	4
30 to 24 percent	3
25 to 29 percent	2
21 to 24 percent	1
20 percent or less	0

2. How much of the perimeter of the site borders on land in non-urban use?

More than 90 percent:	l0 points
90 to 20 percent:	9 to 1 point(s)
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the land adjacent to the proposed site is non-urban use. Where factor #1 evaluates the general location of the proposed site, this factor evaluates the immediate perimeter of the site. The definition of urban and non-urban uses in factor #1 should be used for this factor.

In rating the second factor, measure the perimeter of the site that is in non-urban and urban use. Where more than 90 percent of the perimeter is in non-urban use, score this factor 10 points. Where less than 20 percent, assign 0 points. If a road is next to the perimeter, class the area according to the

use on the other side of the road for that area. Use 1 and 1/3 acre per structure if not otherwise known. Where 20 to 90 percent of the perimeter is non-urban, assign points as noted below:

Percentage of Perimeter Bordering Land	Points
90 percent or greater	10
82 to 89 percent	9
74 to 81 percent	8
65 to 73 percent	7
58 to 65 percent	6
50 to 57 percent	5
42 to 49 percent	4
34 to 41 percent	3
27 to 33 percent	2
21 to 26 percent	1
20 percent or Less	0

3. How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last ten years?

More than 90 percent:	20 points
90 to 20 percent:	19 to 1 point(s)
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the proposed conversion site has been used or managed for agricultural purposes in the past 10 years.

Land is being farmed when it is used or managed for food or fiber, to include timber products, fruit, nuts, grapes, grain, forage, oil seed, fish and meat, poultry and dairy products.

Land that has been left to grow up to native vegetation without management or harvest will be considered as abandoned and therefore not farmed. The proposed conversion site should be evaluated and rated according to the percent, of the site farmed.

If more than 90 percent of the site has been farmed 5 of the last 10 years score the site as follows:

Percentage of Site Farmed	Points
90 percent or greater	20
86 to 89 percent	19
82 to 85 percent	18
78 to 81 percent	17
74 to 77 percent	16
70 to 73 percent	15
66 to 69 percent	14
62 to 65 percent	13
58 to 61 percent	12
54 to 57 percent	11
50 to 53 percent	10
46 to 49 percent	9
42 to 45 percent	8
38 to 41 percent	7
35 to 37 percent	6
32 to 34 percent	5
29 to 31 percent	4
26 to 28 percent	3

23 to 25 percent	2
20 to 22 percent percent or Less	1
Less than 20 percent	0

4. Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected:	20 points
Site is not protected:	0 points

This factor is designed to evaluate the extent to which state and local government and private programs have made efforts to protect this site from conversion.

State and local policies and programs to protect farmland include:

State Policies and Programs to Protect Farmland

1. Tax Relief:

   A. Differential Assessment: Agricultural lands are taxed on their agricultural use value, rather than at market value. As a result, farmers pay fewer taxes on their land, which helps keep them in business, and therefore helps to insure that the farmland will not be converted to nonagricultural uses.

      1. Preferential Assessment for Property Tax: Landowners with parcels of land used for agriculture are given the privilege of differential assessment.

      2. Deferred Taxation for Property Tax: Landowners are deterred from converting their land to nonfarm uses, because if they do so, they must pay back taxes at market value.

      3. Restrictive Agreement for Property Tax: Landowners who want to receive Differential Assessment must agree to keep their land in - eligible use.

   B. Income Tax Credits

   Circuit Breaker Tax Credits: Authorize an eligible owner of farmland to apply some or all of the property taxes on his or her farmland and farm structures as a tax credit against the owner's state income tax.

   C. Estate and Inheritance Tax Benefits

   Farm Use Valuation for Death Tax: Exemption of state tax liability to eligible farm estates.

2. "Right to farm" laws:

   Prohibits local governments from enacting laws which will place restrictions upon normally accepted farming practices, for example, the generation of noise, odor or dust.

3. Agricultural Districting:

   Wherein farmers voluntarily organize districts of agricultural land to be legally recognized geographic areas. These farmers receive benefits, such as protection from annexation, in exchange for keeping land within the district for a given number of years.

4. Land Use Controls: Agricultural Zoning.

Types of Agricultural Zoning Ordinances include:

A. Exclusive: In which the agricultural zone is restricted to only farm-related dwellings, with, for example, a minimum of 40 acres per dwelling unit.

B. Non-Exclusive: In which non-farm dwellings are allowed, but the density remains low, such as 20 acres per dwelling unit.

Additional Zoning techniques include:

A. Slidinq Scale: This method looks at zoning according to the total size of the parcel owned. For example, the number of dwelling units per a given number of acres may change from county to county according to the existing land acreage to dwelling unit ratio of surrounding parcels of land within the specific area.

B. Point System or Numerical Approach: Approaches land use permits on a case by case basis.

LESA: The LESA system (Land Evaluation-Site Assessment) is used as a tool to help assess options for land use on an evaluation of productivity weighed against commitment to urban development.

C. Conditional Use: Based upon the evaluation on a case by case basis by the Board of Zoning Adjustment. Also may include the method of using special land use permits.

5. Development Rights:

A. Purchase of Development Rights (PDR): Where development rights are purchased by Government action.

Buffer Zoning Districts: Buffer Zoning Districts are an example of land purchased by Government action. This land is included in zoning ordinances in order to preserve and protect agricultural lands from non-farm land uses encroaching upon them.

B. Transfer of Development Rights (TDR): Development rights are transferable for use in other locations designated as receiving areas. TDR is considered a locally based action (not state), because it requires a voluntary decision on the part of the individual landowners.

6. Governor's Executive Order: Policy made by the Governor, stating the importance of agriculture, and the preservation of agricultural lands. The Governor orders the state agencies to avoid the unnecessary conversion of important farmland to nonagricultural uses.

7. Voluntary State Programs:

A. California's Program of Restrictive Agreements and Differential Assessments: The California Land Conservation Act of 1965, commonly known as the Williamson Act, allows cities, counties and individual landowners to form agricultural preserves and enter into contracts for 10 or more years to insure that these parcels of land remain strictly for agricultural use. Since 1972 the Act has extended eligibility to recreational and open space lands such as scenic highway corridors, salt ponds and wildlife preserves. These contractually restricted lands may be taxed differentially for their real value. One hundred-acre districts constitute the minimum land size eligible.

Suggestion: An improved version of the Act would state that if the land is converted after the contract expires, the landowner must pay the difference in the taxes between market value for the land and the agricultural tax value which he or she had been

paying under the Act. This measure would help to insure that farmland would not be converted after the 10 year period ends.

B. Maryland Agricultural Land Preservation Program: Agricultural landowners within agricultural districts have the opportunity to sell their development rights to the Maryland Land Preservation Foundation under the agreement that these landowners will not subdivide or develop their land for an initial period of five years. After five years the landowner may terminate the agreement with one year notice.

   As is stated above under the California Williamson Act, the landowner should pay the back taxes on the property if he or she decides to convert the land after the contract expires, in order to discourage such conversions.

C. Wisconsin Income Tax Incentive Program: The Wisconsin Farmland Preservation Program of December 1977 encourages local jurisdictions in Wisconsin to adopt agricultural preservation plans or exclusive agricultural district zoning ordinances in exchange for credit against state income tax and exemption from special utility assessment. Eligible candidates include local governments and landowners with at least 35 acres of land per dwelling unit in agricultural use and gross farm profits of at least $6.000 per year, or $18,000 over three years.

8. Mandatory State Programs:

A. The Environmental Control Act in the state of Vermont was adopted in 1970 by the Vermont State Legislature. The Act established an environmental board with 9 members (appointed by the Governor) to implement a planning process and a permit system to screen most subdivisions and development proposals according to specific criteria stated in the law. The planning process consists of an interim and a final Land Capability and Development Plan, the latter of which acts as a policy plan to control development. The policies are written in order to:

   - prevent air and water pollution;
   - protect scenic or natural beauty, historic sites and rare and irreplaceable natural areas; and
   - consider the impacts of growth and reduction of development on areas of primary agricultural soils.

B. The California State Coastal Commission: In 1976 the Coastal Act was passed to establish a permanent Coastal Commission with permit and planning authority The purpose of the Coastal Commission was and is to protect the sensitive coastal zone environment and its resources, while accommodating the social and economic needs of the state. The Commission has the power to regulate development in the coastal zones by issuing permits on a case by case basis until local agencies can develop their own coastal plans, which must be certified by the Coastal Commission.

C. Hawaii's Program of State Zoning: In 1961, the Hawaii State Legislature established Act 187, the Land Use Law, to protect the farmland and the welfare of the local people of Hawaii by planning to avoid “unnecessary urbanization”. The Law made all state lands into four districts: agricultural, conservation, rural and urban. The Governor appointed members to a State Land Use Commission, whose duties were to uphold the Law and form the boundaries of the four districts. In addition to state zoning, the Land Use Law introduced a program of Differential Assessment, wherein agricultural landowners paid taxes on their land for its agricultural use value, rather than its market value.

D. The Oregon Land Use Act of 1973: This act established the Land Conservation and Development Commission (LCDC) to provide statewide planning goals and guidelines.

Under this Act, Oregon cities and counties are each required to draw up a comprehensive plan, consistent with statewide planning goals. Agricultural land preservation is high on the list of state goals to be followed locally.

If the proposed site is subject to or has used one or more of the above farmland protection programs or policies, score the site 20 points. If none of the above policies or programs apply to this site, score 0 points.

5. How close is the site to an urban built-up area?

The site is 2 miles or more from an urban built-up area	15 points
The site is more than 1 mile but less than 2 miles from an urban built-up area	10 points
The site is less than 1 mile from, but is not adjacent to an urban built-up area	5 points
The site is adjacent to an urban built-up area	0 points

This factor is designed to evaluate the extent to which the proposed site is located next to an existing urban area. The urban built-up area must be 2500 population. The measurement from the built-up area should be made from the point at which the density is 30 structures per 40 acres and with no open or non-urban land existing between the major built-up areas and this point. Suburbs adjacent to cities or urban built-up areas should be considered as part of that urban area.

For greater accuracy, use the following chart to determine how much protection the site should receive according to its distance from an urban area. See chart below:

Distance From Perimeter of Site to Urban Area	Points
More than 10,560 feet	15
9,860 to 10,559 feet	14
9,160 to 9,859 feet	13
8,460 to 9,159 feet	12
7,760 to 8,459 feet	11
7,060 to 7,759 feet	10
6,360 to 7,059 feet	9
5,660 to 6,359 feet	8
4,960 to 5,659 feet	7
4,260 to 4,959 feet	6
3,560 to 4,259 feet	5
2,860 to 3,559 feet	4
2,160 to 2,859 feet	3
1,460 to 2,159 feet	2
760 to 1,459 feet	1
Less than 760 feet (adjacent)	0

6. How close is the site to water lines, sewer lines and/or other local facilities and services whose capacities and design would promote nonagricultural use?

None of the services exist nearer than 3 miles from the site	15 points
Some of the services exist more than one but less than 3 miles from the site	10 points
All of the services exist within 1/2 mile of the site	0 points

This question determines how much infrastructure (water, sewer, etc.) is in place which could facilitate nonagricultural development. The fewer facilities in place, the more difficult it is to develop an area. Thus, if a proposed site is further away from these services (more than 3 miles distance away), the site should be awarded the highest number of points (15). As the distance of the parcel of land to services decreases, the number of points awarded declines as well. So, when the site is equal to or further than 1 mile but less than 3 miles away from services, it should be given 10 points. Accordingly, if this distance is 1/2 mile to less than 1 mile, award 5 points; and if the distance from land to services is less than 1/2 mile, award 0 points.

Distance to public facilities should be measured from the perimeter of the parcel in question to the nearest site(s) where necessary facilities are located. If there is more than one distance (i.e. from site to water and from site to sewer), use the average distance (add all distances and then divide by the number of different distances to get the average).

Facilities which could promote nonagricultural use include:

- Water lines
- Sewer lines
- Power lines
- Gas lines
- Circulation (roads)
- Fire and police protection
- Schools

7. Is the farm unit(s) containing the site (before the project) as large as the average-size farming unit in the county? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage of Farm Units in Operation with $1,000 or more in sales.)

As large or larger:	10 points
Below average: Deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more is below average	9 to 0 points

This factor is designed to determine how much protection the site should receive, according to its size in relation to the average size of farming units within the county. The larger the parcel of land, the more agricultural use value the land possesses, and vice versa. Thus, if the farm unit is as large or larger than the county average, it receives the maximum number of points (10). The smaller the parcel of land compared to the county average, the fewer number of points given. Please see below:

Parcel Size in Relation to Average County Size	Points
Same size or larger than average (l00 percent)	10
95 percent of average	9
90 percent of average	8
85 percent of average	7
80 percent of average	6
75 percent of average	5
70 percent of average	4
65 percent of average	3
60 percent of average	2
55 percent of average	1
50 percent or below county average	0

State and local Natural Resources Conservation Service offices will have the average farm size information, provided by the latest available Census of Agriculture data

8. If this site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project	10 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project	9 to 1 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project	0 points

This factor tackles the question of how the proposed development will affect the rest of the land on the farm The site which deserves the most protection from conversion will receive the greatest number of points, and vice versa. For example, if the project is small, such as an extension on a house, the rest of the agricultural land would remain farmable, and thus a lower number of points is given to the site. Whereas if a large-scale highway is planned, a greater portion of the land (not including the site) will become non-farmable, since access to the farmland will be blocked; and thus, the site should receive the highest number of points (10) as protection from conversion

Conversion uses of the Site Which Would Make the Rest of the Land Non-Farmable by Interfering with Land Patterns

Conversions which make the rest of the property nonfarmable include any development which blocks accessibility to the rest of the site Examples are highways, railroads, dams or development along the front of a site restricting access to the rest of the property.

The point scoring is as follows:

Amount of Land Not Including the Site Which Will Become Non-Farmable	Points
25 percent or greater	10
23 - 24 percent	9
21 - 22 percent	8
19 - 20 percent	7
17 - 18 percent	6
15 - 16 percent	5
13 - 14 percent	4
11 - 12 percent	3
9 - 11 percent	2
6 - 8 percent	1
5 percent or less	0

9. Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available	5 points
Some required services are available	4 to 1 point(s)
No required services are available	0 points

This factor is used to assess whether there are adequate support facilities, activities and industry to keep the farming business in business. The more support facilities available to the agricultural

landowner, the more feasible it is for him or her to stay in production. In addition, agricultural support facilities are compatible with farmland. This fact is important, because some land uses are not compatible; for example, development next to farmland cam be dangerous to the welfare of the agricultural land, as a result of pressure from the neighbors who often do not appreciate the noise, smells and dust intrinsic to farmland. Thus, when all required agricultural support services are available, the maximum number of points (5) are awarded. When some services are available, 4 to 1 point(s) are awarded; and consequently, when no services are available, no points are given. See below:

Percent of Services Available	Points
100 percent	5
75 to 99 percent	4
50 to 74 percent	3
25 to 49 percent	2
1 to 24 percent	1
No services	0

10. Does the site have substantial and well-maintained on farm investments such as barns, other storage buildings, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment	20 points
Moderate amount of non-farm investment	19 to 1 point(s)
No on-farm investments	0 points

This factor assesses the quantity of agricultural facilities in place on the proposed site. If a significant agricultural infrastructure exists, the site should continue to be used for farming, and thus the parcel will receive the highest amount of points towards protection from conversion or development. If there is little on farm investment, the site will receive comparatively less protection. See-below:

Amount of On-farm Investment	Points
As much or more than necessary to maintain production (100 percent)	20
95 to 99 percent	19
90 to 94 percent	18
85 to 89 percent	17
80 to 84 percent	16
75 to 79 percent	15
70 to 74 percent	14
65 to 69 percent	13
60 to 64 percent	12
55 to 59 percent	11
50 to 54 percent	10
45 to 49 percent	9
40 to 44 percent	8
35 to 39 percent	7
30 to 34 percent	6
25 to 29 percent	5
20 to 24 percent	4
15 to 19 percent	3
10 to 14 percent	2
5 to 9 percent	1
0 to 4 percent	0

11. Would the project at this site, by converting farmland to nonagricultural use, reduce the support for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted	10 points
Some reduction in demand for support services if the site is converted	9 to 1 point(s)
No significant reduction in demand for support services if the site is converted	0 points

This factor determines whether there are other agriculturally related activities, businesses or jobs dependent upon the working of the pre-converted site in order for the others to remain in production. The more people and farming activities relying upon this land, the more protection it should receive from conversion. Thus, if a substantial reduction in demand for support services were to occur as a result of conversions, the proposed site would receive a high score of 10; some reduction in demand would receive 9 to 1 point(s), and no significant reduction in demand would receive no points.

Specific points are outlined as follows:

Amount of Reduction in Support Services if Site is Converted to Nonagricultural Use	**Points**
Substantial reduction (100 percent)	10
90 to 99 percent	9
80 to 89 percent	8
70 to 79 percent	7
60 to 69 percent	6
50 to 59 percent	5
40 to 49 percent	4
30 to 39 percent	3
20 to 29 percent	2
10 to 19 percent	1
No significant reduction (0 to 9 percent)	0

12. Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of the surrounding farmland to nonagricultural use?

Proposed project is incompatible with existing agricultural use of surrounding farmland	10 points
Proposed project is tolerable of existing agricultural use of surrounding farmland	9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland	0 points

Factor 12 determines whether conversion of the proposed agricultural site will eventually cause the conversion of neighboring farmland as a result of incompatibility of use of the first with the latter. The more incompatible the proposed conversion is with agriculture, the more protection this site receives from conversion. Therefor-, if the proposed conversion is incompatible with agriculture, the site receives 10 points. If the project is tolerable with agriculture, it receives 9 to 1 points; and if the proposed conversion is compatible with agriculture, it receives 0 points.

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor-type site or design alternative for protection as farmland along with the land evaluation information.

For Water and Waste Programs, corridor analyses are not applicable for distribution or collection networks. Analyses are applicable for transmission or trunk lines where placement of the lines are flexible.

(1) How much land is in nonurban use within a radius of 1.0 mile form where the project is intended?

(2)	More than 90 percent	(3)	15 points
(4)	90 to 20 percent	(5)	14 to 1 point(s).
(6)	Less than 20 percent	(7)	0 points

(2) How much of the perimeter of the site borders on land in nonurban use?

(3)	More than 90 percent	(4)	10 point(s)
(5)	90 to 20 percent	(6)	9 to 1 points
(7)	less than 20 percent	(8)	0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?

(4)	More than 90 percent	(5)	20 points
(6)	90 to 20 percent	(7)	19 to 1 point(s)
(8)	Less than 20 percent	(9)	0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected	20 points
Site is not protected	0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage of Farm Units in Operation with $1,000 or more in sales.)

As large or larger	10 points
Below average deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average	9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project	25 points
Acreage equal to between 25 and 5 percent of the acres directly convened by the project	1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project	0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available	5 points
Some required services are available	4 to 1 point(s)
No required services are available	0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment	20 points
Moderate amount of on-farm investment	19 to 1 point(s)
No on-farm investment	0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is convened	25 points
Some reduction in demand for support services if the site is convened	1 to 24 point(s)
No significant reduction in demand for support services if the site is converted	0 points

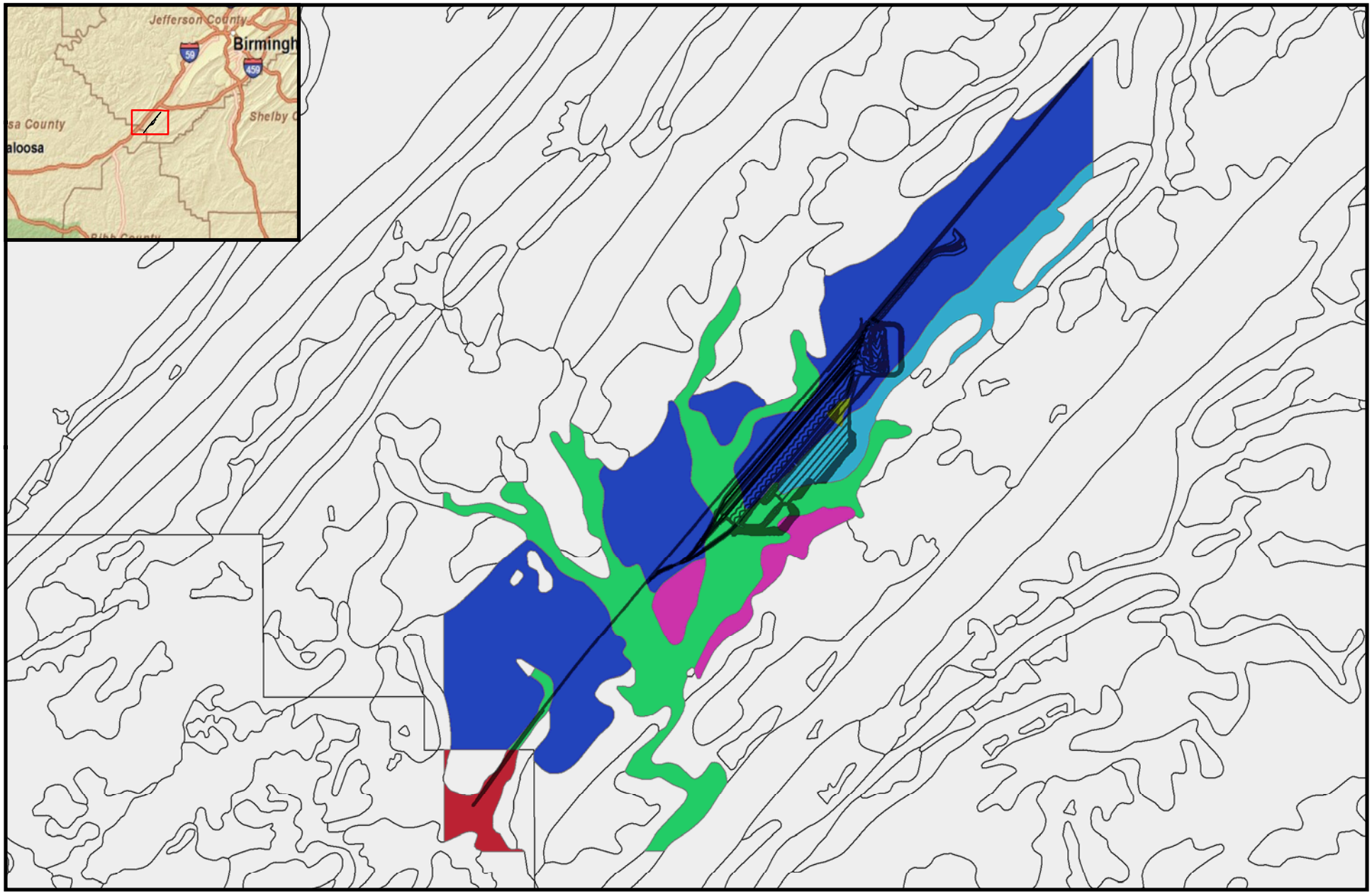
(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?

Proposed project is incompatible to existing agricultural use of surrounding farmland	10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland	9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland	0 points

Attachment B
Birmingham Regional IMF Site Location Map

FIGURE 4.2-1
SITE LOCATION MAP
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY
JEFFERSON AND TUSCALOOSA COUNTIES, AL

Attachment C
Birmingham Regional IMF Soil Map



LEGEND

— Proposed Facility Footprint

Potentially Impacted Soil Map Units

- Ellisville silt loam, frequently flooded
- Etowah loam, 2 to 8 percent slopes
- Fullerton-Bodine complex, 8 to 15 percent slopes
- Sullivan-Ketona complex, 0 to 2 percent slopes
- Tupelo silt loam, 0 to 4 percent slopes
- Water

N

0 2,000 4,000 Feet

Source: USDA Natural Resouces Conservation Service - SSURGO Soils Database, 2009

FIGURE 2
POTENTIALL IMPACTED SOIL MAP UNITS
PROPOSED BIRMINGHAM REGIONAL INTERMODAL FACILITY
JEFFERSON AND TUSCALOOSA COUNTIES, AL

CH2MHILL — NS NORFOLK SOUTHERN

\\GALILEO\PROJ\NORFOLKSOUTHERN_389982\MAPFILES\NRCS_SOILS_MAP.MXD EKLEIN 1/4/2010 13:54:54

Attachment D
Birmingham Regional IMF Site Vicinity Aerial Photo

APPENDIX F

Hazardous Materials Clearance Letter

ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36130-3050

Bureau of Materials and Tests
3700 Fairground Road, Montgomery, Alabama 36110
Phone (334)206-2200 FAX (334)264-6263

Bob Riley
Governor

Joe McInnes
Transportation Director

February 1, 2010

Ms. Alfedo Acoff, Coordinator
Environmental Technical Section
ALDOT Design Bureau
1409 Coliseum Boulevard
Montgomery, AL 36130

RE: Clearance Letter, Project: Birmingham Regional Intermodal Facility
Norfolk Southern Railroad Hub
Jefferson County

Dear Ms. Acoff:

As requested by your office, Hazardous Material personnel performed a site investigation on the above referenced project on January 21, 2010. On further review of the project it appears that there will be no past or present commercial facilities taken by the proposed plan provided. The only facilities found to be impacted by the project are McAdory Middle School and the Rosser residence based on the proposed plans provided. Of the sites found to be impacted no hazardous material sites were identified within the project property or the adjacent properties. **Based on the above referenced information, this project is environmentally cleared for construction work with no associated environmental remediation cost.**

If the alignment or design changes on the above referenced project, a reevaluation will need to be conducted. If you have any questions please contact Mr. Daniel Statum at (334) 206-2281.

Yours very truly,

Larry Lockett, P.E.
Materials and Tests Engineer

By: _____
Adam S. Anderson, P.E.
Hazardous Materials Coordinator

LL/ASA/dfs

cc: Mr. Brian Davis, P. E., 3rd Division Engineer
File

Aerial Photo - Jefferson Metropolitan Park McCalla

Updated: 2009

APPENDIX G

Noise Assessment for the Proposed Birmingham Regional Intermodal Facility

Appendix G

Noise Assessment for Proposed Birmingham Regional Intermodal Facility

Prepared for

Norfolk Southern Railway Company

Revision 3
February 2010

CH2MHILL

Northpark 400
1000 Abernathy Road
Atlanta, GA 30328

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1.0 Introduction

This report presents an assessment of potential noise effects related to Norfolk Southern Railway Company's (NSR) proposed Birmingham Regional Intermodal Facility (BRIMF). It was prepared in support of the National Environmental Policy Act documentation for the proposed facility. Section 1.0 discusses the fundamentals of acoustics. Section 2.0 describes the affected environment, including the methodology and results of baseline noise level surveys performed at the project site. Section 3.0 discusses the environmental consequences attributable to the construction and operation of the proposed facility. Section 4.0 discusses possible noise abatement measures. Section 5.0 identifies agency contacts. Section 6.0 identifies noise permit requirements and schedules. Section 7.0 contains the references used to prepare this report.

1.1 Fundamentals of Acoustics

Acoustics is the study of sound, and noise is defined as unwanted sound. Airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure creating a sound wave. Definitions of acoustical terms used in this section are summarized in Table 1.

The most common metric is the overall A-weighted sound pressure level measurement that has been adopted by regulatory agencies worldwide. The A-weighted network measures sound in a similar fashion to the way a person perceives or hears sound. In this way, it provides a good measure for evaluating acceptable and unacceptable sound levels. A-weighted sound levels are typically measured or presented as equivalent sound pressure level (L_{eq}), which is defined as the average noise level, on an equal energy basis for a stated period of time, and is commonly used to measure steady-state sound or noise that is usually dominant.

The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as startling and hearing loss

In most cases, environmental noise produces effects in the first two categories only. However, workers in industrial plants may experience noise effects in the last category. No completely satisfactory way exists to measure the subjective effects of noise, or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important way of determining a person's subjective reaction to a new noise is by comparing it to the existing or "ambient" environment to which that person has adapted. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

TABLE 1
Definitions of Acoustical Terms

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise or sound at a given location. The ambient level is typically defined by the L_{eq} level.
Background Noise Level	The underlying ever-present lower level noise that remains in the absence of intrusive or intermittent sounds. Distant sources, such as traffic, typically make up the background.
Intrusive	Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, tonal content, and the prevailing ambient noise level as well as the sensitivity of the receiver.
Sound Pressure Level Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
A-Weighted Sound Pressure Level (dBA)	The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Percentile Noise Level (L_n)	The noise level exceeded during n percent of the measurement period, where n is a number between 0 and 100 (e.g., L_{90})
Equivalent Noise Level (L_{eq})	The average A-weighted noise level, on an equal energy basis, during the measurement period.
Day/Night Equivalent Noise Level (L_{dn} or DNL)	The average sound level, on an equal energy basis, over a 24-hour period, with a 10 dBA weighting factored into the night time (10 PM to 7 AM) to account for the greater disturbance typical of noise at night.
Minimum Noise Level (L_{min})	The minimum A-weighted noise level recorded for a single noise event.
Maximum Noised Level (L_{max})	The maximum A-weighted noise level recorded for a single noise event.
Sound Exposure Level (SEL)	A logarithmic expression of all the sound energy for a single noise event.

Table 2 shows the relative A-weighted noise levels of common sounds measured in the environment and in industry for various sound levels.

There are several factors that affect how noise changes as it travels from source to receptor. These factors include:

- Geometric divergence
- Atmospheric absorption
- Ground effects
- Reflections
- Screening by structures or terrain

Geometric divergence is the reduction of noise levels due to spherical spreading from a point source or hemispherical spreading from a line source. The noise energy is spread over a larger area as the distance from source to receptor increases. The noise energy per unit area, and the sound pressure level, decreases as the noise energy decreases. Noise decreases from a point source at a rate of 6 dB per doubling of distance (dB/DD) due to geometric

divergence. Noise decreases from a line source at a rate of 3 dB per doubling of distance (dB/DD) due to geometric divergence.

Noise energy is absorbed by air as it travels through the atmosphere. The reduction in noise is relatively small (< 1 dB/km) at low frequencies (up to 250 hz) but can be significant (> 50 dB/km) at frequencies of 8,000 hz and higher.

Ground conditions affect the change of noise with distance, depending upon the relative hardness of the ground and the heights of the noise source and receptor.

Reflections of noise off of surfaces near the source increase the noise level at a receptor. For example, insertion of an acoustically hard wall (such as concrete) immediately next to a point source would cause the noise from that source in the opposite direction to increase by 3 dB.

Structures or terrain that block the direct line-of-sight between a noise source and receptor would reduce noise levels by at least 5 dB. Increasing the difference between the path the noise must take over a noise wall and the direct line-of-sight from the source to receptor would also increase the level of noise reduction.

TABLE 2
Typical Sound Levels Measured in the Environment and Industry

Noise Source at a Given Distance	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
Shotgun (at shooter's ear)	140	Carrier flight deck	Painfully loud
Civil defense siren (100 ft)	130		
Jet takeoff (200 ft)	120		Threshold of pain
Loud rock music	110	Rock music concert	
Pile driver (50 ft)	100		Very loud
Ambulance siren (100 ft)	90	Boiler room	
Pneumatic drill (50 ft)	80	Noisy restaurant	
Busy traffic; hair dryer	70	Freeway traffic	Intrusive
Normal conversation (5 ft)	60	Data processing center	
Light traffic (100 ft); rainfall	50	Typical suburban background	Quiet
Bird calls (distant)	40	Average living room or library	
Soft whisper (5 ft); rustling leaves	30	Quiet bedroom	
	20	Recording studio	
Normal breathing	10	Rustling leaves	Threshold of hearing

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

2.0 Affected Environment

2.1 Local Land Use and Noise Sources

The proposed BRIMF site is located in McCalla, Alabama, an unincorporated area southwest of Bessemer, in the greater Birmingham area of Jefferson County. The BRIMF is located within a 316-acre, roughly triangular site in McCalla approximately three miles south of the I-20/I-59 and I-459 interchange. The proposed location is adjacent to McAshan Drive, which provides direct access to and from I-20/I-59 approximately 1.6 miles south of the I-459 interchange. Both truck and employee vehicle traffic would use McAshan Drive to access the proposed BRIMF through a new 0.6-mile permanent access road from the BRIMF to McAshan Drive. However, trucks entering and leaving the facility would be directed to only travel on the 1.4-mile segment of McAshan Drive to and from I-20/I-59.

The proposed site is in pasture, and is bounded by the NSR mainline corridor, Eastern Valley Road, and a mix of small farms and woodlands. There are a number of single family residences along both sides of Eastern Valley Road in the vicinity of the site. Additionally, several nearby parcels have been subdivided for housing and small businesses. To the west of the NSR tracks, directly across from the proposed BRIMF site, are several manufacturing/light industrial facilities of the Jefferson Metro Industrial Park. McAdory Elementary School is adjacent to the south side of the proposed site. Tannehill State Park is located to the southeast, separated from the proposed BRIMF site by a series of small subdivisions.

The primary existing man-made noise sources are traffic on local roads and highways; trains on the existing NSR tracks; and activities at the nearby Jefferson Metro Industrial Park facilities.

2.2 Ambient Noise Survey

Ambient noise monitoring was conducted to determine the current level of noise in the project area. Ten monitoring sites were established as shown in Figure 1. The noise monitoring locations were selected because they were near residences or other potentially sensitive receptors as described in Table 3. Monitoring at each location was conducted either for long-term continuous periods of at least 24 hours or for multiple short-term 15-minute periods.

FIGURE 1
Noise Monitoring Locations

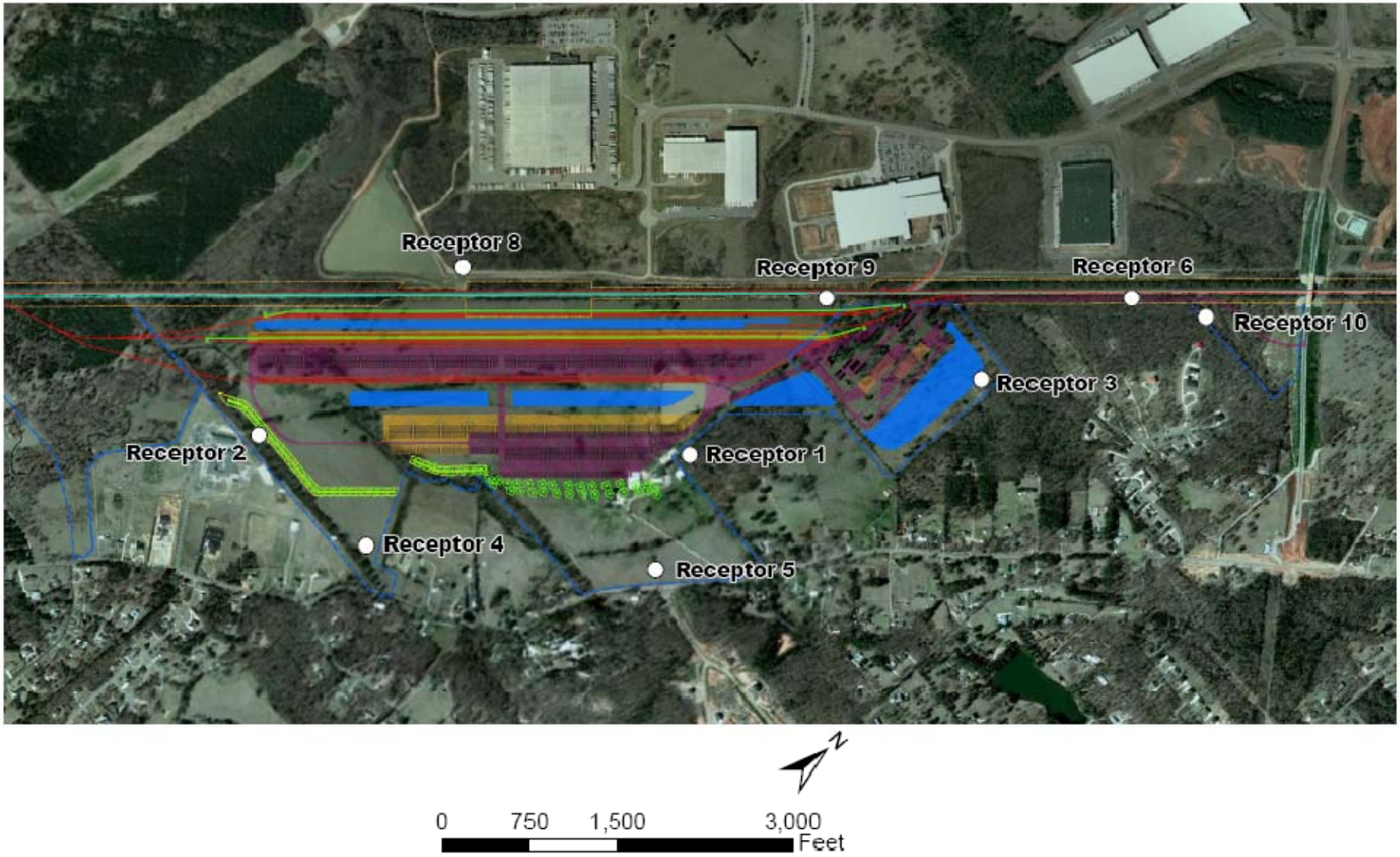


TABLE 3
Noise Monitoring Locations

Location	Type of Monitoring	Description
1	24-hour	North of the barns on the site near the corner of property line. Approximately 250 feet from the former Rosser home and 1,700 feet from the proposed location of the Automated Gate System (AGS). This location was selected to represent sound levels near the center of the project boundary.
2	24-hour	Southwest portion of the site approximately 150 feet north of McAdory Elementary School and 5,200 feet from the proposed location of the AGS. This location was selected to represent sound levels near McAdory Elementary School.
3	15-minute	Northern portion of the site near small pond. Approximately 450 feet from the proposed location of the AGS. This location was selected to represent sound levels at the property boundary between the site and the Sadler Ridge subdivision.
4	15-minute	Southwest portion of the site in the field near Eastern Valley Road. Approximately 300 feet from a neighboring residence and 4,500 feet from the proposed location of the AGS. This location was selected to represent sound levels at the nearby residence.
5	15-minute	Eastern portion of the site in the field near Eastern Valley Road. Approximately 250 feet from a neighboring residence and 2,400 feet from the proposed location of the AGS. This location was selected to represent sound levels at the residences across Eastern Valley Road from the site.
6	15-minute	North-northeast of the site on the rail line access road. Approximately 1,700 feet from the proposed location of the AGS. This location was selected to represent sound levels at the residences in Sadler Ridge subdivision.
7	15-minute	North of the site on the rail line access road. Approximately 600 feet from the proposed location of the AGS. This location was selected to represent sound levels along the property boundary between the site and the Jefferson Metro Industrial Park area.
8	15-minute	West of the site on the access road to the Jefferson Metro Industrial Park storm water retention pond. Approximately 3,600 feet from the proposed location of the AGS. This location was selected to represent sound levels along the property boundary between the site and the Jefferson Metro Industrial Park area.
9	24-hour	Western portion of the site approximately 60 feet from the existing rail line and approximately 1,800 feet from the proposed location of the AGS. This location was selected to represent sound levels along the property boundary between the site and the Jefferson Metro Industrial Park area.
10	24-hour	North-northeast of the site in the woods approximately 450 feet from the nearest residence in the Sadler Ridge subdivision and approximately 2,300 feet from the proposed location of the AGS. This location was selected to represent sound levels near the residences in Sadler Ridge subdivision.

Long-term continuous measurements were conducted at monitoring locations 1, 2, 9, and 10. Short-term 15-minute measurements were made at monitoring locations 3 through 8. For the short-term locations, efforts were made to conduct monitoring at various times throughout the day and night so that the series of sound level measurements would include morning hours (7:00 a.m. to 12:00 noon), afternoon hours (12:00 noon to 7:00 p.m.), evening hours (7:00 p.m. to 10:00 p.m.), and overnight hours (10:00 p.m. to 7:00 a.m.). The noise descriptors recorded for each location included the L_{eq}, L_{min}, and L_{max}.

Larson Davis 820 and 824 ANSI Type 1 (precision) statistical sound level meters were used to conduct the measurements. The sound level meters were field calibrated before and after the measurement with a Larson Davis CAL200 instrument. All sound level meters, microphones, and field calibrators were factory calibrated within the previous 12 months.

The ambient noise monitoring was conducted between 11:00 a.m. on July 21, 2009, and 5:00 p.m. on July 23, 2009. Weather during the monitoring ranged from sunny and clear to cloudy with periods of rainfall. Weather data were obtained for Birmingham, Alabama (approximately 10 miles from the project site). The temperature ranged from 67 °F to 84 °F. Average winds were 4.2 to 5.1 miles per hour. Total precipitation during the monitoring period was reported as 0.41 inch. However, the rain showers in the area were scattered; therefore, the rainfall total varied throughout the area.

Tables 4 through 7 present the monitoring results obtained at the long-term (24-hour) locations. The L_{eq}, L_{min}, and L_{max} are presented for each hour. The L_{dn} 24-hour descriptor is also presented.

TABLE 4
Summary of Hourly Noise Levels at Location 1

Date/Start Time	L_{eq}	L_{min}	L_{max}
7/21/2009 11:00	47	42	71
7/21/2009 12:00	69	43	91
7/21/2009 13:00	54	38	71
7/21/2009 14:00	48	39	66
7/21/2009 15:00	49	40	66
7/21/2009 16:00	52	42	65
7/21/2009 17:00	47	44	51
7/21/2009 18:00	50	43	67
7/21/2009 19:00	47	42	60
7/21/2009 20:00	59	48	64
7/21/2009 21:00	61	57	64
7/21/2009 22:00	60	51	67
7/21/2009 23:00	55	49	61
7/22/2009 0:00	56	47	70
7/22/2009 01:00	56	51	65
7/22/2009 02:00	57	51	67
7/22/2009 03:00	56	50	68
7/22/2009 04:00	51	49	56
7/22/2009 05:00	51	47	57
7/22/2009 06:00	55	47	69
7/22/2009 07:00	54	45	70
7/22/2009 08:00	47	45	53
7/22/2009 09:00	53	45	80
7/22/2009 10:00	53	45	70
7/22/2009 11:00	53	44	68
7/22/2009 12:00	51	44	63
7/22/2009 13:00	48	43	55

Ldn = 62 or 63 dBA (Ldn depends upon the continuous 24-hour period used in the calculation

TABLE 5
Summary of Hourly Noise Levels at Location 2

Date/Start Time	L_{eq}	L_{min}	L_{max}
7/21/2009 11:00	53	45	72
7/21/2009 12:00	51	44	71
7/21/2009 13:00	47	43	61
7/21/2009 14:00	49	44	67
7/21/2009 15:00	52	46	68
7/21/2009 16:00	52	44	63
7/21/2009 17:00	49	45	59
7/21/2009 18:00	51	47	63
7/21/2009 19:00	53	48	60
7/21/2009 20:00	60	54	63
7/21/2009 21:00	58	54	61
7/21/2009 22:00	56	50	66
7/21/2009 23:00	54	49	59
7/22/2009 00:00	54	49	66
7/22/2009 01:00	54	50	63
7/22/2009 02:00	52	49	65
7/22/2009 03:00	52	48	66
7/22/2009 04:00	51	47	56
7/22/2009 05:00	54	49	62
7/22/2009 06:00	54	48	65
7/22/2009 07:00	53	47	70
7/22/2009 08:00	52	47	67
7/22/2009 09:00	53	48	70
7/22/2009 10:00	52	48	64
7/22/2009 11:00	53	48	64
7/22/2009 12:00	53	47	60

Ldn = 60 dBA

TABLE 6
Summary of Hourly Noise Levels at Location 9

Date/Start Time	L_{eq}	L_{min}	L_{max}
7/22/2009 15:00	70	43	91
7/22/2009 16:00	48	40	63
7/22/2009 17:00	56	42	74
7/22/2009 18:00	48	44	62
7/22/2009 19:00	51	44	71
7/22/2009 20:00	52	47	55
7/22/2009 21:00	70	52	89
7/22/2009 22:00	70	52	92
7/22/2009 23:00	53	51	55
7/23/2009 0:00	67	50	93
7/23/2009 01:00	69	51	92
7/23/2009 02:00	52	50	54
7/23/2009 03:00	49	47	55
7/23/2009 04:00	62	45	90
7/23/2009 05:00	68	45	90
7/23/2009 06:00	46	44	57
7/23/2009 07:00	66	45	89
7/23/2009 08:00	64	45	88
7/23/2009 09:00	55	46	70
7/23/2009 10:00	69	45	91
7/23/2009 11:00	53	46	66
7/23/2009 12:00	58	45	85
7/23/2009 13:00	60	44	90
7/23/2009 14:00	69	46	91
7/23/2009 15:00	68	46	90

Ldn = 72 dBA

TABLE 7
Summary of Hourly Noise Levels at Location 10

Date/Start Time	L_{eq}	L_{min}	L_{max}
7/22/2009 16:00	49	40	75
7/22/2009 17:00	63	42	74
7/22/2009 18:00	44	40	56
7/22/2009 19:00	48	44	63
7/22/2009 20:00	57	50	62
7/22/2009 21:00	64	57	85
7/22/2009 22:00	64	57	84
7/22/2009 23:00	59	56	61
7/23/2009 00:00	62	54	85
7/23/2009 01:00	63	53	82
7/23/2009 02:00	55	51	58
7/23/2009 03:00	52	46	57
7/23/2009 04:00	54	41	80
7/23/2009 05:00	59	41	80
7/23/2009 06:00	44	41	55
7/23/2009 07:00	59	40	83
7/23/2009 08:00	62	39	92
7/23/2009 09:00	54	39	66
7/23/2009 10:00	62	40	83
7/23/2009 11:00	54	40	71
7/23/2009 12:00	52	41	76
7/23/2009 13:00	53	40	81
7/23/2009 14:00	64	40	85
7/23/2009 15:00	60	40	80
7/23/2009 16:00	44	40	59

Ldn = 66 dBA

Table 8 presents a summary of the monitoring results obtained at all of the long-term (24-hour) and short-term (15-minute) locations. The L_{eq} levels presented for the long-term monitoring locations are the range of the hourly values during the monitoring period. The L_{min} and L_{max} levels for the long-term monitoring locations are the minimum and maximum values observed over the entire monitoring period. The L_{dn} descriptor is also presented for each location where monitoring was conducted continuously for at least 24 hours. An approximate L_{dn} level is presented for each short-term monitoring location at which at least one measurement was conducted during nighttime hours (10:00 p.m. to 7:00 a.m.). These approximations are probably lower than actual since no passing trains occurred during the monitoring.

TABLE 8
Results for Noise Monitoring Locations

Location	Run #	Monitoring Start Date	Monitoring Start Time[1]	Duration	Overall L_{eq} (dBA)	Overall L_{dn} (dBA)	L_{min} (dBA)	L_{max} (dBA)
1	1[2]	July 21, 2009	11:08	27 hours	47 - 69	62-63	38	91
2	1[2]	July 21, 2009	11:35	26 hours	47 - 60	60	43	72
3	1	July 21, 2009	14:14	15 minutes	48		46	59
	2	July 21, 2009	23:37	15 minutes	55		49	58
	3	July 22, 2009	12:42	15 minutes	52		49	58
	4	July 23, 2009	10:14	15 minutes	54	~60	52	57
4	1	July 21, 2009	15:11	15 minutes	51		45	59
	2[3]	July 21, 2009	22:45	11 minutes	53		50	58
	3	July 22, 2009	11:49	15 minutes	52		49	60
	4	July 23, 2009	10:52	15 minutes	54	~58	49	63
5	1	July 21, 2009	15:56	15 minutes	54		40	67
	2[3]	July 22, 2009	0:06	5 minutes	51		46	58
	3	July 22, 2009	0:18	20 minutes	50		46	60
	4	July 22, 2009	14:11	15 minutes	56		46	71
	5	July 23, 2009	9:42	15 minutes	54	~59	48	67
6[4]	1	July 21, 2009	16:59	15 minutes	47		44	56
	2	July 22, 2009	16:37	15 minutes	44		43	54
7[4]	1	July 21, 2009	17:46	15 minutes	45		42	52
8[5]	1	July 21, 2009	18:49	15 minutes	54		44	82
	2	July 22, 2009	11:03	15 minutes	59		49	73
	3	July 23, 2009	13:13	15 minutes	46		43	53
9	1[2]	July 22, 2009	15:32	25 hours	46 - 70	72	40	93
10	1[2]	July 22, 2009	16:25	25 hours	44 - 64	66	39	92

Notes:
[1] Time is based on a 24 hour clock.
[2] Only one run was conducted for the 24-hour monitoring locations.
[3] Runs were cut short because the sound of increasing rainfall intensity would have affected average sound levels for the run and because of potential for damage to the noise meter from the rainfall.
[4] Fewer runs were conducted at locations 6 and 7 because 24-hour monitoring locations were located in the vicinity of these receptors.
[5] Only three runs were conducted at Receptor 8 because of potential for vandalism near site.

As previously discussed, the noise monitoring locations were selected to be representative of the residences and other nearby sensitive receptors. The following summarizes the receptors/areas being represented by the monitoring locations and summarizes background sound noted during the sound level measurements.

- Location 1 - This location was selected to approximate sound levels at a residence about 250 feet from the monitoring location and approximately along the center of the property boundary. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included cattle, birds, insects, wind, rain, back-up alarms on equipment at the Jefferson Metro Industrial Park facilities across the railroad

from the site, passing trains, and a property owner cutting the grass near the monitoring location.

- Location 2 - This location was selected to approximate sound levels near McAdory Elementary School. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, rain, the air conditioning systems at the school, and passing trains.

- Location 3 - This location was selected to approximate sound levels at the property boundary between the site and the Sadler Ridge subdivision. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, roosters crowing, fish jumping in the pond, frogs, back-up alarms on equipment at the Jefferson Metro Industrial Park facilities across the railroad from the site, passing trains, traffic on Eastern Valley Road, aircraft overflights, dogs barking in the distance, horns/sirens/train whistles, and sound from the air conditioning systems at the Jefferson Metro Industrial Park facilities across the railroad from the site.

- Location 4 - This location was selected to approximate sound levels at a residence about 300 feet from the monitoring location. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, rain, trucks and equipment at the Jefferson Metro Industrial Park facilities across the railroad from the site, passing trains, traffic on Eastern Valley Road, aircraft overflights, dogs barking in the distance, horns/sirens/train whistles, and sound from the air conditioning systems at McAdory Elementary School and the Jefferson Metro Industrial Park facilities across the railroad from the site.

- Location 5 - This location was selected to approximate sound levels at residences across Eastern Valley Road from the site. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, rain, back-up alarms on trucks and equipment at the Jefferson Metro Industrial Park facilities across the railroad from the site, passing trains, traffic on Eastern Valley Road, aircraft overflights, dogs barking across Eastern Valley Road, horns/sirens/train whistles, back-up alarm on a service van at a nearby residence, child at a nearby residence hitting rocks with an aluminum bat, and faint sound from a air conditioning system.

- Location 6 - This location was selected to approximate sound levels at the residences in Sadler Ridge subdivision. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, back-up alarms and trucks and equipment at the Jefferson Metro Industrial Park facilities across the railroad from the site, the Public Address system at the Jefferson Metro Industrial Park facility across the railroad from the site, aircraft overflights, and sound from the air conditioning systems at the Jefferson Metro Industrial Park facilities across the railroad from the site.

- Location 7 - This location was selected to approximate sound levels at the property line between the site and the Jefferson Metro Industrial Park facilities across the railroad from the site. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, and trucks and equipment at the Jefferson Metro Industrial Park facilities across the railroad from the site.
- Location 8 - This location was selected to approximate sound levels at the property line between the site and the Jefferson Metro Industrial Park facilities across the railroad from the site. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, frogs, emergency sirens, passing trains, county surveyor's truck idling nearby, trucks and equipment at the Jefferson Metro Industrial Park facilities across the railroad from the site, and sound from the air conditioning systems at the Jefferson Metro Industrial Park facilities across the railroad from the site.
- Location 9 - This location was selected to approximate sound levels at the property line between the site and the Jefferson Metro Industrial Park facilities across the railroad from the site. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, passing trains, trucks and equipment at the Jefferson Metro Industrial Park facilities across the railroad from the site, and sound from the air conditioning systems at the Jefferson Metro Industrial Park facilities across the railroad from the site.
- Location 10 - This location was selected to approximate sound levels at the residences in Sadler Ridge subdivision. Sound levels measured during the survey can be characterized as low and typical for a suburban area with a few existing noise sources. Background sounds noted during the monitoring included birds, insects, wind, residual rainwater dripping from trees, and passing trains.

Figures 2 through 7 provide graphical summaries of the hourly average measurements made in four locations in the area of the proposed BRIMF during 24-hour measurements. As the data in Table 8 indicate, the hourly average values (Leq (h)) at these locations ranged from 44 to 70 dBA. Calculating the 24-hour energy average noise levels for the long-term monitoring locations, including adding the 10 dBA weighting for day-night sound levels, shows the Ldn levels for this period to vary from 60 to 72 dBA.

FIGURE 2
Background Noise Monitoring Summary Near Project Center (Location 1)

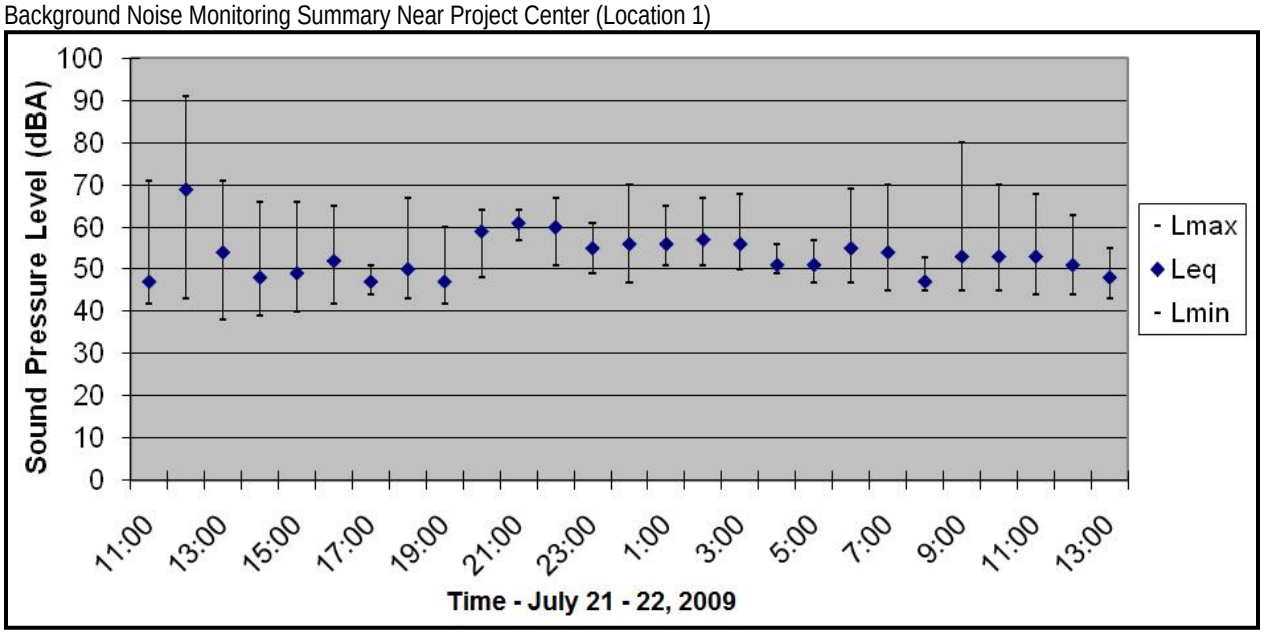


FIGURE 3
Background Noise Monitoring Summary Near McAdory Elementary School (Location 2)

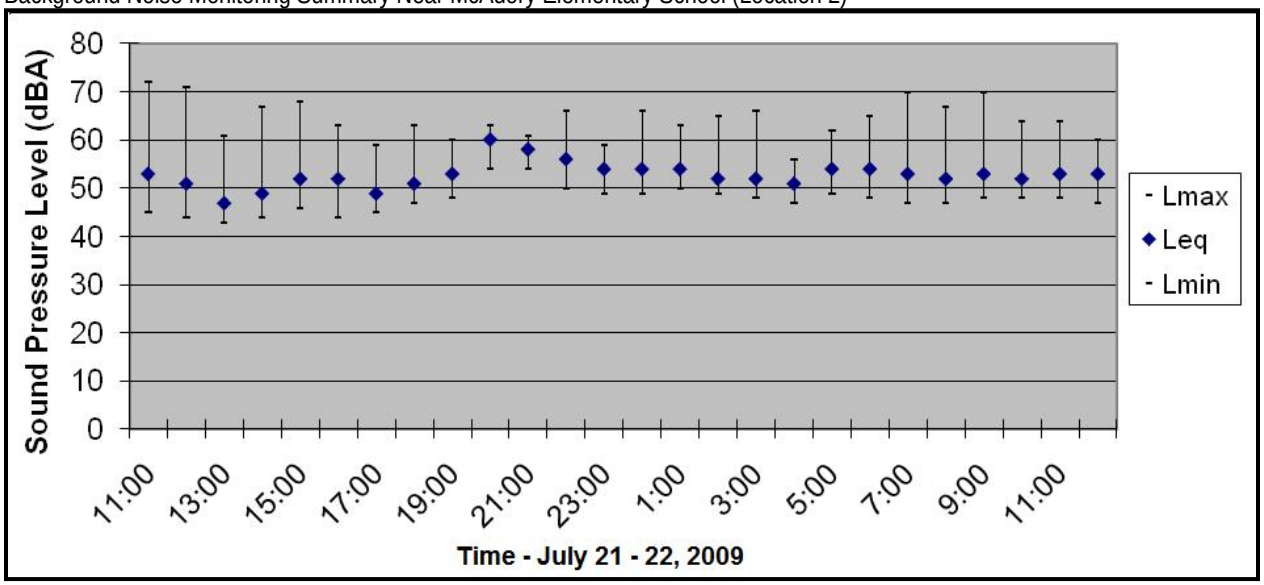


FIGURE 4
Background Noise Monitoring Summary Near Industrial Park (Location 9)

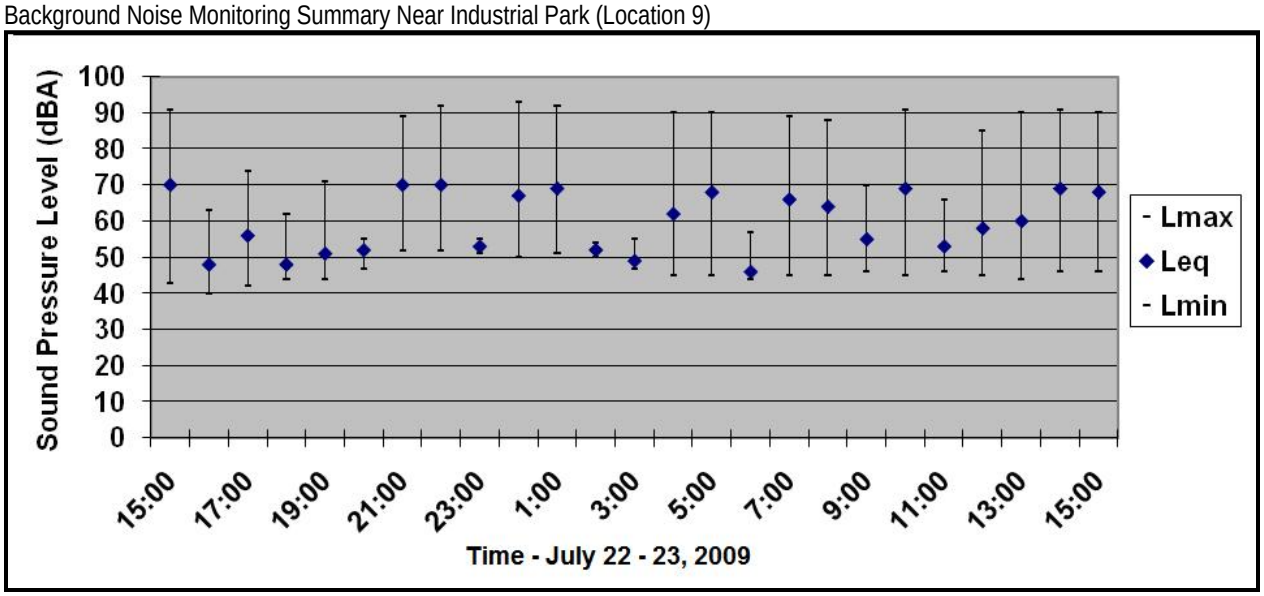


FIGURE 5
Noise Monitoring at Location 2

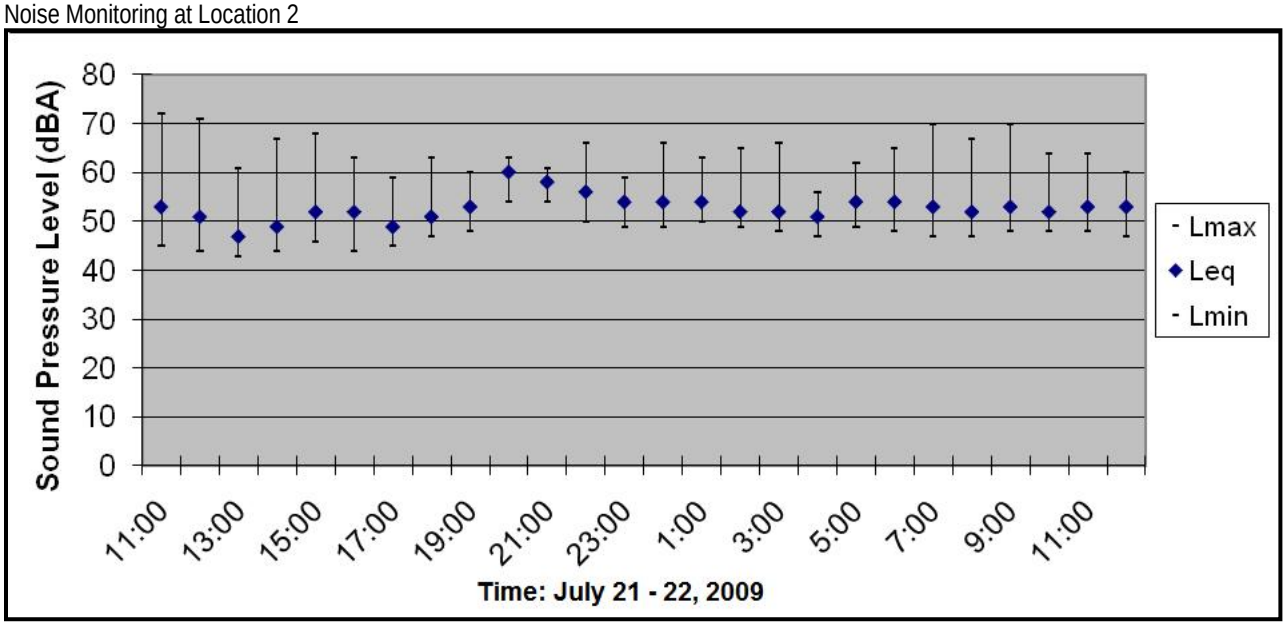


FIGURE 6
Noise Monitoring – Location 10

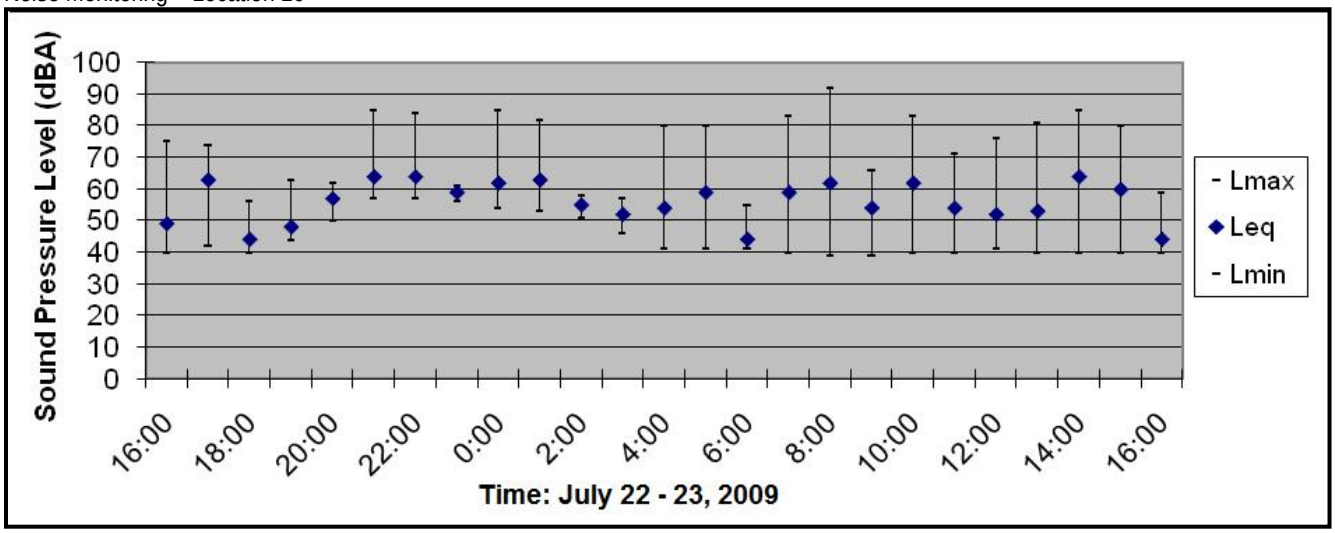
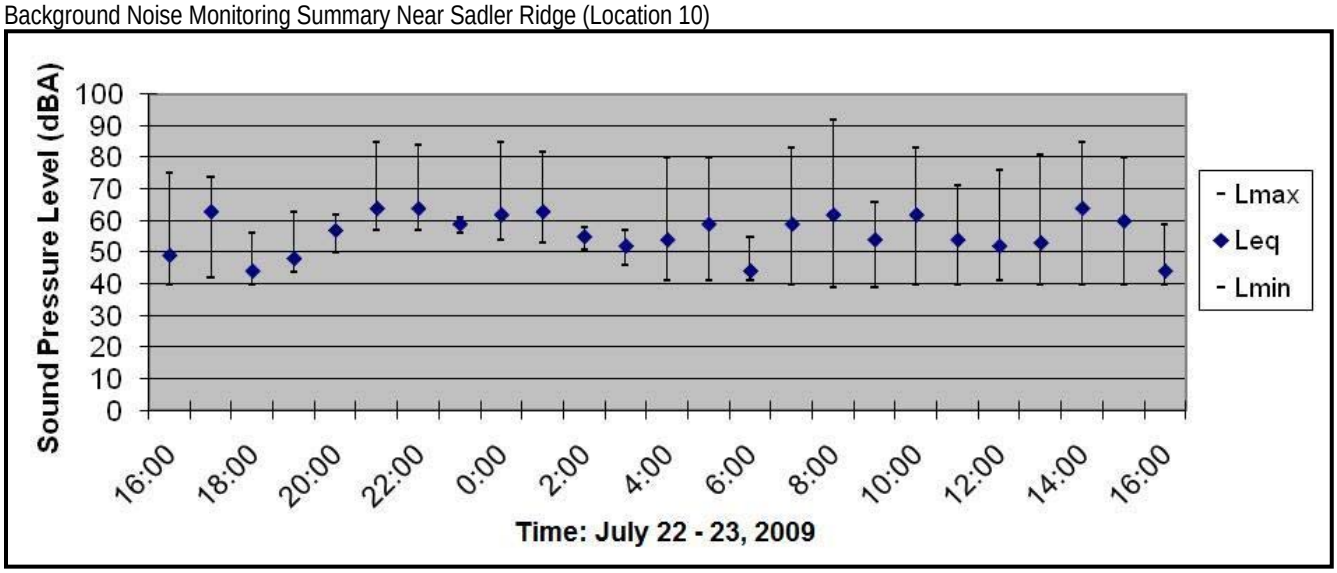


FIGURE 7
Background Noise Monitoring Summary Near Sadler Ridge (Location 10)



The results of the ambient monitoring for the proposed BRIMF site are typical for what may be expected in a rural landscape with scattered residences and open fields. Other than the periodic sounds of trains passing by on the mainline tracks, sounds were a mixture of human activities from automobiles and lawnmowers, and natural sounds of birds, dogs, and insects. The range of individual measurements varied very little, other than a noticeable increase for those measurements that were made closest to the tracks when trains were passing by. Maintenance activities on the tracks during this period, which required the train engineers to blow their whistles more frequently than would otherwise be required, elevated these sounds producing maximum noise levels that reached 92-93 dBA for monitors nearer the tracks. Generally, however, the Leq values throughout the monitoring

period were much lower, with recorded sounds ranging between 44 and 70 dBA, the higher values reflecting the effect of including in these 24-hour measurements the sounds of approximately 20 trains that pass by the mainline tracks each day. Individual short-term measurements throughout the project area were also very typical for non-urban environmental, ranging from 44-59 dBA.

3.0 Environmental Consequences

The following sections summarize the predicted effects of noise during construction and operation of the BRIMF.

3.1 Significance Criteria

No local or state regulations exist that limit the levels of environmental noise from either construction or operation of the BRIMF. To evaluate the potential significance of noise associated with the proposed BRIMF, criteria were applied that are used by several agencies including the Federal Highway Administration (FHWA) and the Alabama Department of Transportation (ALDOT), for typical peak periods of daytime traffic, and the Federal Transit Administration (FTA) and the Federal Railroad Administration (FRA) for either 24-hour exposure or periods other than peak traffic.

3.1.1 Traffic Noise

FHWA and ALDOT noise assessment guidelines were used to evaluate noise from traffic that would be associated with the BRIMF. The Federal Aid Highway Act of 1970 established the requirement that noise control be a part of the planning and design of all federally aided roadways. The FHWA developed guidelines for conducting noise studies and has established noise abatement criteria (NAC) for different land use activity categories. FHWA guidelines are set forth in 23 CFR 772. ALDOT subsequently developed their Highway Traffic Noise Analysis and Abatement Policy and Guidance based on FHWA policy. The noise criteria established by FHWA and as adopted by ALDOT are shown in Table 9. A traffic noise impact occurs when predicted traffic noise levels approach or exceed the NAC. A noise level approaching the NAC is usually considered to be 1 dBA below the NAC. An impact also occurs when the predicted traffic noise levels substantially exceed the existing noise levels. An increase of 15 dBA is considered to be substantial.

TABLE 9
FHWA Noise Abatement Criteria

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

Source: 23 CFR 772

The FHWA/ALDOT criteria were developed to evaluate peak-hour levels for new highway projects. The traffic peak-hour impacts typically occur during the daytime when the ambient noise is usually at its loudest. The highest traffic volumes estimated for the BRIMF are anticipated to occur during or close to normal traffic peak-hour time periods. Therefore, the use of these criteria as guidelines is appropriate for daytime traffic impacts. For the proposed BRIMF site, Activity Category B (Noise Abatement Criterion of 67 dBA) would be the appropriate basis for comparison of the proposed project noise impacts, reflecting schools, churches, and residences as key components of this category that may be affected by noise impacts.

These FHWA/ALDOT criteria and standards as used for the BRIMF noise impact assessment indicate that for daytime sound criteria, a noise level of 66 dBA or greater would be considered an impact.

3.1.2 Rail and Facility Operations Noise

Onsite operations and rail traffic can occur at times other than peak-hour traffic noise. Therefore, additional criteria evaluating impacts during other time periods or total 24-hour exposure are useful. Such criteria are available in guidance (FTA, 2006) published by the FRA and the Federal Transit Administration (FTA). The FRA/FTA guidance criteria vary, depending upon the receptor land use category as shown in Table 10.

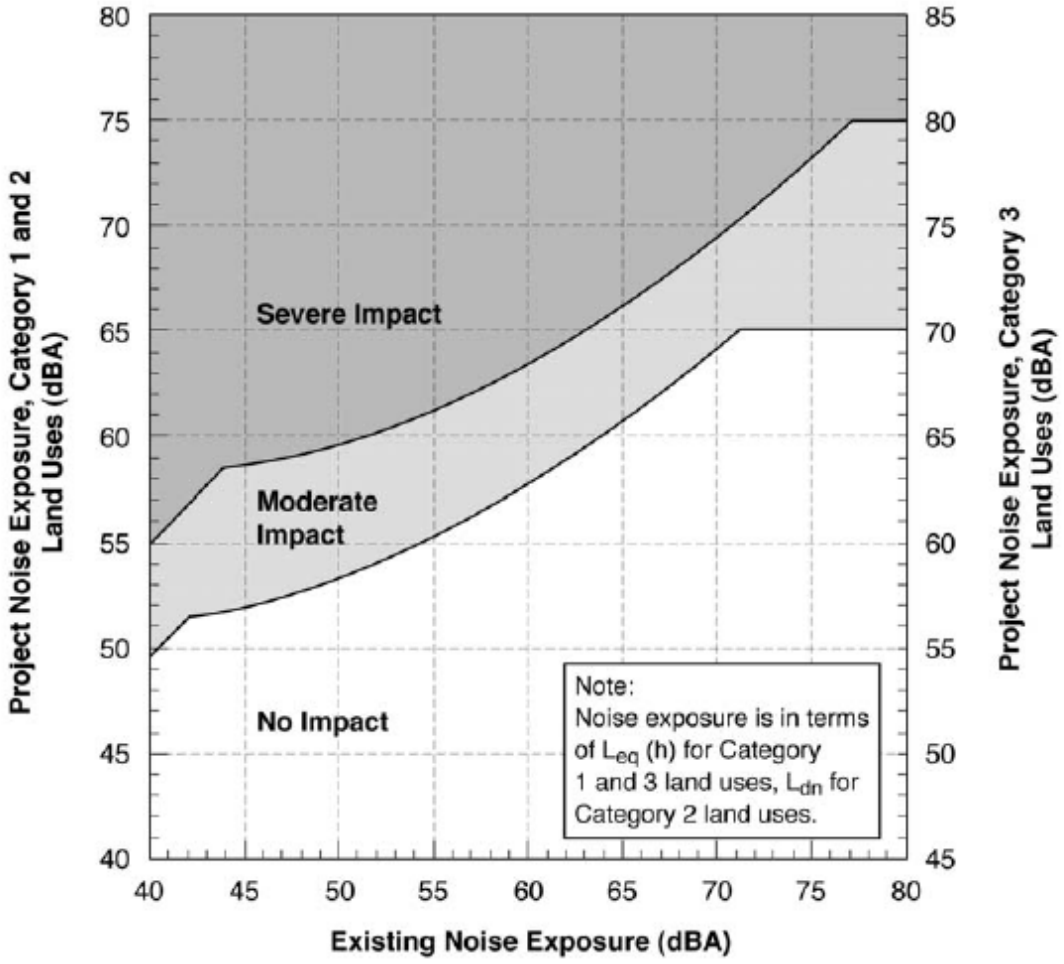
TABLE 10
FRA/FTA Land Use Category Descriptions

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

Source: FTA 2006

The application of these categories for specific existing noise exposures using the FRA/FTA guidance criteria are shown in Figure 8. Land Use Category 2 is the appropriate category to use to assess 24-hour total noise exposure impacts of the proposed BRIMDF reflecting primarily impacts that might affect sleep in nearby residences. Land Use Category 3 is the appropriate category to use to assess the impact at McAdory Elementary School.

FIGURE 8
FRA/FTA Noise Guidance Criteria



Source: FTA 2006

3.2 Identification of Noise Sensitive Receptors

Within 0.5 mile of the proposed BRIMF site there are residences, churches, and a school. These all would be included in Category B of the FHWA/ALDOT classification of activities (Table 9), with a peak hour noise abatement criterion of 67 dBA. There are also commercial and industrial activities within 0.5 mile with a criterion of 72 dBA. The same receptors would be subject to the FRA/FTA criteria, which would vary by receptor depending upon existing Ldn noise levels.

3.3 Construction Noise

Construction of the BRIMF facility is expected to be typical of other light industrial and commercial facilities in terms of schedule, equipment used, and other types of activities. The noise level and duration would vary during the construction period, depending on the construction phase. The overall construction phase is expected to last approximately 18 months and activities would be spread broadly over the site rather than concentrated in one location. Therefore, no concentration of noise-emitting equipment should occur in one

localized area except for very brief periods. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as proper maintenance of muffler systems.

Both the U.S. Environmental Protection Agency (USEPA) Office of Noise Abatement and Control and the Empire State Electric Energy Research Company have extensively studied noise from individual pieces of construction equipment as well as from construction sites of power plants and other types of facilities (USEPA, 1971; Barnes et al., 1976). Information from these documents has been used in the evaluation of noise for this project.

The loudest equipment types generally operating at a site during each phase of construction are presented in Table 11. The composite average or equivalent site noise level, representing noise from all equipment used for each construction phase, is also presented in the table.

TABLE 11
Construction Equipment and Composite Site Noise Levels

Construction Phase	Loudest Construction Equipment	Maximum Equipment Noise Level (dBA) at 50 feet	Average Composite Site Noise Level (dBA) at 50 feet
Site Clearing, and Excavation	Dump Truck Backhoe	91 85	89
Concrete Pouring	Truck Concrete Mixer	91 85	78
Steel Erection	Derrick Crane Jack Hammer	88 88	87
Mechanical	Derrick Crane Pneumatic Tools	88 86	87
Cleanup	Rock Drill Truck	98 91	89

Source: USEPA, 1971; Barnes et al., 1976.

Average or equivalent construction noise levels projected at various distances from the site are presented in Table 12. These results are considered to be conservative since the only attenuating mechanism considered was divergence of the sound waves in open air. Shielding effects of intervening structures and vegetation are not included in the calculations. The noisiest construction activities would be confined to the daytime hours.

TABLE 12
Average Construction Noise Levels at Various Distances

	Sound Pressure Level (dBA)		
Construction Phase	375 feet	1,500 feet	3,000 feet
Site Clearing, and Excavation	71	59	53
Concrete Pouring	60	48	42
Steel Erection	69	57	51
Mechanical	69	57	51
Clean-Up	71	59	53

Elevated noise levels are likely to occur during construction of the facility. Perceived noise levels associated with a specific construction activity would depend on several factors,

including: the type of activity; the types and number of equipment in use; the noise level generated by the various pieces of equipment; the duration of the activity; the distance between the activity and any noise-sensitive receptors; and shielding or absorption effects that might result from existing buildings, topography, or vegetation. There are no applicable criteria that apply to construction noise. However, provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as proper maintenance of muffler systems.

3.4 Determination of Future Operational Noise

Operational noise would be generated by:

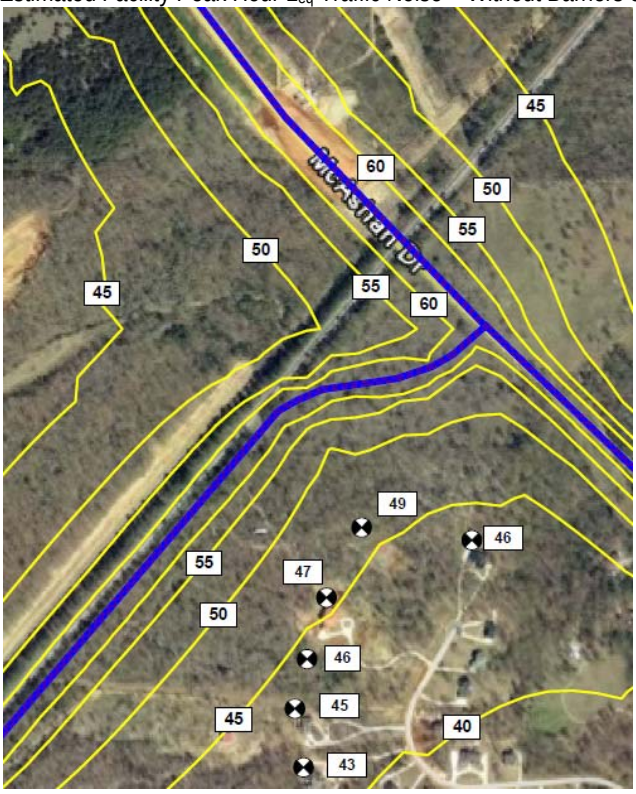
- Motor vehicle traffic to and from the facility.
- Additional rail activity on the mainline and on the IMF site.
- Equipment used onsite to move the containers and trailers to and from the railcars.

Noise levels from each of these noise source categories were estimated through the use of a computer model incorporating accepted noise estimation techniques. Noise levels were also monitored at the NSR J. W. Whitaker Intermodal terminal facility in Austell, Georgia. These were used to check the reasonableness of the estimated noise levels for the BRIMF.

3.4.1 Motor Vehicle Traffic Noise

Heavy trucks would be the primary source of motor vehicle traffic noise associated with the facility. All trucks would enter and leave the site on an access road to be built on the northeast end of the site. This road would be located parallel to the railroad tracks. Trucks would connect with I-20/I-59 by using McAshan Drive. Truck traffic volume would vary widely throughout the day. The peak truck hour is estimated to occur in the 1:00 p.m. to 2:00 p.m. period. This time period was evaluated for traffic noise levels using the FHWA's Traffic Noise Model (TNM) equations as incorporated in the Cadna/A® computer noise model. The estimated traffic noise levels, without a barrier or berm adjacent to the access road are shown in Figure 9. The heavy blue line shows the planned location of the access road and McAshan Drive. The solid yellow lines are contours of hourly L_{eq} traffic noise. The target symbols are estimated noise levels at specific locations.

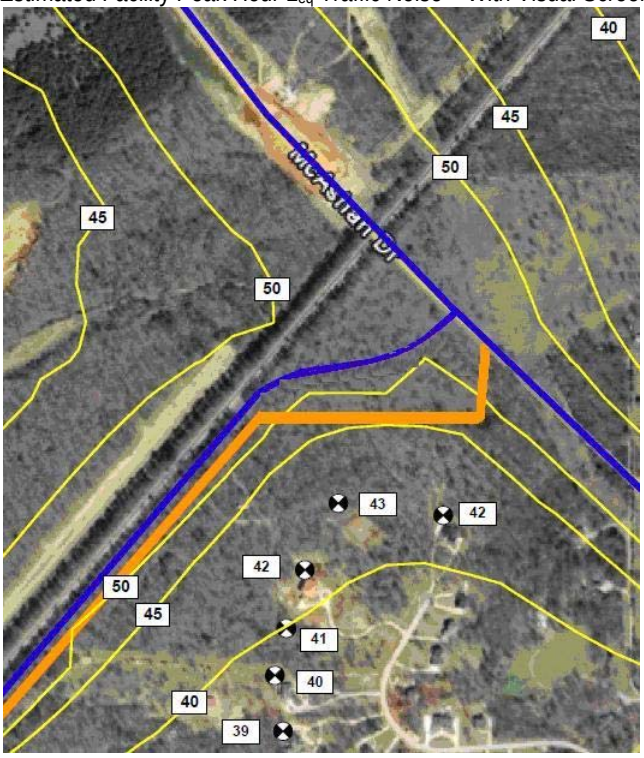
FIGURE 9
Estimated Facility Peak Hour L_{eq} Traffic Noise – Without Barriers or Berms



As can be seen in Figure 9, the highest estimated peak hour traffic L_{eq} noise level at the Sadler Ridge residences to the south of the access road is 49 dBA. This level for truck movement along the access road is well below the FHWA highway criterion of 67 dBA. The measured Leq noise level at Location 10 in the same general area for the 1:00 p.m. to 2:00 p.m. period was 53 dBA. The combined Leq noise level (existing plus project traffic) would be 55 dBA. The 2 dBA increase would not be substantial.

In addition, visual screening barriers are planned to be incorporated into the project that would have the additional benefit of further attenuating the sound from trucks moving along the access road. These barriers would include a 15-foot high visual barrier that would be built on the south side of the access road where it is immediately adjacent to the railroad tracks. A 15-foot high visual barrier would be built from that point to the intersection with McAshan Drive. In addition to the intended benefit of visual screening, the berm and barrier would also block the direct transmission of noise to the Sadler Ridge residences as shown in Figure 10. The heavy orange line shows the planned locations of the barrier and berm.

FIGURE 10
Estimated Facility Peak Hour L_{eq} Traffic Noise – With Visual Screening Barrier



As can be seen in Figure 10, the visual screening barrier is estimated to provide a further reduction in traffic noise levels at the Sadler Ridge residences of 4 to 6 dBA. The highest estimated peak hour traffic Leq noise level at the Sadler Ridge subdivision to the south of the access road with the visual screening barrier is 43 dBA. This level for truck movement along the access road is well below the FHWA highway criterion of 67 dBA. The measured Leq noise level at Location 10 in the same general area for the 1:00 p.m. to 2:00 p.m. period was 53 dBA. The combined Leq noise level (existing plus project traffic) would be 53 dBA (rounded to the nearest decibel). The increase of less than one dBA would not be substantial.

3.4.2 Rail Activity and IMF Operations Noise

Six trains would arrive or depart from the BRIMF daily. Three of these arrivals/departures are scheduled to occur during nighttime (10:00 p.m. to 7:00 a.m.) hours. The other three are scheduled during the daytime. Train operations at the facility are estimated to last for approximately one hour each. It is assumed that the average speed during movement of these trains onsite would be 15 miles per hour.

The noise levels for locomotive and railcar movements were calculated from information provided by Harris Miller Miller & Hanson, Inc. This information, along with data on the schedule of arrivals and departures, was used to allocate the noise generated between daytime and nighttime and was input to the Cadna/A® computer noise model.

Similarly, the noise levels at a reference distance (either 50 or 100) feet were determined for cranes, hostlers, side loaders, and refrigeration units from an evaluation of the technical literature and onsite measurements made at the Austell, Georgia facility. The numbers of each type of noise source and the assumed L_{max} source noise levels used in the computer

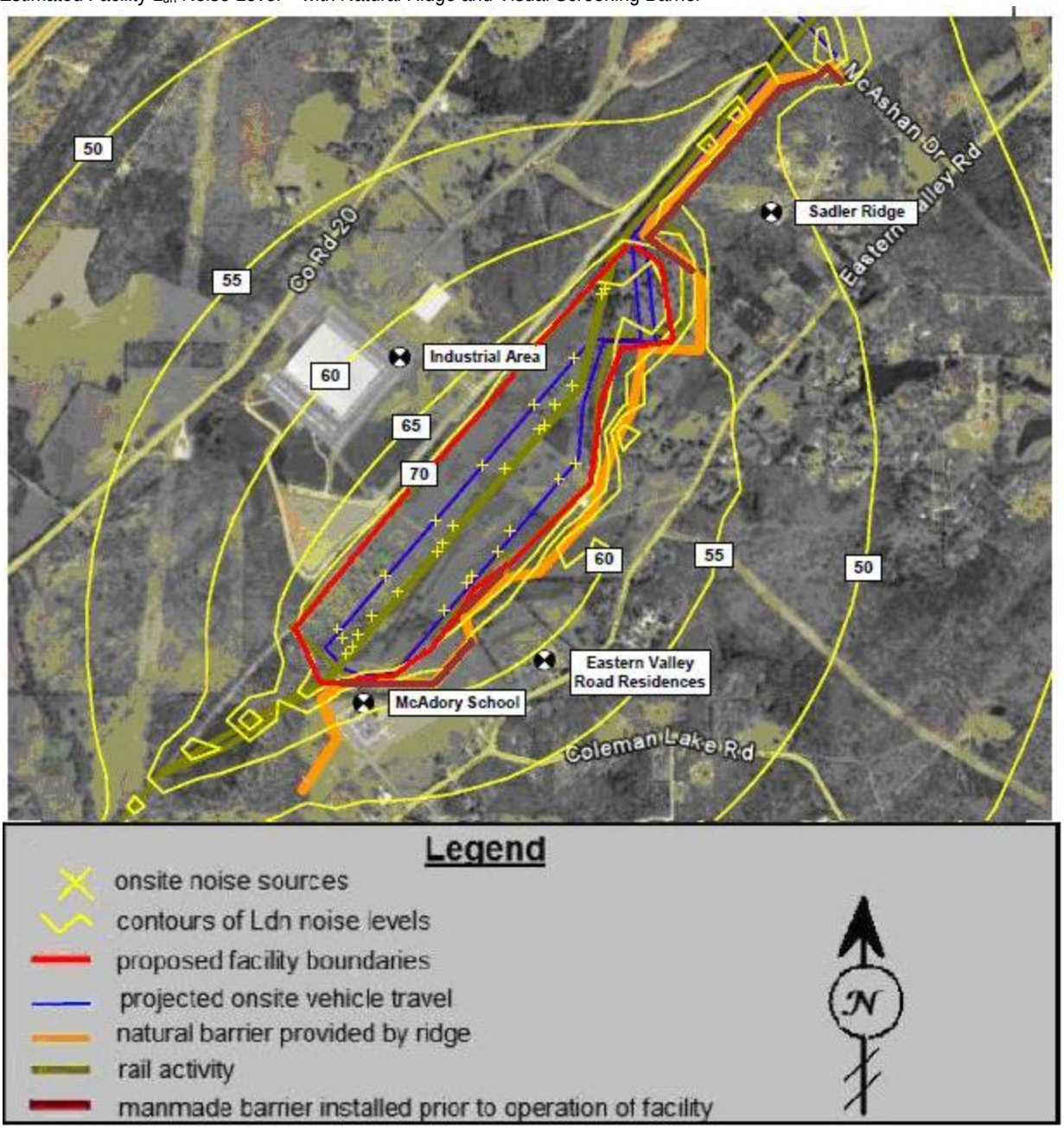
modeling are shown in Table 13. The portion of each hour that the equipment would actually be in operation was taken into account to determine the equivalent sound power level to be used for the equipment noise in the model.

TABLE 13
Noise Levels and Numbers of Equipment Operating Onsite

Equipment	Sound Pressure Level at 50 feet (dBA)	Number of Equipment Operating Onsite
Cranes	79	4
Hostlers	80	14
Side Loader	85	1
Refrigeration Units	73	16

The L_{dn} 24-hour descriptor for noise from future traffic, rail activity, and onsite operations was estimated as shown in Figure 11, where the contours represent the conservative estimate of day-night sound values with operating equipment distributed over the facility. As these data in the figure illustrate, sounds from operating equipment and trains would result in Ldn noise levels at the edge of the facility of approximately 60 dBA.

FIGURE 11
Estimated Facility L_{dn} Noise Level – with Natural Ridge and Visual Screening Barrier



The noise impact for residences is evaluated based on the estimated L_{dn} noise as shown in Figure 11. However, the FRA/FTA criterion used for evaluation of noise impacts on schools is based on the hourly L_{eq}. The daytime hourly facility Leq estimated for McAdory Elementary School is 55 dBA. The existing hourly Leq noise level during school hours (assumed to be 7:00 a.m. to 7:00 p.m.) at the school varies from 47 dBA to 53 dBA.

Table 14 summarizes the results of applying the FRA/FTA criteria to sensitive receptors in the area that may be affected by the operation of the BRIMF. Locations near the existing industrial facilities are not considered areas of sensitive receptors, have no applicable FRA/FTA impact criteria, and therefore are not included in the evaluation.

TABLE 14
Comparison of Projected Operational Noise with FRA/FTA Criteria

Location	Estimated or Measured Existing Noise Exposure	Category and Project Noise Exposure	Impact
Near McAdory Elementary School	47 dBA L_{eq} min 53 dBA L_{eq} max	Category 3 55	Minimum Existing - No Impact Maximum Existing – No Impact
Near Eastern Valley Road Residences	58 to 59 dBA L_{dn}	60 dBA L_{dn}	Moderate
Near Sadler Ridge	60 to 66 dBA Ldn	Category 2 52 dBA L_{dn}	No Impact

The hourly L_{eq} noise from operation of the proposed BRIMF at McAdory School is projected to be 55 dBA. The existing hourly Leq noise levels measured near the school during normal school hours varied from 47 dBA to 53 dBA. Evaluation of these existing and project noise exposures for Category 3 land uses per the FRA/FTA guidance (Figure 8) concludes that there will be no impact.

The L_{dn} noise from operation of the proposed BRIMF at the Sadler Ridge residences is projected to be 52 dBA. The existing Ldn noise levels, based on measured noise at several locations in the area, are estimated to be in the range of 60 to 66 dBA. Evaluation of these existing and project noise exposures for Category 2 land uses per the FRA/FTA guidance concludes that there will be no impact. Note that the noise levels for Ldn shown in Figure 4.10-5 include a weighting penalty to reflect the more sensitive receptors during the evening hours (10 PM to 7 AM) and therefore do not apply to the school which is not occupied during these hours.

The L_{dn} noise from operation of the proposed BRIMF at the residences along Eastern Valley Road is projected to be 60 dBA. The existing Ldn noise levels, based on measured noise at several locations in the area, are estimated to be in the range of 58 to 59 dBA. Evaluation of these existing and project noise exposures for Category 2 land uses per the FRA/FTA guidance concludes that there will be moderate impact.

All estimated noise levels from operation of the proposed BRIMF include the effects of noise reduction by the visual screening berms and the natural terrain.

4.0 References

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APPENDIX H

Agency, Groups, and Organizations Comments and Responses

BRIMF Agency, Non-government Agency, and Organization Comments and Responses

The comments summarized below were developed from comments submitted by governmental agencies and public institutions. These comments were received in response to a Views and Comments letter submitted by the Alabama Department of Transportation (ALDOT) on July 17, 2009. Some comments were received in response to a 30-day public notice of the August 18, 2009 Public Information Meeting, a 30-day public notice of the November 12, 2009 Public Information Meeting, and for 10 business days following each of the Public Information Meetings. The entirety of each comment is available within this Appendix. For those persons interested in obtaining a copy of all public comments submitted, please contact ALDOT's Environmental Technical Section (E.T.S) via phone at 334-242-6738. Studies and reports referenced in these responses are also available upon request by contacting ALDOT.

Multiple comments, questions, and concerns were submitted to Norfolk Southern Railway Company (NSR) and/or ALDOT prior to the commencement of comprehensive studies or the completion of the proposed facility design. These particular statements are indicated by an asterisk (*) at the end of the comment.

A – Purpose and Need

A.1 The need, potential transportation benefits, and adverse effects of the proposed project should be clearly stated and substantiated.*

Response: Section 2.0 of the EA (Purpose and Need) defines the purpose and need for the proposed Birmingham Regional Intermodal Facility (BRIMF). The primary purpose and need for the proposed BRIMF is to meet current and future demand for intermodal (rail/truck) freight transportation in the Birmingham region through expanded capacity. Factors influencing the need for this facility at this time include current and future demand for rail intermodal service capacity and market drivers in the Birmingham region.

The proposed new BRIMF would provide transportation alternatives to long-haul truck traffic to and from the Birmingham region. Section 2.2.3 of the EA (Additional Benefits of Proposed Action) summarizes the potential transportation benefits of the proposed project. In addition to the efficiencies gained in freight transportation and reduction of future demands on highways supporting interstate commerce and energy sources through the development of the BRIMF, the proposed project would also improve the regional economy and provide needed jobs.

Section 4.0 of the EA (Affected Environment and Environmental Consequences) analyzes the environmental consequences of the proposed action and describes how potentially adverse effects would be avoided, minimized, and/or mitigated. Section 5.0 (Indirect and Cumulative Impacts) evaluates the project's indirect and cumulative impacts associated with the proposed BRIMF for each of the affected resource areas.

Substantiation of the purpose and need is provided in Section 2.0 and includes national transportation need projections from the Federal Highway Administration (FHWA) and analysis by Cambridge Systematics, documenting projected freight traffic demand impact, as well as fuel consumption, emissions, safety, and economic and non-monetized impacts.

B – Proposed Action and Alternatives

B.1 What modifications were made to the conceptual plan to help minimize adverse effects to McAdory Elementary School?

Response: The site for the proposed BRIMF is in the viewshed of McAdory Elementary School, and therefore, NSR modified the original design to provide a vegetated earthen landscape berm between the facility and the school as a visual barrier. This berm would provide the added benefit of noise reduction. Part of the southwestern end of the facility footprint was relocated to avoid or reduce impacts to wetlands and the nearby tributary to Mill Creek; this relocation also increased the distance between the school and the proposed facility road nearest the landscape berm. In addition, the entrance to the facility access road was redesigned and signage proposed that will lead trucks exiting the facility toward I-20/59, away from Eastern Valley Road, and deter the potential movement of trucks in the vicinity of McAdory Elementary School.

Section 3.4.3 of the EA (Design Modifications in Response to Public and Agency Comments) discusses the sub-alternatives that have been developed through the conceptual planning phase to respond to various issues, including modifications to minimize potential adverse effects to McAdory Elementary School, as well as mitigation of project effects in general.

B.2 The U.S. Environmental Protection Agency (USEPA) recommends that the National Environmental Policy Act (NEPA) document incorporate a robust alternatives analysis section given their environmental concerns related to the siting of the intermodal facility in proximity to area schools. The document should also discuss any alternative site locations that were examined.*

Response: Section 3.0 of the EA (Proposed Action and Alternatives) describes seven alternative sites considered for the BRIMF and presents the two-part screening analysis which resulted in the selection of the preferred alternative site. The first level screening applied two mandatory criteria for the successful expansion of intermodal capacity in the Birmingham region and resulted in the elimination of two sites. The second level screening examined criteria which are also important in the analysis, including construction, operational, environmental, and social attributes of each of the five remaining sites, and resulted in the identification of the McCalla site as the preferred alternative.

The second level screening presented in Section 3.2.2.2 of the EA (Second Level Screening for Construction, Operational, and Environmental Considerations) included an evaluation criterion for potential impacts of an IMF on the community, including residential communities, schools, churches, and parks. The analysis of potential community impacts compared residential land use areas and the number of non-residential sensitive receptors within 0.5 mile of each alternative. Non-residential sensitive receptors, including schools, were located within 0.5 mile of several alternatives, as described in Section 3.3 of the EA (Description of Alternatives Considered), including the preferred alternative. The magnitude of potential impacts associated with the alternatives considered resulted in selection of the McCalla site as the preferred alternative, consistent with meeting the project purpose and need.

C – Air Quality

C.1 All emissions resulting from the project must be in compliance with all applicable air quality regulations, particularly relative to the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants (e.g., ozone, carbon monoxide, nitrogen oxides, sulfur dioxide, lead and particulates) in designated nonattainment areas. Based on USEPA's initial review, the proposed project area is designated as non-attainment for fine particulate matter (PM2.5) and ozone. There are two types of activities (e.g., facility construction and operation) that contribute to air pollution in the proposed project area.*

Response: NSR will comply with all applicable air quality regulations during both facility construction and operation. While Jefferson County is currently designated as a nonattainment area for PM2.5 and as a maintenance area for ozone, a comprehensive air quality analysis of maximum projected facility emissions demonstrated that BRIMF operations will not cause or contribute to an exceedance of the NAAQS for PM2.5 (or any other pollutant) at any location. A discussion of the air quality analysis methodology, results, and conclusions, is provided in Section 4.2 of the EA.

C.2 USEPA recommends that the NEPA document discuss what will be done to minimize emission impacts. For example, retrofits and other measures to reduce truck emissions and idle reduction measures (e.g., idle reducing hook-ups, appointment scheduling, and other queuing reduction measures). Also, all construction equipment should be tuned to manufacturer's specifications to reduce air emissions. By June 2010, the Ultra Low Sulfur Diesel (ULSD) fuel standard of 15 parts per million (ppm) sulfur will apply to non-road diesel fuel production. Beginning in 2010, locomotive diesel fuel must meet the ULSD fuel standard of 15 ppm sulfur. Open burning should also be minimized or avoided, since such emissions are precursors to ozone. Open burning should be coordinated with the state and/or county regarding permitting needs. USEPA further recommends using water for fugitive dust control during construction, instead of oils and other chemicals.*

Response: Although there is no requirement to do so, NSR has already committed to reducing its emissions by using only new Tier-4 engines that will meet USEPA's future emission standards in its container handling equipment (cranes and hostler yard trucks) at the proposed facility. The equipment operating at the site will also be using ULSD fuel, to the extent that it is available, which (as noted) should be the case following USEPA's June 2010 fuel standard schedule. Currently, low sulphur diesel fuel is available in the Birmingham area. Also as noted by USEPA, the ULSD fuel standard commences in 2010, providing for further reductions in sulfur content. Other mitigation measures are being considered as part of the environmental review process.

The operation of the facility, in and of itself, can be characterized as an "environmentally beneficial project" since it will result in net annual reductions of more than 81 million truck miles and more than 10.5 million gallons of diesel fuel used nationwide. These reductions are consistent with national energy and environmental policy goals for congestion mitigation, dependence on fossil fuels, and air pollutant emission reductions (including greenhouse gases).

During the construction phase of the project, open burning (if required) would only be performed with the approval of the Jefferson County Department of Health. Fugitive dust emissions during construction would be minimized using appropriate Best Management Practices (BMPs) as described in Section 4.2.1 of the EA.

C.3 An evaluation of a project of this magnitude (165,000 transfers per year) should include consideration of the impacts of Mobile Source Air Toxics (MSAT) emissions on nearby populations. The NEPA document should include a detailed inventory of air toxics emissions (including diesel emissions) from both stationary and mobile sources that serve the facility, including the locomotives, switchers, tractors, support equipment, etc. It should also include a screening level evaluation of the potential impacts of these emissions on neighboring populations at each of the locations being considered for the facility in order to allow an informed comparison of the level of acceptability of each of the locations being considered. The screening level evaluation could be conducted using the approach described in USEPA's Air Toxics Risk Assessment Reference Library (ATRA Library). USEPA refers the sponsor of the project to the ATRA Library, Volume 1 Section 3.3.3 for further details (http://epa.gov/ttn/fera/risk_atra_main.html). The evaluation should include a description of the recent literature concerning the impact of air toxics emissions on near-roadway receptors, including sensitive receptors such as children and the elderly. The evaluation should also describe the methods that will be used to mitigate any unavoidable emissions and impacts.*

Response: An evaluation of MSAT emissions during facility operation has been performed and is described in Section 4.2.2 of the EA. The evaluation was based on a detailed emission inventory of all emission sources that will be operating at the facility, at maximum design capacity. The evaluation of MSAT emissions was performed consistent with FHWA and USEPA guidance, as described in Section 4.2.2.4 of the EA. MSAT emission evaluations were only performed for the preferred alternative. It was not necessary to conduct air emissions analysis at alternative locations because other criteria more critical to the acceptability of each of the locations being considered was not met.

The Automated Gate System (AGS) proposed for the facility will ensure quick entry and exit from the facility with minimal stoppage time and associated idling. The transaction time for trucks at the AGS is typically under 3 minutes. Once entering the facility, trucks are driven to their designated cargo location for hookup or release of their intermodal cargo, a matter of a few minutes. Trucks then exit through the AGS with its automated security and inventory control. The entire process is designed to be quick and efficient with minimal idling. There is no incentive in the transportation system for idling, which not only slows the delivery process but also wastes expensive fuel. NSR will install signs at selected locations to further discourage idling.

As mentioned above in Response to Agency Comments C.2, NSR has already committed to reducing its emissions by fielding only new Tier-4 engines that will meet USEPA's future emission standards in its container handling equipment (cranes and hostlers) at the proposed facility. The equipment operating at the site will also be using ULSD fuel, to the extent that it is available, which (as noted) should be the case following USEPA's June 2010 fuel standard schedule.

D – Cultural, Historic, and Archaeological Resources

D.1 A cultural resource survey concurrence should be coordinated with the State Historic Preservation Officer (SHPO). Besides the consideration of listed historical sites, the NEPA document should also discuss procedures for events such as unearthing archaeological sites during prospective construction. Such procedures should include work cessation in the area until SHPO and/or Tribal approval of continued construction is received.*

Response: A cultural, historic, and archeological survey has been completed for the site and no discoveries of any kind that may be considered significant or having potential for listing under Section 106 of the NHPA were found. Formal clearance through SHPO has been requested. An Unanticipated Discoveries Plan will be drafted for the project before construction begins and made available to all site contractors to follow during the construction phase.

E – Fish, Wildlife, and Vegetation

E.1 Has there been an adequate assessment of potential impacts to imperiled species (terrestrial, aquatic, and vegetation) within the project area and beyond (indirect impacts)?*

Response: Site-specific threatened and endangered species surveys were conducted to assess the occurrence of protected fish, mussels, and snails, and terrestrial and wetlands species. These surveys did not find potentially suitable habitat for protected plant and wildlife species nor were any Federal or State protected species identified in or immediately adjacent to the proposed project area. Section 4.4.2.3 of the EA provides additional information on these surveys. To obtain a copy of the protected aquatic species survey reports (*Threatened and Endangered Mollusk Survey in the East and West Forks of Mill Creek and Cooley Creek in the Cahaba River Drainage* and *Survey for Protected Fish in the Vicinity of Proposed Norfolk Southern Project in Jefferson and Tuscaloosa Counties, Alabama*) please submit written request to ADOT.

F – Water Resources

F.1 Post-development stormwater runoff volumes will not approximate pre-development runoff volumes, which will cause significant negative water quality impacts.*

Response: In addition to the control of volume releases of stormwater, a stormwater retention aspect was added to the ponds for detention or stormwater flow runoff velocity reduction. A spray irrigation field supplied by retained water will be installed to reduce water volume in releases and minimize potential impacts to adjacent streams. Section 4.5.2.2 of the EA provides detailed information on stormwater runoff values.

F.2 This is a fundamental, significant issue concerning the health of the Cahaba River system that can no longer be ignored, and must be fully addressed by this NEPA process.

Response: The EA addresses the potential water quality impacts from construction and operational impacts associated with the development of the BRIMF. Additional information

is provided in Section 4.5.2 of the EA. All state and federal protocols for BMPs will be met along with all applicable water quality criteria for any released surface water. Although not required under the Clean Water Act, the facility is being designed to provide for a match of pre- and post-construction hydrology from the site. As mentioned above in Response to Agency Comment F.1, the spray irrigation field will assist in managing water volumes onsite.

F.3 How will the facility yard design plans address water quality concerns? Furthermore, will flooding events impact downstream properties and infrastructure? USEPA recommends that the rail yard be designed to collect stormwater runoff. The runoff should then be constructively used for landscape watering or grey water use in the infrastructure, i.e., flushing toilets or locomotive/rail car cleaning, etc.*

Response: In addition to the control of volume releases of stormwater, a stormwater retention aspect was added to the ponds for detention or storm flow rate reduction. Industry standards were consulted for the retention volume and depth to achieve desired water quality. A spray irrigation field will also be utilized to minimize water volume in releases and reduce potential impacts to adjacent streams. The retention/detention ponds and pond outlet control structures are designed with maximum outflows from the most downstream pond not to exceed the pre-development 2 year storm at the pond outfall. Section 4.5.2 of the EA provides additional information on proposed stormwater management at the BRIMF. The detention ponds are designed with a shutoff valve in order to be able to control any spill that may occur on site. The alignment of the leads on the west side of the terminal was designed so as to reduce stream impacts.

F.4 The document should include an erosion control plan or reference the State erosion control regulations and a commitment to compliance. Compliance should include both BMP application and maintenance. BMPs for the design operation life of the facility should also be considered.*

Response: An erosion control plan will be completed prior to the start of construction of the project and will comply with State erosion control regulations. Design of the facility includes BMP implementation during both construction and operations.

F.5 The document should discuss any proposed crossings of water bodies. In general, crossings should be minimized. Unavoidable crossing should be strategically placed to reduce harm by avoiding fish spawning areas, avoiding fringe wetlands, approaching at right angles to streams, etc.*

Response: Bottomless culverts and bridge crossings will be used to minimize impacts to the movement of aquatic organisms. The design of the tracks included strategic placement to minimize impacts to wetlands. Stream crossings have been designed to be at right angles to the streams wherever feasible to do so. A wall design for two of the incoming tracks will be used instead of culverts to reduce the width of the culvert crossing thereby reducing impacts to the stream and wetlands and provide daylight for aquatic organisms. Water body crossings at the facility will also be governed by the requirements of Section 404 of the Clean Water Act, under the purview of the U.S. Army Corps of Engineers under separate permit which will include full mitigation of impacts to waters and wetlands.

F.6 USEPA notes that the proposed project is located in an impaired watershed. The ADEM has identified Shades Creek as not supporting its designated use of fish and wildlife due to low dissolved oxygen, pathogens, siltation, turbidity, and other habitat alternations. Land use in the headwaters of Shades Creek is urban in its headwaters south of Birmingham. ADEM has also identified collection system failure and urban runoff/storm sewers as probably causes of impairment of Shades Creek. In addition to Shades Creek, three tributaries (Cooley, Mill, and Mud Creeks) are also listed as impaired due to pathogen impairment and are designated as partially supporting their designated use.

The NEPA document should indicate how the proposed project will impact the Shades Creek watershed. What improvements will be made to that portion of the urban storm-water system in the vicinity of the proposed action to help Shades Creek meet existing water quality standards? What improvements need to be made to the collection system to prevent the proposed action from further degrading Shads Creek? How will the proposed action affect the existing sewer (and drinking water) infrastructure? *

Response: Several site visits were completed to characterize the streams in the area of the proposed BRIMF that had any potential to be affected by construction or operation of the facility. Sections ES 5.4 and 4.5.2.2 of the EA includes information from these site visits. The stormwater system that has been designed, consisting of four retention ponds, a weir that can be closed if necessary, and a spray irrigation system, will provide management of runoff from the facility and achieve the required water quality compliance goals and standards. See response to question F.9 for information on the stormwater system included in the proposed BRIMF. All construction and operation activities will apply additional BMPs as needed to further avoid impacts to streams in the watershed as well as designs for retention ponds to manage water flows and quality before the water is released into adjacent streams. These protocols, as described in more detail in Section 5.5.3 of the EA, will be expected to avoid impacts to the tributaries adjacent to the site and thereby avoid impacts to the Shades Creek watershed.

I – Hazardous Materials

I.1 NSR declares that only a "small percentage" of 3 to 4% of intermodal shipments are regulated as hazardous commodities. What does that mean in terms of quantities of hazardous materials being transferred? Most hazardous chemicals are shipped in bulk containers of 88,000 or more gallons. Specifically, what hazardous chemicals will be shipped?

Response: Intermodal traffic is carried on separate trains within the NSR network.

Annually, NSR typically transports approximately 2.2 to 2.9 million shipments or containers through their existing IMFs across the eastern United States, of which only 3 to 4 percent contain hazardous materials. During the period 2004 through 2009, NSR intermodal transported 16,070,989 intermodal units. During that same time there were 25 hazmat spills from intermodal units inside IMFs, or 0.000156% for each shipment. Additionally, the trend has been toward fewer spills each year (2004-10, 2005-5, 2006-2, 200704, 2008-1 and 2009-3). Of these 25 spills, 17 were one gallon or less in size and only one spill was over 25 gallons.

The large railway tank cars (which average 22,000 gallons, with a limited number hauling up to 43,000 gallons), are restricted from NSR intermodal transport and consequently will not be handled at the BRIMF. Specifically which hazardous materials can be shipped is governed by U.S. DOT regulations, which determine shipping requirements that allow certain hazardous materials to be shipped while prohibiting others. These regulations are detailed at 49 CFR 172. Examples of hazardous commodities typically shipped through NSR's intermodal system in containers include cans of paint, cases of household size cleaners, components of fire extinguishers, and air bags. Some materials that are corrosive, toxic or potentially harmful are transported in intermodal service as permitted by U.S. DOT regulations. A more detailed discussion of hazardous commodities transported through NSR's intermodal system is available in Section 4.8 of the EA. NSR does not foresee any plans to transport railway tank cars through the intermodal system in the future, and this equipment therefore will not be transported through the BRIMF. A very small number of tank containers (less than 0.4 percent of all NSR intermodal shipments) are shipped in intermodal service. These tank containers commonly have a capacity of 6,000 gallons and have proven to be a very safe type of equipment. The commodities shipped in tank containers are controlled by USDOT and NSR, and include non-hazardous food-grade commodities and regulated hazardous commodities. Toxic Inhalation Hazards, as well as certain explosives and other similar commodities are forbidden from transit in intermodal service by NSR.

I.2 Even though NSR claims that none of the hazardous materials pose inhalation hazards, how can NSR guarantee that a plume of toxic chemicals would not occur when certain corrosive chemicals (acids and bases) are released during an event?

Response: The very small percentages (less than 4 %) of shipments that carry products that are considered hazardous do not represent highly corrosive acids or bases in large quantities. Prior operating history for NSR's other intermodal facilities has demonstrated that if an incident occurs that causes release of chemicals in a container, the materials released are quantities on the order of ounces to a few gallons. These quantities are managed on site by local staff and vendors. In the very few cases of leaks or spills at the NSR intermodal facilities, hazardous materials have not caused harm to individuals or the environment. Additionally, intermodal facilities are designed to prevent any material or substance from reaching any offsite land or water resources. Shipments of hazardous chemicals through intermodal are regulated by the U.S. DOT and NSR. DOT requirements for shipping, containerizing, and marking are discussed in Section 4.8.2 of the EA.

I.3 The NEPA document should address issues related to potential accidents that may occur related to the proposed intermodal facility. What are the emergency response plans to address issues associated with potential hazardous-cargo accidents, e.g., tractor trailer traffic bringing in the cargo or cargo container transfer incidents between the truck and the train, in an area with elementary, middle, and high schools, day care, and residences.*

Response: Please see Response to Public Comment I.1.

J – Land Use

J.1 If the land use plan is to be "over-ridden" then such a decision should be subject to open public review and involvement. Comprehensive land use planning is an extremely important function that property owners, both families and businesses, in America rely upon to make investment decisions and build towards the future. That important deliberation is not included in the present "EA" material. A full EIS could help resolve those actual and perceived incompatibilities and address the need to consider economic and other impacts to local property owners and the surrounding community.*

Response: Location of rail facilities and certain other infrastructure vital to national interests in interstate commerce were established many years ago. The location of the rail line through McCalla was established in the late 1800's. Accordingly, rail use of the area was established long ago and dictates the general location for transportation facilities like the intermodal facility. Land use plans typically do not address rail facilities due to longstanding legal doctrines limiting local governmental authority over interstate transportation (such as highways, rail, etc.) as well as other nationally important infrastructure (e.g. power, energy pipelines, water). Public and agency input was vital to the development of the alternatives, the analysis of impacts, the selection of the preferred alternative, and the measures to minimize harm that have been developed to mitigate project impacts. Public meetings were held August 18 and November 12, 2009, at the Bessemer Civic Center. Approximately 750 people attended these two meetings and about 300 comments were received. Consideration of economic and other impacts to local property owners has been considered and is described in the EA. A public hearing is scheduled in April 2010 to further provide a venue for public involvement.

K – Noise and Vibration

K.1 The NEPA document should indicate what noise levels can be expected from the project, and the distance to the closest residence or other sensitive receptor (school, medical facility, etc.). Background (ambient) noise levels should also be included in the document. The NEPA evaluation should estimate the projected incremental increase of noise.*

Response: Section 4.10 of the EA provides the noise levels at adjacent receptors (e.g., McAdory Elementary School, Saddler Ridge Neighborhood) that can be expected as a result of the BRIMF. Additionally, ambient noise levels are provided in the report. The evaluation of noise impacts in the EA and noise study conclude little to no incremental increase in noise.

K.2 All construction equipment should be equipped with noise attenuation devices, such as mufflers and insulated engine housings. In addition, OSHA regulations apply for all employees affected by job noises.*

Response: Provisions would be included in the construction plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as proper maintenance of muffler systems. NSR observes all applicable Federal Railroad Administration and OSHA regulations for employees

potentially affected by job noises. Additional details regarding construction generated noise and anticipated mitigation are included in Section 4.10 of the EA.

K.3 If noise impacts are significant at residences just outside the normal width of the right-of-way, relocation of residents should also be considered at the discretion of the affected residents. Avoiding noise impacts via alignment/route shifts or less impacting alternatives is frequently more effective than mitigation. The proposed project does have communities that are located within the vicinity of the project area. Because of their proximity, the NEPA document should indicate how the construction and ongoing operational activities will affect existing area residents and schools. In addition, the documents should also disclose how noise impacts will be minimized and mitigated.*

Response: Results from the noise monitoring and modeling studies indicate that adjacent neighborhoods will not be substantially affected by construction or operation noises from the IMF. Therefore relocating of access roads or other mitigation options is not expected to be required. However, there will be several areas on the site where current planning includes the placement of 15-foot landscape berms or walls to shield the visual impacts from local residences, these walls will provide added reduction of noise levels as well. Additional details regarding construction generated noise and anticipated mitigation are included in Section 4.10 of the EA.

L – Social Elements and Environmental Justice

L.1 Will there be an impact on McAdory Fire Department or the Sheriff's Department, due to the construction or operation of the BRIMF? If so, will NSR assist in funding an increase in manpower and training?

Response: Section 4.11.1.3 of the EA discusses the availability and proximity to community facilities such as police, fire, and emergency medical services (EMS) while Section 4.11.2.1 summarizes the Safety and Security measures proposed by NSR as part of the BRIMF, including emergency preparedness. NSR does not anticipate an impact to the McAdory Fire Department or the Sheriff's Department due to the construction or operation of the BRIMF. However, NSR will offer training to local first responders. Additionally, the NSR Police Department coordinates with local law enforcement agencies in training and exercises.

L.2 NSR claims that it has a stellar safety record. But the citation they give for the E.H. Harriman Gold safety award is for employee safety. It says nothing about derailments and other accidents involving NSR trains and cars. Please provide detailed information on NSR's train safety record: how many derailments, accidents, etc.? How does NSR's record compare with the industry?

Response: Any accident or incident considered reportable is recorded on the Federal Railroad Administration – Office of Safety Analysis website. This website allows the public to run queries based on numerous criteria and topics. When comparing the four largest railroad companies operating in the U.S., over the last ten years NSR has the lowest rate of accidents among the largest Class I railroads. These safety statistics report accidents for all types of trains operated by NSR. Figure 4.11-6 in Section 4.11 of the EA provides a 10-year overview of accidents and incident rates occurring over the rail networks of the four largest Class I Railroads. http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx

L.3 The NEPA document should address the issues associated with residential and children's health and safety issues regarding their potential exposure to increased diesel emissions, heavy truck traffic, noise, lighting and visual impacts. The NEPA document should also indicate whether the existing transportation infrastructure (e.g., Eastern Valley Road) is equipped to handle the additional capacity. What are the plans for addressing the anticipated traffic congestion and associated environmental impacts and safety issues implied by the increased truck traffic? The NEPA document should discuss the following:

- **Whether air monitors will be used to monitor pollutant levels on the school grounds. Monitoring may help to indentify appropriate mitigation to protect children's health.**
- **Filtering air intake to the extent feasible to minimize intake of these particulates into the school's HVAC system, as well as filtering within the HVAC system.**
- **Whether increased truck traffic and noise associated with the facility operation will impact school classes and how this impact can be mitigated, e.g., providing/installing sound proof materials for the class rooms and planting vegetative buffers.**
- **The design plans for the intermodal facility and technology that will be used to reduce associated emissions/noise. Will berms/noise barriers be implemented to separate the facility from neighboring properties? Scheduling outdoor activities at the school when vehicular traffic is low, banning vehicular idling at the intermodal facility, and planting evergreen trees/vegetation should minimize air and noise impacts.***

Response: The EA that has been prepared for the Proposed BRIMF addresses the issues that are raised in this comment. Additional information can be found in the following sections of the EA:

- Section 4.2 (Air Quality)
- Section 4.10 (Noise and Vibration)
- Section 4.11.2. (Environmental Consequences)
- Section 4.12 (Traffic and Transportation)
- Section 4.13 (Visual and Lighting)

More specific responses to each issue are as follows:

- Traffic Congestion - The projected increase in truck traffic on McAshan Drive north of the facility entrance is expected to represent only a small increase in the average annual daily traffic (AADT) volume. Based on traffic studies and the projected truck volume for the project, the increase in traffic on McAshan Drive will be less than 8.5 percent of existing and projected traffic volumes for all foreseeable future scenarios. Traffic studies have also indicated that the facility will not lead to a deterioration of the level of service (LOS) at any intersection between the facility entrance and Interstate 20/59. The facility is being designed such that visiting truck traffic will not enter or leave the facility via Eastern Valley Road. Please also refer to Section 4.12 of the EA.

- Air Quality Monitoring - NSR currently has no plans to perform ambient air quality monitoring at the facility. Ambient air quality monitoring is typically not performed to assess mobile sources of air emissions. USEPA's approach to mobile air source emissions includes regulation of engine emissions through industry standards and analyses of projected emissions (qualitative, or under some circumstances quantitative). NSR believes that the comprehensive qualitative and quantitative air quality analyses that have been performed have adequately demonstrated that the facility will not result in an adverse impact on ambient air quality at any location. Please also refer to Section 4.2 of the EA.
- Air Quality at McAdory Elementary (HVAC Systems) – Comprehensive air quality analyses of the air emissions from the proposed facility (operating at design capacity) have demonstrated that there will be no adverse impacts at or in the vicinity of the McAdory Elementary School or at any other location. Based on the results of these analyses, NSR does not believe that any modifications to the HVAC system should be necessary at the school related to the construction or operation of the BRIMF. Please also refer to EA Section 4.2.
- Traffic and Noise Impacts at McAdory Elementary – Visiting truck traffic will enter and leave the facility via McAshan Drive and travel between the facility entrance and Interstate 20/59. No increase in truck traffic is expected on Eastern Valley Road as a result of facility operations. Additionally, the majority of the trucks and equipment at the facility will be operating on the site at distances between ½ and 1 mile from the school. Earthen berms (15 ft above grade), will also be constructed between the school and the facility to provide a visual barrier. These berms, which will be vegetated, will also substantially reduce or eliminate any potential noise propagation from the facility to the school. Noise analyses of the facility (including the presence of the berms) while operating at maximum design capacity have indicated that there will be no substantial increase in noise levels in the vicinity of the McAdory Elementary School. Based on the results of these analyses, NSR does not believe that additional noise reduction mitigation at the school should be necessary. Please also refer to EA Section 4.10.
- Visual and Lighting - Additional visual barriers, including earthen berms and walls, will be constructed at various locations around the facility to provide visual barriers between the facility and neighboring locations. Please also refer to EA Section 4.13.

L.4 Consistent with Executive Order 12898 (2/11/94), potential EJ impacts should be considered in the NEPA document.*

Response: Consistent with Executive Order 12898 and including assessment under USEPA guidance, Section 4.11 of the EA fully reviews potential Environmental Justice impacts and concludes that no Environmental Justice impacts could result from the proposed BRIMF.

L.5 The demographics of the affected area should be defined using the U.S. Census data for the year 2000 (Census blocks) and compared to other nearby Census block, county, and state percentages for minorities and/or low-income populations. If percentages of these populations are elevated within the project area, other alternatives should be considered, or coordination with affected populations should be conducted, to determine the affected population's concerns and comments regarding the proposed project. This coordination should include a clear discussion of the project, project updates or expansions, inclusion of the affected population (or

their community leader, pastor, or equivalent) on the NEPA document mailing list, any economic benefits (job opportunities, etc.) and adverse impacts of the project to the affected population, and the opportunity for informal and/or formal comments (e.g., EIS scoping meeting and EIS public hearing, or other public meetings). Regardless of the demographic makeup of the affected population, impacts of the project should be controlled so that significant effects on human health are avoided and/or minimized.*

Response: Section 4.11.1.3 of the EA describes the analysis performed by the Regional Planning Commission of Greater Birmingham's (RPCGB) Transportation Planning Division to evaluate potential Environmental Justice issues across Jefferson and Shelby Counties using FWHA procedures at the U.S. Census Bureau block group resolution (Birmingham MPO, 2005). As noted in Section 4.11.1.3, there is not a noticeable concentration of low-income populations in the area around the proposed BRIMF, while minority groups represent approximately 10 to 25 percent of the nearby population as compared with 36 percent of Jefferson and Shelby Counties' overall population. As a result, the development of the proposed BRIMF is not anticipated to have a disproportionate impact on Environmental Justice populations and further coordination is not required. The numerous public participation opportunities for this project include information on the project, economic benefits, potential adverse impacts, and opportunities for comments to solicit view of all of the public, including minority and low-income populations.

M – Traffic and Transportation

M.1 Currently, when a train is present in Bessemer, it divides the city in half. On 22nd Street, there is a two-lane, 10-foot high bridge culvert which doesn't allow fire trucks or semi-trucks to pass under the tracks, which is a dangerous situation during emergencies. The additional train traffic will only make this issue worse. The City of Bessemer requests a new overpass in this area.

Response: Only two additional trains will utilize the mainline once the BRIMF is in operation. Accordingly, it is not anticipated that there will be a substantial adverse impact on traffic in Bessemer. The City of Bessemer's concerns are outside of the scope of this EA; however, NSR anticipates communications with the City of Bessemer regarding this separate project.

M.2 The Traffic Study does not address railroad operations and the impacts to local grade crossings. Train traffic operations and the restrictions or conflicts to local traffic should be included in the study. If the rail operations are expected to negatively impact traffic at grade crossings, alternate routes and the impacts associated with the use of the alternate routes should be included in the study.

Response: As discussed in Section 5.9 of the EA, trains approaching the intermodal facility from the south will be traveling the same speed through the crossing as a train approaching the existing passing track at McCalla. Therefore there should be no additional effects on local traffic. An estimated six trains, each operating 5 or more days per week, would pickup or deliver containers at the BRIMF. Of these six trains, four currently travel along the existing adjacent mainline each day. These four trains would stop at the BRIMF to set out and/or pick up trailers and containers on rail cars. Additionally, one train is projected to originate at the BRIMF and one train is projected to terminate at the BRIMF each day. These two additional trains originating and terminating at the BRIMF will be serving markets in

the Northeast, and will not impact any road crossing south of the terminal. The intermodal trains will operate on a set schedule; however, delays often occur and schedules are frequently modified. Accordingly, it is difficult to accurately predict when crossings will be made by train traffic.

M.3 The appropriate design vehicle should be identified for operation and design purposes.

Response: The design vehicle will be a WD-50 truck.

M.4 Given the high volume of truck traffic that will use the proposed facility, the maximum approach grade for the driveway entrance should be identified for safe access and acceleration onto McAshan Drive.

Response: In a meeting with Jefferson County on February 24, 2010, NSR agreed to a 2% grade for 80 feet where the IMF entrance meets McAshan Drive.

M.5 Access restrictions, such as gates and receiving check points; peak volumes; and hours of operation should be included in the study to address and eliminate offsite parking and truck queues on McAshan Drive.

Response: The gate system is designed to move trucks through the gate area quickly and prevent trucks from backing up. Currently the gate system has multiple inbound and outbound lanes. It typically takes approximately 3 minutes for a truck to be processed through the gate system. It is anticipated that the peak hourly inbound traffic will be 29 trucks. In addition the length of the access road leading to the gate system for the facility is over 3,400 feet from the intersection of McAshan Drive which will provide ample space for queuing of as many as 29 trucks if needed; therefore, no offsite parking or queues will be required.

M.6 As the site access driveway is located in an unlighted area that is zoned for agriculture, recommendations for entrance signing and lighting should be included in the study.

Response: Proposed plans include installing a street light at the intersection of the entrance with McAshan Drive.

M.7 Advanced warning signs and signals for trucks entering should be required. A W110-10 "Truck Symbol" with a W16-13p "When Flashing" supplemental plaque and an actuated flashing beacon should be located on each approach in advance of the entrance.

Response: As described in Section 4.12.2, NSR proposes to install warning signs on McAshan Drive that have yellow flashing lights that will be sensor-activated when a vehicle is pulling out of the BRIMF onto McAshan Drive. These signs will assist in alerting north and southbound drivers on McAshan Drive that a truck is approaching the exit of the BRIMF.

M.8 The McAshan Drive shoulder will have to be widened adjacent to the right turn lane and taper, and the guardrail will have to be reset accordingly and installed along the proposed entrance driveway.

Response: Comment noted. NSR will also install signage along the exit lane of the BRIMF to notify truck drivers that trucks are prohibited from making right turns out of the facility.

M.9 Home Depot has opened a new warehouse facility in the Jefferson Metropolitan Industrial Park. Truck traffic has increased and the traffic study should be updated to account for the significant impact of additional traffic along McAshan Drive from I-59/20 to Jefferson Metropolitan Parkway.

Response: A comparison study was performed in April, 2010 to adequately account for additional traffic volumes (including heavy trucks) on McAshan Drive since the opening of the Home Depot warehouse. Results from this study were compared with those collected during counts performed in 2009 The counts taken reflect an increase of approximately 170 heavy truck trips per day between the truck stop and I-59/20 which is equivalent to approximately 85 new trucks (1 trip inbound and 1 trip outbound per truck) on McAshan Drive for the day. Also note that the truck traffic on McAshan between the railroad and Eastern Valley Road is significantly reduced, likely a result of the truck restrictions on Eastern Valley Road. It is also likely that trucks previously utilizing using Eastern Valley Road to access the industrial park and other destinations on McAshan Drive have been rerouted away from Eastern Valley Road and now utilize McAshan Drive. This accounts for 31 truck trips per day or approximately 15 trucks (1 trip in and 1 trip out per truck) on a daily basis.

N – Visual and Lighting Conditions

N.1 The NEPA document should discuss the type, magnitude, duration, and direction of the lighting. It should also indicate what measures will be made to minimize and mitigate lighting related issues on the neighboring community.

Lighting an intermodal facility also represents a substantial expenditure of energy. In addition, the document should also disclose the conservation potential of various alternatives including the preferred alternative.*

Response: Section 4.13 of the EA discusses NSR's intent to provide the minimal lighting necessary to assure the safety of workers and to provide for the safe and proper circulation of motor vehicles within the parking area. Consideration of energy efficiency will be integrated into the Exterior Lighting Plan noted in Response to Public Comment N.1 and Section 4.13.2 of the EA. Please also see Response to Public Comments N.3.

N.2 The industrial nature of the proposed action is inconsistent with the zoning restrictions and the nature of the residential community. The NEPA document should indicate the measures that will be taken (e.g., building design, layout, landscaping, etc) to make the proposed action look less industrial, and more fitting to the surrounding residential character.*

Response: NSR is actively exploring LEED certified building designs as part of the facility planning process. Viewshed barriers with vegetation in strategic locations will be constructed to reduce terminal visual impact. The vegetation on portions of the landscaping berms will be irrigated using water from terminal detention ponds which has an additional benefit of reducing runoff. See Responses to Public Comments J.5, J.7, N.1, N.2 and N.4 as well as Section 4.13 of the EA.

O – Indirect and Cumulative Impacts

O.1 Have indirect and cumulative impacts and mitigation been adequately considered?*

Response: Indirect and cumulative impacts have been assessed in accordance with NEPA and guidance from numerous agencies including the Council on Environmental Quality, USEPA, FHWA, and others. This includes assessment of secondary impacts from anticipated future growth indirectly induced by the BRIMF, as well as cumulative impacts including both direct and indirect effects. Please also see Responses to Agency Comments O.2, O.3, and O.4.

O.2 The NEPA document should estimate cumulative impacts associated with the proposed project. Cumulative impacts include the additive effects of a relevant parameter (e.g., in this case, air emissions and noise) for all contributing past, present, and reasonably foreseeable projects in the defined project area.*

Response: Section 5.0 of the EA describes the indirect (secondary) and cumulative impacts associated with the proposed BRIMF for applicable resource areas addressed in Section 4.0 with the addition of Energy as a topic area; Table 5-1 provides a summary of potential cumulative impacts that could result from construction and operation of the BRIMF.

O.3 The document should define what cumulative environmental as well as social impacts would result from implementation of the proposed project.*

Response: Section 5.0 of the EA assesses potential cumulative environmental impacts as well as social impacts that could result from implementation of the Proposed BRIMF.

O.4 Since it does not appear as though a corridor planning document is being developed for the Crescent Corridor, the NEPA document should provide a discussion on the various segments of the Corridor that are being proposed within Region 4.

Response: The EA is focused on describing the current and future need for intermodal infrastructure in the Birmingham region and on addressing potential effects that could result from the proposed construction and operation of the BRIMF in accordance with the National Environmental Policy Act (NEPA). The BRIMF has independent, stand alone utility to the Birmingham region and its purpose and need are such that the facility would be developed regardless of segments of the Corridor (EA, Section 2.0). While planned NSR projects attempt to meet the long term goals for improving the operations of the Crescent Corridor, each project also has stand alone, independent value as discussed in Section 2, Purpose and Need, and documented in the EA. Potential indirect and cumulative impacts are discussed in further detail in Section 5.0 of the EA.

P – NEPA Process

P.1 The studies associated with the development of an EA are not available for full review by the public, whereas studies related to an EIS are available for full review by the public. Studies for the proposed BRIMF should undergo full public review.*

Response: All studies once final are available to the public and agencies for full review. The studies are included in the administrative record for the EA and NEPA process and are

available by request from ALDOT at. Public involvement throughout the process of writing this EA has been a critical component to accurately capturing public concerns and questions. Prior to writing this EA, two Public Involvement Meetings were held followed by 30 day comment periods, which provided opportunities for the public to submit questions, comments, and concerns. This EA will also be provided to the public for review prior to holding a third Public Hearing, where the public will be given the opportunity to provide additional questions, comments, and concerns that need to be addressed within the report. Some of the reports and studies related to this EA are included as appendices, as appropriate. However, due to the wealth of information developed for this EA and to facilitate public distribution, not all studies in the administrative record have been included as appendices to the EA. To acquire a copy of a study that was not included as an appendix to the EA, please contact ALDOT.

P.2 The NEPA document should include discussions of possible conflicts between the proposed action and the objectives of federal, regional, state, and local land use plans, policies, and controls for the area concerned and the urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternative and mitigation measures.*

Response: The location of rail transportation facilities was developed long ago, and the rail line in the McCalla area was established in the late 1800's. As noted in Response to Agency Comment J.10, rail transportation is typically not included in local land use and zoning due to the national interest in interstate commerce and limited ability of state and local governments to regulate or specify locations for infrastructure such as rail, highways, power, energy (gas pipelines), water and other similar projects. The EA contains an extensive discussion and assessment of land us plans, policies, and controls and discusses how the project may affect land use resources.

P.3 Overall, USEPA's preliminary scoping review has identified potential environmental impacts requiring additional consideration as part of the NEPA process including alternatives analysis, noise, air, water resource and community impacts. Beyond the documentation of air, noise, wetland, and other environmental impacts of the proposed facility, the NEPA document should assess the societal effects (EJ, children's health, etc.) of these impacts on nearby neighborhoods consisting of residents, school children and other sensitive receptors. Mitigation, as appropriate, should also be discussed and offered by the sponsor for unavoidable impacts. Moreover, it should be noted that proper site selection – where sensitive receptors and other impact parameters are avoided – obviates/reduces the need for and is more effective than such mitigation.*

Response: The EA identifies potential environmental impacts to air quality, noise, water resources, wetlands, wildlife, threatened and endangered species, and the community. These resource areas were also considered in the alternative analysis (Section 3.0). The EA also discusses potential societal, environmental, and health impacts to adjacent neighborhoods and residents, the students and faculty of McAdory Elementary School, and other sensitive receptors. Proposed mitigation for potential impacts to the resources and groups in the project area are discussed throughout the EA.

Q – Other Topics

Q.1 A full Section 4(f) Evaluation is required. See 49 U.S.C. § 303(2).

Response: Section 4.9.2.3 of the EA discusses Section 4(f) Evaluations. The proposed BRIMF would not use lands that contain historic sites, parks, recreation areas, wildlife or waterfowl refuges. Additionally, there is not a constructive use of any Section 4(f) lands, as no Section 4(f) lands near the proposed BRIMF. Therefore, a Section 4(f) Evaluation is not required.

Q.2 In response to NSR's assertion that no "off loading" of goods and commodities will be conducted on site, what provisions have been made to respond to accidents when containers are transferred from trains to trucks or vice-versa?

Response: NSR intermodal terminals have a very high safety record, with a very small percentage of container accidents during transfer on site. These accidents rarely have any spills of transported hazardous substances and when they do the quantities released are usually a few gallons or less. These small releases are easily and readily handled by terminal personnel and if required additional resources to prevent any off site impacts. Section 4.8.2 of the EA describes emergency response and the variety of resources available for such response.

Q.3 NSR contends that fencing will deter any curious children who may be drawn to the facility. What remote train operations (i.e. trains stopped or moving with no human oversight) could occur at the facility where they may not be able to see a child on the tracks when the trains are moving or stopped?

Response: The fencing and berms proposed for the BRIMF will preclude children from having access to the site. Other measures including cameras and security gates will further restrict access or improve detection of trespassers so appropriate action can be taken. There should be no activities that take place inside the facility that cannot be observed.

Q.4 What plans have been put in place to ensure no accidents will occur like the NSR Graniteville, S.C. accident that resulted in 9 deaths and 529 injuries? Additionally in June, 2004 in Texas, 41 people were injured in a derailment where toxic chemicals were released. In August 2002, a Missouri flex hose ruptured and 67 persons were injured.

Response: All of these incidents involved toxic inhalation hazards or other similar substances. Toxic inhalation hazardous materials and other dangerous goods such as certain explosives, are prohibited in intermodal shipment. The BRIMF is being designed to handle the transfer of intermodal units between trucks and rail cars. Please see Response to Public Comment I.3.

Q.5 Please provide a copy of NSR's liability insurance coverage in case of injuries to the public.

Response: NSR carries appropriate levels of insurance in excess of a self-insured retention limit of $25 million. Specific information about insurance coverage is proprietary and will not be disclosed.

Q.6 Please provide a list NSR's owners and Board of Directors.

Response: NSR is a wholly owned subsidiary of Norfolk Southern Corporation. Norfolk Southern Corporation is a publicly traded Fortune 500 company listed on the New York Stock Exchange. Information relating to Norfolk Southern's corporate governance is available at:
http://www.nscorp.com/nscportal/nscorp/Investors/Corporate_Governance/Board_Directors_Committee_Membership/

References:

Dinkins Biological Consulting, LLC. 2010. *Survey for Protected Fish in the Vicinity of Proposed Norfolk Southern Project in Jefferson and Tuscaloosa Counties, Alabama.* January, 2010.

Attachment A

Agency Comments

600 North 18th Street
Post Office Box 2641
Birmingham, Alabama 35291

ETS

ALABAMA POWER
A SOUTHERN COMPANY

July 29, 2009

Mr. William F. Adams
1409 Coliseum Boulevard
Montgomery, AL 36110

Dear Mr. Adams:

Re: Project : Crescent Corridor Intermodal
Freight Project in McCalla
Jefferson County

Thank you for providing Alabama Power Co. the opportunity to comment on the subject project. In our review, we determined that there are potential conflicts involving Alabama Power Co. transmission line facilities. It appears we have several structures on four (4) transmission lines with potential conflict. Our concerns include maintaining ground clearance, access to structures, after hour access, equipment operation, etc. We will be unable to determine the extent of any conflicts without detailed plans of the development.

Please feel free to contact me at (205) 226-1080, or email at jeroper@southernco.com.

Sincerely,

Jeff Roper
Transmission Line Supervisor

cc: Mr. Tim Ponder
Mrs. Sara Parks
Mrs. Kristen Bridges

AUG 2009
RECEIVED
DESIGN BUREAU
ENVIRONMENTAL SEC.
ALDOT

JUL 20
RECEIVED
Design Bur/Admin

ALABAMA-COUSHATTA TRIBE OF TEXAS
571 State Park Rd 56 • Livingston, Texas 77351 • (936) 563-1100

July 31, 2009

Alfedo Acoff
Environmental Technical Section
Alabama Department of Transportation
1409 Coliseum Boulevard, D101
Montgomery, AL 36110-2060

Dear Ms. Acoff:

On behalf of Chief Oscola Clayton Sylestine and the Alabama-Coushatta Tribe, our appreciation is expressed on your efforts to consult us regarding the Birmingham Regional Intermodal Facility proposal in Jefferson County.

Our Tribe maintains ancestral associations throughout the state of Alabama despite the absence of written documentation to completely identify Tribal activities, villages, trails, or burial sites. However, it is our objective to ensure significances of Native American ancestry, especially of the Alabama-Coushatta Tribe, are administered with the utmost considerations.

Upon review of your July 15, 2009 documents submitted to our Tribe, impacts to religious, cultural, or historical assets of the Alabama-Coushatta Tribe of Texas could not be ascertained in conjunction with this proposal. Preventative measures including cultural resource surveys should be undertaken to minimize impacts to buried historic properties.

In the event of inadvertent discovery of human remains and/or archaeological artifacts, activity in proximity to the location must cease and appropriate authorities, including this office, notified without delay. Should you require additional assistance, please do not hesitate to contact us.

Respectfully submitted,

Bryant J. Celestine
Historic Preservation Officer

Telephone: 936 – 563 – 1181 celestine.bryant@actribe.org Fax: 936 – 563 – 1183

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
WILDLIFE AND FRESHWATER FISHERIES DIVISION
64 NORTH UNION STREET, SUITE 567
POST OFFICE BOX 301456
MONTGOMERY, ALABAMA 36130-1456
(334) 242-3465
FAX (334) 242-3032
www.outdooralabama.com

BOB RILEY
GOVERNOR

M. BARNETT LAWLEY
COMMISSIONER

M. N. "CORKY" PUGH
DIRECTOR

FRED R. HARDERS
ASST. DIRECTOR

The mission of the Wildlife and Freshwater Fisheries Division is to manage, protect, conserve, and enhance the wildlife and aquatic resources of Alabama for the sustainable benefit of the people of Alabama.

August 4, 2009

Ms. Alfedo Acoff, Coordinator
Environmental Technical Section
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, AL 36110-2060

RE: Crescent Corridor Intermodal
Freight Project in McCalla
Jefferson County

Dear Ms. Acoff:

The Division of Wildlife and Freshwater Fisheries, Department of Conservation and Natural Resources has reviewed the above-referenced project and provides the following comments and recommendations:

1. The proposed intermodal facility is likely to impact several tributaries of the Cahaba River which is home to numerous species of conservation concern and is considered critical habitat for Federally-protected species. This project is unlikely to impact any State-protected species. However, our records indicate no biological survey has been conducted at the described location to determine if State- or Federally-protected species inhabit the area. Our database does indicate the Round Rocksnail, a State-protected and Federally-threatened species does inhabit Mud Creek, a receiving water of Cooley Creek and Mill Creek. The Cahaba River is listed as critical habitat in the area where Mud Creek joins the Cahaba River. Federally-protected species are under the jurisdiction of the U. S. Fish and Wildlife Service. Please contact that agency regarding potential impacts to federally-protected species (251-441-5181).

2. No net loss of stream functions or habitat should occur as a result of the project. If flowing streams, ditches, or wetlands will be impacted by the proposed activity, the Army Corps of Engineers - Mobile District (251-690-3188), should be contacted to determine if the activity falls under a Corps regulation requiring mitigation for adverse ecological, morphological, or hydrological impacts. Adverse stream impacts requiring mitigation include (but are not limited to) accelerated siltation resulting from improper construction or erosion control practices, stream realignment, flow diversion or interruption, the placement of riprap or other

fill in the streambed in such a way that habitat functions are impaired or fish movement is impeded under low flow conditions, and other modifications of habitat or hydrology which reduce the density or diversity of aquatic species.

3. The State Lands Division (334-242-3484) should be consulted regarding potential impacts to state-owned water bottoms.

4. State water quality standards (particularly those related to erosion control, water turbidity, and dissolved oxygen) should be strictly adhered to.

5. The Division of Wildlife and Freshwater Fisheries (205-339-5716 or 334-242-3851) is notified 48 hours prior to instream blasting (if any). The party responsible for blasting may be required to provide compensation for the replacement cost of fish, mussels, or other biota killed by the blast and for all expenses associated with blast damage assessment by our personnel.

We appreciate the opportunity to comment on this project.

Sincerely,

Matthew D. Marshall
Environmental Coordinator

Chambless

ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36110

Bob Riley
Governor

Joe McInnes
Transportation Director

August 5, 2009

MEMORANDUM

TO: Mr. Ron Green, Chief
Bureau of Personnel and Compliance

FROM: William F. Adams, P.E.
State Design Engineer

By: Alfedo Acoff, Coordinator
Environmental Technical Section

SUBJECT: Public Involvement Meeting for Alabama Department of Transportation

Projects: Birmingham Regional Intermodal Facility
New Intermodal Facility in McCalla
Jefferson, County

This is to inform you that the subject meeting for the above referenced project will be held as follows:

Time: 4:00 PM – 7:00 PM

Date: August 18, 2009

Place: Bessemer Civic Center-Auditorium
1130 9th Avenue SW
City: Bessemer, Alabama 35022

GAL/gal

cc: Mr. Bill Van Luchene, FHWA
Mr. Adenrele Odutola
Mr. Brian Ingram
Mr. Stan Biddick
Mr. Jim Griffin
ETS File

Cahaba River Society

Restoring and protecting the Cahaba River watershed and it's rich diversity of life.

September 1, 2009

Ms. Lillian Furlow
CH_2M Hill
1000 Abernathy Road, Suite 1600
Atlanta, Georgia 30328

Re: Birmingham Regional Inter-Modal Facility

Dear Ms. Furlow,

The Cahaba River Society is a 501(c) 3, non-profit conservation group founded in 1989. Our mission is restoring and protecting the Cahaba River watershed and the rich diversity of life that relies on the river, including the 600,000 people whose drinking water comes primarily from the Cahaba River. We appreciate this opportunity to comment on the proposed Birmingham Regional Inter-Modal Facility (IMF) in McCalla, which would be located in the Cahaba watershed.

Growing awareness about the remarkable qualities of the Cahaba River continues to garner it recognition as one of North America's great biological treasures. The World Wildlife Fund, The Nature Conservancy, the National Geographic Society, and a recent article in the August 2009 *Smithsonian* magazine have each, in their own way, highlighted the Cahaba River as a home to rich, but increasingly imperiled, aquatic wildlife communities considered to be of national and global significance. Some of the species that comprise those communities were formerly widespread in Alabama streams, but now only find a home in the Cahaba River, making the Cahaba River watershed their last remaining hope for survival.

We recognize and appreciate how the proposed intermodal facility could be an economic boon for our area and help our nation cope with global climate change. The annual carbon dioxide and nitrogen oxide reduction goals Norfolk Southern, the Environmental Protection Agency, and the other "SmartWay Transport" partnership members share are important to the economic and environmental future of our nation and the Birmingham area.

Similarly, Norfolk Southern's participation in the "Social, Environmental and Economic Change" initiative is an indicator of its commitment to sustainable development. Collaboration and innovation are hallmark goals of that group. The Norfolk Southern website[1] points out:

> *With each new alliance and partnership that pools our capabilities and shares our commitment to environmental stewardship with other stakeholders, it becomes more apparent that it's the right thing to do, and it's good for business.*

[1] Located at http://www.nscorp.com/footprints/partners.html .

The Cahaba River Society has adopted a collaborative approach with a variety of developers in our basin to minimize impacts in the Cahaba River watershed [2]. We hope our like-mindedness regarding collaboration in environmental problem-solving will allow Norfolk Southern and the Cahaba River Society to work together to avoid significant impacts to groundwater and the streams in our watershed downstream from the proposed intermodal facility, if its construction does proceed.

The surest path for the Birmingham Regional Inter-Modal Facility to avoid significant environmental degradation is through a thorough, open, and publicly reviewed Environmental Impact Study that includes assessment of indirect and cumulative impacts and careful evaluation of potential alternatives and mitigations. We strongly recommend the Federal Highway Administration not issue a Finding of No Significant Impact (FONSI). Issuance of a FONSI would not meet requirements of the National Environmental Policy Act.

We are assuming the environmental studies conducted thus far by Norfolk Southern constitute the information the Federal Highway Administration will evaluate as the "Environmental Assessment". While those may go a long way toward completing a full Environmental Impact Study, those studies are not available for full review by the public. For a project of this magnitude, this shortcoming is very significant. ***A full Environmental Impact Study could substantially resolve a variety of concerns*** that remain as issues for the Society, the McCalla community, and other conservation interests. For example:

- Has current local land use planning been adequately served by this project?
- Have alternative sites been thoroughly explored that could revitalize "grayfield" or "brownfield" areas and could reduce potential environmental and community impacts, such as to McCalla Elementary School?
- Has there been sufficient consideration of stormwater management, pollution and flooding concerns and their mitigation?
- Have indirect and cumulative impacts and mitigations been adequately considered?
- Has there been an adequate assessment of potential impacts and mitigations for imperiled species?

We understand that Norfolk Southern may be confident that each of those questions has, to their satisfaction, been addressed. However, without a full and *publicly reviewed* Environmental Impact Study, neither the general public nor the Federal Highway Administration can adequately assess those issues for a project of this magnitude. While there has been dialog on these matters between Norfolk Southern and the Federal Highway Administration, the public also deserves to be a part of that conversation and deliberation.

We appreciate that Norfolk Southern put substantial time into preparing the information presented at the Public Involvement Meeting held in Bessemer, AL on August 18th, 2009 in an effort to address the public's concerns. However, for our questions, we received too many responses of

[2] See http://www.cahabariversociety.org/growthsolutions.php for a description of successful collaborative efforts in our basin.

"I don't know" and "That has not been determined" to resolve our concerns. We describe those questions and concerns in greater detail below.

Has current local land use planning been adequately served by this project?

The Cahaba River Society supports wise land use planning. It is our understanding that Norfolk Southern has not consulted with the Jefferson County Planning and Development Department. In many respects, the proposed IMF does not conform to the existing and very recently updated land use plan for the unincorporated McCalla area, which has already determined that the area should be slated for residential development. The argument that, on a local scale, the residential and associated service development potential value for the McCalla area may provide more appropriate economic growth and other community benefits than would an IMF must be balanced with the broader regional and national potential benefits of the proposed facility.

If the land use plan is to be "over-ridden," then such a decision should be subject to open public review and involvement. Comprehensive land use planning is an extremely important function that property owners, both families and businesses, in America rely upon to make investment decisions and build towards the future. That important deliberation is not included in the present "Environmental Assessment" material. A full Environmental Impact Study could help resolve those actual and perceived incompatibilities and address the need to consider economic and other impacts to local property owners and the surrounding community.

Have alternative sites that revitalize "grayfield" or "brownfield" areas and could reduce potential environmental and community impacts been thoroughly explored?

While Norfolk Southern has reviewed alternative sites and found all but the proposed site to be lacking from their point of view, a full Environmental Impact Study with a thorough alternatives analysis could potentially identify an appropriate urban "grayfield" or "brownfield" site. While a different site might not be *ideal* for Norfolk Southern, it might be workable and also *better serve the public's interest overall* by utilizing an area which already has infrastructure in place to serve the facility and the subsequent associated development, as well as by catalyzing reinvestment in that area. The public will necessarily pay the expense of some needed infrastructure improvements. They should have the benefit of helping determine if an existing area with adequate water, sewer, and transportation infrastructure already in place is preferred to one where associated growth and development will require significant new investment to create and could have greater environmental and community impacts. Norfolk Southern is asserting that the McCalla site will yield benefits for the greater public good, but alternative sites have not been evaluated from *the public's* perspective. A full Environmental Impact Study would help assure that the public's perspective would be considered.

Are no alternatives to impacts on the McCalla Elementary available?

Section 4(f) of the Department of Transportation Act requires that transportation projects adjacent to a public recreation area, such as the McAdory Elementary School, must demonstrate that "no feasible and prudent alternatives" are otherwise available. It is unclear if the informal alternatives

analysis presented at the August 18th, 2009 public involvement meeting held at the Bessemer Civic Center satisfies such a demonstration.

However, one potential alternative that Norfolk Southern has recently indicated a willingness to consider, a site in Bibb County, could also cause potential negative water quality and habitat impacts to the most biodiverse section of the Cahaba River, along with greater potential indirect and cumulative impacts of urban sprawl. This further underscores why a full Environmental Impact Study would serve to best evaluate alternatives and respond to questions raised by the public about this proposal.

Has there been sufficient consideration of stormwater management and flooding concerns and their mitigation?

During the Public Involvement meeting on August 18th, 2009, we asked questions of several of Norfolk Southern's staff and consultants about a number of issues regarding stormwater management. We came away from those conversations with a sense that an adequate understanding of the potential impacts of *the increased volume of stormwater* that would certainly be generated by the proposed facility is not yet a factor with the Norfolk Southern decision-making and site design. Nor did these conversations indicate sufficient consideration of the sensitive nature of the significant aquatic communities in the Cahaba River watershed. The Society offers to participate in an environmental planning and review process to more fully explore these very important environmental issues and potential mitigations.

Over and again, existing stormwater regulations have proven to be inadequate in the Cahaba River watershed, particularly to prevent excessive sedimentation. The Alabama Department of Environmental Management has classified roughly 160 miles of streams in the Cahaba River basin as impaired due to excessive sedimentation. These impairments are due to both inadequate regulations, poor enforcement of those regulations, and a general lack of understanding about the downstream impacts of stormwater. Significant stream degradation is occurring under the current local, state and federal regulatory structure. Merely meeting the "letter of the law" regarding stormwater management is certain to continue to result in significant stream impairment.

For example, the sections of Shades Creek and the Cahaba River downstream from this project have been placed on the state's 303d list of streams that do not meet water quality standards of the Clean Water Act in large part due to urban stormwater impacts. This has occurred under the same regulations that exist today. Total Maximum Daily Load (TMDL) studies have been or are presently being developed for both streams. Those studies include plans for instituting added measures (the so called "super-BMPs") to reduce pollutant loading from stormwater runoff. But so far, those studies have not prompted essential changes to regulatory requirements affecting individual developments. Thus, Norfolk Southern's aim for the IMF project to meet applicable local, state and federal regulations does not ensure that these streams will be protected, as those regulations are not sufficient to avoid significant, negative environmental impacts. A full Environmental Impact Study would more surely show the level of management and mitigation needed to protect the health of these globally-significant stream resources.

The magnitude of impervious cover increases associated with the proposed IMF and the associated development it will catalyze would, without substantial infiltration of the increased runoff volume to groundwater, significantly increase average annual flow to the tributaries of Mill Creek. The increase in average annual flow may be *3 to 5 fold greater* than the current flow. It is widely accepted among hydrological scientists that such an increased flow can cause significant "in-stream" erosion as streams widen to accommodate the increased average annual flow associated with increasing imperviousness in a developing watershed.

For example, recent studies done by the Region 4 EPA on Shades Creek and a soon-to-be-released Alabama Department of Environmental Management FINAL Sediment TMDL for the Cahaba River mainstem show sediment loading to those waters must be significantly reduced in the future to restore water quality. The EPA study of Shades Creek indicates that about two thirds of the excessive sediment loading in Shades Creek results from the "in-stream" erosion process described above [3].

The additional development forecasted for the immediate area and surrounding communities will also contribute to increased imperviousness and increased sediment loading for the watershed where that development occurs. While it is difficult to predict the location of spin-off development, the added industrial, commercial and residential development pressures near the IMF site will be significant and can be projected to some degree. Without an assessment of the cumulative and indirect effects of that development, it is impossible to gauge the environmental impact or the appropriate mitigations.

There are techniques available to address the increased average annual flow associated with the increased imperviousness associated with development. CRS has an education and collaboration program to provide information about these techniques and collaborate on model projects, described at www.cahabariversociety.org/growthsolutions.php . Those solutions involve techniques to infiltrate, capture and reuse stormwater. However, infiltrating stormwater presents its own set of challenges if the stormwater has a potential to be contaminated by onsite activities, such as the potential for spills from container accidents and the dust and drippings from chemicals used in rail and truck transport. Because of the limestone underlying the area proposed for the IMF, groundwater contamination potential also requires study that has not, so far as we are aware, been a part of the Environmental Assessment.

A potential solution to these concerns that has not, so far as we can learn, been evaluated is to collect the stormwater in one or more detention structures (e.g., detention ponds) before that stormwater is directed to an infiltration field, a constructed wetland, or some other type of infiltration and treatment feature. We recommend that this "treatment train" approach be studied further to determine if it could capture and treat a potential stormwater quality problem prior to its release instead of releasing that stormwater as overland flow or allowing it to become potentially contaminated groundwater. This "treatment train" approach could allow infiltration and reduce the hydrological alterations that typically follow increases in percent imperviousness associated with the amount of paving presently proposed for the IMF.

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[3] See http://www.epa.gov/CREM/seminars/Region4_seminar.html#shades_creek , then click on Shades Creek – Siltation, Turbidity and Habitat Alteration. Slide #18 highlights the contribution of "in-stream processes" to the total sediment loading.

However, these "treatment trains" must be incorporated in the design early in the planning process to provide adequate space for these features. In addition, the potential design and location of these facilities must take into consideration surrounding land uses, and we are mindful of the sensitivity of adjacent McAdory Elementary School. This means that, for a project of this scale and nature, adequate stormwater management to prevent downstream degradation should be a factor in site selection and site planning.

These important considerations have not been included in the Environmental Assessment materials we have been able to review. A full Environmental Impact Study would help assure that this information would be studied and reviewed. As it stands now, the stormwater management approach proposed for this project is inadequate, and CRS would very much like to work with project proponents to develop solutions.

We sincerely hope Norfolk Southern will be proactive in looking to stormwater management approaches that go beyond "the letter of the law". Merely meeting "the letter of the law" will contribute to degradation of Mud Creek, Mill Creek, Shades Creek, and the Cahaba River mainstem. Norfolk Southern has chosen to build an IMF in a watershed with unique and remarkably significant aquatic communities. We hope that if this facility moves forward Norfolk Southern will devote greater focus on the stormwater management challenges this site entails, and the Cahaba River Society would be pleased to collaborate with Norfolk Southern in that effort.

Have indirect and cumulative impacts been adequately considered?

Indirect and cumulative impacts are likely to be significant for the proposed IMF. Norfolk Southern's economic projections forecast that significant development will occur both in the immediate area and in the surrounding communities. The potential for a connection with the new Port of Mobile container terminal will bring even greater growth potential. Significant infrastructure improvements will be necessary to accommodate the forecasted growth. The public may be called upon to fund some of those road, sewer, and stormwater management infrastructure improvements for the IMF and associated developments that may result if this facility is built.

The magnitude of the forecasted growth does not come without environmental impacts and need for mitigation. Even where no single development may be cited as the cause for specific environmental degradation, the indirect and cumulative effects of development, absent intentional mitigation, are widely recognized to contribute to significantly increased stormwater runoff, with all the negative impacts associated with the water quality, water quantity, potential for flooding, and changes in seasonal flows associated with that runoff. A full Environmental Impact Study would help assure that these significant impacts would be fully considered.

Has there been an adequate assessment of potential impacts on imperiled species?

There has not been an adequate review of potential impacts on imperiled species. Important information regarding imperiled species that is known to Alabama Department of Conservation and Natural Resources has not been included in the Environmental Assessment, so far as we can tell. Specifically, there are 47 aquatic species highlighted in *Alabama's Comprehensive Wildlife*

Conservation Strategy [4] that are found in Cahaba River basin streams. Many of these species are known to occur downstream from the proposed IMF. In particular, one of only three existing populations of *Elimia cochliaris*, the Cockle Elimia, is in a spring on Mill Creek about 0.5 mile downstream from the southwestern boundary of the proposed IMF location , *but was not identified in the preliminary biological surveys done for Norfolk Southern*. The Cockle Elimia is identified by the State of Alabama as a "Priority 1 – Species of Highest Conservation Concern".

Elimia cochliaris has also been identified by the *Mobile River Basin Mollusk Restoration Committee*, a group of state and federal biologist charged with developing recovery plans for imperiled mollusks in Alabama, as a Tier 1 species. Tier 1 species are "taxa facing imminent extinction or extirpation from the (Mobile River) basin. These generally included 1) critically imperiled federally listed species endemic to the Basin and 2) taxa reduced to a few (~ 5 or fewer) populations globally."

Significant portions of the Cahaba River downstream from the proposed IMF have been designated by the federal government as "critical habitat" due to the presence of a number of federally listed species. This requires that any project that might affect the *habitat* of those species must consult with the U.S. Fish & Wildlife Service to find ways to minimize those potential impacts to the stream habitat. Certainly, increased sediment loading resulting from significant increases in impervious surfaces in a watershed would require consultation with the Service. The potential for impact on critical habitat areas and the requirement to consult with the Service was not noted in any of the material we viewed during the August 18th, 2009 public involvement meeting.

While it is not difficult to overlook the occurrence of such a species, this oversight underscores the inadequacy of a cursory Environmental Assessment and emphasizes the need for both a full Environmental Impact Study and open public review of this type of information.

In closing, we want to emphasize our willingness to work with Norfolk Southern to examine stormwater management practices that will help minimize impacts to this remarkable watershed, if the project proceeds. These practices may not be able to address all of the potential stormwater problems, but CRS can suggest techniques that we have observed to have been much more successful than the standard techniques often adopted. In many instances, these "Low Impact Development" practices also provide a cost-savings over conventional stormwater management.

We appreciate your consideration of these comments and look forward to continuing a dialog for the benefit of Norfolk Southern, the McCalla community, and the Cahaba River basin.

Sincerely,

Randall C. Haddock

Randall C. Haddock, PhD
Field Director
Cahaba River Society

[4] Available at http://www.outdooralabama.com/research-mgmt/cwcs/ .

cc: David Harris, Alabama Division of the Federal Highway Administration
Jeff Powell, US Fish & Wildlife Service, Daphne, Alabama Field Office
Matthew Marshall, Environmental Coordinator, Alabama Department of Conservation and Natural Resources
Alfedo Acoff, Coordinator, Environmental Technical Section, Alabama Department of Transportation

2717 7th Avenue South, Suite 205, Birmingham, Alabama 35233-3421 • Tel 205 322-5326 • Fax 205 324-8346
www.cahabariversociety.org

November 30, 2009

Mr. Brian C. Davis, Division Engineer
Alabama Department of Transportation – Third Division
1020 Bankhead Highway – West
Birmingham, AL 35204

Regarding: Norfolk Southern Railway Company's proposed Birmingham Regional Intermodal Facility at McCalla, AL

Mr. Davis,

This letter supplements our NEPA comment letter of September 1, 2009 to Lillian Furlow with CH_2M Hill (see attached) and is based on additional information and remaining unresolved questions. We appreciate the opportunity we have had to meet with representatives of Norfolk Southern and the project team on October 28th, 2009 to discuss many of the issues we have raised and to seek solutions.

Here we discuss three remaining areas of concern we have regarding the proposed project. Specifically:

- Post-development storm water runoff volumes will not approximate pre-development runoff volumes, which will cause significant negative water quality impacts.
- Indirect and Cumulative Impacts, Costs, and Mitigations remain unassessed.
- A "finding of no significant impact" is not appropriate.

Post-development storm water runoff volumes will not approximate pre-development runoff volumes, which will cause significant negative water quality impacts.

While the proposed storm water management seeks to match pre- and post-development storm water runoff *rates*, Norfolk Southern Railway (NSR) does not currently believe they can match pre- and post-development storm water runoff *volumes*. Increased runoff volume is an important hydrological factor known to contribute to in-stream erosion processes that must be addressed [1]. As described in our letter of September 1, 2009, ensuring that the post-development hydrology related to site runoff approximates pre-development hydrology, including runoff volumes as well as rates and pollutant loads, is essential to prevent instream erosion and increased sediment pollution in the Cahaba watershed downstream of the site.

On October 28th, 2009, CRS staff met with NSR staff and their consulting team for the project. At that meeting, we were encouraged by various proposals for several Low Impact Development storm water practices that could infiltrate rain and minimize increase in storm water volumes.

[1] http://www.nrcs.usda.gov/technical/stream_restoration/ See Chapter 3, pages 22 through 26 for an explanation of the impacts of increased imperviousness on stream hydrology and sediment loading.

However, new information from an HNTB consultant's characterization of the TTL geotechnical study of the development site indicates that a clay hardpan underlying the entire facility would prevent any significant infiltration of storm water. We note that in many other instances, project proponents in our region have initially rejected Low Impact Development solutions requiring storm water infiltration due to their concerns about the imperviousness of underlying soils and geology. Nevertheless, engineered solutions have been found in those situations that achieve significant storm water infiltration, as well as achieving capture and reuse of storm water in these conditions. For example, it is possible to install soil amendments beneath a storm water infiltration area that create sufficient void volume to accommodate considerable storm water volumes. Planted vegetation helps remove the accumulated groundwater.

As described in our letter of September 1, 2009, downstream segments of Shades Creek and the Cahaba River have been designated under the Clean Water Act as impaired from siltation and habitat alteration. Targets for sediment load reduction have been set by a FINAL Total Maximum Daily Load (TMDL) study for Shades Creek at 74% below sediment loading amounts measured in 2001, and the DRAFT Sediment TMDL for the Cahaba will be finalized soon that will probably require a 48% reduction in sediment loading to the Cahaba River mainstem downstream of the Shades Creek confluence.

Fine clay soils in the area, once disturbed by instream erosion, will travel downstream to impaired stream segments. Therefore, the distance between this project and the impaired section of Shades Creek is not a factor that would protect the creek from increased sediment pollution.

As this project is expected to generate significant indirect associated growth, some portion of which will occur in the immediate area and watersheds of Shades Creek and Cahaba tributaries, this negative water quality impact will be compounded. If clay pan also underlies much of the area that will be impacted by indirect growth related to the project, then it is vitally important to identify innovative storm water management practices that will prevent increases to runoff volumes, rates and pollutants. We ask that the Alabama Department of Transportation (ALDOT) require these stormwater management practices as a minimum condition for development of this site.

This is a fundamental, significant issue to the health of the Cahaba River system that can no longer be ignored, and must be fully addressed in this NEPA process.

If this project cannot incorporate site design features that will manage storm water such that post-development storm water runoff, including volume, rate, and pollutants, approximates pre-development runoff, then this project and its indirect and cumulative impacts will have significant negative impacts on water quality in the Cahaba basin. Further environmental study should be required to fully model the pre- and post-development hydrology of the project and its associated indirect development, to model the full impacts of changes to hydrology and pollutant loads including instream erosion impacts, and to identify mitigations that will prevent increased sediment loading in these watersheds.

The positive examples of several LID projects in the Cahaba watershed and elsewhere in the southeast indicate that there are solutions that may be able to avoid and mitigate these impacts and

protect these significant watersheds. It remains to be determined which solutions would be workable for the site's soils. The Cahaba River Society is eager to work with Norfolk Southern's team to identify workable solutions.

Federal decisions that support and facilitate the Norfolk Southern project can only be made if the project and its associated indirect growth and environmental impacts would not increase sediment loading to the impaired Shades Creek and Cahaba segments or make it more difficult to meet TMDL sediment reduction targets.

We recognize that in some circumstances it may not be feasible for post-development stormwater volumes to be no greater than pre-development. We seek stormwater practices that will reduce any additional volume of runoff to the greatest extent practicable and mitigate any impacts. In order to assess whether it is necessary to adopt additional storm water volume control measures after the project is completed, we would like NSR to monitor several stream cross-section profiles immediately downstream from the proposed development before the construction process and repeat those cross-section measurements periodically subsequently. If significantly expanded stream cross-sections develop over time, as we and others have observed occurring following development[2], then it would be important to have a mechanism in place to implement additional storm water volume controls on-site to halt and mitigate those impacts.

Indirect and Cumulative Impacts, Costs, and Mitigations remain unassessed.

NEPA requires a thorough analysis of the direct, indirect and cumulative impacts of a given project. The CEQ regulations define indirect impacts as those impacts that are later in time or farther removed in distance from a given project, but still reasonably foreseeable. They may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. 40 CFR § 1508.8(b). Indirect impacts are particularly important in the context of construction of major new transportation infrastructure. Furthermore, a project such as the proposed intermodal facility will also be accompanied by secondary infrastructure and development in the project area, bringing increased impervious surface area, increased erosion and sedimentation, and other detrimental effects to water quality.

NEPA defines cumulative impacts as those impacts that result from the incremental impacts on the environment from a project when added to past, present, and reasonably foreseeable future actions in the same area. These impacts can arise from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7. Cumulative impacts are especially crucial when evaluating a project's effects on a given resource, such as the Cahaba watershed in this case. A proper cumulative impact analysis must look at the incremental additional stress on the watershed from the proposed project, and how that incremental effect adds to the other existing stresses on the watershed, as well as any reasonably foreseeable future stresses.

At the public meetings on August 18th, and November 12th, Norfolk Southern consultants presented the position that it is only necessary to estimate indirect and cumulative impacts for the region as a whole, not for any specific area. This is not acceptable. NEPA calls for a more site-

[2] http://www.nrcs.usda.gov/technical/stream_restoration/ See page 24 of Chapter 3.

specific analysis of indirect and cumulative impacts, so as to make an informed decision about the pros and cons of a project; generalized estimates of indirect and cumulative impacts defeat the purpose of a project-specific environmental impact evaluation and can mask significant localized indirect and cumulative impacts on a resource or neighborhood.

This project is desired because it is anticipated to have a strong growth-generating impact. If only the positive financial benefits of that impact are identified, as has been done to date, then the full impacts of the project cannot be properly evaluated and the analysis will not comply with NEPA's requirements. Moreover, the potential economic benefits cannot be realized without necessary infrastructure. Thus, it is impossible to assess how much of the economic benefits may be realized without some idea about how much additional investment will be needed to make it possible. The anticipated growth-inducing effect of this project is a testament to its significant indirect impacts and to the necessity of an Environmental Impact Statement (EIS) to provide a full analysis of project impacts and alternatives.

While there has been ample information provided on the potential regional economic benefits that might derive from the proposal, there has been no careful assessment of the *local costs* of infrastructure or of cumulative environmental impacts that inevitably accompany the expected economic development. If only one side of the "cost : benefit" equation is considered, then a good understanding of the economic picture for the community is not possible.

We recommend that the Norfolk Southern team work together with the Jefferson County Department of Land Planning and Development Services and the Regional Planning Commission of Greater Birmingham (RPCGB) to conduct a thorough study of indirect and cumulative impacts. There are many similar intermodal hubs elsewhere in the southeast, located in exurban areas, that have been functioning for a sufficient time that actual spin-off growth impacts within certain distances from the projects can be measured, averaged, and applied in order to model growth impacts for the proposed project. The RPCGB has methods for projecting growth impacts for the region within specific traffic zones, to help plan major transportation improvements in areas of the region.

The indirect and cumulative impacts analysis should estimate the spin-off growth that would occur within the same general area as the Shades Creek tributary watersheds impacted by the project, to be able to fully identify potential water quality impacts and needed mitigations, as noted above. This watershed is already under significant stress, making a localized analysis of growth impacts particularly crucial.

In addition, the indirect and cumulative impacts analysis should also determine the needs and costs for major infrastructure improvements, such as roads, water, and sewer, that are necessary to support spin-off growth in the immediate project area, where growth impacts will be most concentrated. Traffic impacts and further strain to the County's sewer system and the region's water system and water supply must be included in an adequate NEPA analysis of a project of this scale.

A thorough and objective alternatives analysis is a critically important step in this NEPA analysis. Norfolk Southern's preferred exurban site will require significant infrastructure upgrades. A

grayfield or brownfield site within an existing urban area is more likely to have existing infrastructure with capacity for the project and its indirect growth, potentially avoiding substantial public costs for infrastructure upgrades and increasing the net positive economic impact of the development.

An Environmental Impact Statement Is Required.

Guidance from the EPA suggests that, while there generally are no page limits for an Environmental Assessment (EA), if the document is greater than 15 pages in length, then it is probably appropriate to conduct an EIS [3].

NSR should not be penalized for providing the public their studies and documents. We appreciate their willingness to share information. However, for a project this size with its potential for significant ancillary development, it is necessary for NSR to conduct a full EIS. While NSR has made a commendable effort to bring their information to the public, they have not developed all of the information needed to make a sound assessment of the project, particularly with respect to infrastructure costs, current land use compatibility, and the indirect and cumulative environmental effects of the proposal.

An EIS would more fully address those questions, evaluate alternatives, and have the added benefit of requiring an appropriate citizen participation process. A "finding of no significant impact" is inappropriate here. An EIS is appropriate to settle important unanswered questions about this proposal.

A Full Section 4(f) Evaluation is Required

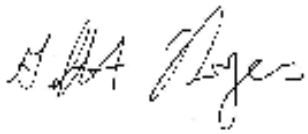
Section 4(f) of the Department of Transportation Act of 1966 prevents a federal project from using publicly owned land unless "(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." 49 U.S.C. § 303 (c). When there is no feasible and prudent avoidance alternative, the regulation implementing Section 4(f) states that "the Administration may approve only the alternative that . . . [c]auses the least overall harm," using a balancing of seven factors. 23 C.F.R. § 774.3 (c)(1); *see* 49 U.S.C. § 303 (2).

The intermodal facility at issue here is in close proximity to a public school, which includes a public recreation area. Even if it does not take land from the school to use for its facility, the adverse impacts from the facility will constitute a constructive use of the recreational property. Therefore, a Section 4(f) evaluation is needed for this project, including a determination of whether there are feasible and prudent alternatives for this project, as well as a determination that all harm has been minimized to the maximum extent.

Thank you for your consideration of these issues.

[3] http://ceq.hss.doe.gov/nepa/regs/40/30-40.HTM#36 See paragraph 36a.

Sincerely,



Beth K. Stewart
Executive Director

Gilbert Rogers
Senior Attorney
Southern Environmental Law Center

CC:

Ntale Kajumba, Region 4 EPA NEPA office
David Harris, Alabama Division of the Federal Highway Administration
Jeff Powell, US Fish & Wildlife Service, Daphne, Alabama Field Office
Matthew Marshall, Environmental Coordinator, Alabama Department of Conservation and Natural Resources
Sandra Bonner, Alabama Department of Transportation
Alfedo Acoff, Coordinator, Environmental Technical Section, Alabama Department of Transportation
J.H. McLain, P.E., Norfolk Southern Corporation
William Foisey, Director, Transportation Planning Division, Regional Planning Commission of Greater Birmingham

Choctaw Nation of Oklahoma

P.O. Box 1210 • Durant, OK 74702-1210 • (580) 924-8280

Gregory E. Pyle
Chief

Gary Batton
Assistant Chief

July 30, 2009

William F. Adams, P.E.
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, Alabama 36110-2060

Dear William F. Adams:

We have reviewed the following proposed project (s) as to its effect regarding religious and/or cultural significance to historic properties that may be affected by an undertaking of the projects area of potential effect.

Project Description: Crescent Corridor Intermodel Freight Project

Project Location: Jefferson County, Alabama

Comments: Thank you for seeking to consult with the Choctaw Nation of Oklahoma on this project. However, Colbert County is located outside of our areas of historical interest. If we may be of any further assistance, or if you would like a list of states and counties, in which we do have a historical interest, please contact us at 1-800-522-6170 ext. 2137.

Sincerely,

Terry D. Cole
Tribal Historic Preservation Officer
Choctaw Nation of Oklahoma

By: _____
Ian Thompson, PhD, RPA
NAGPRA Specialist/Tribal Archeologist
Choctaw Nation of Oklahoma

IAT:vr

EASTERN SHAWNEE TRIBE
OF OKLAHOMA

P.O. Box 350 · Seneca, MO 64865 · (918) 666-2435 · FAX (918) 666-2186

August 28, 2009

Alabama Department of Transportation
William F. Adams, P.E. State Design Engineer
1409 Coliseum Boulevard
Montgomery, AL 36110

Re: Project Crescent Corridor Intermodal
Freight Project McCalla
Jefferson County AL

Dear Mr. William Adams;

We are in receipt of your letter and have reviewed the project details. Thank you for the opportunity to consult regarding the above mentioned issue.

My name is Robin Dushane and I serve the Eastern Shawnee Tribe of Oklahoma (ESTO) as the Cultural Preservation Director. I am the ESTO'S point of contact for all NAGPRA and Section 106 issues. Although, we are unaware of any cultural resources in the proposed area, the Eastern Shawnees have historical occupation in Alabama. We would like to be notified immediately if any inadvertent discoveries are uncovered at anytime throughout the various phases of the project.

I would prefer to make future replies through e-mail. My e-mail address is rdushane@estoo.net. My telephone number is (918) 2435 Ext. 247. Thank you for the opportunity to comment.

Best Regards,

Robin Dushane
Cultural Preservation Director
Eastern Shawnee Tribe of Oklahoma

Jgh/cc

PUBLIC INVOLVEMENT MEETING

Birmingham Regional Intermodal Facility

Norfolk Southern Railway Company (NSR), through its Alabama Great Southern Railroad Company (AGS) subsidiary, proposes to construct and operate a new intermodal facility in McCalla, Jefferson County, Alabama

Tuesday, August 18, 2009
Bessemer Civic Center - Auditorium
1130 9th Avenue - SW
Bessemer, Alabama 35022
4:00 PM to 7:00 PM

NAME: Vi Parramore, President JCAFT

ADDRESS: 1900 20th Ave South

PHONE: 205 933-1124

INTEREST IN PROJECT

AREA RESIDENT: _____ PROPERTY OWNER: _____ LOCAL BUSINESSPERSON: _____

ELECTED OFFICIAL: _____ GOVERNMENTAL REPRESENTATIVE: _____

JCAFT Dockers Union

COMMENTS

Questions from our union leaders are attached. Additionally I am concerned about the Eastern Valley Rd. that has two lanes.

PLEASE COMPLETE AND RETURN THE COMMENT SHEET AT THIS PUBLIC INVOLVEMENT MEETING OR TO THE FOLLOWING ADDRESS OR E-MAIL ADDRESS WITHIN TEN (10) BUSINESS DAYS.
COMMENT FORMS ARE NOT VALID WITHOUT A NAME.

Birmingham Regional IMF
ATTN: Ms. Lillian Furlow, CH2M HILL
1000 Abernathy Road – Suite 1600
Atlanta, Georgia 30328

E-mail to: BHMIMF@ch2m.com

Jefferson County American Federation of Teachers Local 2143 - AFL-CIO
1900 20th Avenue South ♥ Birmingham, AL 35209 ♥ (205) 933-1124 ♥ Fax: (205) 933-1101

A Union of Professionals

August 18, 2009

TO: Representatives of Norfolk Southern Railroad

FROM: Vi Parramore, President JCAFT

RE: Questions for the North Railroad Intermodal Facility (BRIMF) to be located in McCalla, Alabama

After touring the Austell facility on Friday, August 14, 2009, I am offering these questions for your consideration. Questions are as follow:

1. What is the emergency preparedness and response plan for the intermodal center? How will Norfolk coordinate a response with community responders? How will Norfolk communicate with the school district and the school? How often will Norfolk have mock response exercises?
2. In response to Norfolk's assertion that no "off-loading" of goods and commodities will be conducted on site, what provisions have been made to respond to accidents when containers are transferred from trains to trucks or vice-versa?
3. Norfolk declares that only a "small percentage" of 3 to 4% of shipments are regulated as hazardous commodities. What does that mean in terms of quantities of hazardous materials being transferred? Most hazardous chemicals are shipped in bulk containers of 88,000 or more gallons. Specifically, what hazardous chemicals will be shipped?
4. Even though Norfolk claims that none of the hazardous materials pose inhalation hazar ds, how can Norfolk guarantee that a plume of toxic chemicals would not occur when certain corrosive chemicals (acids and bases) are released during an event?
5. Norfolk claims that it has a stellar safety record. But the citation they give for the E. H. Har riman Gold safety award is for employee safety. It says nothing about derailments and other accidents involving Norfolk trains and cars. Please provide detailed information on Norfolk train safety record, how many derailments, accidents, etc.? How does Norfolk's record compare with the industry?
6. What is the noise levels projected in the school yard? Will Norfolk do an extensive noise assessment to assure t hat the children's academic program will not be compromised or that children while outside will not be exposed to noise levels that are associated with higher stress levels (we have studies of schools near airports that have reported higher stress levels in children in those schools)? Will Norfolk officials construct a sound barrier?
7. Norfolk contends that fencing will deter any curious children who may be drawn to the facility. What remote train operations (i.e. trains stopped or moved with no human oversight) will be at the facility that m ay not be able to "see" a child on track when trains are being moved and stopped?
8. We have been informed that 400 trucks will arrive and depart from this proposed facility each day. Will the Norfolk railroad monitor diesel fume levels produced by the increased traffic in the area? Can Norfolk make a guarantee that children, especially asthmatic children will not be adversely affected by increased diesel fumes in the vicinity?
9. Will Norfolk officials use EPA monitoring or independent contractors to monitor air quality?
10. How many monitors will be placed near the elementar y school?
11. Will Norfolk Southern provide funds to maintain a staffed fire station to respond to emergencies?
12. What plans have been put in place to ensure no accidents will occur like the Norfolk Southern Graniteville, S.C. accident that resulted in 9 deaths and 529 injuries? Additionally, in June 2004, in Texas 41 people were injured in a derailment where toxic chemicals were released. In August 2002, in Missouri a flex hose ruptured and 67 persons were injured.
13. Please provide a copy of your company's liability insurance coverage in case of injuries to the public.
14. Please provide a list of the owners and Board of Directors of Norfolk Southern.
15. Please provide the names of the entities and a contact person to all regulators at the local, state and national levels.

Our members work at the McAdory schools. They are very concerned about the safety of their students. I look forward to your response.

JEFFERSON COUNTY COMMISSION

BETTYE FINE COLLINS - PRESIDENT
WILLIAM A. BELL, SR.
JIM CARNS
BOBBY HUMPHRYES
SHELIA SMOOT

BETTYE FINE COLLINS
PRESIDENT
COMMISSIONER OF FINANCE
AND GENERAL SERVICES
Suite 220
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5070
FAX (205) 325-4881

July 27, 2009

William F. Adams, P.E.
Environmental Technical Section
Alabama Department of Transportation
1409 Coliseum Blvd
Montgomery, AL 36110

RE: Crescent Corridor Intermodal
Freight Project in McCalla
Jefferson County Commission

Dear Mr. Adams:

During this extremely trying time for Jefferson County, the above referenced project will bring additional jobs to our area and that will be a great benefit for us all.

Sincerely,

Bettye Fine Collins

Bettye Fine Collins,
President

BFCblw

JEFFERSON COUNTY COMMISSION

BETTYE FINE COLLINS - PRESIDENT
GEORGE F. BOWMAN
JIM CARNS
BOBBY HUMPHRYES
SHELIA SMOOT

BOBBY HUMPHRYES–COMMISSIONER
ROADS AND TRANSPORTATION
LAND DEVELOPMENT
INSPECTION SERVICES
EMERGENCY MANAGEMENT AGENCY

E. WAYNE SULLIVAN, P.E./P.L.S.
Director/County Engineer
A200 Courthouse
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5154

February 24, 2010

Mr. Charles B. McMillan
Norfolk Southern Corporation
Design & Construction
Engineering Department
Building Box 7-142
1200 Peachtree Street, NE
Atlanta, Georgia 30309-3579

Re: Birmingham Regional Inter-Modal Facility
Traffic Operations Study

Dear Mr. McMillan:

We have reviewed the Traffic Operations Study for the proposed Birmingham Regional Inter-Modal Facility in McCalla and have the following remarks and comments concerning traffic operation and design of the proposed facility.

1 – The study does not address railroad operations and the impacts to local grade crossings. Train traffic operations and the restrictions or conflicts to local traffic should be included in the study. If the rail operations are expected to negatively impact traffic at grade crossings, alternate routes and the impacts associated with the use of the alternate routes should be included in the study.

2 – The appropriate design vehicle should be identified for operation and design purposes.

3 - Given the high volume of truck traffic that will use the proposed facility, the maximum approach grade for the driveway entrance should be identified for safe access and acceleration onto McAshan Drive.

4 - Access restrictions, such as gates and receiving check points; peak volumes; and hours of operation should be included in the study to address and eliminate off site parking and truck queues on McAshan Drive.

5 - As the site access driveway is located in an unlighted area that is zoned for agriculture, recommendations for entrance signing and lighting should be included in the study.

6 - Since the entrance is located on a section of McAshan Drive that has high speed traffic (85th percentile 57.4 mph); is outside the Industrial Park area; and is at the very site of a fatal accident involving a truck entering the roadway, advance warning signs and signals for trucks entering should be required. A W11-10 "Truck Symbol" with a W16-13p "When Flashing" supplemental plaque and an actuated flashing beacon should be located on each approach in advance of the entrance.

7 - We have ordinanced "No Trucks with Semi-Trailers" on Eastern Valley Road due to the narrow lanes and shoulders. We have not, nor have justification to ordinance truck restrictions on McAshan Drive. However, we have installed a R5-2 "No Truck Symbol" within an advance warning sign southeast of the Jefferson Metropolitan Parkway intersection on McAshan Drive for Eastern Valley Road. The sign can be relocated to the proposed entrance if necessary.

8 - The McAshan Drive shoulder will have to be widened adjacent to the right turn lane and taper, and the guardrail will have to be reset accordingly and installed along the proposed entrance driveway.

9 - Home Depot has opened a new warehouse facility in the Jefferson Metropolitan Industrial Park. Truck traffic has increased and the traffic study should be updated to account for the significant impact of additional traffic along McAshan Drive from I-59/20 to Jefferson Metropolitan Parkway.

Thanks for your assistance in addressing our concerns.

Sincerely,

Kenneth W. Boozer, P.E.
County Traffic Engineer

A cor

LAKEVIEW FIRE PROTECTION DISTRICT

WTA

July 31, 2009

Alabama Department of Transportation /
Norfolk Southern Railway Company (NSR)

RE: Project: Crescent Corridor Intermodal
Freight Project in McCalla
Jefferson County

To Whom This May Concern:

Thank you for the inclusion to the information of the upcoming facility. We understand that the majority of the facility will be in our neighboring county. Our only major concern is how much added rail traffic will be pushed to and from the facility on the Tuscaloosa County end. This is a serious issue for the Fire District and could put several lives and properties in jeopardy.

We have over 100 residences and properties on the Eastern Valley Road side of the tracks that are in our Fire District. As well, we assist two (2) neighboring Fire Departments in that area. If this facility becomes operational we feel that our Fire District will need a permanent access route over the rails either at Tannehill Parkway or Kimbrell Cutoff Rd. Many events happen each month at the Tannehill State Park as well, which in turn could back up traffic tremendously on The Tannehill Parkway.

So in closing we look forward to hearing a response back on this issue. Thank you for your time and consideration in this matter.

BRANDON T. JONES
LAKEVIEW FIRE PROTECTION DISTRICT
FIRE CHIEF
205- 477-6341 OFFICE
205- 361-3740 CELL

JEFFERSON COUNTY COMMISSION

BETTYE FINE COLLINS - PRESIDENT
WILLIAM A. BELL, SR.
JIM CARNS
BOBBY HUMPHRYES
SHELIA SMOOT

BETTYE FINE COLLINS
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716 Richard Arrington, Jr. Blvd. N.
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Telephone (205) 325-5070
FAX (205) 325-4881

July 27, 2009

William F. Adams, P.E.
Environmental Technical Section
Alabama Department of Transportation
1409 Coliseum Blvd
Montgomery, AL 36110

RE: Crescent Corridor Intermodal
Freight Project in McCalla
Jefferson County Commission

Dear Mr. Adams:

During this extremely trying time for Jefferson County, the above referenced project will bring additional jobs to our area and that will be a great benefit for us all.

Sincerely,

Bettye Fine Collins

Bettye Fine Collins,
President

BFCblw

PUBLIC INVOLVEMENT MEETING

Birmingham Regional Intermodal Facility

Norfolk Southern Railway Company (NSR), through its Alabama Great Southern Railroad Company (AGS) subsidiary, proposes to construct and operate a new intermodal facility in McCalla, Jefferson County, Alabama

Tuesday, August 18, 2009
Bessemer Civic Center - Auditorium
1130 9th Avenue - SW
Bessemer, Alabama 35022
4:00 PM to 7:00 PM

NAME: CHIEF BRANDON JONES LAKEVIEW FIRE DISTRICT

ADDRESS: 21289 Phyllis DR.

PHONE: (205) 477-6341

INTEREST IN PROJECT

AREA RESIDENT: _____ PROPERTY OWNER: _____ LOCAL BUSINESSPERSON: _____

ELECTED OFFICIAL: X GOVERNMENTAL REPRESENTATIVE: _____

COMMENTS

Our District Board is concerned about access to residents on Eastern Valley Rd. within Tusc. Co.
Rail Traffic increasing

PLEASE COMPLETE AND RETURN THE COMMENT SHEET AT THIS PUBLIC INVOLVEMENT MEETING OR TO THE FOLLOWING ADDRESS OR E-MAIL ADDRESS WITHIN TEN (10) BUSINESS DAYS.
COMMENT FORMS ARE NOT VALID WITHOUT A NAME.

Birmingham Regional IMF
ATTN: Ms. Lillian Furlow, CH2M HILL
1000 Abernathy Road – Suite 1600
Atlanta, Georgia 30328

E-mail to: BHMIMF@ch2m.com

ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36110

Bob Riley
Governor

Joe McInnes
Transportation Director

December 2, 2009

Mayor Edward E. May
City of Bessemer
1800 3rd Avenue
Bessemer, AL 35020

RE: Crescent Corridor Intermodal Freight Project
Birmingham Regional Intermodal Facility (IMF)
McCalla, Jefferson County, AL

Dear Sir:

Your letter dated November 17, 2009, has been forwarded to Norfolk Southern Railroad for their consideration and inclusion into the environmental document for the above referenced project.

Sincerely,

William F. Adams, P.E.
State Design Engineer

WFA/hd

cc: Mr. Brian Davis, 3rd Division Engineer
DB File
ETS File
FHWA
NFS Railroad

Edward E. May
Mayor

City of Bessemer

Mailing Address
1800 3rd Avenue, Bessemer, AL 35020
(205) 424-4060 FAX: (205) 424-4372
Email: edmay@bessemeral.org

November 17, 2009

Mr. William F. Adams, P.E.
State Design Engineer
ALDOT
1409 Coliseum Blvd
Montgomery, Alabama 36110

RE: Project-Crescent Corridor Intermodal Freight Project, McCalla Jefferson County, Alabama

Dear Mr. Adams:

I am in receipt of your letter relative to the Birmingham Regional Intemodal Facility (IMF) proposed to be constructed in the McCalla (Unincorporated Jefferson County) Alabama.

The City of Bessemer shares a common boarder with McCalla. In fact, Bessemer is the third largest city within Jefferson County (the largest county within the state). Please understand we are not opposed to the building of the proposed facility, based upon information we have to date.

Additionally, we recognize the construction of the facility can be beneficial to our community. We also realize that such a large scale project will bring with it many problems for the residents who live in Bessemer and many of those persons who come to and through our city to conduct business and otherwise.

I am of the opinion there are a number of things that can be done which will minimize the adverse impact the proposed facility can have on our city and the surrounding community. The following are areas of concerns to us:

The main Norfolk Southern Railroad (NSR) Track runs through Bessemer and divides the city (almost) in half. Presently, there is only one crossing from one side of the city to the other side. This is a two lane, ten feet high bridge culvert, under the NSR track at 22nd Street. Although there are any number of streets going east and west, that to get from one side of the city to the other side; the major street that connects the western side of Jefferson County, to the eastern side of the county is State Highway 150 which is the

city's 14th Street. This is the primary connection between the cities of Hueytown, Bessemer and Hoover. When a train is blocking the tracks at the Hwy 150 (14th Street) normal traffic must be detoured to 22nd Street. As a result, truck traffic, fire trucks and semi-freight trucks cannot pass under the culvert at 22nd Street and thus must wait for railroad trucks to clear. Additionally, State Highway 150 connects I-459 and U.S. 31 in Hoover and, I-59/20 in Bessemer. Also, State Highway 150 is presently under construction being widened from two lanes to five lanes. This will improve traffic flow between there. However, the Highway 150/NSR rail crossing will, with the additional rail traffic will become even more of a major traffic delay for the City of Bessemer, its citizens and those who must travel through Bessemer.

I would submit that a five lane bridge overpass will be needed to prevent this area from becoming a major traffic jam for and between the cities of Bessemer, Hoover and Hueytown (also for a significant portion of West Jefferson County).

The main NSR Tracks/CSX Track and the BSR Track at 32nd Street in Bessemer is another area where a bridge overpass will (is) needed. This is an industrial area where truck traffic and residential currently experience frequent and very long delays from trains being on the track, closing street traffic from., again, one side of Bessemer from the other side of the city. In fact, the old Pullman Standard property was recently leased to an intermodal company that will open operations within the next few months. With the increase in train traffic from your proposed project the city anticipates that any blocking of streets would create a very dangerous situation for too many of our residents. This potential problem can be, in my opinion, eliminated by the construction of a bridge overpass on 32nd Street.

We have made several other observations relative to the proposed project and would very much appreciate the opportunity to sit down with you and discuss these observations and concerns at your convenience.

I look forward to hearing from you.

Sincerely,

Edward E. May
Mayor, City of Bessemer

EEM/ara

ALABAMA DEPARTMENT OF TRANSPORTATION
1409 Coliseum Boulevard, Montgomery, Alabama 36110

Bob Riley
Governor

Joe McInnes
Transportation Director

July 17, 2009

RECEIVED JUL 2 2 2009

Ms. Lisa Stopp, Preservation Office
United Keetoowah Band of Cherokee Indians in Oklahoma
P.O. Box 746
Tahlequah, OK 74465

The United Keetoowah Band of Cherokee Indians in Oklahoma has no objection to the referenced project. However, if any remains, artifacts or other items are inadvertently discovered, please cease construction immediately and contact us at 918-456-6533 or by letter.

Lisa C. Stopp, Tribal NAGPRA POC Date 7-22-09

RE: Project: Crescent Corridor Intermodal Freight Project in McCalla Jefferson County

Dear Sir or Madam:

Norfolk Southern Railway Company (NSR), through its Alabama Great Southern Railroad Company (AGS) subsidiary, proposes to construct and operate a new intermodal facility in McCalla, Jefferson County, Alabama. The proposed project, referred to as the Birmingham Regional Intermodal Facility (IMF) (attached Figure), will meet current and future demands for freight transportation between the Birmingham region and the Northeast U.S., Southeast U.S. ports, and western destinations. The proposed facility, designed to optimize transportation efficiency, will provide additional benefits by: (1) reducing energy usage and carbon emissions, (2) reducing highway congestion and enhancing safety through the reduction of long-distance truck traffic, and (3) attracting local economic development and job creation.

Background

Intermodal is a method of moving freight involving two or more modes of transportation from origin to destination. Intermodal improves the overall efficiency of the transportation system by using the best and most efficient transportation mode for each segment of the shipment's route. In an intermodal transportation network, trains, trucks, ships, and aircraft are connected in a seamless system that is efficient and flexible, meeting the needs of consumers, carriers, and shippers. The Birmingham Regional IMF would facilitate the intermodal movement of freight via rail for long distances and via highway for localized pick-ups and deliveries.

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DESIGN BUREAU
ENVIRONMENTAL SEC.
ALDOT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

September 2, 2009

Ms. Alfedo Acoff
Environmental Coordinator
Environmental Technical Section
Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, AL 36110

Subject: EPA Scoping Comments on the Crescent Corridor Intermodal Freight Project McCalla, Jefferson County, Alabama

Dear Ms. Acoff:

Thank you for the opportunity to review the above subject document. Pursuant to Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the scoping document. The Norfolk Southern Railway Company (NSR), through its Alabama Great Southern Railroad Company (AGS), proposes to construct and operate a new 316-acre intermodal facility in McCalla, Jefferson County, Alabama. The proposed public-private project is also called the Birmingham Regional Intermodal Facility (IMF), which is part of a larger 2,500-mile Crescent Corridor expansion project spanning from New York, New Jersey to New Orleans. The proposed Crescent Corridor will incorporate a network of terminals including three new terminals within Region 4 (Birmingham, Memphis, and Knoxville) and improvements to existing terminals.

The proposed Birmingham Regional IMF will facilitate the intermodal movement of freight via rail for long distances and via highway for localized pick-ups and deliveries. The facility includes the following components: three pad tracks averaging 4,600 ft each, a support yard with approximately 21,700 ft of track, 7,500-ft lead tracks on both ends of the facility allowing two trains to switch the facility at the same time and avoid blocking the main track, paved areas for parking approximately 1,440 trailers and containers mounted on chassis, and an automatic gate system, administration building, maintenance and operations buildings, equipment maintenance pad, and related ancillary facilities.

According to the scoping document, the proposed facility will meet current and future demands for freight transportation between the Birmingham region and the Northeast U.S., Southeast U.S. ports, and western destinations. It is also intended to optimize transportation efficiency and (1) reduce energy usage and carbon emissions, (2) reduce highway congestion and enhance safety through the reduction of long-distance truck traffic, and (3) attract local economic development and job creation.

Based on our review of the scoping document, EPA offers the following environmental and socioeconomic issues for consideration in development of any associated NEPA documents:

Purpose and Need: The need, potential transportation benefits and adverse effects of the proposed project should be clearly stated and substantiated. Need should be substantiated with information such as connectivity needs, traffic data, levels of service, and safety data. Project impacts and impact mitigation are evaluated in the context of project need.

Alternatives: EPA understands that location is a critical component of the Birmingham Regional IMF. The scoping document selected a 316-acres site as the preferred alternative, but does not include any information regarding other potential site locations. The selected site criteria identified in the scoping document includes: sufficient land that supports the facilities operational requirements, and a safe and efficient facility, proximity to rail infrastructure and highway infrastructure, and customer base. EPA recommends that the NEPA document incorporate a robust alternative analysis section given our environmental concerns related to the siting of the intermodal facility in proximity to area schools (See Attached Documents). The document should also discuss any alternative site locations that were examined.

If an Environmental Impact Statement (EIS) is prepared, a minimum of two feasible action alternatives should be fully considered, a full array of existing transportation infrastructure improvement alternatives, as well as the No-Action Alternative. Rationales for rejecting alternatives should also be provided. These rationales should include environmental reasons, along with other considerations. The selected alternative should avoid or minimize adverse impacts, so that the need for mitigation of impacts will be lessened or eliminated.

Air Resources: All emissions resulting from the project must be in compliance with all applicable air quality regulations, particularly relative to the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants (e.g., ozone, carbon monoxide, nitrogen oxides, sulfur dioxide, lead and particulates) in designated nonattainment areas. Based on our initial review, the proposed project area is designated as non-attainment for fine particulate matter ($PM_{2.5}$) and ozone. There are two types of activities (e.g., facility construction and operation) that contribute to air pollution in the proposed project area.

Construction and operational activities that contribute to air pollution include: land clearing, operation of diesel engines, demolition, burning, and working with toxic materials. Construction sites generate high levels of dust (typically from concrete, cement, wood, stone, silica) that can be transported over large distances and extend over a long period of time. Construction dust is classified as PM_{10}. $PM_{10 \text{ and } 2.5}$ can penetrate into the lungs and cause a wide range of health problems including respiratory illness, asthma, bronchitis and even cancer. Another major source of $PM_{2.5}$ comes from the diesel engine exhausts of vehicles and heavy equipment. This is known as diesel particulate matter (DPM) and consists of soot, sulphates and silicates, all of which can combine with other toxins in the atmosphere, increasing the health risks of particle inhalation. Diesel is also responsible for emissions of

carbon monoxide, hydrocarbons, nitrogen oxides and carbon dioxide. Noxious vapors from oils, glues, thinners, paints, treated woods, plastics, cleaners and other hazardous chemicals that are widely used on construction sites, also contribute to air pollution.

Also regarding DPM, the idle time and slow speed stop-and-go movements associated with heavy equipment used for moving freight around the intermodal terminal facility can result in higher emission rates within a concentrated geographic area that can affect neighboring communities. EPA recommends that the NEPA document discuss what will be done to minimize emission impacts. For example, retrofits and other measures to reduce truck emissions and idle reduction measures (e.g., idle reducing hook-ups, appointment scheduling, and other queuing reduction measures). Also, all construction equipment should be tuned to manufacturer's specifications to reduce air emissions. By June 2010, the Ultra Low Sulfur Diesel (ULSD) fuel standard of 15 parts per million (ppm) sulfur will apply to non-road diesel fuel production. Beginning in 2012, locomotive diesel fuel must meet the ULSD fuel standard of 15 ppm sulfur. Open burning should also be minimized or avoided, since such emissions are precursors to ozone. Open burning should be coordinated with the state and/or county regarding permitting needs. We further recommend using water for fugitive dust control during construction, instead of oils and other chemicals.

An evaluation of a project of this magnitude (165,000 transfers per year) should include consideration of the impacts of mobile source air toxics emissions on nearby population centers and sensitive populations. The NEPA document should include a detailed inventory of air toxics emissions (including diesel emissions) from both stationary and mobile sources that serve the facility, including the locomotives, switchers, tractors, support equipment, etc. It should also include a screening level evaluation of the potential impacts of these emissions on neighboring populations at each of the locations being considered for the facility in order to allow an informed comparison of the level of acceptability of each of the locations being considered. The screening level evaluation could be conducted using the approach described in EPA's Air Toxics Risk Assessment Reference Library (ATRA Library). We refer the sponsor of the project to the ATRA Library, Volume 1 Section 3.3.3 for further details (http://epa.gov/ttn/fera/risk_atra_main.html). The evaluation should include a description of the recent literature concerning the impact of air toxics emissions on near-roadway receptors, including sensitive receptors such as children and the elderly. The evaluation should also describe the methods that will be used to mitigate any unavoidable emissions and impacts.

Children's Health/Community Impacts: Increased heavy truck traffic on neighboring streets, particularly in close proximity of school zones, is an area of environmental and public health concern. The NEPA document should address the issues associated with residential and children's health and safety issues regarding their potential exposure to increased diesel emissions, heavy truck traffic, noise, lighting and visual impacts. The NEPA document should also indicate whether the existing transportation infrastructure (e.g., Eastern Valley Road) is equipped to handle the additional capacity. What are the plans for addressing the anticipated traffic congestion and associated environmental impacts and safety issues implied by the increased truck traffic? The NEPA document should discuss the following:

- Whether air monitors will be used to monitoring pollutant levels on the school grounds. Monitoring may help to identify appropriate mitigation to protect children's health.
- Filtering air intake to the extent feasible to minimize intake of these particulates into the school's HVAC system, as well as filtering within the HVAC system
- Whether increased truck traffic and the noise associated with the facility operation will impact school classes and how this impact can be mitigated, e.g., providing/installing sound proof materials for the class rooms and planting vegetative buffers.
- The design plans for the intermodal facility and technology that will be used to reduce associated emissions/noise. Will berms/noise barriers be implemented to separate the facility from neighboring properties? Scheduling outdoor activities at the school when vehicular traffic is low, banning vehicular idling at the intermodal facility, and planting evergreen trees/vegetation should minimize air and noise impacts.

Water Resources: Potential sources of water resource impacts on construction sites include: diesel and oil; paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt. When land is cleared, it can result in soil erosion that leads to silt-bearing runoff and sediment pollution. Silt and soil that runs into natural waterways increases turbidity, which restricts sunlight filtration and affects aquatic life. The surface water body in the area is a state-listed impaired water body. Surface water runoff also carries other pollutants from the site, such as diesel and oil, toxic chemicals, and building materials like cement. Pollutants on construction sites can also infiltrate into the groundwater. The proposed project may result in a substantial increase in impervious surface and associated stormwater runoff. Consequently, water quality issues could be further exacerbated, particularly to Shades Creek.

How will the facility yard design plans address water quality concerns? Furthermore, will flooding events impact downstream properties and infrastructure? EPA recommends that the rail yard be designed to collect stormwater runoff. The runoff should then be constructively used for landscape watering or grey water use in the infrastructure, i.e., flushing toilets or locomotive/rail car cleaning, etc.

EPA recommends the use of best management practices (BMPs) to reduce erosion during construction. Typical BMPs include the use of staked hay bales, silt fences, mulching and reseeding, and appropriate buffer zones along water bodies. The document should include an erosion control plan or reference the State erosion control regulations and a commitment to compliance. Compliance should include both BMP application and maintenance. BMPs for the design operational life of the facility should also be considered.

The document should discuss any proposed crossings of water bodies. In general, crossings should be minimized. Unavoidable crossings should be strategically placed to reduce harm by avoiding fish spawning areas, avoiding fringe wetlands, approaching at right angles to streams, etc. If the proposed project includes disturbance of five or more acres of land during construction, and point source discharges into waters of the United States (i.e.,

water bodies such as rivers, lakes, wetlands, etc.), coverage under an EPA storm water National Pollutant Discharge Elimination System (NPDES) General Permit may be required. Contact your state environmental agency for further information on the NPDES program. A concerted effort should be made to avoid placement of capacity adding transportation projects within defined critical water supply recharge areas associated with water supply impoundments and intakes.

EPA notes that the proposed project is located in an impaired watershed. The Alabama Department of Environmental Management (ADEM) has identified Shades Creek as not supporting its designated use of fish and wildlife due to low dissolved oxygen, pathogens, siltation, turbidity, and other habitat alterations. Land use in the headwaters of Shades Creek is urban in its headwaters south of Birmingham. ADEM has also identified collection system failure and urban runoff/storm sewers as probable causes of impairment of Shades Creek. In addition to Shades Creek, three tributaries (Cooley, Mil, and Mud Creeks) are also listed as impaired due to pathogen impairment and are designated as partially supporting their designated use.

The NEPA document should indicate how the proposed project will impact the Shades Creek watershed. What improvements will be made to that portion of the urban storm-water system in the vicinity of the proposed action to help Shades Creek meet existing water quality standards? What improvements need to be made to the collection system to prevent the proposed action from further degrading Shades Creek? How will the proposed action affect the existing sewer (and drinking water) infrastructure?

Noise: Construction sites and intermodal terminals can produce substantial noise impacts mainly from vehicles, heavy equipment and machinery. High noise levels can be distracting and annoying and can also lead to sleep disturbances, stress, increased blood pressure and potential hearing loss. The NEPA document should indicate what noise levels can be expected from the project, and the distance to the closest residence or other sensitive receptor (school, medical facility, etc.). Background (ambient) noise levels should also be included in the document. The NEPA evaluation should estimate the projected incremental increase of noise. Generally, EPA considers all increases over 10 dBA at any given noise level (doubling of noise) as a significant increase. Comparisons to any noise guidelines (e.g., FHWA, HUD) or city ordinances are also appropriate. Also, EPA has a target noise level (not a guideline or standard) of 55 dBA DNL for outdoor areas where people spend a varying amount of time (such as residences). All construction equipment should be equipped with noise attenuation devices, such as mufflers and insulated engine housings. In addition, OSHA regulations apply for all employees affected by job noises.

Forms of noise mitigation include, but are not limited to, vegetated earthen berms and fabricated noise barriers, as well as vegetative screens using evergreen vegetation. If noise impacts are significant at residences just outside the normal width of the right-of-way, relocation of residents should also be considered at the discretion of the affected residents. Avoiding noise impacts via alignment/route shifts or less impacting alternatives is frequently more effective than mitigation. The proposed project does have communities that are located within the vicinity of the project area. Because of their proximity, the NEPA document

should indicate how the construction and ongoing operational activities will affect existing area residents and schools. In addition, the document should also disclose how noise impacts will be minimized and mitigated.

Light Pollution: Lighting associated with the proposed intermodal facility is likely to be used on a continuous basis. The NEPA document should discuss the type, magnitude, duration and direction of the lighting. It should also indicate what measures will be made to minimize and mitigate lighting related issues on the neighboring community. Lighting an intermodal facility also represents a substantial expenditure of energy In addition, the document should also disclose the conservation potential of various alternatives including the preferred alternative.

Visual Impacts: The industrial nature of the proposed action is inconsistent with the zoning restrictions and the nature of the residential community. The NEPA document should indicate the measures that will be taken (e.g., building design, layout, landscaping, etc) to make the proposed action look less industrial, and more fitting to the surrounding residential character.

Emergency Response Provisions: The NEPA document should address issues related to potential accidents that may occur related to the proposed intermodal facility. What are the emergency response plans to address issues associated with potential hazardous-cargo accidents, e.g., tractor trailer traffic bringing in the cargo or cargo container transfer incidents between the truck and the train, in an area with elementary, middle and high schools, day care, and residences.

Environmental Justice (EJ): Consistent with Executive Order 12898 (2/11/94), potential EJ impacts should be considered in the NEPA document. An EJ survey is to ensure equitable environmental protection regardless of race, ethnicity, economic status or community, so that no segment of the population bears a disproportionate share of the consequences of environmental pollution attributable to a proposed project.

The demographics of the affected area should be defined using the U.S. Census data for the year 2000 (Census blocks) and compared to other nearby Census block, county, and state percentages for minorities and/or low-income populations. If percentages of these populations are elevated within the project area, other alternatives should be considered, or coordination with affected populations should be conducted, to determine the affected population's concerns and comments regarding the proposed project. This coordination should include a clear discussion of the project, project updates or expansions, inclusion of the affected population (or their community leader, pastor, or equivalent) on the NEPA document mailing list, any economic benefits (job opportunities, etc.) and adverse impacts of the project to the affected population, and the opportunity for informal and/or formal comments (e.g., EIS scoping meeting and EIS public hearing, or other public meetings). Regardless of the demographic makeup of the affected population, impacts of the project should be controlled so that significant effects on human health are avoided and/or minimized.

Cultural Resources: A cultural resource survey concurrence should be coordinated with the State Historic Preservation Officer (SHPO). Besides the consideration of listed historical sites, the NEPA document should also discuss procedures for events such as unearthing archaeological sites during prospective construction. Such procedures should include work cessation in the area until SHPO and/or Tribal approval of continued construction.

Cumulative Impacts: The NEPA document should estimate cumulative impacts associated with the proposed project. Cumulative impacts include the additive effects of a relevant parameter (e.g., in this case, air emissions and noise) for all contributing past, present and reasonably foreseeable projects in the defined project area. The document should define what cumulative environmental as well as social impacts would result from implementation of the proposed project. Since it does not appear as though a corridor planning document is being development of the Crescent Corridor, the NEPA document should provide a discussion on the various segments of the Corridor that are being proposed within Region 4.

Other NEPA issues: The NEPA document should include discussions of possible conflicts between the proposed action and the objectives of federal, regional, state, and local land use plans, policies and controls for the area concerned[1] and the urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.[2] For example in 2008, the Jefferson County Planning and Zoning Commission's Land Department (Land Department) adopted a new Comprehensive Plan that calls for the protection and preservation of the Shades Creek Watershed, where the proposed action is to be located, as a predominately residential area with specifically-defined villages at certain key intersections. This Comprehensive Plan resulted in the Jefferson County Economic & Industrial Development Authority imposing extensive restrictions upon its own Jeff-Met Industrial Park, to make it as compatible as possible with the area's existing and future residential development. How will the proposed action be implemented to be as compatible as possible with the Comprehensive Plan or mitigate impacts to the proposed plan?

Overall, EPA's preliminary scoping review has identified potential environmental impacts requiring additional consideration as part of the NEPA process including alternatives analysis, noise, air, water resource and community impacts. Beyond the documentation of air, noise, wetland and other environmental impacts of the proposed facility, the NEPA document should assess the societal effects (EJ, children's health, etc.) of these impacts on nearby neighborhoods consisting of residents, school children and other sensitive receptors. Mitigation, as appropriate, should also be discussed and offered by the sponsor for unavoidable impacts. Moreover, it should be noted that proper site selection – where sensitive receptors and other impact parameters are avoided – obviates/reduces the need for and is more effective than such mitigation.

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[1] § 1506.2(d)

[2] 40 CFR § 1502.16 Environmental consequences

Thank you for the opportunity to comment on this proposed action. We would look forward to reviewing the projects NEPA document. If we can be of further assistance, please feel free to contact Ntale Kajumba at (404) 562-9620 or kajumba.ntale@epa.gov.

Sincerely,

Christine M. Hoberg /fr

Heinz J. Mueller
NEPA Program Office
Office of Policy and Management

Proposed Birmingham Regional Intermodal Facility
Jefferson and Tuscaloosa Counties, AL

Study Area: 1.73 sq/mi

Within 400 meters

Feature	Quantity	Name/Type
Ozone Non-attainment area	1	Birmingham, AL
PM-2.5 Non-attainment		Present
Level 4 Eco-regions	1	Southern Limestone/Dolomite Valleys and Low Rolling Hills
National, State, or Local Forest or Park	1	Tannehill State Park
Potential EJ-2000 Area	4	Non-EJ Areas

Within 3 miles

School Name	Distance
Bucksville School (historical)	0.82 miles
Faith School	0.96 miles
McAdory Elementary School	1.58 miles
McAdory High School	1.67 miles
Shades Valley Elementary School	2.37 miles

Other features within 3 miles:
Impaired Stream – Shades Creek
NWI Wetlands – 65, variety of types

EJ Geographic Analysis: Social Overview

Total Persons	1209	**Land Area**	99.5%	**Households in Area**	425
Pop. Density	173.01/sq mi	**Water Area**	0.5%	**Housing Units in Area**	467
% Minority	9.7%	**Persons < poverty level**	67 (5.5%)	**Households on Public Assistance**	2
% Urban	21%	**Housing Units Built <1970**	36%	**Housing Units Built <1950**	11%

EJ Geographic Analysis: Economic

Income Breakdown	Households (%)
Less than $15,000	32 (7.5%)
$15,000-$25,000	61 (14.5%)
$25,000-$50,000	151 (35.6%)
$50,000-$75,000	99 (23.2%)
Greater than $75,000	74 (17.4%)

CH2MHILL TELEPHONE CONVERSATION RECORD

Attendees:
Scott Skipper/Skipper Consulting, Inc. Kenny Burton/Jefferson County

Date: May 12, 2010

Time: 11:45 CST

Notes By: Scott Skipper

Subject: BRIMF: Bridge Crossing Railroad on McAshan Drive

Items Discussed

I spoke with Kenny Burton with Jefferson County Roadway Design concerning the bridge that spans the railroad on McAshan Drive. He indicated that the bridge was constructed to accommodate vehicles operating within the legal limits for travel on roadways within the State of Alabama. He did not state an exact design weight, but indicated it was designed and constructed in conjunction with the adjacent industrial park to accommodate industrial type development that could occur southeast of the railroad.

APPENDIX I

Public Comments and Responses

BRIMF Public Comments and Responses

The comments summarized below were developed from comments submitted by members of the public. Governmental agency and public institutional comments and responses are addressed in Appendix H. These comments were received in response to a 30-day public notice of the August 18, 2009 Public Information Meeting, a 30-day public notice of the November 12, 2009 Public Information Meeting, and for 10 business days following each of the Public Information Meetings. Additionally, comments were submitted through an electronic mail account established in July 2009 for the environmental analysis. The entirety of each comment is available in the administrative record for the environmental analyses established by the Alabama Department of Transportation (ALDOT). For those persons interested in obtaining a copy of all comments submitted, please contact ALDOT's Environmental Technical Section (E.T.S) via phone at 334-242-6738.

Based on those persons who signed in, approximately 400 members of the public attended the August 18 Public Information Meeting. In response to this meeting, ALDOT received approximately 275 public comments which were submitted at the meeting, mailed to ALDOT, or submitted via email. Of these 275 comments, approximately90 percent were opposed to the BRIMF and approximately 10 percent were in favor. After careful review of all comments, it was determined that of the 90 percent of those comments opposing the project, the majority disapproved with the proposed location of the facility.

Based on those persons who signed in, approximately 136 members of the public attended the November 12 Public Information Meeting. In response to this meeting, ALDOT received approximately 73 public comments which were submitted at the meeting, mailed to ALDOT, or submitted via email. Of these 73 comments, approximately 90 percent were opposed to the BRIMF and approximately 10 percent were in favor. After careful review of all comments, it was determined that of those comments opposing the project, the majority disapproved with the proposed location of the facility. For each summarized comment, responses are provided below. Where two or more comments raised common issues, questions, or concerns, or provided information also found in another comment, the comment is summarized into one comment and a common response is provided. To facilitate analysis and review, the summary of comments is organized into 16 topics which correspond to sub-sections of Sections 4.0 and 5.0 of the EA. Studies and reports referenced in these responses are available upon request by contacting ALDOT.

Multiple comments, questions, and concerns were submitted to Norfolk Southern Railway Company (NSR) prior to the commencement of comprehensive studies or the completion of the proposed facility design. These particular statements are indicated by an asterisk (*) at the end of the comment.

A - Purpose and Need

A.1 The need, potential transportation benefits, and adverse effects of the proposed project should be clearly stated and substantiated.*

Response: Please refer to Agency Comment A.1 in Appendix H.

A.2 Will rail cars be switched within the terminal?

Response: An intermodal facility (IMF) is very different from a rail yard and while limited "switching" occurs at IMFs, this is not the type of switching that is most commonly associated with rail activities. Switching operations within the proposed BRIMF typically will only involve the switching and storing of a number of connected intermodal railcars, known as 'blocks,' within the terminal. Many cars will not be moved between tracks. They will arrive on a loading/unloading track and depart from that same loading /unloading track. Some cars, particularly those arriving on weekends, will be moved between loading/unloading tracks and storage tracks in long blocks. A smaller number of cars will be switched according to car type (trailer cars and container cars) and ownership depending on car-type requirements.

Based on freight transportation demand and typical NSR intermodal trains currently passing through the project area, the optimum length of intermodal trains serving the BRIMF will be 8,000 feet (ft). These trains typically will be split into a minimum number of tracks for efficiently performing lifts and minimizing train dwell time within the facility. Thus, two pad tracks approximately 4,000 ft long are required to efficiently handle an 8,000-ft intermodal train with a minimum of switching operations. The BRIMF will provide at least three pad tracks averaging 4,000 ft long, four intermodal car storage tracks averaging 4,725 ft long, and a running track. Collectively, these tracks will provide the capacity to accommodate two trains simultaneously and reduce the amount of switching required at the facility. Therefore, switching will be minimized to the extent practical .

B - Proposed Action and Alternatives

B.1 Why place its new IMF in McCalla?

Response: The BRIMF is proposed to be located at the site referred to in the EA as the McCalla M1 site (Alternative 3). The site satisfies the purpose and need for an IMF as described in Section 2.0 of the EA. It should be noted that rail transportation has been located in McCalla since the late 1800s.

Section 3.0 of the EAEA (Proposed Action and Alternatives) describes seven alternative sites considered for the BRIMF and presents the two-part screening analysis which resulted in the selection of the preferred alternative site.

B.2 Where are the other sites considered during the site selection process and why were they eliminated?

Response: Seven different alternative sites were considered and analyzed as build alternatives for the BRIMF. These alternative sites are described in Section 3.3 of the EAEA (Description of Alternative Sites Considered). The scope and detail of alternatives analysis was developed in response to comments from the public and agencies, including alternative site locations offered by local interests. Initially, six sites were identified in Jefferson and Tuscaloosa Counties, including Irondale, Ensley, three in McCalla, and Vance. However, based on public comments and input received on these alternatives at the August 18, 2009

Public Information Meeting held in Bessemer, Alabama, a seventh alternative site in Bibb County (Woodstock) was added for consideration and analysis in the EA.

The seven alternatives were thoroughly analyzed through a two-part screening process presented in Section 3.0 of the EA (Alternatives Analysis) and summarized above in Response B.1.

B.3 There are potential conflicts involving the preferred alternative and Alabama Power Company transmission line facilities, with concerns including maintaining ground clearance, access to structures, after hours access, equipment operation, etc.

Response: The second level screening of alternative sites presented in Section 3.2.1 of the EA (Second Level Screening for Construction, Operational, and Environmental Considerations) considered potential conflicts with existing infrastructure, including transmission lines, among the potential constructability constraints for the five alternative sites capable of meeting the Purpose and Need for the project.

The screening analysis considered the existing 115-kilovolt (kV) Alabama Power Company power line that extends approximately 1,600 ft across the preferred alternative site and concluded that potential conflicts could be avoided or minimized in the site design by relocating or elevating existing support structures. Through close work with Alabama Power Company, the site is being designed to ensure proper ground clearance, access to structures, and after-hours access, and to avoid impacts from intermodal equipment operation.

B.4 The conceptual plan shows the construction of new tracks along both sides of the existing rail. Where do the new tracks originate?

Response: As described in Section 3.0 of the EA (Proposed Action), the proposed BRIMF, including its running track next to the NSR mainline, will span a distance of approximately 4.3 miles along the mainline between mileposts 161 and 166. The new running track will replace the function of an existing track, which will become a lead track once the new running track is operational. The proposed lead track at the southwest end of the facility will extend approximately 840 ft into Tuscaloosa County (about 5,000 ft southwest of the Kimbrell Cutoff Road grade crossing). The linear configuration of the preferred alternative site provides for a sufficiently long distance between the switch to the main facility and Kimbrell Cutoff Road (over 5,300 ft) to avoid extended conflict between automotive and rail traffic at this existing grade crossing during switching operations. Approximately two of NSR's IMF trains that currently pass this area will serve the BRIMF. Once the facility is in operation, these trains will travel through the Kimbrell Cutoff Road grade crossing at slower speeds to safely enter the facility. Trains entering or departing the facility on the southern end of the facility will use the lead track. The proposed lead track at the northeast end of the facility will extend about 4,500 ft northeast of McAshan Drive and will not intersect any existing grade crossings. As McAshan Drive is grade-separated, there will be no impact to vehicular traffic on that roadway.

B.5 What modifications were made to the conceptual plan to help minimize adverse affects to the McAdory Elementary School?

Response: Please refer to the response B.1 in the Agency Comments and Responses, Appendix H.

Air Quality

C.1 What are the anticipated levels of particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) from the BRIMF?

Response: A comprehensive analysis has been performed to quantify the facility's air emissions at maximum design capacity, and to predict the impact of those emissions on ambient air quality in the vicinity of the facility. The results of that analysis have demonstrated that the change in ambient air quality levels of $PM_{2.5}$ will be small and imperceptible at all locations. The maximum predicted impact of facility $PM_{2.5}$ emissions (while operating at maximum design capacity) is less than 5 percent of the ambient air quality standards. After taking into account existing background air quality levels, the air quality analysis has also demonstrated that BRIMF operations will not cause or contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ (or any other pollutant) at any location on or near the IMF, despite the fact that Jefferson County has been designated as a nonattainment area for $PM_{2.5}$. It is emphasized that the federally mandated NAAQS for $PM_{2.5}$ are established by the U.S. Environmental Protection Agency (USEPA) to be protective of public health, including children and sensitive groups such as asthmatics and the elderly. The $PM_{2.5}$ standard was most recently updated by USEPA in 2006 to provide for lower ambient criteria. A discussion of the air quality analysis methodology, results, and conclusions is provided in Section 4.2 of the EA.

C.2 Will the planned facility contribute adversely to air quality nonattainment levels

Response: No. Comprehensive air quality analyses of projected BRIMF air emissions have demonstrated that BRIMF operations will not cause or contribute to an exceedance of any ambient air quality standards at any location. A more detailed discussion is provided in Section 4.2 of the EA.

C.3 Will the emissions generated by activities at the BRIMF create adverse effects to children with asthma and or allergy issues, elderly, or livestock in the area? If so, will compensation be given to these people for the health impacts that are a direct result of increased exposure to diesel exhaust?

Response: National Ambient Air Quality Standards (NAAQS) are established by the U.S. Environmental Protection Agency (USEPA) to be protective of public health, including children and sensitive groups such as asthmatics and the elderly. The comprehensive studies and analyses of the air emissions during BRIMF operations (at maximum design capacity) provided in Section 4.2.2 of the EA, demonstrate that facility operations will not cause or contribute to an exceedance of any NAAQS for any pollutant at any location. A discussion of the air quality analysis methodology, results, and conclusions is provided in Section 4.2.2 of the EA.

C.4 I am concerned about air pollution for McCalla area residents specifically as it relates to the teratogenic effects of diesel fuel exposure.

Response: The U.S. Environmental Protection Agency (USEPA) has assessed the potential for diesel emissions to indicate teratogenicity and has determined that no teratogenic effects have been observed in laboratory tests. As noted in the EA at Section 4.2, facility emissions are anticipated to result in maximum potential exposure levels that are well below National Ambient Air Quality Standards (NAAQS) and associated levels where effects would be observed. Since the USEPA established the NAAQS to protect public health and these standards include a margin of safety to protect children and other sensitive populations, exposure levels well below NAAQS are consistent with USEPA's mandate to protect public health.

C.5 When trucks are "waiting" within the proposed BRIMF, will they leave their engines running?

Response: Based on NSR's experience at its other IMFs, trucks will not be "waiting" for any extended periods of time while they are at the facility. Each visiting truck will be onsite for an average of 25 minutes, with each visit typically consisting of approximately 2 miles of onsite travel and 13 minutes of idling (for security gate clearance, trailer connect/disconnect, etc.). The Automated Gate System (AGS) proposed for the facility will ensure quick entry and exit from the facility with minimal stoppage time and associated idling. The transaction time for trucks at the AGS will typically be 3 minutes. Once entering the facility, trucks will be driven to their designated cargo location for hookup or release of their intermodal cargo, a matter of a few minutes. Trucks will then exit through the AGS with its automated security and inventory control. The entire process is designed to be quick and efficient with minimal idling. There is no incentive in the transportation system for idling, which not only slows the delivery process, wastes expensive fuel, and reduces driver productivity. NSR will install signs at selected locations to further discourage idling.

C.6 Will NSR or the U.S. Environmental Protection Agency (USEPA) monitor air quality in the vicinity of the BRIMF once in operation? Will monitors be placed near the school?

Response: Ambient air quality monitors are typically developed, installed, and maintained by regulatory entities for a variety of reasons, including the sensitivity and complexity of the equipment and analysis, issues regarding location and representative sampling, and resource and regulatory implications. Ambient air quality monitoring is typically not done at mobile source facilities like IMFs or other mobile source transportation facilities like airports, highways, bus terminals, and municipal centers attracting vehicle traffic. This is due to the nature of mobile source emissions. Because of the practical, logistical, and reliability issues regarding mobile source emissions monitoring, USEPA regulates mobile source emissions through limitations and performance goals on the manufacture and use of combustion engines for mobile sources, such as USEPA's regulation of off-road and on-road diesel emissions, USEPA's regulation of locomotive emissions (40 Code of Federal Regulations [CFR] Part 1033), and USEPA's regulatory actions relating to Mobile Source Air Toxics (MSAT). Accordingly, there are no plans to perform ambient air quality monitoring at the facility. The comprehensive air quality analyses that have been performed in accordance with accepted scientific methodology and applicable regulatory guidance and regulations have adequately demonstrated that the facility will not result in an adverse impact on ambient air quality at any location.

D – Cultural, Historic, and Archaeological Resources

D.1 Has a cultural resource study been performed on the proposed BRIMF site? Where can I review it?

Response: A cultural resource study has been performed within the proposed project area where land disturbing activities will occur. A summary of this survey is provided in Section 4.3.1 of the EA. The *Phase I Cultural Resources Report* (Brockington and Associates, Inc., 2010) indicates there are no artifacts or other findings of cultural significance that will be affected by the project. Please contact ALDOT to request a copy of this report.

E – Fish, Wildlife, and Vegetation

E.1 Within the proposed BRIMF and adjacent areas where aquatic surveys occurred, were any habitats identified that are indicative of state or federally listed species? Any listed species? If yes, how will they be protected?

Response: Site-specific threatened and endangered species surveys were conducted and did not find potentially suitable habitat for protected plant and wildlife species. Surveys also did not find any threatened or endangered species in areas likely to be affected by the proposed BRIMF. Sections ES 5.4 and 3.6.1 and Table 4.4-3 in the EA discuss endangered species surveys completed at the BRIMF site. The aquatic species survey reports (Dinkins Biological Consulting, 2010 and Southeastern Aquatic Research, 2010) indicate no adverse impacts to protected aquatic species are anticipated as a result of the proposed BRIMF. These reports are available in Appendix B.

E.2 I am concerned about the destruction of natural habitats in the area of the BRIMF and how that will affect local wildlife.

Response: The number of animals displaced by the facility will be minimal, as the majority of the land that will be used for the facility has been previously cleared and used primarily for agriculture or for cattle grazing. Section 4.4.2.1 of the EA provides additional information on potential wildlife impacts.

F – Water Resources

F.1 What measures will be taken to prevent pollution of surface water and groundwater as a result of storm water runoff?

Response: The facility design has carefully considered the location and operation of surface water management areas (detention/retention ponds). These ponds will be located and designed to ensure that the facility complies with applicable water quality standards, which are established by the U.S. Environmental Protection Agency (USEPA) and the Alabama Department of Environmental Management (ADEM) as protective of water quality and designated uses. Refer to Sections ES 5.5 and 3.6.1 in the EA for additional information. As noted in Section 4.5.2 of the EA, the use and presence of materials that could affect groundwater will be minimal in volume, and with the facility's planned containment areas, paved area, and stormwater management system with shutoff valves and substantial capacity, the likelihood that a release of materials might reach the environment so as to present a risk to groundwater will be very low.

F.2 Where are the retention/detention ponds going to be placed and who will manage them?*

Response: There will be four retention/detention ponds within the BRIMF. Their locations are shown in the conceptual plan for the BRIMF, Figure 3-6 of the EA. They will be managed/maintained by onsite personnel who will be responsible for their operation and maintenance. Additional information regarding the ponds and stormwater management is provided in Section 4.5.2 of the EA.

F.3 What assurances are there that the retention system/pond will not overflow onto McAdory Elementary School grounds or affect the children by the presence of mosquitoes or odor associated with it?

Response: The retention/detention ponds and pond outlet control structures are designed to detain floods for up through the 100-year storm, preventing overflow onto school grounds, with maximum outflows from the most downstream pond not exceeding the pre-development 2-year storm at the pond outfall, meaning that stormwater volumes from the site after its construction will very closely match the flow from the site currently occurring from a moderate rain event (of the type that occurs at least once every 2 years). Water in the ponds is not expected to be stagnant and, with periodic flushing from rainfall events, the water is not anticipated to create an increase in mosquito populations. Additionally, the design of the stormwater retention ponds and management of releases, including the use of spray irrigation, will control water flows to reduce or eliminate impact. Refer to Sections ES 5.4 and 3.6.1 in the EA for additional information.

F.4 All stormwater runoff and creek flow should be maintained at current standards.

Response: The retention/detention ponds and pond outlet control structures are designed with maximum outflows from the most downstream pond not to exceed the pre-development 2-year storm at the pond outfall. Additional information regarding the ponds and stormwater management is provided in Section 4.5.2 of the EA.

F.5 I am concerned that the retention pond(s) will not be able to adequately absorb stormwater due to the clay substrate beneath the pond. Has the U.S. Army Corps of Engineers (USACE) assessed the situation?

Response: The retention/detention ponds and pond outlet control structures are designed to detain floods for up through the 100-year storm (i.e., a rain event of the size that occurs once every 100 years) with maximum outflows from the most downstream pond not to exceed the pre-development 2-year storm at the pond outfall. The clay substrate has been analyzed as part of the site design and the stormwater management system design with the assumption that infiltration will be minimal at the site. A spray irrigation field will also be utilized to manage water volume in ponds and reduce potential impacts to adjacent streams. Sections 3.6.1 and 4.5.2 of the EA provide additional information on stormwater management. The USACE has reviewed the site and preliminary plans for the ponds and will be conducting an overall review of the EA as a Cooperating Agency.

F.6 I am concerned with the underground river that is located beneath the proposed BRIMF.

Response: Construction and operational Best Management Practices (BMPs) will be used to minimize the potential for impacts to groundwater. A clay layer below the project site will further minimize impacts to any groundwater resources. Information regarding hydrogeology at the site indicates that an underground river is not present at the site, but that a shallow aquifer underlies the site typical of this region/soil type (TTL, Inc., 2009). No impacts to the aquifer are anticipated. Sections 4.5.1.1 and 4.5.2.1 of the EA describe groundwater resources in more detail.

G – Wetlands

G.1 Has the U.S. Army Corps of Engineers (USACE) performed an assessment of the BRIMF? If so, were any wetlands or waterbodies deemed non-jurisdictional?

Response: The USACE performed a site visit on September 30, 2009 and will be reviewing the Section 404 permit application for the project to ensure compliance with the Clean Water Act. Several site assessments of waterbodies, ditches, storm conveyances, swales, and all site water features have been conducted and included in a comprehensive water and wetland report for submission to the USACE in conjunction with the Clean Water Act Section 404 permit application. All wetlands and waterbodies associated with the proposed BRIMF site are presently considered jurisdictional by the USACE.

G.2 What methods will be used to protect/preserve wetlands and waterbodies within the BRIMF?

Response: The site design has been modified to avoid and minimize impacts to streams and wetlands. This includes adjustments to the site footprint, edge locations, and features. The creation and use of retention ponds and spray irrigation fields and operational BMPs will further minimize impacts during construction and operation. Sections 3.6.1 and 4.5.2 of the EA address stormwater controls within the BRIMF; Sections 3.6.1 and 4.4.2.2 of the EA address actions to be taken to minimize impacts to wetlands and waterbodies during construction and operation of the BRIMF.

I – Hazardous Materials

I.1 If spills occur at the BRIMF, how will they be addressed? Is there a recovery plan?

Response: Most of the containers that will be transported through the BRIMF will not contain materials in quantities that would cause a release off of the BRIMF site if a container were damaged. U.S. Department of Transportation (USDOT) container, packaging, packing, and handling requirements will reduce the likelihood of a release. Spills of transported hazardous materials on IMFs are rare, but if a leak or spill does occur onsite, trained terminal staff will quickly respond to contain the spill, manage its recovery, and clean it up.

In the unlikely event of a hazardous material spill from a container, emergency protocols for response and recovery will go into immediate effect and a variety of emergency response resources made available as necessary. Emergency protocols for the BRIMF will provide for

trained employees onsite to initially handle any spill of transported hazardous materials. In addition, the BRIMF and its employees will be subject to the United States Hazardous Materials Instructions for Rail, which are operating rules that implement certain portions of 49 CFR Part 172 and include emergency response. Under facility response protocols, facility employees, working with NSR environmental staff and local emergency first responders as necessary, will have around-the-clock access to emergency response resources (local first responders, local environmental contractors, U.S. Environmental Protection Agency [USEPA], and the U.S. Army Corps of Engineers [USACE]) accessible through a telephone call to the NSR Alabama Division dispatch office, which is staffed 24 hours a day, 7 days a week. Detailed procedures are found in NSR's Alabama Division's Emergency Action Plan and the 2008 Emergency Response Guidebook (USDOT, 2008), which provides emergency detailed procedures for a variety of types of spills and releases. NSR also has published a Railroad Emergency Response Planning Guide, which is available to local first responders. The BRIMF design includes measures to prevent spills of transported materials from leaving the facility.

Petroleum and equipment fluids necessary for the facility's operations will be handled and enclosed within appropriately designed containment equipment in the maintenance area of the facility and will be handled in compliance with applicable State and Federal regulatory requirements for spill control. NSR will prepare a Spill Prevention, Control, and Countermeasures (SPCC) Plan, as needed, prior to the operation of the proposed BRIMF. Section 4.8 of the EA provides additional information.

Given NSR's safety record, USDOT's comprehensive regulatory program governing hazardous materials shipments, emergency response planning and preparedness measures noted above, and the proposed BRIMF's design, a release or spill of a hazardous material at the proposed BRIMF is unlikely. Based upon historical information on releases or spills at IMFs, if any release or spill were to occur, it would most likely be a very small volume and would be contained on the concrete pad where BRIMF containers will be parked. The BRIMF is designed such that any fluid materials which leave the large concrete pad will be directed to four retention ponds, which are equipped with emergency valves and gates to prevent materials from leaving the BRIMF. With the emergency response training of onsite personnel, the availability of additional response personnel on an around–the-clock basis, the protocols established for local emergency response, and the notification provisions for additional emergency response resources, the proposed BRIMF will achieve a very high level of safety and protection from hazardous materials releases or spills.

I.2 Does NSR transport hazardous material in intermodal service? If yes, what percentage of shipments is considered "restricted hazardous materials" by USDOT?

Response: Approximately 3-4 percent of items transported through NSR's intermodal service are U.S. Department of Transportation (USDOT) regulated hazardous materials. "Restricted hazardous materials" is not a category regulated by USDOT, although presumably the question relates to Toxic Inhalation Hazards and other similar substances. Toxic inhalation hazardous materials and other potentially dangerous materials such as certain explosives are prohibited in intermodal shipments. Additional details regarding the shipment of hazardous materials are available in Section 4.8 of the EA.

I.3 How does NSR store fuel needed for operation of the BRIMF, and where is it stored?

Response: Fuel necessary for the operation and maintenance of facility vehicles and equipment will be stored in aboveground tanks onsite. Tanks will be kept in the maintenance area, on the northeast side of the facility, approximately 1 mile northeast of McAdory Elementary School. These tanks will have secondary containment structures to prevent releases offsite and will be constructed, inspected, and operated in compliance with federal law. Additional details regarding onsite fuel storage are presented in Section 4.8.2 of the EA.

I.4 Are tank cars transported through NSR's intermodal service? If not, can NSR guarantee that tank cars will never be transported through the intermodal facility?

Response: Railway tank cars carrying liquids are not transported through NSR's intermodal system. NSR does not foresee any plans to transport tank cars through the intermodal system in the future; these cars will not be transported through the BRIMF. A very small number of intermodal tank container units (0.4 percent of all NSR intermodal shipments) are shipped in intermodal service. These intermodal tank container units commonly have a capacity of 6,000 gallons. The commodities shipped in intermodal tanks are controlled by USDOT; and these tanks have proven to be a very safe method of transport for liquid commodities. A variety of liquids are hauled in these tank containers, including food grade items such as vegetable oil. In the unlikely event that a tank container ruptured, the IMF containment system could adequately contain a volume of this size. Toxic Inhalation Hazards are forbidden from transit in these tank container units and in intermodal service. Please refer to Comment I.1 in Appendix H for additional details.

Example of a tank container. Contains up to 6,000 gallons.

Side view of a tank container.

I.5 Will NSR propose an emergency evacuation plan for McAdory Elementary School in the event of an incident at the BRIMF and how will NSR effectively and efficiently communicate with the school during an emergency?

Response: Emergency evacuation plans for McAdory Elementary School are the responsibility of the local emergency management agency or school district. NSR will cooperate with local emergency management agencies in appropriate emergency planning.

The probability of an event occurring at the BRIMF which would result in the evacuation of the adjacent McAdory Elementary School is very low due to the nature of the contents of intermodal shipments**.** However, in the event that an emergency arises, NSR will coordinate and cooperate with the following local emergency management agencies, as appropriate under the circumstances:

- McCalla Area Fire District
- Birmingham Regional Emergency Medical Services (EMS) System
- McAdory Fire & Rescue
- Bessemer Fire & Police Departments
- Lakeview Fire Protection District
- NorthStar Emergency Medical Services

As discussed in Section 4.11.2 of the EA, NSR has a police communications center in operation 24 hours a day, 7 days a week, and also has available its own emergency response plans and resources as well as emergency response contractors in the event of an emergency. The BRIMF will be governed by the NSR Alabama Division Emergency Action Plan and the United States Hazardous Material Instructions for Rail. In addition, NSR participates in national, state, and local emergency preparedness, response, and training to assist in effective and efficient response and communications in the event of emergency, including TRANSCAER (Transportation Community Awareness and Emergency Response), whistle stop tours, and other planning and preparedness exercises. National and state emergency response protocols call for emergency evacuation decisions and orders to be managed by local emergency management agencies in the first instance, whose personnel are typically best informed regarding the local geographic area and needs of the community in case of emergency. State and Federal resources are also on call 24 hours a day, 7 days a week. For more information on emergency response relating to the BRIMF, see the EA at Section 4.8.2.

J – Land Use

J.1 Exactly how far will the BRIMF operations occur from the school?

Response: Section 4.9.1.1 of the EA describes the proximity of the proposed BRIMF to adjacent land uses. Specifically, Figure 4.9-3 illustrates the proximity of McAdory Elementary School and the Tannehill Child Development Center to intermodal activities at the proposed BRIMF. The minimum distance from intermodal train operations to the school building will be approximately 500 ft. The nearest vehicle or equipment activity will be approximately 350 ft from the school building.

J.2 Is NSR relying on the right of eminent domain to acquire land for the siting of the BRIMF?

Response: No, NSR purchased the property for the proposed BRIMF from individuals who were willing to sell their land at their own discretion.

J.3 Is NSR required to abide by county zoning ordinances?

Response: Under the Interstate Commerce Commission Termination Act of 1995 ("ICCTA"), 49 U.S.C.§ 10501 and the Federal Railway Safety Act of 1970 ("FRSA"), 49 U.S.C.§ 20101 et seq., most state and local regulations of railroads are preempted to ensure that barriers to interstate commerce are not created. This includes local planning, zoning, and similar laws and ordinances that would conflict with or burden rail transportation. Note that rail transportation has existed in the area since the late 1800s, and it is uncommon for local zoning and planning to address rail transportation, as well as other interstate transportation such as highways, pipelines, and power lines, in recognition of the federal interest in interstate commerce and state and national needs. While NSR plans to voluntarily comply with local criteria whenever possible, there may be instances where those criteria would be incompatible with rail operations.

J.4 Will NSR buy my house and pay for my relocation if I live within a minimum distance from the BRIMF? If not, will NSR compensate me for double-paned windows or other sound-abating improvements to my home?

Response: There are no plans to relocate or otherwise compensate home owners living adjacent to the BRIMF. Section 4.10 of the EA presents an analysis of potential noise and vibration effects from the BRIMF; the analysis found that noise levels to the nearest receptors in this area will not exceed the Federal Highway Administration (FHWA) criterion even at the highest estimated peak hour traffic. As a result, sound-abating improvements, relocation, or compensation will not be necessary.

J.5 The new BRIMF is not consistent with the long-term development plan for the McCalla area.

Response: Section 4.9.2 of the EA discusses the potential environmental consequences of the proposed BRIMF with regard to land use, comprehensive planning, and zoning. The proposed BRIMF site is currently zoned A-1, Agriculture District. Adequate infrastructure to support the BRIMF and other industrial uses is planned for the area. As noted in Response to Public Comment J.3, Jefferson County zoning and planning provisions are inapplicable by virtue of ICCTA and FRSA. See also Response to Agency Comment J.1.

J.6 Why doesn't the planned landscape berm between McAdory Elementary and the BRIMF extend across the back of the school?

Response: Figure 3-6 illustrates the current extent of the two landscape berms (15 ft above pavement) planned for the southwest facility boundary between McAdory Elementary and the BRIMF. Operational requirements for the running track, including 7,500-ft lead tracks on each end of the facility (described in Section 3.4.1), the extent of NSR's property ownership, as well as efforts to minimize impacts to local waterways and floodplains, described in (Section 4.5.2), prevent NSR from extending the berm across the back of McAdory Elementary. The existing 50-ft vegetative buffer between the proposed BRIMF site and McAdory Elementary will remain undisturbed both during and after construction of the proposed BRIMF, resulting in no visibility of activities at the BRIMF site from McAdory Elementary and buffering of any noise from activities at the BRIMF site.

J.7 Once the BRIMF stimulates industrial growth in the area, there will not be any countryside left to enjoy.

Response: Section 5.8 of the EA discusses potential indirect and cumulative impacts to land use. Any cumulative impacts of the proposed BRIMF that could be collectively considerable over time will be limited by the densities and uses allowed by Jefferson County for the plansects noted in Figure 5-2. The presence of the BRIMF is not expected to have a negative impact on the continued implementation of the Shades Creek Watershed Comprehensive Plan and the County can address potential changes in these anticipated development patterns via future updates to the Comprehensive Plan Proposal Map. Additionally, Sections 4.13 and 5.12 of the EA assess potential impacts to visual and lighting conditions. There will be limited potential for the BRIMF to interact with other projects with regard to visual quality. Once the facility is constructed and the barriers and screening vegetation are in place, the BRIMF will not further alter visual quality. The incremental contribution to reduction in visual quality will be limited by the screening barriers and vegetation.

J.8 A landscape berm should be placed along Eastern Valley Road to reduce the sight of the light poles and help reduce noise impacts.

Response: Figure 3-6 illustrates that, to the extent practical, considering property ownership as well as efforts to minimize impacts to local waterways and floodplains, described in Section 4.5.2, NSR has proposed multiple measures to buffer Eastern Valley Road as well as adjacent residences from operation of the proposed BRIMF. Section 3.5 describes the three proposed landscape berms (15 ft above pavement) and 16-ft high visual barrier wall along the south side of the entrance road.

J.9 To what extent will the landscape berm stretch along the entrance to the facility? Will it reach all the way to McAshan?

Response: A 15-ft high visual barrier will be installed along the entire length of the access road, beginning at McAshan Drive and extending to the proposed Automated Gate System area. Figure 3.6 in the EA provides the conceptual plan for the BRIMF and includes the locations for planned barrier and berms.

K - Noise and Vibration

K.1 Have noise studies been performed? Where?

Response: Yes, studies which include ambient noise monitoring and modeling have been performed at adjacent receptors such as McAdory Elementary School, the Sadler Ridge neighborhood, and other sensitive receptors. Section 4.10.1 (specifically Table 4.10-3 and Figure 4.10-1) of the EA indicates the monitoring locations. The results of this study and projected impacts are discussed in Section 4.10.2 of the EA.

K.2 Will the noise created by the BRIMF impact students at McAdory Elementary School? How will noise be mitigated in the vicinity of the school?

Response: Results from the noise monitoring and modeling studies indicate that individuals at the school will experience sounds close to current ambient or background conditions and that noise impacts are not anticipated. Therefore, no mitigation for noise is required. However, the current design plan for the facility includes a proposed landscape berm between the facility and the school with the ancillary benefit of further reducing noise levels associated with facility construction and operations. A more detailed explanation is provided in Section 4.10.2 of the EA.

K.3 How will the noise from trucks entering/exiting the facility each day be minimized to reduce impacts to adjacent neighborhoods?

Response: Results from the noise monitoring and modeling studies indicate that adjacent neighborhoods will not be substantially affected by noise from trucks entering or leaving the facility. However, current plans include a barrier along the entire length of the access road and around part of the Automated Gate System, which will provide a variety of mitigation benefits including aesthetic improvements, security, and noise suppression. This barrier, combined with existing vegetation and the distance between the road and residents in the area, is expected to reduce sounds from the trucks to near ambient levels for those residents. A more detailed discussion regarding the noise study and anticipated impacts is available in Section 4.10 of the EA.

K.4 Noise from the trains and BRIMF will be a disturbance to the community.

Response: See Response to Public Comment K.3.

Results from the noise monitoring and modeling studies indicate that adjacent neighborhoods will not be substantially affected by operational noises from the BRIMF. There will be several areas on the site where current planning includes the placement of 15-ft landscape berms that will provide added reduction of noise, as well as visual impacts from most local residences. Additional details regarding operational noise are included in Section 4.10 of the EA.

K.5 Please explain what "intermittent noise levels" are and their impact on the learning environment for children at McAdory Elementary.

Response: Intermittent noises are sounds that do not occur continuously. For example, the back-up alarm on a truck is considered an intermittent noise. Studies have been performed showing that intermittent noises produced at the BRIMF are not considerable and will have little to no effect on the learning environment of children at McAdory Elementary School. The proposed earthen berm, coupled with an existing 50-ft wide vegetative buffer, will reduce sounds from operations to near ambient levels at the school.

K.6 Have noise studies been performed at the Austell IMF? If so, what were the results?

Response: Yes, a report entitled *Noise Assessment for Proposed Birmingham Regional Intermodal Facility*, Dec 2009 prepared by CH2MHILL, included noise studies performed at the Austell IMF. These studies were primarily conducted to further validate the noise levels used in the impacts assessment for the project based on actual noise levels from operating equipment

onsite. These studies verified that the presence of a berm such as the one at Austell could further reduce sound levels by as much as 10 dBA. Additional details regarding operational noise impacts are included in Section 4.10.2 of the EA. To obtain a copy of the noise report, please contact ALDOT.

K.7 There are a number of portable classrooms outside of the main building at McAdory Elementary. Have studies been performed to take into account the effects of noise on the students and faculty within these portables?

Response: Noise modeling results indicate that the anticipated noise levels at the McAdory Elementary School property outside the building will be a day-night equivalent noise level (Ldn) of 60 Ldn during maximum BRIMF operations. The Federal Railroad Administration/Federal Transit Administration (FRA/FTA) maximum criterion threshold for sensitive receptors is 63 L_{dn}. To better understand the difference between 60 and 63 L_{dn}, please refer to Section 4.10.1.1 (Fundamentals of Acoustics) in the EA. Since these results are for the outside environment, there is no reason to expect that there will be any impact to portable classrooms.

L – Social Elements and Environmental Justice

L.1 How many employees will be hired to operate the BRIMF? Where will they be hired from?

Response: Section 4.11.2 of the EA describes anticipated employment for the proposed BRIMF, including approximately 230 persons total when it reaches full capacity (70 terminal employees plus 160 local truck delivery drivers). The terminal employees will work for a contractor retained by NSR to operate the facility. The notice for employment opportunity will be publicized locally and the preference will be to hire qualified employees locally as the terminal volumes grow. In the timeframe immediately following terminal completion experienced personnel will be brought in to establish operations. By the time the terminal achieves its' full operational capacity, the vast majority will have been hired locally.

L.2 Are there comparable IMFs that have been in operation at least 15 years, so that an economic comparison can be made?

Response: There are many IMFs that have been in place for 15 years or longer; however, it is challenging to find readily available data assessing IMF sites and corresponding regions that are directly comparable (in terms of size and local economic characteristics) to the BRIMF and its surrounding area. Section 4.11.1.2 of the EA, Local Economy and Employment, references the Virginia Inland Port (VIP) built by the Virginia Port Authority in 1989 as a representative example of the potential effects of an IMF on local economic development.

L.3 Will there be an emergency evacuation route that could be used by the trucks at the facility?

Response: The BRIMF will include an emergency access road connecting the southeastern boundary of the facility to Eastern Valley Road, see Section 4.11 of the EA. The emergency access road will have a locked gate, and will not be used in normal operation of the BRIMF.

L.4 Does NSR have an emergency response plan that describes the action taken in the event of a fire, spill, or any other situation deemed as an emergency? Where can the public view this plan?

Response: Section 4.11.2.1 summarizes the Safety and Security measures proposed by NSR as part of the BRIMF, including emergency preparedness. The BRIMF will be governed by the NSR Alabama Division Emergency Action Plan and the U.S. Hazardous Materials Instructions for Rail, which specifies response protocols and notifications.

L.5 Will siting the BRIMF near the McAdory Elementary School pose additional risks to the health and safety of students and/or faculty?

Response: The EA demonstrates that the proposed BRIMF is not anticipated to pose additional risks to the health and safety of students and/or faculty near the McAdory Elementary School. It includes the following sections that describe site-specific studies and their results: Air Quality – Section 4.2; Noise and Vibration– Section 4.10, and Traffic and Transportation – Section 4.12. Additionally, Section 4.11.2.1, Safety and Security, describes the measures NSR will implement related to worker safety, public safety, and facility security at the proposed BRIMF.

No additional health risk is expected to occur at any location as a result of the siting or operation of the BRIMF. Air quality impacts attributable to facility operations are predicted to be very low and they will not cause or contribute to an exceedance of any National Ambient Air Quality Standard (NAAQS) for any pollutant. Federally mandated NAAQS are established by the U.S. Environmental Protection Agency (USEPA) to be protective of the public health, including children and sensitive groups such as asthmatics and the elderly. A discussion of the air quality analysis methodology, results, and conclusions is provided in Section 4.2 of the EA.

Freight that will be transported through the BRIMF will not include any hazardous materials that will pose an inhalation health risk at any location. Transported materials will be containerized commercial goods or intermodal tank container units (no tank railcars), subject to federal packaging, marking, and response requirements. Accidental spills of transported materials (such as paint, alcohol, or similar materials) at NSR IMFs have been very rare and minimal and, as explained in the EA, it is anticipated that there will be no major risk of offsite impacts. A more detailed discussion is provided in Section 4.8 of the EA.

There will be multiple barriers between the school and the BRIMF to prevent children at the school from gaining access to the intermodal facility. This will include an 8-ft fence adjacent to the existing tree line, a 15-ft earthen berm, and a second 8-ft fence topped with security wire. A more detailed discussion is provided in Section 4.11.2.1 of the EA.

The results of noise studies and analyses have shown that noise levels at the school will not increase substantially as a result of BRIMF operations. A more detailed discussion is provided in EA Section 4.10.1.1.

L.6 What assurances can NSR provide the community regarding the safety of children congregating around McAdory Elementary School during the construction phase of the BRIMF?

Response: Section 4.11.2.1 of the EA discusses Safety and Security measures for the proposed BRIMF, including protection of children and public and worker safety during

construction. Access to the construction site will be strictly controlled by the general contractor. Construction site managers will be responsible for limiting site access to construction personnel and sub-contractors only. In the portion of the BRIMF property that is closest to McAdory Elementary School, a 15-ft earthen berm will be constructed as a visual barrier and security fences installed as soon as practical during construction. NSR plans to construct two 8-ft high security fences (one on either side of the berm); the fence farther from the school will be equipped with security wire along the top.

L.7 Will the education of students at McAdory Elementary School be adversely impacted by the operation of the BRIMF?

Response: The studies completed for the EA, as discussed in the EA in sections on Air Quality (Section 4.2), Land Use (Section 4.9), Noise and Vibration (Section 4.10), Social Elements and Environmental Justice (Section 4.11), Traffic and Transportation (Section 4.12), and Visual and Lighting Conditions (Section 4.13), indicate that there should be no adverse impact on McAdory Elementary School from operation of the BRIMF. Please see Responses to Public Comments B.5, K.5, K.7, L.5 and Q.5.

L.8 Will local businesses experience adverse effects (i.e. a reduction in business) as a result of the BRIMF?

Response: Section 4.11.1.2 of the EA describes current economic conditions and employment in the South Bessemer/Oxmoor Planning District, and the location of the proposed BRIMF, while Section 4.11.2 discusses the potential consequences of the Proposed Action. There are no indications that the BRIMF will be bad for the economy. Expectations are that on a regional basis there will be new jobs, tax revenue, and other benefits for the economy.

L.9 Will there be an impact on McAdory Fire Department or the Sheriff's Department, due to the construction or operation of the BRIMF? If so, will NSR assist in funding an increase in manpower and training?

Response: Section 4.11.1.3 of the EA discusses the availability of and proximity to community facilities such as police, fire, and emergency medical services (EMS), while Section 4.11.2.1 summarizes the Safety and Security measures proposed by NSR as part of the BRIMF, including emergency preparedness. NSR does not anticipate an impact to the McAdory Fire Department or the Sheriff's Department due to the construction or operation of the BRIMF. However, NSR will offer hazardous materials response training to local first responders.

L.10 What tax benefits generated by the BRIMF can the McCalla area expect once the facility is in operation?

Response: Tax benefits specific to the McCalla area have not been calculated. The Birmingham regional economic benefits study (Insight Research Corporation, 2009) stimated that $25.1 million in direct and indirect cumulative tax revenue through 2020 could result from the BRIMF alone. According to the study, this revenue will benefit Jefferson County, the State of Alabama, Jefferson County Schools, the Special School Tax, and the McCalla Fire District.

L.11 NSR indicated there could be 8,000 spin-off jobs resulting from the BRIMF. What types of jobs will these be and where will they come from?

Response: An estimated total of approximately 8,600 direct and indirect full-time equivalent jobs from at-risk and potentially benefited industrial expansions are projected by 2020 as a result of the proposed BRIMF. This includes the 230 persons directly employed by the BRIMF, as described in Section 4.11.2 of the EA. The balance of the estimate relates to potential future industrial development such as Distribution, Office Warehouse, Manufacturing, and Service Centers within the seven-county (Bibb, Blount, Chilton, Jefferson, St. Clair, Shelby and Walker Counties) Birmingham-Hoover, AL Metropolitan Statistical Area (MSA) that are either at risk or in a position to be stimulated by the availability of intermodal service and competitive pricing. Approximately 68 percent of the jobs projected through 2020 are anticipated to occur within Jefferson County, with the balance coming from the other six counties in the MSA (Insight Research Corporation, 2009).

L.12 What approaches will NSR take to improve the environment for the children at McAdory Elementary School?

Response: The BRIMF is not expected to cause a negative impact on the environment at McAdory Elementary School. There will be local and county economic benefits from the project that may be expected to have benefits in the community, including possible actions that may be taken by local and county governments that could benefit the school.

M – Traffic and Transportation

M.1 Will trucks entering and/or exiting the facility use Eastern Valley Road as a route to the main highways?

Response: Trucks entering and exiting the BRIMF will only use the segment of McAshan Drive between the BRIMF access road and Interstate 20/59. The design of the access road and signage will direct all trucks leaving the site to make a left turn onto McAshan Drive to further ensure they do not turn toward Eastern Valley Road. A recent Jefferson County ordinance now restricts all but local delivery trucks from using Eastern Valley Road.

M.2 Will McAshan Drive accommodate the trucks that will travel to and from the BRIMF?

Response: The traffic study conducted for this project incorporated extensive surveys of current and future traffic conditions on McAshan Drive, including modeling of the added traffic that will be associated with operation of the facility. The data from these surveys indicate that McAshan Drive will accommodate the added traffic without reducing service levels. Additional details regarding the results of the traffic study are discussed in Section 4.12 of the EA. Also, please see response to Agency Comment M.9 in Appendix H regarding additional traffic counts performed to account for the recent opening of the Home Depot Warehouse at the Metropolitan Industrial Park.

M.3 Can the BRIMF be expanded or increase the number of trucks visiting the site daily without notifying the community first?

Response: As determined by the Purpose and Need for the project, described in Section 2.0 of the EA, the planned BRIMF capacity is 165,000 container or trailer lifts per year. This planned capacity is based upon projected freight demand, which is also described in Section 2.0 of the EA. The facility will be built in one or more phases to achieve the planned 165,000-lift capacity. NSR will notify appropriate local authorities of any proposed increase in capacity at or expansion of the BRIMF.

M.4 Will the bridge on McAshan Drive handle the truck traffic for the BRIMF?

Response: Jefferson County Roadway Design indicated that the bridge on McAshan Drive that crosses the railroad is capable of accommodating any vehicle that legally operates on roadways in the state of Alabama. It was designed and constructed in conjunction with the Jefferson Metropolitan Park to accommodate industrial-type developments.

M.5 Will NSR or ALDOT install traffic lights at the I-20/59 intersection of McAshan Drive?

Response: The traffic studies that have been conducted for this project do not indicate a current need for a traffic light at the I-20/59 intersection of McAshan Drive. There are currently no plans for modifications to the I-20/59 intersection on McAshan Drive.

M.6 How many trucks per day are expected to use the BRIMF?

Response: The design of the BRIMF will be able to accommodate approximately 400 trucks per weekday entering the facility. It is expected that initial truck traffic will be below this level.

M.7 Which entity will fund road improvements to McAshan Drive and which entity is responsible for maintaining McAshan Drive?

Response: McAshan Drive, between the proposed BRIMF and the Bessemer City limits near I-20/59, is under Jefferson County jurisdiction. The traffic impact analysis indicates that McAshan Drive will adequately serve the additional truck traffic created by the BRIMF without the need for modifications or improvements. General maintenance and funding is the responsibility of Jefferson County and the City of Bessemer. Results of the traffic impact analysis are discussed further in Section 4.12 of the EA.

M.8 The congestion surrounding the entrance/exit to the Flying "J" truck stop is a concern.

Response: A traffic analysis was performed in the area of the Flying "J" truck stop on McAshan Drive. It was noted that during peak traffic hours (i.e. morning and evening rush hour) periods of congestion were observed; however, as noted in Section 4.12.2 and in Figure 4.12-3 of the EA, the additional trucks serving the BRIMF will have very minor impacts on the existing traffic conditions and peak truck traffic serving the BRIMF will not coincide with the existing peak traffic hours.

M.9 Trucks back up along McAshan Road near the Flying J when a vehicle is waiting to turn into the truck stop. There seems to be enough room there to add a turning lane. Will a turning lane be added?

Response: As indicated in Response to Public Comment M.7, the traffic impact analysis indicates that McAshan Drive will adequately serve the additional truck traffic without modifications. Accordingly, there are no current plans to add a turning lane at the Flying "J" on McAshan Drive.

M.10 What are the anticipated traffic impacts along Old Tuscaloosa Hwy?

Response: The majority of NSR's customer base is located in the Birmingham area, which is north-northeast of the proposed BRIMF. Drivers are expected to use the most direct route available to access the interstate from the BRIMF. McAshan Drive provides the most direct route to I-20/59 and because trucks will not be permitted to use Eastern Valley Road, drivers will also use McAshan Drive to access I-459 by way of I-20/59. Old Tuscaloosa Highway does not provide direct access to I-459; therefore, it is not a desirable route. Old Tuscaloosa Highway does provide access to I-20/59; however, the distance from the BRIMF to I-20/59 on Old Tuscaloosa Highway is approximately 3.7 miles farther compared to using McAshan Drive to access I-20/59.

M.11 I am concerned with the additional truck traffic passing by my house, especially when the children are getting on and off the bus.

Response: As depicted in Figure 4.12-3 of the EA, peak truck traffic will not coincide with peak school traffic. The route of trucks entering and leaving the facility will also be limited to the stretch of McAshan Drive between the facility and the I-20/59 intersection, a route that avoids most, if not all, homes in the area. Additionally, Alabama's School Bus Stop Law requires all vehicles traveling in either direction to come to a complete stop when a school bus is loading or unloading (unless travelling in the opposite direction on a four lane divided highway). Truck drivers are required to abide by all state traffic laws and ordinances.

M.12 Has a traffic impact study been performed and, if so, will it be reviewed by an outside agency?

Response: A traffic impact analysis has been completed (Skipper and Associates, 2010). It has been reviewed and commented on by ALDOT and FHWA, and was modified to satisfy their comments. It was also provided to the Jefferson County Roads and Transportation Department for review.

M.13 How will NSR improve traffic flow in the areas around the schools on Eastern Valley Road?

Response: The traffic study completed for the BRIMF has determined that facility operation will have no impact on traffic flow around the schools on Eastern Valley Road since all trucks will be directed to remain on McAshan Drive between the access road and the intersection of I-20/59.

M.14 Will there be added delays at the railroad crossing on Kimbrell Cutoff Road and McCalla Road due to trains slowing down to enter the facility?

Response: Please refer to the response to comment M.2 in Appendix H.

M.15 Which entity will enforce speed limits on surface streets (Old Tuscaloosa Hwy, McAshan Dr., and Eastern Valley Rd.) in vicinity of the BRIMF and the "no truck" regulation on Eastern Valley Road?

Response: Old Tuscaloosa Highway and Eastern Valley Road, between Kimbrell Cutoff Road and I-459, are both under the jurisdiction of the Jefferson County Sheriff's Department. McAshan Drive near the I-20/59 intersection is under the jurisdiction of the City of Bessemer Police Department. All speed limit and ordinance enforcement is the responsibility of the appropriate law enforcement agency within that jurisdiction.

M.16 I am concerned about traffic issues at exit 100 (I-20/59) due to the increased truck volume.

Response: NSR does not anticipate trucks using exit 100 (SR 216). Trucks will be using exit 104, as discussed in Responses to Public Comments M.5, M.8, M.9, and M.10.

M.17 What provisions have been made for trucks to turn around when they miss the entrance to the BRIMF?

Response: Sufficient and adequate signage, as well as a deceleration lane, will be placed along the southbound lane of McAshan Drive. The signage and lanes will serve to notify truck drivers of the upcoming entrance to the BRIMF. Experience from other facilities has shown that trucks are unlikely to miss a well marked entrance to an IMF. Additionally, the majority of truck drivers supporting the shippers using the BRIMF will be local drivers.

M.18 If there is an accident on I-20/59 or I-459, which requires the rerouting of traffic, how will trucks will be kept off of Eastern Valley Road?

Response: Eastern Valley Road, between Kimbrell Cutoff Road and I-459, and most of McAshan Drive are under the jurisdiction of the Jefferson County Sheriff's Department. McAshan Drive near the I-20/59 intersection is under the jurisdiction of the City of Bessemer Police Department. All decisions regarding the management of temporary detours of interstate highway traffic will be the responsibility of the Alabama Highway Patrol in conjunction with appropriate local law enforcement agencies. Please also refer to the Response to Public Comment M.15.

M.19 In addition to the 400 trucks per day visiting the BRIMF, how many total trucks are anticipated to run daily on McAshan Drive over the next six years? If 8,000 jobs are anticipated, how many trucks and cars will be added to this area each day?

Response: It is likely that the projected spin-off jobs will be distributed beyond just the McCalla area. Approximately 68 percent of the jobs projected through 2020 are anticipated to be created throughout Jefferson County with the balance coming from the other six counties in the Birmingham-Hoover, AL MSA (Insight Research Corporation, 2009). To account for development that may occur between the present and 2015, a vehicle growth rate of approximately 3 percent per year is projected along McAshan Drive, which would lead to an increase of approximately 300 trucks per day along the segment between I-20/59 and Eastern Valley Road by the year 2015. It should be noted that these daily trucks will not be associated with the BRIMF. Additional information regarding the traffic analysis is available in Section 4.12 of the EA.

N - Visual and Lighting Conditions

N.1 Will the lighting utilized at the BRIMF affect nearby residents?

Response: Section 4.13.2 describes NSR's plans to develop an exterior lighting plan to safely illuminate the proposed project with reduced light levels. Specially designed "downward directed" lights will be used that will reduce the amount of light projecting away from the facility. This will result in the proposed BRIMF having minimal light emissions that should have no impact on residential areas or the McAdory Elementary School. For additional details regarding visual quality and lighting conditions, refer to Section 4.13 of the EA.

N.2 What is the purpose of the 15-foot berms?

Response: The berms described in Section 3.5 and illustrated in Figure 3-6 of the EA will serve multiple purposes, primarily as safety and visual buffers for adjacent and nearby properties. Section 4.11.2.1, Safety and Security, discusses the berms' use as an additional safety measure adjacent to McAdory Elementary School when used in concert with two 8-ft high security fences: one installed on either side of the berm, with the fence farthest from the school equipped with security wire along the top. Figure 3-6 illustrates how the berms will provide a visual buffer between the proposed BRIMF and McAdory Elementary School as well as between the Automated Gate System and surrounding properties which will not be shielded by natural terrain features. Section 4.10 describes the noise analysis performed for the EA, while Figure 4.10-5 illustrates the estimated facility noise levels with natural ridges and proposed visual barriers present, demonstrating that noise levels are expected to be below values that would be considered to reach a noise impact threshold. Nonetheless, the berms will provide additional noise reduction to areas opposite these berms from the BRIMF.

N.3 Light pollution may adversely affect migrating birds and frogs and a solution to protect these species will be not operating at night. Light pollution can also be associated with air quality concerns.

Response: Adverse impacts from nighttime lighting on nocturnally migrating birds is a concern for some species of birds migrating over sites that utilize white and/or red lighting (containing visible long-wavelength radiation). NSR is committed to using downward directed lighting (see Section 4.13 of EA) or cutoff lighting within the BRIMF. This type of lighting is consistent with the guidelines and objectives set forth by the International Dark Sky Association. Downward directed lighting or cutoff lighting is less visible from the air than typical street lights, parking lot lighting, or high-mast interstate lighting that is commonly found in the McCalla area. There should be no means by which light at the BRIMF will have an impact on air quality.

N.4 Will the BRIMF be visible from Eastern Valley Road?

Response: As discussed in Section 4.13.2 of the EA, much of the site is not readily visible from Eastern Valley Road due to the ridge across the center of the property and the presence of trees blocking the viewshed in several locations. For those areas that could be visible, Figure 3-6 illustrates the extent and combination of landscape berms (15 ft above pavement), tree plantings, and visual barriers planned to block the view of the BRIMF from Eastern

Valley Road, McAdory Elementary School, and adjacent residences. The planning and installation of these visual barriers will be one of the first tasks completed during construction to ensure that vegetation and other measures are established as soon as practical prior to operation.

N.7 If the light towers are going to be 100 feet tall, and the cranes will be nearly 48 feet tall, why are proposed berms only going to be 15 feet high?

Response: Section 4.13.1 of the EA describes the existing topography of the site relative to different viewsheds of the proposed BRIMF site from various locations; see Figures 4.13-1 through 4.13-6. Based on the 3-dimensional model of the terrain, 15-ft high berms, when combined with plantings, will mostly block the view of these light towers when viewed from ground level. Additionally, Section 4.13.2 notes that lights along the entrance road from McAshan Drive will be on towers no more than 25 ft high.

O – Indirect and Cumulative Impacts

O.1 Will the presence of the BRIMF stimulate more industrial and/or commercial development in the local area?

Response: Section 5.0 of the EA addresses the potential for indirect and cumulative land use impacts that could be stimulated by the presence of the proposed BRIMF. Figure 6-2 illustrates that portions of the local area around the proposed BRIMF are already being targeted either for future industrial or infill development by the Shades Creek Watershed Comprehensive Plan Proposal Map (JCDLPDS, 2008a). As a result, any induced, indirect impacts from the proposed BRIMF that are likely to occur in the reasonably foreseeable future near the site will be consistent with the existing Comprehensive Plan. Outside the immediate area, secondary growth associated with additional industries that may avail themselves of transportation services afforded by the BRIMF will also comply with local zoning and land use requirements and therefore will not be expected to have negative land use impacts. See Response to Public Comment M.19.

O.2 Will there be any cumulative environmental impacts beyond the McCalla area as a result of the BRIMF?

Response: Section 5.0 of the EA provides a detailed discussion of the potential indirect and cumulative environmental impacts. See also Responses to Agency Comments O.2, O.3, and O.4.

P – NEPA Process

P.1 What is an Environmental Assessment (EA)?

Response: An Environmental Assessment (EA) is a document prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) and is one of three types of documents that may be required for projects that involve federal actions such as federal permits or funding. The purpose of the EA is to take a hard look at environmental impacts

(which include impacts to the environment as well as the human environment and socioeconomic effects). An EA provides decision makers sufficient information on which to make a determination as to whether a proposed project will cause impacts that are considerable and cannot be avoided or mitigated. The Council on Environmental Quality (CEQ) coordinates federal environmental efforts and works with state and federal agencies in the development of environmental policies and initiatives. The CEQ regulations require that EAs include a discussion of the purpose and need for the Proposed Action, alternatives considered, description of the affected environment, and effects of the project on the environment, including cumulative and indirect effects. The EA may also include public participation and input. The approach to the BRIMF EA has been to provide expansive public participation (including multiple public meetings, a public hearing, meetings with community members, and a Community Outreach Group) to ensure comprehensive identification of issues for analysis and comment. This approach has led to a robust and comprehensive analysis, including alternatives analysis, as well as indirect and cumulative effects analysis, to ensure that all potential impacts have been assessed. If, following the analysis and public comment period, a decision is made that the impacts of the proposed project are not significant, then a "Finding of No Significant Impact," or FONSI, will be prepared. If additional studies or information are required to make a decision, then the lead agency may require that additional activities be conducted through an Environmental Impact Statement or EIS. NSR has used the various public meetings, and meetings with agencies and other groups, to direct a very comprehensive EA.

P.2 Will an Environmental Impact Statement (EIS) be developed for the BRIMF?

Response: An Environmental Assessment (EA) has been prepared at this time. The final decision on whether an EIS is required will be based on the agency and public review of this EA. This decision will take into account not only environmental factors but also economic considerations and other factors.

P.3 What will be the process of responding to public comments and what sources are used in determining answers?

Response: Public comments received prior to the release of the EA to the public have been documented. The EA has taken these comments into account and, to the extent practical, addressed public concerns. In addition, this comment and response document has been prepared to help the public and other groups see where in the EA their comment has been addressed.

P.4 What is the anticipated schedule for submittal of the EA? Where will the EA be placed so that the public can review and comment?

Response: The EA was released to the public in June 2010. Copies of the EA were placed in the following publically accessible locations: Bessemer Public Library, Hueytown Public Library. The public will have a 30-day period to review the EA. An ALDOT/FHWA Public Hearing is tentatively scheduled in July, 2010. During this meeting, members of the public will have the opportunity to provide oral comments, concerns, and questions to be included in the public record. Written comments will be accepted for 10 days following the ALDOT/FHWA Public Hearing for those individuals who did not provide oral input during the meeting. ALDOT will then take all comments into account as the EA is revised

to include any outstanding topics of concern that were not fully addressed in the EA. In August, 2010, a revised EA will be published, which will incorporate any additional concerns brought forth by the public.

P.5 Will NSR place a copy of the Environmental Assessment in the library at McAdory Elementary School?

Response: No, the Environmental Assessment will not be placed in the library at McAdory Elementary School. It will be available at the Bessemer Public Library and the Hueytown Public Library.

P.6 Regarding the environmental and social studies performed for this project, what areas were considered? Just within the proposed site? Less than or greater than a one mile radius?

Response: Environmental studies regarding wetlands, water bodies, threatened and endangered species and their preferred habitats, and other resource topics such as soils and geology were completed in areas that could be directly affected by the BRIMF. Based on comments received from the public, some aquatic biology surveys extended downstream of any streams where potential impacts could occur. Cultural resources surveys were performed in the areas that could be directly affected by the project and additional literature search included data for previously recorded sites within a 1-mile radius. A groundwater wells search was also conducted within a 1-mile radius of the BRIMF. Areas considered for potential indirect and cumulative impacts were extended well beyond the boundaries of the proposed BRIMF, including adjacent counties. Noise surveys included potential sensitive receptors at several locations, as shown in Figure 4.10-1. Air quality studies were performed using available data from several modeling locations in the region where relevant data were available. Traffic studies were conducted at several locations, as described in Section 4.12.1 of the EA.

Q – Miscellaneous Questions

Q.1 What actions are being taken by NSR to preserve the quality of life in the McCalla community?

Response: Since announcing plans for the construction of the BRIMF in July 2009, NSR has met with many individuals and groups in McCalla and Jefferson County to gain a full understanding of the concerns of the community regarding the project. These concerns have been assessed in the EA, the responses to comments, or both. In many cases, issues and comments from the community have resulted in changes in the proposed design, construction, or features of the BRIMF in order to preserve quality of life. These include measures to minimize aesthetic, noise, traffic, or other aspects generally considered quality of life concerns. These concerns are discussed in greater detail in Sections 4.10, 4.12, and 4.13 of the EA. In NSR's experience, in addition to creating or benefiting jobs, promoting economic development opportunities, and generating tax revenue, intermodal facilities (IMFs) constructed with productive community input do not adversely affect the local quality of life.

Q.2 Has NSR performed environmental studies within the area proposed for placement of the BRIMF?*

Response: Yes, comprehensive environmental studies regarding air quality, noise, traffic, wetlands, water bodies, threatened and endangered species and their preferred habitats, and other natural features have been completed within the area of the proposed BRIMF. Results of these studies are discussed throughout Section 4.0 of the EA. Also see Response Public Comment to P.6.

Q.3 Who will regulate the trucks to make sure they are safe for the roads?

Response: Standards for trucks, trailers, and chassis fall under U.S. Department of Transportation (USDOT) regulations. Under federal law, motor carriers, such as trucking companies, are required (subject to penalty) to ensure that their vehicles and equipment receive pre-trip inspections to ensure they are in safe working order, and are in compliance with the Federal Motor Carrier Safety Administration's stringent and comprehensive standards enumerated at 49 Code of Federal Regulations (CFR) Parts 300-399. Truck operation is licensed by the state.

Q.4 Is Federal funding being used to help pay for this project? Was Federal money used to help fund the studies/research?

Response: In February 2010, Alabama was awarded funds to support the development of the BRIMF from the U.S. Department of Transportation (USDOT), Transportation Investment Generating Economic Recovery (TIGER) Program. These funds were part of the American Recovery and Reinvestment Act (ARRA) of 2009. However, all studies and research regarding the proposed BRIMF, including the work done for the EA, have been paid for by NSR.

Q.5 I am worried that the smells from the BRIMF will disrupt the learning environment at McAdory Elementary and be a nuisance to the community.

Response: To the knowledge of NSR, there have been no documented cases or known complaints regarding the presence of unwanted odors in areas adjacent to NSR's existing intermodal facilities (IMFs). The BRIMF will comply with all state and federal regulations affecting water stored in the detention ponds to prevent odors. Operation of equipment onsite is not expected to result in any emissions that will affect odor. See Response to Public Comment L.7.

Q.6 What environmental permits or standards will the facility be required to abide by?

Response: The facility will meet, or exceed, the requirements of all applicable regulations and standards that may affect the natural and human environment. Those applicable environmental permitting requirements include: the Clean Water Act, the Endangered Species Act, the National Historic Preservation Act, and the Clean Air Act.

Q.7 What security measures will be utilized at the BRIMF?

Response: NSR has a railroad police department, and routinely coordinates with local law enforcement agencies. NSR also uses security cameras and other measures as required to ensure security and theft prevention in intermodal terminals. The BRIMF will also be

secured with fencing and gates that cannot be entered without approved access. Specific details regarding the anticipated security measures at the BRIMF are further discussed in Section 4.11.2.1 of the EA.

Q.8 If illegal substances are discovered or suspected within any container, what steps will NSR take to prevent these items from harming or reaching local residents and/or children?

Response: If illegal materials or substances are found, access to these shipments will be controlled, and local law enforcement agencies will be promptly notified.

Q.9 Will NSR plan an emergency exit from the BRIMF to Eastern Valley Road?

Response: See Response to Public Comment L.3.

Q.10 Will NSR coordinate an Emergency Response Plan with community and county services?

Response: NSR has made initial contact with local emergency responders to discuss the BRIMF. As noted in the responses in Section I – Hazardous Materials, NSR participates in national, state, and local emergency preparedness, response, and training, including coordination with local emergency responders. This coordination will continue through the construction phase and operation. Coordination may include training exercises or drills. See Responses to Public Comments L.4 and L.9.

Q.11 What is NSR's safety record?

Response: Please see Agency Comment L.2. Any accident or incident considered reportable is recorded on the Federal Railroad Administration – Office of Safety Analysis website. This website allows the public to run queries based on numerous criteria and topics. When comparing the four largest railroad companies operating in the U.S., over the last 10 years, NSR has the lowest rate of accidents among the largest Class I railroads.

http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx

Q.12 What is the life span of an IMF? What measures will NSR take to close down the facility when operations cease?

Response: The BRIMF is anticipated to have a life span of many decades. Facility closure and decommissioning, should it happen, will follow all appropriate laws and regulations to safely remove structures and prepare the site for other uses as appropriate at that time.

Q.13 When transferring containers, are those containers full or empty?

Response: The facility will move both loaded and empty containers.

Q.14 What role is ALDOT playing in this Project?

Response: The Alabama Department of Transportation (ALDOT) is the lead agency in overseeing the National Environmental Policy Act (NEPA) process for this project. ALDOT is responsible for reviewing the Environmental Assessment (EA) and associated studies and reports. Once all project information is reviewed, the lead Federal agency will determine whether the project meets the standard for a Finding of No Significant Impact (FONSI) or if additional studies may be required to make a decision about significance.

Q.15 Will NSR help build new ball fields for the McCalla area?

Response: Recreational facilities are not impacted by the proposed BRIMF and accordingly plans for ball fields are not included in the EA. NSR is committed to improving the quality of life for the McCalla area and understands the community is interested in support for certain projects.

Q.16 How will my property value be affected by the presence of the BRIMF? What have the property value trends been in the neighborhoods adjacent to the Austell IMF?

Response: During construction, there will be the potential for temporary impacts to adjacent residential and institutional property values while NSR is clearing the site, constructing the access road, and installing the visual barriers. Any additional effect on property values in the area is expected to be minimal during construction. Additionally, the impacts will be avoided or otherwise mitigated by routing all but the earliest stages of construction along the new access road to be built to McAshan Drive. Installation of barrier walls or berms will also be completed during the initial stages of construction to provide visual buffers to the extent practical for local viewsheds.

The Transportation Research Board (TRB) has acknowledged the difficulty in predicting property values and observing effects on property values in Section 11 of - Guidebook for Assessing the Social and Economic Effects of Transportation Projects (NCHRP RPT456, Part B). TRB methods for assessing effects on property values hinge on some form of observation of the property-value effects associated with similar types of projects in similar types of areas. To be useful, such observations require observable changes or differences in property values, reflecting a competitive and efficient market for land and buildings, unbiased by subsidies, price controls, or location restrictions. In short, it is exceptionally difficult to find a corresponding example that is appropriate from a location, time, and market perspective.

Following the announcement date of the Whitaker Intermodal Facility (IMF) in Austell, an independent MAI (Member of the Appraisal Institute) appraiser concluded that there should be negligible, if any, impact on prevailing residential property values or rate of sales as a result of the announcement or construction of the NSRIMF. Current findings suggest that the trend for sales prices of homes within the neighborhood closest to the IMF is the same as that in the surrounding zip codes.

While local residential property values have declined throughout the U.S. due to economic conditions, it is anticipated that regional economic benefits stimulated by the project will support the local and regional economy, including residential and institutional property values.

Q.17 Why is the name of this facility "*Birmingham* Regional Intermodal Facility" when it is directly impacting McCalla?

Response: The BRIMF will serve the Greater Birmingham Region and consequently provide economic benefits to the entire region.

Q.18 Please design and construct the BRIMF using "green" materials.

Response: The use of "green" materials will be evaluated during detailed design.

Q.19 Is there any study on file with CH2M HILL concerning other schools in relation to an Intermodal Rail System?

Response: CH2M HILL is aware of a number of studies involving intermodal facilities (IMFs). Several studies include analysis of potential environmental effects of IMFs and some of the facilities studied are located near schools. Most of the IMFs studied are distinguishable from the BRIMF based on the size of the facilities (often much larger than the BRIMF), location of the facilities (each location has unique environmental characteristics as well as differing state regulations and local concerns), and the age of the facility (older that the BRIMF, which will be a new facility, committed to utilizing new technologies, such as Tier 4-engines). CH2M HILL has not conducted a study concerning schools in relation to other IMFs.

Section 4.0 of the EA describes in detail the potential effects of the project, including any effects at McAdory Elementary School. The analysis concludes that the BRIMF will not present substantial adverse effects to the school based upon a comprehensive analysis which included study of air impacts, noise impacts, visual and aesthetics, safety, hazardous materials, and other resources of particular relevance for school uses. See also Response to Public Comment B.5.

Q.20 Does NSR own the Rosser property that extends to Eastern Valley Road? If so, does NSR have any plans for expanding the BRIMF in the future within the area of property that extends to Eastern Valley Road or does NSR intend to sell this land to an Industrial or Commercial corporation?

Response: NSR has purchased the Rosser property that extends to Eastern Valley Road. Currently, there are no plans to extend the facility beyond the current design or sell the property for industrial or commercial uses.

Q.21 Who decides which transportation company will deliver or pick up the containers? Does NSR request specific drivers?

Response: The drivers are hired by the company transporting the containers or trailers outside of the facility; they are not contracted by NSR. However, only drivers who are registered in NSR's Strategic Intermodal Management System (SIMS) will be authorized to access the BRIMF.

Q.22 Does NSR require any special training or certifications for the drivers who are permitted to enter the facility other than the standard DOT requirements?

Response: Drivers must be registered in NSR's Strategic Intermodal Management System (SIMS) prior to gaining access to the BRIMF. In order to be registered in NSR's SIMS and approved for the pickup of shipments, a new driver must present his or her Commercial Drivers License, which is scanned into the SIMS database and retained on file.

Q.23 Does NSR ever open and inspect full containers, and if so, to what extent? Does the DOT ever inspect containers?

Response: No. Containers transported in intermodal service are sealed by the shipper. On rare occasions, a seal may be broken and, for safety or security reasons, the contents may be inspected or evaluated for safe rail or highway shipment.

Q.24 How frequently are the trailers, which carry the containers, inspected or upgraded? And which entity performs inspections and upgrades?

Response: It is the responsibility of the transport company to maintain and inspect trucks, trailers, and chassis (used to transport containers) which carry goods to and from market. Trucks, trailers, and chassis are subject to the regulations and specifications of the U.S. Department of Transportation.

NSR and its contractors are responsible for maintaining and inspecting equipment within the boundaries of the BRIMF that are used for loading and offloading containers from trains to trucks (e.g., cranes and hostlers). NSR requires daily pre-operations checks on cranes in the terminal and periodic inspections at different time periods or operating hour intervals (based on manufacturers' guidelines) on equipment that is in service.

Q.25 If there is an accident involving a truck transporting an intermodal container along McAshan Drive, and the accident is the direct result of equipment failure on the truck, container, or trailer, which entity is responsible?

Response: It is the responsibility of the motor carrier or trucking company to maintain and inspect trucks, trailers, and container chassis which transport the goods to and from market. If an accident involving a truck were to occur along McAshan Drive relating to a container transported to or from the proposed BRIMF, the response will be handled by local emergency response personnel like any other automotive incident.

Q.26 Will NSR consider constructing an indoor playground at McAdory Elementary School?

Response: Extensive studies and modeling indicate that air and noise quality and safety will not be adversely affected at the existing playground at McAdory Elementary School. Accordingly, plans for an indoor playground are not included in the EA. NSR is committed to improving the quality of life for the McCalla area and understands the community is interested in support for certain projects.

Q.27 Was ALDOT invited to visit the proposed Bibb County Site (Woodstock Alternative)?

Response: The Woodstock Alternative site has been visited and reviewed by Project planners, as were other alternatives considered in the EA. This site is thoroughly discussed in the Alternatives Analysis Section (3.0) of the EA. ALDOT has not notified NSR as to whether a site visit to the Bibb County Alternative was performed.

Q.28 Please list the agencies and NGOs that were provided with project details and given an opportunity to provide their input regarding the proposed BRIMF.

Response: Please refer to Attachment A of this appendix for a list of stakeholders who have been provided with project details.

Q.29 Why was the Community Outreach Group (COG) formed?

Response: The COG was formed as an independent group to share the questions, concerns, and needs of the community with NSR. The formation of the COG and the meetings, discussions, and other correspondence are not a formal part of the National Environmental Policy Act (NEPA) process. The Alabama Department of Transportation (ALDOT) has

utilized COGs on other projects and found COGs to be of assistance in improving communication and addressing community concerns.

Q.30 I worry about all the trains on the tracks near our school.

Response: The NSR mainline has been in service for nearly 139 years; and currently, 27 trains of all types are scheduled to pass by McAdory Elementary School per day. Once the BRIMF is in operation, only two additional trains per day will pass by McAdory Elementary School. The addition of two intermodal trains per day is not anticipated to adversely impact the students or faculty at the school. Section 4.0 of the EA discusses the affected environment and potential consequences of the proposed BRIMF. Section 4.0 is divided into sub-sections that elaborate on the potential affects at McAdory Elementary School in terms of Air Quality (Sec. 4.2), Hazardous Materials (Sec. 4.8), Land Use (Sec. 4.9), Noise and Vibration (Sec. 4.10), Social Elements (Sec. 4.11), Traffic and Transportation (Sec. 4.12), and Visual Impacts (Sec. 4.13).

Q.31 The McCalla residents feel like the proposed project was planned long before it was introduced/announced to the public. Residents also believe public officials were aware of the proposed BRIMF, but were forced to keep quiet. Is this true, and if yes, why such secrecy?

Response: As with many large-scale complex projects, the planning phase, which includes identifying potential sites, drafting initial conceptual plans, and assessing the feasibility of a project, involves a large team engaged in numerous meetings and multiple versions of plans and drawings. The potential for the project was announced as early as possible following this assessment, and at this point in the process, the project is still a potential project subject to numerous reviews, approvals, and permits.

Q.32 I am worried about increased acid rain.

Response: The primary pollutant that contributes to acid rain is sulfur dioxide (SO_2). As described in Section 4.2.2 of the EA, the use of transportation-grade ultra low sulfur diesel (ULSD) fuel (0.0015% or 15 parts per million sulfur) at the facility will result in a negligible amount of SO_2 emissions during facility operations. Based on the very low emissions of SO_2, facility operations are not expected to result in an increase in acid rain at any location.

Q.33 I am concerned that there will be a decrease or termination of continued home building in partially developed subdivisions.

Response: Operation of the proposed BRIMF will stimulate economic growth throughout the Birmingham Region. As new businesses open and new jobs are created, an added demand for housing within this region is expected. Neighborhood developments are more likely to continue with the construction of new homes as the demand for housing increases.

Q.34 I am concerned that an increase in train traffic will cause delays for emergency vehicles at the rail road crossings.

Response: As McAshan Drive is grade-separated, emergency vehicles will be able to rely upon that route as having no impacts from train traffic at any time of the day or night. Also, please see the Response to Public Comment M.14.

Q.35 What happens if contraband is discovered to be held within a container?

Response: Please see Response to Public Comment Q.8.

Q.36 It will be helpful to see photos of sites that have the same function and size as the proposed BRIMF.

Response: While the Austell facility is considerably larger than the proposed BRIMF, photographs of NSR's existing John W. Whitaker Intermodal Facility in Austell, Georgia can be viewed at the following website: www.maccallacan.com.

Q.37 How should one go about applying for a position at the new BRIMF?

Response: Information for those interested in career opportunities with NSR is available at NSR's Job Seeker website: http://www.nscorp.com/nscportal/nscorp/Job_Seekers/. This site provides a list of available positions and instructions on how to apply. Jobs associated with contractors retained by NSR will be advertised locally. See Response to Public Comment L.1.

Q. 38 Will NSR consider building a "Norfolk Southern Welcome Center" in the McCalla area which could provide meeting rooms for clubs and other organizations?

Response: This item does not relate to the environmental impacts studied in the EA and accordingly no plans for a Welcome Center are included in the EA. NSR is committed to improving the quality of life for the McCalla area and understands the community is interested in support for certain projects.

Q.39 Will NSR consider assisting in the maintenance and upkeep of three historical homes that were built in the mid-1800s which are located near the proposed BRIMF?

Response: There is no indication that the BRIMF will have any effects on these or other historic homes in the area and accordingly, no plans to assist in the maintenance of these homes are included in the EA.

Q.40 Currently McAdory Elementary test scores fall in the 39th percentile. Will NSR consider providing assistance and guidance toward raising the test scores of the McAdory Schools?

Response: The BRIMF is not expected to cause a negative impact on McAdory Elementary School; accordingly, plans for assistance and guidance toward raising test scores are not included in the EA. There will be local and county economic benefits from the project that may be expected to have benefits in the community, including actions that may be taken by local and county governments that could benefit the school. NSR is committed to improving the quality of life for the McCalla area and understands the community is interested in support for certain projects.

Q.41 This project will create a financial burden to tax payers for the improvements to the roads.

Response: The traffic impact analysis indicates that roadways in the vicinity of the BRIMF will adequately serve the additional truck traffic created by the BRIMF, as discussed in Section 4.12 of the EA. Please see Response to Public Comment M.7. While tax benefits specific to the McCalla area have not been calculated, both direct and indirect tax benefits are estimated to result from the BRIMF. Please see Response to Public Comment L.10.

Q.42 What percent of the noise pollution, air pollution, light pollution, and water pollution caused by the facility will be reduced by a 15-foot berm?

Response: The purpose of the 15-ft landscape berms is to provide a visual barrier between some areas, including the McAdory Elementary School and the proposed BRIMF, which will not be shielded by natural terrain features. These berms are also expected to further reduce noise levels associated with facility construction and operations. There will be a passive effect of reducing the noise by as much as 10 decibels, A-weighted scale (dBA) although current studies indicate that the noise levels are not expected to pass a threshold that would be of concern. There are no water quality related impacts expected from the operation of the facility and appropriate stormwater management plans will be implemented to meet or exceed all state and federal water quality standards. Please see Responses to Public Comments N.2 & N.3.

Q.43 Are upgrades and/or modifications planned for the New Orleans to Birmingham NSR corridor and what is the timeline for these improvements?

Response: The primary purpose of the proposed BRIMF is to meet current and future demand for intermodal (rail/truck) freight transportation in the Birmingham region through expanded capacity, as described in Section 2.0 of the EA (Purpose and Need). The Proposed Action does not include upgrades or modifications to the NSR mainline corridor beyond the proposed BRIMF, as described in Section 3.5.1 of the EA (Proposed Action).

References

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Dinkins Biological Consulting, LLC. 2010. *Survey for Protected Fish in the Vicinity of Proposed Norfolk Southern Project in Jefferson and Tuscaloosa Counties, Alabama.* January, 2010.

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Attachment A

List of Stakeholders Notified by ALDOT of the Proposed Birmingham Regional Intermodal Facility

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July 17, 2009

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«City», «State» «ZIP_Code»

RE: Project: Crescent Corridor Intermodal Freight Project in McCalla Jefferson County

Dear Sir or Madam:

Norfolk Southern Railway Company (NSR), through its Alabama Great Southern Railroad Company (AGS) subsidiary, proposes to construct and operate a new intermodal facility in McCalla, Jefferson County, Alabama. The proposed project, referred to as the Birmingham Regional Intermodal Facility (IMF) (attached Figure), will meet current and future demands for freight transportation between the Birmingham region and the Northeast U.S., Southeast U.S. ports, and western destinations. The proposed facility, designed to optimize transportation efficiency, will provide additional benefits by: (1) reducing energy usage and carbon emissions, (2) reducing highway congestion and enhancing safety through the reduction of long-distance truck traffic, and (3) attracting local economic development and job creation.

Background

Intermodal is a method of moving freight involving two or more modes of transportation from origin to destination. Intermodal improves the overall efficiency of the transportation system by using the best and most efficient transportation mode for each segment of the shipment's route. In an intermodal transportation network, trains, trucks, ships, and aircraft are connected in a seamless system that is efficient and flexible, meeting the needs of consumers, carriers, and shippers. The Birmingham Regional IMF would facilitate the intermodal movement of freight via rail for long distances and via highway for localized pick-ups and deliveries.

The Federal Highway Administration (FHWA) Freight Analysis Framework (FAF) forecasts that U.S. freight tonnage will almost double between 2006 and 2035. This increase will be driven primarily by the expansion of economic activity, population, and international freight. The FHWA projects intermodal transportation will grow at faster rates than all other transportation methods except air. The Birmingham Regional IMF would help address these projections of future freight transportation in the Birmingham region. The growth of U.S. intermodal traffic also is being driven by factors such as highway congestion, higher fuel prices, the quest for energy efficiency and smaller carbon footprints, truck driver shortages, and improvements in intermodal service offerings. The result is an increasing need for new intermodal terminals where rail to truck and truck to rail mode conversion occurs. One train can take up to 280 truckloads of freight off our congested highways.

Existing infrastructure and transportation facilities are not adequate to serve future freight transportation needs in the Birmingham region. Current capacity limitations result in a pent-up demand for intermodal service between the Birmingham region and the Northeast U.S. NSR projects that, by developing sufficient rail intermodal infrastructure and competitive rail intermodal services, over 69,000 domestic truckloads can be converted from all-highway to rail intermodal between the Birmingham Regional IMF and the Northeast.

The proposed Birmingham Regional IMF is also ideally located to handle domestic and international freight between the Birmingham region and western destinations, and international freight to and from the Southeast ports of Savannah, Georgia and Charleston, South Carolina. All volumes combined, NSR estimates the need for a Birmingham area intermodal facility that can annually perform 165,000 total lifts of trailers and containers.

The Birmingham Regional IMF would also improve the regional economy and provide needed jobs. Beyond the economic benefits, the projected conversion of freight from all-highway to rail intermodal service would substantially reduce future highway truck traffic on interstate highways between Birmingham and the Northeast. This conversion to rail intermodal transport would produce significant safety and environmental benefits and help relieve highway congestion.

Project Description

The Birmingham Regional IMF would be built and owned by AGS, an NSR subsidiary, on property owned or controlled by AGS (see attached Figure). It would have the following main components:

- Three pad tracks averaging 4,600 ft each.
- A support yard with approximately 21,700 ft of track.

- 7,500-ft lead tracks on both ends of the facility. These leads would allow two trains to switch the facility at the same time and avoid blocking the main track for other rail traffic. A very short segment of lead track at the southwest end of the facility would be located in Tuscaloosa County within AGS' existing operating right-of-way.

- Paved areas for the parking of approximately 1,440 trailers and containers mounted on chassis.

- An automatic gate system, administration building, maintenance and operations buildings, equipment maintenance pad, and related ancillary facilities.

Location is a critical component of the Birmingham Regional IMF. The selected site must have the following components:

- Sufficient Land: The selected 316-acre site has enough land for a facility that can meet market demands and support the facility's operational requirements. Safe and efficient facility operations require a site with minimum dimensions of approximately 7,500 ft by 1,500 ft.

- Proximity to Rail Infrastructure: The selected site is adjacent to the AGS Birmingham to Meridian mainline, between mileposts 161.17 and 165.98. This location on the west side of Birmingham is key because it will enhance the flexibility of rail operations and maximize the number of markets that can be served by the facility by allowing trains to use either of the two NSR mainline routes east of Birmingham.

- Proximity to Highway Infrastructure: The selected site has excellent highway access. Trucks would access the Birmingham Regional IMF via McAshan Drive, which connects to Interstates 20 and 59 approximately 1.4 miles from the proposed IMF.

- Customer Base: The selected site is centrally located for its customer base. Industrial and commercial economic activity is spread throughout the Birmingham region.

Existing transportation capacity limitations, combined with future projections for intermodal traffic growth, indicate the need for a large intermodal facility in the Birmingham region. Such a facility must be close to existing major highways and rail lines and have adequate size and scope to meet future capacity demands. The proposed Birmingham Regional IMF would meet these requirements to serve national and regional transportation needs.

Views and Comments

NSR is investigating all aspects of this proposal in order to determine its feasibility. The FHWA is very much interested in the views of public officials and agencies concerning this proposed highway facility. The early identification of effects a transportation project may have on an area is needed to assure proper planning.

Additionally, this letter is to officially begin consultation as required under Section 106 of the National Historic Preservation Act (16 U.S.C.470f) and its implementing regulations (36 CFR Part 800). All requirements of the Section 106 process will be met as part of completing the project environmental document. Therefore, your review is requested.

We would appreciate any comments or useful information that you might have on potential social, economic, or environmental effects of the proposed project. We also solicit your comments on the purpose and need for the proposed project and potential alternatives to the project. The comments will be taken under consideration during preparation of the environmental document.

Sincerely,

William F. Adams, P.E.
State Design Engineer

By: Alfedo Acoff
Alfedo Acoff, Coordinator
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AA/GL/mmz

pc: ETS File