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TRANSPORTATION FACILITIES

A. INTRODUCTION

The following narrative is based on several site visits, meetings with LSAAP staff, including Day and Zimmerman, Inc. (DZI) and Army Corps of Engineers (Corps) employees, third-party interviews and reviews of drawings and reports on the facility. These efforts are detailed as follows:

- LSAAP was visited on six occasions during the analysis period (July 2006 through January 2007). DZI staff gave tours of the site and production areas. The RRAD-WEP site was visited on two occasions.
- Meetings with DZI and Corps staffs were held to discuss specific road and rail information, to request data and to inspect transportation improvements.
- DZI staff provided drawings of site transportation improvements detailing various road and rail locations.
- The Reuse Plan by BRW, Inc. for the 1995 RRAD BRAC process (1997)
- The Environmental Condition of Property by URS (2006) for LSAAP and RRAD
- Construction Drawings, as prepared by DZI, were used for research.
- Representatives from various rail providers or operators were contacted and interviewed.

B. SUMMARY OF MAJOR FINDINGS AND CONCLUSIONS

- Most of the transportation system construction was completed when LSAAP was opened in the 1940s. These facilities have been repaired and maintained as needed, but have never been fully modernized.
- The paved road system around a loop generally bounded by Fourth, Fifth/Sixth, Lincoln and Washington streets were reconstructed during the 1990s. These roads are suitable to provide access for new industrial development, but they need maintenance. Additional asphalt surfacing and roadside ditch repairs are needed elsewhere on the facility. A study is needed to determine where new industrial uses should be placed.

- The shipping needs of LSAAP were primarily serviced by rail. However, most new industries rely on truck transportation for shipping and delivery needs. As such, additional upgrades will be needed for roads earmarked to remain prior to use for truck traffic.
- The rail system was generally constructed with 90-pound rail. All rail systems are rated Class I (no load restrictions as long as rail speeds remain less than 10 mph). Maintenance is needed on the beds (additional ballast and ties) and rails (conversion from 90 to 112 pound rail).

Transportation Assessment

LSAAP – Roads and rail infrastructure at LSAAP is sufficient to meet short-term needs, but will require significant upgrades and expansion as development occurs.

RRAD-WEP – The lack of roads will restrict the redevelopment of RRAD-WEP to major frontage parcels along U.S. 82 and SH 8.

C. TRANSPORTATION SYSTEM DESCRIPTION

1. Facility Construction

a.) Lone Star Army Ammunition Plant

The LSAAP was opened in the 1940s. Most of the roads and rail at the site were constructed at this time. The road network was constructed to accommodate light truck, support and worker traffic. Most roads near the production areas and main entrance are paved. However, the roads located in the more remote areas such as the demolition ranges, landfills, bunkers and buffer areas typically are gravel. The rail lines, located primarily in the northwest portion of the site, were constructed using 90 pound per lineal foot (pound) rail. Each transportation system requires additional study in order to determine if the service can be provided more safely and economically.

b.) Red River Army Depot-West Excess Property

The RRAD-WEP was opened in the 1940s. Very limited roads and facilities were constructed at this time. This area of the RRAD has always been used as a buffer and occupied for blast arcs related to ammunition storage. There is one asphalt road and gate installation to this area. It is located on US 82 on the north central side approximately 0.5 miles west of SH 8. All other roads are dirt or gravel. Direct rail access is not available to the site.

2. Road Inventory

a.) Lone Star Army Ammunition Plant

The LSAAP road system totals 141 miles. The network was in place when the facility was first opened during World War II. The road network was designed to provide access to the munitions production and storage areas as well as to the various support facilities. However, some roads existed prior to the government acquisition including Old Boston Road, Concord Road and Red Springs Road.

The 32-mile road loop around the main production areas of LSAAP consists of asphalt streets with roadside ditches for drainage (Exhibit 6-1). This loop generally includes all roads bounded by Fourth Street to the North, Lincoln Avenue to the East, Fifth/Sixth Street to the South and Washington Avenue to the West. The loop is accessible from the north via Central Avenue and Van Buren Avenue. These roads are in reasonably good shape. Maintenance work is needed to address truck traffic, drainage concerns and longevity.



Lone Star Army Ammunition Plant
 Transportation Base Map
 Bowie County, Texas

Red River Redevelopment Authority
 May 08, 2007



The road system to the south of the production area loop consists of gravel surfaces with roadside ditches. These roads are used to access timber areas, landfills, provide fire lanes and access other remote areas. Maintenance needs are ongoing, requiring additional gravel and grading after rains and to maintain the drainage system. Gravel roads total 109 miles.

The LSAAP site was designed to provide a safe environment for the manufacture, storage, and shipment of ammunition. Production areas appear to be sized to provide clear zones both in a north-south direction and an east-west direction from adjacent manufacturing areas. The Transportation Base Map shows the existing road system.

b.) Red River Army Depot-West Excess Property

There are approximately 46 miles of road located on the RRAD-WEP property. The road system is generally unimproved. Logging on perimeter roads total 43 miles and are either dirt or gravel. Paved roads total 3 miles. All roads require reconstruction before redevelopment.

3. Site Access

a.) Lone Star Army Ammunition Plant

The Main Gate is located off U.S. Highway 82 and Spur 74 (I-30 access) is the primary access point for LSAAP vehicle traffic. This entrance is also referred to as Gate 7. Four other entrances (Gates 1, 2, 4 and 14) also access U.S. 82. Gate 4, the busiest gate, is the main truck entrance to the LSAAP facility and enters the site at Central Avenue.

The Texas Northeastern Railroad (TNER) runs parallel to U.S. 82 and rail access is by a switch located on the west boundary of LSAAP near RRAD. The access to the Union Pacific (UP) line is also located on the west side of the site adjacent to Ford Road and the RRAD boundary.

b.) Red River Army Depot-West Excess Property

The RRAD-WEP site has direct access to U.S. 82 with a gated entrance approximately 2,600 feet east of Highway 8. Although there is 4,800 feet of road frontage along Highway 8, there is no direct access at this time. There is no rail access associated with the property transfer.

4. Current System Loading and Capacity

a.) Lone Star Army Ammunition Plant

The existing road and rail systems do not meet full mobilization needs required by the LSAAP mission. These transportation systems were originally designed to provide more capacity than full mobilization needs. However, declining mission requirements have translated into deteriorating road/rail systems and lack of maintenance funding. As a result, there has been a gradual degradation in the capacity or ability to move traffic or freight in and out of the installation.

Adjacent to LSAAP are transportation facilities consisting of three Federal Aid Primary highways including Interstate 30, U.S. 82 and U.S. 67. There are also two rail providers – Union Pacific (UP) and the Texas Northeastern Railroad (TNER). There is surplus capacity in these transportation systems to provide LSAAP redevelopment needs with service.

b.) Red River Army Depot-West Excess Property

The existing road system does not meet any mobilization or reuse need. There is no excess capacity on the gravel or dirt roads. With no maintenance activity, the existing roads will be

overtaken by forests within five years. The TNER rail along this RRAD-WEP section was removed during the 1990s. There is no direct rail access available.

5. System Description

A brief description of each LSAAP and RRAD-WEP transportation system follows:

a.) Lone Star Army Ammunition Plant

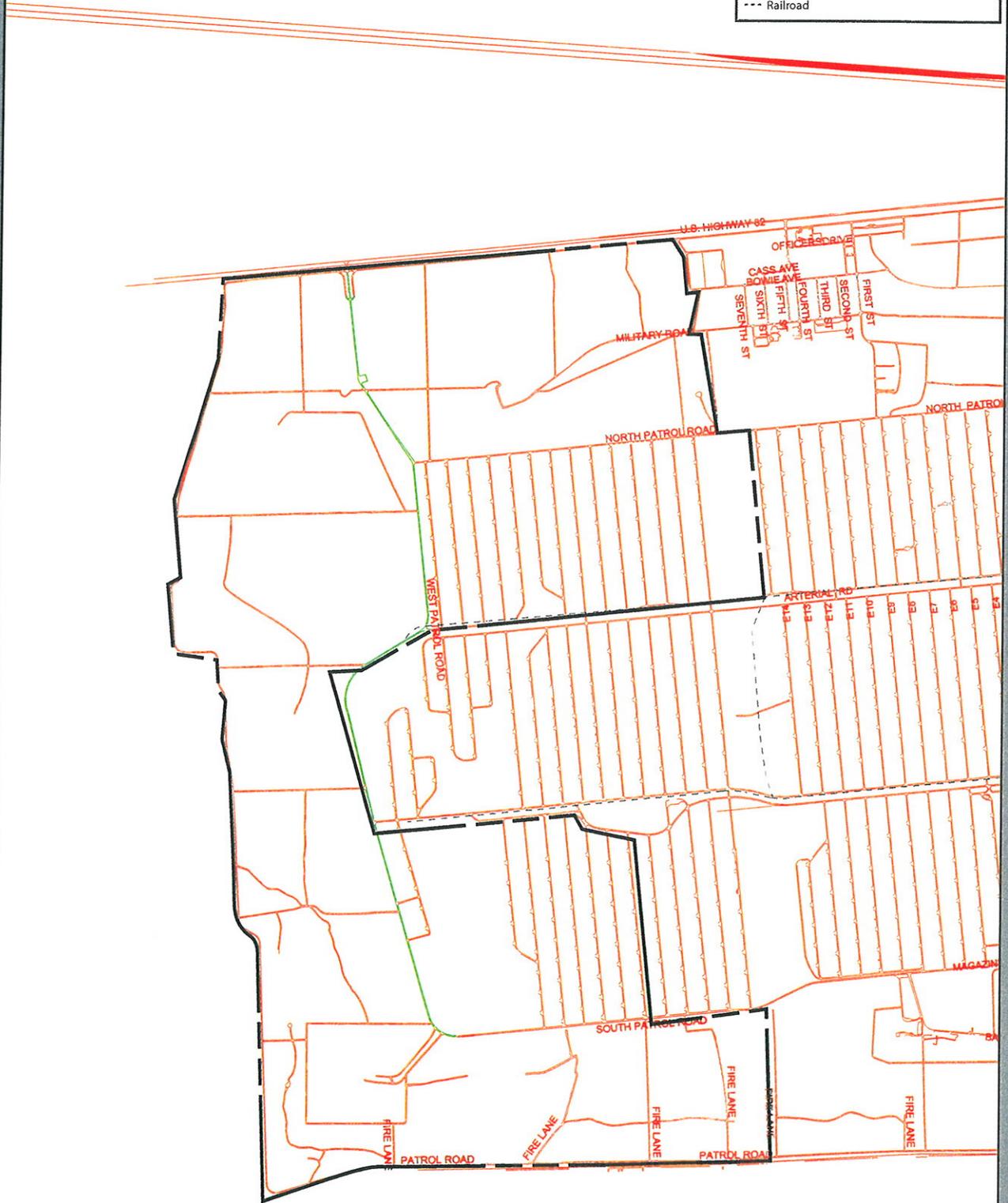
- **Production Area Roads** - Roads in the production areas generally are constructed with a crowned asphalt road and roadside ditches. The asphalt roads have either a double bituminous seal or asphalt overlay over a thicker layer (6 to 12 inches) of road gravel. There are approximately 32 miles of paved road. These roads are typically 22 to 24 feet wide. The road construction is generally good, but maintenance is needed on the streets in order to preserve and extend the life of the existing pavement. Maintenance needed consists of repairing failed areas, asphalt overlays or seal coats and roadside ditch repair.
- **Other Roads** - Roads south of the production areas are generally constructed with gravel and roadside ditches. The gravel roads are typically constructed with a 6 to 12 inch layer of road gravel. There are approximately 109 miles of gravel road. These roads are 14 to 18 feet wide. The road construction generally adequate. Maintenance is needed on these gravel roads after rains and or timber operations. Maintenance needs consist of repairing failed areas, adding additional road gravel and roadside ditch repair.
- **Railroads and Railspurs** - Rail systems were constructed to most production areas with a main loop generally bounded by Fourth, Fifth, Harrison and Kit Roads. Spurs off this loop access interior production areas. A switchyard is located along Kit Road where cars can be sent to either the TNER or UP systems.

b.) Red River Army Depot-West Excess Property

RRAD-WEP roads are typically constructed of dirt or gravel (Exhibit 6-2). These roads access the perimeter of the property as well as providing access to timber management operations. There are over 43 miles of unimproved roads.

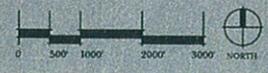
There is one access to US 82 which is paved and suitable for use. The paved roads total 3.4 miles.

Transportation Key	
	Paved Roads
	Dirt Roads
	Railroad



Red River Army Depot
 Transportation Base Map
 Bowie County, Texas

Red River Redevelopment Authority
 May 08, 2007



6. Existing Conditions and Future Maintenance

a.) Lone Star Army Ammunition Plant

The maintenance of the road system is adequate for the age and type of roads. Freight shipments in and out of the LSAAP gradually have declined (in terms of weight and number) over the years. The types of items manufactured typically are light in weight and volume so outbound freight shipments do not stress the roads. Additionally, timber traffic was directed to lesser roads and minor gates. Inbound truck shipments generally are lighter and less frequent, with heavier shipments being made by rail.

Despite this, roads perform best when used and maintained. The road and rail infrastructure has declined over the years due to inconsistent investment resulting from the continually diminishing volume of production. The existing roads function well for the current use; however a more frequent, heavier traffic volume due to new industrial ventures on the site will require improved maintenance and reconstruction.

The potential for more frequent and heavier truck traffic resulting from the redevelopment of the LSAAP will require a road analysis to help determine the most effective manner to improve and maintain the road network. Issues such as industry placement, network realignment, alternate access points and investment timing will need to be considered. For example, additional asphalt thickness will remedy issues relating to the additional new demand. The existing paving cross section of ten inches of gravel and three inches of asphalt can accommodate up to 25 trucks per day without failure. Increasing the thickness of existing roads by one inch of asphalt will double their capacity. Each additional inch will support another 50 truck-trips per day. The study will help determine how much additional thickness would be needed.

Inspections of the road system showed little new construction other than localized maintenance activities. These efforts consist of repairing road failures, cleaning drains/ditches or grading gravel roads. No new construction (generally the past 5 to 10 years) was evident.

b.) Red River Army Depot-West Excess Property

Inspections of the road system showed little new construction other than localized maintenance activities. These efforts consist of repairing road failures, cleaning drains/ditches or grading gravel roads. No new construction was evident.

D. RAIL SYSTEM

1. Lone Star Army Ammunition Plant

a.) General

The existing rail system provides access to most production or storage areas. The TNER line runs parallel to U.S. 82, with access controlled by a switch located on the west boundary of LSAAP near RRAD. The access to the Union Pacific (UP) line is also located on the west side of the site but south of the TNER line near Ford Road and the RRAD boundary.

b.) Rail Inventory

The LSAAP rail system was constructed in the 1940s to provide access to production and storage areas as well as support facilities. There are approximately 32 miles of rail.

c.) Current Rail System Loading and Capacity

LSAAP makes infrequent use of the rail system. Lone Star Railcar Storage (LRS, an Armament Retooling and Manufacturing vendor) operates all switching on the facility and offers short-

term storage of empty cars. The current inventory is approximately 1,500 cars with ongoing operations.

Usage primarily has been for short-term storage of empty cars with cars delivered to and from the site on the TNER rail. Union Pacific stored 80-car trains (265,000 to 300,000 pound gross car loads) totaling 60,000 cars during the five-year period between 1998 and 2003. These trains were generally split between the UP and TNER lines while the UP Texarkana system was being improved. Car usage by various LSAAP or Red River Commerce Park tenants has been sparse.

d.) Status of Rail Condition

The maintenance of the rail system is generally adequate for the age and type of tracks. Much of the rail used on the site was constructed with 90-pound rail. In addition, the original construction was primarily made with used rail dating from 1917 through the 1930s. New rail, ties and ballast are needed throughout the LSAAP site in order to accommodate the potential demand of new industrial users. Although some sections are used continuously by Lone Star Railcar Storage, many production areas have been abandoned pending substantial reconstruction efforts.

A rail spur, which runs through the southern portion of LSAAP, and crosses RRAD property, connects to the Union Pacific main line in Redwater, TX. While this spur could be a valuable rail connection in the future, it has been abandoned and will require significant upgrades to bring it back on line.

e.) Regulatory Requirements

There are no proposed regulatory requirements that affect this site.

2. Red River Army Depot-West Excess Property

There is no active rail directly serving the RRAD excess property, however, rail spurs are within close proximity and could be extended to this area if required.

3. Summary

The rail system for LSAAP is extremely important to the redevelopment plans. The rail system potentially could be an important marketing amenity for attracting rail-dependent firms to the site. Because of the age and construction of the system continued and annual improvements are required. Approximately \$500,000 should be budgeted per year to maintain the system and other upgrades may be required pending actual redevelopment activity.

The RRAD-WEP site will not have rail access.

E. CONCLUSIONS

The transportation infrastructure system at LSAAP dictates that economic development efforts begin at this location. While the existing infrastructure is adequate to begin redevelopment, considerable investment will be required in subsequent years to maintain, upgrade, and expand access to other areas. The RRAD-WEP is not well positioned to capture immediate economic development activity, given the lack of paved roads and other basic infrastructure. This could restrict development to those frontage parcels that can be accessed from main highways.

FACTORS INFLUENCING THE ACHIEVEMENT OF BASE REUSE GOALS

- **Job Creation & Economic Development** - The presence of road and rail infrastructure at LSAAP will create immediate economic development opportunities, primarily within the area bound by the following streets: Fourth, Fifth, Washington, and Central Avenue. The rail network will become central to making LSAAP a regional distribution center.
- **Supports Military Mission** – Focusing reinvestment at LSAAP will allow the RRRRA to target its economic development activities. As new private users occupy LSAAP, utility systems will be replaced and expanded, so of which could be shared with the Depot.
- **Retains Existing Job Base** – The redevelopment of LSAAP will incorporate existing companies, allowing them to continue operation at LSAAP.