



**Comprehensive
Master Redevelopment Plan**

**Kansas Army
Ammunition Plant**

Prepared for the
KSAAP Local Redevelopment
Planning Authority

August 2007

KSAAP

KANSAS ARMY AMMUNITION PLANT

COMPREHENSIVE MASTER REDEVELOPMENT PLAN

AUGUST 2007

Prepared for the:

Kansas Army Ammunition Plant
Local Redevelopment
Planning Authority
Parsons, Kansas

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FORWARD

**Kansas Army Ammunition Plant
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August 16, 2007

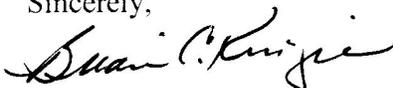
I am pleased to forward the Comprehensive Master Redevelopment Plan for the excess property at the Kansas Army Ammunition Plant, Parsons, Kansas.

The Kansas Army Ammunition Plant (KSAAP) Local Redevelopment Planning Authority (LRPA) was established by resolution of the Labette County Commissioners on October 31, 2005, and recognized by the Department of Defense on February 7, 2006. RKG Associates, Inc., Jeffrey Donohoe Associates, LLC, CH2M Hill, and Black & Veatch Special Projects Corporation were contracted on October 19, 2006, to assist the KSAAP-LRPA in developing the Comprehensive Master Redevelopment Plan. The KSAAP-LRPA approved the Plan and the Homeless Assistance Submission on August 16, 2007. The Redevelopment Plan analyzes existing conditions at the KSAAP, identifies redevelopment goals, and presents a preferred land use plan. The preferred use plan identifies a variety of redevelopment proposals and options: Conservation/Agriculture, Commercial Energetics & Munitions Storage, Industrial/Manufacturing, Transportation & Warehousing, Energy Production, Public Education & Training, Special Events, Housing, and Hazardous Materials Treatment.

The Kansas Army Ammunition Plant Local Redevelopment Authority appreciates the active involvement of the local community, the collaborative efforts of the Department of Defense and the Army, the local Army staff, and the KSAAP operating contractor in the redevelopment planning process. We are looking forward to working with the Department of Defense and Army team as we progress through the property transfer process and the early successful implementation of this plan.

Questions concerning the contents of this Comprehensive Master Redevelopment Plan may be directed to KSAAP-LRPA Executive Director, Mr. Daniel W. Goddard at (620) 421-1228.

Sincerely,



Brian C. Kinzie, Chairman
KSAAP-LRPA

KANSAS ARMY AMMUNITION PLANT

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EXECUTIVE SUMMARY

INTRODUCTION

This Comprehensive Master Redevelopment Plan for the Kansas Army Ammunition Plant (KSAAP) is the result of a nine-month planning process that was designed to identify a practical reuse strategy for the redevelopment of the KSAAP site. The plan was prepared between December 2006 and July 2007, and officially adopted by the KSAAP Local Redevelopment Planning Authority on August 16, 2007.

LOCATION AND DESCRIPTION

The Kansas Army Ammunition Plant (KSAAP) is located in Labette County, Kansas approximately 30 miles west of the Missouri border and 20 miles north of the Oklahoma border. The KSAAP site is about two (2) miles east of Parsons, Kansas. KSAAP contains 13,727 acres and has approximately 624 buildings that total more than 2.5 million square feet of floor space. Surrounding land uses are primarily agriculture.

HISTORY

Construction activities at the Kansas Ordnance Plant, the original name for KSAAP, were initiated in August 1941 and completed in November 1942. During World War II, employment peaked at about 6,700 and production efforts focused on artillery shells and bombs, as well as components for artillery shells such as fuzes, boosters, detonators, relays and primers.

KSAAP was placed on standby status from September 1945 to August 1950. During this period, operations at the site primarily involved the receipt, storage and issuance of ammunition and explosives, as well as site maintenance and preservation. All available land was out-leased for agricultural purposes during this period.

Beginning in August 1950, KSAAP was reactivated and all production lines were in use by September 1954. Production diminished after the Korean War and ceased by 1957. From 1957 to 1967, the plant was in a standby status and some idle facilities were leased to the U.S. Bureau of the Census and several manufactures.

The plant was reactivated in 1967 during the Vietnam War. At the conclusion of the war, five of the eight operating lines were laid away, and in 1993 the plant was placed on inactive status. The operating contractor at KSAAP was not directly assigned a workload by the Department of the Army, but the contractor was able to compete for U.S. or foreign material defense and commercial contracts. Approximately 250 individuals were employed at KSAAP in 2007.

In 2005, the Defense Base Closure and Realignment Commission concurred with the recommendations of the U.S. Secretary of Defense to close the Kansas Army Ammunition

Plant. The Labette County Commission, in 2006, established the Kansas Army Ammunition Plant Local Redevelopment Planning Authority (KSAAP LRPA) to undertake planning for the eventual reuse of the KSAAP site.

THE PLANNING PROCESS

In November 2006, the LRPA initiated the preparation of a Comprehensive Master Redevelopment Plan for the Kansas Army Ammunition Plant. An important consideration in preparing the Redevelopment Plan was public comments, suggestions and direction. During the planning process, ten (10) public meetings were held, including four (4) public forums. At the public forums, specific elements related to the planning process were reviewed and written summaries of project activities were distributed for discussion purposes.

The planning process began with an evaluation of existing facilities at KSAAP including buildings, utility systems and transportation assets. A review of natural, environmental and historic conditions was also conducted, including an examination of data and information relating to hazardous wastes and explosive hazards at KSAAP. In addition, a regional real estate market and economic analysis was prepared in order to identify possible private sector uses for property at KSAAP. Once these steps were completed two different redevelopment alternatives were identified for the site. After a careful public review of these alternatives, a preferred land use plan for the redevelopment of KSAAP was identified by the LRPA.

EXISTING CONDITIONS AT KSAAP

- KSAAP has approximately 2.5 million square feet of floor space in more than 600 buildings. About 1.2 million square feet of floor space is associated with the production of munitions, and an additional one million square feet is used for warehouse and storage. Approximately 300,000 square feet of building space is dedicated to other types of usages.
- Due to the historic use of the property for the manufacture of munitions, it is anticipated that many of the production-related facilities will have environmental and contamination issues that may render these facilities unusable, except for continued munitions manufacturing. Since facilities in the production area account for more than 1.2 million square feet of floor space at KSAAP, almost 50% of existing buildings may be impaired from a general reuse perspective.
- There are almost 250 warehouse type structures at KSAAP with a combined floor space of more than one million square feet. While the overall average building size is less than 4,200 square feet, this average is heavily impacted by existing storage igloos, which typically range from 1,200 to 1,800 square feet each. However, aboveground storage magazines, depending on location, range from an average of 11,000 to 21,000 square feet.
- Shop space at KSAAP has some reuse potential. These facilities, in general, are flexible in terms of the types of activities they could accommodate including manufacturing, warehouse and light industrial uses.

- The administrative headquarters building, constructed in 1985, contains almost 68,000 square feet and has very good reuse potential.
- The Contaminated Waste Processor (CWP) may have reuse potential as a commercial processing center for the incineration of hazardous materials.
- The utility infrastructure at KSAAP is in generally poor condition. The water, sewer, electrical and communications systems are in a state of decay and in many cases antiquated. The transportation infrastructure, including the existing rail lines, is generally in better condition than the utility system, but will also need to be upgraded.
- Any redevelopment within the boundaries of KSAAP will likely be expensive, due to the poor condition of water and sewer lines, as well as the electrical and communications systems. In addition, initial and probably long-term redevelopment should be limited to the area within KSAAP where utility and transportation systems are easily accessible.
- The KSAAP site contains 13,727 acres that are relatively flat in the north, and with gently rolling terrain in the south.
- No threatened or endangered floral species have been identified at KSAAP. However, there are two areas of special interest: the Labette Creek Corridor and the Native Prairie. The Labette Creek Corridor contains high-quality timber and is one of the best examples of an eastern floodplain in Kansas. The native grass prairie habitat is also considered unique for the southeastern portion of the state.
- There are 47 miles of rivers and streams, 123 ponds and 212 acres of wetland habitat located at KSAAP.
- Over 9,700 acres of land are outleased for agricultural purpose at KSAAP.
- All existing buildings, structures or objects at KSAAP are considered ineligible for inclusion on the National Register of Historic Places.
- KSAAP has senior water rights to the Neosho River and maintains this right through annual use.
- The Department of the Army's environmental management activities, under the Defense Environmental Restoration Program, is referred to as the Installation Restoration Program (IRP). The purpose of the IRP is to identify, investigate, and cleanup contamination at active Army facilities. Under the IRP, 17 sites at KSAAP are designated as Response Complete and 16 are active sites. The active sites involve landfill covers at two sites, soil removal at two sites, monitored natural attenuation of groundwater at four sites, and long-term monitoring of groundwater at several other sites.
- There are no significant implications for the reuse of KSAAP based on evaluated natural and cultural resources.
- The Department of the Army anticipates completion of all environmental remediation work by 2037.

- More than 10,300 acres at KSAAP are available for reuse with no environmental restrictions.
- Cleanup standards for many locations at KSAAP have been based on industrial uses. Consequently, without additional cleanup, the major types of land use at KSAAP will likely be limited to industrial applications.
- Past use of portions of the KSAAP site will require long-term monitoring of wells and groundwater use restrictions.
- The KSAAP site has been properly managed and has minimal explosives contamination to interfere with future redevelopment.
- Explosive residues may be present in production areas (buildings, ventilation systems, vacuum systems, sewer lines and dispensing lines), but have not yet been characterized or quantified.
- The population of Labette County has declined since 1940. The U.S. Census reported a population of 22,835 in 2000. However, the number of housing units within the county has increased since 1940. At the time of the 2000 Census, 10,306 housing units were identified in Labette County.
- KSAAP is located in close proximity to U.S. Highway 400, which runs east to west, and U.S. Routes 59 and 69, which run north and south. Although these roadways are not Interstate quality roadways, the road network does provide reasonably quick access to other locations.
- Labette County is very business-friendly and has an impressive record of business development.
- Due to the extensive history of KSAAP as a munitions manufacturing location, reuse of the site for the manufacture of munitions, ammunition and/or other commercial explosives is a realistic possibility.
- Other potential uses for property at KSAAP include agricultural, recreation/conservation, rail-related commerce, manufacturing, bioenergy production, electrical power production, and oil refinery.

REDEVELOPMENT GOALS

Based on comments made by the general public, discussions among the members of the LRPA and a recently completed (2006) economic development strategy for Labette County, several specific goals were identified for the redevelopment of KSAAP. While these goals may never be completely achieved, their delineation establishes priorities for redevelopment, as well as a basis for determining the merit and success of future redevelopment activities.

- Stabilize the existing employment base and grow area businesses.
- Position KSAAP redevelopment as a catalyst for long-term economic expansion – minimize impediments for reuse of the facility.

- Broaden the type and quality of available jobs.
- Prepare a realistic reuse and implementation plan for KSAAP that supports the long-term economic growth of the region.
- Evaluate the potential for an “Energy Park.”
- Develop a reuse plan for the Kansas Army Ammunition Plant that is environmentally sensitive to the high-value habitat located on the site.
- The acquisition of property at KSAAP should be accomplished in a fiscally responsible manner.
- Reuse efforts should focus on those portions of the KSAAP site that offer the greatest potential for successful redevelopment.
- The redevelopment of KSAAP should be undertaken in a manner that ensures that the environmental cleanup of hazardous waste sites is effective, efficient and relates to the redevelopment needs identified in the reuse plan.
- Redevelopment efforts should encourage the retention of existing private sector employment opportunities currently at KSAAP.
- The continued use of property at KSAAP for agricultural purposes should be encouraged.
- The organization responsible for implementing the reuse plan should work with federal, state and local agencies in establishing conservation and/or recreation areas at KSAAP.

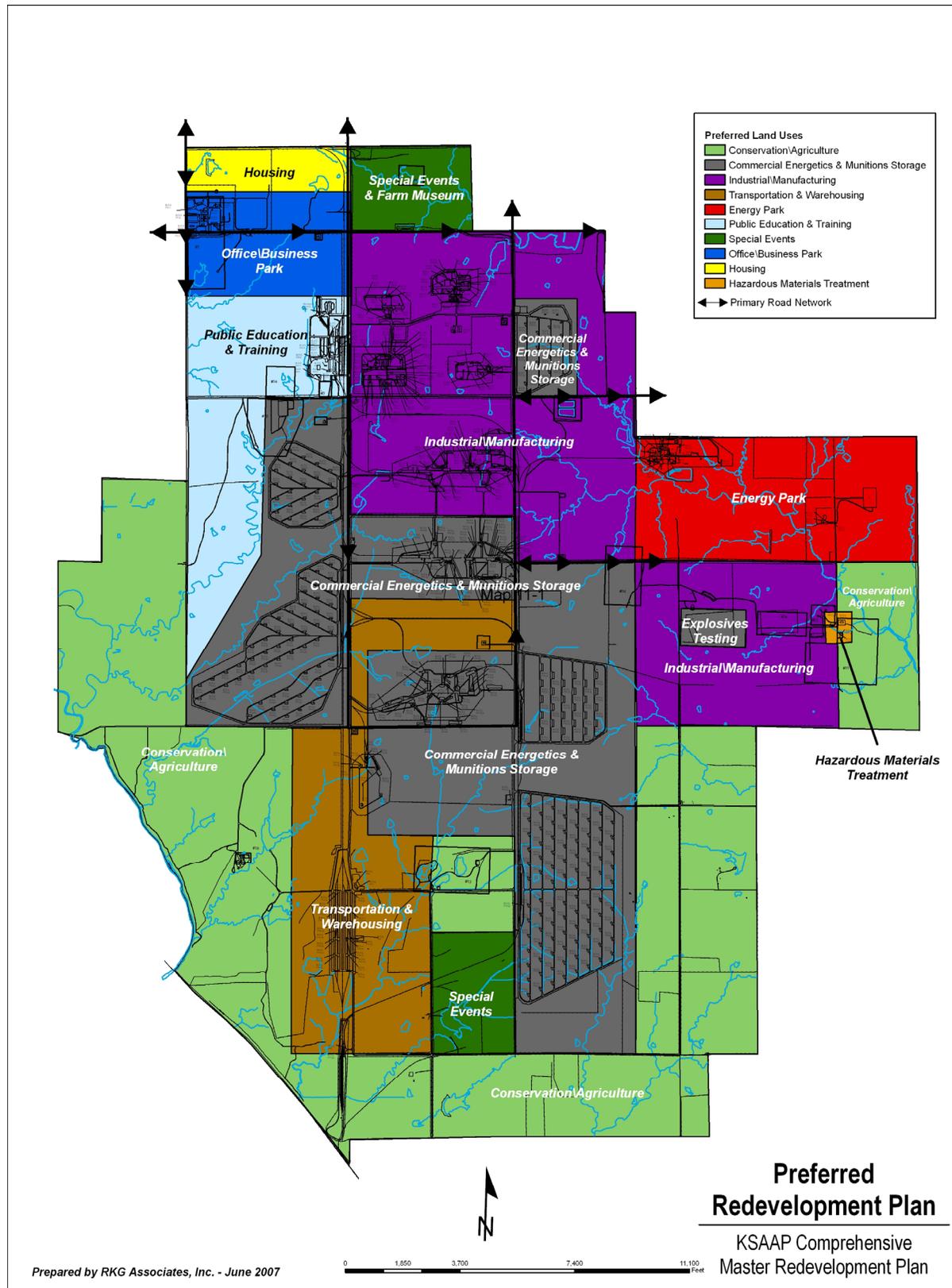
THE KSAAP PREFERRED LAND USE PLAN

The preferred land use plan for the Kansas Army Ammunition Plant was influenced by several key factors:

- The poor condition of existing buildings and structures;
- The extensive use of existing facilities (almost 50%) for the production of munitions;
- The high percent of building space (approximately 41%) devoted to storage and warehouse uses; and
- The location of infrastructure (primarily water and sewer lines) in the middle portion of the site.

Due to these site characteristics, and other factors, the redevelopment of KSAAP is primarily a land development initiative. It is also important to understand that the land use plan has been prepared to be flexible during the redevelopment process. This flexibility provides local officials and residents the latitude to respond to changes in the market and to better meet the needs of potential tenants as the redevelopment process unfolds.

Key land uses at KSAAP include the following (See Preferred Redevelopment Plan Map).



- **Conservation and Agriculture** – Approximately 3,881 acres (28 percent of the site) has been designated for conservation and agricultural purposes. This type of use will protect a wide range of natural resources and provide significant opportunities for a variety of outdoor activities for the general public.
- **Commercial Energetics and Munitions Storage** – About 3,450 acres, (28 percent of the site) has been identified for commercial energetics and munitions storage. This area includes several existing production lines, as well as existing storage igloos and magazines.
- **Industrial/Manufacturing** – This use involves 2,618 acres (19 percent of the site). It is anticipated that a significant period of time will be required to redevelop this portion of the site due to the need to demolish existing munitions production facilities (load lines), possible environmental remediation efforts, and existing market conditions.
- **Transportation and Warehousing** – These types of activities would involve an estimated 1,145 acres (8 percent of the site). Key development initiatives would include railcar storage and use of existing cold storage warehouses.
- **Energy Park** – Approximately 826 acres (6 percent of the site) could be used for a variety of possible energy production efforts including bio-fuel facilities (ethanol), oil refinery and/or a coal-fired power plant.
- **Public Education and Training** – A small portion of the site, about 783 acres (6 percent of the land area), is recommended as a location for the training and education of fire, rescue, police and emergency responders.
- **Special Events** – Two sites containing approximately 484 acres (4 percent of the land area) have been identified for special events. One site would involve the establishment of a farm museum, along with related activities, while the other location would support adjacent conservation activities.
- **Office/Business Park** – Approximately 405 acres (3 percent of the site) adjacent to the existing administrative office facility at KSAAP, have been designated as an office/business park.
- **Housing** – About 173 acres have been reserved for housing if the need for this type of development occurs over the next 10 to 15 years.
- **Hazardous Materials Treatment** – The existing Contaminated Waste Processor facility and a small amount of land, about 19 acres, has been designated as a hazardous waste treatment facility.

INFRASTRUCTURE IMPROVEMENTS

Redevelopment of KSAAP for industrial and business related uses will require a functional utility system, especially water and sewer. However, the utility infrastructure at KSAAP is in generally poor condition. Specifically, the water, sewer, electrical and communications

systems are in a state of decay and in many cases antiquated. In addition, almost no studies or evaluations of system operations or conditions have been prepared during the past twenty years.

Due to this lack of information about the existing systems, it is critical that key infrastructure at KSAAP be evaluated in terms of operational condition and capacity, as well as a determination of estimated improvement costs. Outlined below are key infrastructure systems that should be evaluated.

- **Sanitary Sewer** – The key focus should involve an evaluation of existing sewer lines and lift stations in terms of condition and potential for inflow/infiltration. Although the existing treatment plant is worth retaining, capacity and operating condition should be examined.
- **Water System** – Existing water lines and towers should be inspected and evaluated for leakage and overall condition. Portions of specific water lines may have to be replaced and water towers repaired or demolished.
- **Electrical** – Although the existing substation is considered adequate, distribution and power lines need to be evaluated and designated for replacement if necessary.
- **Telecommunications** – The existing telephone and communications systems, including the PBX, are inadequate and should be replaced. The evaluation of these systems should focus on alternatives for creating a reliable and functioning telecommunications system.
- **Stormwater Management** – The flow of stormwater at KSAAP, especially in the areas designated for development, should be evaluated and options for managing stormwater run-off identified.
- **Transportation** – Existing roadways are adequate, but a management and improvement plan should be prepared in order to support long-term development. The same type of undertaking should also focus on the existing on-site railway system.
- This evaluation of KSAAP infrastructure is critical to the future redevelopment of the site. Although some interim reuses could continue at the site for a few years, improvements will be needed quickly, especially with the water and sewer systems. Consequently, the identification of key improvements, along with cost estimates, should be completed as soon as possible.

IMPLEMENTING THE REDEVELOPMENT PLAN

Once the initial planning for the redevelopment of KSAAP has been completed, the LRPA is expected to finalize its recommendations, including a decision about the creation of an implementation Local Redevelopment Authority (LRA). In order for the implementation LRA to meet the challenges and responsibilities associated with redevelopment, a number of factors need to be considered. These include financial capability, local representation, regional representation and state representation. It is important to recognize that the

determination of a reuse and redevelopment approach, the acquisition strategy for the property, and the level of investment necessary could all affect the eventual make-up of an implementation LRA. Therefore, it is recommended that strong consideration be given to local and regional issues and conditions in determining the eventual membership of the implementation LRA.

The KSAAP LRPA has a number of other important issues facing them in implementing the redevelopment plan. Issues such as whether to acquire the entire KSAAP site, whether to pursue early transfer, and what conveyance method to pursue are all critical to the future redevelopment of the site. Related to these issues are the procedures that the implementation LRA will use to operate and maintain the site, and when marketing efforts should be initiated.

- **Amount of Property to Acquire** – The implementation LRA needs to closely evaluate whether they want to acquire property at KSAAP, and how much property is appropriate to acquire. While acquisition of the entire site seems to offer the highest level of control over the future redevelopment of the property, it also comes with significant financial responsibilities. Acquisition of lesser amounts of property could reduce operation and maintenance costs, but the loss of control could affect the implementation LRA's ability to pursue an integrated plan, and could create "competitors" for potential users/employers.
- **Conveyance Method** – A final decision on the appropriate conveyance method will affect how the implementation LRA acquires the property, as well as how property can be used and/or disposed of in the future. While the LRA needs to make a decision on how it wants to approach the conveyance, the Army will also have a say in how the property is transferred, since it must approve and document the conveyance. While it is recommended that the implementation LRA request transfer of the entire property via a no-cost EDC, the Army may balk at transferring the entire site via an EDC. In the event that the Army counteroffers with either a request for an EDC with a cost, or with a partial EDC and other approaches for non-EDC parcels, the implementation LRA will have to consider the overall impact of the Army's response on their long-term plan.
- **Early Transfer** – The decision regarding an early transfer will also be affected by others. It is recommended that a request for early transfer of the KSAAP property be submitted in order to expedite environmental remediation efforts and allow the implementation LRA to prioritize cleanup consistent with its development objectives and marketing plans. The Army must agree to the early transfer and provide necessary funding to resolve environmental issues. In addition, the Governor of Kansas will also have to approve deferral of the covenant regarding environmental remediation for the KSAAP site. While the Governor's concurrence on this issue is not expected to be problematic, it is one more layer of complexity in completing the transaction.
- **Staff vs. Contractor** – Assuming that the implementation LRA acquires property at KSAAP; there will be a number of issues associated with the ongoing operation, maintenance, management and marketing of the property. Among the chief concerns

will be what functions to provide with direct staff resources, and what functions should be provided via contract agreements with service providers in the region. It is likely that the implementation LRA will have to use some blend of staff and contracted services to operate, market and maintain the property, but consideration will have to be given to what specific functions should be performed with internal staffing.

- **Early Marketing Efforts** – Typically, LRAs have benefited from “marketing while planning,” which provides real world feedback on plans for redevelopment of properties. In the case of KSAAP, there is uncertainty relative to when the property might be available due to existing facility use agreements between the Army and its operating contractor. Since the operating contractor has some ongoing contracts with the Department of Defense (DoD), it is unknown whether the facility will be available after completion of these contracts, or whether DoD will seek to accelerate or terminate the contracts. This uncertainty could make it difficult for the implementation LRA to market facilities (or land) at KSAAP, since they cannot specify to a user when they might be able to begin utilizing a specific facility. The implementation LRA must work with both the operating contractor and the Army to gain an understanding of when specific facilities and/or areas of the plant will be available for use by others.
- **Phasing Plan for Development** - In terms of an asset that can readily be used and generate immediate cash flow for the implementing LRA, the portions of the property that can support agricultural uses and grazing will need to be an early focus. These lands, which include significant portion of land identified on the Preferred Redevelopment Plan as Conservation/Agriculture, can begin generating immediate revenue to support the activities of the implementation LRA.

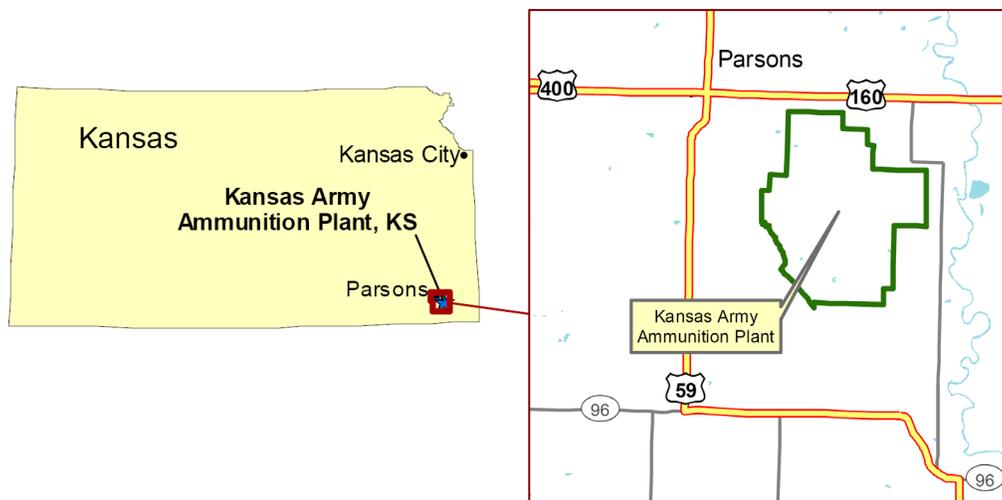
In terms of phasing, it is anticipated that the munitions storage facilities, including igloos and magazines, will be an early focus for the implementation LRA. Given the fact that these facilities were primarily used to store finished products, it is anticipated that the majority of these facilities will be available for reuse during the early stages of redevelopment. Other key redevelopment activities, by phase and year, are noted below:

| | |
|------------------|--|
| Phase I | Years 1-5 |
| | Conservation and Agriculture Special Events and Farm Museum Administrative Headquarters Transportation and Warehousing Commercial Energetics and Munitions Storage |
| Phase II | Years 6 – 10 |
| | Hazardous Waste Disposal 20% of Office /Business Park Special Events Portion of Conservation Area Public Education and Training Site Energy Park |
| Phase III | Years 11+ |
| | Industrial/Manufacturing Remainder of Office/Business Park Housing |

Source: RKG Associates, Inc.

1. INTRODUCTION

The Kansas Army Ammunition Plant (KSAAP) has a long and rich history. The southeastern Kansas KSAAP site, located in Labette County near the City of Parsons, contains over 13,000 acres of land. Construction activities at the Kansas Ordnance Plant, the original name for KSAAP, were initiated in August 1941 and completed in November 1942. During WW II, employment peaked at 6,700 and production primarily focused on artillery ammunition and bombs, as well as components for artillery shells such as fuses, boosters, detonators, relays and primers.



KSAAP was placed on standby status from September 1945 through August 1950. During this period, operations at the plant were limited to the receipt, storage and the issuance of ammunition, explosives and industrial reserve equipment. Land was also leased for agricultural purposes, a practice that continues to the present.

Beginning in August 1950, a process of reactivation was initiated at KSAAP that resulted in the complete use of all production lines by September 1954. Production diminished gradually after the Korean War, and by 1957 all production ceased.

From 1957 to 1967, the plant was in a standby status. During this period some ammunition was received, stored and issued from the facility. It was during this time that some idle facilities were made available for leasing. The U.S. Bureau of the Census occupied part of the administrative area and over 95,000 square feet of space was leased to manufacturers of prefabricated motel units, cabinets and sheet metal products.

The plant was reactivated in 1967 during the Vietnam War. At the conclusion of the war, five of the eight operating lines were laid away, and in 1993 the plant was placed on inactive status under the direction of the U.S. Army Industrial Operations Command. As an inactive

facility, the Operating Contractor, Day & Zimmerman, was not directly assigned a workload by the Department of the Army. The contractor does have the ability, however, to compete for U.S. or foreign material defense and commercial products. Approximately 250 individuals were employed at KSAAP in 2007.

The 2005 Defense Base Closure and Realignment Commission concurred with the recommendation of the U.S. Secretary of Defense to close the Kansas Army Ammunition Plant. This document was prepared to examine alternatives and options for the reuse and redevelopment of the KSAAP site in a manner that would benefit and assist the residents of Labette County and the region.

The Labette County Commission, on October 31, 2005, established the Kansas Army Ammunition Plant Local Redevelopment Planning Authority (KSAAP LRPA) to undertake planning for the eventual reuse of KSAAP. The LRPA was officially designated by the Department of Defense, Office of Economic Adjustment (OEA), on February 7, 2006, as the organization recognized by the Secretary of Defense, pursuant to the Defense Closure and Realignment Act of 1990, as the official Local Redevelopment Authority (LRA) for planning the redevelopment of KSAAP.

In November 2006, the LRPA, with financial support from the Office of Economic Adjustment, contracted with RKG Associates, Inc. to prepare a Comprehensive Master Redevelopment Plan for the Kansas Army Ammunition Plant. During a seven-month period the consulting team worked with the members and staff of the LRPA to evaluate existing site features, infrastructure, facilities, environmental issues, real estate market and economic conditions, and financial aspects associated with redevelopment. Assistance in collecting and evaluating data was also provided by numerous Department of Army personnel including Donald Dailey, Army Site Manager and Base Transition Coordinator at KSAAP; Bret Raines, Environmental Coordinator; and Chris Deurmyer, Natural Resources Manager. In addition, staff at Day & Zimmermann, the Operating Contractor at KSAAP, provided assistance in understanding existing operations at the facility. Key individuals included Patrick McReynolds, Maintenance Service Manager; Steve Kosman, Director of Engineering; and Danny Longerot, Director of Production.

An important factor in preparing the KSAAP Comprehensive Master Redevelopment Plan was public comments, suggestions and direction. During the planning process, ten (10) public meetings were held, including four (4) public forums. During the public forums specific activities related to the planning process were reviewed and written summaries of project activities were distributed for discussion purposes. Copies of material distributed at public forums as well as possible redevelopment alternatives identified during the forums are located in the Appendix of this document.

Including this Introduction, the Comprehensive Master Redevelopment Plan contains eleven chapters. Chapters 2 through 6 represent an assessment of various site characteristics such as buildings, utilities, environmental conditions, historic features and hazardous waste. How these site features might impact the redevelopment of KSAAP were also examined. Chapters 7 to 9 contain an evaluation of other factors that might influence redevelopment initiatives

including county and regional economic conditions, real estate market trends and alternatives for acquiring the property from the Federal government. The final two chapters, 10 and 11, include an evaluation of alternative development approaches and the identification of a preferred land use plan for site redevelopment. Suggestions for property acquisition, land use management, staffing, project phasing and the creation of an organization to implement reuse efforts are also discussed. An Appendix to this document contains references of previous reports and studies prepared about the KSAAP site, as well as samples of summary material distributed at public forums and redevelopment alternatives identified during several forums.

The completion of this Comprehensive Master Redevelopment Plan represents a major first step in the process of creating other uses for the KSAAP site. Additional steps will be required, however, to implement the plan and redevelop the KSAAP site. This Master Redevelopment Plan provides direction in taking these steps as well as suggestions for reuse actions that are reasonable and practical.

2. IDENTIFICATION AND ASSESSMENT OF FACILITIES

A. Introduction

In order to determine redevelopment potential for the Kansas Army Ammunition Plant (KSAAP), it is important to have an understanding of the site's existing assets. Specifically, the condition of existing buildings, and the ability of those building to support economic development and other activities, is considered a critical step in helping the Local Redevelopment Planning Authority (LRPA) understand the long-term potential for the reuse of KSAAP property.

The consulting team participated in a site tour of KSAAP, and inspected a representative sample of on-site buildings. The site tour was conducted by representatives of the operating contractor for KSAAP. Among the facilities inspected for this assessment were the administrative headquarters, a production line, the public works garages and shops, the lead azide production area and an aboveground munitions storage magazine.

B. Summary of Major Findings and Conclusions

- KSAAP has approximately 2.5 million square feet of floor space in more than 600 buildings. About 1.2 million square feet of floor space is associated with the production of munitions, and an additional one million square feet is used in warehousing and storage areas. This leaves less than 300,000 square feet dedicated to other types of uses.
- Environmental contamination issues are expected to affect the practicality of reusing buildings in the productions areas. The exception would be the possibility of continued use of the facilities for munitions and commercial explosives production.
- The ability to reuse the warehouse and storage facilities may also be affected by environmental contamination issues. However, since a large portion of the facilities focused on the storage of finished products, some of these facilities may not be severely contaminated.
- Many of the buildings at KSAAP have corrugated asbestos roofing. Asbestos is not considered hazardous unless it is friable (airborne). However, the presence of asbestos roofing makes any removal, repair or replacement substantially more costly.
- Shop space at KSAAP may also have some reuse potential. These facilities, in general, are flexible in terms of the types of uses they could accommodate, allowing for manufacturing, warehousing, automotive and light industrial uses.
- In general, the administrative headquarters building is considered to have very good reuse potential. Although the building is somewhat large for an office facility by local standards, its layout is consistent with possible multi-tenant occupancy.

- The Contaminated Waste Processor (CWP) may have reuse potential as a commercial processing center for incineration of hazardous materials. Issues associated with transferring the permits for the CWP should be evaluated, as well as possible upgrades that might be necessary to the CWP's emissions systems in order to meet existing air quality standards.

C. Overview of KSAAP Building Types

KSAAP's major facilities include 624 buildings that total more than 2.5 million square feet of floor space. Data from the KSAAP Plant Data Book, as well as the Environmental Condition of Property (ECP) Report, allocate buildings by location (referred to as areas) on the property. For example, the main administrative area of the property is known as the 100 Area, and buildings in this section of the property are numbered between 100 and 199. Similarly, the maintenance shops are known as the 200 Area, and buildings in this area are numbered from 200 to 299.

KSAAP has eight separate production areas, including the 300, 500, 700, 800, 900, 1000, 1100 and 1200 Areas (See Map 2-1). These are the traditional production lines at KSAAP. The 3000 Area, the most recently constructed production area on KSAAP, was developed to produce lead azide, a component used in other production processes at KSAAP.

Ammunition storage areas are located to the east and west of the production areas. In general, raw materials are stored to the west of the production area, and include the 1500 and 1600 Areas. Finished goods are stored to the east of the production areas. Munitions storage areas include earth-covered "igloos" and aboveground warehouse facilities in the 1700, 1800 and 1900 Areas. Inert storage is primarily located in the 1400 Area, south of the production areas.

Table 2-1 - Summary of Buildings and Square Footage by Area

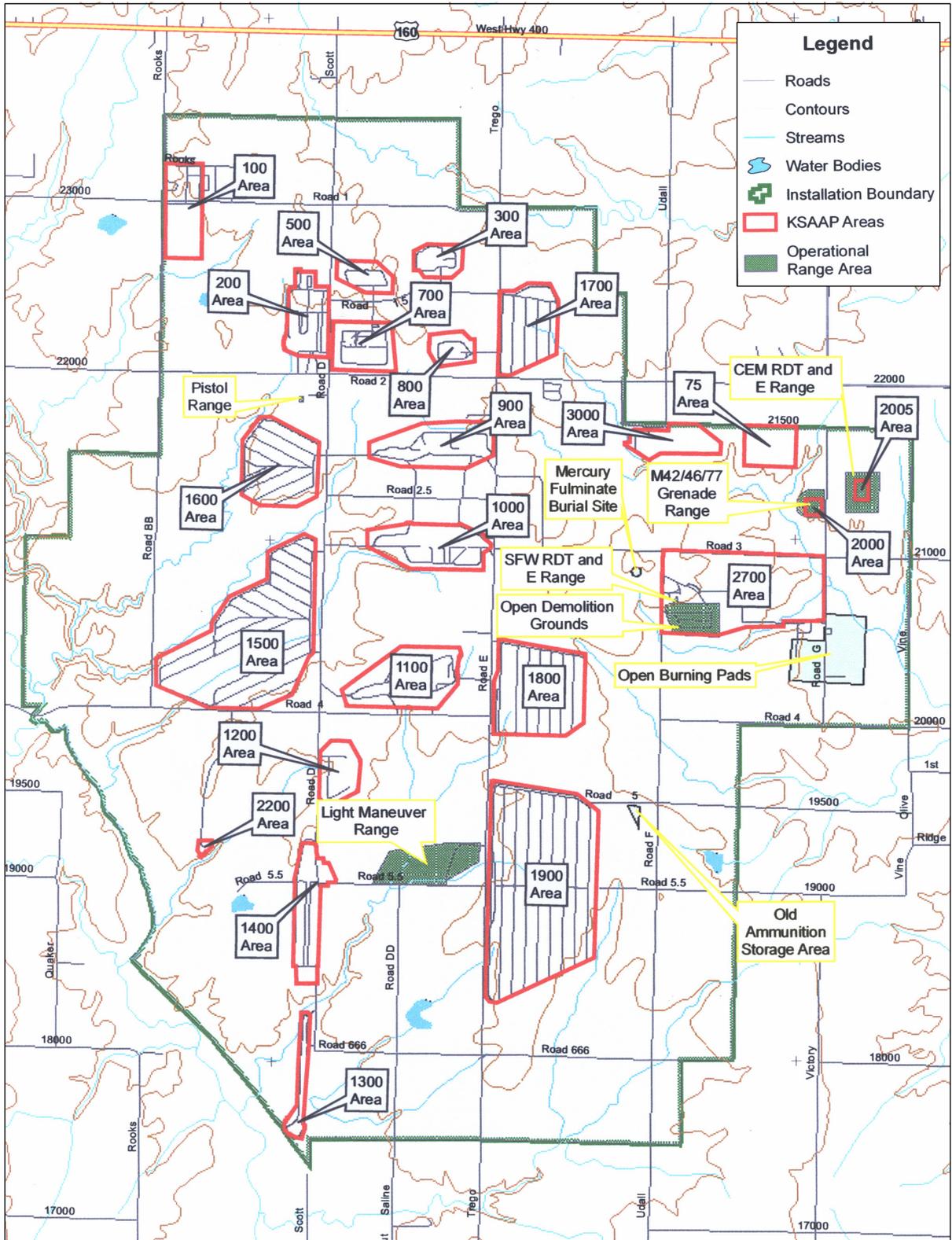
| Area | Primary Use | Buildings | Square Footage |
|-------|---------------------------|-----------|----------------|
| 100 | Administrative Area | 8 | 77,685 |
| 200 | Maintenance Area | 32 | 149,220 |
| 300 | Production/Loading | 19 | 164,498 |
| 500 | Production/Loading | 15 | 52,841 |
| 700 | Production/Loading | 50 | 95,561 |
| 800 | Production/Loading | 20 | 48,403 |
| 900 | Production/Loading | 57 | 256,311 |
| 1000 | Production/Loading | 55 | 206,707 |
| 1100 | Production/Loading | 45 | 277,684 |
| 1200 | Production/Loading | 14 | 26,625 |
| 1400 | Inert Storage | 25 | 395,697 |
| 1500 | High Explosives Magazines | 57 | 78,349 |
| 1600 | High Explosives Magazines | 26 | 50,560 |
| 1700 | High Explosives Magazines | 22 | 32,432 |
| 1800 | Ammunition Storage | 28 | 296,590 |
| 1900 | High Explosives Magazines | 90 | 173,593 |
| 2000 | Explosive Test Area | 9 | 1,849 |
| 2100 | Water Supply | 13 | 57,077 |
| 2200 | Sewer System | 6 | 1,157 |
| 3000 | Lead Azide | 33 | 76,074 |
| Total | | 624 | 2,518,913 |

Source: KSAAP Plant Data Book

The rail yard is known as the 1300 Area, while the detonation and burning grounds areas are identified as the 2700 Area. The wastewater treatment facilities are located in the 2200 Area.

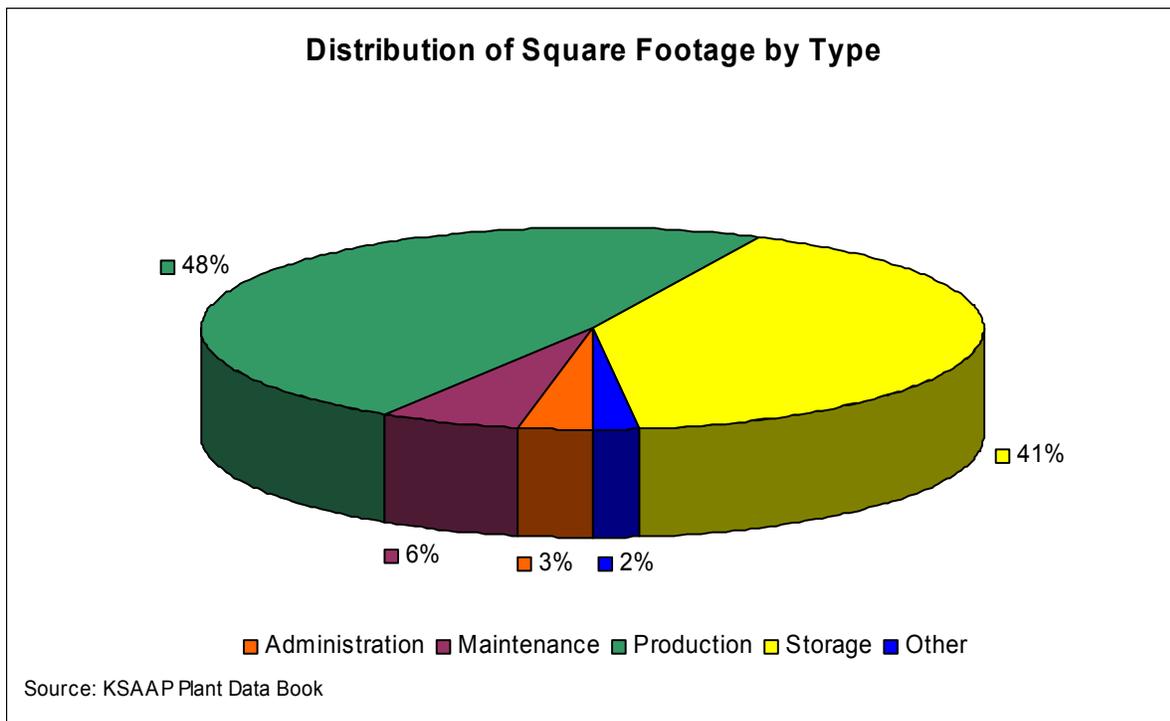
Table 2-1 provides a summary of the number of structures and the total square footage for each area of KSAAP. As shown in the table, KSAAP includes more than 2.5 million square feet of floor space in 624 structures. The 1900 Area (High Explosives Magazines) has the most structures (90). The 1400 Area (Inert Storage) has the largest amount of square footage at almost 400,000 square feet.

Map 2-1 - Overview of Developed Areas



In terms of usage, the majority of the Plant’s 2.5 million square feet of floor space is located in the production and storage areas. Figure 2-1 provides a graphic representation of the total square footage by broad use category. As shown in the figure, 48%, or more than 1.2 million square feet of floor space, is located in the production areas. In terms of reuse potential, the production areas may be constrained due to environmental issues associated with munitions activities. Uses in the storage and warehousing areas account for another one million square feet, or 41% of total floor space. Together, uses in the production and storage areas account for almost 90% of the floor space at KSAAP.

Figure 2-1 – Distribution of Square Footage by Type



In contrast, there is a limited amount of office and administrative space. Less than 80,000 square feet of space is available in the administrative area, the majority of which (67,000 SF) is contained in the headquarters building. The remaining buildings in the administrative area are considered questionable in terms of their reuse potential.

The maintenance shops account for almost 150,000 square feet of space, or approximately 6% of total floor space. Uses such as utility systems and the testing areas of the property account for approximately 60,000 square feet, or just over 2% of total floor space.

In terms of size, the majority of structures at KSAAP are considered as small. A sample of more than 500 buildings on-site indicates that more than 75% of all buildings are less than 3,000 square feet in size, while less than 7% of buildings are 20,000 square feet or larger.

Table 2-2 - Distribution of Buildings by Square Footage

| Facility Size | Count | Percentage |
|----------------------|--------------|-------------------|
| Under 1,000 SF | 159 | 31.5% |
| 1,000 to 3,000 SF | 221 | 43.8% |
| 3,000 to 5,000 SF | 17 | 3.4% |
| 5,000 to 10,000 SF | 20 | 4.0% |
| 10,000 to 20,000 SF | 53 | 10.5% |
| 20,000 to 30,000 SF | 30 | 5.9% |
| Over 30,000 SF | 5 | 1.0% |
| Total | 505 | 100.0% |

Source: KSAAP Plant Data Book

The average size of buildings at KSAAP is heavily influenced by the presence of more than 180 ammunition storage igloos, which are generally either 1,220 square feet or 1,813 square feet in size. In addition, the production lines generally include a number of small facilities, such as heater houses, guard shacks, boiler houses, vacuum houses and rest houses, the majority of which are less than 1,000 square feet each. Table 2-2 provides a summary of the distribution of facilities by square footage. As illustrated in the table, 88 of the 505 buildings evaluated are over 10,000 square feet. However, this is somewhat deceptive, as 25 of these buildings are ammunition storage magazines (essentially unheated warehouse space). In fact, with the exception of four shops in the maintenance area (200 Area), the administrative headquarters and 19 warehouses (21,000 square feet each) in the 1400 Area, all of the remaining large buildings are production-related.

D. Specific Building Types

Members of the consulting team inspected a sampling of buildings at KSAAP to better understand both their condition and possible reuse potential. Among the facilities inspected were a typical production line, maintenance shop, a munitions storage warehouse, and the cold storage warehouses in the 1400 Area. In addition, consulting team members visited the lead azide production area, the contaminated waste processor, the explosive waste disposal facility and the main administrative office facility. Each of these buildings is discussed below.

1. Administrative Headquarters, Building 101

Building 101 is one of the newest facilities at KSAAP. The building is a two-story, brick structure, with portions of the lower level built into the hillside. This has the effect of creating two separate facilities – the upper level parking lot provides access to the top floor office areas, while the lower lot provides access for employees to lower level operations, including the health clinic, security center and locker rooms. The facility has a brick exterior, and includes one elevator. The facility has a sprinkler system, as well as an alarm system.

The facility was constructed in 1985, and includes 67,900 square feet of floor space on two levels. The upper level, which serves as the main entrance, includes a variety of office spaces and conference rooms that serve as the primary location for the operating contractor's staff, as well as Army personnel working at the site. The majority of interior finishes on the upper level include carpeted floors, painted drywall walls, and suspended ceilings with fluorescent lighting. The rear portion of the building has several large bullpen-style offices, though there are some individual office spaces along the perimeter, as well. Conference rooms are generally located in the building core.

Building Photograph 2-1 – Building 101

The lower level of the facility houses two distinct functions – the health center and the security center. The health center is similar to most small doctors’ offices, and includes a central waiting area and a number of perimeter examination rooms. The facility also has an x-ray room. Flooring is predominantly vinyl composition tile (VCT), and the lower level has painted drywall walls and suspended ceilings. Finishes are

similar in the security center, though the locker rooms adjacent to the security center include tile flooring. The lower level also includes the former cafeteria, which has finishes consistent with the remainder of the lower level.

2. Maintenance Shops

The maintenance shops area (200 Area) includes a number of warehouse and shop-style buildings. The buildings were previously heated via a central boiler that supported the 200 Area; however, those buildings that are still heated have reportedly been retrofitted with individual furnaces. Among the buildings evaluated in the 200 Area were:

Building Photograph 2-2 – Interior of Building 203

Building 203 – Building 203 is a 21,000 square foot building with concrete floors, wire reinforced windows and an exposed wood truss roof. The roofing is corrugated asbestos panels, indicating that any roof repair or replacement issues will likely be costly. A portion of the facility, estimated to be 25%, is unheated.

Building 208 – Building 208 serves as the central office location for the maintenance staff. The building is concrete block construction, with a concrete floor and board-and-batten ceilings. The facility has a newer stand-alone boiler, and is 4,274 square feet in size.

building is concrete block construction, with a concrete floor and board-and-batten ceilings. The facility has a newer stand-alone boiler, and is 4,274 square feet in size.

Building Photograph 2-3 – Building 202

12 feet high, though two of the doors are 14 feet high. The building also has a small enclosed paint booth.

Building 202 – Building 202 is the primary vehicle maintenance building. The facility is approximately 20,600 square feet in size, and includes eight vehicle bays. The building is concrete block construction, with concrete floors and an exposed wood truss roof system. The building includes eight drive-in bays for vehicle maintenance, each with an overhead door for access. The majority of the overhead doors are

Building Photograph 2-4 – Interior Locomotive Repair Shop

The north end of this building is used as a locomotive maintenance shop. The north end of the building includes rail lines into the building, allowing the locomotive to be “driven” into the building. The overhead doors in this portion of the building are taller than the remainder of the building, estimated to be 16 feet. In addition, the ceilings in this section are also higher, estimated to be 18 to 20 feet.

Building Photograph 2-5 – Building 214

Building 214 – Building 214 is one of the newest buildings at KSAAP, constructed in 1989. The building is a pre-engineered, metal panel pole barn, with metal roofing. The facility includes 12,000 square feet of space, and has an estimated ceiling height of 18 feet. The building has a dirt floor, limiting its appeal for many uses.

Building Photograph 2-6 – Building 243 - Interior

Building 243 – Building 243 is the General Stores warehouse. The facility was constructed in two phases. The older section of the building has lower ceiling heights, some perimeter offices, concrete floors and sprinklers. The newer section is a metal frame, pre-engineered facility, with concrete block end-walls. This section of the building is reportedly not heated. Ceiling heights in this section are significantly higher

than in the older portion of the facility, indicative of the shifts in market standards for warehousing operations. The facility includes both drive-in and dock-height doors for access.

3. Production Line

As part of the consulting team’s evaluation of facilities, one of the unused production lines was inspected, specifically the production line in Area 900. The load lines, including Areas 500, 700, 800, 900 and 1000, all contain similar structures, though the sizes of various structures varies between lines. According to the Environmental Condition of Property Report:

“This area, occupying approximately 105 acres, was originally used as a Load Assembly and Pack (LAP) production facility for the 105 millimeter (mm) shell during WWII and the Korean War. In 1967 it was converted to a facility for loading the 81 mm mortar round with Composition B. The line was automated in 1975 and produced, on a trial basis, the M374A3 mortar cartridge. X-ray equipment was located in this area and was used to check loaded rounds for defects. The area has primarily been inactive since 1978, though one building was used in 1980 for reworking 155 mm projectiles prior to loading.”¹

Building Photograph 2-7 – Typical Production Area

Typically, each production line includes warehouse-style buildings at each end of the line – one that is used for raw materials and one that is used for the packing and crating of finished products. Other major buildings in each line typically include an office facility, a melt/pour facility, a packing building and loading dock area.

¹ Environmental Condition of Property Report, Page 3-3

In addition, because of environmental concerns, each line has multiple change houses, where employees could dispose of contaminated clothing at the end of their shift, as well as vacuum houses, which were used to help control explosive residues. Each production area also has its own boiler for heating, multiple guardhouses for access control, and multiple storage buildings for inert products as well as explosive products. Many of the individual facilities within each production area are connected by covered walkways that allowed products to be moved between facilities without being exposed to the elements.

Building Photograph 2-8 – Typical Covered Walkways



In general, buildings in this area are constructed of concrete block, with concrete floors and blast walls in areas considered “high risk.” Roofs in the warehouse area are exposed wood trusses. The melt/pour areas are multi-story buildings, and include emergency exit slides from upper stories to allow for rapid evacuation in the event of an emergency.

In general, the production lines most likely have limited reuse potential, except for similar uses such as ammunition manufacturing. While some of the warehouse-style facilities may be marketable, their proximity to explosive contaminated buildings is expected to limit their market appeal. In addition, explosive arc setbacks may make these facilities uninhabitable until the explosive contamination issues in adjoining buildings are resolved.

4. Lead Azide Area

Building Photograph 2-9 – Lead Azide Production



The 3000 Area is the newest production area at KSAAP. The buildings in this area were constructed during 1967 and 1968, with the intention of insuring that KSAAP would have a reliable source of lead azide, which was used in manufacturing munitions products on-site. However, according to the ECP Report, the facility was used only once to produce a test batch of lead azide, and has remained in a layaway status since that time.

Building Photograph 2-10 – Storage Tanks

The majority of the production facilities in the 3000 Area are pre-engineered metal panel buildings, with metal roof systems. In addition, there are numerous storage tanks in this area, used for storage of chemicals required in the manufacturing process. At the time of inspection, some of the buildings showed evidence of damage to roofs and exterior walls.

The support facilities near the front gate of the 3000 Area are concrete block buildings, with drop ceilings

and tile floors. The size of the floor tiles is typical of asbestos floor tiles used prior to the mid-1970s. More recently, these two buildings were activated after the attacks on September 11, 2001. The buildings were renovated and reactivated for use as barracks and support activities for military security personnel, such as a dining area, showers and office uses. Renovations included minimal painting and re-activation of utilities.

5. Specialty Incineration**Building Photograph 2-11 – Contaminated Waste Processing Building**

In addition to production facilities, KSAAP has two specialized facilities that were used to incinerate waste products. These facilities include the Contaminated Waste Processor (CWP) and the Explosive Waste Incinerator (EWI). These buildings are located in the 2700 Area, adjacent to the Open Burning Grounds. The CWP, shown in the picture to the left, is a high-temperature incinerator that operates at

1,500 degrees Fahrenheit. According to operating contractor staff at KSAAP, the CWP was used to incinerate materials that may have included explosive material residue, such as floor sweepings. The CWP is a pre-engineered metal panel building that includes a warehouse/storage area, control room and the actual incinerator. According to staff, this facility can be activated with a minimum of effort, and was last used in 2005.

The EWI was used to incinerate explosive compounds and/or explosive materials that did not meet specifications. This was a more complex process that included the transfer of explosive materials via conveyor to an enclosed outdoor area, with a complex system of collectors to recapture exhausts and residue. Both the CWP and EWI were put into service in 1981.

6. Ammunition Storage

Building Photograph 2-12 – Ammunition Storage Magazine



KSAAP has two types of ammunition storage facilities on-site, including earth-covered storage igloos and aboveground storage magazines, which are essentially warehouses. In general, the storage igloos are constructed of super-reinforced concrete, with a Quonset-style concrete roof, covered with earth. Igloos were

constructed in two sizes, typically a 1,200 square foot footprint and a 1,800 square foot footprint. The average ceiling height is 10 feet, though the Quonset-style roof makes some areas near the edges less usable than areas in the central portion of each igloo. These structures generally have a single door, typically wide enough for a forklift to move materials into and out of each structure.

Building Photograph 2-13 – Interior of Storage Magazine



The aboveground storage magazines at KSAAP are brick structures, with concrete floors. Roofs are exposed wood trusses, with corrugated roofing believed to be asbestos. Each storage magazine has multiple entry points, usually in the form of a roll-up door as well as one or more exterior sliding doors. Since most of these facilities were primarily used to store finished products, environmental contamination is not expected to be substantial.

However, the ECP Report identifies all of the munitions storage areas as “ECP CATEGORY 7 – Areas that are unevaluated or require additional evaluation.” Therefore, it is not clear whether these facilities will be usable in the short term. (See Chapters 5 & 6 for additional information about the reuse of storage magazines.)

7. Cold Storage Warehouses

Building Photograph 2-14 – Cold Storage Warehouse



The 1400 Area of KSAAP is comprised of a group of 19 cold storage warehouse buildings, each containing 21,389 square feet of floor space, with approximate dimensions of 52 feet by 400 feet. In total, these facilities provide more than 400,000 square feet of warehouse space. In general, these buildings are constructed of red concrete blocks, with concrete floors. These facilities have exposed wood truss roofs, with asbestos roof covering. Exterior

doors include overhead roll-up doors as well as sliding doors. There are also a limited number of windows in each facility, allowing for some natural light. The buildings also include a firewall separation to create two separate spaces within each building.

Each of the buildings includes a rail siding, allowing materials and supplies to be off-loaded from railcars directly into the warehouses. In general, these facilities do not have heating systems, nor do they have plumbing. Ceiling heights are generally lower than modern warehouse structures, approximately 12 to 14 feet. Interestingly, these buildings also have dry, deluge-style sprinkler systems, which is uncommon on the KSAAP site.

E. Implications for Reuse

As discussed in this chapter, KSAAP has more than 2.5 million square feet of buildings on-site. However, the majority of these buildings fall into two categories – production-related facilities and storage facilities. Given the historic use of the property for the manufacture of munitions, it is anticipated that many of the production-related facilities will have environmental and contamination issues that may render them unusable, except for continued munitions manufacturing. Since facilities in the production areas account for more than 1.2 million square feet of floor space at KSAAP, almost 50% of existing buildings may be impaired from a reuse perspective.

The storage and warehouse type facilities may have some reuse potential. Overall, there are almost 250 buildings in the storage and warehouse areas, with a combined floor space of more than one (1) million square feet. While the overall average size is less than 4,200 square feet, this average is heavily impacted by the storage igloos, which typically range 1,200 to 1,800 square feet each. In contrast, the aboveground storage magazines in the 1800 Area average more than 11,000 square feet each, while the inert storage warehouses in the 1400 area average more than 21,000 square feet each. Assuming these facilities are environmentally suited for reuse, they may provide some limited cash flow to support operation and maintenance of the facility, though rent levels are likely to be low, since most

facilities do not have heat or plumbing. In addition, the total square footage of more than 650,000 square feet may be more space than the regional marketplace can comfortably absorb.

The shops in the 200 Area may also have some reuse potential. These facilities, in general, are flexible in terms of the types of activities they could accommodate, allowing for manufacturing, warehousing, automotive and light industrial uses. Most of these facilities have asbestos roofing, as do many of the facilities at KSAAP. While asbestos roofing is not hazardous unless the material is friable (air borne), it will significantly increase costs for repair or replacement when roofing materials is removed and disposed.

In general, the administrative headquarters building is considered to have very good reuse potential. Although the building is somewhat large for an office facility by local standards, its layout is consistent with possible multi-tenant occupancy.

Finally, the Contaminated Waste Processor (CWP) may have reuse potential as a commercial processing center for incineration of hazardous materials. Specifically, since the facility has been used within the past 18 months, it may be possible to attract an operator for the facility. However, the LRPA must evaluate the issues associated with transferring the permits for the CWP, and should also consider what upgrades might be necessary to the CWP's emissions systems in order to meet existing clean-air standards.

3. MAJOR UTILITIES

A. Introduction

This chapter describes existing utility systems at the Kansas Army Ammunition Plant (KSAAP). This information was compiled through a review of existing records, maps, reports, and interviews with federal, state and local government officials, as well as representatives of the operating contractor that manages services at the KSAAP site. Major utility systems examined included sanitary sewers, water, electrical distribution, telecommunications, and the transportation system.

B. Summary of Major Findings and Conclusions

- **Sanitary Sewers** – The wastewater treatment system at KSAAP includes a wastewater treatment plant (WWTP) and wastewater collection system. The WWTP has a treatment capacity of approximately one (1) million gallons per day (MGD). Due to reduced flows at the plant, the capacity of the WWTP has been curtailed to about 500,000 gallons per day. The wastewater collection system ranges from 6-inch to 12-inch cast iron sewer lines. The lines are old and in poor condition, with infiltration creating the potential for additional problems in the future.
- **Water Systems** – A water treatment plant (WTP) located on the banks of the Neosho River, approximately two (2) miles east of KSAAP, supplies potable water to the facility. The WTP has sufficient capability to treat the one (1) MGD it is authorized to draw from the Neosho River. However, the plant is using less than 80 million gallons annually or less than 25 % of capacity. The infrastructure at the plant and the water system is approximately 60 years old.
- **Electric** – KSAAP receives electrical power via a Westar Energy substation, located on the eastern side of the site. More than 462,000 lineal feet of overhead lines deliver power to the KSAAP facility. The electrical distribution system is in fairly good condition. Dozens of transformer banks serve all the buildings on the site. In addition, approximately 17 emergency generators are located at the site to provide back-up power.
- **Telecommunications** – The existing telecommunications system is primarily provided by aerial and underground lines. Southwestern Bell provides service up to the perimeter of the site, while lines on the KSAAP property are owned by the Army. The system is in generally poor condition and in some cases unreliable. Several buildings still have the original wiring installed during initial construction in the 1940s. KSAAP also has limited fiber optic and data communications capabilities.
- **Transportation System** – Roadways and rail lines comprise the transportation system at KSAAP. The majority of the roadways within the boundaries of KSAAP are asphalt pavement. The secondary roads are primarily gravel with several roads

primarily dirt driveways. The majority of the asphalt pavement roadways are in fair condition. The gravel and dirt roads are in fair to rough condition. The railway system includes lines, spurs and sidings in various states of repair. A subcontractor currently leases sections of the on-site rail system.

C. Sanitary Sewers

The wastewater treatment plant (WWTP) is located on a four-acre parcel on the southwest portion of the site. The WWTP site has an office building with a testing laboratory. Wastewater is conveyed to the WWTP by the existing wastewater collection system and is then treated by a basic, but very efficient treatment process. Map 3-1 illustrates the extent of the wastewater collection system. The treatment process includes the following:

- Grit chamber for removal of large solids
- Two rectangular primary settling tanks
- A dosing tank
- Two rock media trickling filters
- A rectangular secondary settling tank
- A rectangular final clarifier
- Anaerobic sludge digester
- Two sludge drying beds

Some modifications have occurred to the sewage treatment system since it was first constructed in the early 1940s. The sludge beds were rehabilitated in 1985 and in 2001, and an ultraviolet system was installed at the WWTP to complete treatment of the wastewater for fecal coli in order to comply with new National Pollution Discharge Elimination System (NPDES) standards.

The active sanitary sewer system was constructed during the original build-out of KSAAP facilities in the early 1940s. The sewers principally utilize cast iron pipe. Force main lines were constructed using cast iron pipes and fittings. The existing connecting laterals are typically 6, 8, or 10 inches in diameter. The force mains are up to 12 inches in diameter.

A full inspection of the wastewater collection system has not been undertaken; however, based on the type of material and the age of the system, infiltration is a potential problem. A portion of the system has been upgraded to 15-inch PVC lines. These lines generally run from the 1200 Area to the treatment plant.

The sewage treatment plant sludge drying beds have recently been upgraded with a new settling tank system.

Map 3-1 - Existing Sanitary Sewer Lines

Overall, the operating sewage treatment plant appears to be in fair to good condition and capable of treating the flows currently received at the facility.

To further reduce the amount of infiltration into the operating sewer systems, sewer lines serving vacant buildings have been plugged and sealed with various materials at manhole connections.

The typical manhole at KSAAP is constructed of brick and provided with a heavy-duty cast iron ring and cover. An inspection of these structures would be required to determine their condition and identify possible locations of groundwater infiltration.

The operating sewer system on the site utilizes lift stations to convey a portion of the wastewater flow to the treatment plant. The lift stations appear to be functional and adequate for the flows they currently receive.

Implications for Future KSAAP Reuse

Based on the information presented above, the following observations are offered for consideration:

- The existing sewage treatment plant is worth keeping and incorporating into the future reuse of the KSAAP facility.
- Existing sewer lines, however, are in poor condition and should be replaced as the site is redeveloped.
- The redevelopment alternative ultimately selected for KSAAP may result in sewage flows that exceed the capacity of the existing treatment plant. Expansion of the plant is feasible and should be considered as an option.
- Pretreatment of industrial wastewater should continue to be required for whatever redevelopment alternative is pursued in order to facilitate the long-term operation of the existing sewage treatment plant.
- Expansion of development activities at KSAAP should be limited to areas that have active sewer lines.

D. Water Lines

The water treatment plant, located on the banks of the Neosho River, provides potable water for KSAAP. Storage capacity of potable water for KSAAP is provided by four (4) 200,000 gallon elevated towers and a one (1) million gallon storage reservoir at the treatment plant. Map 3-2 illustrates the water distribution system within KSAAP. A public school, several residences and a Westar energy production facility also receive potable water from the KSAAP water system. Since 1993, minimal upgrades have been made to the water distribution system.

Water is transferred by two 12-inch water mains for two miles from the Neosho River to the KSAAP site. The water is distributed to the individual facilities via 4, 6, 8, and 10-inch distribution lines. The piping material used in the water distribution system is cast iron or asbestos cement. The water lines that serve some specific facilities that are no longer in use have been plugged and abandoned.

The system includes four (4) elevated water towers for storage and maintenance of system pressure. According to operating contractor representatives, of the four water towers on the site, only two are currently in service. The two active water towers have not been inspected in the last several years. The two other remaining towers are not presently in use due to reduced water flow. Although specific problems have not been identified with the water towers not in use, Water Tower Number 4 does exhibit visible exterior deterioration.

The operating contractor has reported no major water line leaks; however, the age of the system, lack of adequate pipe bedding during the original construction, shifting building foundations, lack of protective pipeline coatings, and previous use of dissimilar materials could be contributing factors in potential leaks.

Residual chlorine in the water system is also a problem during the summer and often requires system flushing. Currently the plant operators are adding chlorine dioxide to treat the water obtained from the storage basin after the solids are removed.

Some of the system operating procedures within the WTP require specialized knowledge and skill to keep the system functioning efficiently. Training new personnel would require, at a minimum, the passing on of this specialized knowledge.

Implications for Future KSAAP Reuse

Based on the information presented above, the following observations are offered for consideration:

- The existing water towers and reservoir are worth retaining and incorporating into the future reuse of the KSAAP facility. It should be noted, however, that some rehabilitation of these structures will likely be required.
- In the short-term, the existing water systems appear to be adequate. A significant growth in the number of tenants, though, could result in a corresponding increase in the level of maintenance required to keep the system operational.

For the long term, it appears reasonable to try to utilize the existing supply lines and the major distribution piping (12 inches) during the redevelopment of the site. Redevelopment initiatives would not necessarily need to be designed around the smaller diameter distribution piping. In congested areas where existing buildings might be retained, it would be prudent to replace as much existing piping as possible to minimize traffic disruptions and pavement cuts associated with possible future water line repairs. The condition of all lines to be retained should be verified by detailed investigation and pressure/leakage testing before intensive redevelopment efforts are undertaken.

Map 3-2 – Existing Potable Water Lines

- Reconstruction of at least some portion of the existing water systems will probably be necessary to realistically implement possible redevelopment efforts. For example, site redevelopment may require relocation of existing lines to better serve new building arrangements and footprints. Further, existing lines may not be in the best locations required to service new development activities and could end up being abandoned and replaced by new piping. Lastly, earthwork required by new development may cause the amount of cover over the existing lines in cut areas to be reduced to the point where they would have to be re-laid to maintain adequate depth for protection from frost and vehicle loads. Where fills may be required by new development initiatives, existing lines could end up being buried deeper, resulting in higher costs and site disruption should repairs have to be made in the future.
- Water towers not required for the future development may have some salvage value.
- Communications companies may be interested in leasing space for antennas on some of the water towers in order to provide wireless service at the KSAAP site.
- The residual chlorine problem will need to be addressed if new users are added to the system in the future. Flushing the system when the chlorine levels are elevated could also require a large quantity of water that might be needed by potential users.
- Expansion or construction of new structures may be limited to the areas that have active potable water lines.

E. Electric

The electrical service at KSAAP is provided by a Westar Energy substation located in the eastern portion of the KSAAP site. The substation is a 3-phase, 60 cycles, 69 kV substation.

Dozens of transformer banks serve as part of the electrical distribution system. The transformer banks are primarily 3-phase with some 1-phase transformer banks. The one phase transformers are 120/240 volts, while the 3-phase transformers are 120/208 or 120/240 volts. The majority of the one-phase transformer banks are on the eastern portion of the site. The 3-phase transformer banks are located in the developed production areas. The primary electrical distribution system at KSAAP consists of overhead lines with some underground lines.

The entire KSAAP overhead distribution system is owned by the Army, and served and maintained by the operating contractor.

Implications for Future KSAAP Reuse

Based on the information presented above, the following observations are offered for consideration:

- The active substation could be used to serve existing customers. Future development of the site may require expansion of the substation or construction of a new one.

- The majority of the active overhead distribution lines and power line poles could be used to serve existing and future customers.
- Wood poles and distribution lines not currently used (and in poor condition) should be demolished. The majority of the steel towers support energized and de-energized lines; the de-energized lines (in poor condition) should be removed. This will make for a much cleaner and safer environment, while allowing space for new lines.
- If additional service capacity is required, the local electric utility, by law, must provide service to support the additional loads.

F. Telecommunications

The telephone system at KSAAP consists of underground and overhead cable. The system was previously owned and operated by Southwestern Bell. Southwestern Bell turned the system over to the Army due to the relative poor condition of the system. The telephone system originates at the Administrative Area and is distributed throughout the site.

The PBX system is owned and operated by the Army. The PBX system is distributed to all the buildings via underground feeds and aerial feeds. Typically, one person provides the maintenance for the telephone system. It should be noted that some of the buildings have the original wiring that is unreliable for most types of existing services.

Implications for Future KSAAP Reuse

Based on the information presented above, the following observations are offered for consideration:

- If future redevelopment occurs, the telephone system will need to be upgraded. The present configuration is considered adequate for the existing level of activity, but the system will not sustain any increase in usage.
- Wood poles and cables not currently used for the operation of the telecommunications system should be demolished.

G. Transportation System

The existing roadway infrastructure at KSAAP adequately serves the current level of usage at the site. The majority of the roadways are asphalt pavement in fair condition. The remaining secondary roads that provide access to the leased farmland have gravel or dirt surfaces and are in fair condition for these types of uses.

KSAAP also has an extensive railway system. The on-site tracks consist of lines, spurs and sidings. The majority of the lines are below current rail standards. However, most of the track is in good condition and currently a contractor is leasing the tracks for storage of railcars.

Implications for Future KSAAP Reuse

Based on the information presented above, the following observations are offered for consideration:

- Future redevelopment of the site will require upgrades of the transportation system. Although the present configuration is adequate for the existing level of activity, the existing roadway system will not sustain any significant increase in usage.
- Expansion of new rail uses would most likely be limited to the areas that already have active railways.

H. Site Redevelopment Implications

The utility infrastructure at KSAAP is in generally poor condition. The water, sewer, electrical, and communications systems are in a state of decay and in many cases antiquated. The transportation infrastructure is generally in better condition than the utility infrastructure, but the transportation system will also need to be upgraded.

Any redevelopment within the boundaries of KSAAP will likely be expensive, due to the poor condition of water and sewer lines, as well as the electrical and communication systems. In addition, initial and probably long-term redevelopment will be limited to the areas within KSAAP where utility and transportation systems are easily accessible.

4. NATURAL ENVIRONMENT AND HISTORIC FEATURES

A. Introduction

Natural and historical features associated with the Kansas Army Ammunition Plant (KSAAP) are briefly outlined in this chapter. The findings discussed in this chapter are based on a site visit and discussions with the KSAAP National Resources Manager. Overview information is provided concerning topography, soils, vegetation, wildlife, hydrology, floodplains, wetlands, timber, and agriculture, as well as historical and cultural factors.

Information in this chapter was also obtained from previous studies and reports. However, the primary source of information was the *Kansas Army Ammunition Plant Integrated Natural Resources Management Plan and Environmental Assessment, 2006-2010*, prepared by Gene Stout and Associates in 2005.

B. Summary of Major Findings and Conclusions

- The KSAAP site is topographically characterized as relatively flat in the north and gently rolling terrain in the south. Elevation across the site varies from a low of 780 feet above mean sea level (amsl) to a high of 920 feet amsl.
- The KSAAP site is principally located in soils that are characterized as somewhat poorly drained to moderately well drained, and having dominantly clayey subsoil. Problems involving erosion are minimal.
- No threatened or endangered floral species have been documented on KSAAP. With respect to vegetation, two areas of special interest exist onsite: the Labette Creek Corridor and the Native Prairie. Labette Creek contains high-quality timber and is one of the best examples of an eastern floodplain in Kansas. KSAAP contains approximately 40 areas of high-quality Native Prairie and approximately 70 low-quality native prairie areas.
- KSAAP has widely diverse wildlife with 252 taxa (classifications) of vertebrate wildlife and mussels confirmed onsite. No federally threatened or endangered fauna have been documented on KSAAP, although there are 12 species listed as Species in Need of Conservation by the State of Kansas.
- Forty-seven miles of rivers and streams are present on KSAAP, with the majority comprised of intermittent streambeds that are seasonally flooded. KSAAP also contains 123 ponds that were chiefly created for livestock water.
- There are 212 acres of wetland habitat on KSAAP, more than half of which (137 acres) consists of permanent aquatic beds from watershed ponds.
- KSAAP has limited commercial forest resources, totaling only about 1,000 acres. KSAAP manages the forest ecosystem as a wildlife habitat program that emphasizes

support of the military mission, enhancement of watersheds, management of wildlife habitat, and provisions for outdoor recreation.

- Agricultural/grazing leases are an essential part of natural resources management on KSAAP, and a total of 9,714 acres of land are outleased as part of the agricultural management program.
- All KSAAP buildings, structures, or objects are considered ineligible for inclusion on the National Register of Historic Places. No archeological surveys have been conducted at KSAAP and no archeological sites have been recorded.
- KSAAP has senior water rights to the Neosho River and maintains this right through annual use.
- There are no significant implications for the reuse of KSAAP based on the evaluated natural and cultural resources.

C. Topography

The surface topography at KSAAP varies from relatively flat in the north to gently rolling terrain in the south. The ground surface elevation ranges from 950 feet above mean sea level (amsl) in the northwest near the Administration Area to 840 feet amsl near the western boundaries. Except for locally steep slopes adjacent to drainages, ground surface slopes throughout most of the KSAAP range from 0.5 to 1.0 percent (Aguirre Engineers, Inc., 1998).

D. Soils

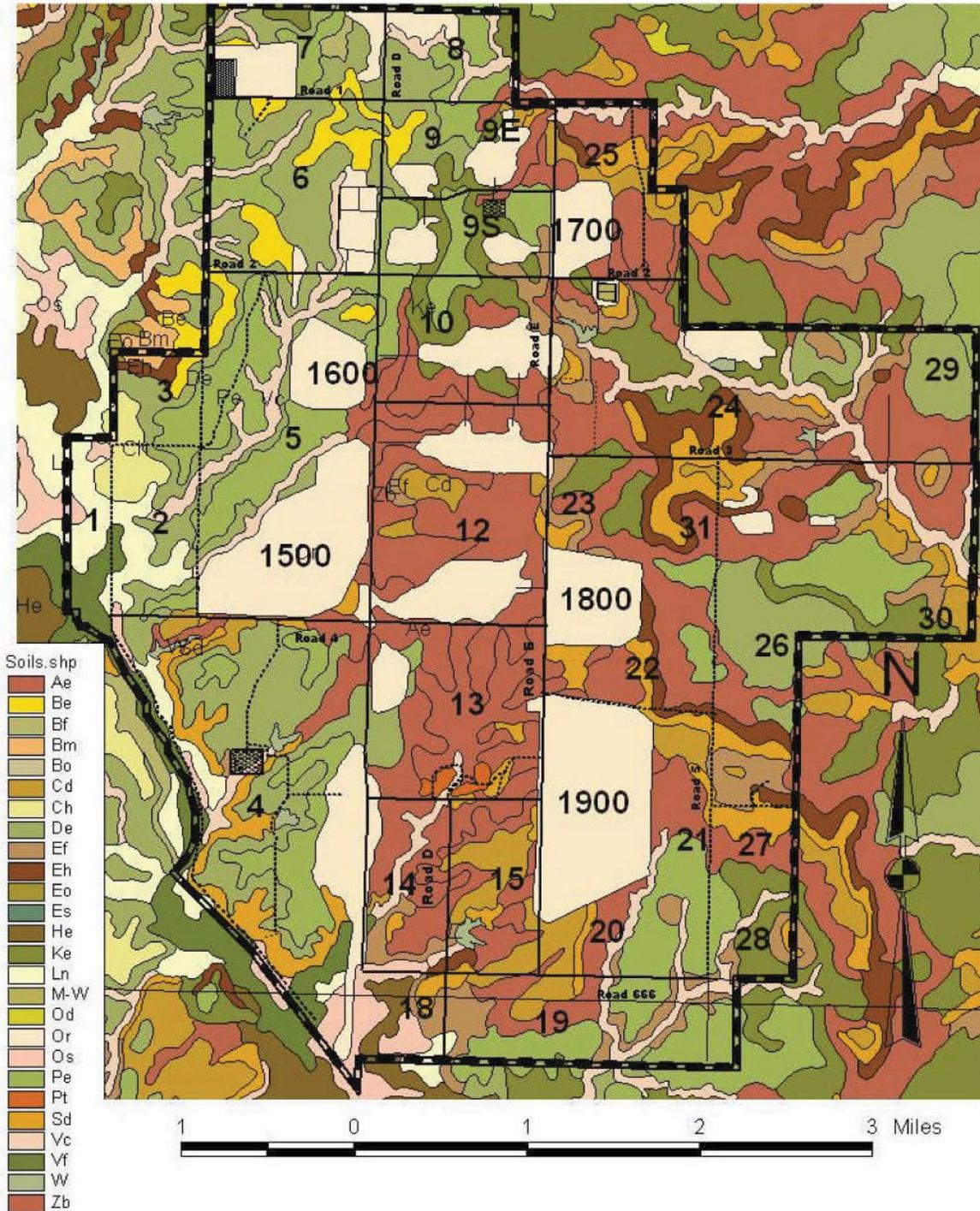
Five soil associations are common to Labette County, although most of KSAAP lies within the Parsons-Kenoma-Dennis Association, which is characterized as deep, nearly level and gently sloping, somewhat poorly drained to moderately well drained, and having dominantly clayey subsoil. A small strip (approximately 5 percent) of the Lanton-Osage-Hepler Association occurs in the floodplain of Labette Creek. The KSAAP soil associations are shown on Map 4-1.

E. Vegetation

Vegetative community types on KSAAP consist of bottomland hardwood forest, native prairie, mixed hardwood and prairie, hay meadow, and agriculture, as shown on Map 4-2. However, intensive grazing of many prairie areas has left low-quality vegetative communities, although new grazing practices are transforming the native prairie communities to a higher quality, more diverse plant community.

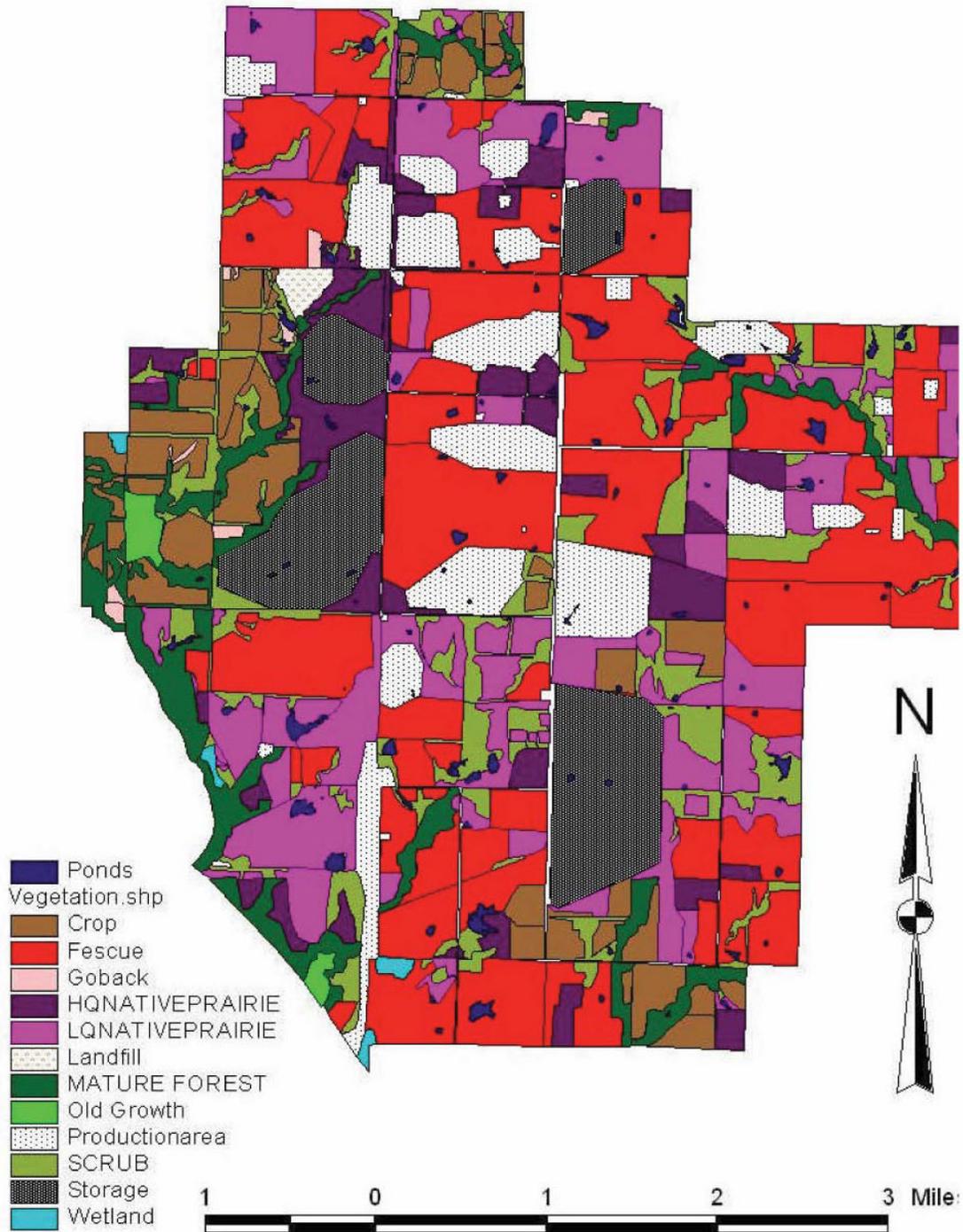
Forested areas are primarily an oak-hickory association occupying about 759 acres found largely within and along riparian corridors. Grasslands are a matrix of native tallgrass prairie, early succession fields, and cool season grasses. Approximately 822 acres of native or fescue hay are present on KSAAP, while some 7,846 acres onsite are grazed by cattle and another 938 acres are occupied by cropland. Impoundments, wetlands, and streams, meanwhile, account for 242 acres.

Map 4-1 Kansas Army Ammunition Plant Soils



Source: Gene Stout and Associates, 2005. *Kansas Army Ammunition Plant Integrated Natural Resource Management Plan and Environmental Assessment, 2006-1010.*

Map 4-2 Kansas Army Ammunition Plant Vegetative Types



Source: Gene Stout and Associates, 2005. *Kansas Army Ammunition Plant Integrated Natural Resource Management Plan and Environmental Assessment, 2006-1010.*

No threatened or endangered floral species have been documented on KSAAP.

Two areas of special interest have been identified on KSAAP: the Labette Creek Corridor and the Native Prairie. The Labette Creek Corridor contains high quality timber and is considered one of the best examples of an eastern floodplain in the State of Kansas. Most of the corridor is either protected from livestock grazing, or not within a grazing lease. Flooding may occur occasionally, but is of a short duration.

KSAAP contains approximately 40 areas of high-quality native prairie as well as some 70 low-quality native prairie areas. Many of the high-quality areas are part of an experimental, rotational grazing management scheme as a form of biological control for invasive and low-quality vegetative species.

F. Wildlife

The natural areas at KSAAP provide habitat for numerous species of mammals, birds, fish, reptile and amphibians, mussels, and invertebrates, with a total of 252 taxa (classifications) of vertebrate wildlife and mussels confirmed onsite.

Mammals typically found at KSAAP include the whitetail deer, eastern cottontail, raccoon, coyote, eastern fox squirrel, red fox, bobcat, beaver, striped skunk, and opossum. In all, 31 mammal species have been confirmed on KSAAP in addition to 181 bird species.

Key bird populations include the Wild Turkey and Bobwhite Quail. Although the turkey population is healthy, the quail population has declined within its range during the past twenty years. Both species are managed and limited harvesting is permitted under a lottery system.

Thirty-seven fish species have been confirmed at KSAAP, the most common of which are yellow and black bullheads, common carp, channel fish, green sunfish, bluegill, flathead catfish, largemouth bass, white crappie, and black crappie being the most common.

Twenty-seven reptile species have been confirmed at KSAAP, including the snapping turtle, painted turtle, rat snake, common kingsnake, plainbelly water snake, brown snake, and common garter snake. Nine amphibian species, meanwhile, have been confirmed onsite, including the American toad, smallmouth salamander, Great Plains narrow mouth toad, western chorus frog, and bullfrog.

Twenty species of mussels have been confirmed in Labette Creek. Three on the Kansas Species in Need of Conservation List were documented in Labette Creek, including the yellow sandshell, washboard, and fawnsfoot.

A general invertebrate species inventory has not been performed.

No federally threatened or endangered fauna have been documented on KSAAP, although a small potential exists for the presence of state-listed threatened or endangered species. The butterfly mussel was documented at the intake facility on the Neosho River in 1994 and 1999. Other state-listed threaten or endangered species with potential to occur include the

endangered flat floater mussel, threatened fluteshell mussel, endangered Neosho mussel, and the endangered rabbitsfoot mussel. There are also 12 species listed as Species in Need of Conservation by the State of Kansas.

G. Hydrology, Floodplains, and Wetlands

Forty-seven miles of rivers and streams are present on KSAAP, with most being intermittent streambeds that are seasonally flooded. The surface water and wetland resources at KSAAP are shown on Map 4-3. Labette Creek and the Neosho River are the two primary drainages in the vicinity of the facility, and KSAAP holds senior water rights to the Neosho River that it maintains through annual use.

A total of 123 ponds covering approximately 125 acres are scattered throughout KSAAP. The ponds range from 10 acres to less than 1 acre in size, and were constructed primarily for livestock water.

There are 212 acres of wetland habitat on KSAAP, more than half of which (137 acres) consists of permanent aquatic beds from watershed ponds.

H. Timber

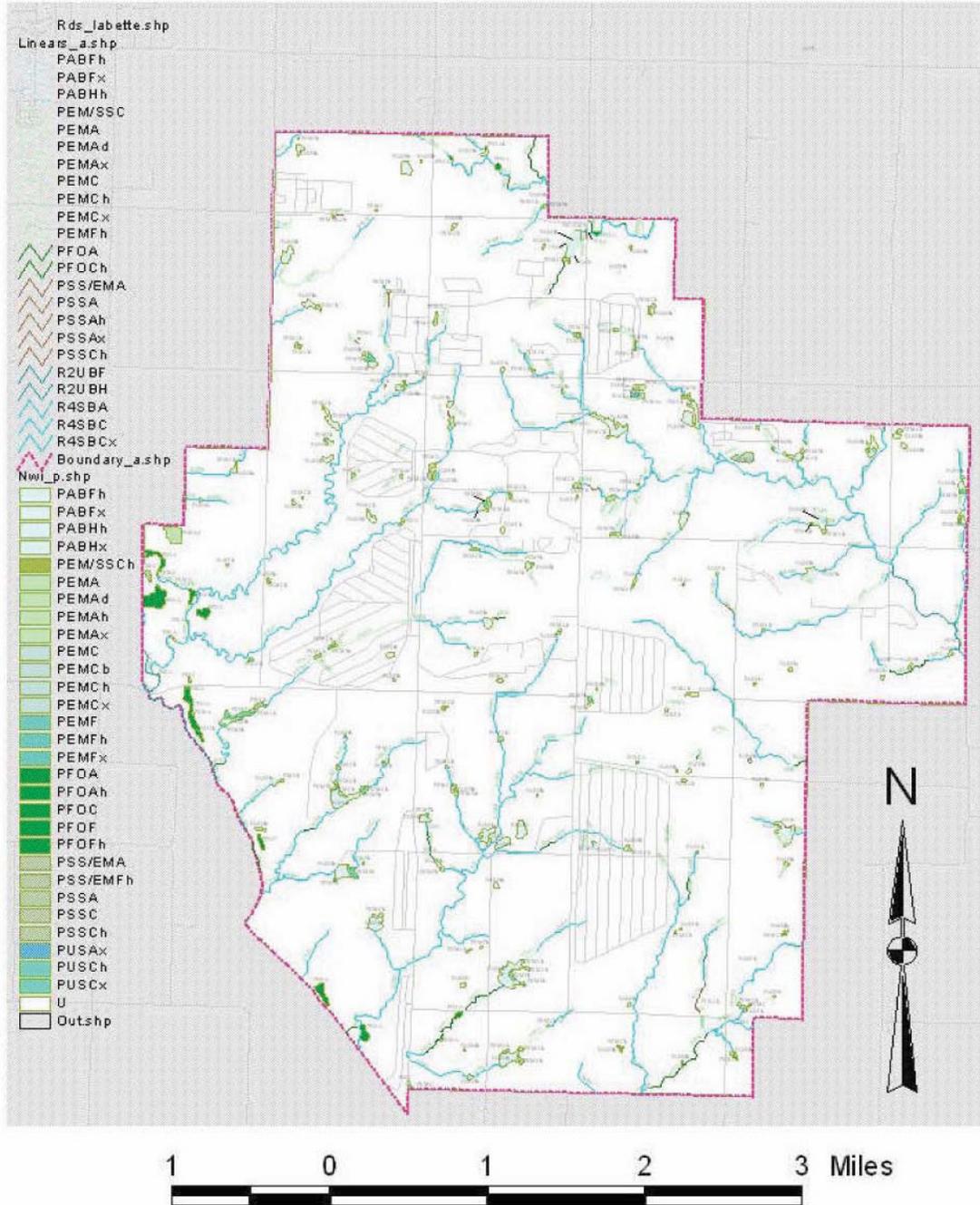
KSAAP contains limited commercial forest resources, totaling only about 1,000 acres, primarily adjacent to Labette Creek. The last timber harvest was in 1988, and a 1992 inventory of the site's forest resources documented 127,000 board feet of black walnut and 84,000 board feet of bur oak (Hynek, 2000). Some high-quality veneer logs are also present onsite, and selected harvests of walnut, hackberry, ash, and oak could occur. However, KSAAP manages the forest ecosystem as a wildlife habitat program that emphasizes support of the military mission, enhancement of watersheds, management of wildlife habitat, and provisions for outdoor recreation. It should be emphasized that the riparian corridor of Labette Creek contains some of the most pristine woodlands habitat located in Kansas. Stewardship of the riparian timber, including a sustainable timber harvest strategy, will be important in preserving this unique habitat.

I. Agricultural Lands

Agricultural/grazing leases are an essential part of the natural resources management on KSAAP. More than 3,000 acres of native prairie remain onsite, and long-term production and enhancement of this land are the most important elements of KSAAP's natural resources management program because of their rarity. While Kansas ranks at the top for native grass prairie, this habitat has become unique in the southeastern part of the state. Over the next 100 years, the KSAAP prairie will become even more important, and every effort should be made to preserve and enhance this resource. There are 4,480 acres of non-native fescue pasture present on KSAAP that provide excellent forage for grazing.

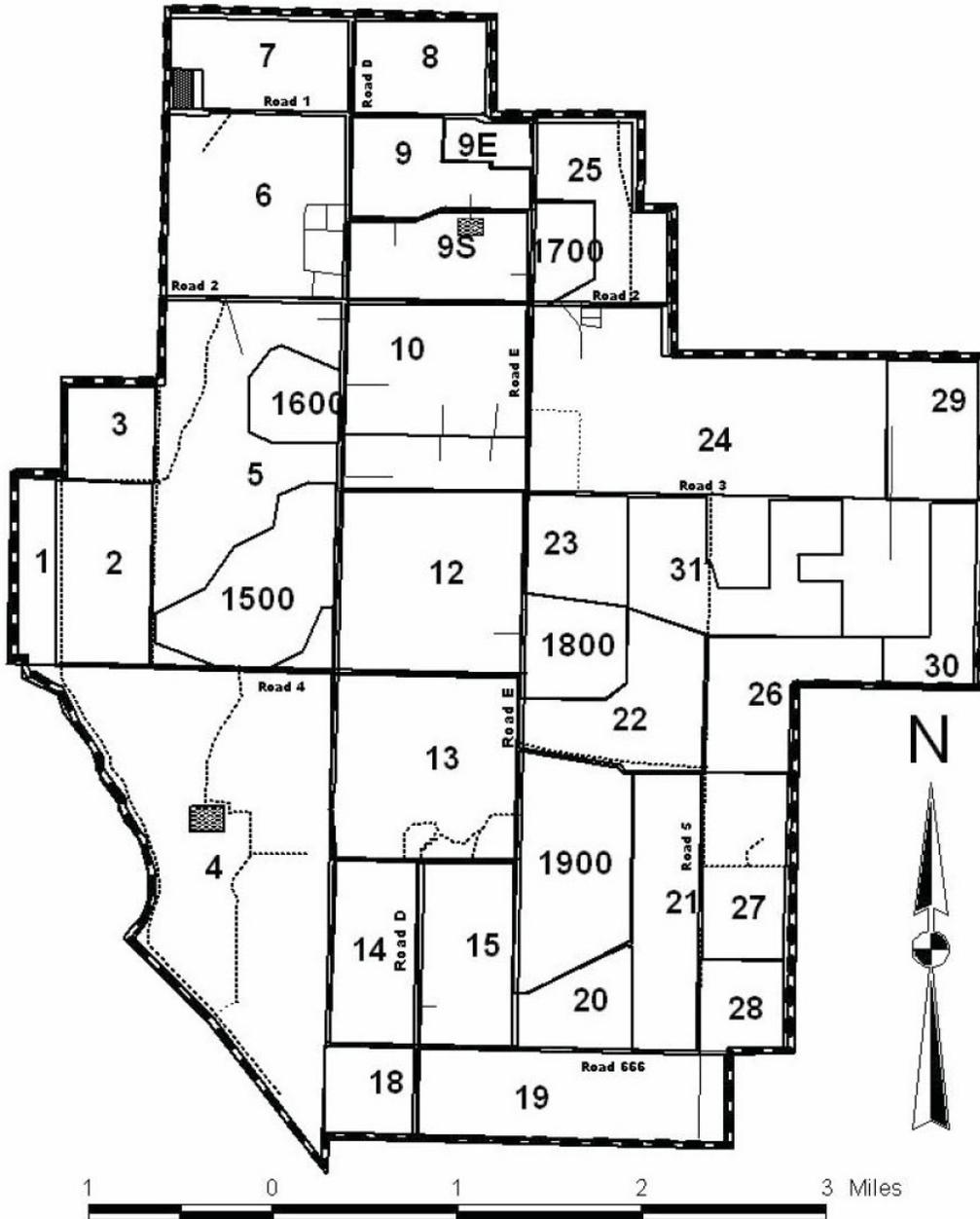
The current agricultural outlease program includes 35 outlease tracts totaling 9,714 acres. Map 4-4 presents the agricultural leases along with Table 4-1, which shows the prevalent lease use and the number of acres per tract. Land uses include farming, grazing, and some hay production.

Map 4-3 Kansas Army Ammunition Plant Surface Water and Wetland Resources



Source: Gene Stout and Associates, 2005. *Kansas Army Ammunition Plant Integrated Natural Resource Management Plan and Environmental Assessment, 2006-1010.*

Map 4-4 Kansas Army Ammunition Agricultural Map



Source: Gene Stout and Associates, 2005. *Kansas Army Ammunition Plant Integrated Natural Resource Management Plan and Environmental Assessment, 2006-1010.*

J. Historical and Cultural Features

Cultural resources at KSAAP include buildings, structures, prehistoric and historic archeological sites, native sacred sites, and cemeteries. Cultural resources for the KSAAP site are presented in Map 4-5.

No archeological surveys have been conducted at KSAAP and no archeological sites have been recorded (Geo-Marine, Inc., 1996). Two areas exist in the west-central portion of KSAAP known to possess Native American deposits (Hynek, 2000), and an incidental find of arrowheads in a plowed field was documented in 2000.

Table 4-1 – Agricultural Leases at KSAAP

| Tract | Use | Acres | Tract | Use | Acres |
|----------|-----------------|-------|--------------|---------|--------------|
| Tract 1 | Farming | 60 | Tract 20 | Farming | 94 |
| Tract 2 | Farming | 156 | Tract 21 | Grazing | 355 |
| Tract 3 | Farming | 139 | Tract 22 | Grazing | 332 |
| Tract 4 | Grazing/Hay | 797 | Tract 23 | Grazing | 191 |
| Tract 5 | Farming | 254 | Tract 24 | Grazing | 651 |
| Tract 6 | Grazing | 384 | Tract 25 | Grazing | 273 |
| Tract 7 | Grazing | 286 | Tract 26 | Grazing | 301 |
| Tract 8 | Farming | 120 | Tract 27 | Grazing | 297 |
| Tract 9 | Grazing | 160 | Tract 28 | Grazing | 149 |
| Tract (E | Grazing | 63 | Tract 29 | Hay | 209 |
| Tract 9S | Grazing | 179 | Tract 30 | Grazing | 177 |
| Tract 10 | Grazing | 433 | Tract 31 | Grazing | 375 |
| Tract 12 | Grazing | 403 | Tract 1500 | Grazing | 398 |
| Tract 13 | Grazing | 515 | Tract 1600 | Grazing | 139 |
| Tract 14 | Grazing | 241 | Tract 1700 | Grazing | 106 |
| Tract 15 | Grazing/Farming | 255 | Tract 1800 | Grazing | 158 |
| Tract 18 | Grazing | 167 | Tract 1900 | Grazing | 471 |
| Tract 19 | Grazing/Farming | 426 | Total | | 9,714 |

Source: URS, 2006. Environmental Condition of Property Report, Kansas Army Ammunition Plant. Final Report. November 15.

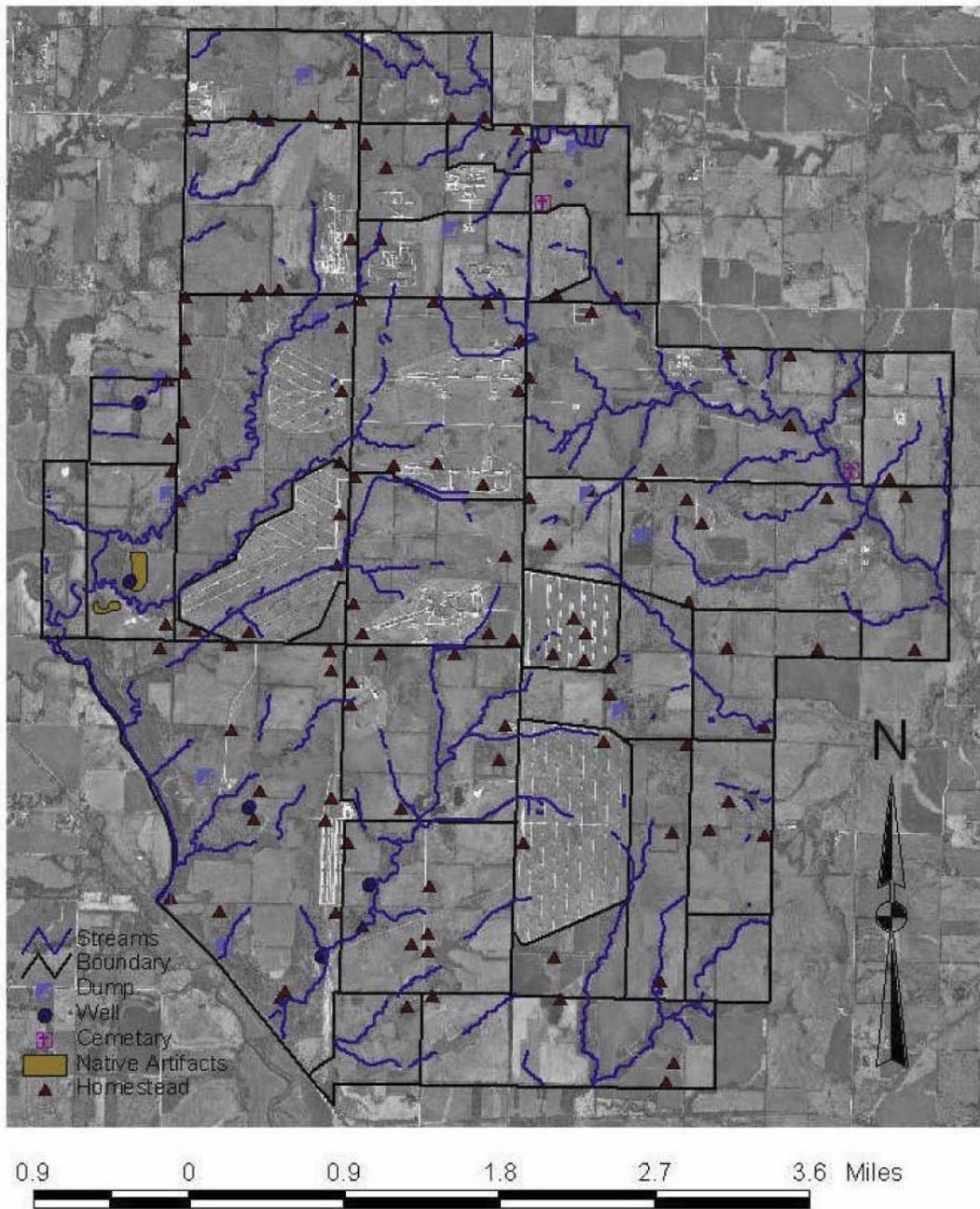
Areas of concern for archeological resources consist of locations where the presence of archeological sites are suspected or where KSAAP undertakings have significant potential to negatively impact undiscovered archeological resources. Most archeological resources are likely to occur along Labette Creek, as well as at scattered locations near water sources (Hynek, 2000).

No KSAAP buildings, structures, or objects dating to the Cold War are considered eligible for inclusion on the National Register of Historic Places. Therefore, no management consideration is necessary for World War II or Cold War military-related architectural resources on KSAAP (Geo-Marine, Inc., 1996).

K. Implications for Reuse

There are no significant implications for reuse based on existing identified natural and cultural resources.

Map 4-5 Cultural Resources of KSAAP



Source: Gene Stout and Associates, 2005. *Kansas Army Ammunition Plant Integrated Natural Resource Management Plan and Environmental Assessment, 2006-1010.*

Map 4-5 – Cultural Resources for KSAAP

5. ENVIRONMENTAL ISSUES

A. Introduction

This chapter examines the types of hazardous wastes identified at the Kansas Army Ammunition Plant (KSAAP). The findings in the chapter are based on a site visit and discussions with the KSAAP Environmental Specialist. This chapter includes information from the *Environmental Condition of Property Report*, dated November 15, 2006 (URS, 2006), the *Historical Records Review* (TechLaw, Inc., 2006), the *Environmental Baseline Survey Report* (Aguirre Engineers, Inc., 1998), and the *FY2006 Army Defense Environmental Restoration Program Installation Action Plan* (U.S. Army Environmental Center [USAEC], 2006). A list of all source material used in preparing this chapter is located in the Appendix.

The reader of this chapter needs to be aware that any examination of environmental issues involves reference to a wide variety of federal laws and specialized nomenclature. In fact, any discussions of hazardous waste and cleanup efforts can quickly evolve into a multitude of acronyms known to only a handful of experts. To the extent humanly possible, the use of scientific, legal and technical abbreviations have been kept to a minimum. However, in some cases the use of abbreviations or references to federal legislation is unavoidable. In these instances, a definition of the term is provided in order to assist the reader in understanding the context in which the term is used. A list of acronyms is located at the end of this chapter.

B. Summary of Major Findings and Conclusions

- Under the Installation Restoration Program (IRP), 17 sites at KSAAP are designated as Response Complete and 16 are active sites. The active sites involve landfill covers at three sites, soil removal at two sites, monitored natural attenuation (MNA) of groundwater at four sites, and long-term monitoring (LTM) of groundwater.
- The Department of the Army anticipates completion of all environmental remediation work by 2037. The extended duration is attributable to the Army's 30-year projection for MNA and landfill post-closure LTM at select sites.
- The Department of the Army is currently assessing explosive contamination at various buildings at KSAAP. Four areas (300, 800, 900, and 1200) have been classified as 3X, indicating a potential explosive hazard, and 10 areas (500, 700, 1000, 1100, 1500, 1600, 1700, 1800, 1900, and 3000) have been classified as 1X, indicating the highest level of explosive contamination. The results of this assessment will impact future redevelopment efforts.
- There are six ranges on the active/inactive range inventory. Additionally, the Old Ammunition Storage Area is being inspected because munitions were reportedly scattered throughout the area due to decomposition of containers.

- All underground storage tanks (USTs) at KSAAP have been removed. There are 40 aboveground storage tanks (ASTs) permitted by the Kansas Department of Health and Environment (KDHE).
- Thirty-four polychlorinated biphenyl (PCB) transformers are present at KSAAP with concentrations greater than 50 parts per million (ppm). The Army is responsible for ensuring the transformers are compliant with the Toxic Substance Control Act (TSCA) upon property transfer.
- Approximately 98 percent of the structures at KSAAP contain suspected asbestos-containing material (ACM). Friable (airborne) ACM has been removed from the 200, 300, 500, 900, 1000, 1200, and 3000 Areas, as well as the 1414S Boiler House. Asbestos, however, must still be abated from 50's buildings and the 1100 line. Asbestos issues will need to be addressed and managed by a new property owner or owners.
- With the exception of the water tower, no lead-based paint (LBP) surveys have been performed at KSAAP. Renovation or demolition of existing structures will require some LBP abatement. LBP issues will also need to be addressed and managed by a new property owner or owners.
- Radon tests for indoor air were below the U.S. Environmental Protection Agency (USEPA) action level.
- More than 10,300 acres are available for reuse with no restrictions (See Map 5-1).
- Cleanup standards for many of the sites have been based on an industrial use; therefore, without additional cleanup, land use is limited to industrial applications in a variety of areas across KSAAP (See Map 5-1.)
- Past uses of portions of the KSAAP sites require long-term monitoring (LTM) of wells and groundwater use restrictions. Groundwater quality in the area is poor due to high levels of total dissolved solids (TDS), which are naturally occurring. As a result, the groundwater is not suitable for use as a drinking water source. Access to monitoring wells will need to be maintained for purposes of ongoing groundwater monitoring.

C. Regulatory Framework and Permits

Several key environmental permits are active at KSAAP, and a brief description of the permits and their status is provided in Table 5-1.

Table 5-1 – Summary of Environmental Permits at KSAAP

| Permit | Description | Issues/Status |
|---|--|--|
| RCRA Part B Permit (USEPA ID # KS021380467), 1989 | Large-quantity generator (no more than 2,200 pounds of hazardous waste per month and the accumulation of up to 13,000 pounds hazardous waste at any one time). | Twenty-five SWMUs identified that required investigation of surface water, groundwater, and soils. |
| RCRA Subpart X Permit | Operation of the Open Burn/Open Detonation grounds. Lists all the hazardous waste codes permitted for storage and treatment. | Hazardous wastes generated at KSAAP are transported offsite to the Fort Riley Defense Reauthorization and Marketing Office (DRMO) or to one of the onsite treatment facilities. There are three hazardous waste treatment facilities. |
| Open Burning Area (SWMU-108) – Permitted Hazardous Waste Treatment Facility | Reactive wastes and off-specification and scrap explosives are treated in metal pans for open burning at Pad 5 (SWMU-108). Contaminated equipment is treated at Pad 6 (SWMU-109). | |
| Open Detonation Range – Permitted Hazardous Waste Treatment Facility | Off-specification and scrap munitions and components are treated by open detonation at the Open Detonation Range (SWMU-114). Items to be treated are buried in an earthen pit and remotely detonated. | |
| Explosive Waste Incinerator – Permitted Hazardous Waste Treatment Facility | The Explosive Waste Incinerator (EWI) (SWMUs 105 through 107) was used to treat off-specification explosives and scrap munitions and components. | The EWI is currently under idling status and annual inspections are conducted by the Kansas Department of Health and Environment (KDHE). |
| Solid Waste Landfill Permit | KSAAP has a permit that allows the operation of an unlined, industrial, solid waste landfill (SWMU-146). Historically, this landfill was used for all types of sanitary waste including uncontaminated trash, boxes, office waste, construction and demolition (C&D) debris, fly ash from coal-fired boiler operations, asbestos, grenades, and non-hazardous thermal treatment residue from the 2700 Area (DZI EEPE, 2006). | The permit is renewed annually. |
| Title V Class I Air Emission Source Operating Permit | The permit is for a number of fuel oil-powered boilers and emergency generators. The CWP is not a RCRA-permitted treatment unit; however, this unit was permitted as a solid waste treatment unit to treat commercial waste. Commercial waste was never treated in the CWP because the unit does not meet the current continuous emission monitoring requirements | KDHE conducted an annual compliance inspection on March 23, 2006, and determined that KSAAP was in compliance with Kansas Air Quality Regulations and the operating permit. The permit allows KSAAP to emit no more than 250 tons of sulfur dioxide per year. This limit has never been exceeded (DZI, 2006). |
| National Pollutant Discharge Elimination System (NPDES) Permit | The NPDES permit includes seven outfalls. | KSAAP currently treats its sanitary wastewater at the Sewage Treatment Plant in the 2200 Area. The wastewater is discharged through Outfall 004 and the sludge is treated by anaerobic digestion and dried on sand-drying beds. The capacity of the system is 1 million gallons per day. |

Most environmental activities at KSAAP are driven by the installation's Resource Conservation and Recovery Act (RCRA) Permit that became effective on December 7, 1989. All hazardous waste managed at KSAAP is performed in accordance with its RCRA Part B Permit (USEPA ID Number KS0213820467). KSAAP is classified as a large-quantity generator (LQG), generating up to 2,200 pounds of hazardous waste per month. In addition, up to 13,200 pounds of hazardous waste may accumulate onsite at any one time. The RCRA Permit expired on December 7, 1994. However, KSAAP is currently allowed to operate in an Interim Status under the original permit while awaiting Kansas Department of Health and Environment (KDHE) review of its permit renewal application, which was prepared and submitted to KDHE in the appropriate time frame.

D. Investigation and Remediation Overview

The Army's cleanup program under the Defense Environmental Restoration Program (DERP) is referred to as the Installation Restoration Program (IRP), the goal of which is to identify, investigate, and clean up contamination at active Army installations. Active installations are real properties within the United States owned by the Army, and the IRP focuses on the cleanup of contamination associated with past Army activities.

KSAAP has been identified for possible transfer under the Base Realignment and Closure (BRAC) program. The BRAC Environmental Restoration Program is similar to the Department of Defense (DoD) IRP, but has been expanded to include non-Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) contamination substances that are not normally addressed under the IRP, including ACM, LBP, PCBs, radon, unexploded ordnance (UXO) and/or ordnance fragments, radionuclides, and pesticides. A summary of each of these substances is including in the following sections.

E. IRP Program (Installation Restoration Program)

KSAAP currently has 16 active IRP sites. A summary of all the IRP sites and their current status is presented in Table 5-2. A description of ongoing activities at each of the active IRP sites is also provided in Table 5-2.

The active sites are focusing on landfill covers at three sites, soil removal at two sites, monitored natural attenuation (MNA) of groundwater at four sites, and LTM of groundwater at 10 sites, as follows:

1. Landfill Covers

KSAAP plans to upgrade the existing soil cover at the KAAP-03 (200 Area refuse burn pits and closed/inactive landfill), KAAP-04 (closed/inactive landfill), and KAAP-05 (active landfill, asbestos shingle burial site, and grenade body disposal area) in order to meet regulatory standards.²

² This notation (KAAP) is used to refer to specific sites at the Kansas Army Ammunition Plant.

Table 5-2 - IRP Sites and Status at KSAAP

| USEPA SWMU Group | USEPA RFA SWMU | Area/Building | USAEHA SWMU | IRP AEDBR No. | IRP Status |
|------------------|---|---|---|---------------|--|
| 1 | 1 124 124 | Building 112 sump Building 112 ditch Building 112 oxidation pond | NA NA KAAP-35 | KAAP-35 | Response Complete |
| 2 | 8 | 200 Area oil/water separator | KAAP-26 | KAAP-26 | Response Complete |
| 3 | 6 | 200 Area oil land farm | KAAP-25 | KAAP-25 | Response Complete |
| 4 | 16 | Building 314 waste oil/toluene tank | NA | KAAP-39 | Response Complete |
| 5 | 10 11 12 13 125-126 127 | Buildings 315, 324, 326, and 327 sumps and troughs Building 305 sumps and troughs Building 302 sumps and troughs Building 311 sumps and troughs Ditches and oxidation pond (Pond 1) Ditches and former evaporation pond | KAAP-16 KAAP-16 KAAP-16 KAAP-16 KAAP-30 KAAP-30 | KAAP-16 | Active Four years of LTM are anticipated. |
| 6 | 19 20 21 | Building 503 sump, troughs, and ditches Building 505 sump, troughs, and ditches Buildings 513 and 529 sump, troughs, and ditches | KAAP-17 KAAP-17 KAAP-17 | KAAP-17 | Active Four years of LTM are anticipated. |
| 7 | 47 48 | Buildings 804 and 849 sump, troughs, and ditches Building 816 sump, troughs, and ditches | KAAP-19 KAAP-19 | KAAP-19 | Active Thirty years of MNA are projected, although the actual length of time required will be evaluated based on MNA monitoring reports and 5-year reviews. |
| 8 | 49 50 51 52 53 54 130 131 132 | Building 907— 900 Area wastewater treatment system Building 905 sump and troughs Building 907 sump and troughs Building 927 sump and troughs Building 946 sump and troughs Building 952 sump and troughs Ditch and Pond 8 Ditch and Pond 37 Ditch and Pond 43 | KAAP-14 KAAP-20 KAAP-20 KAAP-20 KAAP-20 KAAP-20 KAAP-32 KAAP-32 KAAP-32 | KAAP-20 | Active Four years of LTM are anticipated. This site will be included in the first 5-year review scheduled for FY08. Based on the results, the corrective measure could be changed to NFA, continued LTM, or some additional corrective measure. |
| 9 | 57 58 59 133 134 135 | Building 1006 sump and troughs Buildings 1007/1017, and 1018 sumps and troughs Buildings 1008/1078 sumps and troughs Ditch and Pond 39 (Pond 1001) Ditch and Pond 1501 Ditch and Pond 31 | KAAP-21 KAAP-21 KAAP-21 KAAP-33 KAAP-33 KAAP-33 | KAAP-21 | Active Four years of LTM are anticipated. This site will be included in the first 5-year review scheduled for FY08. Based on the results, the corrective measure could be changed to NFA, continued LTM, or some additional corrective measure. |
| 10 | 65 66 67 138 NA | Buildings 1109 and 1127 sumps and troughs Building 1123 sump and troughs Building 1126 sump and troughs Oxidation pond 1101 Oxidation pond 1102 | KAAP-22 (sumps and drainages only) | KAAP-22 | Active This site will be included in the first 5-year review scheduled for FY08. Based on the results, the corrective measure could be changed to NFA, continued LTM, or some additional corrective measure. |

Table 5-2 – IRP Sites and Status at KSAAP (continued)

| USEPA SWMU Group | USEPA RFA SWMU | Area/Building | USAEHA SWMU | IRP AEDBR No. | IRP Status |
|------------------|-------------------|---|-------------------------------|---------------|---|
| 11 | 110-113 | Open Burning Pads #1-4 | KAAP-10 | KAAP-10 | Active Following 5 years of sampling, a 5-year review of the protectiveness of the corrective measure will be performed. Based on the results, the corrective measure could be changed to NFA, continued LTM, or some additional corrective measure. |
| 12 | NA | 100 Area classification area (near gate 3) | KAAP-01 | KAAP-01 | Active A Construction Closure Report for SWMUs 12, 13, and 23 was scheduled to be submitted to the USEPA and KDHE in 2006. RC was anticipated in December 2006. |
| 13 | 139 | Closed/inactive landfill near quarry | KAAP-02 | KAAP-02 | Active A Construction Closure Report for SWMUs 12, 13, and 23 was scheduled to be submitted to the USEPA and KDHE in 2006. RC was anticipated in December 2006. Three additional years of LTM. |
| 14 | 118 140-141 | 200 Area refuse burn pits 200 Area closed/inactive landfill | KAAP-03 KAAP-03 | KAAP-03 | Active KSAAP plans to upgrade the existing cover to meet regulatory standards. MNA will be evaluated as part of the 5-year review but is currently projected to continue throughout the 30-year post-closure period. |
| 15 | 146 147 148 | Active landfill Asbestos shingle burial site Grenade body disposal area | KAAP-05 KAAP-07 KAAP-06 | KAAP-05 | Active KSAAP plans to upgrade the existing cover to meet regulatory standards. LTM is projected to continue throughout the 30-year post-closure period. |
| 16 | 142-145 | Closed/inactive landfill west of OD Grounds (2700 Area) | NA | KAAP-04 | Active KSAAP plans to upgrade the existing cover to meet regulatory standards. MNA will be evaluated as part of the 5-year review but is currently projected to continue throughout the 30-year post-closure period. |
| 17 | 96-97 | 2200 Area (Sewage Treatment Plant) Sludge drying beds | KAAP-15 | KAAP-15 | Response Complete |
| 18 | NA | Coal-pile runoff catchment device and associated ditches | KAAP-28 | KAAP-28 | Response Complete |
| 19 | 105-107 | Explosive waste incinerator | NA | KAAP-24 | Response Complete |

Table 5-2 – IRP Sites and Status at KSAAP (continued)

| USEPA SWMU Group | USEPA RFA SWMU | Area/Building | USAEHA SWMU | IRP AEDBR No. | IRP Status |
|------------------|---------------------|--|--------------------|---------------|--|
| 20 | 78-85 | Container storage units (hazardous waste) (19 units) | NA | KAAP-12 | Response Complete |
| 21 | 102 and 104 | Contaminated waste processor (explosives-contaminated waste) | KAAP-24 | KAAP-38 | Response Complete |
| 22 | 115-117 | Burning Cages Nos. 14, 17, and 22 | KAAP-09 | KAAP-09 | Active Anticipate groundwater monitoring for 5 years from removal of berms and cages that occurred in 2005. |
| 23 | 108-109 | Open Burning Pads Nos. 5 and 6 | KAAP-10 | KAAP-10 | Active Following 5 years of sampling, a 5-year review of the protectiveness of the corrective measure will be performed. Based on the results, the corrective measure could be changed to NFA, continued LTM, or some additional corrective measure. A removal action at Pad 5 is scheduled for FY07. |
| 24 | 25-44 128 129 | 700 Area sumps and ditches 700 Area oxidation pond (No. 28) 700 Area oxidation pond (No. 15) | KAAP-18 KAAP-31 | KAAP-18 | Active Thirty years of MNA are projected, although the actual length of time required will be evaluated based on MNA monitoring reports and 5-year reviews. |
| NA | NA | Pistol range Active/Inactive Range Inventory No. 00023 | NA | KAAP-40 | Response Complete |
| NA | NA | Water towers | KAAP-41 | KAAP-41 | Response Complete |
| NA | NA | 1200 Area Ammonium Nitrate Production Building | NA | KAAP-43 | Active Five years of LTM are expected after removal of contaminated soils is complete. |
| NA | AOC I | Former pesticide mixing and storage area at Lyons Pond (Pond 4) | NA | KAAP-11 | Response Complete |
| NA | 70 | Building 1406 PCB storage area | NA | KAAP-13 | Response Complete |
| NA | 119-120 | Building 58 hazardous waste accumulation areas (2) | NA | KAAP-23 | Response Complete |
| NA | NA | Mercury fulminate burial site west of OD Grounds | NA | KAAP-27 | Response Complete |
| NA | NA | Particulate emission control systems for coal-fired boilers, 200 and 1200 Areas | NA | KAAP-29 | Response Complete |
| NA | NA | Water Detention Basin | NA | KAAP-42 | Response Complete |

Source: URS, 2006. *Environmental Condition of Property Report, Kansas Army Ammunition Plant*. Final Report. November 15.

2. Soil Removal

Removal of the berms (and Burning Cages 14, 17, and 22) occurred at KAAP-09 in 2005, and contaminated soils are currently being removed at KAAP-43, site of the 1200 Area Ammonium Nitrate Production Building.

3. MNA of Groundwater

Thirty years of groundwater monitoring (MNA) are projected at both KAAP-18 (700 Area sumps and ditches, and oxidation ponds) and KAAP-19 (Buildings 804, 816, and 849 sumps, troughs, and ditches), although the actual length of time required will be evaluated based on MNA monitoring reports and 5-year reviews. In addition, MNA will be evaluated at KAAP-03 and KAAP-04 as part of the 5-year review but it is currently projected to continue throughout the 30-year post-closure period.

4. Long-Term Monitoring (LTM)

LTM is either anticipated or projected to continue at a number of sites across the installation, including KAAP-02, KAAP-05, KAAP-09, KAAP-10, KAAP-16, KAAP-17, KAAP-20, KAAP-21, KAAP-22, and KAAP-43.

Areas of investigation include production areas, landfills, open burning cages, open burning pads, an open detonation area, and miscellaneous maintenance and support areas. The primary contamination of concern in the production areas and open burning areas are explosives and metals. Explosives have been detected in the groundwater at some production areas. Contamination in the production areas was generally highest near the sumps and production facilities, and some contamination was detected at all landfill areas. The landfills addressed in the IRP are discussed in the following section.

F. Landfills

KSAAP holds a permit, which is renewed annually, that allows the operation of an unlined, industrial solid waste landfill (SWMU-146).³ This landfill was historically used for all types of sanitary waste including uncontaminated trash, boxes, office waste, construction and demolition (C&D) debris, fly ash from coal-fired boiler operations, asbestos, grenades, and non-hazardous thermal treatment residue from the 2700 Area (Day & Zimmerman, Inc., 2006a). However, in 2001, the waste stream was limited to C&D debris, excluding wood.

Currently, the Industrial Landfill Area (SWMU-146) is used for the disposal of non-hazardous construction debris including concrete, brick, and tile rubble. In the past, this landfill has also accepted fly ash from coal-fired boiler operations, asbestos, grenades, and non-hazardous (SWMUs 102 through 104) thermal treatment residue from the Contaminated Waste Processor (CWP) in the 2700 Area.

Five closed/inactive landfills have been identified at KSAAP that are currently being addressed under the IRP process. These include:

³ Solid Waste Management Unit (SWMU)

- **KAAP-01 Classification Area Construction Waste** – This site is an approximately 4-acre uncapped construction debris landfill site that was used to dispose of construction waste generated during construction of KSAAP in 1942. Further investigation has determined that this was not a landfill, but rather a surface disposal area.
- **KAAP-02 Closed Landfill Construction Waste** – This site was a closed landfill located in the south-central part of KSAAP that was in use between 1941 and 1945. The 0.4-acre site was circular in shape with a diameter of 150 feet. This landfill was remediated in 2005 and buried in the northwest corner of the current Industrial Landfill (SWMU-146) (USAEC, 2006).
- **KAAP-03 Closed Landfill with Refuse Burn Pits** – This site is located in the northwest portion of the facility and consists of the 200 Area Closed Landfill and Burn Pits. In operation from 1950 to 1969, this area was approximately 2.5 acres in size and reportedly contained 15 burn pits and eight landfill trenches. The location of the trenches and pits are no longer discernible. Trash and burned refuse were purportedly placed in the landfill trenches and covered with four (4) feet of earthen fill. The materials in the burn pits are believed to be inert. It is unknown whether hazardous constituents were disposed of in the landfill. Munitions and Explosives of Concern (MEC) may be present, but has not yet been confirmed (USAEC, 2006).
- **KAAP-04 Closed Landfill** – The landfill is approximately 50 acres in size and was operated between 1969 and 1981. The disposed waste included ashes from burning operations and non-saleable scrap metal.
- **KAAP-05 Inactive Landfill, Administrative and Construction** – The site occupies approximately 12 acres of a 40-acre parcel permitted for landfill use. This 12-acre site stopped receiving waste in 1982, but past waste disposal included inert grenade bodies, asbestos, fly ash from the CWP, maintenance operation waste, sludge from the anaerobic digester, and trash. Waste disposal is currently restricted to administrative and construction waste in the active portion of the landfill (USAEC, 2006).

The current status of each of the landfills is presented in Table 5-2.

G. Explosives

The Military Munitions Response Program (MMRP) is an element of the Defense Environmental Restoration Program (DERP) under which the Secretary of Defense carries out environmental restoration resulting from historical activities. DERP, through the IRP, had historically focused on cleaning up sites contaminated with hazardous components, including explosives, but generally has not addressed either UXO or Munitions Constituents (MC). However, because DERP is intended to address environmental problems remaining from past practices, the MMRP does not cover munitions responses for areas that operated after fiscal year 2002 (FY02).

Media contaminated with explosive residues are considered a “special waste” and may be deemed a hazardous waste under RCRA because of their ignitability, reactivity, or toxicity.

Safety and liability issues exist with the reuse of any structure contaminated with explosive material.⁴

1. Structures

Explosive residues may be present in production areas (buildings, ventilation systems, vacuum systems, sewer lines, and dispensing lines) but have not yet been characterized or quantified. Explosives residues may be present in specific production buildings such as screening/blending, melt/pour, cooling, pelleting, wash racks, and Load, Assemble and Pack (LAP); in ventilation, vacuum, and product distribution system piping; and in settling tank systems and sumps. In addition, industrial and sanitary sewer lines, sumps, and settling tanks remaining in the ground have the potential to be contaminated with explosives and/or have contaminated the surrounding soil. Although numerous production area buildings at KSAAP have been assigned specific explosives decontamination levels (1X, 3X, and 5X), assigned decontamination levels only apply to the equipment remaining in the buildings. Army Technical Bulletin 700-4, "Decontamination of Buildings and Equipment" (U.S. Army, 1978) defines these decontamination levels as:

- 1X indicates that the equipment or facilities have been partially decontaminated and require additional decontamination.
- 3X indicates the equipment or facilities have been examined and decontaminated by approved procedures and no contamination can be detected by appropriate instrumentation, test solutions, or by visual inspection on easily accessible surfaces or in concealed housings. Such equipment and facilities are considered safe for the intended use (all standby contaminated items that remain in place or in storage at an installation will be decontaminated to a minimum of 3X). (U.S. Army, 1978).
- 5X indicates the equipment or facilities have been completely decontaminated, are free of hazard, and may be released for general use or to the general public.
- Zero indicates the item, although located in a contaminated area, was never directly exposed to contamination.

KSAAP consists of numerous production lines that have undergone several periods of active and inactive status. These production lines are identified as "areas," several of which have been identified as areas of concern (AOCs) as discussed in detail in the subsections below. Two of the areas analyzed, the 200 Area and the 1400 Area, were determined to have no munitions or explosives issues. The 200 Area was identified as a maintenance area, while the 1400 Area was identified as inert storage warehouses. No information pertaining to munitions or explosives issues for these two areas was identified during the various research and interview activities.

The following information, which was primarily obtained from the *Final Historical Records Review (HRR), Kansas Army Ammunition Plant, Parsons, Kansas* (TechLaw,

⁴ Chapter 6 Explosives Hazard Review contains additional information on explosive contamination.

Inc., 2006), addresses potential explosives-contaminated Areas of Concern (AOCs) that are not MMRP-eligible.

- **300 Area – 155-Millimeter (mm) Projectile Assembly Line** - The 300 Area comprises approximately 33 acres of land with 20 buildings. Generally, the buildings within the 300 Area have a 3X explosives classification (i.e., buildings/equipment that retain a potential explosive hazard) and limited-to-significant explosive hazard classifications based on the historical activities at the site.
- **500 Area – Pellet, Booster, and Fuze Assembly Line** - The 500 Area encompasses approximately 33 acres with 14 buildings. In general, buildings within the 500 Area have a 1X explosives classification (i.e., highest level of explosive contamination) and limited-to-significant explosive hazard classifications based on the site's historical activities.
- **700 Area – Grenade, Detonator, and Expulsion Charge Load Lines** - The 700 Area includes approximately 67 acres with 40 buildings. Generally, buildings within the 700 Area have a 1X explosives classification (i.e., highest level of explosive contamination) and limited-to-significant explosive hazard classifications based on the historical activities at the site.
- **800 Area – Primer Explosive Manufacture Line** - The 800 Area totals approximately 30 acres with 20 buildings. Generally, buildings within the 800 Area have 3X explosives classifications and limited-to-significant explosive hazard classifications based on the site's historical activities.
- **900 Area – 81-mm Mortar and 105-mm Round Rework Lines** - The 900 Area encompasses approximately 105 acres with 35 buildings. Generally, buildings within the 900 Area have 3X explosives classifications and limited-to-significant explosive hazard classifications based on the historical activities at the site.
- **1000 Area – 105-mm Shell Assembly Line** - The 1000 Area totals approximately 103 acres with 32 buildings. Generally, buildings within the 1000 Area have a 1X classification (i.e., highest level of explosive contamination) and limited-to-significant explosive hazard classifications based on current and historical site activities.
- **1100 Area – Cluster Bomb Unit Production and Combined Effects Munitions** - The 1100 Area comprises approximately 124 acres with 38 buildings. In general, buildings within the 1100 Area have a 1X classification (i.e., highest level of explosive contamination) and a significant explosive hazard classification based on current and historical activities at the site. During the June 2006 ECP site visit, inactive equipment on the second and third floors of Building 1109 displayed painted 3X labels (URS, 2006).
- **1200 Area – Former Ammonium Nitrate Plant** - The 1200 Area totals approximately 48 acres with 17 buildings. In general, several buildings within the

1200 Area have a 3X classification and a limited explosive hazard classification based on historical activities at the site.

- **1500, 1600, 1700, and 1900 Areas – Bulk Explosive, Bulk Powder, Finished Ammunition, and Hazardous Waste Storage** - The 1500, 1600, 1700, and 1900 Areas encompass approximately 358, 130, 105, and 463 acres, respectively, within KSAAP. These areas are used for the storage of explosive compounds, bulk powder, and finished ammunition, while some are utilized for hazardous waste storage. These areas contain earthen-covered concrete igloos and are partially active (Aguirre Engineers, Inc., 1998). Generally, the structures within the 1500, 1600, 1700, and 1900 Areas have a 1X classification (i.e., highest level of explosive contamination) and a limited explosive hazard classification based on historical activities at the site.
- **1800 Area – Finished Ammunition and Hazardous Waste Storage** - The 1800 Area is located in the southeastern portion of KSAAP and comprises approximately 176 acres and 25 buildings. In general, structures within the 1800 Area have a 1X classification (i.e., highest level of explosive contamination) and a limited explosive hazard classification based on historical activities at the site.
- **3000 Area – Lead Azide Production Facility** - The 3000 Area totals approximately 53 acres with 12 buildings, including a Lead Azide Facility that was constructed in 1967-1968. As noted earlier, the facility was operated only once, when a trial batch of lead azide was produced to assure that it was operational, and has remained in lay-away status since that time (Aguirre Engineers, Inc., 1998). In general, structures within the 3000 Area have a 1X classification (i.e., highest level of explosive contamination) and a limited explosive hazard classification based on historical site activities.
- **Test Area 75** - Test Area 75 was believed to comprise an area totaling approximately 51 acres in the extreme east-central portion of KSAAP, on the west side of Road G and approximately 1,100 feet north of the 2000 Area. However, based on historical aerial photographs and maps as well as an area identified in the 1978 Installation Assessment, it has been determined that Test Area 75 totals only 1.10 acres located immediately north of the 2000 Area and just west of Road G (Aguirre Engineers, Inc., 1998) (KSAAP, 2006). Test Area 75 is currently inactive and no information has been found regarding its period of use or waste handling practices. Only a concrete barrier currently remains.

2. Ranges/AOCs for Explosives

A total of six ranges are listed on the Active/Inactive Range Inventory (Army Materiel Command [AMC], 2002), as follows:

- **The Combined Effects Munitions (CEM) Research, Design, Testing, and Evaluation (RDT&E) Range** is an operational range totaling approximately 74 acres. In addition to the CEM testing, sectioning of 60-mm, 81-mm, and 155-mm M795 trinitrotoluene (TNT) projectiles reportedly occurred at this site in order to

determine cast quality and base separation. It is not anticipated that MEC or MC would extend beyond the fenced area surrounding the testing facility. There are also indications that BLU97 CEM submunitions, MK118 Rockeye submunitions, M141 Shoulder-Launched Multipurpose Assault Weapon-Disposal (SMAW-D), BMD, M72 Light Antitank Weapons (LAW), and reactivity tests were performed.

- **The Sensor-Fused Weapons (SFW) RDT&E Range** is a 0.64-acre operational range. The range was also identified as a 200-foot test range where SFW warhead testing is conducted at a static metal-frame test fixture. This range is also referred to as the 2700 Area Test Range. The area surrounding the SFW RDT&E Range is swept once annually for UXO items, and controlled burns are conducted in the area to remove vegetation (KSAAP, 2006; DZI, 2006b).
- **The M42/46/77 Grenade Range** is a 38-acre operational range where submunitions penetration tests and spin-arming tests are conducted. Testing is conducted on a regular basis during the production of grenades.
- **The Heavy Demolition Range Open Burning Grounds** is a 36-acre operational range that was used in 1942 for the detonation of rejected and loaded explosive items.
- **The Pistol Range** is an operational range totaling 0.50 acres in size. Munitions, explosives of concern, and Munitions Constituents (MC) likely would not be found beyond the actual Pistol Range boundary because the area was used only as a practice range by security personnel for annual firearms qualification. Although the types of projectiles were not identified during this research, it is assumed that .22 caliber, .45 caliber, and 9-mm ammunition were used, based on the size of the range and its function. Several investigations have been performed at the Pistol Range that recommended the collection of subsurface soil samples to determine if lead was detected at concentrations greater than background levels. However, no documentation was found regarding the status or results of lead testing in subsurface soil.
- **The Light Maneuver Range** is a 74-acre site that was reportedly used as a small-arms range by the National Guard. However, based on available information, the area was utilized by National Guard troops to conduct exercises on water purification procedures, and no weapons or munitions were ever used at this location. Therefore, the area should not have been defined as an operational range and it is recommended that its status should be changed from an operational range area (URS, 2006).

KSAAP has one site, the Old Ammunition Storage Area, that is part of the MMRP. This site consists of 3.02 acres and was used as a storage area for munitions. Munitions were reportedly scattered throughout the area due to decomposition of the containers. The site is currently used for cattle grazing but the area has been fenced. Based on the Historic Records Review (HRR), it appears the size of the site may be increased to 26 acres. The site inspection is scheduled to be performed from 2005 to 2007, the Remedial Investigation/Feasibility Study (RI/FS) from 2008 through 2010, and the remedial action from 2010 to 2011 (USAEC, 2006).

H. Storage Tanks

There are currently no Underground Storage Tanks (USTs) at KSAAP. Thirty-one USTs were formerly located at the installation but have since been removed following the submission of Leak Assessment Reports. With the exception of UST 24, Leak Assessment documents were provided for all registered USTs at the July 2005 ECP Workshop. The search of the Kansas Department of Health and Environment (KDHE) database indicated all of the former USTs at KSAAP are classified as “closed.”

Forty aboveground storage tanks (ASTs) are present within the survey area, nine of which are empty and not currently in use. Permits for all of the ASTs have been issued by KDHE.

One oil/water separator (OWS) is present at KSAAP, located south of the 200 Area. This OWS separates oil and grease from the 200 Area wash rack and gas station, and discharges to grade from Outfall 002.

I. Polychlorinated Biphenyls (PCB)

Historically, electrical transformers located throughout KSAAP contained polychlorinated biphenyl (PCB) dielectric fluid. All transformers at KSAAP have been sampled and analyzed for PCBs. PCBs were detected in numerous transformers. Thirty-four transformers are currently on-plant and have PCB concentrations greater than 50 ppm.

In addition, some limited PCB wipe sampling was conducted as part of the 2004 RCRA Facility Assessment (RFA) of the 1200 Area (U.S. Army Corps of Engineers [USACE], 2004). Of the 48 samples collected, 16 samples tested positive for concentrations of PCBs (greater than 50 ppm). The Army will be responsible for ensuring the transformers are compliant upon property transfer, as required under the Toxic Substance Control Act (TSCA).

J. Asbestos-Containing Materials (ACM)

Based on visual observations and the date of construction of the majority the buildings, it is estimated that 98 percent of KSAAP buildings contain suspected ACM. Non-friable suspected ACM, including 9-inch by 9-inch vinyl floor tiles and transite roofing and siding, are common throughout KSAAP. An asbestos survey and asbestos abatement of friable materials were reportedly performed, although no summary report was available during preparation of the *1998 Environmental Baseline Survey (EBS)* or the *2006 Environmental Condition of Property (ECP) Records* reviews.

Friable ACM had been removed from the 200, 300, 500, 900, 1000, 1200, 3000 Areas as well as the 1414S Boiler House as of July 2005. Asbestos still must be abated from the 50's buildings and the 1100 line. Demolition or renovation of existing structures will likely require some asbestos abatement, and asbestos abatement programs would be the responsibility of a new property owner or owners.

K. Lead and Lead-Based Paint (LBP)

Based on interviews conducted during the 1998 EBS and the 2006 ECP, no LBP survey has been performed at KSAAP with the exception of the water towers. A Department of Defense (DoD) memorandum dated October 31, 1994, regarding asbestos, LBP, and radon policies at BRAC properties states that all facilities constructed prior to 1978 are assumed to contain LBP. If a building is to be demolished, the existing paint should be evaluated to determine whether the lead is leachable. If the results are less than 5 parts per million (ppm), the demolition debris may be disposed of as normal building debris. LBP abatement would be the responsibility of a new owner or owners.

L. Radon

As a requirement of the U.S. Army Radon Reduction Program, KSAAP conducted monitoring of the indoor air for radon in 72 KSAAP buildings during May-August 1990. All results were less than the USEPA action level of 4.0 picocuries per liter of air (pCi/L air).

M. Radioactive Materials

KSAAP holds a Nuclear Regulatory Commission (NRC) License (License #SUB-1283) for depleted uranium (DU) used in Building 1019's X-ray equipment.

Building 1019, the Quality Assurance and X-Ray Analysis Laboratory, operates one 4-million-electron-volt (MeV) Varian linear accelerator that contains 46 kilograms of DU. The Radiation Safety Officer (RSO) indicated KSAAP purchased a new linear accelerator that uses lead and tungsten for X-ray shielding, but not DU. The NRC-licensed DU in the 4-MeV accelerator will be transferred to Varian's NRC license for possession of DU shielding plates. This transfer had not yet occurred.

In addition to the 4-MeV linear accelerator, KSAAP also has two X-ray machines that do not pose any potential for environmental contamination by radioactive materials.

KSAAP does not have records of radiological commodities. However, interviews with the RSO and personnel from the electrical shop suggested that there are currently no radiological commodities present at KSAAP.

N. Other Identified Concerns

Several other environmental concerns have been identified, which are summarized below:

- **Ammonium Perchlorate:** Ammonium perchlorate was identified as having been used in one explosives compound (PAX 21 powder used in 60-mm rounds). As a result, the locations and use of ammonium perchlorate require further clarification along with a review of the groundwater sampling conducted to date. Under the National Pollutant Discharge Elimination System (NPDES) permit program, KSAAP routinely analyzes samples of treated wastewater from Building 1008 for perchlorates. No other sampling/analysis is performed unless it is specifically mandated (DZI, 2006b).

Perchlorate has not been sampled under the IRP program because there was no reason to believe that releases had previously occurred (KSAAP, 2006).

- **Final Disposition of World War I Chemical Weapons Round:** The U.S. Army Technical Center for Explosive Safety (USATCES) identified an Archive Search Report regarding the temporary storage of a World War I 75-mm chemical round at KSAAP. The round was apparently found in the local community in September 1958, and was subsequently stored at KSAAP in Magazine 1989. KSAAP was given permission to dispose of the round onsite, although the exact location of the disposal area is unknown (USACE, 1993). There are no documents concerning final disposition, and the KSAAP personnel interviewed had no knowledge of this incident. Additional research of this incident through archival sources may be necessary (USATCES, 2005).
- **Mercury in Facilities/Construction Components:** Several facilities/construction components are expected to contain small quantities of mercury (such as mercury vapor lights, mercury switches). Mercury-lubricated bearings were formerly used at the Wastewater Treatment Plant (Aguirre Engineers, Inc., 1998).
- **KSAAP Rail Lines:** The environmental condition of the rail lines located throughout KSAAP has not been assessed. The rail lines were installed during the initial construction of KSAAP and it is possible that the associated ballast contains de minimus (of minimum importance) quantities of oils and lubricants from railroad activities.

O. Implications for Reuse

The KSAAP site has been identified for possible transfer under BRAC. In accordance with this program, an Environmental Condition of Property Report (ECP) is prepared, the purpose of which is to characterize existing environmental conditions at KSAAP. The ECP assesses the components identified in the *DoD Base Redevelopment and Realignment Manual (BRRM)*, (4165.66-M, C.8.3 and AP2), dated March 1, 2006. Discrete geographical areas, referred to as parcels, are classified into one of seven standard ECP area types (categories). *The Environmental Condition of Property Report (ECP), Kansas Army Ammunition Plant* presents the findings (URS, 2006). The parcels that were categorized in the ECP were used to prepare a land use map showing the potential land use restrictions based on the status of the environmental investigation and remediation programs.

The implications for reuse or redevelopment based on the environmental concerns discussed in the previous sections are summarized in Map 5-1. As shown in the map, KSAAP has been divided into three basic categories, as follows:

- **Green** – The green areas represent parcels cleared for unrestricted land use.
- **Yellow** – The yellow areas represent parcels where the potential land use restrictions are unknown.

Map 5-1 – Summary of Land Use Restrictions

- **Red** – The red areas represent parcels where there are restrictions associated with land use. There are four subcategories, which include parcels where use is restricted to industrial land use (red with green stripes); parcels restricted to industrial land use and groundwater use is prohibited (red with yellow stripes); parcels restricted to industrial land use, groundwater use is prohibited, and maintenance of a landfill cap is required (red); and parcels with industrial land use restrictions, groundwater use restrictions, and there is a potential for UXO/explosive contamination (red with black stripes).

The areas with unrestricted land use (areas in green on Map 5-1) totals more than 10,300 acres and fall within the areas surrounding the production facility and the infrastructure. These areas consist primarily of land that has not been developed, although agricultural activities have occurred on some of the parcels.

The Army has remediated sites in the IRP to industrial cleanup standards and, therefore, many of the parcels will have land use restrictions that limit use to industrial activities without additional cleanup. In addition, in areas where groundwater was contaminated, there is a restriction on groundwater use. Groundwater has not been used in the area as a drinking water supply due to the high levels of total dissolved solids (TDS), which are naturally occurring. Any monitoring wells installed as part of the remediation efforts will need to be accessed in the future by the Army in order to satisfy sampling and reporting requirements. Easements and/or right-of-entry agreements will need to be prepared to allow for this activity.

The areas designated in yellow are areas where the potential land use restrictions are unknown. Most of these areas are where explosives were stored or handled. The evaluations for determining the extent of the potential issues associated with these areas have not been assessed.

P. List of Acronyms Used in this Chapter

AOC – Areas of Concern

AST – Aboveground Storage Tanks

ACM – Asbestos Containing Materials

BRAC – Base Realignment and Closure

BRRM – Base Redevelopment and Realignment Manual

CEM – Combined Effects Munitions

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act

CWP – Contaminated Waste Processor

DERP – Defense Environmental Restoration Program

DoD Department of Defense

DU – Depleted Uranium

ECP – Environmental Condition of Property Report

HHR – Historic Records Review

IRP – Installation Restoration Program

KAAP – Kansas Army Ammunition Plant (Used to identify IRP sites)

KSAAP – Kansas Army Ammunition Plant

KDHE – Kansas Department of Health and Environment
LAP – Load, Assemble and Pack
LBP – Lead Based Paint
LTM – Long-Term Monitoring of Groundwater
LQG – Large Quantity Generators (related to hazardous waste)
MC – Munitions Constitutes
MEC – Munitions and Explosives of Concern
MM - Millimeter
MMRP – Military Munitions Response Program
MNA – Monitored Natural Attenuation of Groundwater
NPDES – National Pollutant Discharge Elimination System
NPL – National Priorities List
NRC – Nuclear Regulatory Commission
PCB – Polychlorinated Biphenyl
RCRA – Resource Conservation and Recovery Act
TDS – Total Dissolved Solids
RDT&E – Research Design Testing and Evaluations
SWMU – Solid Waste Management Units
TSCA – Toxic Substance Control Act
USATCES – U.S. Army Technical Center for Explosive Safety
USEPA – United States Environmental Protection Agency
UST – Underground Storage Tanks
UXO – Unexploded Ordnance

6. EXPLOSIVES HAZARD REVIEW

A. Introduction

A visit to the Kansas Army Ammunition Plant (KSAAP) was conducted on April 11, 2007 by the Munitions Response Services Division of CH2M Hill to examine sites potentially affected by munitions and explosives of concern (MEC). In preparation for this visit, previous reports were reviewed to identify potential sites and types of explosives safety issues. Due to time constraints, only a limited number of the sites with potential explosives contamination were visited. The following sections address each area that was visited or identified and provides a summary of the activities conducted, potential hazards, and possible effects on development. It should be noted that all areas potentially affected by MECs will be evaluated during research being conducted as part of the environmental services cooperative agreement (ESCA) as discussed in Chapter 9.

B. Summary of Major Findings and Conclusions

- The KSAAP site has been properly managed and has minimal explosives contamination to interfere with future redevelopment.
- The Installation Restoration Program (IRP) at KSAAP is a mature program that has made significant progress in identifying, remediating, and closing solid waste management units (SWMU).
- It is likely that explosives operating buildings associated with load and pack operations could be decontaminated and/or removed without burning. Additional analysis is needed to develop the best method of certifying load and pack explosives operating buildings as safe for reuse. Buildings within the load and pack areas, which included detonator production, present additional hazards beyond those for load and pack buildings that would likely require decontamination by burning.
- Melt and pour explosives operating buildings will require detailed analysis to determine if explosives contamination can be removed without destroying the buildings by burning. The melt towers are three-story operations with screened flakes pellets, or dust going to the top floor where it is dumped into tubes leading to the kettles. The kettles are on the middle floors with a magazine where additional bulk material can be added. The bottom floor houses the injectors and multiplex units where the molten explosive is loaded in the warhead or projectile body. Major problems in the melt pour buildings are the piping systems for flaked propellant going to the kettles, the rotoclones pulling vapors off the kettles and the vacuum systems supporting drilling (fuze cavity) operations.
- The open detonation area located within the 2700 Area is likely to require extensive remediation if closed. Existing plans are to close the area with the possibility of opening a properly lined and constructed test area.

- Explosives residues may be present in production areas (buildings, ventilation systems, vacuum systems, sewer lines and dispensing lines) but have not yet been characterized or quantified.

C. Areas Known or Suspected of Having Explosives Hazards (Map 6-1)

75 Area – Test Area

This area was used to perform quality control inspection of cast explosives in projectiles. The procedure employed was to use a remotely operated band saw, operating under a stream of water to cool the cutting process and reduce the likelihood of an unintended explosion. Personnel were protected by a concrete barricade that still remains in place. Once the projectile was cut in half, a visual inspection was done to determine if any voids existed in the cast explosives. There were two areas where projectiles were sectioned: Area 75 in the 1940's and 1950's, and today in Building 2005. Building 2005 is currently used to section the M795 and PAX 21 located 60mm projectile. Voids in cast explosives allow the formation of crystals that are very sensitive and subject to unintended detonation when subjected to the force of being fired from a weapon.

Explosives residues from a cutting operation typical of what was used at the 75 Area are normally collected in the water stream and captured in a splash pan that is emptied at the end of each cutting event and removed for disposal by open detonation. Residual contamination beyond the machinery, in the floors and walls, is unlikely. The machinery used to cut projectiles, if properly maintained, should not have any explosives contamination. However, disposal of the machinery requires thermal flashing to meet 5X requirements for release to the public for recycling. (See Table 6-1 for an explanation of building and equipment explosive hazard classification system.) Only an experienced and qualified contractor using highly trained and experienced personnel should inspect, decontaminate/demilitarize, certify, and verify equipment and facilities involved in explosives operations as being suitable for reuse.

Table 6-1 - Explosive Hazard Classification for Buildings and Equipment

| Department of the Army Technical Bulletin (TB) 700-4 |
|--|
| <p>0x Classification – Indicates the item, although located in a contaminated area, was never directly exposed to contamination.</p> |
| <p>1x Classification – Indicates the facilities or equipment have been partially decontaminated. Further decontamination processes are required before facilities or equipment are moved or any maintenance, repair, etc. is performed. This degree would generally be applied to facilities or equipment that have been subjected to routine decontamination performed by an operator on a piece of equipment, room, bay, or buildings at the close of the work day.</p> |
| <p>3x Classification – Indicates the equipment or facilities have been examined and decontaminated by approved procedures and no contamination can be detected by appropriate instrumentation, test solutions, or by visual inspection on easily accessible surfaces or in concealed housings, etc. and are considered safe for the intended use. Items decontaminated to this degree can not be furnished to qualified DoD or Industry users or be subjected directly to open flame (cutting, welding, high temperature heating devices), or operations that generate extreme heat, such as drilling and machining unless the following conditions are met: a) It is determined that decontamination to 5x level will destroy the usefulness of the items, and, b) Decontamination to a degree less than 5x in combination with administrative and technical safeguards will eliminate risk of injury. As a minimum, an approved SOP (setting forth the specific operational limitations, precautions to be observed, and monitoring necessary to assure safety) will be available and decontamination will be performed under the direction of the Certifying Official.</p> |
| <p>5x Classification – Indicates the equipment or facilities have been completely decontaminated, are free of hazards and may be released for general use or to the general public.</p> |

Past explosives operations in the 75 Area are unlikely to affect redevelopment of the property.

300 Area – 155mm Projectile Assembly Line

The 300 Area was used as a load and pack (LAP) facility for the M864 155mm projectile Improved Conventional Munitions (ICM) up to 2004. It also had been configured for the M483 and M795 155mm projectile. These munitions are loaded with submunitions that when fired in combat are dispersed over a wide area inflicting casualties and destroying lightly armored vehicles. The process of loading a projectile with submunitions and packing it in a shipping configuration does not create explosives residues that contaminate machinery used in the process or find its way into drains, cracks in the walls ceiling or floor. Generally, the buildings within the 300 Area have a 3X explosives contamination classification. Given the nature of recent explosives operations, the 3X classification is likely a conservative assignment (See Table 6-1.) Decontamination and reuse of the building or recycling of the construction materials used to build the facility can be accomplished with proper planning and inspection. The exception would be press loading of explosives in the M42/M46 grenades. This operation also has the potential to create explosives dust.

Past operations in the 300 Area are unlikely to affect redevelopment of the property.

2000 Area – Grenade Test Facility

The area was used to conduct quality control testing for M42 and M46 grenades. These grenades are submunitions that are loaded into the M864 155mm projectile. Testing consisted of simulating flight after ejection from the 155mm projectile for the grenades to evaluate arming and functioning of the fuzes. To perform quality testing of the grenades for penetration, the grenades were placed on a metal witness plate, usually six at a time, and initiated remotely. This type of controlled testing does not normally create any residual explosives hazards.

Past explosives operations in the 200 Area - Grenade Test Facility are unlikely to affect redevelopment of the property.

2700 Area – Burning and Detonation Grounds and Contaminated Waste Processor and Explosives Waste Incinerator

Open Burning Pads 1, 2, 3, and 4 (SWMU Group 11) are located in the 2700 Area and consist of open burning pads used for remote ignition of explosives wastes. The wastes were burned directly on the ground and air emissions were discharged to the atmosphere in an uncontrolled manner. A removal action for metals and explosives contaminated soils was completed in 2003, and the groundwater will be monitored for the next five years as part of long-term management by the Department of the Army.

No explosives safety hazards are expected in this area and the possibility of past explosives operations are unlikely to affect redevelopment of the property.

Open Detonation Grounds (SWMU Group 17) is a RCRA regulated unit of approximately 25 acres that is routinely used to detonate off-specification explosive items that have failed to

pass quality testing. These items are typically placed on the ground, usually in a pit created by previous explosions and are counter-charged with high explosives and initiated remotely. Recent practices have included the use of soil to tamp the explosive items to reduce the effects of a detonation, i.e., the soil tamp reduces maximum fragmentation distance, reduces noise, and increases the effectiveness of the detonation process for disposal of specification munitions. This type of explosives operation, on occasion, is known to produce ejected or buried munitions that have not detonated. Because these munitions have been subjected to dynamic forces from the detonation event, these are considered as unexploded ordnance (UXO) and are considered very hazardous. UXOs are military munitions that (A) have been primed, fuzed, armed, or otherwise prepared for action; (B) have been fired dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (C) remain unexploded whether by malfunction, design, or any other cause.

Past burning and detonation activities are assumed to have created a danger area that is based on the hazardous fragmentation distance for the maximum net explosive weight (NEW) allowed for any single explosive event. Documents reviewed prior to the site visit did not identify the maximum NEW allowed per explosive event. Based on the types of munitions manufactured at this ammunition plant, it is estimated that this open detonation site experienced explosive events of at least 50 pounds NEW. This would create a hazard fragment zone of at least 601 feet from the detonation center. Therefore, it is likely that the hazard area is larger than 25 acres, and would require extensive investigation to determine the level and extent of UXO contamination. Previous use of the 2700 burning and detonation grounds is likely to limit redevelopment of the property. Typical land use for an open detonation site after regulatory closure is wildlife preserve or cattle grazing. Extensive efforts to remove and isolate the hazards could upgrade the land use to industrial, but only at significant expense.

Past and present operations in the Open Detonation Area will make it difficult for remediation efforts to restore the land for redevelopment beyond a wildlife preserve or for cattle grazing.

The Explosives Waste Incinerator (EWI) (SWMU Group 20) is located in the 2700 Area and consists of the EWI, associated cyclone separator and baghouse. The EWI was actively used to dispose of off-specification explosives and unusable munitions components from the manufacturing processes. The EWI has not been in use for nearly ten years. A closure plan is currently being developed for this facility that was permitted under the Resource Conservation and Recovery Act (RCRA).

Once decontaminated and removed, the property could be redeveloped.

The Contaminated Waste Processor (CWP) (SWMU Group 22) is located in the 2700 Area and consists of a CWP, associated cyclone separator and baghouse. The CWP was used to burn non-hazardous waste. The CWP has not been in use for over a year. Potential upgrade of the CWP for use as a contaminated waste processor for both medical and energetic waste could be accomplished but would require updating the Air and Solid Waste permits.

Once decontaminated and removed, the property could be redeveloped.

The Burning Cages (SWMU Group 23), which no longer exist, were located in the 2700 Area and consisted of large metal cages surrounded by earth berms on three sides with the fourth side being open to allow access. These cages were used for open burning of trash and process waste generated at the plant that had been potentially contaminated by explosives. Historical records reviewed do not provide much detail, but it is assumed that the burning events did not include bulk explosives or fragmentation producing munitions. It is unlikely that there are any explosives hazards remaining at this site. A removal action for contaminated soils was completed in 2005.

Past operations of the Burning Cages Area are unlikely to affect redevelopment of the property.

Open Burning Pads 5 and 6 (SWMU 24) are located in the 2700 Area and consist of an open burning pad used for remote ignition of explosives wastes and a flashing pad used for explosives decontamination of equipment and items too large to be processed in the CWP. The burning pad operations are conducted in elevated metal pans surrounded on three sides by earth berms. The flashing pad operations are conducted on native soil surrounded by berms on three sides.

No explosives safety hazards are expected in this area and past explosives operations are unlikely to affect redevelopment of the property.

D. Active/Inactive Range Inventory

A total of six ranges are listed on the Active/Inactive Range Inventory, and one former munitions storage area, as potentially having residual explosives hazards. The following briefly discusses these sites.

Combined Effect Munitions (CEM) Research, Design, Testing, and Evaluation (RDT&E) Range

This is an operational range consisting of approximately 74 acres. In addition to CEM testing, this area also conducts quality control inspections of cast explosives in projectiles. The quality control operations are discussed in detail in Section C, 75 Area - Test Area above. Closure of this range and redevelopment of the property would require a munitions response investigation to ensure that no dud hazard munitions remain on the site.

Sensor-Fuzed Weapons (SFW) RDT&E Range

This is an operational range that consists of .64 acres. Testing is conducted from a static metal frame structure. Closure of this range and redevelopment of the property would require a munitions response investigation to ensure that no dud hazard munitions remain on the site.

M42/46/77 Grenade Range

This is an operational range that consists of 38 acres. This site is discussed in detail in Section C above.

Heavy Demolition Range for Open Burning Grounds

This site is discussed in detail in Section C above.

Pistol Range

This site is used for small arms training for existing security staff. No explosives or dud hazard munitions were used on the site. Pistol ranges do not normally have any explosives hazards. The primary hazard associated with a pistol range is lead bullet in the soil backstop/berm.

No explosives safety hazards are expected in this area, and past explosives operations are unlikely to affect redevelopment of the property.

Light Maneuver Area

This site consists of 74 acres and was used by the National Guard as a bivouac area, and to conduct water purification exercises. No explosives or bivouac munitions of any kind were used on the site.

No explosive safety hazards are expected in this area, and past explosive operations are unlikely to affect redevelopment of the property.

Old Ammunition Storage Area

This site consists of 27 acres and was used as a temporary storage area for munitions. It is unlikely that any explosives hazards remain at this site. There is a site inspection scheduled by the U.S. Army Corps of Engineers (USACE) in the near future that should result in a finding of No Further DoD Action Indicated.

Past operations on this site are unlikely to affect redevelopment of the property from an explosives safety perspective.

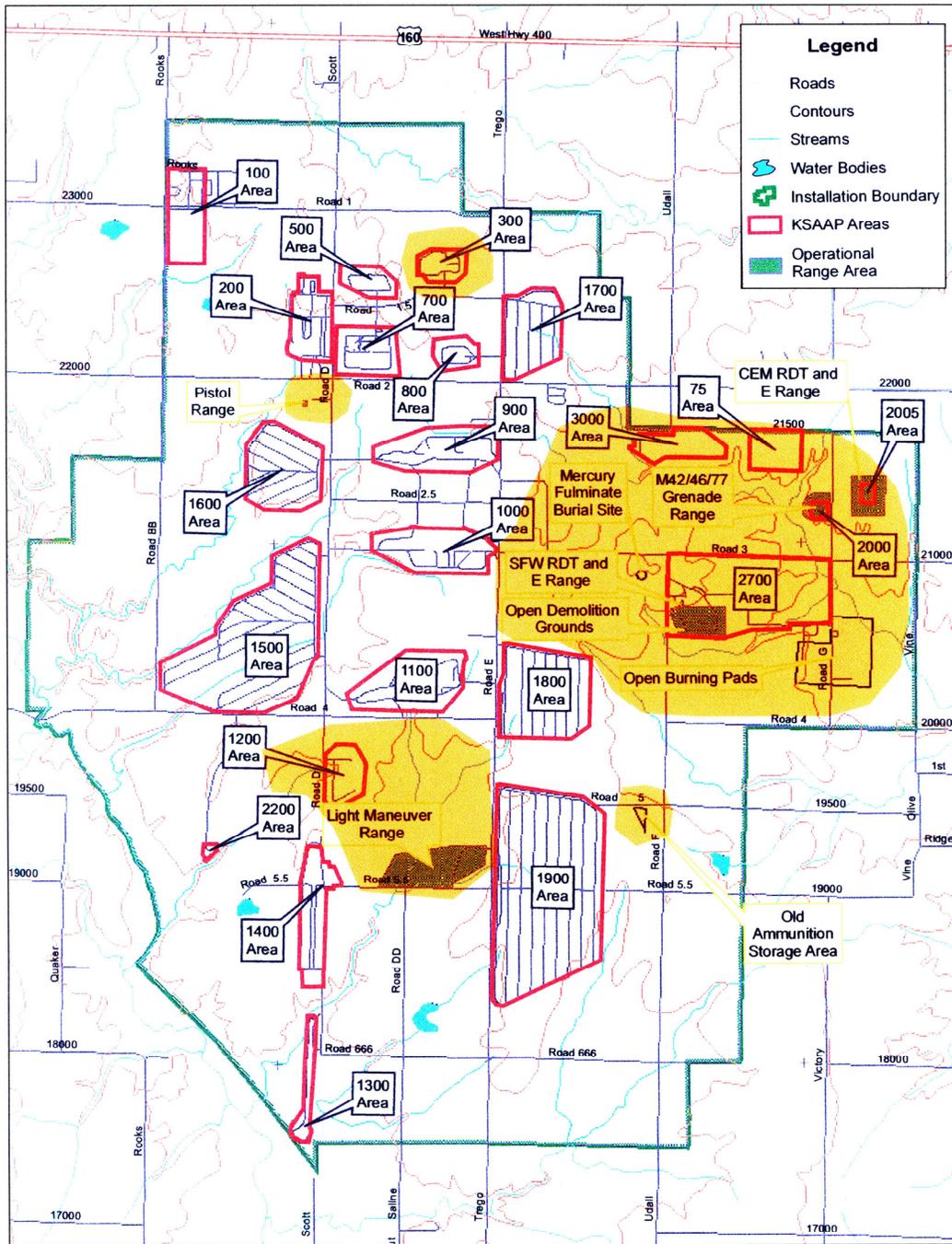
E. Other Areas Often Associated with Explosives Contamination

Other areas that are often associated with explosives contamination, such as melt and pour buildings, load and pack buildings, and landfills were not visited.

Landfills always have the potential to contain munitions and explosives of concern (MEC) if not properly monitored. None of the landfills were visited.

Melt and Pour buildings are used to heat explosives to a melting temperature, which allows the explosives to be poured into a munition such as a projectile body or bomb body. This process is sometimes known to create explosives dust particles that find their way into floor drains, cracks in the walls, floor, and ceiling, and into the manufacturing machinery that creates an explosive hazard making it dangerous to disassemble a melt and pour facility. The most common way of remediating an explosives melt and pour building is by burning the structure.

Map 6-1 – Known or Suspected Areas of Explosive Hazards



 Explosive Hazards and Range Locations

Load and pack buildings are used to assemble pre-loaded munitions components into fully loaded munitions. This process normally does not produce explosives dust particles, which makes remediation and reuse possible. Exceptions would be where extensive cavity drilling and vacuuming were conducted. These areas would require additional analysis to determine reuse options.

F. Summary

Kansas Army Ammunition Plant has been properly managed and has minimal explosives contamination to interfere with future redevelopment. The Installation Restoration Program (IRP) at KSAAP is a mature program that has made significant progress in identifying, remediating, and closing solid waste management units (SWMU). Explosives hazards are limited to a few buildings and ranges that dispose of munitions by detonation.

7. COUNTY AND REGIONAL SOCIO-ECONOMIC CONDITIONS

A. Introduction

The redevelopment of the Kansas Army Ammunition Plant (KSAAP) will be influenced by the environment within which it is redeveloped. Specifically, the demographic and socio-economic conditions of Labette County and the larger region will have an effect on how the Local Redevelopment Planning Authority (LRPA) approaches redevelopment, as well as what specific redevelopment opportunities are realistic and viable for the property.

This chapter provides an overview and understanding of demographic trends within Labette County. In addition, data for surrounding counties, including Cherokee, Crawford, Montgomery, Neosho and Wilson, is also presented. The residents of this region will have a significant impact on how the property is redeveloped, since they will serve as the primary source of labor for the project. In addition, regional income levels will affect how some potential users view the property from a site desirability perspective.

B. Major Findings and Conclusions

Population

The population of Labette County has been steadily declining over the last 65 years. In 1940, the region had a population of more than 30,000, according to the U.S. Census Bureau. At the time of the 2000 Census, the county had a reported population of fewer than 23,000. This equates to an average annual population loss of almost 125 residents.

The surrounding five counties similarly experienced a steady decline in population since 1940, though the region has seen some sporadic upticks in population, notably in 1980 and 2000. In 1940, the region had a population of 163,370, but by the time of the 2000 Census, the region's population had fallen to 124,428. This equates to an average annual regional population decline of more than 650 residents.

In contrast, the state has seen steady growth in its population since 1940, gaining almost one million residents between the 1940 census and the 2006 population estimate. This represents a growth in statewide population of more than 50% since 1940.

Housing Units

Despite the substantial population losses discussed above for Labette and the surrounding counties, the number of housing units has actually increased since 1940. At the time of the 2000 Census, Labette County had 10,306 housing units, an increase of more than 1,000 units over the 60-year period.

The surrounding counties experienced similar growth in the number of housing units, despite population declines. The surrounding counties experienced a net increase of almost

6,000 housing units between 1940 and 2006, according to estimates by Claritas, a private demographic and market research firm.

The State of Kansas experienced much more rapid growth in the number of housing units between 1940 and 2006. In 1940, the state had fewer than 550,000 housing units. By 2000, the state had more than 1.1 million housing units, an increase of more than 116% since 1940, for an average of 9,462 net new housing units annually.

Households

The U.S. Census Bureau defines households as occupied housing units. At the time of the 2000 Census, Labette County had 9,194 households. This represented a decline of more than 180 units from the 1990 census, when the county had 9,377 households. The surrounding region experienced a slight increase in the number of households during the 1990s. At the time of the 2000 Census, the surrounding region had 50,224 households, a slight increase over the 1990 census of 49,614. The State of Kansas has experienced steady growth in the number of households. In 1990, the census indicated that there were 944,726 households in Kansas. By 2000, the state had more than one million households, an increase of 10% during the 1990s.

All three regions experienced a reduction in the number of vacant housing units between 1990 and 2000. The state and the counties surrounding Labette County experienced reductions in the number of vacant units of just over 6%. Labette County outperformed both the state and surrounding counties, reducing the number of vacant units by more than 12%.

The number of vacation/recreation homes in the state increased by 70% during the 1990s. However, growth at the state level was outpaced during the 1990s by Labette County and the surrounding counties. The surrounding counties experienced a 97% increase in the number of housing units identified as vacation or recreation homes during the 1990s, increasing from 554 to 1,091. Labette County's stock of vacation and recreation homes grew at an even faster rate, increasing by 122% during the 1990s, from 55 to 112.

Population in Group Quarters

The group quarters population grew by almost 10% in Labette County during the 1990s, from 782 to 857 in 2000. The group quarters population in the surrounding counties grew at an even faster rate than Labette County in the 1990s. The census indicates that the surrounding counties had 3,258 residents living in group quarters in 1990. This figure increased by more than 500 during the 1990s, to 3,765 at the time of the 2000 Census. At the state level, group quarters population declined slightly during the 1990s.

Income

In terms of median household income, Labette County and the surrounding counties are well below the state median. The median household income in Labette County was \$30,656 at the time of the 2000 Census. This was slightly below the median of \$30,779 for the surrounding counties. The median for Labette County and the surrounding counties was more than 25% less than the state median household income, which was more than \$41,000.

Locational Attributes

In general, the site selection process involves a variety of issues, and compares various locations against each other in order to rank and prioritize alternatives. In evaluating potential locations, four key variables are typically examined: transportation access, workforce, utilities and regulatory issues.

Transportation Access

Transportation is considered a critical component in any site selection process. The KSAAP site has good access to the regional rail system, via the Union Pacific line, which runs north and south in proximity to the Plant. The key issue is whether the KSAAP site is considered too close to the larger rail yards in Kansas City to make a satellite location in Labette County a worthwhile undertaking.

In terms of highway access, KSAAP is located in close proximity to U.S. 400, which runs east to west, and U.S. Routes 59 and 69, which run north to south. These highways are not Interstate-quality roadways, and therefore some heavy distribution users will not find them as attractive from a locational perspective. However, regional carriers, such as Old Dominion Trucking in Parsons, may find the central location of Labette County within the larger southeast Kansas region to be appealing.

Workforce

As part of the BRAC Evaluation Studies, funded by the Kansas Department of Commerce and a National Emergency Grant from the U.S. Department of Labor, an evaluation of the Southeast Kansas Labor Basin was prepared in June of 2006. Among the key findings of that study are:

- The population of the Southeast Kansas Labor Basin is estimated to be 201,687. About 22% of the population (or 44,781 individuals) is considered part of the Available Labor Pool (ALP). Of the ALP, an estimated 2,404 (5.4%) non-working and 9,768 (21.8%) working individuals are *looking* for new employment, while 2,104 (4.7%) non-working and 30,505 (68.1%) working individuals would *consider* new and/or different employment for the right opportunities.
- A majority of ALP members report having “strong work skills” when it comes to working in groups and interpersonal relations (93.4%), management and supervision (76.7%), writing (72.5%), math (70%), computers (53.3%), and public speaking (51.9%) .
- Slightly more than 85% (38,143 individuals) of the ALP indicate that they are “willing to work outside of their primary field of employment for a new or different employment opportunity.” About 35% of the members (15,855 individuals) of the ALP will commute up to 45 minutes, one way, for an employment opportunity. Almost 80% (35,451 individuals) will commute up to 30 minutes for employment.
- The most important desired benefits are good retirement benefits, good salary or hourly wage, good health benefits, on-the-job or paid training, and good vacation benefits.

Utilities

The availability, reliability and sufficiency of utility systems, including water, sewer, electricity, telecommunications and natural gas are critical factors in evaluating potential business locations. The KSAAP site does have existing utility systems in place; though, as described in prior chapters of this report, there may be a need for upgrading, based on the preliminary conditions assessment. Although KSAAP staff report that the on-site systems are generally reliable, the ability of individual systems to meet the needs of a specific user will have to be evaluated on a case-by-case basis.

From a price perspective, the State of Kansas' electric costs are below the average for competitive locations in the region. In addition, the State of Kansas enjoys a significant price advantage in terms of natural gas costs.

Regulatory Issues

In terms of regulatory issues, Labette County appears to have a very business-friendly environment. The county's economic development efforts, which are directed by the City of Parsons, have had an impressive record of success despite its small size and modest budget. Potential uses for redevelopment of the KSAAP site could focus on other uses that are difficult to locate – other “noxious uses.”

The site could also benefit from its rural location in terms of environmental issues. The location can support tremendous increases in traffic, water uses and sewer uses without significant increases in infrastructure or environmental permitting. In addition, the property has a number of existing air permits that could be used to support new industrial activities on the site, including re-activation of the contaminated waste processor.

Potential for Similar Uses

Given the extensive history of KSAAP as a munitions manufacturing location, consideration should be given to the continued use of the property as a center for the manufacture of munitions, ammunition and/or other commercial explosives. The existing facilities on the KSAAP site have been designed and constructed to support this type of operation

According to data from the 2002 Economic Census, the ammunition manufacturing sector (NAICS 332993) includes 54 establishments, employing more than 7,100 people. Overall, this sector had wages in excess of \$305 million in 2002, which equates to an average wage of just under \$43,000 (2002). Total shipments for 2002 were reported to be \$1.13 billion, or an average of \$20.9 million per establishment. Value added from the production of munitions by these companies was more than \$800 million, or almost \$210,000 per production employee.

Although the existing facilities at KSAAP could be suitable for similar uses to the existing munitions manufacturing operation currently operating on the site, it is important to recognize that the 2005 Base Realignment and Closure (BRAC) round includes a number of facilities that could be considered as “competitors” for munitions and/or explosives manufacturing uses, including several other Army ammunition plants, depots and arsenal properties.

Alternative Development Strategies

The vast size of the KSAAP property makes it likely that the redevelopment plan will be able to support a variety of land uses. Given the history of the property, many of the uses that could be supported on-site are considered “difficult-to-site.” The remote nature of the property, combined with existing buffers from surrounding uses, make the KSAAP property attractive for uses that are difficult-to-site. Among the opportunities under consideration in the development of alternatives for the site are:

- Agricultural Uses
- Recreation/Conservation Uses
- Energy Generation
- Refinery
- Biofuels Production
- Incineration
- Landfill
- Prison

Impacts of Closure

The operating contractor for KSAAP provided limited information regarding payroll and place of residence for its 354 employees on-site as part of the workforce evaluation studies completed in 2006. The contractor indicates that these employees had aggregate wages of \$13.15 million in 2005, or an average of \$37,153 annually. In addition to direct salary, the contractor indicated that medical insurance costs equate to just over 23% of salaries and wages, bringing the total compensation to an average of almost \$46,000 per employee.

The largest number of employees at KSAAP reside in the City of Parsons. Parsons residents make up more than 43% of KSAAP employees. The next highest concentration of employees reside in Oswego, which is home to less than 10% of the KSAAP workforce.

In addition to direct employment at the site, the contractor also purchases a variety of goods and services within Labette County and the larger region. According to data provided by the contractor, the company purchased approximately \$2.625 million in goods and services from within a 60-mile radius of KSAAP in 2005. These purchases were split almost equally between Labette County and areas outside of the county.

C. Socio-Economic Trends

The redevelopment of KSAAP will be influenced by existing conditions in the region. Specifically, the existing population base, labor force, housing costs and income levels will all be factors in how the property is viewed in terms of its redevelopment potential. This section provides an overview of socio-economic trends in Labette County and the surrounding region, which includes Cherokee, Crawford, Montgomery, Neosho and Wilson Counties.

1. Population

The population of Labette County has been steadily declining over the last 65 years. In 1940, the region had a population of more than 30,000, according to the U.S. Census Bureau. However, the county’s population declined by more than 10% (3,550) over the

ensuing 20-year period. At the time of the 2000 Census, the county had a reported population of just fewer than 23,000. Claritas, a private demographic and market research firm, estimates that the 2006 population of Labette County was 22,167. This represents a loss of almost 8,200 residents, or 27%, over the 66 years between 1940 and 2006, which equates to an average annual population loss of almost 125 residents.

The surrounding five counties similarly experienced a steady decline in population since 1940 (See Table 7-1). However, the region has seen some sporadic upticks in population, notably in 1980 and 2000. In 1940, the region had a population of 163,370, according to the U.S. Census Bureau. However, the county's population declined by more than 34,000 (20%) by 1970. At the time of the 2000 Census, the region's population had fallen to 124,428, though this was an increase over the 1990 population of 123,000. Claritas estimates that the 2006 population of the five counties surrounding Labette County was 120,748. This represents a loss of almost 43,000 residents, or 26%, over the 66 years between 1940 and 2006. This equates to an average annual population loss of more than 650 residents.

Table 7-1 - Long Term Population Trends

| | Labette County | Surrounding Counties | 6-County Region | State |
|---------------------------|---------------------------|---------------------------------|----------------------------|--------------|
| 1940 | 30,352 | 163,670 | 194,022 | 1,801,028 |
| 1950 | 29,285 | 147,025 | 176,310 | 1,905,299 |
| 1960 | 26,805 | 136,850 | 163,655 | 2,178,611 |
| 1970 | 25,775 | 129,477 | 155,252 | 2,249,071 |
| 1980 | 25,682 | 133,596 | 159,278 | 2,364,236 |
| 1990 | 23,693 | 123,085 | 146,778 | 2,477,574 |
| 2000 | 22,835 | 124,428 | 147,263 | 2,688,418 |
| Est. 2006 | 22,167 | 120,748 | 142,915 | 2,752,576 |
| Change 1940 - 2006 | (8,185) | (42,922) | (51,107) | 951,548 |
| % Change | -27.0% | -26.2% | -26.3% | 52.8% |

Source: U.S. Census and Claritas

In contrast, the State of Kansas has seen steady growth in its population since 1940, gaining almost one million residents between the 1940 census and the 2006 estimate. In 1940, the state had a reported population of 1.8 million. By the time of the 2000 Census, the population was almost 2.7 million, and Claritas estimates the 2006 population was 2,752,576. This represents growth of the statewide population of more than 50% since 1940.

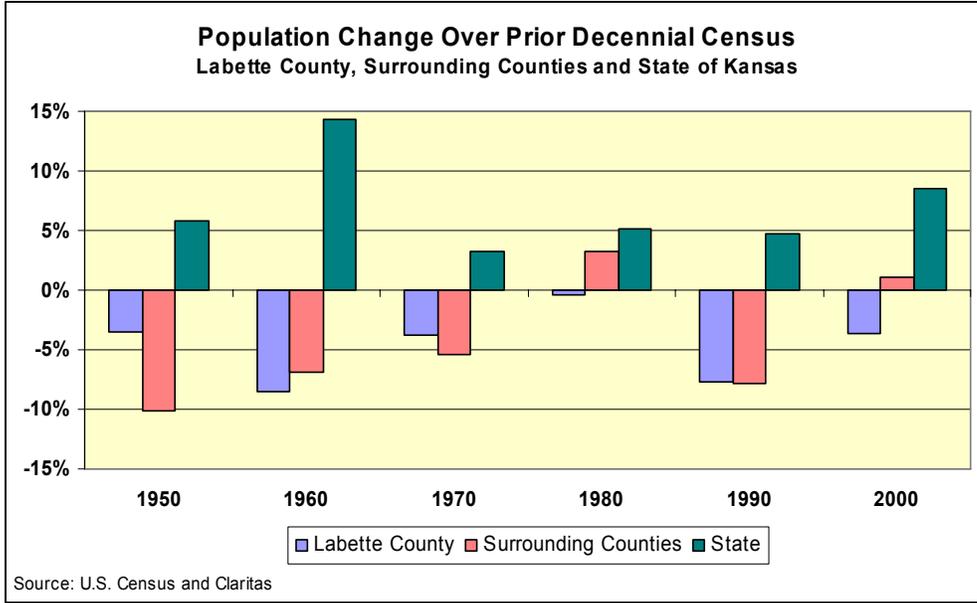


Figure 7-1 – Population Change Over Prior Decennial Census

2. Housing Units

Despite the substantial population losses discussed above for Labette County and the surrounding counties, the number of housing units has actually increased since 1940. In 1940, Labette County had 9,255 housing units. At the time of the 2000 Census, the county had 10,306 housing units, an increase of more than 1,000 units over the 60-year period. Claritas estimates that the county had 10,267 housing units in 2006, a net increase of 1,102 units in 66 years. This is an increase of almost 11% since 1940, or approximately 15 net new housing units per year across the county.

The surrounding counties experienced similar growth in the number of housing units, despite population declines. As shown in Table 7-2, the surrounding counties experienced a net increase of almost 6,000 housing units between 1940 and 2006, according to Claritas’ estimates. This equates to an increase in the number of units of 11.8% since 1940, or an average of 91 new units annually across the five counties.

Table 7-2 – Long Term Housing Unit Trends

| | Labette County | Surrounding Counties | 6-County Region | State |
|---------------------------|----------------|----------------------|-----------------|-----------|
| 1940 | 9,255 | 50,829 | 60,084 | 545,821 |
| 1950 | 9,894 | 51,879 | 61,773 | 625,148 |
| 1960 | 10,070 | 52,407 | 62,477 | 740,335 |
| 1970 | 9,813 | 51,681 | 61,494 | 789,735 |
| 1980 | 10,619 | 57,549 | 68,168 | 955,207 |
| 1990 | 10,641 | 56,691 | 67,332 | 1,044,112 |
| 2000 | 10,306 | 56,857 | 67,163 | 1,131,200 |
| Est. 2006 | 10,267 | 56,819 | 67,086 | 1,182,164 |
| Change 1940 - 2006 | 1,012 | 5,990 | 7,002 | 636,343 |
| % Change | 10.9% | 11.8% | 11.7% | 116.6% |

Source: U.S. Census and Claritas

The State of Kansas experienced much more rapid growth in the number of housing units between 1940 and 2006. In 1940, the state had fewer than 550,000 housing units. By 2000, the state had more than 1.1 million housing units, and Claritas estimates that the state had almost 1.2 million housing units in 2006. This represents an increase of more than 116% since 1940, and indicates an average of 9,462 net new housing units across the state on an annual basis since 1940.

3. Households

The U.S. Census Bureau defines households as occupied housing units. Those housing units that are not occupied are classified as vacant. Reasons for vacancy include a unit that is available for-sale or for-rent, but not occupied at the time of the census. In addition, housing units that are occupied on a seasonal basis, including camps, cottages and other recreational-type properties are classified as vacant.

At the time of the 2000 Census, Labette County had 9,194 households. This represented a decline of more than 180 units from the 1990 census, when the county had 9,377 households. Claritas estimates that the number of households has continued to decline, as the estimate for 2006 was 8,991 households. This represents a 2.2% decline since 2000. The number of households is forecasted to decline further to 8,828 by 2011, an additional 1.8% decline.

The surrounding region experienced a slight increase in the number of households during the 1990s. At the time of the 2000 Census, the surrounding region had 50,224 households, a slight increase over the 1990 census of 49,614. However, Claritas estimates that the number of households has declined to 48,779 since the time of the 2000 Census.

The State of Kansas has experienced steady growth in the number of households. In 1990, the census indicated that there were 944,726 households in Kansas. By 2000, the state had more than one million households, an increase of 10% during the 1990s. Claritas estimates that the state's households have continued to increase at a steady rate, though slower than the pace of the 1990s.

Table 7-3 – Household Growth, 2000 - 2011

| | 2000 Census | 2006 Estimate | %Change 2000-2006 | 2011 Projection | %Change 2006-2011 |
|----------------------|----------------|------------------|----------------------|--------------------|----------------------|
| Labette County | 9,194 | 8,991 | -2.2% | 8,828 | -1.8% |
| Surrounding Counties | 50,224 | 48,779 | -2.9% | 47,642 | -2.3% |
| State of Kansas | 1,037,891 | 1,067,289 | 2.8% | 1,091,126 | 2.2% |

Source: U.S. Census and Claritas

All three regions experienced a reduction in the number of vacant housing units between 1990 and 2000. As indicated in Table 7-4, the state and the counties surrounding Labette County experienced reductions in the number of vacant units of just over 6%. Labette County outperformed both the state and surrounding counties, reducing the number of vacant units by more than 12%.

Table 7-4 – Vacancy Trends

| | Labette County | Surrounding Counties | State |
|-------------------|---------------------------|---------------------------------|--------------|
| 1990 Vacant Units | 1,264 | 7,077 | 99,386 |
| 2000 Vacant Units | 1,112 | 6,633 | 93,309 |
| Change | (152) | (444) | (6,077) |
| Change - % | -12.0% | -6.3% | -6.1% |

Source: U.S. Census

One factor that should also be considered is the number of housing units used as vacation/recreation homes. Table 7-5 shows how this market sector expanded during the 1990s. As illustrated in the table, the number of vacation/recreation homes in the state increased by 70% during the 1990s. However, growth at the state level was outpaced during the 1990s by Labette County and the surrounding counties. The surrounding counties experienced a 97% increase in the number of housing units identified as vacation or recreation homes during the 1990s, increasing from 554 to 1,091. Labette County's stock of vacation and recreation homes grew at an even faster rate, increasing by 122% during the 1990s, from 55 to 112.

Table 7-5 – Seasonal Housing Unit Trends

| | Labette County | Surrounding Counties | State |
|--------------------------------|---------------------------|---------------------------------|--------------|
| 1990 Vacation/Recreation Units | 55 | 554 | 7,379 |
| 2000 Vacation/Recreation Units | 122 | 1,091 | 12,454 |
| Change | 67 | 537 | 5,075 |
| Change - % | 122% | 97% | 69% |

Source: U.S. Census

4. Population in Group Quarters

The U.S. Census Bureau's population reports include a summary of the population in group quarters. This typically includes two distinct groups: (1) institutionalized population, which includes people under formally authorized, supervised care or custody in institutions at the time of enumeration; and (2) non-institutionalized population, which typically includes all people who live in group quarters other than institutions, such as dormitories, halfway houses, and communes. The institutionalized population generally includes people classified as "patients or inmates," and they are normally restricted to the building and grounds of the institution, and typically have limited contact with the rest of the community.

According to data from the U.S. Census Bureau, the group quarters population grew by almost 10% in Labette County during the 1990s, from 782 to 857 in 2000. The group quarters population has experienced slight growth since the 2000 Census, according to Claritas, and it is estimated that Labette County will have 863 residents living in group quarters in 2011.

The group quarters population in the surrounding counties grew at an even faster rate than Labette County in the 1990s. The census indicates that the surrounding counties had 3,258 residents living in group quarters in 1990. This figure increased by more than 500 during the 1990s, to 3,765 at the time of the 2000 Census. Claritas projects somewhat slower growth through 2011, when the estimated group quarters population will be 3,825.

Table 7-6 – Population in Group Quarters, 2000 - 2011

| | 2000 Census | 2006 Estimate | %Change 2000-2006 | 2011 Projection | %Change 2006-2011 |
|----------------------|------------------------|--------------------------|------------------------------|----------------------------|------------------------------|
| Labette County | 857 | 860 | 0.4% | 863 | 0.4% |
| Surrounding Counties | 3,765 | 3,799 | 0.9% | 3,825 | 0.7% |
| State of Kansas | 81,950 | 82,101 | 0.2% | 82,139 | 0.1% |

Source: U.S. Census and Claritas

At the state level, group quarters population declined slightly during the 1990s, from 82,791 in 1990 to 81,950 in 2000, a decline of approximately 1%. Claritas projects slight increases between 2000 and 2011.

5. Income

In terms of median household income, Labette County and the surrounding counties are well below the state median household income. The median household income in Labette County was \$30,656 at the time of the 2000 Census. This was slightly below the median of \$30,779 for the surrounding counties. However, the median for Labette County and the surrounding counties was more than 25% less than the state median household income, which was more than \$41,000.

Table 7-7 – Median Household Income Trends, 2000-2011

| | 2000 Census | 2006 Estimate | %Change 2000-2006 | 2011 Projection | %Change 2006-2011 |
|----------------------|------------------------|--------------------------|------------------------------|----------------------------|------------------------------|
| Labette County | \$30,656 | \$35,171 | 14.7% | \$38,362 | 9.1% |
| Surrounding Counties | \$30,779 | \$36,122 | 17.4% | \$40,281 | 11.5% |
| State of Kansas | \$41,046 | \$47,379 | 15.4% | \$52,460 | 10.7% |

Source: U.S. Census and Claritas

Since 2000, Claritas estimates indicate that income growth in Labette County has lagged both the state and the surrounding counties. This trend is projected to continue through 2011. Slower income growth in Labette County means that the gap between Labette County and the state, as well as surrounding counties, will continue to expand over the next five years.

6. Income Stratification

The low median income level in Labette County is indicative of a region with low incomes at all levels. Table 7-8 provides an overview of the percentage of households with income levels in various cohorts. As shown in the table, more than 75% of households in Labette County earned less than \$50,000 at the time of the 2000 Census.

This compares to the surrounding counties that had just under 75%, and the state, which had less than 61% of households earning less than \$50,000.

At the high end of the income spectrum, Labette County had just 8.5% of households earning more than \$75,000 at the time of the 2000 Census. This was less than the surrounding counties (9.4%), and substantially below the state, which had 18.9% of households earning more than \$75,000.

Projections for 2006 and 2011 indicate that the disparity between Labette County and both the state and surrounding counties will worsen. By 2011, Labette County is forecasted to have just 16.8% of households earning more than \$75,000, and 31.3% earning less than \$25,000. This compares to the surrounding counties that are forecasted to have 19.8% of households earning more than \$75,000, and 30.9% earning less than \$25,000. The state projections are 31.4% of households earning more than \$75,000, and 20.9% earning less than \$25,000.

Table 7-8 – Income Stratification, 2000 - 2011

| | 2000 Census | 2006 Estimate | 2011 Projection |
|-----------------------------|------------------------|--------------------------|----------------------------|
| Labette County | | | |
| Under \$25,000 | 40.6% | 34.8% | 31.3% |
| \$25,000 - \$49,999 | 34.6% | 33.6% | 33.1% |
| \$50,000 - \$74,999 | 16.3% | 18.6% | 18.9% |
| Over \$75,000 | 8.5% | 13.0% | 16.8% |
| | 100.0% | 100.0% | 100.0% |
| Surrounding Counties | | | |
| Under \$25,000 | 41.2% | 34.6% | 30.9% |
| \$25,000 - \$49,999 | 33.5% | 31.6% | 30.0% |
| \$50,000 - \$74,999 | 16.0% | 18.6% | 19.4% |
| Over \$75,000 | 9.4% | 15.2% | 19.8% |
| | 100.0% | 100.0% | 100.0% |
| State of Kansas | | | |
| Under \$25,000 | 28.7% | 23.7% | 20.9% |
| \$25,000 - \$49,999 | 32.1% | 29.3% | 27.0% |
| \$50,000 - \$74,999 | 20.3% | 20.8% | 20.7% |
| Over \$75,000 | 18.9% | 26.2% | 31.4% |
| | 100.0% | 100.0% | 100.0% |

Source: U.S. Census and Claritas

D. Locational Attributes and Market Assessment

In order to evaluate the potential reuse and/or redevelopment of KSAAP, it is important to evaluate the attributes of the site as a business location. In addition, it is important to understand what the site has to offer in terms of reuse potential, particularly for similar uses (ammunition and explosive production). If some (or all) of the site cannot be used for similar uses, alternative redevelopment scenarios should be evaluated. In the case of KSAAP, those alternative uses will be driven by the locational attributes of the site, including the availability of an adequate workforce, transportation characteristics, proximity to raw

materials, access to markets and other cost factors, such as utility costs, labor costs, land costs and tax costs.

1. Locational Attributes

In evaluating business location alternatives, companies and site selectors typically use a defined set of criteria related to the specific industry for which they are seeking a location. For example, a warehousing and distribution operation is likely to place a higher emphasis on access and proximity to an Interstate highway, while a manufacturing facility might place a higher emphasis on proximity to raw materials and/or customers (end users).

In general, site selection involves a variety of issues, and compares various locations against each other in order to rank and prioritize alternatives. In evaluating potential locations, four key variables are typically evaluated: transportation access, workforce, utilities and regulatory issues.

Transportation Access – Transportation is considered a critical component in any site selection process. It is critical for the transportation assets of a site to be quantified, in terms of capacities as well as time and distance to major transportation hubs. The KSAAP site has good access to the regional rail system, via the Union Pacific line, which runs north and south in proximity to the Plant. This main line proceeds south through Oklahoma to Dallas-Fort Worth and beyond, to the Gulf of Mexico, and to ports in the Los Angeles area to the west. In addition, the line runs north to Kansas City and Chicago, where there are numerous connections for east-west shipping, as well as other north-south lines. The key issue is whether the KSAAP site is considered too close to the larger rail yards in Kansas City to make a satellite location in Labette County a worthwhile undertaking.

In terms of highway access, KSAAP is located in close proximity to U.S. 400, which runs east to west, and U.S. Routes 59 and 69, which run north to south. These highways are not Interstate-quality roadways, and therefore some heavy distribution users will not find them as attractive from a locational perspective. However, regional carriers, such as Old Dominion Trucking in Parsons, may find the central location of Labette County within the larger southeast Kansas region to be appealing.

The county does not have scheduled air service available. The nearest airports with scheduled passenger service are in Joplin, Missouri; Tulsa, Oklahoma; and Kansas City, Missouri. There is no barge access available for waterborne commerce.

Workforce – As part of the BRAC Evaluation Studies, funded by the Kansas Department of Commerce and a National Emergency Grant from the U.S. Department of Labor, an evaluation of the Southeast Kansas Labor Basin⁵ was prepared in June of 2006. The key findings of that study, which was prepared by the Docking Institute of Public Affairs at Fort Hays State University, indicate that there is a substantial workforce available within the region. As discussed in other sections of this report, workforce costs in Labette

⁵ The Southeast Kansas Labor Basin includes Cherokee, Crawford, Labette, Montgomery, Neosho, and Wilson Counties in Kansas, and Craig, Nowata, and Ottawa Counties in Oklahoma.

County are considered reasonable, with an average weekly wage in the range of \$478. Among the key findings of the Docking Institute's analysis are:

- The population of the Southeast Kansas Labor Basin is estimated to be 201,687. About 22% of the population (or 44,781 individuals) are considered part of the Available Labor Pool (ALP).
- Of the ALP, an estimated 2,404 (5.4%) non-working and 9,768 (21.8%) working individuals are *looking* for new employment, while 2,104 (4.7%) non-working and 30,505 (68.1%) working individuals would *consider* new and/or different employment for the right opportunities.
- Almost 65% of the ALP has at least some college experience and about 95% has at least a high school diploma. The average age for members of the entire ALP is about 42 years old, and women make up 51% of the ALP.
- A majority of ALP members report having “strong work skills” when it comes to working in groups and interpersonal relations (93.4%), management and supervision (76.7%), writing (72.5%), math (70%), computers (53.3%), and public speaking (51.9%) .
- Approximately 5,377 members of the ALP are currently employed as general laborers, construction workers, or cleaners. An additional 4,233 report having experience or training in these fields.
- Slightly more than 85% (38,143 individuals) of the ALP indicate that they are “willing to work outside of their primary field of employment for a new or different employment opportunity.”
- About 35% of the members (15,855 individuals) of the ALP will commute up to 45 minutes, one way, for an employment opportunity. Almost 80% (35,451 individuals) will commute up to 30 minutes for employment.
- The most important desired benefits are good retirement benefits, good salary or hourly wage, good health benefits, on-the-job or paid training, and good vacation benefits.
- Among the ALP that are willing to commute the necessary distance to the labor basin center, an estimated 13,702 people (30.6%) are interested in a new job at \$16 an hour, 8,410 (18.8%) are available at \$12 an hour, and 2,619 (5.8%) are available at \$8 an hour.
- Of the 40,348 members in the subset of *employed members* of the ALP, 18,721 (46%) consider themselves underutilized. Almost 70% of this subset of the ALP has some college experience, and nearly all (97%) are willing to change jobs to improve their underutilized status.
- Of the 38,775 members in the subset of *non-business owning members* of the ALP, 16,054 (41%) have seriously considered starting their own business. Sixty-four percent of this subset of the ALP has some college experience.

Utilities – The availability, reliability and sufficiency of utility systems, including water, sewer, electricity, telecommunications and natural gas are critical factors in evaluating potential business locations. Which of these systems are considered most important will be determined by the specific industry being considered. For example, a commercial food processing facility may have substantial water usage needs, and may need sufficient access to natural gas for heating and/or pasteurizing products. In contrast, a furniture manufacturer may have limited need for water, but may be particularly sensitive to electric costs.

The KSAAP site has existing utility systems in place; though, as described in Chapter 3 (Major Utilities, there may be a need for upgrading specific utilities based on the preliminary condition assessment. KSAAP staff reports that the on-site systems are generally reliable. However, the ability of individual systems to meet the needs of a specific user will have to be evaluated on a case-by-case basis.

Table 7-9 – Comparative Electric Prices

| Average Statewide Price for Electricity - Industrial Users (Cents per Kilowatt Hour) | | |
|--|-------------|-------------|
| State | 2005 | 2006 |
| Arkansas | 4.86 | 5.16 |
| Louisiana | 8.7 | 6.65 |
| Missouri | 3.89 | 4.18 |
| Oklahoma | 5.13 | 4.83 |
| Texas | 8.16 | 7.57 |
| Kansas | 4.85 | 5.26 |

Source: Energy Information Administration

From a price perspective, the State of Kansas' electric costs are below the average for competitive locations in the region. As indicated in Table 7-9, Kansas' electric rates for industrial users are below the average of 5.60 cents per kilowatt-hour for the region. However, this average is heavily influenced by the high cost locations of Texas and Louisiana.

The State of Kansas enjoys a significant price advantage in terms of natural gas costs. As shown in Table 7-10, Kansas' pricing for natural gas is competitive with Texas', the lowest cost provider in the region. However, the nearest gas line is

located in the City of Parsons, and would require an extension in order for gas to be available on-site at KSAAP.

Table 7-10 – Comparative Natural Gas Prices

| Average Statewide Price for Natural Gas - Industrial Users (Dollars per 1,000 Cubic Feet) | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|---------------------------|
| State | 2001 | 2002 | 2003 | 2004 | 2005 | Change 01 - 05 |
| Arkansas | \$6.38 | \$5.64 | \$6.94 | \$8.03 | \$9.44 | \$3.06 |
| Louisiana | \$5.04 | \$3.69 | \$5.53 | \$6.58 | \$9.11 | \$4.07 |
| Missouri | \$7.49 | \$6.01 | \$7.93 | \$8.80 | \$10.99 | \$3.50 |
| Oklahoma | \$8.07 | \$6.28 | \$7.45 | \$8.59 | \$9.41 | \$1.34 |
| Texas | \$4.46 | \$3.40 | \$5.36 | \$5.91 | \$7.64 | \$3.18 |
| Kansas | \$4.97 | \$3.62 | \$4.95 | \$6.41 | \$7.67 | \$2.70 |

Source: Energy Information Administration

Regulatory Issues – In terms of regulatory issues, Labette County appears to have a very business-friendly environment. The county’s economic development efforts, which are directed by the City of Parsons, have had an impressive record of success despite its small size and modest budget. This is considered particularly important, given the availability of KSAAP assets and the historic uses that have occurred at the site. In particular, KSAAP has historically hosted what most would consider a “noxious use” – ammunition manufacturing. Potential uses for redevelopment of the KSAAP site could focus on other uses that are difficult to locate – other “noxious uses.”

The site could also benefit from its rural location in terms of environmental issues. The location can support significant increases in traffic, water uses and sewer uses without major increases in infrastructure or environmental permitting. In addition, the property has a number of existing air permits that could be used to support new industrial activities on the site, including re-activation of the contaminated waste processor.

In terms of state and local tax burdens, Kansas is a higher cost location than many of its regional competitors. As shown in Table 7-11, Kansas has a higher state and local tax burden than all of the competing locations except for Louisiana.

Table 7-11 – Comparison of State and Local Tax Burden

| | State-Local Tax Burden | Rank |
|---------------------|-----------------------------------|-------------|
| Arkansas | 10.3% | 27 |
| Kansas | 10.7% | 18 |
| Louisiana | 11.0% | 11 |
| Missouri | 9.9% | 34 |
| Oklahoma | 9.6% | 40 |
| Texas | 9.4% | 44 |
| U.S. Average | 10.6% | |

Source: Tax Foundation calculations.

As indicated in the table, Kansas’ average rate of state and local taxation is just above the national average. This could be a factor in marketing efforts to attract firms that are considering alternative locations for a facility in these locations.

2. Potential for Similar Uses

Given the extensive history of KSAAP as a munitions manufacturing location, consideration should be given to the continued use of the property as a center for the manufacture of munitions, ammunition and/or other explosives. The existing facilities on the KSAAP site have been designed and constructed to support this type of operation. In particular, KSAAP has a significant inventory of specialized ammunition storage facilities, including earth-bermed bunkers and aboveground storage magazines that have been created to store explosive materials and components safely. In particular, these facilities, as well as the production activities, benefit from significant protective arcs (quantity distance arcs) that serve as buffers not only between these uses, but also between individual facilities. This separation of facilities helps to limit the possibility of one explosion causing a chain reaction among other buildings in the complex.

According to data from the 2002 Economic Census, the ammunition manufacturing sector (NAICS 332993) includes 54 establishments, employing more than 7,100 people.

Overall, this sector had wages in excess of \$305 million in 2002, which equates to an average wage of just under \$43,000 (2002). Included in this total were 3,874 production workers. These production workers had wages of \$121.8 million, an average wage of just over \$31,400.

Total shipments for 2002 were reported to be \$1.13 billion, or an average of \$20.9 million per establishment. Value added from the production of munitions by these companies was more than \$800 million, or almost \$210,000 per production employee. It should be noted that there are a variety of additional sectors that may be able to utilize some portion the existing facilities at KSAAP. These sectors include:

- NAICS 332992 Small Arms Ammunition Manufacturing
- NAICS 332995 Other Ordnance and Accessories Manufacturing
- NAICS 325920 Explosives Manufacturing

Although the existing facilities at KSAAP could be suitable for uses similar to the existing munitions manufacturing operation that currently operates on the site, it is important to recognize that the 2005 Base Realignment and Closure (BRAC) round includes a number of facilities that could be considered as “competitors” for munitions and/or explosives manufacturing uses. These include, but are not limited to:

- Lone Star Army Ammunition Plant, Texas
- Riverbank Army Ammunition Plant, California
- Mississippi Army Ammunition Plant, Mississippi

In addition to these facilities, there are a number of other industrial facilities (depots, arsenals, etc.) that are also being closed as part of the 2005 BRAC round. Some of these facilities have facilities, such as ammunition storage igloos, that could also compete against portions of KSAAP for ammunition-related businesses.

3. Alternative Development Strategies

The vast size of the KSAAP property makes it likely that the redevelopment plan will be able to support a variety of land uses. Given the history of the property, many of the uses that could be supported on-site are considered “difficult-to-site.” The remote nature of the property, combined with existing buffers from surrounding uses, make the KSAAP property attractive for these types of uses. Among the opportunities that will be evaluated for consideration in the development of alternatives for the site are:

Agriculture – Labette County has a strong existing agricultural base. In fact, portions of the KSAAP property are currently used for grazing livestock and hay production. According to the Labette County Farm Bureau, agricultural production in the county

exceeded \$52 million in 2005. This figure included almost \$30 million in crop production, and an additional \$23 million in livestock production.

Recreation/Conservation – The KSAAP property has an abundance of wildlife, and representatives of the Army indicate that hunting on-site generates substantial interest from members of the community. The property has the ability to support a variety of conservation programs and outdoor recreational opportunities. It is anticipated that some of these uses will be temporary in nature, until development of individual sites (or larger portions of the property) occurs, while others will be long-term, for the benefit of the residents of Labette County and the surrounding region.

Energy Generation – Labette County and KSAAP have had at least one serious expression of interest for the development of a new coal-fired electric generation plant. This is due to a number of factors, including the availability of several hundred acres of land to support the plant and associated coal storage; the access to the existing rail line, which serves as a southbound dedicated line primarily for hauling coal; and the availability of an existing water supply, which can be used for cooling electric generation turbines. The LRPA may be able to negotiate a preferred electric rate for on-site users, or may be able to negotiate a franchise fee or other production-related payment to support economic development activities in proximity to the electric plant.

Refinery – In 2005, the President of the United States proposed the creation of additional oil-refineries on closed military bases. According to the Association of Defense Communities, *“The Gasoline for America’s Security (GAS) Act, H.R. 3893, requires the President to designate at least three closed military bases as potentially suitable sites for refineries, but the Secretary of Defense “shall give substantial deference to the recommendations of the redevelopment authority, as contained in the redevelopment plan for the installation, regarding the siting of a refinery on the installation.” The LRA would be required “to consider the feasibility and practicability of siting a refinery on the installation” as it prepares its redevelopment plan. Another new provision states that closed installations considered suitable for a refinery should be disposed of according to applicable base closure laws.”*

The LRPA should consider the possibility of being nominated as a refinery location. Despite concerns over the distance to raw materials, as well as issues surrounding transportation of finished products, KSAAP’s locational attributes, workforce availability and a conducive business climate could all be considered strong selling points in competing for an opportunity of this type.

Biofuels – The recent spikes in energy prices have resulted in increased interest in production of alternative fuels in the U.S. In particular, there has been a significant increase in the construction and development of alternative, renewable fuel plants, including biodiesel and ethanol. Biodiesel plants rely upon renewable input sources such as vegetable oils and animal fats, to create a cleaner-burning form of diesel fuel. Typically, these products are blended with more traditional diesel fuels, to produce a “partially renewable” fuel.

Ethanol is an alcohol-based fuel made from distilling/fermenting crops. A variety of input materials could be used, including corn, cheese whey, waste beer and milo, though corn is by far the most common source material. The agricultural sector in Labette County and the surrounding region has a strong history in the production of corn and milo. Proximity to supplies of raw materials is considered an important factor in siting these plants. In addition, many of these refineries are located in proximity to end-users of the product, in order to minimize transportation costs for the finished product.

The process of creating these alternative fuels has ancillary benefits as well. For example, after corn has been processed to produce ethanol, the remaining by-product can be used as feed for cattle. This could be beneficial to local cattle operations if an ethanol refinery were built at the KSAAP site.

Incineration – As discussed in the Chapter 2 (Identification and Assessment of Facilities), there is a contaminated waste processor on-site used to incinerate materials that are contaminated with trace amounts of explosive materials. According to operating staff at KSAAP, this facility is in working order, and could be reactivated within a relatively short period of time, though it could require up to \$1 million in upgrades to the emissions control systems. Conversion of the facility to support incineration of hazardous materials, such as medical waste, should be considered as a potential near-term use that could generate potential cash flow to the LRPA, as well as some limited on-site employment.

Landfill – The KSAAP site could be considered for development of a regional or super-regional landfill operation. Consideration could be given to accepting municipal solid waste; though a specialized facility, such as an asbestos landfill and/or a construction/demolition debris landfill might be more attractive, both from an operating perspective and marketability.

Prison – Many former military installations have been selected to house prison operations. In some cases, state or local/county jails are developed as a means of creating long-term employment on-site, and as a method for bringing public funding onto these sites. In addition, in many cases, the development of a prison has been used as a method to enhance or upgrade utility services on-site. The Federal Bureau of Prisons has also developed facilities at a number of former military base properties. Competition for these projects is intense, since federal prisons are often viewed as more attractive than those funded by the state or county. The KSAAP site has the ability to support a large-scale prison operation, though infrastructure upgrades will likely be necessary.

E. Impact of the Closure of KSAAP

There is limited information available regarding the expected impact of the closure of KSAAP on the local and regional economy. This is because the plant is operated by a private contractor, which is not required to disclose sensitive operating and payroll cost data. However, the operating contractor did provide some information regarding payroll and place

of residence for its employees at KSAAP, as part of the workforce evaluation studies completed in 2006. The information provided is summarized in Table 7-12.

Table 7-12 – Place of Residence, KSAAP Workers

| Community | Employees | Wages |
|------------------|------------------|---------------------|
| Girard | 12 | \$380,411 |
| McCune | 12 | \$414,336 |
| Altamont | 12 | 429,239 |
| Pittsburg | 13 | \$566,145 |
| Columbus | 18 | \$713,669 |
| Oswego | 29 | \$983,538 |
| Parsons | 153 | \$5,544,001 |
| All others | 105 | \$4,120,740 |
| Total | 354 | \$13,152,079 |

Source: Day & Zimmerman

As noted in the table, information was provided for 354 employees at KSAAP. The data indicates that these employees had aggregate wages of \$13.15 million in 2005. This equates to an average salary/wage of \$37,153. In addition to direct salary, the operating contractor indicates that medical insurance costs equate to just over 23% of salaries and wages, bringing the total compensation to an average of almost \$46,000 per employee.

As expected, the largest numbers of KSAAP employees reside in the City of Parsons. Parsons residents make up more than 43% of KSAAP employees. The next highest concentration of employees resides in Oswego, which is home to less than 10% of the KSAAP workforce.

It is important to note that this information changes frequently, and therefore it should be used only as an indicator of the magnitude of employment and wages from the site at a given employment level.

In addition to direct employment at the site, the operator also contracts for a variety of goods and services within Labette County and the larger region. According to data provided by the contractor, the company purchased approximately \$2.625 million in goods and services from within a 60-mile radius of KSAAP in 2005. These purchases were split almost equally between Labette County and areas outside of the county. However, information regarding the specific goods and services purchased was not provided.

8. MARKET POTENTIAL OF LAND AND FACILITIES

A. Introduction

The redevelopment of the Kansas Army Ammunition Plant (KSAAP) will be influenced by the regional real estate market, as well as the presence of competitive development sites throughout the south-central United States. In order to gain an understanding of the development potential for KSAAP, this chapter considers the viability of existing buildings from a reuse perspective. In addition, consideration is given to land at KSAAP that could be developed for commercial and industrial uses. Specific market sectors are evaluated in terms of the potential for the KSAAP site to support development in these market sectors.

The potential markets considered in this chapter focus on the ability of the KSAAP site to support uses that are “difficult to site” and those that can capitalize on specific assets on-site that provide a competitive advantage, as well as other types of agricultural and recreational uses. Among the markets considered in this analysis are rail-related commerce, bioenergy production, electrical power generation, landfill/incineration and oil refinery development. Finally, this chapter evaluates the competitive position of KSAAP as compared to some of the competing large-scale development sites in the south central United States.

B. Summary of Major Findings and Conclusions

Vacant Land

KSAAP includes 13,727 acres of land, one of the largest single parcels in the region. In addition, the property has water and sewer systems in place to support development of new uses on-site. The majority of on-site development and infrastructure is located in the north-south corridor through the middle of the site. The *Environmental Condition of Property (ECP) Report* identifies more than 10,300 acres of land at KSAAP as “uncontaminated.”

Market Potential of Existing Facilities

As discussed in the Assessment of Facilities Chapter, the majority of existing building and structures at KSAAP were specifically developed to support the munitions manufacturing mission of the site. Long-term use of these facilities for munitions productions has resulted in some environmental contamination issues on-site. The presence of significant explosive contamination also represents a major challenge in terms of reusing existing buildings.

Unless the existing operating contractor for KSAAP, or a similar organization, continues operations on the site after closure, it is likely that the Army will remediate the facilities. In the case of facilities that are explosively contaminated, the Army’s traditional remediation approach has been to burn the facilities down.

The net result is a significant amount of residual materials that must be disposed of in a special landfill. In general, landfills of this type have substantial tipping fees (reportedly up to \$200 per ton), and transportation costs can be significant as well. Therefore, the

consulting team recommends that the LRPA work with its environmental consultants to evaluate the options for the development of an on-site disposal solution that could support the needs of the Army during the remediation process. An on-site “special wastes” landfill could also provide the LRPA with a significant revenue source, if “special wastes” were accepted from outside the county.

Potential Target Markets

Agriculture

Labette County has a strong existing agricultural base. According to the Labette County Farm Bureau, agricultural production in the county exceeded \$52 million in 2005. This figure included almost \$30 million in crop production, and an additional \$23 million in livestock production. While conversion of portions of KSAAP to agricultural uses is viable in the short-term, it will have only a limited impact in terms of job creation. In fact, a significant portion of the plant is already used for agricultural purposes, with more than 9,700 acres of the property dedicated for cattle grazing and key production.

Recreation/Conservation

The KSAAP property has an abundance of wildlife, and representatives of the Army indicate that hunting on-site generates substantial interest from members of the community and within the region. The plant allows restricted hunting of deer, turkey and quail, according to published data. In general, the hunts are limited to 20 to 25 hunters at one time, though quail hunting is limited to 10 groups and with a maximum of 40 hunters.

The property has the ability to support a variety of conservation programs and outdoor recreational opportunities. Uses as diverse as an all-terrain vehicle park, hiking trails, archery ranges, target shooting and/or trap and skeet shooting could occur at the site. However, it will be critical for any uses of this type to have an identifiable, long-term source of funding. It is important to recognize that uses of this type will not create significant numbers of jobs, though they may enhance the quality of life for residents of Labette County and the surrounding region.

Rail-Related Commerce

The area in proximity to KSAAP is served by the Union Pacific Railroad (UP). The UP operates in the western half of the United States, with Chicago, St. Louis, Memphis and New Orleans serving as the primary easternmost points of the system. The UP is the largest owner of main line track in Kansas, owning approximately 60% of the 3,085 miles of main line track in Kansas, and UP is the largest hauler of chemicals in the United States. In addition, UP’s lines have access to major coal regions in Wyoming, Colorado, Utah and Illinois.

Within Kansas, UP is by far the largest carrier, accounting for more freight movement than all other carriers combined. In 2005, the UP moved more than 211 million tons of freight, while all other carriers moved 166 million tons. This is due primarily to the company’s transportation of coal into and through the state, which accounted for 137 million tons of coal in 2005. Competing rail systems moved just 57 million tons of coal in 2005.

Freight volumes into and out of Kansas have continued to increase on both rail routes and over-the-road.

The Journal of Commerce identified a market trend of distribution centers of between 200,000 and 500,000 square feet in size as being most attractive to the marketplace, with larger, “big box” retailers requiring centers of 800,000 to 1.2 million square feet. The relatively low population density in the Labette County region, however, may make it difficult to support a large-scale warehouse/distribution use of this type.

Bioenergy Production

Ethanol is an alcohol-based fuel, made from distilling/fermenting crops. Labette County and the surrounding counties have a strong agricultural base, which could support the development of an ethanol plant in terms of raw materials for production. The majority of existing plants are located in the Midwestern United States. This is driven primarily by proximity to supplies of raw materials in these locations. The process of creating these alternative fuels has ancillary benefits as well. For example, after corn has been processed to produce ethanol, the remaining by-product can be used as feed for cattle, which could be beneficial to local cattle operations.

There are currently 113 existing ethanol plants in the United States, with a combined capacity 5,583 million gallons per year. There are seven plants presently being expanded, and another 78 plants under construction. When these new facilities are completed, an additional 6,243 million gallons per year will be added, bringing the total capacity to almost 12 billion gallons annually.

The KSAAP property is considered a potential good fit for alternative energy production, given the availability of rail access to the property for bringing in raw materials and shipping out finished products. In addition, the region has an established cattle industry that could make use of byproducts created during production.

Landfill and Incineration

According to the Kansas Department of Health and Environment (KDHE), there are presently 57 licensed solid waste facilities in Labette County and the surrounding counties, including 20 public facilities and 37 private. The most recent permit issued appears to be for the new Labette County Transfer Station. KDHE also reports that there are currently six new projects under review, including four municipal/county facilities and two private facilities.

The Kansas Army Ammunition Plant holds a permit from KDHE, identified as Permit 0401 (SWMU 15), for its incinerator. The permit references the types of waste associated with the incinerator, including asbestos, clean rubble, construction/demolition waste, inert grenade bodies, municipal waste combustion ash, trash, and wastewater sludge. The permit also indicates that ash, trash and sludge are no longer disposed of at this facility, though it does not appear to prohibit this type of operation in the future.

The availability of significant land areas that could be used for landfill purposes may be an asset, in terms of potential cash flows for the LRPA. Specifically, although there is

limited demand locally for landfill capacity, a number of states export portions of their municipal solid waste, due to capacity constraints and other factors, including Missouri, which exports more than 2 million tons of municipal solid waste annually. Landfill operations are not always viewed in a favorable light. In particular, the importing of refuse from outside the state could generate public opposition. However, from the perspective of providing cash flow to the LRPA for operation and maintenance of the remainder of the KSAAP property, a landfill operation could offer significant cash flow benefits.

The LRPA should also evaluate the economic viability of upgrading the existing incinerator on-site, as compared to the costs associated with permitting, constructing and activating a new incinerator. The on-site incinerator may be sufficient for processing medical waste, though existing emissions systems may require upgrades.

The LRPA should also consider, with the Army, the creation of an on-site landfill that could accept “special wastes,” particularly those associated with the demolition of facilities on-site. A landfill of this type could create a significant revenue stream for the LRPA, which could be used to support operation, management, maintenance and capital improvements for the KSAAP property during redevelopment.

Electrical Power Generation

According to the U.S. Department of Energy (DOE), there are 159 new proposed coal-fired power plants across the United States. These plants represent an investment of more than \$140 billion, and when completed will generate 96 gigawatts of power - enough to supply almost 100 million homes. According to DOE information, three new coal-fired plants are proposed in the State of Kansas, though one was reported as on hold and one was reported to be postponed.

Surrounding states have similar projects under consideration. For example, Oklahoma has four projects pending, with a combined generation of 3.3 gigawatts, at a cost of \$4.9 billion. Missouri has three projects pending that will generate 1.5 gigawatts at a cost of \$3.0 billion, while Arkansas has two projects in development that will generate 1.3 gigawatts at a cost of \$2.3 billion.

Property at KSAAP meets many of the published site selection criteria for a new coal-fired power plant, as evidenced by Westar’s reported interest in a portion of the property. However, if Westar is unable to construct a new plant at the KSAAP site, the LRPA may want to consider aggressively marketing the site for development of a power plant.

Oil Refinery

In 2005, the President of the United States proposed the creation of additional oil-refineries at closed military bases to encourage the creation of new refinery capacity. Published reports indicate that no new refineries have been constructed in the U.S. in the past 30 years, in part due to uncertainties associated with the permitting and development of a new facility, and environmental regulations that affect the ability of a project to be developed on a clear timeline.

There are more than 100 refineries in the United States. While many of these refineries are located in coastal areas near supplies (and major shipping points) of raw materials, some are located well inland, including three refineries in Kansas. Among these three is the Coffeyville refinery, which has a reported capacity of 108,000 barrels per day.

The LRPA should consider the possibility of being nominated as a refinery location. Despite concerns over the distance to raw materials, as well as issues surrounding transportation of finished products, KSAAP's locational attributes, workforce availability and conducive business climate could all be considered strong selling points in competing for an opportunity of this type.

Strengths and Weaknesses as a Business Location

From a locational and market perspective, KSAAP has a variety of strengths and weaknesses related to the uses identified in this chapter. Specific strengths and weaknesses include:

Strengths

Highway Access – KSAAP has good access to U.S. highway 400 for east-west movements. U.S. highways 59, 69 and 169 provide access to Kansas City and Interstate 35, to the north, and to Interstate 44 and the Tulsa area to the south.

Rail Access – The site has an established rail network on-site, with off-site connections to the nationwide rail network. The on-site rail network provides access to a wide variety of potential development parcels.

Air Quality – The KSAAP property enjoys a good air quality rating, and has the ability to support a variety of industrial, energy and manufacturing uses that could be difficult to permit in more urbanized areas.

Ability to Support “Noxious” Uses – The KSAAP site has been used for more than 60 years for heavy industrial activities, including the production of ammunition. The property has significant buffers from surrounding land uses, providing the ability to support “noxious” or difficult-to-locate uses.

Availability of Large Development Sites – The KSAAP site includes almost 14,000 acres of land that could support commercial and industrial development. In order to determine the viability of individual sites, more detailed site information is required, particularly a detailed wetlands database that will help define preferred development locations.

Infrastructure Systems – The KSAAP property has existing infrastructure in place that could be used to support redevelopment activities. In particular, the site has existing water, sewer and roadway systems that can serve as a starting point for redevelopment, though system upgrades will likely be required.

Weaknesses

Level of Investment – While the existing infrastructure systems can be used to “jumpstart” redevelopment at KSAAP, it is anticipated that comprehensive

redevelopment of the property will require significant infrastructure investments in order to redevelop portions of the property to “modern” industrial standards.

Environmental Stigma – As with any property that has experienced significant environmental impacts, the marketing and redevelopment of property at KSAAP is expected to be affected by the environmental stigma associated with prior use (and contamination) of portions of the property.

Uncertainty Regarding Timing – The LRPA’s Executive Director has extensive experience in dealing with property transfer issues associated with military base realignment and closure (BRAC). However, there are a variety of external factors that could affect the timing of when property will be available for redevelopment. It is not clear when the necessary funding for environmental remediation of the property will be made available. In addition, the time period for environmental remediation actions may require that large portions of the developed area of the property be unavailable for redevelopment for several years.

Interstate Access – While KSAAP enjoys good access to several U.S. highways, the nearest Interstate highway is approximately 45 minutes to the east in Joplin, Missouri.

Competitive Position as Compared to Similar Properties

The KSAAP site was evaluated against other large-scale development sites with a minimum of 1,000 acres of contiguous land, with zoning suitable for development of a large-scale industrial, manufacturing and/or warehouse and distribution use. These sites total more than 25,000 acres of available industrial land. A total of ten sites were identified in states in close proximity to KSAAP.

Locational Attributes

Although the KSAAP property has good access to a U.S. highway, many of the competing locations are much closer to an Interstate highway. The KSAAP site has good rail access, consistent with several other sites evaluated. Of the competing sites, only one is reported to have dual rail access on-site.

Utilities

The majority of competing sites are reported to have utilities that are in place to support development of the sites. Three of the ten sites evaluated require extensions for sewer lines, but all are within 2,000 feet or less of the site.

Natural gas prices in Kansas are among the lowest in the region. Electric rates in Kansas are more consistent with neighboring states.

Workforce and Population

In terms of labor force availability, KSAAP’s available labor force within the county is at the median among the group of competitors. Data for each county where these large development sites are located was gathered from the U.S. Bureau of Labor Statistics. Labette County’s workforce is larger than half of the competing sites.

Population estimates were acquired for a 10-, 20- and 30-mile radius around the primary zip code for each site. Two sites offer access to a much larger population base within a 10-mile radius. However, as the radius around the property increases, competing sites gain access to larger populations. Within a 30-mile radius, eight of the ten competing locations have a larger population base than Labette County.

Matrix of Competitive Facilities

In order to compare the KSAAP site with competing facilities, a comparative matrix was developed. The matrix subjectively ranks each facility against the KSAAP site in each category. The sites in Marion, Joplin and Pryor are considered the best quality locations as compared with KSAAP property. The property in Pryor was determined to be most competitive with KSAAP, as it had the highest scores due to excellent Interstate access, dual rail, dual gas and lower electric costs, as well as a larger population base from which to draw workers.

C. Evaluation of Business Trends and Potential Markets

This section provides an overview of business trends within specific potential markets that could be part of the redevelopment of KSAAP. Included is an analysis of the vacant land that is available at KSAAP, as well as an overview of how the existing buildings at the site might be reused. In addition, trends in operations and development are provided for the potential target markets under consideration for KSAAP.

1. Vacant/Undeveloped Land

KSAAP includes 13,727 acres of land, one of the largest single parcels in the region. In addition, the property has water and sewer systems in place to support development of new uses on-site. The majority of on-site development and infrastructure has occurred in a north-south corridor through the middle of the site. In general, raw materials are stored along the western side of the developed area. Processing and production activities are located in the center of the site, and finished products are stored along the eastern side of the developed area.

The *Environmental Condition of Property (ECP) Report* was prepared by URS Corporation in November of 2006. That report provides an overview of KSAAP and its developed areas, and identifies potential environmental issues that could affect the use of the property. The ECP indicates:

“The parcel identified as ECP Category 1 is considered “uncontaminated” and is defined as areas where no release or disposal of hazardous substances or petroleum products or their derivatives has occurred, and to which there has been no migration of such substances from adjacent areas (ASTM 2002). The ECP Category 1 parcel contains 10,319.17 acres of land. There was no evidence that a documented release or disposal of hazardous substances or petroleum products or their derivatives has occurred in these areas.”

The ECP Category 1 parcel is identified in green on Map 5-1 in Chapter 5 (Environmental Issues) of this report. As illustrated on the map, much of the developed

area of the property has environmental concerns. In addition, the map indicates a significant presence of small streams, creeks and wet areas. Some of these issues could affect the developability of portions of the site. However, despite the apparent development constraints, the KSAAP site appears to have the ability to readily support the creation of multiple development sites of several hundred acres each. It is important to recognize, however, that additional site-specific evaluations will be necessary before selecting parcels for development.

2. Market Potential of Existing Facilities

As discussed in Chapter 2 (Identification and Assessment of Facilities), the majority of existing facilities at KSAAP were specifically developed to support the munitions manufacturing mission of the site. Long-term use of these facilities for munitions productions has resulted in some environmental contamination issues on-site. In particular, many of the existing production buildings have been classified as contaminated with explosives. As summarized in the Environmental Issues Chapter, “Four areas (300, 800, 900 and 1200) have been classified as 3X, indicating a potential explosive hazard, and 10 areas (500, 700, 1000, 1100, 1500, 1600, 1700, 1800, 1900 and 3000) have been classified as 1X, the highest level of explosive contamination.”

The presence of significant explosive contamination represents a major challenge in terms of reusing existing buildings. Specifically, while the buildings may be suitable for use by another munitions or explosives manufacturer, that company may be averse to the risks associated with occupying facilities that have been previously contaminated.

Therefore, unless the existing operating contractor for KSAAP continues operations on the site after closure, it is likely that the Army will remediate the facilities. In the case of facilities that are explosively contaminated, the Army’s traditional remediation approach has been to burn the facilities down. This results in potential air quality impacts, and is a somewhat slow process in terms of completion. More recently, the Army is now considering an implosion model, with flash-burn prior to implosion to remove explosive contaminants.

Under either scenario, the net result is a significant amount of residual materials that must be disposed of in a special landfill. In general, landfills of this type have substantial tipping fees (reportedly up to \$200 per ton), and transportation costs can be significant as well. Therefore, the consulting team recommends that the LRPA work with its environmental consultants to evaluate the options for the development of an on-site disposal solution that could support the needs of the Army during the remediation process. An on-site “special wastes” landfill could also provide the LRPA with a significant revenue source, if “special wastes” were accepted from outside Labette County.

3. Potential Target Markets

a) Agriculture

Labette County has a strong existing agricultural base. According to the Labette County Farm Bureau, agricultural production in the county exceeded \$52 million in 2005. This figure included almost \$30 million in crop production, and an additional \$23 million in livestock production. Major crops in Labette County include:

- **Wheat** – Labette County farmers produced more than 1.3 million bushels of wheat in 2005. The average yield for county farmers was 45 bushels per acre. Wheat revenues were almost \$4.5 million, or an average of \$3.34 per bushel. Both the yield and the average price in 2005 were above historic averages, though the number of bushels produced was below average.
- **Corn** – Labette County farmers produced almost 3.4 million bushels of corn in 2005. The average yield for county farmers was 106 bushels per acre. Corn revenues were almost \$6.9 million, or an average of \$2.04 per bushel. Both the yield and the total production in 2005 were above historic averages, while the average price per bushel was lower than the historic average.
- **Sorghum** – Labette County farmers produced 1.3 million bushels of sorghum in 2005. The average yield for county farmers was 81 bushels per acre. Sorghum revenues were more than \$2.0 million, or an average of \$1.63 per bushel, somewhat lower than the historic average of \$1.92 per bushel.
- **Livestock** – Livestock production was reported to be \$23.1 million in 2005. This was approximately \$1 million less than the long-term average of \$24.2 million. While the number of cattle (57,300) was below the historic average of 63,250, the inventory value of \$54.3 million was well above the average of \$42.6 million.

The county's farmers also produce a number of other crops, including sunflowers, milo and alfalfa. Other livestock reflected in the production totals include hogs, sheep and lamb.

While conversion of portions of KSAAP to agricultural uses is viable in the short-term, it will have only a limited impact in terms of job creation. In fact, a significant portion of the plant is already used for agricultural purposes. The Army reports that more than 9,700 acres of the property have existing grazing leases for cattle and hay production.

b) Recreation/Conservation

Property at KSAAP has an abundance of wildlife, and representatives of the Army indicate that hunting on-site generates substantial interest from members of the community. The plant allows restricted hunting of deer, turkey and quail, according to published data. In general, the hunts are limited to 20 to 25 hunters at one time, though quail hunting is limited to 10 groups and a maximum of 40 hunters.

The property has the ability to support a variety of conservation programs and outdoor recreational opportunities. Uses as diverse as an all-terrain vehicle park, hiking trails, archery ranges, target shooting and/or trap and skeet shooting could be supported. However, it will be important for any uses of this type to have an identifiable, long-term source of funding. It is also important to recognize that uses of this type will not create significant numbers of jobs, though they may enhance the quality of life for residents of Labette County and the surrounding region. It is anticipated that some of these uses will be temporary in nature, until development of individual sites (or larger portions of the property) occurs, while others will be long-term, for the benefit of the residents of Labette County and the surrounding area.

c) Rail-related Commerce

The area in proximity to KSAAP is served by the Union Pacific Railroad (UP). The UP operates in the western half of the United States, with Chicago, St. Louis, Memphis and New Orleans serving as the primary easternmost points in the system. UP also interchanges rail traffic with the Canadian rail system. The UP is the largest owner of main line track in Kansas, owning approximately 60% of the 3,085 miles of main line track in Kansas.

UP is the largest hauler of chemicals in the United States, with much of the traffic originating along the Gulf Coast. In addition, UP's lines have access to major coal regions in Wyoming, Colorado, Utah and Illinois. UP transported more than 130 million tons of coal in the first half of 2006. The company operates almost 8,000 locomotives, and more than 100,000 railcars.



Figure 8-1 - Union Pacific Rail System

Within Kansas, UP is by far the largest carrier, accounting for more freight movements than all other carriers combined. In 2005, the UP moved more than 211 million tons of freight, while all other carriers moved 166 million tons. This is due primarily to the company's transportation of coal into and through the state, which accounted

for 137 million tons in 2005. Competing rail systems moved just 57 million tons of coal in 2005.

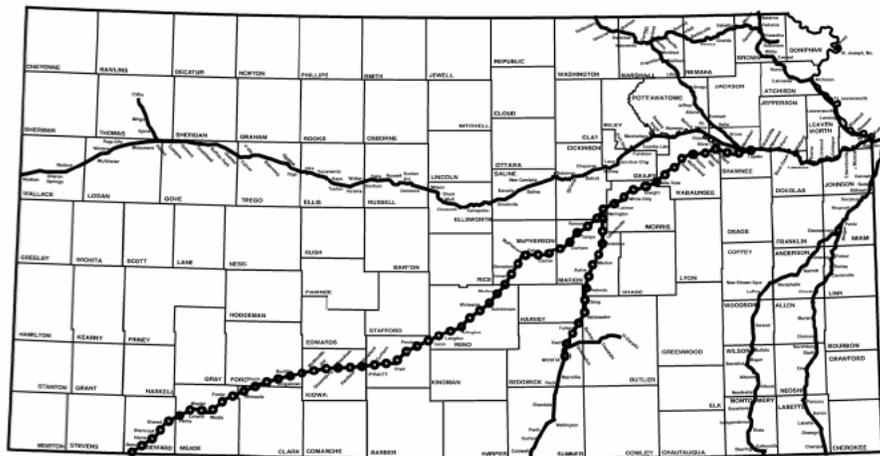


Figure 8-2 - Union Pacific Lines in Kansas

Table 8-1 – Tonnage Shipped by Major Rail Carriers

| | 2003 | 2004 | 2005 | Change | % Change |
|----------------------|-------------|-------------|-------------|------------|----------|
| Burlington Northern | 102,966,235 | 133,825,836 | 137,337,603 | 34,371,368 | 33.4% |
| Kansas City Southern | 20,165,173 | 20,884,928 | 27,120,024 | 6,954,851 | 34.5% |
| Norfolk Southern | 1,310,710 | 1,434,853 | 1,550,335 | 239,625 | 18.3% |
| Union Pacific | 211,339,805 | 205,881,426 | 211,402,507 | 62,702 | 0.0% |
| Total | 335,781,923 | 362,027,043 | 377,410,469 | 41,628,546 | 12.4% |

Source: Kansas Department of Transportation

Freight volumes into and out of Kansas have continued to increase on both rail routes and over-the-road. As shown in Table 8-1, rail freight volume in Kansas increased by more than 12% between 2003 and 2005.

Numerous studies have indicated that rail transportation is experiencing a renaissance. Cushman & Wakefield, one of the nation’s leading commercial real estate firms, recently issued a White Paper on the “new age of trade” that illustrates how changing global business priorities are impacting real estate across the nation. Among the findings of that study are:

“The increased use of rail has led to strong growth in the warehouse markets surrounding some of the nation’s largest interior hubs, such as Chicago, Memphis, Atlanta and Dallas. Once the cargo is delivered to port, it can be placed directly onto railcars for fast shipment to the nation’s interior. Rail is more cost-effective than trucks for many types of goods, especially for large shipments that can be transported from ports to holding destinations, such as super-sized distribution centers.”

Chicago, Memphis and Dallas-Fort Worth all stand to gain the most from rail's resurgence. These regions have the ability to serve large markets and are located at the intersection of multiple rail lines and interstates. These areas also have major players such as local government, railroads and developers, who are willing to make investments that will keep the rails and the real estate surrounding them growing."

The Journal of Commerce identified a market trend of distribution centers of between 200,000 and 500,000 square feet in size as being most attractive to the marketplace, with larger, "big box" retailers requiring centers of 800,000 to 1.2 million square feet. However, the relatively low population density in the Labette County region may make it difficult to support a large-scale warehouse/distribution use of this type.

As the demand for consumer goods has increased, and a larger percentage of goods are being imported into the U.S., the majority of these items come into the country through a limited number of ports, and are then distributed to locations across the U.S. In fact, published reports indicate that the number of imported goods entering the U.S. is projected to increase by 10% annually for the foreseeable future.

This growth is expected to affect the real estate market, as the size of container ships increases to meet growing demand. In some cases, additional facilities will be developed to support these larger ships. In other cases, however, goods will be off-loaded onto rail transports for shipment elsewhere, frequently to an inland port. The concept of an inland port allows goods to be moved away from busy (and expensive) seaports to larger, less expensive sites located inland. These inland ports can help to reduce the amount of time that goods spend at the port, and reduce the amount of time that is required for goods to reach their final destination. In fact, Kansas City will open the first Mexican Customs clearance facility on U.S. soil with the creation of an inland port for the processing of Asian goods that are shipped to Mexico, then off-loaded onto train cars and transported to Kansas City. As a result, Kansas City has seen significant new construction in the warehouse and distribution sector.

d) Bioenergy Production

The recent spikes in energy prices have resulted in increased interest in production of alternative fuels in the U.S. In particular, there has been a significant increase in the construction and development of alternative, renewable fuel plants, including biodiesel and ethanol.

Biodiesel plants rely upon renewable input sources such as vegetable oils and animal fats, to create a cleaner-burning form of diesel fuel. Typically, these products are blended with more traditional diesel fuels, to produce a "partially renewable" fuel. Older diesel engines can typically burn a blend with no more than 20% biodiesel, though newer engines (built since 1994) can reportedly burn up to 100% biodiesel.

Ethanol is an alcohol-based fuel, made from distilling/fermenting crops. A variety of input materials can be used, including corn, cheese whey, waste beer and milo;

though corn is by far the most common source material. Labette County and the surrounding counties have a strong agricultural base that could support the development of an ethanol plant in terms of raw materials for production. According to the Labette County Farm Bureau, Labette County's farmers produced approximately 3.4 million bushels of corn in 2005.

According to the Renewable Fuels Association, there are currently 113 existing ethanol plants in the United States. These plants have a combined capacity of 5,583 million gallons per year. In addition, there are seven plants presently being expanded, and another 78 plants under construction. When these new facilities are completed, an additional 6,243 million gallons per year will be added, bringing the total capacity to almost 12 billion gallons annually.

U.S. Ethanol Biorefinery Locations

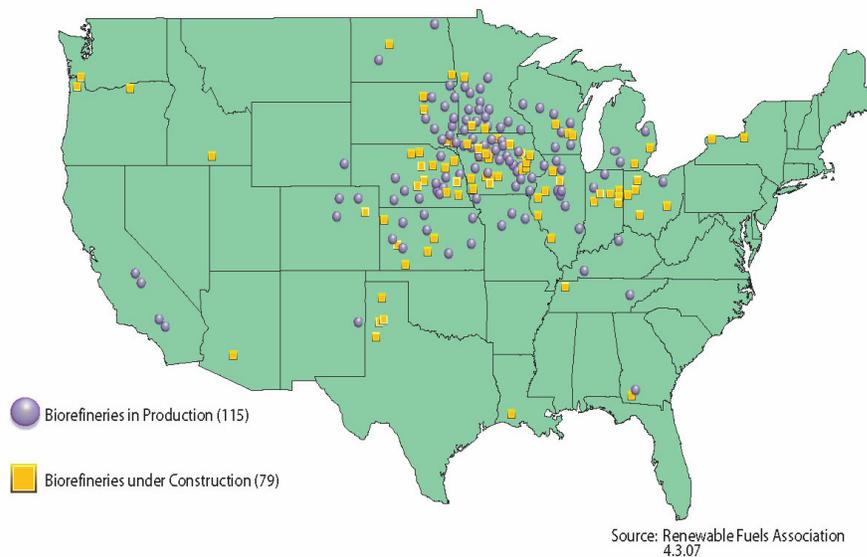


Figure 8-3 – Biorefinery Locations

As shown in Figure 8-3, the majority of existing plants are located in the Midwestern United States. This is driven primarily by proximity to supplies of raw materials in these locations. In addition, many of these refineries are located in proximity to end users of the product in order to minimize transportation costs for the finished product.

Though the average capacity for an ethanol refinery is currently less than 50 million gallons per year, according to the Renewable Fuels Association, the 85 new plants and expansions will have an average capacity of more than 73 million gallons per year, an increase of almost 50% in the average plant size.

It should be noted that the process of creating these alternative fuels has ancillary benefits as well. For example, after corn has been processed to produce ethanol, the remaining by-product can be used as feed for cattle. This could be beneficial to local cattle operations if an ethanol refinery were built at the KSAAP site.

The KSAAP property is considered a potential good fit for alternative energy production, given the availability of rail access to the property for bringing in raw materials and shipping out finished products. In addition, the region has an established cattle industry that could make use of byproducts created during production.

e) Landfill and Incineration

Historically, landfills have been the primary method for disposing of municipal solid waste. However, over the years, as a number of landfills have reached their capacities, they have been closed. The result is an overall decline in the capacity of existing landfills.

Table 8-2 – Solid Waste Facilities

| | Public | Private | Total |
|--------------|-----------|-----------|-----------|
| Cherokee | 4 | 8 | 12 |
| Crawford | 3 | 8 | 11 |
| Labette | 6 | 3 | 9 |
| Montgomery | 2 | 10 | 12 |
| Neosho | 3 | 6 | 9 |
| Wilson | 2 | 2 | 4 |
| Total | 20 | 37 | 57 |

Source: Kansas Department of Health and Environment

According to the Kansas Department of Health and Environment (KDHE), there are presently 57 licensed solid waste facilities in Labette County and the surrounding counties. As noted in Table 8-2, 20 of these facilities are public, while the remaining 37

facilities are private. The most recent permit issued appears to be for the new Labette County Transfer Station.

KDHE also reports that there are currently six new projects under review, including four municipal/county facilities and two private facilities.

It should be noted that the Kansas Army Ammunition Plant holds a permit from KDHE, identified as Permit 0401 (SWMU 15), for its incinerator. The permit also references the types of waste associated with the incinerator, including asbestos, clean rubble, construction/demolition waste, inert grenade bodies, municipal waste combustion ash, trash, and wastewater sludge. The permit also indicates that ash, trash and sludge are no longer disposed of at this facility, though it does not appear to prohibit them in the future.

In addition, the *Environmental Condition of Property Report*, prepared by the URS Corporation, indicates:

“KSAAP has a permit that allows the operation of an unlined, industrial, solid waste landfill (SWMU-146). The permit is renewed annually. Historically, this landfill was used for all types of sanitary waste including uncontaminated trash,

boxes, office waste, construction and demolition (C&D) debris, fly ash from coal-fired boiler operations, asbestos, grenades, and non-hazardous thermal treatment residue from the 2700 Area (DZI EEPE 2006). However, in 2001 the waste stream was limited to C&D debris, excluding wood. Five historical landfills have been identified and are currently being addressed under the Installation Restoration Program (IRP)."

The availability of significant land areas that could be used for landfill purposes could be an asset in terms of potential cash flows for the LRPA. Specifically, although there is limited demand locally for landfill capacity, a number of states export portions of their municipal solid waste, due to capacity constraints and other factors. As shown in Figure 8-4, Missouri exports more than 2 million tons of municipal solid waste annually, according to the National Municipal Solid Wastes Association (NMSWA).

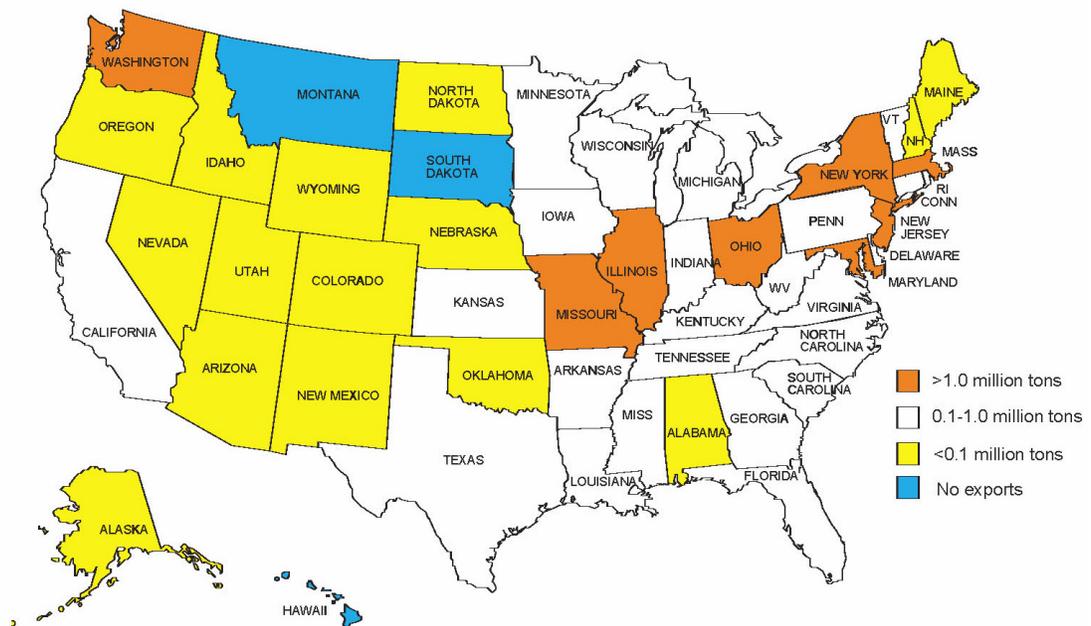


Figure 8-4 – Municipal Solid Waste Exports

The consulting team recognizes that landfill operations are not always viewed in a favorable light. In particular, the importing of refuse from outside the state could generate public opposition. However, from the perspective of providing cash flow for operation and maintenance of the remainder of the KSAAP property, a landfill operation could offer significant cash flows.

The economic viability of upgrading the existing incinerator on-site should also be evaluated, as compared to the costs associated with permitting, constructing and activating a new incinerator. The existing incinerator may be sufficient for processing medical waste, though emissions systems may require upgrades.

Finally, as discussed earlier in this Chapter, the LRPA should consider, with the Army, the creation of an on-site landfill that could accept “special wastes,” particularly those associated with the demolition of facilities on-site. A landfill of this type could create a significant revenue stream that could be used to support operation, management, maintenance and capital improvements for the KSAAP property during redevelopment.

f) Electrical Power Generation

According to the U.S. Department of Energy (DOE), recent technological improvements have led to a resurgence in the use of coal as a fuel source for electric power generation. According to data presented in January of 2007, there are 159 new proposed coal-fired power plants across the United States. These plants represent an investment of more than \$140 billion, and when completed will generate 96 gigawatts of power, enough to supply almost 100 million homes.

Recent DOE information indicates that three new coal-fired plants are proposed in the State of Kansas.

- The Sunflower Electric Power Corporation’s project includes three 700-megawatt units, which has an estimated cost of \$2.5 billion and is expected to come on-line in 2011.
- The Great Plains Energy project includes an 850-megawatt plant to be built at a cost of \$850 million, although the project was reportedly put on hold in 2004.
- The Westar Energy project includes a 600-megawatt plant to be built at a cost of \$1.3 billion. However, the project was reported as postponed in December of 2006.

Surrounding states have similar projects under consideration. For example, Oklahoma has four projects pending, with a combined generation of 3.3 gigawatts, at a cost of \$4.9 billion. Missouri has three projects pending that will generate 1.5 gigawatts at a cost of \$3.0 billion; while Arkansas has two projects in development that will generate 1.3 gigawatts at a cost of \$2.3 billion.

Published information cites the following as key location factors in siting a coal-fired power plant:

- availability and accessibility of primary energy - coal and water
- the ease with which the new station can be integrated into the national transmission network
- environmental impacts of both the power station and its related infrastructure, such as transmission lines

- construction period
- impact on the local area in terms of its communities and natural environment
- emissions - particulate and gaseous
- capital costs
- operating costs

KSAAP meets many of these criteria, as evidenced by Westar's reported interest in a portion of the property. However, if Westar is unable to construct a new plant at the KSAAP site, the LRPA may want to consider aggressively marketing the site for development of a power plant.

g) Oil Refinery

In 2005, the President of the United States proposed the creation of additional oil-refineries on closed military bases. According to the Association of Defense Communities, *"The Gasoline for America's Security (GAS) Act, H.R. 3893, requires the President to designate at least three closed military bases as potentially suitable sites for refineries, but the Secretary of Defense "shall give substantial deference to the recommendations of the redevelopment authority, as contained in the redevelopment plan for the installation, regarding the siting of a refinery on the installation." The LRA would be required "to consider the feasibility and practicability of siting a refinery on the installation" as it prepares its redevelopment plan. Another new provision states that closed installations considered suitable for a refinery should be disposed of according to applicable base closure laws."*

The above bill was passed, in part, to encourage the creation of new refinery capacity. Published reports indicate that no new refineries have been constructed in the U.S. in the past 30 years. This is due, in part, to uncertainties associated with the permitting and development of a new facility, and environmental regulations that impact the ability of a project to be developed on a clear timeline.

According to information from the National Petrochemical and Refiners Association (NPR), in 2004, demand for petrochemical products was approximately 18.5 million barrels per day. Gasoline accounted for approximately one-half of this demand, while fuel oil accounted for approximately 20%. The majority of this demand (95%) was met with products that were refined in the United States.

NPR indicates that there are more than 100 refineries in the United States. While many of these refineries are located in coastal areas near supplies (and major shipping points) of raw materials, some are located well inland. It is estimated that while 95% of products are refined in the United States, approximately 65% of the raw materials are imported.

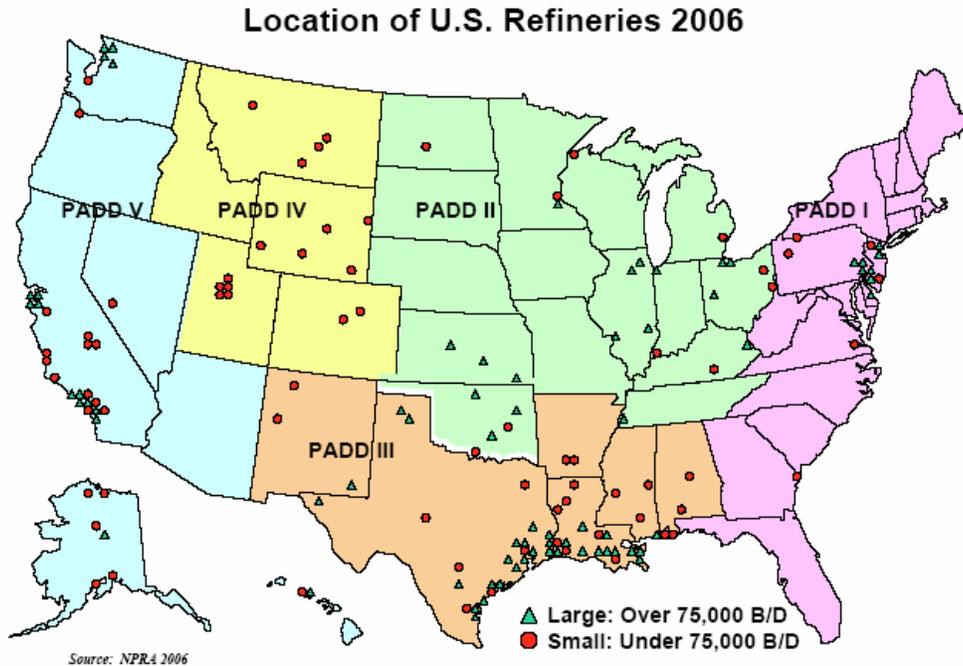


Figure 8-5 – Location of U.S. Refineries

In general, NPRA defines refineries with a capacity of less than 75,000 barrels per day as small, and those with a capacity of more than 75,000 barrels per day as large. According to NPRA, there are three refineries in Kansas, all of which are classified as large. Among these three is the Coffeyville refinery, which has a reported capacity of 108,000 barrels per day.

The LRPA should consider the possibility of being nominated as a refinery location. Despite concerns over the distance to raw materials, as well as issues surrounding transportation of finished products, KSAAP's locational attributes, workforce availability and conducive business climate could all be considered strong selling points in competing for an opportunity of this type.

D. Competitive Position

This section provides an overview of the competitive position of the KSAAP property. First, an overview of the site's strengths and weaknesses is presented, from the perspective of its location and marketability. Next, the KSAAP property is compared against other large-scale development sites in the south-central United States. Each site is ranked against KSAAP in terms of issues such as transportation access, availability and price for utility services, population and workforce, among others.

1. Strengths and Weaknesses of the Kansas Army Ammunition Plant Site

From a locational and market perspective, KSAAP has a variety of strengths and weaknesses related to the uses identified in this Chapter. Specific strengths and weaknesses are summarized below.

a) Strengths

Highway Access – KSAAP has good access to U.S. highway 400 for east-west movements. U.S. 400 connects with Interstate 44 in the area of Joplin, Missouri, approximately 45 minutes to the east, and with Interstate 35 in the area of Wichita, approximately two hours to the west. U.S. highways 59, 69 and 169 provide access to Kansas City and Interstate 35, approximately two and one-half hours north. These same highways provide access to Interstate 44 and the Tulsa area approximately two hours to the south.

Rail Access – The site has an established rail network on-site, with off-site connections to the nationwide rail network. The on-site rail network provides access to a wide variety of development parcels that could support many of the industries discussed in this Chapter.

Air Quality – The KSAAP property enjoys a good air quality rating, and has the ability to support a variety of industrial, energy and manufacturing uses that could be difficult to permit in more urbanized areas.

Ability to Support “Noxious” Uses – The KSAAP site has been used for more than 60 years for heavy industrial activities, including the production of ammunition. The property has significant buffers from surrounding land uses, providing the ability to support “noxious” or difficult-to-locate uses.

Availability of Large Development Sites – The KSAAP site includes almost 14,000 acres of land that could support commercial and industrial development. In order to determine the viability of individual sites, more detailed site information is required, particularly, a detailed wetlands database that will help define preferred development locations.

Infrastructure Systems – The KSAAP property has existing infrastructure in place that could be used to support redevelopment activities. In particular, the site has existing water, sewer and roadway systems that can serve as a starting point for redevelopment, though system upgrades will likely be required.

b) Weaknesses

Level of Investment – While the existing infrastructure systems can be used to “jumpstart” redevelopment at KSAAP, it is anticipated that comprehensive redevelopment of the property will require significant infrastructure investments in order to redevelop portions of the property to “modern” industrial standards.

Environmental Stigma – As with any property that has experienced significant environmental impacts, the marketing and redevelopment of property at KSAAP is expected to be affected by the environmental stigma associated with prior use (and contamination) of portions of the property.

Uncertainty Regarding Timing – The LRPA’s Executive Director has extensive experience dealing with property transfer issues associated with military base realignment and closure (BRAC). However, there are a variety of external factors that could affect the timing of when property will be available for redevelopment. Ongoing budget issues within the Department of Defense have left funding for implementation of BRAC more than \$3 billion below estimated costs for the current year. Thus, it is not clear when the necessary funding for environmental remediation of the property will be made available. In addition, the time period for environmental remediation actions may require that large portions of the developed area of the property be unavailable for redevelopment for several years.

2. Competitive Position of KSAAP Property

In order to understand whether available land at KSAAP has a unique value or market appeal, a search was conducted to identify large-scale industrial properties in the Southern United States. Published marketing information from a variety of real estate-related entities was the primary focus of the research, including information from real estate brokers as well as local, regional and state economic development professionals.

The primary search criteria was sites with a minimum of 1,000 acres of contiguous land with zoning suitable for development of a large scale industrial, manufacturing and/or warehouse and distribution use. These sites total more than 25,000 acres of available industrial land. A total of 10 sites were identified in states in close proximity to KSAAP. Sites identified include:

Burkburnett, Texas – A 3,450-acre tract with frontage on Interstate 44. This property is being marketed for industrial uses, but the marketing materials also indicate residential development potential, hunting lease potential and the possibility of a portion of the site being used as a working farm or ranch. The asking price is \$3,200 per acre.

Helena, Arkansas – This is a 4,000-acre property, located along the Mississippi River. A rail spur is available on the site, and there is river access. However, the site is somewhat removed from Interstate access. Access to Interstate 40 is available approximately 18 miles away, via U.S. Route 49. The site is served by municipal water and sewer, and there is an on-site 10-inch gas main. This property is available for \$3,200 per acre.

Marion, Arkansas – This property includes 1,750 acres, and has an asking price of \$25,000 per acre. The property abuts the Union Pacific Intermodal Terminal, and is in close proximity (less than three miles) to the interchange between Interstates 40 and 55. The site is served by municipal water and sewer. Natural gas is approximately one-half mile away.

Walnut Ridge, Arkansas – This property includes 1,750 acres, and is in the area of the Walnut Ridge Regional Airport. Access to Interstate 55 from the site is via U.S. Highway 63 to the southeast, approximately 60 miles away. The property does

benefit from access to the Burlington Northern line adjacent to the property, and a Union Pacific line is six miles away. The property is served by municipal water and sewer, as well as a low pressure gas line. The remote nature of this site is reflected in the asking price of \$4,500 per acre.

Osceola, Arkansas – This property includes 1,313 acres, and has frontage along the Mississippi River. Access to Interstate 55 is approximately six miles west. This property does not presently have on-site utilities, though the City has existing services within 1,000 feet of the site, including water, sewer and gas. While there is no port on-site, the Port of Osceola is located less than three miles to the north. Asking price is \$10,000 per acre.

Wynne, Arkansas – This property includes 1,150 acres. The site is located approximately 12 miles from Interstate 55, along U.S. Highway 1. Rail access (Union Pacific) is approximately one mile from the site. City water is available, and city sewer is just 300 feet away. Asking price is \$8,000 per acre.

West Memphis, Arkansas – This is a 1,312-acre property located along the Mississippi River. Access to the Union Pacific line is 1.25 miles away. While this site does not have its own port facilities, it is immediately adjacent to the Port of West Memphis. Access to Interstate 40 is available approximately 5 miles away. The site is served by municipal water, but the nearest sewer line is two miles from the site. The asking price for this property is \$15,000 per acre.

Holly Ridge, Louisiana – This site includes 5,300 acres of land. The property is located on Interstate 20 at the junction with Highway 183. Marketing materials for the property identify it as “The Crown Jewel of Mega-sites.” The property is owned by the State of Louisiana, and its attributes include the availability of dual rail, unlimited water availability, location within the I-20 Southern Automotive Corridor, 24” and 30” gas mains, fiber optics on-site, and a variety of state, federal and local incentives. However, no asking price is specified.

Pryor, Oklahoma – The Mid-America Industrial Park includes more than 9,000 acres, of which 7,000 are reported to be available. The park has its own independent water treatment system (designed for 50 MGD) and its own wastewater system (6.4 MGD). Union Pacific has lines on-site, and there is a cogeneration plant for electric service. In addition, Mid-America owns and operates a regional business airport as well. Pricing was not available.

Joplin, Missouri – This site includes 2,000 acres of developable land on the west side of Joplin, near the Kansas border. The site is served by the Burlington Northern line, and is approximately six miles from Interstate 44. Asking price is \$12,000 per acre.

a) Locational Attributes

Although the KSAAP property has good access to a U.S. highway, many of the competing locations are much closer to an Interstate highway. The KSAAP site has

good rail access, consistent with Burkburnett, Marion, Pryor and Walnut Ridge. Of the competing sites, only the Holly Ridge site reported dual rail access on-site.

b) Utilities

The majority of competing sites are reported to have utilities in place to support development of the sites. Three of the ten sites evaluated require extensions for sewer lines, but all are within 2,000 feet or less of the site.

In order to evaluate the cost for utility services at competing locations, statewide data for electricity and natural gas pricing, developed by the Energy Information Administration of the U.S. Department of Energy, was reviewed. Table 8-3 provides data on the average statewide cost for natural gas for industrial users. As shown in the table, Kansas has been among the lowest cost in terms of natural gas costs for industrial users. Kansas enjoys a significant price advantage over the states of Arkansas, Louisiana, Missouri and Oklahoma.

Table 8-3 – Natural Gas Costs, Major Development Sites

| (Dollars per 1,000 Cubic Feet) | | | | | | | Change |
|--------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|
| Community | State | 2001 | 2002 | 2003 | 2004 | 2005 | '01 - '05 |
| Helena | AR | \$6.38 | \$5.64 | \$6.94 | \$8.03 | \$9.44 | \$3.06 |
| Marion | AR | \$6.38 | \$5.64 | \$6.94 | \$8.03 | \$9.44 | \$3.06 |
| Osceola | AR | \$6.38 | \$5.64 | \$6.94 | \$8.03 | \$9.44 | \$3.06 |
| Walnut Ridge | AR | \$6.38 | \$5.64 | \$6.94 | \$8.03 | \$9.44 | \$3.06 |
| West Memphis | AR | \$6.38 | \$5.64 | \$6.94 | \$8.03 | \$9.44 | \$3.06 |
| Wynne | AR | \$6.38 | \$5.64 | \$6.94 | \$8.03 | \$9.44 | \$3.06 |
| Holly Ridge | LA | \$5.04 | \$3.69 | \$5.53 | \$6.58 | \$9.11 | \$4.07 |
| Joplin | MO | \$7.49 | \$6.01 | \$7.93 | \$8.80 | \$10.99 | \$3.50 |
| Pryor | OK | \$8.07 | \$6.28 | \$7.45 | \$8.59 | \$9.41 | \$1.34 |
| Burkburnett | TX | \$4.46 | \$3.40 | \$5.36 | \$5.91 | \$7.64 | \$3.18 |
| Labette County | KS | \$4.97 | \$3.62 | \$4.95 | \$6.41 | \$7.67 | \$2.70 |

Source: U.S. Energy Information Administration

Electric rates in Kansas are more consistent with neighboring states. As indicated in Table 8-4, the Energy Information Administration indicates that the average price per kilowatt-hour for industrial users in Kansas is consistent with pricing in Arkansas, and below Louisiana, Oklahoma and Texas.

Table 8-4 – Electric Costs, Major Development Sites

| (Cents per Kilowatt Hour) | | | |
|---------------------------|-----------|---------------|---------------|
| Community | State | 2005 | 2006 |
| Helena | AR | \$4.86 | \$5.16 |
| Marion | AR | \$4.86 | \$5.16 |
| Osceola | AR | \$4.86 | \$5.16 |
| Walnut Ridge | AR | \$4.86 | \$5.16 |
| West Memphis | AR | \$4.86 | \$5.16 |
| Wynne | AR | \$4.86 | \$5.16 |
| Holly Ridge | LA | \$8.70 | \$6.65 |
| Joplin | MO | \$3.89 | \$4.18 |
| Pryor | OK | \$5.13 | \$4.83 |
| Burkburnett | TX | \$8.16 | \$7.57 |
| Labette County | KS | \$4.85 | \$5.26 |

Source: U.S. Energy Information Administration

c) Workforce

In terms of labor force availability, KSAAP's available labor force within the county is at the median among the group of competitors. Data for each county where these large development sites are located was gathered from the U.S. Bureau of Labor Statistics. As illustrated in Table 8-5, Labette County's workforce is larger than half of the competing sites.

Table 8-5 – Workforce and Employment, Counties with Major Development Sites

| Community | County | State | Labor Force | Employment | Unemployment | Rate |
|--------------|----------------|-----------|---------------|--------------|--------------|-------------|
| Helena | Phillips | AR | 9,013 | 8,206 | 807 | 9.0% |
| Marion | Crittenden | AR | 22,765 | 21,344 | 1,421 | 6.2% |
| Osceola | Mississippi | AR | 20,486 | 18,743 | 1,743 | 8.5% |
| Walnut Ridge | Lawrence | AR | 7,648 | 7,111 | 537 | 7.0% |
| West Memphis | Crittenden | AR | 22,765 | 21,344 | 1,421 | 6.2% |
| Wynne | Cross | AR | 8,623 | 7,998 | 625 | 7.2% |
| Holly Ridge | Richland | LA | 8,603 | 7,932 | 671 | 7.8% |
| Joplin | Jasper | MO | 55,636 | 53,003 | 2,633 | 4.7% |
| Pryor | Mayes | OK | 16,933 | 16,118 | 815 | 4.8% |
| Burkburnett | Trinity | TX | 5,821 | 5,470 | 351 | 6.0% |
| KSAAP | Labette | KS | 10,679 | 9,990 | 689 | 6.5% |

Source: U.S. Bureau of Labor Statistics

In order to gain a better understanding of the ability of these large development sites to support major new employment opportunities, a radius analysis was completed around the primary zip code for each site, using demographic data from Claritas, a demographic and market research service provider. Population estimates were acquired for a 10-, 20- and 30-mile radius around the primary zip code for each site. As outlined in Table 8-6, the sites in Marion, West Memphis and Joplin offer access to a much larger population base within a 10-mile radius. However, as the radius around the property increases, competing sites gain access to larger populations. As shown in the table, within a 30-mile radius, eight of the ten competing locations have a larger population base than Labette County.

Table 8-6 – Populations Surrounding Major Development Sites

| Community | State | 10 Miles | 20 Miles | 30 Miles |
|-----------------------|-----------|---------------|---------------|----------------|
| Helena | AR | 18,384 | 41,628 | 85,319 |
| Marion | AR | 72,264 | 675,095 | 1,103,135 |
| Osceola | AR | 12,568 | 67,354 | 182,597 |
| Walnut Ridge | AR | 8,802 | 129,191 | 176,918 |
| West Memphis | AR | 176,632 | 787,641 | 1,126,549 |
| Wynne | AR | 16,714 | 47,664 | 74,252 |
| Holly Ridge | LA | 11,778 | 94,790 | 214,161 |
| Joplin | MO | 100,492 | 178,730 | 261,136 |
| Pryor | OK | 26,068 | 90,425 | 227,468 |
| Burkburnett | TX | 34,331 | 134,327 | 153,067 |
| Labette County | KS | 14,796 | 30,423 | 105,592 |

Source: U.S. Energy Information Administration

d) Matrix of Competitive Facilities

In order to compare the KSAAP site with competing facilities, a comparative matrix was developed. The matrix ranks each facility against the KSAAP site in each category. For example, the highway access at each available site is evaluated against the highway access at KSAAP. In those cases where the competing site is considered similar to KSAAP, a score of 2 is indicated. In those cases where the available site is superior to KSAAP, a score of 3 is indicated, and when the available property is inferior to KSAAP, a score of 1 is indicated. Under this approach for each of the 10 factors identified in Table 8-7, a potential (“perfect”) score of 30 is possible, if each competing site was rated higher than KSAAP in the various factors evaluated. A site that was similar to KSAAP would receive a score of 2 for each factor, or a total score of 20. Thus, any site with a total score of more than 20 can be viewed as more attractive than KSAAP, and any site with a score of less than 20 can be considered less attractive than KSAAP.

As shown in the table, the sites in Marion, Joplin and Pryor are considered the best quality locations as compared with KSAAP property. The property in Pryor was determined to be most competitive with KSAAP, as it had the highest scores due to excellent Interstate access, dual rail, dual gas and lower electric costs, as well as a larger population base from which to draw workers.

This matrix indicates that, from a subjective view, the KSAAP property could be competitive with some of the other large development sites in the Southern United States, though its highway access is considered one of the major limiting factors. The property’s large size, rail access, and low natural gas costs are considered its strongest marketing advantages (i.e. areas where competitors’ scores were lowest). Marketing challenges (i.e. areas where competitors scored highest) include highway access and the population base within the larger region.

Table 8-7 – Comparative Matrix of Major Development Sites as Compared to KSAAP

| | Helena AR | Marion AR | Osceola AR | Walnut Ridge AR | West Memphis AR | Wynne AR | Holly Ridge LA | Joplin MO | Pryor OK | Burk- burnett TX |
|--------------------------|--------------|--------------|---------------|-----------------------|-----------------------|-------------|----------------------|--------------|-------------|------------------------|
| Acreage | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 |
| Interstate Access | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| Rail Access | 2 | 3 | 1 | 1 | 1 | 1 | 3 | 1 | 2 | 2 |
| Water Availability | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 |
| Sewer Availability | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| Natural Gas Availability | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Electric costs | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 3 | 1 |
| Natural Gas Costs | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Labor Force | 1 | 3 | 3 | 1 | 3 | 1 | 1 | 3 | 3 | 1 |
| Population (30 miles) | 1 | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 |
| Total Score | 18 | 22 | 19 | 18 | 19 | 16 | 21 | 22 | 24 | 20 |

1 = Property is inferior to KSAAP

2 = Property is similar to KSAAP

3 = Property is superior to KSAAP

Source: RKG Associates, Inc.

9. PROPERTY TRANSFER PROCESS

A. Introduction

Previous chapters of this redevelopment plan have illustrated that the Kansas Army Ammunition Plant (KSAAP) has a variety of site conditions, as well as environmental and economic characteristics that may warrant multiple approaches for transferring the facility from military control, and/or its reuse for civilian purposes. This chapter provides an overview of the key types of transfer processes and conveyance mechanisms that are likely to be most applicable to possible approaches for redeveloping KSAAP.

Generally, these conveyance methods fall into two major categories that involve options for transferring the property, or portions of the property, at no cost or reduced cost, as well as others that involve acquisition at market rate values. Other options discussed in this chapter involve the potential for early transfer of the facility for civilian use prior to full closure by the military.

All of the options noted above are reflective of the military's criteria for disposal of surplus property emanating from the 2005 BRAC evaluation process. These criteria emphasize, among other factors, the DoD's intent to expedite the transfer process and to maximize a return on investment for the Federal government as part of that process. This indicated desire to accelerate the closure process and transfer the facility to community use means that the military may be more flexible in applying a variety of approaches to hasten this conveyance. However, it is also an indication that the military will "rely on and leverage market forces" to the greatest extent possible, as noted in the Base Realignment and Closure Manual (BRRM). All of these factors have ramifications for the LRPA's preparation of a final reuse plan, which will be discussed in this, and subsequent chapters of this redevelopment plan.

B. Summary of Major Findings and Conclusions

- The potential use of a Public Benefit Conveyance (PBC) for the transfer of KSAAP property at no cost or reduced cost may be limited to conservation purposes and the possible acquisition of the existing water and sewer systems.
- All potential conveyance mechanisms likely to be of use in property transfer, with the exception of a PBC, will require the completion of an appraisal to establish the property's market value.
- The LRPA should be particularly cognizant of the market value of the land and facilities at KSAAP, a value that will be reflective of the highest and best use of the property, and the potential effect that recommendations presented in this redevelopment plan may have on establishing that value.
- Consideration of early transfer may be a practical option for KSAAP since remediation of environmental cleanup by the military is anticipated to require an

extended period of time. An interim lease agreement for the current military contractor may also be feasible, but will be dependent upon continuation of this contractual arrangement.

- It is advisable that consideration be given to acquiring additional environmental insurance to protect the LRPA, as well as other parties involved with future use of the facility, against liability related to unanticipated contamination. Such insurance can help to protect against unknown existing conditions on the site and can also serve as a marketing tool to help attract financing and developers.
- The screening process for potential use of KSAAP facilities by organizations representing the homeless revealed that there is no interest for such use by any groups within the immediate region.

C. Property Transfer Alternatives

Once the decision has been made through the BRAC process to close a military installation such as KSAAP, federal law provides for a number of alternative transfer methods that can be employed by the Department of Defense (DoD) to dispose of the property. One of the first steps in the disposal process is the “screening” of the property to determine if other federal agencies have use for any or all of the facility. In the case of KSAAP, no other federal users identified an interest in the facility within the allotted timeframe, which resulted in its designation by the DoD as “surplus” property. In light of this fact, disposal of property at KSAAP can potentially occur under one or more alternative methods of transfer that will be dependent upon the type of end user (i.e. public or private) and the intended use.

The primary methods of transfer most likely to be considered for the KSAAP facility are outlined in Table 9-1, and discussed in more detail in the subsequent portions of this chapter. These methods are based on information presented in the *Base Redevelopment & Realignment Manual (BRRM) 2006*, which contains the DoD’s primary guidelines for the reuse of BRAC facilities.

Table 9-1 – Property Transfer Alternatives

| Conveyance Method | Conditions | Community Planning Considerations |
|--|--|--|
| Public Benefit Conveyance (PBC) | <ul style="list-style-type: none"> ▪ The property is conveyed at market value unless a sponsoring agency determines a discount is warranted ▪ The property must be used for public purposes (schools, healthcare, recreation, etc.) ▪ Sponsoring agencies may impose additional land use controls | <ul style="list-style-type: none"> ▪ Market value is an objective of the sponsoring agency – an appraisal will most likely be needed ▪ Consideration should be given to how the reuse plan will affect market value and ultimately the price paid to the sponsoring agency |
| Economic Development Conveyance (EDC) | <ul style="list-style-type: none"> ▪ The military department is required to seek market value ▪ However, the military can grant an EDC without consideration if proceeds support economic development for 7 years ▪ Proceeds not used for economic | <ul style="list-style-type: none"> ▪ Market value will need to be determined – an appraisal must be completed ▪ If LRA develops property, it must determine there are enough qualified investors to warrant a discount |

| Conveyance Method | Conditions | Community Planning Considerations |
|--|---|--|
| | <ul style="list-style-type: none"> • development can be recouped by the military | <ul style="list-style-type: none"> • A lower market value may be arrived at if reuse plans are more generalized and do not assume high densities of development due to agricultural and other types of conservation uses |
| Negotiated Sale to Public Entities | <ul style="list-style-type: none"> • Property can only be conveyed to public entity for a public benefit • Same benefit cannot be obtained from sale or PBC conveyance • Congress must approve transaction • If property is sold within 3 years all profits revert to the military | <ul style="list-style-type: none"> • Market value will determine final sale price for LRPA or other public body – an appraisal must be completed • A very detailed reuse plan may result in higher market value than a more generalized plan |
| Advertised Public Sale | <ul style="list-style-type: none"> • Property is conveyed by the military through public bidding process • Military will consult with LRPA before taking this approach • The military's objective will be to seek sale to highest responsible bidder | <ul style="list-style-type: none"> • Because this process requires a bid process, market value is assumed to be part of this process • The establishment of minimal land use controls in the reuse plan may encourage more rapid, market-driven redevelopment, if so desired by the LRPA |
| Conservation Conveyance | <ul style="list-style-type: none"> • Similar to a public benefit conveyance, but property must be used for conservation oriented purposes • Management of property must involve state or local government, or non-profit conservation organization • Property reverts to United States if use ceases to be for conservation purposes | <ul style="list-style-type: none"> • If conveyance is for no cost – market value is not an issue • The community plan should still examine highest and best use since conservation conveyances can severely limit the development potential of an otherwise economically viable site |
| Environmental Responsibilities Transfer/Sale (Early Transfer) | <ul style="list-style-type: none"> • Property is conveyed through two-step bid process • The military then requests a covenant deferral from state governor • After deferral is approved military can enter into a binding purchase agreement | <ul style="list-style-type: none"> • Because this process requires a bid process, market value is assumed to be part of this process • State will assume responsibility for oversight of remedial actions for contaminated sites • The establishment of minimal land use controls in the reuse plan may encourage more rapid, market-driven redevelopment, if so desired by the LRPA • Consideration should be given to acquiring additional environmental insurance to protect involved parties from future liability |
| <p>Source: <i>Understanding Key Issues in DoD's Base Redevelopment & Realignment Manual, An Infobrief from the Association of Defense Communities, May 2006</i></p> | | |

1. Public Benefit Conveyance

One of the more useful methods of property transfer for a variety of public uses is the Public Benefit Conveyance (PBC). A PBC can be used to convey real or personal property to state and local governments, and certain non-profit organizations, for public purposes at no cost or reduced cost. These purposes include schools, parks, public health facilities, law enforcement, emergency management response, correctional facilities, historic monuments, self-help housing, and wildlife conservation. If this method is selected by the LRPA, and approved by DoD, a federal sponsoring agency may request assignment of the property for purposes of conveying the property to a designated eligible recipient. The sponsoring agencies are responsible for selecting qualified applicants and determining the amount of the discount (if any) from the fair market value of the property. It should be noted that some uses, such as law enforcement, emergency management response, correctional facilities, historic monuments, and wildlife conservation, do not require a sponsoring agency and can be directly transferred from the DoD to an approved recipient. The primary PBC approaches that are potentially useful in redeveloping the KSAAP facility are summarized below.

Conservation Conveyance – The Secretary of the Army may also convey surplus property that is considered “suitable and desirable” for conservation purposes to a state or local government, or to a non-profit organization that exists primarily for the purpose of natural resource conservation. Such a conveyance may, if noted in the deed, permit the recipient to convey the property for the same purpose and conduct incidental revenue producing activities. If a property transferred in this manner ceases to be used for conservation purposes, ownership shall revert back to the Federal government.

Public Safety – Water and sewer systems, as well as medical facilities, can be transferred without cost as a PBC through the endorsement of the U.S. Department of Health and Human Services.

Education – The U.S. Department of Education can convey land and facilities to public and private non-profit educational institutions on a discounted basis over thirty years. The educational entity actually fulfills the obligation to the Federal government for the property at the rate of three and one-third percent annually through constructive educational use. Title to the property is conveyed up front, subject to educational use restrictions, and a reverter or buy-out provisions.

2. Economic Development Conveyance

Transfer of the KSAAP facility could potentially occur by means of an Economic Development Conveyance (EDC) from the Army. However, only a Local Redevelopment Authority (LRA), such as the LRPA, is eligible to acquire property under an EDC. The LRPA must demonstrate that the proposed uses for the property will generate sufficient jobs to justify an EDC conveyance, and that the proposed land uses are realistically achievable given current and projected market conditions. In most cases, the Army will be required to seek fair market value consideration for the EDC

conveyance, although it is authorized, on a case-by-case basis, to grant an EDC for no consideration.

Under this scenario, an Implementation LRA, or Local Redevelopment Authority that has the ability to acquire and manage property, would have to be established to oversee redevelopment of the site once the existing LRPA has fulfilled its responsibilities for preparing this reuse plan. The Implementation LRA would have to take title to the property within a “reasonable time” after the Army makes its surplus property determination. In addition, the LRA must agree that the proceeds of sale or lease of the property received during the first seven years after initial conveyance shall be used to support the economic development of the installation. The Implementation LRA may use proceeds from the property to fund the following activities for supporting economic redevelopment of the site.

- Road construction and public buildings
- Transportation management facilities
- Storm and sanitary sewer construction
- Police and fire protection facilities and other public facilities
- Utility construction
- Building rehabilitation
- Historic property preservation
- Pollution prevention equipment or facilities
- Demolition
- Landscaping, grading and other site or public improvements
- Planning and marketing reuse of the installation

3. Negotiated Sale or Public Sale

There are a number of other methods that the Army can use to dispose of the surplus property, two of which, negotiated sale to a public entity or an advertised public sale, have reasonable potential for possible uses related to the KSAAP facility. A negotiated sale can only be transacted with a public body if a public benefit, which would not be realized from a competitive advertised sale or authorized public benefit conveyance, will result from the negotiated sale. The grantee may not pay less than fair market value based upon a highest and best use appraisal of the property. In addition, final approval of the sale must be authorized by Congress. If the property is sold within three years following a negotiated sale, the grantee may be required to remit all proceeds in excess of its initial acquisition costs.

If the LRPA, after preparing a reuse plan, determines it is in the best interest of the community not to be directly involved in redeveloping the site, it can recommend that the Army dispose of the property through a public sale. The actual method of sale could be one of a number of different approaches including a sealed bid, Internet auction, or on-site auction to the highest bidder. Under such an approach, the DoD would make a determination whether to sell the entire site or as subdivided parcels. Property acquired by a private organization or individual, however, is subject to local land use and zoning controls.

4. Disposal of Property for Use by Homeless

As part of the initial screening process for reuse and disposal of a BRAC property, consideration must be given to potential use of the property to provide housing and/or services for the homeless. Property that has been identified for potential use to the homeless must be conveyed to either an organization that is a representative homeless provider, as approved by the U.S. Department of Housing and Urban Development (HUD), or the LRPA. If the property is conveyed to the LRPA, it must then make it available to the homeless provider for no cost. The LRPA is also responsible for monitoring the use of the property and ensuring that the homeless provider complies with the legally binding agreement that must accompany all such conveyances.

In accordance with base closure statutes and regulations, the LRPA must solicit Notices of Interest (NOI) from state and local governments, representatives of the homeless, and other interested parties in the vicinity of the installation that may be eligible for a public benefit conveyance related to the KSAAP facility. The LRPA must give notice as to the timeframe in which NOIs will be accepted for submittal and hold hearings to allow interested parties to provide input into the reuse planning process. On June 8, 2006, the LRPA published a public notice soliciting interest from the types of organizations noted above with a deadline for receipt of said notices by September 15, 2006. During this time period, the LRPA received no notices of interest from any qualified organizations or representatives of the homeless.

5. Interim Use Leases

The ultimate goal of the military, with regard to BRAC facilities, is to dispose of any surplus property as promptly as possible. One means of facilitating an early or expedited transfer is through execution of an interim lease. Prior to deed transfer there may be opportunities for the LRPA to obtain access to certain land parcels or facilities on an interim use basis that could allow economic development to proceed prior to actual installation closure and transfer. There are many examples from previous BRAC rounds where the LRPA assumed responsibility for operation of the base's infrastructure in order to facilitate establishment of a master lease agreement that allowed for subleases of specific structures, or sites, for civilian uses. This, in turn, created short-term revenue-generating activities and/or helped to minimize the operating and maintenance costs of the properties. An interim lease approach may be suitable for KSAAP with regard to its potential continued operation.

If the military determines that the interim use of such property would facilitate state and local economic efforts, and not interfere or delay final property disposal, it may be inclined to grant such a lease. Further, the military may accept less than fair market value if it determines that such acceptance would be in the public interest and fair market rent is unobtainable or not compatible with such public benefits. Before entering into a lease, the military must consult with the Kansas Department of Health and Environment (KDHE) to determine whether environmental conditions on the property are acceptable, as discussed subsequently under the section related to early transfer authority, for execution of such an agreement. Consultation with the Environmental Protection Agency (EPA) may also be helpful.

D. Appraisals and Fair Market Value

It should be noted that the Army, or in the case of a Public Benefit Conveyance (PBC) the sponsoring agency, is required to obtain appraisals of fair market value of the property prior to conveyance. Therefore, any transfer of property at KSAAP by means of an EDC, negotiated sale, or public sale, as well as a PBC, will necessitate preparation of an appraisal. Appraisals must be based on the highest and best use of the property, taking account of all property conditions that are relevant to fair market value. The final determination of fair market value is made by the Secretary of Defense, or a designee such as the Secretary of the Army, and cannot be negotiated by the LRPA.

Determining market value can often appear to be a rather subjective judgment, since arriving at a highest and best use for a property is dependent upon a number of assumptions that reflect *potential* future conditions that may exist at the property. Market value is heavily dependent upon assumptions related to market conditions, availability of resources, tenants, environmental contamination, capital costs, and code violations. An analysis of highest and best use is required to determine the highest economic return that is typically based on the four following tests.

- What uses are *physically possible* for the site in that they could function adequately for their intended purpose?
- What uses are *legally possible* based on compliance with all applicable land use regulations and laws?
- Which uses are *financially feasible* in terms of their ability to provide an adequate return on investment?
- What is the *maximum productivity* of the physically, legally, and financially feasible uses, in terms of generating the highest return?

Based on these criteria, it is evident that the local reuse planning process can have a significant impact on determining highest and best use and ultimately market value. The final reuse plan will address issues such as zoning and other land use controls, estimated infrastructure improvements, public land uses, and redevelopment incentives. Detailed plans that provide proposals for high-density development, for example, may result in higher

market value than less detailed or lower density redevelopment plans. While this possibility should not necessarily preclude planning for more intensive land use, it is important that any plan accurately reflect redevelopment potential from an economic perspective, since this planning is likely to affect the purchase price that will have to be recovered by either the community or a private developer.

E. Early Transfer of Property

Under certain circumstances, the military may have unfinished responsibilities regarding a BRAC installation that could preclude immediate transfer of property or otherwise affect the clear-title status of the facility. In the case of KSAAP, such a situation will exist with regard to remediation of contaminated sites at the facility where final cleanup and long-term management by the Army is expected to continue through 2037. Provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) require federal agencies to complete all environmental remediation actions for contaminated sites before transferring property by deed to a non-federal entity.

An amendment to CERCLA in 1996, however, provided an alternative approach that allows for early transfer of contaminated sites prior to full remediation. Furthermore, through the course of the last several BRAC rounds, DoD has made significant efforts to expedite the transfer of such sites, including approaches that involve privatization of all or portions of the environmental cleanup process. An early transfer of a military base with privatized environmental remediation typically requires the following interrelated agreements, which are described in more detail below.

- An environmental services cooperative agreement (ESCA)
- A guaranteed fixed-price (“GFP”) contract
- Environmental insurance
- Enforceable agreement(s) with the state environmental regulatory agency and/or U.S. Environmental Protection Agency (EPA)

As part of the transfer agreement, DoD can oversee the entire cleanup process or enact a subsidiary agreement with either a local, county or state government agency, as well as a private entity that represents the interest of a BRAC installation, to oversee cleanup and restoration activities. The governor (or EPA at a Non-Priority List [NPL] site) typically expects that such an agreement be negotiated prior to approving an early transfer through a Covenant Deferral Request.

1. Environmental Services Cooperative Agreement (ESCA)

The Defense Environmental Restoration Program (DERP) authorizes DoD to enter into agreements with any state or local agency to carry out aspects of DoD’s responsibilities under DERP, including the identification, investigation and cleanup of contamination. Military departments have begun entering into “environmental services cooperative agreements” with Local Redevelopment Authorities (LRAs) to provide LRAs funds to complete DoD’s remaining environmental cleanup responsibilities at property being considered for early-transfer. The ESCA describes exactly what responsibility is being

transferred to the LRA and what responsibility is being retained by the military department. The military department must retain its underlying liability for environmental cleanup under CERCLA.

2. Guaranteed Fixed-Price Contract

Theoretically, an LRA could decide to engage an environmental contractor under a traditional time and materials contract to perform the environmental cleanup transferred under the ESCA. However, few if any LRAs are willing to take the risk that the ESCA grant will be sufficient. Consequently, the LRA typically engages an environmental contractor to remediate the site for a guaranteed fixed price, under a Guaranteed Fixed Price Contract (GFPC), backed by a “cost-cap” or “stop-loss” insurance policy. The GFPC for remediation is a performance-based scope of work to be delivered for the guaranteed price regardless of the cost.

3. Environmental Insurance

As part of any real estate transfer process involving a site that has been subjected to environmental contamination, strong consideration should be given to obtaining environmental insurance. As noted previously, under the provisions of CERCLA, the Federal government is responsible for cleaning up any contamination that can be attributed to DoD activities. In addition, BRAC properties are afforded a second level of protection under the National Defense Authorization Act, through which the DoD indemnifies transferees and lessees of base closure property from legal action for releases or threatened releases of hazardous substances resulting from DoD activities. Although these measures do provide a considerable level of protection for reuse of contaminated sites, the acquisition of environmental insurance may also be warranted to offer further assurance to future owners against potential liability.

Early transfer transactions typically involve the purchase of two interrelated environmental insurance policies. As noted above, the first is a “cost-cap” or “stop loss” policy. These types of policies protect the environmental contractor against cost overruns for the scope of work the contractor is obligated to perform. These policies can also be structured to protect the LRA by allowing a substitution of contractors if the first contractor has defaulted on its obligations.

The second type of environmental insurance is a liability policy, referred to as “a pollution legal liability” policy or “environmental impairment liability” policy. These policies generally combine a number of different types of coverage, but two of the most important are first party claims for cleanup of “unknown” contamination and third party claims for damages arising from the contamination. Other coverage can be included for issues such as tenant interruption or loss of rental value.

The application of an environmental insurance policy to a BRAC site such as KSAAP is a complex transaction, since there can be a number of parties involved in the remediation and redevelopment who are subject to various inherent environmental risks as part of the property transfer process. These parties can include the LRPA, local and county governments, contractor, consultant, project manager, as well as the financial company,

developer, or purchaser. In light of this fact, insurance carriers have developed appropriate policies that help to manage these risks in an effort to protect all participants from known and unknown exposures at a given site. The selected policy should be in place as soon as the LRPA or other insured entity incurs any liability as a result of any transfer or conveyance mechanism, including the execution of a lease. Prior to selecting the appropriate policy, a risk management program should be developed that recognizes and balances the proposed transfer structure, reflects acceptable levels of risk for the parties involved and is flexible enough to adapt to unanticipated future changes. In addition, selection of a qualified insurer will also be an important part of this process. Some key characteristics suggested by the Association of Defense Communities (ADC) that should be considered when selecting a group of insurers should include the following.

- A strong and stable financial position through industry ratings
- Track record of previous BRAC placement
- Commitment to the BRAC market all the way to senior management
- The ability to bring an efficient team of underwriters, environmental consultants and legal experts with demonstrated BRAC experience to the table
- The ability to work alongside your attorneys, environmental consultants and broker as a team

4. The Enforceable Agreement(s) with the State and/or EPA

The military departments and the governor, who must approve the early transfer request, expect the parties assuming responsibility for the remediation to enter into a consent agreement (or similar enforceable agreement) with the state agency that acts as the lead regulator at the base. A consent agreement sets forth the processes that must be followed to receive a determination from the state agency that all necessary remedial action has been completed. The consent agreement also sets forth a schedule for cleanup. It may also require the parties to enter into a separate land use covenant imposing interim land use restrictions on the property during the cleanup. The consent agreement also stipulates penalties for noncompliance.

10. REDEVELOPMENT GOALS AND REUSE ALTERNATIVES

A. Introduction

This chapter identifies redevelopment goals for the Kansas Army Ammunition Plant (KSAAP) and presents two land use alternatives for the site. The alternative land use concepts are based on a variety of factors, including site conditions, market potential and redevelopment goals. The two reuse alternatives are described in general terms and information is provided concerning types of uses and property disposition strategies.

B. Summary of Major Findings and Conclusions

- A recently completed (September 2006) “Economic Vision for the Future of Labette County, Kansas” identified a number of goals and action steps for improving the regional economy. Specific goals relating to the redevelopment of KSAAP are noted below:
 - Stabilize existing employment base and grow area businesses.
 - Expand employment opportunities by attracting new industries that can capitalize on existing assets. A specific action step noted that KSAAP redevelopment could act as a catalyst for long-term economic expansion.
 - Broaden the types and quality of available jobs.
 - Initiate a strategic regional approach to economic development that involves the preparation of a realistic reuse and implementation plan for KSAAP that supports long-term economic growth of the region.
 - Continue to maintain and upgrade local/regional infrastructure systems.
 - Maintain and enhance attributes associated with the region’s quality of life including a reuse plan for KSAAP that is environmentally sensitive to the high-value habitat located on the site.
- In addition to these regional goals and action steps related to KSAAP, a number of other specific goals for the reuse of KSAAP were also identified.
 - The acquisition and redevelopment of property at KSAAP should be accomplished in a fiscally responsible manner.
 - Reuse efforts should focus on those portions of the KSAAP site that offer the greatest potential for successful redevelopment.

- The redevelopment of KSAAP should be undertaken in a manner that ensures that the environmental cleanup of hazardous waste sites is effective, efficient and relates to the redevelopment needs identified in the reuse plan.
 - Redevelopment efforts should encourage the retention of existing private sector employment currently at KSAAP.
 - The continued use of property at KSAAP for agricultural purposes should be encouraged.
 - The organizational responsibility for implementing the redevelopment plan should work with federal, state and local agencies in establishing conservation and/or recreational areas at KSAAP.
- Implementation of these goals will require leadership, commitment to take action and financial resources. A wide variety of private and public organizations will also have to be involved in activities required to achieve these goals.
 - Two reuse alternatives were identified for the redevelopment of KSAAP.
 - Several key factors (noted below) influenced the identified reuse alternative.
 - Almost 50% of the building space was used for munitions production. It is not anticipated that these facilities could be used for other purposes.
 - About 41% of the buildable space (250 structures) was used as storage and warehouse facilities that lack heat or plumbing.
 - Reuse Alternative A focuses on retaining the production of munitions and commercial explosives at KSAAP. Key production areas would be retained for reuse as well as existing storage magazines.
 - Reuse Alternative B involves a variety of supporting land uses. Reuse efforts focus on energy production, hazardous waste storage and incineration, explosive storage and manufacturing, agricultural/conservation activities and railcar storage.
 - Significant land areas are devoted to conservation and agricultural uses under both Reuse Alternatives.

C. Redevelopment Goals

The closing of a military facility can be a very traumatic experience. Due to a loss of jobs and a subsequent decline in business activity, most communities impacted by a closure want to create new employment opportunities as soon as possible. As a result, there is often a strong desire in the community to transfer the property from federal ownership to other types of uses as quickly as possible.

Prior to the preparation of the KSAAP Comprehensive Master Redevelopment Plan, an overall economic development strategy was completed for Labette County, Kansas. As part of the preparation of the strategy, an economic visioning charrette was conducted in the City

of Parsons on September 27, 2006. A key component of this economic vision involved the identification of specific goals and actions. A number of the goals articulated, specifically related to the redevelopment of KSAAP. These economic related goals and key action steps that support the redevelopment of KSAAP are outlined below.

Employment Growth and Business Expansion

- **General Economic Goal** – Stabilize existing employment base and grow area businesses.
 - Improve competitiveness of area businesses within national/global markets.
 - Provide public sector incentives and resources to area businesses.
- **General Economic Goal** – Expand employment opportunities by attracting new industries that can capitalize on existing assets.
 - Position KSAAP redevelopment as a catalyst for long-term economic expansion – minimize impediments for reuse of the facility.
 - Promote alternative industries/uses for local agricultural products.
 - Promote technology “connectivity” between public and private sector institutions and businesses.
 - Target marketing of businesses that form “clusters” with existing industry sectors – special emphasis on the agricultural and manufacturing sectors.
 - Focus business recruitment on transition from manufacturing to technology industries.
- **General Economic Goal** – Broaden the types and quality of available jobs.
 - Increase the number of high-paying jobs and professional positions.
 - Attract more technology-oriented jobs.
 - Provide more jobs for younger members of the workforce.

Economic Development Planning

- **General Economic Goal** – Initiate a strategic regional approach to economic development.
 - Prepare a realistic reuse and implementation plan for KSAAP that supports the long-term economic growth of the region.
 - Position Labette County as the economic hub of southeastern Kansas and a conduit for strategic development initiatives.
 - Expand marketing activities to better promote regional attributes and quality of life.

Infrastructure Systems

- **General Economic Goal** – Continue to maintain and upgrade local/regional infrastructure systems.
 - Develop an action/investment plan for expansion of infrastructure systems to support long-term economic development.
 - Encourage use and development of alternative/renewable energy supplies.
 - Evaluate the potential for an “Energy Park.”
 - Ensure that the region’s digital technology infrastructure system is up-to-date and compatible with industry standards.

Quality of Life

- **General Economic Goal** – Maintain and enhance attributes associated with the region’s quality of life.
 - Develop a reuse plan for the Kansas Army Ammunition Plant that is environmentally sensitive to the high-value habitat located on the site.
 - Establish policies and programs to protect agricultural land as a quality of life attribute and economic development component.

In addition to the long-range goals and action steps identified during the economic visioning charrette, a number of other specific goals related to the reuse of KSAAP were also discussed at several public meetings related to the preparation of this redevelopment plan. These specific goals are noted below.

KSAAP Redevelopment Goal – The acquisition and redevelopment of property at KSAAP should be accomplished in a fiscally responsible manner.

Members of the KSAAP Local Redevelopment and Planning Authority and local residents have noted that Labette County government, as well as other local governmental agencies impacted by the closure of KSAAP, do not have the financial resources necessary to acquire and redevelop the site. Consequently, the redevelopment of KSAAP needs to be undertaken in a manner that does not place unrealistic financial burdens on local and county governments.

KSAAP Redevelopment Goal – Reuse efforts should focus on those portions of the KSAAP site that offer the greatest potential for successful redevelopment.

Although the total amount of reusable building square footage is not very large in comparison to other closing military facilities, the land area at KSAAP is significant. However, a major portion of the site lacks adequate utilities (e.g., water, sewer, and telecommunications) and substantial financial resources may be required to maintain and upgrade the existing utilities infrastructure. While there is potential for private redevelopment at the site, redevelopment will be expensive. Consequently, reuse

efforts should be directed at those portions of the site with the greatest potential for success. This approach will also minimize the amount of local governmental financial resources required for redevelopment.

KSAAP Redevelopment Goal – The redevelopment of KSAAP should be undertaken in a manner that ensures that the environmental cleanup of hazardous waste sites is effective, efficient and relates to the redevelopment needs identified in the reuse plan.

As discussed earlier (See Chapter 5 – Environmental Issues and Chapter 6 – Explosives Hazard Review) a number of environmental concerns have been identified at KSAAP. A major goal of reuse efforts should be to ensure that cleanup occurs as quickly as possible and that all cleanup efforts support redevelopment activities identified in the redevelopment plan.

KSAAP Redevelopment Goal – Redevelopment efforts should encourage the retention of existing private sector employment opportunities currently at KSAAP.

Presently there are a number of private sector jobs at the KSAAP site and maintaining these jobs will significantly enhance long-term redevelopment opportunities. However, this approach will require private sector participation in assuming some of the risks associated with redevelopment. Convincing private firms to assume development risks may require a variety of incentives and financial assistance.

KSAAP Redevelopment Goal – The continued use of property at KSAAP for agricultural purposes should be encouraged.

Currently portions of KSAAP are used for various agricultural activities. This kind of private sector use should be continued since it will minimize public investment as well as enhance cash flow required to maintain the site.

KSAAP Redevelopment Goal – The organization responsible for implementing the reuse plan should work with federal, state and local agencies in establishing conservation and/or recreation areas at KSAAP.

The existing wildlife habitat at KSAAP offers some unique opportunities for expanding recreation and conservation areas within Labette County and the region. Portions of KSAAP should be designated for conservation and special events often associated with these types of natural resource characteristics.

It should be emphasized that the goals outlined above are broad statements that can be used to establish direction for the community in redeveloping KSAAP. While the goals are somewhat abstract and rarely fully obtainable, their delineation defines priorities for community action.

The process of goal identification, however, is only the first step. Implementation of these goals will require leadership, commitment to take action and financial resources. In addition,

it must be strongly emphasized that the pursuit of these goals is not the exclusive responsibility of the KSAAP Local Redevelopment Planning Authority (LRPA) or subsequent organizations assigned implementation responsibilities. A wide variety of private and public organization will have to be involved in actions required to achieve these goals. Finally, it must be recognized that the redevelopment process will be lengthy. Therefore, the goals outlined in this chapter should be periodically reviewed and altered, if necessary, to deal with changing economic conditions.

D. Redevelopment Alternatives

This section provides an overview of two reuse alternatives for the Kansas Army Ammunition Plant. The alternatives identify a range of land uses for KSAAP based on an evaluation of existing assets and liabilities associated with the site. While the two alternatives represent different approaches for site redevelopment, the final reuse plan could represent a composite of the two alternatives, as well as other types of uses based on discussions with LRPA members and residents of the community. An estimate of acreage associated with the reuse alternatives is also included. The estimates of land use acres are approximate and are based on a total KSAAP site size of 13,727 acres.⁶

Several factors influenced the layout of the two alternatives. A key site consideration, as discussed in Chapter 2 (Identification and Assessment of Facilities), is the use and condition of existing buildings on the site. Although there are more than 2.5 million square feet of building space at KSAAP, almost 50 percent of the building space (1.2 million square feet) has been devoted to the manufacturing of munitions. Due to this historic use, it is anticipated that many of the production-related facilities will have environmental and contamination issues that may render them unusable, except for continued munitions or explosive manufacturing.

The other significant use of structures at the site involves 250 buildings (more than 1 million square feet or about 41% of buildable space) that have been used as storage and warehouse facilities. Many of these facilities involve storage igloos (typically 1,200 to 1,800 square feet each) and most of the facilities lack heat or plumbing.

Due to the conditions and character of existing buildings it was determined that one practical reuse alternative would involve redevelopment of the site similar to the existing use – munitions and commercial explosives manufacturing and storage, on a somewhat smaller scale. The second alternative would primarily involve a land redevelopment strategy that also includes an extensive building demolition effort.

It was determined that under both reuse alternatives more intensive redevelopment activities would be located in the middle portion of the site where existing sewer and water lines are located. As discussed in Chapter 3 (Major Utilities) both the water and sewer treatment plant are in fairly good condition. The distribution systems, however, will require significant improvements over time as the site is redeveloped.

⁶ See Plant Data Summary – Kansas Army Ammunition Plant – June 1998.

1. Reuse Alternative A

Reuse Alternative A focuses on retaining the production of munitions at KSAAP, on a smaller footprint, that also includes the manufacturing of explosives. Key production areas would be retained as well as existing storage magazines. These land uses, as well as related activities, are briefly described in the following sections.

a) Munitions and Explosives Manufacturing and Storage

The existing facilities at KSAAP were designed and constructed to support the manufacture and storage of munitions. In particular, the site includes dozens of ammunition storage igloos and aboveground storage magazines. Under Reuse Alternative A, the plan envisions continued manufacturing of munitions, as well as other types of explosives, in the central core of KSAAP. Existing load lines (1000, 1100 and 1200 areas) could be reused, or the existing facilities could be demolished, and new munitions and explosive manufacturing facilities constructed.

It is anticipated that the storage igloos and magazines would be used by on-site producers of munitions and/or explosives. However, these facilities could also be used on a contractual basis for storing munitions and explosives manufactured at other locations.

This land use category includes approximately 4,800 acres in the central core of the site, as illustrated on Map 10-1. It is assumed that the production and storage facilities would include secure environments for their operations, through fencing and other access controls. However, to ensure access to other portions of the site, it is anticipated that north-south roads (D Road and E Road) would be usable by other entities.

Disposition – Due to environmental issues associated with the production of munitions and explosives, it is recommended that the Reuse Authority transfer ownership of any parcels expected to be used for manufacturing of these items to the end user. However, it is also recommended that the Reuse Authority maintain ownership of the ammunition storage igloos and bunkers, and that these facilities should be marketed through short- and long-term leases.

b) Hazardous Materials Storage and Incineration

Currently, the area identified in Reuse Alternative A for hazardous materials storage and incineration is the location of the contaminated waste processor, the explosive waste incinerator and the demolition/burning grounds. Reuse Alternative A envisions capitalizing on the availability of the contaminated waste processor for incineration of hazardous materials, including medical and biological waste, as well as wastes contaminated with trace levels of explosive compounds. This Alternative also recognizes the potential for the existing demolition/burning grounds to be used as a hazardous materials landfill, not only for the existing materials that are located there, but also for demolition debris from the anticipated environmental remediation of load lines that are no longer required for production purposes.

This land use category includes approximately 1,640 acres in the easternmost portion of the property. Thus, it will be important to maintain a perimeter buffer between the on-site land use and adjacent off-site parcels. This type of use would have to be operated as a secure facility (fencing and limited access), due to health and safety concerns. Access could be via 22000 Road from the east or Scott Road from the north to the on-site roadway network.

Disposition – Operation of the facilities envisioned in this area of the site is a highly regulated undertaking. However, this type of use could generate substantial cash flows after upfront capital investments have been recouped. It is recommended that the Reuse Authority identify one or more companies that can operate this type of facility as partners with the Reuse Authority. This will allow the Reuse Authority to participate in the available revenue streams associated with these activities, while benefiting from the experience and credibility of one or more companies that are active in similar types of enterprises.

c) Explosives Storage

A separate group of ammunition storage magazines is located in the northeast corner of KSAAP. These facilities presently provide storage associated with production lines that are expected to be demolished (see Future Development later in this section). It is anticipated that these magazines could be used by on-site producers of munitions and/or explosives. In addition, these facilities could also be used on a contractual basis for storing munitions and explosives manufactured elsewhere.

This land use category includes approximately 717 acres in the northeast corner of the site, as illustrated on Map 10-1. It is anticipated that the magazines would be operated in a secure environment, through fencing and other access controls. The existing buffering is considered sufficient in terms of maintaining separation between explosives and off-site property owners. The primary access to this portion of the property would be via Trego Road off-base (aka E Road on-base).

Disposition – It is recommended that the Reuse Authority maintain ownership of the ammunition magazines, and that these facilities be marketed through short- and long-term leases.

d) Office/Business Park

The northwest corner of KSAAP is envisioned as supporting the development of office and business park-type uses. The existing administration building in this portion of the site could serve as the anchor facility, with almost 70,000 square feet of office space. Given the availability of existing utility systems in this area, the development of additional office and flex-type buildings could be accomplished with a reduced level of investment, as compared with sites that do not have ready access to infrastructure.

Map 10-1 - Alternative A

This land use category includes approximately 336 acres in the northwest corner of the site, as illustrated on Map 10-1. At a density of 5,000 square feet per acre, this portion of the property could support approximately 1.7 million square feet of floor space. It is anticipated that this portion of the property would have minimal access controls, similar to other industrial/business parks in the area, notably existing Parsons industrial and business parks. Access to this section of KSAAP could be obtained via Rooks Road or Scott Road from the north, or via 23000 Road from the west.

Disposition – It is recommended that the Reuse Authority consider the model used by the City of Parsons in creating its industrial and business parks. The city typically installs necessary infrastructure and utilities in order to have an inventory of available sites that can be developed with a minimum of delay. In many cases, companies are attracted to sites that are “shovel-ready,” meaning that construction can begin almost immediately. This approach would also allow the Reuse Authority to develop infrastructure using a phased approach in order to conserve capital investment dollars.

Once the development of necessary infrastructure has been completed and/or upgraded, the Reuse Authority could subdivide lots for initial phases. This would permit the Authority to transfer title for industrial properties while maintaining control over uses that are allowed at the business park.

e) Energy Production

As discussed in Chapter 8 (Market Potential of Land and Facilities) of this Redevelopment Plan, a portion of the KSAAP facility is well positioned to capitalize on the need for expanded energy production. In particular, this portion of the site could support development of one or more bio-fuel facilities (ethanol), as well as a more traditional oil refinery. A 790-acre portion of the property, located in the northwest quadrant of the site, is envisioned for energy production uses.

This portion of the property is served by rail, something considered critical in the development of either an oil refinery or bio-fuel facilities. In addition, although maintenance shops are presently located in this area, they only utilize an estimated 50 acres of the property. Further, some of these buildings could be used as support facilities for the Authority, or for new on-site users.

Disposition – It is anticipated that the undeveloped land associated with an oil or bio-fuel refinery will have to be transferred by deed to the user/developer. However, the Authority should have a recoupment provision in any transfer documents that requires that the land be returned to the Authority without cost or penalty in the event the planned refinery is not developed. It is recommended that the Authority maintain ownership of the shops and garages in the 200 Area, for use by the Authority, as well as for long- and short-term leasing.

f) Conservation/Agricultural

As discussed in Chapter 4 (Natural Environment and Historic Features) KSAAP has a wide diversity of wildlife and natural resources. There are also about 1,000 acres of commercial timber resources, currently managed as part of a wildlife habitat program, that provide unique opportunities for outdoor recreation. In addition, over 9,700 acres of land at KSAAP are currently leased for agricultural and grazing purposes.

Under Alternative A, as illustrated on Map 10-1, approximately 3,040 acres would be dedicated to outdoor recreation activities, wildlife habitat and agricultural uses. Although these areas are primarily located in the western and southern portions of KSAAP, it is anticipated that these types of uses, especially for agricultural purposes, could also be permitted in other portions of the site. Access would be provided from Rook Road from the north and various other roadways from the south. It is expected that a wide range of outdoor activities could be conducted in these areas including hiking, horseback riding, hunting and fishing. Periodic managed timber harvest may also be appropriate as part of resource management efforts.

Disposition – Due to the diverse types of activities associated with this land use, it is recommended that the Authority acquire this portion of the site. Property involved in outdoor recreational activities and wildlife habitat management could be leased at no cost to a state agency for management and operation purposes. Agricultural land could also be leased to users in a similar manner as currently employed by the Department of the Army.

g) Farm Museum and Special Events

Under Alternative A, this portion of KSAAP would be dedicated for the development of a farm museum and other types of special activities. Space would be made available for the construction of a limited number of permanent structures for meetings and display purposes, as well as outdoor locations for specific activities and parking. This 246-acre site could also be used for a variety of other types of community and regional activities such as auctions, domestic animal exhibits and private sector events. Access to the site would be provided by Scott Road.

Disposition – The operation of this type of community facility would most likely require the creation of a new public-based organization that would be responsible for site development and management. It is recommended that the Authority lease this property, with some performance standards, to the end user. It should be anticipated that redevelopment of the site for this type of use could require five to ten years.

h) Transportation and Warehousing

This southern portion of KSAAP is designated as a transportation and warehousing center under Alternative A. As noted in Chapter 3 (Major Utilities) KSAAP has an extensive railway system. The on-site tracks consist of lines, spurs and siding. This type of use would include a number of these railway resources, as well as over 400,000 square feet of cold storage space in the 1400 area of KSAAP.

The portion of the site under Alternative A contains almost 760 acres of land. Access would be provided at Scott Road. In addition to the warehouses presently located at the site, it is anticipated that the user could also store railcars and possibly establish a railcar maintenance and repair facility within this portion of the site.

Disposition – It is recommended that the Authority lease this property to a private operation in order to generate cash flow required to fund other related development and maintenance activities on the site. In addition, the lease agreement should include provisions for maintenance of tracks and other rail related facilities by the user.

i) Future Development

Under Alternative A, approximately 1,400 acres have been identified for future development. This area includes several munitions production locations (Areas 300, 500, 700, 800 and 900). It is expected that a significant amount of time (five to ten years) will be required before environmental contamination and explosive materials are removed from these sites and the buildings eventually demolished. Once cleanup has been completed, a use for the site could be identified. However, if the munitions and explosives manufacturing operations on the adjacent parcel are successful, these types of munition manufacturing activities could be expanded into this location.

Disposition – This site should be retained by the Authority and then sold or leased based on future market conditions.

j) Alternative A – Mix of Land Uses

As shown in Table 10-1, the primary land uses under Alternative A involve the manufacture and storage of munitions and explosives (approximately 40% of the land area under these two different land use categories). Hazardous material storage and incineration accounts for about 12% of the land area. Other types of land uses (energy production, transportation and warehousing, office business park, farm museum and special events) represent about 21% of projected land uses at the site, while future development (as yet an unidentified land use category) represent about 10% of the property. It should be emphasized that conservation and agricultural uses involve 22% of the site, or about 3,040 areas.

Table 10-1 - KSAAP Reuse Alternative A, Estimated Land Use Acreage

| Land Use | Acres | Percent of Total |
|--|---------------|------------------|
| Munitions & Explosives | | |
| Manufacturing & Storage | 4,803 | 35.0% |
| Conservation/Agricultural | 3,042 | 22.2% |
| Hazardous Materials Storage & Incineration | 1,641 | 12.0% |
| Future Development | 1,395 | 10.2% |
| Energy Production | 790 | 5.8% |
| Transportation & Warehousing | 757 | 5.5% |
| Explosives Storage | 717 | 5.2% |
| Office Business Park | 336 | 2.4% |
| Farm Museum & Special Events | 246 | 1.8% |
| Total | 13,727 | 100% |

Source: RKG Associates, Inc.

2. Reuse Alternative B

Reuse Alternative B includes a variety of supporting land uses. Since munitions and explosive production is not included as part of the land uses under this alternative, key redevelopment initiatives focus on energy production, hazardous materials storage and incineration, explosive storage and manufacturing. Conservation and agricultural also represents a major land use activity under this alternative.

a) Hazardous Materials Storage and Incineration

The area identified in Reuse Alternative B for hazardous materials storage and incineration is the location of the contaminated waste processor, the explosive waste incinerator and the demolition/ burning grounds. This type of land use is envisioned as being somewhat smaller under Alternative B than Alternative A. The intent of the plan is to capitalize on the availability of the contaminated waste processor for incineration of hazardous materials, including medical and biological waste, as well as wastes contaminated with trace levels of explosive compounds. This Alternative also recognizes the potential for areas in proximity to the existing demolition/ burning grounds to be used as a hazardous materials landfill, not only for existing materials that are located there, but also for demolition debris from the anticipated environmental remediation of load lines that are no longer required.

This land use category (Map 10-2) includes approximately 1,160 acres in the easternmost portion of the property, approximately one-third less than the amount allocated under Alternative A. Under this Alternative, the Energy Park (see description below) is located immediately to the north of the hazardous materials incineration and storage area. Therefore, it will be important to maintain buffers between on-site and off-site land uses, as well as a buffer between this area and the Energy Park. This type of facility would have to be operated as a secure facility (fencing and limited access), due to health and safety concerns. Access could be via 22000 Road from the east or Scott Road from the north, to the on-site roadway network.

Disposition – Operation of the facilities envisioned in this area of the site is a highly regulated undertaking. However, this type of land use could generate substantial cash flows after upfront capital investments have been recouped. It is recommended that the Reuse Authority identify one or more companies that can operate this type of facility as partners with the Reuse Authority. This will allow the Reuse Authority to participate in the available revenue streams associated with these activities, while benefiting from the experience and credibility of one or more companies that are active in similar types of enterprises.

Map 10-2 – Alternative B

b) Explosives Storage

Under Reuse Alternative B, as illustrated on Map 10-2, the ammunition bunkers and storage magazines in the central and southern portions of the KSAAP property would be used for storage of a variety of explosives or other types of materials. These facilities presently provide storage associated with production lines, which would be demolished if munitions manufacturing operations were halted (see Long-Term Development Reserve later in this section). It is anticipated that these magazines could also be used on a contractual basis for storing munitions and explosives manufactured at other locations.

This land use category includes approximately 2,515 acres, as illustrated on Map 10-2. It is anticipated that the magazines would be operated in a secure environment, through fencing and other access controls. The existing buffering is considered sufficient in terms of maintaining separation between explosives and other on-site uses. The primary access to this portion of the property from off-site would be via Scott Road (also known as D Road on-site) or Trego Road off-base (known as E Road on-site).

Disposition – It is recommended that the Reuse Authority maintain ownership of the ammunition bunkers and storage magazines, and that these facilities be marketed as short- and long-term leases.

c) Office/Business Park

The northwest corner of KSAAP is envisioned as supporting the development of office and business park type uses. The existing administration building in this section could serve as the anchor facility, with almost 70,000 square feet of office space. Given the availability of existing utility systems in this area, the development of additional office and flex-type buildings could be accomplished with a reduced level of investment, as compared with sites that do not have ready access to infrastructure.

This land use category includes approximately 336 acres in the northwest corner of the site, as illustrated on Map 10-2. At a density of 5,000 square feet per acre, this portion of the property could support approximately 1.7 million square feet of floor space. It is anticipated that the site would have minimal access controls, similar to other industrial/business parks in the area, notably existing Parsons industrial and business parks. This portion of KSAAP can be accessed from Rooks Road or Scott Road from the north, or via 23000 Road from the west.

Disposition – It is recommended that the Reuse Authority consider the model used by the City of Parsons in creating its industrial and business parks. The city typically installs necessary infrastructure and utilities in order to have an inventory of available sites that can be developed with a minimum of delay. In many cases, companies are attracted to sites that are “shovel-ready,” meaning that construction can begin almost immediately. This approach would also allow the Reuse Authority to develop

infrastructure using a phased approach, in order to conserve capital investment dollars.

Once the development of necessary infrastructure has been completed and/or upgraded, the Reuse Authority could subdivide lots for initial development phases. This would allow the Authority to transfer title for industrial properties, while maintaining control over uses that are allowed at the business park.

d) Energy Park

As discussed in Chapter 8 (Market Potential of Land Use Facilities) of this Redevelopment Plan, a portion of the KSAAP facility is well positioned to capitalize on the need for expanded energy production. In particular, this portion of the property has been identified as attractive for the development of a coal-fired power plant, due to its proximity to the water supply, as well as its access to rail lines for coal delivery. This portion of the site could also support development of one or more bio-fuel facilities (ethanol), or a more traditional oil refinery. A total of 1,188 acres, located on the eastern edge of the property, are envisioned for this use.

This portion of the property is served by rail that would allow raw materials to be brought into the site more cost effectively than shipments via truck. In addition, in the case of a refinery, some finished products could also be shipped out by rail.

Disposition – It is anticipated that the undeveloped land associated with a coal-fired power plant, an oil refinery or a bio-fuel refinery will have to be transferred by deed to the user/developer. However, the Authority should have a recoupment provision in any transfer documents that requires that the land be returned to the Authority without cost or penalty in the event that the planned power plant and/or refinery are not developed.

e) Housing

If the land use concepts identified in this plan are successfully implemented, there will be substantial economic activity on the KSAAP site. A housing component has been added under Alternative B to allow for more of a smart-growth, mixed-use development where people could live, work and play.

A total of 245 acres has been allocated for this type of housing use on-site. As indicated in Map 10-2, the housing area is located in the most northerly portion of the property, east of the office/business park. This area was selected due to its access to the on-site infrastructure at KSAAP and the developability of the property in terms of minimal construction constraints. In addition, access is good from Scott Road, which can be used to connect to U.S. 400 for commuting purposes.

Disposition – It is recommended that the Reuse Authority hold this property for ten to fifteen years in order to evaluate progress in implementing other aspects of the reuse plan. At that time, the Authority can identify a phased development approach for

required infrastructure, and determine the mix of unit sizes, styles and types that are appropriate for the marketplace.

f) Industrial/Manufacturing

As discussed in Chapter 8 (Market Potential of Land and Facilities), KSAAP has a unique ability to support industrial and manufacturing uses that have difficulty in finding development sites. A 1,172-acre portion of site, located in the northeast corner, has been allocated for industrial and manufacturing uses. This site was selected because of its access to the rail line and proximity to existing off-site roadways that allows for a rapid connection to U.S. Route 400.

It is anticipated that many of the existing facilities (load lines) in this area of the site will be demolished, assuming that munitions production activities are halted. The demolition of existing facilities, as part of the site remediation effort, will create a “shovel ready” industrial development site on the western two-thirds of the property.

Disposition – It is recommended that the Reuse Authority consider holding this property for large-scale industrial and/or manufacturing users who require at least 200 acres for their operations. Other areas of the KSAAP site have the capacity to support smaller-scale users, and maintaining one or more large sites could be beneficial in terms of marketing. If a user is attracted to the site, the Authority should be prepared to transfer title to the new user, with specific performance requirements related to construction and job creation.

g) Transportation and Storage

Under Alternative B (Map 10-2), a larger land area (1,080 acres) is devoted to the establishment of a transportation and storage operation than under Alternative A. This area includes significant railroad siding, as well as the 400,000 square feet of cold storage buildings located in the 1400 area. Due to this configuration, additional land could be devoted to the construction of new storage facilities as well as repair activities associated with railcar maintenance.

Disposition – As under Alternative A, it is recommended that the Authority lease this site and the rail lines to one or more users in order to generate cash flow. As part of the rail line lease, maintenance and repair of all rail lines and related facilities on KSAAP should be part of the lease agreement.

h) Special Events and Projects

This use under Alternative B involves about 636 acres in the northwest portion of the site (Map 10-2). The type of use would be similar to the Farm Museum and Special Events reuse discussed under Alternative A. However, the larger land area would permit a wider range of activities and possibly a connection with conservation land to the south. Primary access to the site would be available from Rooks Road or 2300 Road from the west.

Disposition – As under Alternative A, it is recommended that this property be conveyed under a long-term lease that includes specific performance standards.

i) Conservation/Agriculture

Approximately 3,909 acres have been identified for conservation and agricultural purposes under Alternative B (Map 10-2). It is anticipated that land within this area would be dedicated to outdoor recreation activities, wildlife habitat protection and agricultural uses. Possible activities for the area could include hiking, horseback riding, hunting and fishing. Periodic managed timber harvests could also be appropriate as part of resource management efforts.

Disposition – Due to the diverse types of activities associated with this land use, it is recommended that the Authority retain ownership of this portion of the KSAAP site. Property involved in outdoor recreational activities and wildlife habitat management could be leased at no cost to a state agency for management and operational purposes. Agricultural land could be leased to users in a similar manner as currently employed by the Department of the Army.

j) Long-Term Development Reuse

Under Alternative B, about 1,490 acres have been designated for long-term development. This portion of the site includes several munitions production locations (900, 1000 and 1100 Areas). It is expected that a significant amount of time (five to ten years) will be required before environmental contamination and explosive material are removed from the site and the buildings eventually demolished.

Disposition – This site should be retained by the Authority and then sold or leased based on future market conditions.

k) Alternative B – Mix of Land Uses

Under Alternative B, the largest land use (about 29%) of the site involves conservation and agricultural uses (Table 10-2). The major difference with conservation and agricultural land under Alternative A is the inclusion of additional land in the northern portion of the site, as well as land between Road DD and Road D. Industrial and explosive storage related land development involves a variety of uses (energy park, manufacturing, transportation and storage and explosive storage) and represents about 44% of the land area on the site. In addition, long-term development reserves, which will likely be used for industrial purposes after remediation, contain almost 11% of the total land area. Other identified small uses (special events and projects, office/business park and housing) only involve about 9% of the site's land base.

Table 10-2 - KSAAP Reuse Alternative B, Estimated Land Use Acreage

| Land Uses | Acres | Percent of Total |
|--|---------------|-------------------------|
| Conservation/Agricultural | 3,909 | 28.5% |
| Explosives Storage | 2,513 | 18.3% |
| Long-Term Development Reserve | 1,490 | 10.9% |
| Energy Park | 1,188 | 8.7% |
| Industrial/Manufacturing | 1,172 | 8.5% |
| Hazardous Materials Storage and Incineration | 1,158 | 8.4% |
| Transportation & Storage | 1,080 | 7.9% |
| Special Events & Projects | 636 | 4.6% |
| Office/Business Park | 336 | 2.4% |
| Housing | 245 | 1.8% |
| Total | 13,727 | 100% |

Source: RKG Associates, Inc.

11. RECOMMENDED LAND USE PLAN AND IMPLEMENTATION STRATEGY

A. Introduction

This chapter describes the recommended land use plan for the redevelopment of the Kansas Army Ammunition Plant (KSAAP). The land use plan is based on an examination of key site characteristics, existing market conditions, and the financial implications of various development options. Direction provided by the KSAAP Local Redevelopment and Planning Authority (LRPA), as well as comments made during numerous public meetings, influenced the preparation of this land use plan. In addition to land use recommendations, information is provided about property acquisition, property disposal, the phasing of redevelopment efforts, and the creation of an implementation Local Redevelopment Authority (LRA).

It is important to understand that this land use plan has been prepared to maintain flexibility during the redevelopment process. This flexibility provides local officials and residents the latitude to respond to changes in the market and to better meet the needs of potential tenants at KSAAP as the redevelopment process unfolds.

B. Summary of Major Findings and Conclusions

- Future redevelopment of KSAAP will be strongly influenced by the condition of existing buildings on the site and infrastructure limitations.
- It is recommended that 28 percent of KSAAP (approximately 3,881 acres) be designated for conservation and agricultural purposes. This type of use will protect a wide range of natural resources and provide significant opportunities for a variety of outdoor activities for the general public.
- Approximately 3,450 acres, or about 25 percent of the KSAAP site, have been identified for commercial energetics and munitions storage. This area includes several existing production lines, as well as all of the existing storage igloos and magazines.
- Industrial and manufacturing uses have been designated for an estimated 2,561 acres, or approximately 19 percent of the land area at KSAAP. It is anticipated that a significant period of time will be required before this type of development can be initiated, due to demolition requirements and market conditions
- Transportation and warehousing activities would involve an estimated 1,145 acres or approximately 8 percent of the site. Key development initiatives would include railcar storage and use of existing cold storage warehouses.

- Approximately 826 acres, or 6 percent of the site, have been designated as an energy park. Types of possible uses include bio-fuel facilities (ethanol), an oil refinery and/or a coal-fired power plant.
- A small portion of the site, about 783 acres (6 percent of the land area), is recommended as a location for the training and education of fire, rescue, police and emergency responders.
- Two sites containing approximately 484 acres, or almost 4 percent of the land area, have been identified for special events. One site would involve the establishment of a farm museum, along with related activities, while the other portion would support adjacent conservation activities.
- Approximately 405 acres, adjacent to the existing administrative office facility at KSAAP, have been designated as an office/business park.
- A small portion of the site, about 173 acres, has been reserved for housing if the need for this type of development occurs over the next 10 to 15 years.
- The existing Contaminated Waste Processor facility and a small amount of land, almost 19 acres, has been designated as a hazardous material treatment site.
- Water, sewer, electrical and communications systems are in a state of decay and in many cases are considered antiquated. In addition, almost no studies or evaluations of system operations or conditions have been prepared during the past twenty years.
- An implementation LRA should be created to meet the challenges and responsibilities associates with the redevelopment of KSAAP. Key issues that will need to be addressed include:
 - Financial resources
 - Local representation
 - Regional representation
 - State representation
- It is critical that key infrastructure at KSAAP be evaluated in terms of operational condition and capacity, as well as estimated improvement costs.
- Basic land use and development standards need to be identified for KSAAP in order to effectively manage future reuse of the site.
- Due to the nature of contamination at KSAAP and the likelihood that an Army-led cleanup could delay implementation of the redevelopment plan, it is recommended that an early transfer of the site be pursued.
- It is recommended that the LRPA, or its successor organization the implementation LRA, seek a no-cost economic development conveyance (EDC) for the KSAAP site.

- The implementation LRA should use a variety of approaches for property disposal at KSAAP.
- Key decisions during the next several years involve:
 - Amount of property to acquire
 - Method of property acquisition
 - Use of the early transfer option
 - Staffing size and duties
 - Early marketing efforts
- Early phasing efforts should focus on property that can generate a cash flow.

C. Preferred Land Use Plan

The preferred land use plan for the Kansas Army Ammunition Plant (KSAAP) site represents a synthesis of the two alternative land use plans discussed earlier in this report. As noted in Chapter 10 (Redevelopment Goals and Reuse Alternatives), the redevelopment of KSAAP will be influenced by several key factors:

- The poor condition of existing buildings and structures;
- The extensive use of existing facilities (almost 50%) for the production of munitions;
- The high percent of building space (approximately 41%) devoted to storage and warehouse uses, and
- The location of infrastructure (primarily water and sewer lines) in the middle portion of the site.

Outlined below are descriptions of ten (10) key land use parcels (See Map 11-1).

1. Conservation and Agricultural

As discussed in Chapter 4 (Natural Environment and Historic Features) the KSAAP site includes a wide diversity of natural features that provide unique opportunities for a range of conservation, recreation and agricultural activities. Over 47 miles of rivers and streams, as well as 123 ponds, are located on the site. There are also over 212 acres of wetland habitat and over 1,000 acres of critical forest resources that are managed as part of a wildlife habitat. KSAAP also has a variety of wildlife including deer, turkey, quail and fish that are harvested as part of a hunting and fishing program managed by the Department of the Army. In addition, 9,700 acres are currently leased for agricultural activities including farming and grazing.

The Conservation and Agricultural portion of the site includes approximately 3,881 acres (nearly 28% of the site) and represents the largest reuse of land at KSAAP. This use is located in a continuous strip in the western, southern and eastern portions of the site. It is

anticipated that the preservation of this large conservation area would provide opportunities for a variety of public outdoor uses such as self-guided tours, nature trails, access to the Neosho River, managed horseback riding, and controlled hunting and fishing. Stewardship of riparian timber, including a sustainable timber harvest strategy, will also be important in preserving this unique habitat. In addition, agricultural property within this area, as well as other portions of KSAAP, could be leased for agricultural and grazing purposes in order to generate needed cash flow for the Reuse Authority.

Disposition - It is anticipated that the Reuse Authority would acquire the KSAAP site under an Economic Development Conveyance (EDC). Property involved in outdoor recreation and conservation purposes could then be leased at no cost to a state agency for management and operation purposes. Agricultural land could also be leased to users in a manner similar to the approach currently employed by the Department of the Army.

2. Commercial Energetics and Munitions Storage

One of the key elements of this redevelopment plan involves the continuation of the manufacturing and storage of munitions on a portion of the KSAAP site. Under the preferred land use plan, approximately 3,450 acres (25% of the site) would be dedicated to the manufacturing and storage of munitions, as well as other types of explosives. Existing load lines (1000, 1100 and 1200 areas) would be reused as existing structures, or demolished and new manufacturing facilities constructed. The existing storage igloos and magazines would be used by on-site manufacturers or leased on a contractual basis for storing munitions, explosives or products manufactured at other locations. It is expected that portions of existing north-south roads (D Road and E Road) may be made available to other tenants on the site.

As noted earlier, this use is located in the central core of the site (See Map 11-1) with access to existing roads, water and sewer lines. It is also assumed that new fencing and access control measures would be required for security purposes.

Disposition - Due to environmental issues associated with the production of munitions and explosives, it is recommended that the Reuse Authority transfer the ownership of property that would be used for manufacturing directly to the end user. However, it is also recommended that the Reuse Authority maintain ownership of the ammunition storage igloos and bunkers, and that these facilities be marketed through short- and long-term leases.

3. Industrial/Manufacturing

As discussed previously in this document (Chapter 8 – Market Potential of Land and Facilities), because of its size and location, KSAAP has the opportunity to attract industrial and manufacturing uses that may have difficulty finding an appropriate development site. Under the preferred land use plan, approximately 2,561 acres (nearly 19% of the site) have been identified in the northeast and eastern portions of KSAAP for industrial and manufacturing uses. This location has access to the existing on-site rail line as well as internal roadways (Roads E and G) that would provide a rapid connection to U.S. Route 400.

Map 11-1 - Preferred Redevelopment Plan

Redevelopment of this portion of KSAAP would require the demolition of existing munitions production facilities (load lines), as well as the remediation of the open burning pads. Once these improvements are completed, it is anticipated that large land parcels (200 to 300 acres) would be available for redevelopment.

Disposition - Due to the expected lengthy time period required for remediation, it is recommended that the Reuse Authority reserve this site for large-scale industrial and/or manufacturing uses that require at least 200 acres. Transfer of the property to a user, by sale or long-term lease, should also include specific performance requirements related to the initiation of construction activities and the number of jobs created.

4. Transportation and Warehousing

This portion of KSAAP contains approximately 1,145 acres (about 8% of the site) and includes 19 cold storage warehouse buildings with nearly 400,000 square feet (1400 Area). Each of the buildings also has access to a rail siding, allowing materials and supplies to be off-loaded from railcars directly into the warehouse.

Due to the location of the warehouses and the rail tracks on the site, it is recommended that this area be designated for transportation and warehouse uses. Due to the configuration of the site, it is expected that additional land could be devoted to the construction of new warehouse facilities as well as the repair and storage of railcars. Access to the site would be provided by Scott Road and Road D.

Disposition - It is recommended that the Reuse Authority lease the rail line to a private operator in order to generate the cash flow required to fund other related site development activities. The rail use agreement should also include provisions for maintenance of the tracks and other rail related activities. Warehouse space should also be leased to individual users.

5. Energy Park

Due to existing demand for sites relating to the construction of energy production facilities, approximately 826 acres (about 6% of the site) have been identified as an energy park. This type of use, located in the northeastern portion of KSAAP, could support the development of one or more bio-fuel facilities (ethanol) as well as a more traditional oil refinery. In addition, this site has been identified as attractive for the development of a coal-fired power plant due to its proximity to a water supply, as well as its access to rail lines for coal delivery.

Disposition - It is expected that the land required for a coal-fired power plant, an oil refinery or a bio-fuel refinery would have to be transferred by deed to the user/developer. The Reuse Authority should have a recoupment provision in any transfer documents that requires that the land be returned to the Authority without cost or penalty in the event that the planned power plant and/or refinery are not developed.

6. Public Education and Training

Approximately 783 acres (nearly 6% of the site) have been identified on the northwest portion of the site for training and education of fire, rescue, police and emergency responders. It is anticipated that this area could also be used as a location for state and federal government training needs related to various first responders and homeland security needs. Although the use of this site will require the construction of new buildings and structures, supporting infrastructure (e.g. water and sewer) exists on-site.

Disposition - This portion of site could be retained by the Reuse Authority or transferred to an appropriate governmental organization.

7. Special Events

Two sites, containing approximately 484 acres (nearly 4% of the site), have been identified for special events types of uses. The northern site (about 249 acres) could host a number of limited or one-time events relating to agriculture and recreation activities. Specifically, this site would be the location for a proposed regional farm museum with equipment, artifacts and programs about farm history. Space could also be made available for the construction of a limited number of permanent structures for meetings and display purposes, as well as outdoor locations for specific activities and parking. The site could also be used for other regional activities such as auctions, domestic animal exhibits and private sector functions. Access to the site would be provided by Scott Road.

The southern special event site (containing approximately 242 acres) would be used for activities related to adjacent conservation areas. One activity could involve the construction of cabins related to the Kansas Wildscape Project. This endeavor involves donations that are used to fund the construction of cabins at state parks that are then managed by the Kansas Department of Wildlife and Parks. The cabins would also provide access to other portions of the site designated for conservation purposes.

Disposition - As discussed under the Conservation and Agricultural section, it is expected that this property would be leased to end users by the Reuse Authority.

8. Office/Business Park

This northwestern portion of the KSAAP site, containing approximately 405 acres (nearly 3% of the site), would be used to support the development of office and business park types of uses. The key anchor would be the existing administration building, which contains approximately 70,000 square feet of space. Also, due to existing utility systems in the area, the development of additional office and flex-type buildings could be completed with a reduced level of investment, as compared with other sites at KSAAP that do not have access to required infrastructure.

Based on the size of the site, it is projected that at 5,000 square feet per acre, this portion could support approximately two million square feet of floor space, although this type of density is probably not realistic. It is anticipated that this portion of the property would have minimal access controls, similar to other industrial/business parks in the area,

notably the Parsons Industrial and Business Park. Access to this site could be obtained via Scott Road from the north, or 23000 Road from the West.

Disposition - It is recommended that the Reuse Authority consider the model used by the City of Parsons in creating its industrial and business parks. The city typically installs necessary infrastructure and utilities in order to have an inventory of available sites that can be developed with a minimum of delay. In many cases, companies are attracted to sites that are “shovel-ready,” meaning that construction can begin almost immediately. This approach would also allow the Reuse Authority to develop infrastructure using a phased approach in order to conserve capital investment dollars.

Once the necessary infrastructure development has been completed and/or upgraded, the Reuse Authority could subdivide lots for initial phases. This would permit the Authority to transfer title for industrial properties, while maintaining control over uses that are allowed at the business park.

9. Housing

A small area, containing approximately 173 acres (nearly 1% of the site), has been identified for housing construction. This is a long-term type of use that would be implemented only if substantial economic activity occurred at the KSAAP site. This housing type of use is envisioned as a smart growth, mixed-use development where people could live, work and play. This area was also selected because of access to on-site infrastructure at KSAAP and the developability of the property in terms of limited constraints. Road access would be via Scott Road, which connects to U.S. 400.

Disposition - It is recommended that the Reuse Authority hold this property for ten to fifteen years in order to evaluate the progress of implementing other aspects of the reuse plan. At that time, the Authority can identify a phased development approach for required infrastructure, and determine the mix of unit sizes, styles and types that are appropriate for the marketplace.

10. Hazardous Material Treatment

A small portion of the KSAAP site, approximately 19 acres (about 0.1% of the site), has been identified for the treatment of hazardous materials. This eastern portion of the site contains both the Contaminated Waste Processor (CWP) and the Explosive Waste Incinerator (EWI) facilities. Wastes at both the CWP and EWI were only treated at this location. Both buildings are adjacent to the Open Burning Grounds.

It is expected that the Explosive Waste Incinerator building will be demolished. However, the Contaminated Waste Processor facility is a high-temperature incinerator that was last used in 2005 and could be reactivated with a minimum of effort. Under this land use, the site would be used to process and treat hazardous materials.

Disposition - Operation of the facilities envisioned in this area of the site is a highly regulated undertaking. However, this type of use could generate significant cash flows, after up-front capital investments have been recouped. It is recommended that the Reuse

Authority identify one or more companies that could operate this type of facility as partners with the Reuse Authority. This will allow the Reuse Authority to participate in the available revenue streams associated with this type of activity, while benefiting from the experience and credibility of one or more companies that are active in similar types of enterprises.

Table 11-1 - Preferred Land Use Plan Acreage

| Land Use | Estimated Acres | Percent of Total |
|---|------------------------|-------------------------|
| Conservation and Agriculture | 3,881 | 28.3% |
| Commercial Energetics and Munitions Storage | 3,450 | 25.1% |
| Industrial/Manufacturing | 2,561 | 18.7% |
| Transportation & Warehousing | 1,145 | 8.3% |
| Energy Park | 826 | 6.0% |
| Public Education & Training | 783 | 5.7% |
| Special Events | 484 | 3.5% |
| Office/Business Park | 405 | 3.0% |
| Housing | 173 | 1.3% |
| Hazardous Materials Treatment | 19 | 0.1% |
| Total | 13,727 | 100% |

Note: Acreage estimate is approximate

Source: RKG Associates, Inc.

D. Creation of an Implementation LRA

Once the initial planning for the redevelopment of KSAAP has been completed, the LRPA is expected to finalize its recommendations, including a decision about the creation of an implementation Local Redevelopment Authority (LRA). In order for the implementation LRA to meet the challenges and responsibilities associated with the redevelopment, a number of factors need to be considered. These include financial capability, local representation, regional representation and state representation. It is important to recognize that the determination of a reuse and redevelopment approach, the acquisition strategy for the property, and the level of investment necessary could all affect the eventual make-up of an implementation LRA. Therefore, it is recommended that strong consideration be given to local issues and conditions in determining the eventual composition of the implementation LRA.

1. Financial Capability

In order to redevelop KSAAP effectively, the implementation LRA will have to be able to support redevelopment over the long term. While the goal of the project is to be self-sustaining, it is likely that the LRA will require some outside funding, including grants, loans and/or special appropriations. In many cases, grant funds and special appropriations are restricted to public or quasi-public agencies, such that the implementation LRA would have to be related to the local or county government. Further, DoD will seek to determine whether the LRA has the financial capacity to implement the plan for KSAAP as recommended in the reuse plan. In many cases, the ability to infuse money into the project (if necessary) is considered a critical component

of a financing plan for the redevelopment of a site. In most cases, this means the ability to access funds through taxation, which would require that the implementation LRA be affiliated with state, county or local governments.

2. Local Representation

The LRPA currently includes an executive committee and a steering committee, and was established by the Labette County Commissioners in response to the BRAC recommended closure of KSAAP. It is anticipated that the implementation LRA will also be established by the County Commissioners, due to the need to potentially have access to funding for redevelopment activities, while maintaining local control of the redevelopment of the site. It is anticipated that the implementation LRA will have broad-based representation from citizens of Labette County, appointed by the Labette County Commissioners.

However, because of the anticipated length of time required to redevelop KSAAP, the implementation LRA should be created with the goal of maintaining stability of membership, even during election years. Therefore, it is recommended that the LRA include the representatives appointed by the three County Commissioners, but also representatives from the community-at-large. Further, it is important that the terms of all representatives be staggered, such that during a single year the LRA Board experiences no more than a one-third turnover of its members. Each County Commissioner should have a maximum of three appointments to the implementation LRA.

Consideration should also be given to the creation of an implementation LRA with a mix of skills consistent with a project of this nature. Key disciplines that could be considered for membership on the implementation LRA include individuals with experience and training in banking, real estate, environmental issues, education, accounting/finance, governmental operations, economic development and/or agriculture.

3. Regional Representation

During public meetings regarding the reuse plan, there were comments from the public that the implementation LRA should reflect the larger region, because of the potential significance of the redevelopment within the context of the region's economy. The need for broader representation must be weighed against the anticipated costs of redevelopment, and more specifically, the anticipated source of public monies used to implement the redevelopment program. While the larger region may experience positive benefits from the redevelopment at KSAAP, it is not realistic to expect that the citizens of Neosho, Montgomery, Cherokee or Crawford Counties will provide funding for a redevelopment project in Labette County. Therefore, it is recommended that the implementation LRA include representation from the surrounding counties, but as non-voting or ex-officio members.

4. State Representation

The redevelopment of KSAAP is expected to be long, complex and expensive. As part of the redevelopment process, it is very likely that State participation will be sought, either through direct financial support, or indirectly, possibly through the location of one or

more state agencies/offices at the site. As part of this process, it is considered critically important that the State of Kansas (via the Governor) have representation on the implementation LRA through the appointment of up to two representatives to the implementation LRA. While the specific individuals to be nominated to the implementation LRA are open to discussion, the LRA may want to consider recommending an appointment from the Kansas Department of Commerce, the Kansas Department of Revenue or the Governor's Military Council. In particular, these organizations should have an understanding of the costs associated with redeveloping military properties, and the types of state assistance that could be beneficial to the long-term reuse of KSAAP.

E. Infrastructure and Roadways

Redevelopment of the Kansas Army Ammunition Plant (KSAAP) for industrial and business related uses will require a functional utility system, especially water and sewer services. However, as noted in Chapter 3 (Major Utilities), the utility infrastructure at KSAAP is in generally poor condition. Specifically, the water, sewer, electrical and communications systems are in a state of decay and in many cases antiquated. In addition, almost no studies or evaluations of system operations or conditions have been prepared during the past twenty years.

Due to this lack of information about the existing system, it is critical that key infrastructure at KSAAP be evaluated in terms of operational condition and capacity, as well as a determination of estimated improvement costs. Outlined below are key infrastructure systems that should be evaluated in the next 9 to 12 months.

- **Sanitary Sewer** - Key focus should be on existing sewer lines and lift stations that should be evaluated in terms of condition and potential for inflow/infiltration. Although the existing treatment plant is worth retaining, capacity and operating condition should be evaluated.
- **Water System** - Existing water lines and towers should be inspected and evaluated for leakage and overall condition. Portions of specific lines may have to be replaced and water towers repaired or demolished.
- **Electrical** - Although the existing substation is considered adequate, distribution and power lines need to be evaluated and designated for replacement if necessary.
- **Telecommunications** - The existing telephone and communications systems, including the PBX, are inadequate and should be replaced. The evaluation of these systems should focus on alternatives for creating a reliable and functioning telecommunications system.
- **Stormwater Management** - The flow of stormwater at KSAAP, especially in the areas designated for development, should be evaluated and options for managing stormwater run-off identified.

- **Transportation** - Existing roadways are adequate, but a management and improvement plan should be identified for support of long-term development. The same type of undertaking should also focus on the existing on-site railway system.

This evaluation of KSAAP infrastructure is critical to the future redevelopment of the site. Although some interim reuses could continue at the site for a few years, improvements will be needed quickly, especially with the water and sewer systems. Consequently, the identification of key improvements, along with cost estimates, should be completed as quickly as possible.

F. Early Transfer

As discussed in Chapter 9 (Property Transfer Process), the Department of Defense (DoD) can transfer property prior to completion of environmental remediation activities on-site. Although the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires federal agencies to include a covenant in any deed conveying real property to a nonfederal party that provides representations and warranties regarding completion of environmental remediation, CERCLA also authorizes a procedure for the deferral of this covenant (known as 'early transfer'). This allows for the conveyance of property before environmental remediation has actually been completed.

In recent years, the early transfer process has been used as a method to accelerate environmental remediation activities, as well as provide LRAs the ability to schedule their cleanup efforts in order to make the most desirable properties available in a timely manner. Typically, this has taken the form of an Environmental Services Cooperative Agreement (ESCA), as described in Chapter 9. An ESCA generally provides funding to state or local entities (including LRAs) that can contract with private sector firms for investigation and cleanup.

Given the nature of environmental contamination at KSAAP, and the likelihood that an Army-led cleanup would delay implementation of the Reuse Plan, it is recommended that the KSAAP LRPA (or its successor the implementation LRA) pursue early transfer of the KSAAP site. This will provide the implementation LRA with the opportunity to focus cleanup efforts on those parcels that it considers most marketable. In addition, local control of the remediation effort may also provide a greater level of support from both state regulators and local residents and businesses. Ultimately, this strategy is also expected to complete the cleanup much more quickly as compared to a cleanup approach that must count on annual appropriations, and therefore, the implementation LRA should be able to market and redevelop the property on a much faster timetable.

G. Property Acquisition

From the perspective of acquisition, it is considered important for the KSAAP site to be viewed in its entirety. This is due to the size of the property (almost 14,000 acres), and the presence of extensive infrastructure, including roadways, the water system, the sewer system and the rail lines, among others. This section provides specific recommendations for acquiring the KSAAP property in a manner consistent with the preferred reuse plan for the site.

The Department of Defense (DoD) published the Base Redevelopment and Realignment Manual (BRRM) on March 1, 2006. The BRRM prescribes procedures for the reuse and redevelopment of military bases. The BRRM applies to DoD and its component parts, including the Office of the Secretary of Defense and the Military Departments, among others.

The BRRM defines a variety of property transfer options that can be used for property at KSAAP. Among the transfer options outlined in the BRRM are:

- Public benefit conveyances
- Homeless assistance conveyance
- Negotiated sale to public entities
- Advertised public sales
- Environmental responsibility transfer
- Economic development conveyance
- Military construction exchange
- Conservation conveyance

Many of these alternatives were discussed in Chapter 9 of this report (Property Transfer Process). From the perspective of the acquisition of KSAAP, the size of the facility, together with the anticipated operating costs for the property, make consideration of the potential revenues from the property an important consideration in evaluating how the property can and should be acquired.

As discussed later in this chapter, the projected operating and management costs for the KSAAP facility could be in the range of \$500,000 to \$750,000 annually. In order for the Reuse Authority to support this type of cost structure, it will be critically important for the Authority to acquire the facility at little or no cost. In addition, it will also be important for any revenues generated on-site to be available to support the long-term operation, management, marketing and redevelopment of the site.

Considering these factors, it is recommended that the KSAAP LRPA, or implementation LRA, request the entire KSAAP facility under a no-cost economic development conveyance (EDC). As described in the BRRM, an EDC requires that the implementation LRA agree that the proceeds of sale or lease of the property received during at least the first seven years after the initial conveyance shall be used to support the economic redevelopment of, or related to, the installation. The BRRM indicates that an implementation LRA can use proceeds from sales or leasing of property in support of economic redevelopment for the following purposes:

- Road construction and public buildings
- Transportation management facilities

- Storm and sanitary sewer construction
- Police and fire protection facilities and other public facilities
- Utility construction
- Building rehabilitation
- Historic property preservation
- Pollution prevention equipment or facilities
- Demolition
- Disposal of hazardous materials generated by demolition
- Landscaping, grading, and other site or public improvements
- Planning for, or the marketing of, the development and reuse of the installation

One of the key factors in the redevelopment of KSAAP will be the availability of revenues from agricultural and grazing leases. This is an established revenue stream at KSAAP, and consistent within the Southeast Kansas marketplace. Agricultural leases are projected to generate approximately \$175,000 annually, or almost 25% of the projected operating and maintenance costs for the facility.

Other potential sources of revenues include rental/lease revenue from the munitions storage facilities, lease revenues from the on-site rail system, building rents from the administrative building, and lease or sale revenues from a portion of the existing munitions production lines. In addition, some level of user fees may also be generated for water and sewer services. Potential revenues and operating costs are discussed in more detail in the Implementation section of this chapter.

1. Alternative Acquisition Scenarios

A number of alternative approaches could be considered for the acquisition of specific parcels at KSAAP. These include:

a) Public Benefit Conveyances

The utility systems at KSAAP could be acquired via public benefit conveyance (PBC) for public health and safety. These conveyances have historically been sponsored by the U.S. Department of Health and Human Services, and typically require that all revenues generated be reinvested into system operations and maintenance. In the context of KSAAP, use of an economic development conveyance (EDC) will provide a greater level of flexibility in funding operations and maintenance.

The KSAAP LRPA, or implementation LRA, may also be able to acquire the land area identified for public education and training via a PBC. This would require sponsorship of the conveyance by the U.S. Department of Education (DOE). Typically, DOE requires that the organization acquiring the property have an

established budget to support the long-term operation and maintenance of the facility. Since a specific user-organization has not been identified for this parcel, it is unlikely that DOE would support transfer.

b) Conservation Conveyance

The conservation/agricultural property could be acquired via a conservation conveyance. The Army is permitted to transfer property that is suitable and desirable for conservation purposes to states, political subdivisions of states, or nonprofit organizations that exist for the primary purpose of conservation of natural resources. However, in the case of KSAAP, a transfer of the conservation lands via this approach would limit the implementation LRA's ability to use funds generated from agricultural leasing activities. Specifically, these funds could not be used for operations and maintenance of other portions of the site.

c) Negotiated Sale

The implementation LRA could acquire all or a portion of the KSAAP property via a negotiated sale. This approach could make sense for a small portion of the KSAAP property. In particular, the housing parcel and the farm museum/special events parcel could be considered for acquisition through negotiated sale, as this approach would offer enhanced flexibility over an EDC.

The principal benefit of the negotiated sale approach is that it provides the implementation LRA with additional flexibility in its ability to use proceeds from the sale or lease of property at KSAAP – the proceeds would not necessarily have to be “reinvested” in the site for the first seven years. However, a negotiated sale also requires payment of fair market value for the property, in contrast to the EDC, which has provisions for transfer of property at below market value or no cost. It should be noted that an evaluation of KSAAP, prepared by the Staubach Companies for the Army, indicated a range of value of \$7.2 to \$25 million for KSAAP, or approximately \$500 to \$1,800 per acre. It is also important to consider that negotiated sales typically restrict the ability to re-sell (“flip”) property in the first three years after transfer, and that the DoD typically includes a recoupment provision, allowing DoD to recover excess profits generated through flipping a property.

d) Advertised Public Sales

The implementation LRA could recommend that some parcels be sold directly by the Army to third parties by advertised public sales. This could include the office/business park property, the energy park site, the transportation/warehousing parcel and the industrial/manufacturing site. In recent years, the majority of sales of this type have been conducted via internet auction.

Use of this approach would represent a significant risk for the implementation LRA and the county. Specifically, since Labette County does not have zoning in place, use of this approach would leave implementation of the reuse plan and job recovery in the hands of private sector developers. Moreover, there would be a substantial risk that buyers would simply “land bank” properties and not encourage job creation activities

on the site. Finally, this approach could also affect cash flows to the implementation LRA. While maintenance responsibilities could be reduced, revenues from agricultural and grazing activities could also decline, since these activities partially take place on some of these sites.

e) Environmental Responsibility Transfer

The federal property transfer regulations also allow for the transfer of property at fair market value, with some (or all) of the purchase price offset by the buyer's willingness to perform environmental remediation activities. This is similar to the Early Transfer Process outlined in Chapter 9, and requires the concurrence of the Governor before any transfer can be finalized.

This approach would be considered most appropriate for those areas where the environmental contamination can be remediated. In the case of KSAAP, the production lines and hazardous materials areas are considered to be most affected. However, this acquisition approach is generally used in areas where the property can be converted to a higher and better use after remediation. This creates an "upside" incentive to invest private funds in the remediation effort. In the case of KSAAP, these properties would be expected to have minimal upside potential after cleanup, such that private investment for cleanup would not be justified, except by an end-user that had the ability to use a specific site.

H. Property Disposal/Development Strategies

Once the property has been acquired from the Army, the implementation LRA will have the responsibility for its operations and maintenance, as well as marketing. In order to implement the reuse plan, the LRA will have to use a variety of approaches, depending on the specific land use target. It is important to note that agricultural and grazing uses (on a leased basis) have traditionally crossed many of the land use categories discussed below, and these uses would be expected to continue across much of the site until individual parcels are developed.

1. Conservation/Agricultural

It is anticipated that the implementation LRA will hold these sites for the long-term benefit of the project and the citizens of Labette County. No sale/disposal of these sites is anticipated, though the implementation LRA may consider use agreements and/or management agreements for portions of this property. As discussed above, agricultural and grazing uses are anticipated for these sites and others throughout the KSAAP property. However, a variety of factors should be considered in preparing these management agreements, including quality of life considerations.

2. Commercial Energetics and Munitions Storage

The majority of this area of the property is expected to be held by the LRA over the long term. In particular, the majority of the storage bunkers and magazines are expected to be held by the implementation LRA and marketed for short-term and long-term storage. Other existing buildings within these areas will be marketed for reuse in the short term, though it is anticipated that these buildings will be demolished in the longer term in favor

of new construction. Available development sites within these areas will be marketed to companies within the energetics and munitions sectors, and it is anticipated that the implementation LRA would transfer fee-title to these parcels to end users.

3. Industrial/Manufacturing

This portion of the site is designed to support industrial and manufacturing uses and is expected to be developed over the long term. Demolition of most existing structures will likely be required in this area. This could take a number of years to complete, due to environmental issues associated with existing structures.

Once remediation efforts have been completed, the implementation LRA can develop conceptual plans for this portion of the property that capitalize on the availability of existing infrastructure that can support a variety of large-scale and small-scale uses. Marketing efforts in this area are expected to include commercial real estate brokers, as well as LRA staff. It is recommended that LRA staff focus on recruiting efforts on a larger scale (national marketing efforts) to both small and large users. Property is expected to be sold and developed on a lot-by-lot basis, possibly for limited cash consideration.

4. Transportation & Warehousing

Property in this area includes the existing rail yard, the 1400 area warehouse buildings and some vacant land, which could be used to develop additional storage capacity. It is recommended that the implementation LRA maintain ownership of all rail lines, and that any use of the rail lines be via a license or lease. At the LRA's discretion, the existing buildings can be sold or marketed on a lease basis. The vacant land should be marketed for development to users that can benefit from the location of the property.

5. Energy Park

The ability to support energy-related uses will require direct marketing to companies in the field of traditional and renewable energy. In order to attract a power plant, ethanol facility, traditional refinery or another related entity, the implementation LRA will have to compete against other locations. Ultimately, it is anticipated that an appropriate amount of land would be transferred by deed to the developer of a facility or facilities of this type, possibly for little or no cash consideration. Marketing to users of this type will be very competitive, as jobs of this type are highly sought-after.

6. Public Education & Training

The education and training section of the property is expected to be marketed for the creation of a training center for first-responders. Because of the nature of this type of project, it is anticipated that this portion of the property will be developed by a state government agency, or through an agreement among regional governmental entities. The implementation LRA should work with appropriate political resources to identify necessary funding for this project, and maintain flexibility in terms of necessary ownership to get the project completed.

7. Special Events & Farm Museum

It is recommended that the implementation LRA negotiate to sell a portion of this property to an end user with the capability and capacity to implement the plan to create a farm museum on the site. In addition, the LRA should also begin marketing efforts to sell the remainder of this section of the site to an end user that is committed to using the site for special events with the goal of enhancing tourism and visitation to the site and the larger region. As an alternative, the LRA could maintain ownership of the property, and lease the site on an event-by-event basis.

8. Office/Business Park

The office/business park parcel offers some significant opportunities for the implementation LRA. The existing administrative headquarters for the property is located in this area, and could offer the LRA a potential source of cash flow. It is recommended that the LRA market the property with a commercial real estate broker who can offer the property for lease or sale. The building has the ability to support two or more separate users, based on its layout. Assuming an average net lease rate of \$6.00 per square foot per year, the building could generate almost \$400,000 in revenue on an annual basis at full occupancy. This cash flow has obvious benefits for the LRA in terms of the operations, management, maintenance and marketing of the property.

Once the administrative building has been marketed, the implementation LRA can consider developing conceptual site plans for the remaining land in this parcel. Site plans should be developed that can capitalize on the availability of existing infrastructure systems, and accommodate a variety of end users (i.e. sizes and types). These plans can be developed both for marketing purposes, and to inform/influence potential subdivision approaches for the site. Once the concept plans have been developed, and the LRA has an understanding of cost issues associated with the infrastructure necessary to support development, the parcels can be marketed to local and regional developers by commercial real estate brokers in the region, and by LRA staff.

9. Housing

The housing parcel is considered a longer-term development option for the site. Therefore, it is recommended that the implementation LRA maintain ownership of this parcel for ten to fifteen years, until substantial job creation activity has occurred on the site. At that time, the LRA can evaluate whether the property should be subdivided or sold in its entirety to a housing developer.

10. Hazardous Materials Treatment

It is anticipated that the implementation LRA will have to maintain ownership of these parcels over the long term. Disposal is not anticipated.

I. Land Use Controls

Most communities involved in redeveloping a closed military installation eventually adopt zoning ordinances and development controls (e.g. subdivision and site plan review regulations) to manage the long-term redevelopment of the facility. Generally, these types of

regulations provide potential reusers with an understanding of how the entire property will be developed over the long term and serves as a valuable tool for marketing the site.

However, Labette County, where KSAAP is located, does not currently have a zoning ordinance. In order to manage eventual reuse of the site, the Redevelopment Authority may want to establish some development standards that provide guidance about site redevelopment.

This type of approach would involve compliance with specific development standards if another organization acquires the property through a lease or deed transfer. Responsibility for compliance could be part of the lease agreement or covenants within the deed. These standards could involve a variety of property development activities including:

- Building siting and layout
- Parking requirements
- Environmental Restrictions/Land Use Controls
- Grading and drainage
- Stormwater management
- Building height
- Safety standards
- Location of utilities
- Lighting
- Signage
- Rights-of-way and access
- Location of storage areas
- Construction standards

The implementation LRA would be the organization assigned responsibility for managing compliance with identified standards. In essence, this process would operate in conjunction with the lease or sale of property and could be flexible in order to meet the unique needs of a specific developer.

J. Strategic Implementation Strategy

In order for the KSAAP LRPA (and/or its successor implementation LRA) to effectively operate, manage and redevelop the KSAAP site, it is important to recognize some of factors that have to be considered in moving forward with the project. Specifically, the implementation LRA needs to understand some of the key decisions that will have to be made in the coming year, and how these decisions will affect the ability to initiate redevelopment, as well as timing for redevelopment.

To some extent, the ability to reuse the site will be influenced by the implementation LRA's approach to redevelopment, their risk tolerance, the availability of funding, and the influence of the marketplace. These issues are examined below.

1. Key Decisions

The KSAAP LRPA has a number of important issues facing them before the end of the current year. Issues such as whether to acquire the entire KSAAP property, whether to pursue early transfer, and what conveyance method to pursue are all critical to the future redevelopment of the site. Related to these issues are the methodology that the LRPA, or its successor implementation LRA, will use to operate and maintain the site, and when marketing efforts should be initiated.

Amount of Property to Acquire - The implementation LRA needs to closely evaluate whether they want to acquire property at KSAAP, and how much property is appropriate to acquire. While acquisition of the entire site seems to offer the highest level of control over the future redevelopment of the property, it also comes with significant financial responsibilities. Acquisition of lesser amounts of property could reduce operation and maintenance costs, but the loss of control could affect the implementation LRA's ability to implement an integrated plan, and could also create "competitors" for potential users/employers.

Conveyance Method – A final decision on the appropriate conveyance method will affect how the implementation LRA acquires the property, as well as how it can be used and/or disposed of in the future. While the LRA needs to make a decision on how it wants to approach conveyance, the Army will also have a say in how the property is conveyed, since it must approve and document the conveyance. While it is recommended that the LRA request transfer of the entire property via no-cost EDC, the Army may balk at transfer of the entire site via an EDC. In the event that the Army counteroffers with either a request for an EDC with a cost, or with a partial EDC and other approaches for non-EDC parcels, the LRA will have to consider the overall impact of the Army's response on their long-term plan. If the Army's proposal does not meet the needs of the LRA and the larger community, it may be necessary to consider implementing municipal land use controls on the property and allowing the Army to sell off the property via advertised public sales.

Early Transfer – The decision regarding early transfer will also be affected by others. It is recommended that the implementation LRA request early transfer of the KSAAP property in order to expedite environmental remediation efforts and to allow the LRA to prioritize cleanup consistent with its development objectives and marketing plans. The Army must agree to the early transfer and provide necessary funding to resolve environmental issues. In addition, the Governor of Kansas will also have to approve deferral of the covenant regarding environmental remediation for the KSAAP site. While the Governor's concurrence on this issue is not expected to be problematic, it is one more layer of complexity in completing the transaction.

2. Staff vs. Contractor

Assuming that the LRPA (or the implementation LRA) acquires property at KSAAP, there will be a number of issues associated with the ongoing operation, maintenance, management and marketing of the property. Among the chief concerns will be what functions to provide with direct staff resources, and what functions should be provided via contract agreements with service providers in the region. It is likely that the implementation LRA will have to use some blend of staff and contracted services to operate, market and maintain the property, but consideration will have to be given to what specific functions the LRA wants to perform with internal staffing.

3. Early Marketing Efforts

Typically, implementation LRAs have benefited from “marketing while planning,” which provides real world feedback on plans for redevelopment of properties. In the case of KSAAP, there is uncertainty relative to when the property might be available to the LRA, because of the existing facility use agreement between the Army and its operating contractor. Since the operating contractor has some ongoing contracts with DoD, it is unknown whether the facility will be available after completion of these contracts, or whether DoD will seek to accelerate or terminate the contracts. This uncertainty makes it difficult for the LRA to market facilities (or land) at KSAAP, since they cannot specify to a user when they might be able to begin utilizing a specific facility. The implementation LRA must work with both the operating contractor and the Army to gain an understanding of when specific facilities and/or areas of the plant will be available for use by others.

K. Phasing Plan and Development Approach

In terms of an asset that can readily be used and generate immediate cash flow for the implementation LRA, the portions of the property that can support agricultural uses and grazing will need to be an early focus. These lands, which include the majority of land identified on the Preferred Reuse Alternative Map as Conservation/Agriculture, can begin generating immediate revenue to support the activities of the LRPA.

In terms of phasing, it is anticipated that the munitions storage facilities, including igloos and magazines, will be an early focus for the implementation LRA. Given the fact that these facilities were primarily used to store finished products, it is anticipated that the majority of these facilities will be available for reuse during the early stages of redevelopment. However, the *Environmental Condition of Property (ECP) Report* indicates that these facilities are unevaluated, or require additional evaluation.

The ECP also indicates that the existing rail yard is unevaluated, or requires additional evaluation. However, the majority of the land area identified for transportation and warehousing uses is considered environmentally “clean” (as are the majority of the 1400 Area warehouse structures). This property is also expected to be an early focus of the implementation LRA, given the attractiveness of the rail assets, and market data that indicates significant increases in rail traffic. This area of the site could support substantial

development of new warehousing uses, exterior storage and shipment of bulk materials, and expanded railcar storage.

The existing administrative headquarters building is also expected to be an early focus of the implementation LRA. Leasing of this facility could generate \$300,000 or more for the LRA at full occupancy, and marketing of this facility is considered critical in terms of helping the LRA to meet the financial costs associated with the KSAAP site.

Table 11-2 provides a summary of activity by phase, and Map 11-2 provides a graphic representation of the phasing of redevelopment.

Table 11-2 – Phasing Schedule by Land Use Area

| Phase I | Years 1-5 |
|------------------|--|
| | Conservation and Agriculture Special Events and Farm Museum Administrative Headquarters Transportation and Warehousing Commercial Energetics and Munitions Storage |
| Phase II | Years 6 – 10 |
| | Hazardous Waste Disposal 20% of Office /Business Park Special Events Portion of Conservation Area Public Education and Training Site Energy Park |
| Phase III | Years 11+ |
| | Industrial/Manufacturing Remainder of Office/Business Park Housing |

Source: RKG Associates, Inc.

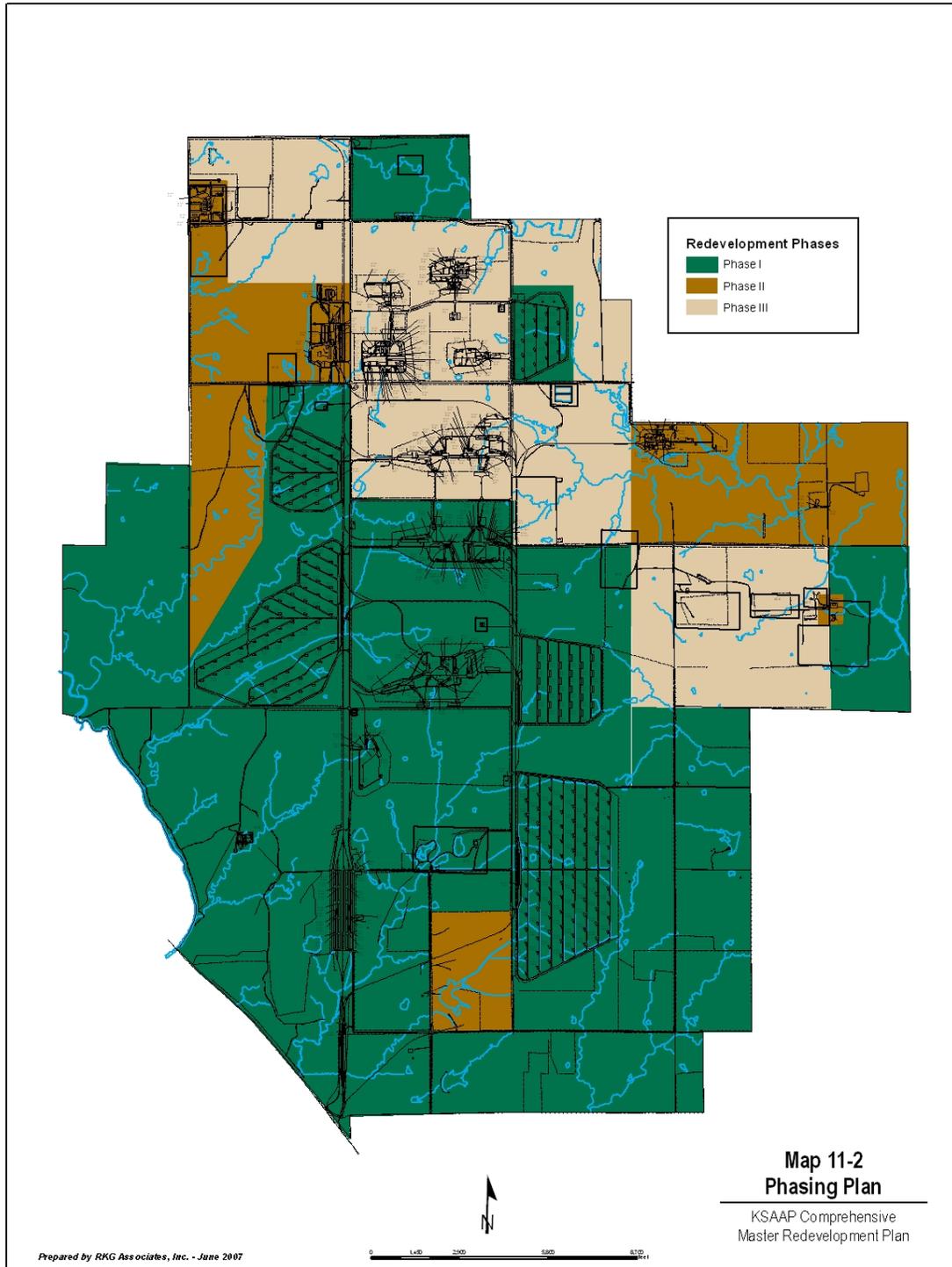
The second phase of KSAAP redevelopment is expected to begin in Year 6. At that time, it is anticipated that the implementation LRA will have interest, and the associated sponsor and funding, for the development of the public education and training facility.

The energy park parcel is also expected to see some activity during Phase II. While the implementation LRA had early interest in this site for the development of a coal-fired power plant, the project has been put on hold. However, it is anticipated that the project, or a similar project, will be attractive due to the proximity to the rail lines and the availability of water.

The special events portion of the conservation area is also expected to see development during Phase II. It is anticipated that it will require several years before funding can be secured to develop the facilities envisioned for this portion of the property.

Some additional development in the office/business park is anticipated during Phase II. It is expected that approximately 20% of the site could be developed during Phase II, including the existing administrative headquarters building.

Map 11-2 – Phasing Plan



Finally, the hazardous materials disposal site is expected to be used during Phase II, primarily for disposal of demolition debris from the Plant.

The final phase of KSAAP redevelopment includes development from Year 11 forward. The focus of this portion of the project will involve attraction of users for the industrial and manufacturing portions of the site. Given the availability of more than 2,000 acres for industrial and manufacturing uses, redevelopment of this portion of the property could require decades to experience significant progress or achieve build-out.

Similarly, the redevelopment of the office/business park property is expected to continue during Phase III. Redevelopment of this property could include one million square feet or more of total floor space, and achieving build-out could require 20 years or more.

Finally, the housing area is expected to be developed during Phase III. At that time, it is anticipated that the KSAAP site will have achieved a “critical mass,” and established itself as one of the major employment centers in Southeast Kansas.

APPENDIX

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B. Public Reuse Suggestions

Reuse Comments and Suggestion made at KSAAP Public Forums Conducted on October 19, 2006 and February 8, 2007.

1. What land use restrictions do we have? Is this discussion premature, since we don't know infrastructure condition, etc.?
2. Like to see an airport – enhanced access to the area – ability to support industrial development.
3. Area has historically been a regional employment center – should continue in that role. Utility production, airport, incinerator/recycling center/composting/etc.
4. There's a lot to be said for the plant "as-is" – but how can we identify users and attract them to the site? Primary focus should be manufacturing.
5. Can you manufacture ammunition and have other users/economic development? Does one impede the other?
6. Would like to see more jobs and some of the property on the tax base. Higher paying jobs should be a focus – there are lots of \$8 to \$10 per hour jobs available in the region.
7. Can we combine technology with our agricultural base and do plastics, bio-diesel, and pharmaceuticals? K-State, Kansas Bioscience Authority.
8. Article in the paper regarding conversion of waste to fuel.
9. Agriculture and timber need to be considered. Walnut trees are going to waste because of limited management of the forest. Agricultural leases are not generating maximum revenue because of some restrictions on grazing. Agricultural uses should be considered for the south end of the site.
10. Can a large portion of the site be managed as a wildlife preserve? Cherokee County has a wildlife area that generates 300,000 visitor days per year.
11. Site is big enough to support a mix of uses.
12. What are the assets, and do they have value? Water, sewer, rail, central U.S. location, some buildings (primarily storage buildings), size (13,000 square feet).
13. Focus on multiple uses/multiple users & owners (public, private, government, education, non-profit).

14. Housing – why can't we have a large-scale planned community? With golf, recreation, amenities, etc.
15. How about age-restricted housing?
16. Can the LRA sell to a single buyer? Should they?
17. How about a major theme park? Other tourism-related uses?
18. How about a medical waste incinerator or even a low level hazardous waste incinerator? Would it hinder other uses of the property?
19. How about munitions disposal as a use? Storage might also be an opportunity. EBV in Joplin is at capacity, store munitions in Camden, Arkansas and Milan, Tennessee.
20. Will the Administration building be available? Would seem to have a different set of uses than many other areas of KSAAP.
21. LRPA should carefully consider decisions that are irreversible, such as cutting the old-growth walnut.
22. How about a regional training facility for first-responders?
23. State should participate in the process, and provide funding to help with the redevelopment.
24. Concerned about the timetable for acquisition - when will we be able to acquire the property?
25. Other munitions-related manufacturing.
26. Farm History Center has interest in relocating Four States Farm Show, presently held 30 miles east, has previously been held in Parsons.
27. Antique Farm Show as well.
28. State-related academies – police, fire, etc.
29. Prisons?
30. Mineral rights
31. Bio-security at Manhattan and Leavenworth – need to raise our profile for large state and federal projects.

32. Agriculture-related uses to capitalize on existing economic base, value-added for farmers and agricultural-related companies
33. K-State and Kansas University have research facilities in the region. Pittsburg State has an automotive and plastics background.
34. Manufactured housing company to create reasonably priced products for the region.
35. Bio-diesel and/or ethanol?
36. Distribution Centers built nearby – can we compete?
37. Recreation uses, RV park and/or storage, trails, etc.
38. Coordinate with workforce investment board for new employers and retraining, uptraining.

C. Public Meeting Handouts

February 8, 2007

May 22, 2007

June 27, 2007

Copies of Public Meeting Handouts (produced in grayscale) are included for illustrative purposes only.

DRAFT

Comprehensive Master Redevelopment Plan

Kansas Army Ammunition Plant

The logo for the Kansas Army Ammunition Plant (KSAAP) is located in the top right corner of the header. It consists of the letters "KSAAP" in a bold, sans-serif font, enclosed within a rectangular border that has a stepped, staircase-like appearance on its right side.

The **Kansas Army Ammunition (KSAAP) Local Planning Redevelopment Authority (LRPA)** is presently engaged in preparing a **Comprehensive Master Redevelopment Plan** for KSAAP. A redevelopment plan prepared by the LRPA is required by federal regulations before the property can be transferred by the Department of Defense to other users.

The information presented in this handout provides a brief overview of the scope of work involved in completing a redevelopment plan for the site, as well as a summary of major findings and conclusions developed during the assessment of facilities at KSAAP. Outlined below are the three major phases of the reuse planning process and key components that will be addressed.

Phase I – Inventory and Analysis

Part 1 – Data Collection, Identification and Assessment of KSAAP Facilities (Tasks 1 & 3)

During this part of the project the consulting team will work with Department of Army officials in the collection and evaluation of a wide range of information pertaining to the KSAAP site. Facilities identified for examination include:

- Existing Buildings
- Environmental Issues
- Natural Resources
- Infrastructure
- Land Use Patterns
- Site Constraints

Part 2 – Economic and Market Assessment (Tasks 2 & 4)

A variety of regional and local economic social trends will be evaluated during this part of the project including employment, business activities and population changes. This assessment will also include an overview of real estate market conditions.

Phase 2 – Reuse Vision and Reuse Alternatives

Task 5 – Community Visioning

Task 6 – Redevelopment Plan Alternatives

During this phase, redevelopment goals, based on several public meetings as well as direction provided by LRPA members, will be identified. Based on the site analysis and identified reuse goals alternative reuse concepts for the KSAAP site will be prepared.

Phase 3 – Redevelopment Plan and Implementation Strategy

Task 7 – DoD Property Transfer Process

Task 8 – Recommended Redevelopment Plan & Implementation Strategy

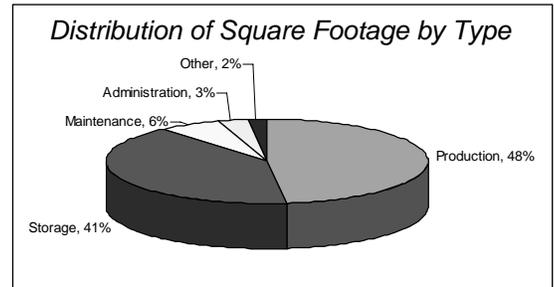
Task 9 – Review of Impacts Associated with Munitions and Explosives of Concerns (MEC) Programs or Redevelopment Potential

This phase will involve the preparation of a recommended reuse plan for the KSAAP site. An implementation strategy will also be prepared that highlights alternatives for property acquisition, market and infrastructure needs, public and private investments, possible changes in local land use regulations, an implementation timeline for key decisions and a development approach for the site. Alternative organizational structures appropriate for implementing the redevelopment plan will also be presented.

Assessment of Buildings and Facilities

Summary of Major Findings and Conclusions

- KSAAP has approximately 2.5 million square feet of floor space in more than 600 buildings. About 1.2 million square feet of floor space is associated with the production of munitions, and an additional 1 million square feet is used in warehousing and storage areas. This leaves less than 300,000 square feet dedicated to other types of uses.
- Environmental contamination issues are expected to affect the practicality of reusing buildings in the production areas. The exception would be the possibility of continued use of the facilities for munitions production.
- The ability to reuse the warehouse and storage facilities may also be affected by environmental contamination issues. However, since a large portion of the facilities focused on the storage of finished products, some of these facilities may not be severely contaminated.
- Many of the buildings at KSAAP have corrugated asbestos roofing. Asbestos is not considered to be hazardous unless it is friable (airborne). However, the presence of asbestos roofing makes any removal, repair or replacement substantially more costly.
- Shop space at KSAAP may also have some reuse potential. These facilities, in general, are flexible in terms of the types of uses they could accommodate, allowing for manufacturing, warehousing, automotive and light industrial uses.
- In general, the administrative headquarters building is considered to have very good reuse potential. Although the building is somewhat large for an office facility by local standards, its layout is consistent with possible multi-tenant occupancy.
- The Contaminated Waste Processor (CWP) may have reuse potential as a commercial processing center for incineration of hazardous materials. Issues associated with transferring the permits for the CWP should be evaluated, as well as possible upgrades that might be necessary to the CWP's emissions systems in order to meet existing air quality standards.



Assessment of Major Utilities

Comprehensive
Master Redevelopment Plan

KSAAP

Summary of Major Findings and Conclusions

Sanitary Sewers

The wastewater treatment system at KSAAP includes a wastewater treatment plant (WWTP) and wastewater collection system. The WWTP has a treatment capacity of 1 million gallons per day (MGD). Due to reduced flows at the plant, the capacity of the WWTP has been reduced to 500,000 gallons per day. The wastewater collection system ranges from 6 to 12 inch cast iron sewer lines. The lines are old and in poor condition, with infiltration creating the potential for more problems.

Water Systems

A water treatment plant (WTP) located on the banks of the Neosho River, approximately 2 miles east of KSAAP, supplies potable water to the facility. The WTP has sufficient capability to treat the 1 MGD it is authorized to draw from the Neosho River. However, the plant is using less than 80 million gallons annually or less than 25 % of capacity. The infrastructure of the plant and the water system is approximately 60 years old.

Electric

KSAAP receives electrical power via a Westar Energy substation, located on the eastern side of the site. More than 462,000 lineal feet of overhead lines deliver power to KSAAP facility. The electrical distribution system is in fairly good condition. Dozens of transformer banks serve all the buildings on site. In addition, approximately 17 emergency generators with day tanks are located at the site to provide back-up power.

Telecommunications

The existing telecommunications system is primarily provided by aerial and underground lines. Southwestern Bell provides service up to the perimeter of the site, while lines on KSAAP property are owned by the Army. The system is generally in poor condition and in some cases unreliable. Several buildings still have the original wiring. KSAAP has limited fiber optic and data communications capabilities.

Transportation System

Roadways and railways comprise the transportation system at KSAAP. The majority of the roadways within the boundaries of KSAAP are asphalt pavement. The secondary roads are primarily gravel; with several roads primarily dirt driveways. The majority of the asphalt pavement roadways are in fair condition. The gravel and dirt roads are in fair to rough condition. The railway system includes lines, spurs and sidings. The railway systems are in various states of repair. A subcontractor currently leases section of the on-site rail system.

Natural Environment and Historic Features

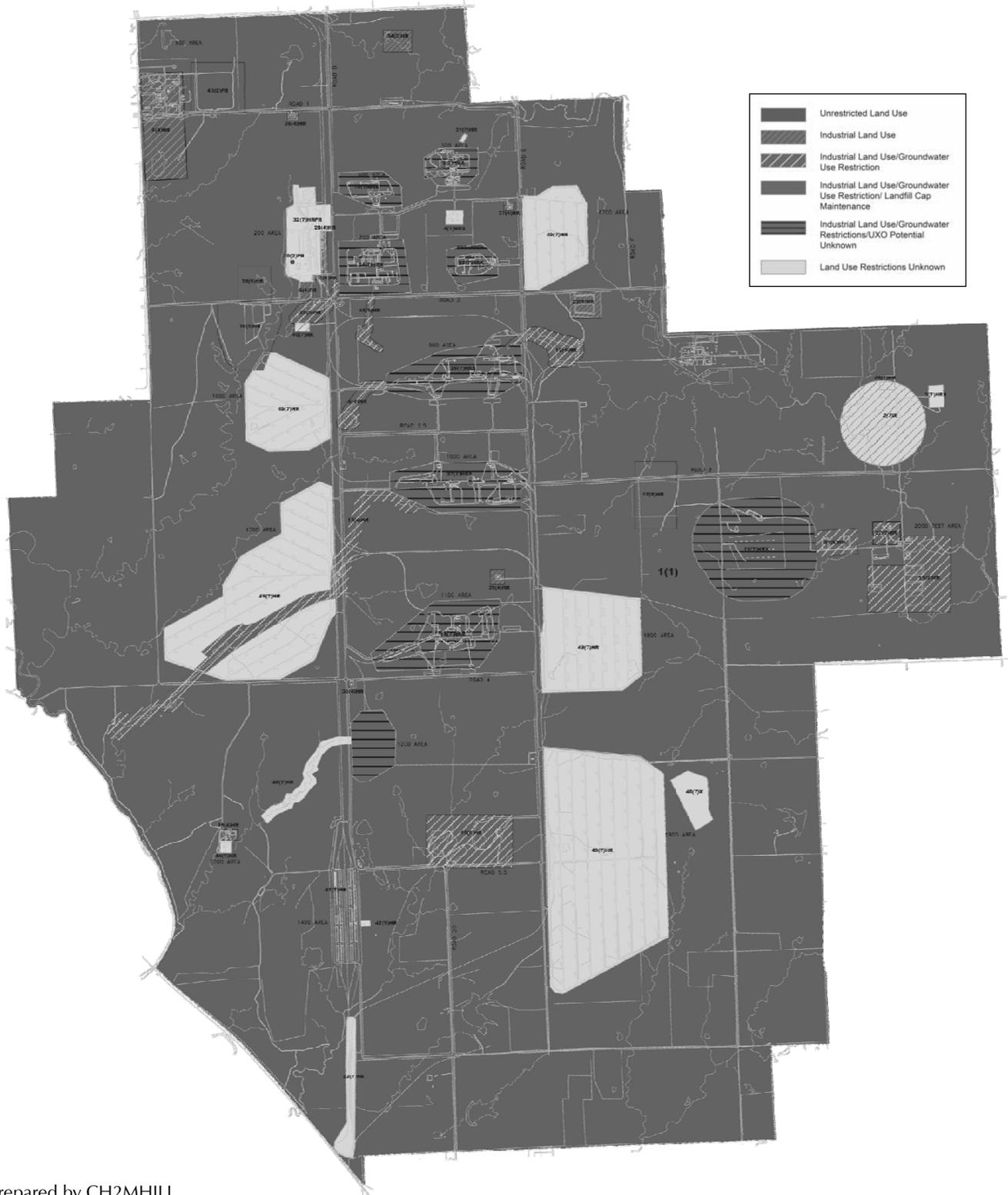
Comprehensive
Master Redevelopment Plan

KSAAP

Summary of Major Findings and Conclusions

- The KSAAP site is topographically characterized as relatively flat in the north and gently rolling terrain in the south. Elevation across the site varies from a low of 780 feet above mean sea level (amsl) to a high of 920 feet amsl.
- The KSAAP site is principally located in soils that are characterized as somewhat poorly drained to moderately well drained, and having dominantly clayey subsoil. Problems involving erosion are minimal
- No threatened or endangered floral species have been documented on KSAAP. With respect to vegetation, two areas of special interest exist onsite: the Labette Creek Corridor and the Native Prairie. Labette Creek contains high-quality timber and is one of the best examples of an eastern floodplain in Kansas. KSAAP contains approximately 40 areas of high-quality Native Prairie and approximately 70 low-quality native prairie areas.
- KSAAP has widely diverse wildlife with 252 taxa (classifications) of vertebrate wildlife and mussels confirmed onsite. No federally threatened or endangered fauna have been documented on KSAAP, although there are 12 species listed as Species in Need of Conservation by the State of Kansas.
- Forty-seven miles of rivers and streams are present on KSAAP, with the majority comprised of intermittent streambeds that are seasonally flooded. KSAAP also contains 123 ponds that were chiefly created for livestock water.
- There are 212 acres of wetland habitat on KSAAP, more than half of which (137 acres) consist of permanent aquatic beds from watershed ponds.
- KSAAP has limited commercial forest resources, totaling only about 1,000 acres. KSAAP manages the forest ecosystem as a wildlife habitat program that emphasizes support of the military mission, enhancement of watersheds, management of wildlife habitat, and provisions for outdoor recreation.
- Agricultural/grazing leases are an essential part of natural resources management on KSAAP, and a total of 9,714 acres of land are outleased as part of the agricultural outlease program.
- All KSAAP buildings, structures, or objects are considered ineligible for inclusion on the National Register of Historic Places. No archeological surveys have been conducted at KSAAP and no archeological sites have been recorded.
- KSAAP has senior water rights to the Neosho River and maintains this right through annual use.
- There are no significant implications for the reuse of KSAAP based on the evaluated natural and cultural resources.

Environmental Condition of Property Parcel Map



Prepared by CH2MHILL
 Source: Modified from URS 2006 Environmental
 Condition of Property Report - KSAAP

Environmental Issues

Summary of Major Findings and Conclusions

KSAAP

- Under the Installation Restoration Program (IRP), 17 sites at KSAAP are designated as Response Complete and 16 are active sites. The active sites involve on landfill covers at three sites, soil removal at two sites, monitored natural attenuation (MNA) of groundwater at four sites, and long-term monitoring (LTM) of groundwater.
- The Department of the Army anticipates completion of all environmental remediation work by 2037.
- The Department of the Army is currently assessing explosive contamination at various buildings at KSAAP. Four areas (300, 800, 900, and 1200) have been classified as 3X, indicating a potential explosive hazard, and 10 areas (500, 700, 1000, 1100, 1500, 1600, 1700, 1800, 1900, and 3000) have been classified as 1X, indicating the highest level of explosive contamination.
- There are six ranges on the active/inactive range inventory. Additionally, the Old Ammunition Storage Area is being inspected because munitions were reportedly scattered throughout the area due to decomposition of containers.
- All underground storage tanks (USTs) at KSAAP have been removed. There are 40 aboveground storage tanks (ASTs) permitted by the Kansas Department of Health and Environment (KDHE).
- Thirty-four polychlorinated biphenyl (PCB) transformers are present at KSAAP with concentrations greater than 50 parts per million (ppm). The Army is responsible for ensuring the transformers are compliant with the Toxic Substance Control Act (TSCA) upon property transfer
- Approximately 98 percent of the structures at KSAAP contain suspected asbestos-containing material (ACM). Friable (airborne) ACM has been removed from the 200, 300, 500, 900, 1000, 1200, and 3000 Areas as well as the 1414S Boiler House. Asbestos, however, must still be abated from 50's buildings and the 1100 line. Asbestos issues will need to be addressed and managed by a new property owner or owners.
- With the exception of the water tower, no lead-based paint (LBP) surveys have been performed at KSAAP. Renovation or demolition of existing structures will require some LBP abatement. LBP issues will also need to be addressed and managed by a new property owner or owners.
- Radon tests for indoor air were below the U.S. Environmental Protection Agency (USEPA) action level.
- More than 10,300 acres are available for reuse with no restrictions.
- Cleanup standards for many of the sites have been based on an industrial use; therefore, without additional cleanup, land use is limited to industrial applications in a variety of areas across KSAAP.
- Past uses of portions of the KSAAP sites require long-term monitoring (LTM) of wells and groundwater use restrictions. Groundwater quality in the area is poor due to high levels of total dissolved solids (TDS), and groundwater is not suitable for use as a drinking water source.

Reuse Implications

Kansas Army Ammunition Plant

KSAAP

Buildings and Facilities

It is anticipated that many of the production-related facilities will have environmental and contamination issues that may render them unusable. In total, more than 1.2 million square feet of floor space at KSAAP, almost 50% of existing buildings, may be impaired from a reuse perspective. The administrative headquarters building is considered to have very good reuse potential. The storage and warehouse type facilities may have some reuse potential and could provide some limited cash flow to support operation and maintenance of the facility, though rent levels are likely to be low. In addition, the total square footage of more than 650,000 square feet may be more space than the regional marketplace can comfortably absorb.

The shops in the 200 Area may also have some reuse potential allowing for manufacturing, warehousing, automotive and light industrial uses. Finally, the Contaminated Waste Processor (CWP) may have reuse potential as a commercial processing center for incineration of hazardous materials. However, the LRPA must evaluate the issues associated with transferring the permits for the CWP, and should also consider what upgrades might be necessary to the CWP's emissions systems in order to meet existing clean-air standards.

Utility Systems

The utility infrastructure at KSAAP is generally in poor condition. The water, sewer, electrical, and communications system are in a state of decay and in many cases antiquated. The transportation infrastructure is generally in better condition than the utility infrastructure, but the transportation system could be upgraded. Any redevelopment within the boundaries of KSAAP would likely be expensive, due to the poor condition of water and sewer lines, as well as electrical and communication systems. In addition, initial and probably long-term redevelopment will be limited to the areas within KSAAP where utility and transportation systems are easily accessible.

Environmental Considerations

Based on the Environmental Condition of Property Report (ECP) existing environmental conditions at the KSAAP were categorized into three basic categories, as follows. (See map on page 6).

- Green – The green areas represent parcels cleared for unrestricted land use.
- Yellow – The yellow areas represent parcels where the potential land use restrictions are unknown.
- Red – The red areas represent parcels where there are restrictions associated with land use.

The **green** areas with unrestricted land use total more than 10,300 acres and fall within the areas surrounding the production facility and the infrastructure. The areas designated in **yellow** are areas where the potential land use restrictions are unknown. Most of these areas are where explosives were stored or handled. The evaluations for determining the extent of the potential issues associated with these areas have not been assessed. In areas designated by **red** the Army has remediated sites in the IRP to industrial cleanup standards and, therefore, many of the parcels have restrictions that limit use to industrial activities without additional cleanup. In addition, in areas where groundwater was contaminated, there is a restriction on groundwater use. Any monitoring wells installed as part of the remediation efforts will need to be accessible in the future by the Army in order to satisfy sampling and reporting requirements.

For more information about the reuse plan for the Kansas Army Ammunition Plant please contact:

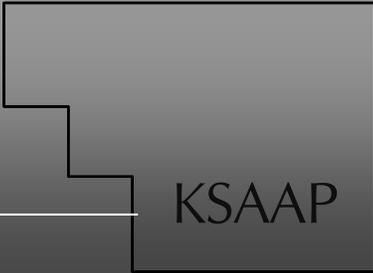
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Comprehensive Master Redevelopment Plan

Kansas Army Ammunition Plant



The **Kansas Army Ammunition (KSAAP) Local Planning Redevelopment Authority (LRPA)** is presently engaged in preparing a **Comprehensive Master Redevelopment Plan** for KSAAP. A redevelopment plan prepared by the LRPA is required by federal regulations before the property can be transferred by the Department of Defense to other users.

The information presented in this handout provides a brief summary of major findings and conclusions relating to property transfer and redevelopment alternatives.

Property Transfer Process

Transfer of Federal property to other users fall into two major categories that involve options for transferring of all the property, or portions of the property, at no cost or reduced cost, as well as other methods that involve acquisition at market rate values. Other options involve the potential for early transfer of the facility for civilian use prior to full closure by the military.

Property Transfer Alternatives

| Conveyance Method | Conditions | Community Planning Considerations |
|--|--|---|
| Public Benefit Conveyance (PBC) | <ul style="list-style-type: none"> The property must be used for public purposes (schools, healthcare, recreation, etc.) The property is conveyed at market value unless a sponsoring agency determines a discount is warranted Sponsoring agencies may impose additional land use controls | <ul style="list-style-type: none"> Market value is an objective of the sponsoring agency – an appraisal may be needed Consideration should be given to how the reuse plan will affect market value and ultimately the price paid to the sponsoring agency |
| Economic Development Conveyance (EDC) | <ul style="list-style-type: none"> The military department is required to seek market value However, the military can grant an EDC without consideration if proceeds support economic development for 7 years Proceeds not used for economic development can be recouped by the military | <ul style="list-style-type: none"> Market value may need to be determined – an appraisal must be completed A lower market value may be arrived at if reuse plans are more generalized and do not assume high densities of development |

Comprehensive Master Redevelopment Plan

Comprehensive
Master Redevelopment Plan

Property Transfer Process

KSAAP

| Conveyance Method | Conditions | Community Planning Considerations |
|--|--|--|
| Negotiated Sale to Public Entities | <ul style="list-style-type: none"> Property can only be conveyed to public entity for a public benefit Same benefit cannot be obtained from sale or PBC conveyance Congress must approve transaction If property is sold within 3 years all profits revert to the military | <ul style="list-style-type: none"> Market value will determine final sale price for LRPA or other public body – an appraisal must be completed A very detailed reuse plan may result in higher market value than a more generalized plan |
| Advertised Public Sale | <ul style="list-style-type: none"> Property is conveyed by the military through public bidding process Military will consult with LRPA before taking this approach The military's objective will be to seek sale to highest responsible bidder | <ul style="list-style-type: none"> Because this approach requires a bid process, market value is assumed to be part of this process The establishment of minimal land use controls in the reuse plan may encourage more rapid, market-driven redevelopment, if so desired by the LRPA |
| Conservation Conveyance | <ul style="list-style-type: none"> Similar to a public benefit conveyance but property must be used for conservation oriented purposes Management of property must involve state or local government, or non-profit conservation organization Property reverts to United States if use ceases to be for conservation purposes | <ul style="list-style-type: none"> If conveyance is for no cost – market value is not an issue The community plan should still examine highest and best use since conservation conveyances can severely limit the development potential of an otherwise economically viable site |
| Environmental Responsibilities Transfer/Sale (Early Transfer) | <ul style="list-style-type: none"> Property is conveyed through two-step bid process The military then requests a covenant deferral from state governor After deferral is approved military can enter into a binding purchase agreement | <ul style="list-style-type: none"> Because this process requires a bid process, market value is assumed to be part of this process State will assume responsibility for oversight of remedial actions for contaminated sites The establishment of minimal land use controls in the reuse plan may encourage more rapid, market-driven redevelopment, if so desired by the LRPA Consideration should be given to acquiring additional environmental insurance to protect involved parties from future liability |

Property Transfer Process and Explosive Hazard Review

Comprehensive
Master Redevelopment Plan

KSAAP

Summary of Major Findings and Conclusions

- The potential use of a Public Benefit Conveyance (PBC) for transfer of the KSAAP property at no cost or reduced cost is likely to be limited to conservation purposes and possibly for acquisition of the existing water and sewer utility systems.
- All potential conveyance mechanisms likely to be of use for the KSAAP facility, with the exception of a PBC, may require the completion of an appraisal to establish the property's market value.
- The LRPA should be particularly cognizant of the market value of the land and facilities at the KSAAP, a value that will be reflective of the highest and best use of the property, and the potential effect that recommendations presented in this redevelopment plan may have on establishing that value.
- Consideration of early transfer may be practical option for the KSAAP since remediation of environmental cleanup by the military is anticipated to require an extended period of time. An interim lease agreement for the current military contractor may also be feasible but will be dependent upon continuation of this contractual arrangement.
- It is advisable that consideration be given to acquiring additional environmental insurance to protect the LRPA, as well as other parties involved with future use of the facility, against liability related to contamination that is not addressed under the BRAC law itself. Such insurance can help to protect against unknown existing conditions on the site and can also serve as a marketing tool to help attract financing and developers.
- The screening process for potential use of KSAAP facilities by organizations representing the homeless revealed that there is no interest for such use by any groups within the area.

Explosive Hazard Review

- The KSAAP has been properly managed and has minimal explosives contamination to interfere with future redevelopment.
- The Installation Restoration Program (IRP) at KSAAP is a mature program that has made significant progress in identifying, remediating, and closing solid waste management units (SWMU).
- It is likely that explosives operating buildings associated with load and pack operations could be decontaminated and/or removed without burning. Additional analysis is needed to develop the best method of certifying load and pack explosives operating buildings as safe for reuse.
- Melt and pour explosives operating buildings will require detailed analysis to determine if explosives contamination can be removed without destroying the buildings by burning.
- The open detonation area located within the 2700 Area is likely to require extensive remediation if closed.
- Explosives residues may be present in production areas (buildings, ventilation systems, vacuum systems, sewer lines, and dispensing lines) but have not yet been characterized or quantified.

The Kansas Army Ammunition Plant has been properly managed and has minimal explosives contamination to interfere with future redevelopment. The Installation Restoration Program (IRP) at KSAAP is a mature program that has made significant progress in identifying, remediating, and closing solid waste management units (SWMU). Explosives hazards are limited to a few buildings and ranges that dispose of munitions by detonation

Redevelopment Goals and Reuse Alternatives

Comprehensive
Master Redevelopment Plan

KSAAP

Summary of Major Findings and Conclusions

Summary of Major Findings and Conclusions

- A recently completed (September 2006) “Economic Vision for the Future of Labette County, Kansas” identified a number of goals and action steps for improving the regional economy.
- Expand employment opportunities by attracting new industries that can capitalize on existing assets. A specific action step noted that KSAAP redevelopment could act as a catalyst for long-term economic expansion.
- Initiate a strategic regional approach to economic development that involves the preparation of a realistic reuse and implementation plan for KSAAP that supports long-term economic growth of the region.
- Maintain and enhance attributes associated with the region’s quality of life including a reuse plan for KSAAP that is environmentally sensitive to the high-value habitat located on the site.
- In addition to these regional goals and action steps related to KSAAP, a number of other specific goals for the reuse of KSAAP were also identified.
- The acquisition and redevelopment of property at KSAAP should be accomplished in a fiscally responsible manner.
- Reuse efforts should focus on those portions of the KSAAP site that offers the greatest potential for successful redevelopment.
- The redevelopment of KSAAP should be undertaken in a manner that ensures that the environmental cleanup of hazardous waste sites is effective, efficient and relates to the redevelopment needs identified in the reuse plan.
- Redevelopment efforts should encourage the retention of existing private sector employment currently at KSAAP.
- The continued use of property at KSAAP for agricultural purposes should be encouraged.
- The organizational responsibility for implementing the redevelopment plan should work with federal, state and local agencies in establishing conservation and/or recreational areas at KSAAP.
- Implementation of these goals will require leadership, commitment to take action and financial resources. A wide variety of private and public organizations will also have to be involved in activities required to achieve these goals.
- Two reuse alternatives were identified for the redevelopment of KSAAP.
- Several key factors influenced the identified reuse alternative.
- Almost 50% of the building space was used for munitions production. It is not anticipated that these facilities could be used for other purposes.
- About 41% of the buildable space (250 structures) were used as storage and warehouse facilities that lack heat or plumbing.
- Reuse Alternative A focuses on retaining the production of munitions at KSAAP. Key production areas would be retained for reuse as well as existing storage magazines.
- Reuse Alternative B involves a variety of supporting land uses. Reuse efforts focus on energy production, hazardous waste storage and incineration, explosive storage and manufacturing.
- Significant land areas are devoted to conservation and agricultural use under both Reuse Alternatives.

For more information about the reuse plan for the Kansas Army Ammunition Plant please contact:

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Comprehensive Master Redevelopment Plan

Kansas Army Ammunition Plant

The logo for the Kansas Army Ammunition Plant (KSAAP) is located in the top right corner of the header. It consists of the letters "KSAAP" in a bold, sans-serif font, enclosed within a rectangular border that has a stepped, staircase-like appearance on its right side.

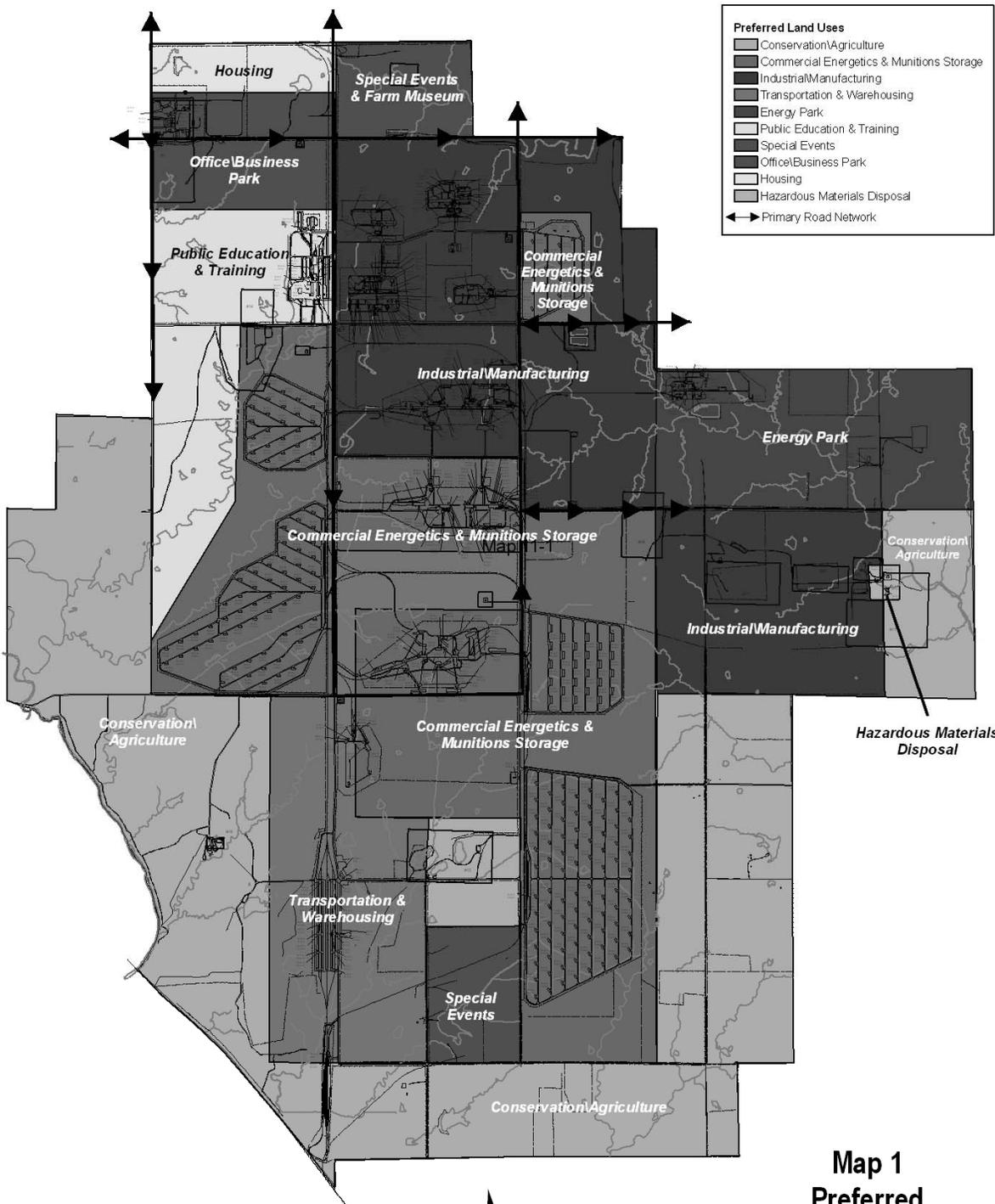
The **Kansas Army Ammunition (KSAAP) Local Redevelopment Planning Authority (LRPA)** is presently engaged in preparing a **Comprehensive Master Redevelopment Plan** for KSAAP. A redevelopment plan prepared by the LRPA is required by federal regulations before the property can be transferred by the Department of Defense to other users.

The information presented in this handout provides a brief overview of the conclusions and recommendations that were prepared as part of the redevelopment planning process. Outlined below and on the following pages is a summary of the major findings and conclusions from the redevelopment plan, as well as two maps that illustrate the preferred redevelopment plan and the anticipated phasing for reuse of the site

Recommended Reuse Plan

Summary of Major Findings and Conclusions

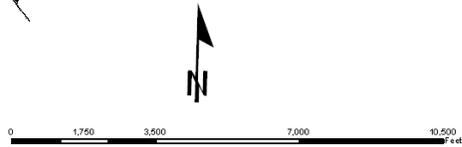
- Future redevelopment of KSAAP will be strongly influenced by the condition of existing buildings on the site and infrastructure limitations.
- It is recommended that 28 percent of KSAAP (approximately 3,881 acres) be designated for conservation and agricultural purposes. This type of use will protect a wide range of natural resources and provide significant opportunities for a variety of outdoor activities for the general public (See Map 1).
- Approximately 3,393 acres, or almost 25 percent of the KSAAP site, have been identified for commercial energetics and munitions storage. This area includes several existing production lines, as well as all of the existing storage igloos and magazines.
- Industrial and manufacturing uses have been designated for an estimated 2,618 acres, or approximately 19 percent of the land area at KSAAP. It is anticipated that a significant period of time will be required before this type of development can be initiated, due to demolition requirements and market conditions
- Transportation and warehousing activities would involve an estimated 1,145 acres or approximately 8 percent of the site. Key development initiatives would include rail car storage and use of existing cold storage warehouses.
- Approximately 826 acres, or 6 percent of the site, have been designated as an energy park. Types of possible uses include bio-fuel facilities (ethanol), an oil refinery and/or a coal-fired power plant.
- A small portion of the site, approximately 783 acres (6 percent of the land area), is recommended as a location for the training and education of fire, rescue, police and emergency responders.
- Two sites containing approximately 484 acres, or almost 4 percent of the land area, have been identified for special events. One site would involve the establishment of a farm museum, along with related activities, while the other portion would support adjacent conservation activities.

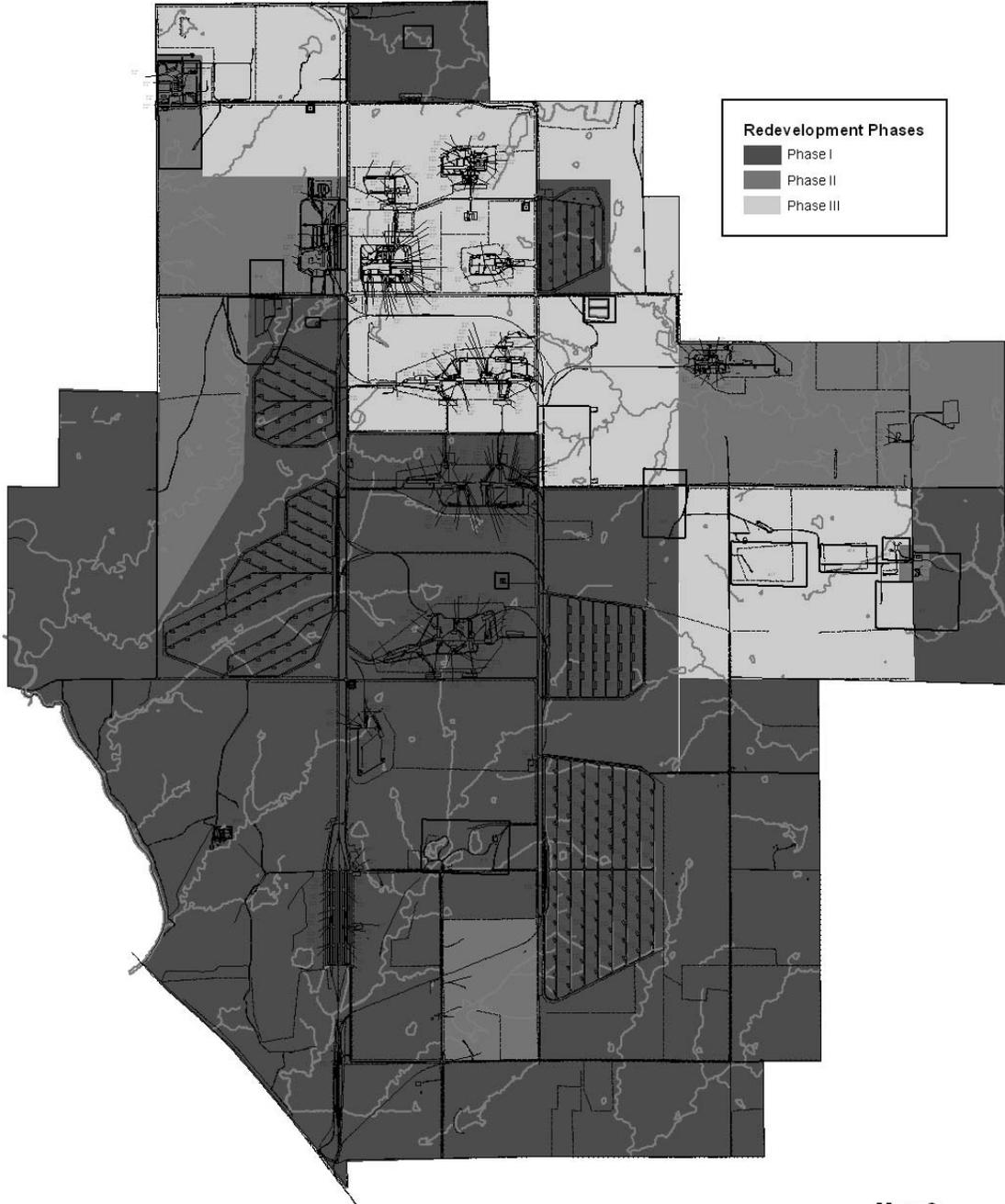


**Map 1
Preferred
Redevelopment Plan**

KSAAP Comprehensive
Master Redevelopment Plan

Prepared by RKG Associates, Inc. - June 2007





**Map 2
Phasing Plan**

KSAAP Comprehensive
Master Redevelopment Plan



Recommended Reuse Plan

Kansas Army Ammunition Plant

KSAAP

- Approximately 405 acres adjacent to the existing administrative office facility at KSAAP have been designated as an office/business park.
- A small portion of the site, approximately 173 acres, has been reserved for housing if the need for this type of development occurs over the next 10 to 15 years.
- The existing Contaminated Waste Process facility and a small amount of land, almost 19 acres, have been designated as a hazardous material disposal site.
- Water, sewer, electrical and communications systems are in a state of decay and in many cases are considered antiquated. In addition, almost no studies or evaluations of system operations or conditions have been prepared during the past twenty years.
- It is critical that key infrastructure at KSAAP be evaluated in terms of operational condition and capacity, as well as estimated improvement costs.
- Basic land use and development standards need to be identified for KSAAP in order to effectively manage future reuse of the site.
- Due to the nature of contamination at KSAAP and the likelihood that an Army-led cleanup could delay implementation of the redevelopment plan, it is recommended that an early transfer of the site be pursued.
- It is recommended that the LRPA, or its successor organization, seek a no-cost economic development conveyance (EDC) for the KSAAP site.
- The Implementation LRA should use a variety of approaches for property disposal at KSAAP.
- Key decisions during the next several years involve:
 - Amount of property to acquire
 - Method of property acquisition
 - Use of the early transfer option
 - Staffing size and duties
 - Early marketing efforts
- Early phasing efforts should focus on property that can generate a cash flow (See Map 2).
- Key issues related to the creation of an Implementation LRA:
 - Financial resources
 - Local representation
 - Regional representation
 - State representation

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