Final
Environmental Impact Statement
for BRAC 95 Disposal and Reuse of the
Savanna Army Depot Activity, Savanna, Illinois

Prepared for

US Army Materiel Command

by

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ENVIRONMENTAL IMPACT STATEMENT ORGANIZATION

This Environmental Impact Statement (EIS) addresses the proposed action of disposal and reuse of the Savanna Army Depot Activity, Savanna, Illinois. As required by AR 200-2 and the National Environmental Policy Act, the potential environmental and socioeconomic impacts are analyzed.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

SECTION 1.0 ***PURPOSE, NEED, AND SCOPE*** summarizes the purpose of and need for the proposed action and describes the scope of the environmental impact analysis process.

SECTION 2.0 ***DESCRIPTION OF THE PROPOSED ACTION*** describes the proposed action of disposal and reuse of the Savanna Army Depot Activity.

SECTION 3.0 ***ALTERNATIVES CONSIDERED*** examines alternatives for implementing the proposed action.

SECTION 4.0 ***AFFECTED ENVIRONMENT*** describes the existing environmental and socio-economic setting of the Savanna Army Depot Activity.

SECTION 5.0 ***ENVIRONMENTAL AND SOCIOECONOMIC CONSEQUENCES*** identifies potential environmental and socioeconomic effects of implementing the proposed action.

SECTION 6.0 ***LIST OF PREPARERS*** identifies persons who prepared the document and their areas of expertise.

SECTION 7.0 ***DISTRIBUTION LIST*** indicates recipients of this EIS.

SECTION 8.0 ***REFERENCES*** provides bibliographical information for cited sources.

SECTION 9.0 ***PERSONS CONSULTED*** provides a listing of persons and agencies consulted during preparation of this EIS.

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GLOSSARY

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FINAL
ENVIRONMENTAL IMPACT STATEMENT
DISPOSAL AND REUSE
SAVANNA ARMY DEPOT ACTIVITY

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ENVIRONMENTAL IMPACT STATEMENT

LEAD AGENCY: U.S. Army Materiel Command (AMC)

TITLE OF PROPOSED ACTION: Disposal and Reuse of the Savanna Army Depot Activity, Savanna, Illinois

AFFECTED JURISDICTION: Jo Daviess and Carroll Counties, Illinois

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ABSTRACT: The proposed action is the disposal and reuse of approximately 13,062 acres of property made available by the closure of the Savanna Army Depot Activity (SVADA). Two disposal alternatives (encumbered and unencumbered) are presented and evaluated in this environmental analysis, as are three reuse scenarios representing low, medium-low, and medium intensity reuse. In addition to the proposed action, a no action alternative, with the property remaining in caretaker status, is evaluated. Other alternatives are discussed but not analyzed because they were considered infeasible. The effects of the proposed action on the environment and on social and economic systems are analyzed in the document. Implementation of the proposed action would not be expected to result in significant impacts.

REVIEW COMMENT DEADLINE: Comments may be provided to Mr. Glen Coffee at the Corps of Engineers, Mobile District (ATTN: CESAM-PD-E), 109 St. Joseph Street, P.O. Box 2288, Mobile, Alabama 36628-0001, or by facsimile at (334) 694-3815. Comments on this Final Environmental Impact Statement must be received within 30 days of the date of publication.

EXECUTIVE SUMMARY

INTRODUCTION

The 1995 Base Closure and Realignment Commission made recommendations for realignment and closure actions for military installations. On July 13, 1995, the President of the United States approved the Commission's recommendations, which, following Congressional review, became law on September 28, 1995. Among the actions recommended by the Commission was closure of the Savanna Army Depot Activity (SVADA). This environmental impact statement (EIS) analyzes the disposal and subsequent reuse of the BRAC property at SVADA. The region of influence (ROI) for this action includes Jo Daviess County and Carroll County, Illinois.

BACKGROUND

SVADA is located on 13,062 acres of land in northwestern Illinois. The entire parcel, and improvements on it, have been identified through the BRAC process as excess to Department of Defense (DoD) needs. The depot is scheduled to close no later than July 13, 2001.

PROPOSED ACTION

The proposed action is to dispose of property made available by closure mandated by the 1995 BRAC Commission recommendation for SVADA. This action includes caretaker operations, cleanup of contaminated sites, and possible interim leasing. Reuse by others is a secondary action resulting from disposal.

Alternatives for the proposed action are encumbered disposal, unencumbered disposal, and no action. An encumbrances is any Army-imposed or legal constraint on the future use or development of property. The Army's preferred alternative for disposal of SVADA property is encumbered disposal, with encumbrances pertaining to unexploded ordnance, wetlands, historical resources, threatened and endangered species, utilities dependencies and easements, an access easement, reversionary interest, an overflow easement, road easements, remedial activities, and lead-based paint.

The Army considers the local redevelopment authority's reuse plan as the primary factor in defining the reuse scenarios to be considered. Reuse alternatives for the SVADA property are examined in terms of intensity-based probable reuse scenarios. For reuse of the SVADA property, low intensity reuse, medium-low intensity reuse, and medium intensity reuse scenarios are evaluated. The Army expresses no preference with respect to reuse scenarios since that decision will be made by others.

DISPOSAL PROCESS

Methods available to the Army for property disposal include transfer to another federal agency, public benefit discount conveyance, economic development conveyance, negotiated sale, and competitive sale. The real estate screening process first invites expressions of interest by DoD and

other federal agencies, then the Savanna Army Depot Local Redevelopment Authority (SVAD LRA), state and local authorities, and homeless providers. Prior to disposal, the Army will complete an environmental baseline survey to describe the environmental condition of the property. The Army will prepare a report that identifies uncontaminated parcels, as required by the Community Environmental Response Facilitation Act.

Where closure and disposal are involved, remediation or cleanup of contaminated sites is required under the Army's BRAC Installation Restoration Program. This program is separate from the NEPA process, but also includes public involvement and often occurs simultaneously during disposal of installation property. Activities to occur prior to disposal of SVADA include cleanup of sites contaminated as a result of previous military actions. SVADA was placed on the National Priorities List in March of 1989. A Federal Facilities Agreement pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act involving the Army, U.S. Environmental Protection Agency, and State of Illinois guides cleanup of SVADA's contaminated sites.

The Army proposes to transfer the majority of the 13,062-acre installation to the U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (USACE). The remaining portion of the installation would be available for conveyance to and subsequent reuse by the SVAD LRA or other entities.

The USFWS has expressed interest in approximately 9,445 acres at SVADA and has developed a draft conceptual management plan for development of the property into the Savanna Army Depot Wildlife Management Unit. The plan addresses biological monitoring, public access, public recreational activities and management, and facilities management.

The USACE has also prepared a conceptual management plan for lands at SVADA. Under this plan, the USACE would manage approximately 282 acres as a public recreation area. Also, the 173-acre Apple River Island would be used by the USACE to support dredged material disposal operations. Material obtained from dredging would be transported to the island hydraulically and placed in the island's interior. The conceptual management plan anticipates the USACE's retention of an easement, granted by SVADA in 1937, to permit overflow on approximately 6,000 acres of SVADA property. This overflow results from operation of navigation dams that submerge or increase the frequency of inundation of SVADA land along the Mississippi River. Also included in the plan is a request for 13 miles (75 acres) of access road easements.

The SVAD LRA has developed a draft reuse plan which includes expressions of interest by private industry, state, and local government interests for reuse of the property. The comprehensive reuse plan also envisions mixed use of the lands and facilities that have been declared surplus. Three specific redevelopment proposals included in the plan are construction of a prison facility, a marina, and a barge terminal (see Section 2.2). The Army is considering the SVAD LRA's reuse plan as the primary factor in defining the reuse scenarios analyzed in the EIS.

ALTERNATIVES

Immediately following closure and for a period of at least 12 months, the Army will place the property to be disposed of in caretaker status. During this time, the Army will provide for levels of

maintenance that would ensure transfer of facilities in optimal condition for reuse. The environmental impacts of this "no action" alternative, with the property remaining in caretaker status, are evaluated. Also evaluated are two disposal alternatives—encumbered and unencumbered. For property disposal, encumbrances may involve restrictions on certain future uses. Three reuse scenarios (low, medium-low, and medium intensity), which encompass the community's reuse plan, are also discussed and evaluated.

ENVIRONMENTAL CONSEQUENCES

Resource areas evaluated include land use, climate, air quality, noise, geology, water resources, infrastructure, hazardous and toxic substances and ordnance and explosives, permits and regulatory authorizations, biological resources, cultural resources, legacy resources, economic development, sociological environment, quality of life, and installation agreements. Direct and indirect impacts of either disposal alternative on the resource areas include a variety of short-term and long-term impacts, both adverse and beneficial. For encumbered disposal, the preferred alternative, minor adverse impacts on land use, air quality, noise, and the sociological environment, as well as certain installation agreements would occur. For the remaining resource areas, environmental and socioeconomic impacts under the preferred alternative are either beneficial or considered not significant. For unencumbered disposal, significant adverse impacts on land use, biological resources, and cultural resources would occur, and minor beneficial impacts on the condition of ordnance and explosives would occur. The selection of a disposal alternative would not result in environmental impacts concerning hazardous and toxic substances since the Army would proceed to remediate all known sites regardless of whether disposal was encumbered or unencumbered. Table ES-1 summarizes the potential impacts on SVADA resources based on the preferred alternative.

Direct, indirect, and cumulative impacts of the three reuse scenarios evaluated have the potential for a variety of adverse and beneficial short-term and long-term impacts. Analysis of the three reuse scenarios is discussed in detail in Section 5.4.

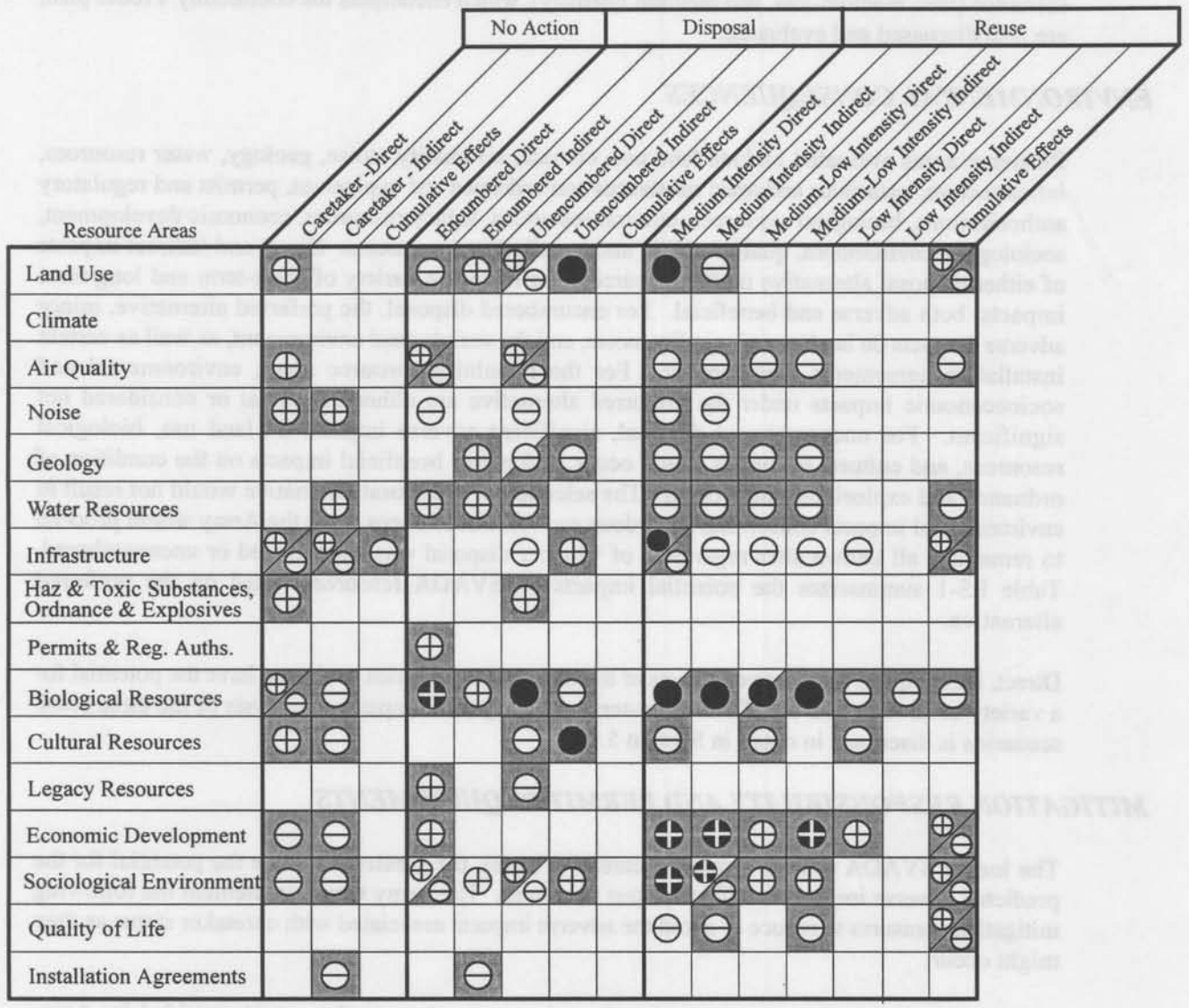
MITIGATION RESPONSIBILITY AND PERMIT REQUIREMENTS

The longer SVADA were to remain in caretaker status, the greater would be the potential for the predicted adverse impacts to affect various resources. The Army would implement the following mitigation measures to reduce or avoid the adverse impacts associated with caretaker status as they might occur:

- Conduct installation security and maintenance operations to the extent provided by Army policies and regulations for the duration of the caretaker period, and transfer responsibilities for these functions to non-Army entities as soon as practicable to minimize disruption of service.

- Identify clean or remediated portions of the installation for disposal and reuse and prioritize restoration and cleanup activities to ensure timely disposal and reuse of remaining portions. Recycle solid wastes and debris where practicable.

Table ES-1
Impact Summary



Impacts Legend

- Long-term Minor Beneficial Effect
- Short-term Minor Beneficial Effect
- Long-term Minor Adverse Effect
- Short-term Minor Adverse Effect
- Long-term Significant Beneficial Effect
- Short-term Significant Beneficial Effect
- Long-term Significant Adverse Effect
- Short-term Significant Adverse Effect
- No Effects Expceted

- Maintain necessary natural resources management measures, including continued close coordination with other federal agencies such as the USFWS and state agencies such as the Illinois Department of Natural Resources.

- Review the advisability of continuing the current grazing lease given its seemingly detrimental impacts on native prairie vegetation.

- Construct physical barriers (e.g., fencing) around sensitive natural areas, including wetlands and the river dune complex, to prevent intrusion and damage by cattle.

- Actively support interim leasing arrangements, where environmental restoration efforts permit, to provide for job creation, habitation and maintenance of structures, and rapid reuse of the installation.

To avoid, reduce, or compensate for adverse impacts that might occur as a result of disposal, the Army would implement the following mitigation measures:

- Continue to work with local entities to identify available options for the use of buildings not having independent utility systems. If no feasible alternatives were identified, the Army would encumber the transfer of the buildings with deed provisions showing that the utilities are not available from the Army. New owners may be responsible for alternative utility sources effective the date of property conveyance.

- Continue to work with the SVAD LRA to ensure that, to the maximum extent feasible, encumbered disposal transactions are consistent with the community reuse plan.

- Prior to disposal, complete cultural resource surveys of the SVAD LRA parcel in consultation with the State Historic Preservation Officer to ensure no adverse effects on the resources that might be present.

- Until final disposal, maintain installation buildings, infrastructure, and natural resources in caretaker status to the extent provided by Army policy and regulations.

Conveyance documents would notify future property owners of obligations concerning natural and cultural resources that would be imposed as a result of the Army's determination of the applicability of an encumbrance. Conveyance documents would also identify past hazardous substance activities at each site, as defined by CERCLA.

Under reuse, non-Army entities assume reuse planning and execution of redevelopment actions. Mitigation actions for intensity-based reuse scenarios, except for those related to federally protected interests, remediation, or other Army concerns, are not the responsibility of the Army. However, the following points identify general mitigation actions that could be implemented by other parties for the reduction, avoidance, or compensation of impacts resulting from their actions.

- *Land Use*. Adverse impacts associated with development of SVADA to a level of intensity equal to an MIR scenario could be at least partially be reduced through sound site planning and design and the creation of appropriate buffer zones. County officials could also evaluate the desirability of establishing other land use zoning mechanisms to provide for orderly growth throughout the region of influence (ROI).
- *Air Quality*. The permit process established in the Clean Air Act provides effective controls over potential stationary air emission sources. Adherence to the State Implementation Plan's provisions for mobile sources could address that source category. Additional mechanisms, such as application of best management practices to control fugitive dust during construction, could be used to control airborne contaminants.
- *Water Resources*. Application of best management practices to reduce sediment loading to surface waters could aid in reducing impacts on water quality. Construction of storm water retention systems could help mitigate impacts associated with storm water runoff from impervious surfaces.
- *Geology*. Disturbance of highly erodible soils should be avoided wherever possible. Should these or other soil types be disturbed, desilting basins, sediment traps, silt fences, straw barriers, and other erosion control measures could be constructed.
- *Biological Resources*. Adverse impacts on biological resources could occur, especially as a result of new development. Two principal measures for conserving significant biological resources are ensuring consultation with natural resources experts and regulatory agencies prior to initiating actions and implementing best management practices during construction projects. Operational controls could also be applied to minimize any adverse effects of noise and light on sensitive biological resources.

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SECTION 1.0: PURPOSE, NEED, AND SCOPE

1.1 PURPOSE AND NEED

The Department of the Army is reducing its force structure in response to changing security requirements, resulting in a need for fewer installations. As the Army reduces, activities are being realigned and consolidated with maximum readiness to the most efficient installations capable of projecting and sustaining combat power in support of national military objectives.

Recommendations of the Defense Base Closure and Realignment Commission made in conformance with the provisions of the Base Closure and Realignment Act of 1990 (1990 Base Closure Act), Public Law 101-510, as amended, require the closing of Savanna Army Depot Activity and realignment of essential missions to other installations. The installation property is excess to Army military need and will be disposed of according to applicable laws, regulations, and national policy. Pursuant to the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations, the Army has prepared this Environmental Impact Statement, which addresses the environmental and socioeconomic impacts of disposing of the property and reasonable, foreseeable reuse alternatives.

To recommend closure and realignment actions, the military services used criteria established by the Secretary of Defense and approved by Congress, as well as a force structure plan provided by the Joint Chiefs of Staff. The evaluation criteria used were military value, return on investment from cost savings, and environmental and socioeconomic impacts. A consolidated Department of Defense (DoD) list of recommended actions was submitted by the Secretary of Defense to an independent commission appointed by the President and confirmed by the Senate. The 1995 Defense Base Closure and Realignment Commission (Commission) evaluated the recommendations and sent the findings to the President, who forwarded the recommendations to Congress on July 13, 1995. The 1990 Base Closure Act stipulated that the recommendations would be implemented unless Congress disapproved them within a specified period of time. No disapproval was issued, and thus the Commission's recommendations became binding on September 28, 1995. These recommendations are being implemented as required by the 1990 Base Closure Act.

The Commission's recommendations for base realignments and closures made in 1995 are referred to in this document as BRAC 95. The Commission recommended the following action at Savanna Army Depot Activity (SVADA) in its 1995 report to the President:

- Close Savanna Army Depot Activity.
- Relocate the United States Army Defense Ammunition Center and School (USADACS) to McAlester Army Ammunition Plant, Oklahoma.[1]

[1] The Army proposes to relocate USADACS to McAlester Army Ammunition Plant, Oklahoma. A separate analysis of potential environmental effects associated with that relocation is being conducted.

Pursuant to the above recommendations, all Army missions at SVADA must cease or be relocated. Following closure, the Army proposes to dispose of SVADA's 13,062 acres, since the property will be excess to Army needs. The purpose of the proposed action of disposal, as described more fully in Section 2.0, is to implement the Commission's recommendations. The proposed action supports the Army's need to transfer the excess property to new owners.

1.2 SCOPE

The 1990 Base Closure Act specifies that NEPA does not apply to actions of the President, the Commission, or DoD, except "(I) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated" (Public Law 101-510, Sec. 2905(c)(2)(A)).

The 1990 Base Closure Act further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation, or (iii) military installations alternative to those recommended or selected" (Public Law 101-510, Sec. 2905(c)(2)(B)).

The Commission's deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA (Public Law 101-510, Sec. 2905(c)(2)). Accordingly, this Environmental Impact Statement (EIS) does not address the need for closure or realignment. NEPA does, however, apply to disposal of excess property as a direct Army action, and to reuse of such property as an indirect effect of disposal; therefore, those actions are addressed in this document.

Two disposal alternatives (encumbered and unencumbered) are presented and evaluated in this EIS. Three reuse scenarios (low, medium-low, and medium intensity), which encompass the community's reuse plan, are identified and evaluated as secondary actions. Other federal agencies will independently conduct an environmental impact analysis of proposed uses, if required, following transfer of property to them. The environmental effects of "no action," with the property remaining in caretaker status, are also evaluated. These alternatives and scenarios, and the rationale for selecting them, are further described in Section 3.0. A summary of reuse obligations and limitations, distinguishing the boundaries of Army decision making and future activities, is provided in Section 5.1.4. The Army will prepare other NEPA documentation for interim leasing, if required, before the completion of a Record of Decision concerning the matters evaluated in this EIS.

1.3 PUBLIC INVOLVEMENT

1.3.1 NEPA Public Involvement Process

Under regulations issued by the Council on Environmental Quality (CEQ), the evaluation of potential environmental effects of federal actions is open to the public. Public participation in the NEPA process promotes both open communications between the public and the Army and better decision making. All persons and organizations that have a potential interest in the proposed action,

including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the NEPA environmental analysis process.

Public participation opportunities with respect to the proposed action are guided by CEQ regulations and Army Regulation 200-2, *Environmental Effects of Army Actions*. These regulations provide for five major aspects of public participation available in conjunction with preparation of this EIS: Notice of Intent, scoping, 45-day public review of the draft EIS, public meeting on the draft EIS, and public release of the final EIS and 30-day public review period. Each of these steps in the process provides for public involvement and is briefly discussed. Public comments are welcome at any time during the process. A related public involvement process, applicable to contaminated site remediation, is also discussed.

1.3.2 Notice of Intent

The Notice of Intent (NOI), informing the public that an EIS will be prepared, is the first formal step in the NEPA public involvement process. The notice is published in the *Federal Register* prior to the start of the scoping process by the agency proposing the action. The NOI includes a description of the proposed action and gives the name and address of an agency contact person. The NOI declaring the Army's intent to prepare an EIS for the disposal and reuse of SVADA was published in the *Federal Register* on September 22, 1995.

1.3.3 Scoping Process

The purpose of scoping is to solicit public comment on issues or concerns that should be addressed in the EIS. It is designed to involve the public early in the EIS process. Public comments are solicited through mailings, media advertisements, and both agency and public scoping meetings. While informal comments are welcome at any time throughout the process, the scoping period and the scoping meeting provide formal opportunities for public participation in and comment on the environmental impact analysis process.

A public scoping meeting was held June 27, 1996, at SVADA. Display advertisements for the meeting were published in the *Savanna Times Journal* on June 11 and 18, 1996, and in the *Clinton Herald* on June 13 and 20, 1996. Notices concerning the public meeting were also sent to a mailing list comprising public officials, agencies, organizations, and individuals. Names on the list were compiled from a variety of sources, including the installation. All persons and organizations thought to have a potential interest, including minority, disadvantaged, and Native American groups, were included. The mailing identified a contact person at the installation for further information, as well as another contact person to whom comments could be sent by July 11, 1996.

In addition to the public scoping meeting, on June 27, 1996, the Army hosted a meeting with state and federal agency officials to discuss the scope of the EIS. Agencies represented at the meeting included the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (USACE), the Illinois Environmental Protection Agency (IEPA), and the Illinois Department of Natural Resources (IDNR). At the agency scoping meeting, agency representatives recommended that the Army address potential impacts on air quality; ground and surface water quality; fish, wildlife, and vegetative resources; critical habitats,

if any; wetlands; underground storage tanks; and hazardous or special substance disposal sites. Agency representatives requested that opportunities for reuse or recycling of construction or demolition debris be described. They also requested a wetlands compensatory ratio of 1.5 to 1 in the event of any loss of naturally occurring wetlands.

Six members of the public attended the public scoping meeting. Participants did not raise any particular issues or concerns to be addressed in the EIS. A member of the Savanna Army Depot Local Reuse Authority (SVAD LRA) asked whether the LRA was a cooperating agency in preparation of the EIS; the Army has not received a request from the LRA to be designated a cooperating agency for this EIS.

Issues brought to the Army's attention by the Friends of the Depot during scoping include potential impacts on plants and wildlife caused by habitat fragmentation resulting from new road or utility easement construction or realignment (e.g., the potential for increased road kills of wildlife); impacts on hydrology from increased soil erosion, impervious surfaces such as parking lots, roads, and facility construction (such as a prison); impacts that might harm or harass nocturnal animals or affect the growth of endangered plants as a result of illumination associated with a prison facility; impacts on water resources through increased consumption patterns, potable water availability, and sewage treatment and disposal; impacts on threatened or endangered species, especially bald eagle nesting and roosting; impacts resulting from noise produced by operation of a prison; and impacts on quality of life. These matters are assessed in Section 5.0, where adequate data permit informed estimates of potential impacts.

The Friends of the Depot also asked the Army to determine how development of a prison complex at SVADA would affect tourism and related industries in Jo Daviess and Carroll Counties. The Friends of the Depot requested that the Army analyze current and future levels of recreational use of the Depot and nearby areas such as Mississippi Palisades State Park, Apple Canyon State Park, Blandings Campground, Chestnut Mountain Resort, and other locations. The Friends of the Depot asked the Army to analyze the future growth of tourism and tourism-related industries, both in the near and long term, especially addressing the potential effects of the presence of a prison. This document considers the socioeconomic effects within the socioeconomic region of influence, described in Section 4.14, of construction and operation of a prison as part of the intensity-based analysis used by the Army for prediction of impacts caused by reuse of the installation.

EPA, Region 5, asked during the scoping process that the Army consider potential impacts on air quality; ground and surface water quality; fish, wildlife, and vegetative resources; critical habitats; wetlands, if any; underground storage tanks; hazardous substance disposal sites; and opportunities for reuse or recycling of construction and demolition debris. These matters are addressed in Sections 4.0 and 5.0.

Multiple concerns were raised about the impact of a proposed barge terminal on fish and wildlife habitat. The Iowa Department of Natural Resources and Illinois Department of Natural Resources suggested that the construction of a barge terminal would disturb fish spawning and migration and the mussel beds that occur along the riverbank adjacent to the depot, as well as in the lower portion of Crooked Slough. It was also stated that these portions of the Mississippi River are important feeding areas for diving ducks during spring migration. A private citizen in Hanover, Illinois,

questioned the impact of a barge terminal on the nesting activities of bald eagles and herons in the bottomland hardwood forests. This issue is addressed in Section 5.0.

The USFWS raised several concerns as part of the scoping process. Many of the issues raised in correspondence are also identified in the USFWS's Draft Conceptual Management Plan for SVADA (Appendix A). With respect to environmental contamination, the USFWS asked that the EIS address future plans for environmental cleanup and long-term monitoring; determine whether a long-term hazardous waste permit would be required from IEPA or USEPA and the responsible applicant for such a permit; determine who will pay for long-term maintenance fences or enclosures in areas closed to the public due to contamination; and health and safety issues that might arise regarding public access into potentially contaminated areas. Concerns related to public recreation were also raised (i.e., a comparison of current wildlife-dependent public use versus economic redevelopment opportunities and their potential impacts on wildlife resources). The USFWS also expressed concern for the identification and management of unexploded ordnance and its potential impact on habitat management efforts, the inventory and identification of abandoned wells, the proposed location of a barge terminal and fleeting operation, potential impacts of reuse on threatened and endangered species, the impact of livestock operations on odor and water quality, identification of economic development proposals that are "environmentally friendly," potential redevelopment impacts on wetlands and cultural resource sites, and the potential impacts of USACE dredge spoil on Apple River Island. In these areas, the USFWS requested that the Army identify mitigation options to ameliorate adverse effects.

1.3.4 Public Review of Draft EIS

The draft EIS was made available for public review and comment. A notice of availability (NOA) of the draft EIS was published in the *Federal Register* on February 7, 1997, and copies of the draft EIS were sent to people on the mailing list and those who requested copies in response to the NOA. In addition, copies of the draft EIS were provided to the Savanna Public Library in Savanna, Illinois; the Hanover Public Library in Hanover, Illinois; and the Galena Public Library in Galena, Illinois. Agencies, organizations, and individuals were invited to review and comment on the document. A review period of 45 days was provided to allow reviewers the opportunity to comment on the analysis or on other aspects of the EIS process.

1.3.5 Public Meeting

The Army conducted a public meeting on March 6, 1997, to receive public input on the draft EIS. A display advertisement informing the public of the public meeting was taken out in three area newspapers. The *Savanna Journal*, a weekly paper, published the advertisement on February 20 and February 27, 1997. The *Dubuque Telegraph Herald*, a daily paper, published the advertisement in its February 24 and March 3, 1997, editions. The *Clinton Herald*, a daily paper, published the advertisement in its February 24, 1997, edition. In addition to announcing the time and place of the public meeting, the advertisement identified Mr. Glen Coffee, US Army Corps of Engineers, Mobile District, as the person designated to receive written comments if the reader was unable to attend the meeting. The meeting was held at 7:00 pm at the SVADA Welcome Center, Building 255. Three members of the public provided oral comments at the meeting, and 11 agencies, organizations, and members of the public provided written comment during the 45-day comment period. Public

comments received on the draft EIS and the Army's responses, along with a transcript of the public meeting, are provided in Appendix K.

1.3.6 *Final EIS*

As provided for in CEQ Regulations (40 CFR 1503.4), the Army will consider all comments provided by the public and agencies on the draft EIS. The final EIS incorporates changes suggested by comments on the draft EIS, as appropriate, and will contain responses to all comments received during the review period. Copies of the final EIS will be mailed to various federal, state, and local agencies. Copies will also be placed in the Savanna Public Library, Galena Public Library, and Hanover Public Library for review, and notice of the report's availability will be published in the *Federal Register*. After a 30-day period, during which further comments may be submitted for Army consideration, the Army will prepare a Record of Decision (ROD),[2] which will provide an overview of the range of reuse alternatives considered for SVADA and include any required mitigation measures associated with disposal.

1.3.7 *Contaminated Site Remediation Public Review Process*

Remediation or cleanup of contaminated sites under the Army's BRAC Installation Restoration Program (IRP) also includes public involvement where closure and disposal are involved. This program is separate from the NEPA process although the actions usually occur simultaneously during disposal of installation property. Studies and reports for remediation actions are made available at the public information repositories located in surrounding communities. Remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) include formal opportunities for public participation through document review and public meetings. This EIS addresses the sites under remediation by describing the nature and extent of the contamination in an overall environmental context and identifying their remedial status (Section 4.0). The public will be kept informed about site remediation studies and will be invited to participate in public meetings associated with them.

The Army's policy of improved public involvement in base cleanup includes the local community in the installation cleanup program by making information available, providing opportunities for comment, and establishing and seeking active participation on a Restoration Advisory Board (RAB). The RAB is composed of two Army representatives, USEPA and state representatives, and members of the local community. The RAB is jointly chaired with the BRAC Environmental Coordinator at SVADA. The responsibilities of the RAB are to conduct oversight of public outreach activities, to act as a vehicle for disseminating information, and to develop and implement community relations plans. The RAB conducts regular meetings that are open to the public and maintains mailing lists of "stakeholders" who wish to receive information on the cleanup program.

[2] The ROD for an EIS should not be confused with the ROD for hazardous substance cleanup decision making related to the Comprehensive Environmental Response, Compensation, and Liability Act. At SVADA, the Army intends to promulgate both types of RODs. As appropriate under the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), one or more RODs may be required to document decision making for selection of hazardous substance site cleanup alternatives.

1.4 IMPACT ANALYSIS PERFORMED

This EIS identifies, evaluates, and documents the effects of disposal and reuse of the SVADA property. Several other, related processes occur in conjunction with the Army's preparation of the property for closure and disposal. These associated processes and their time frames are shown in Figure 1-1.

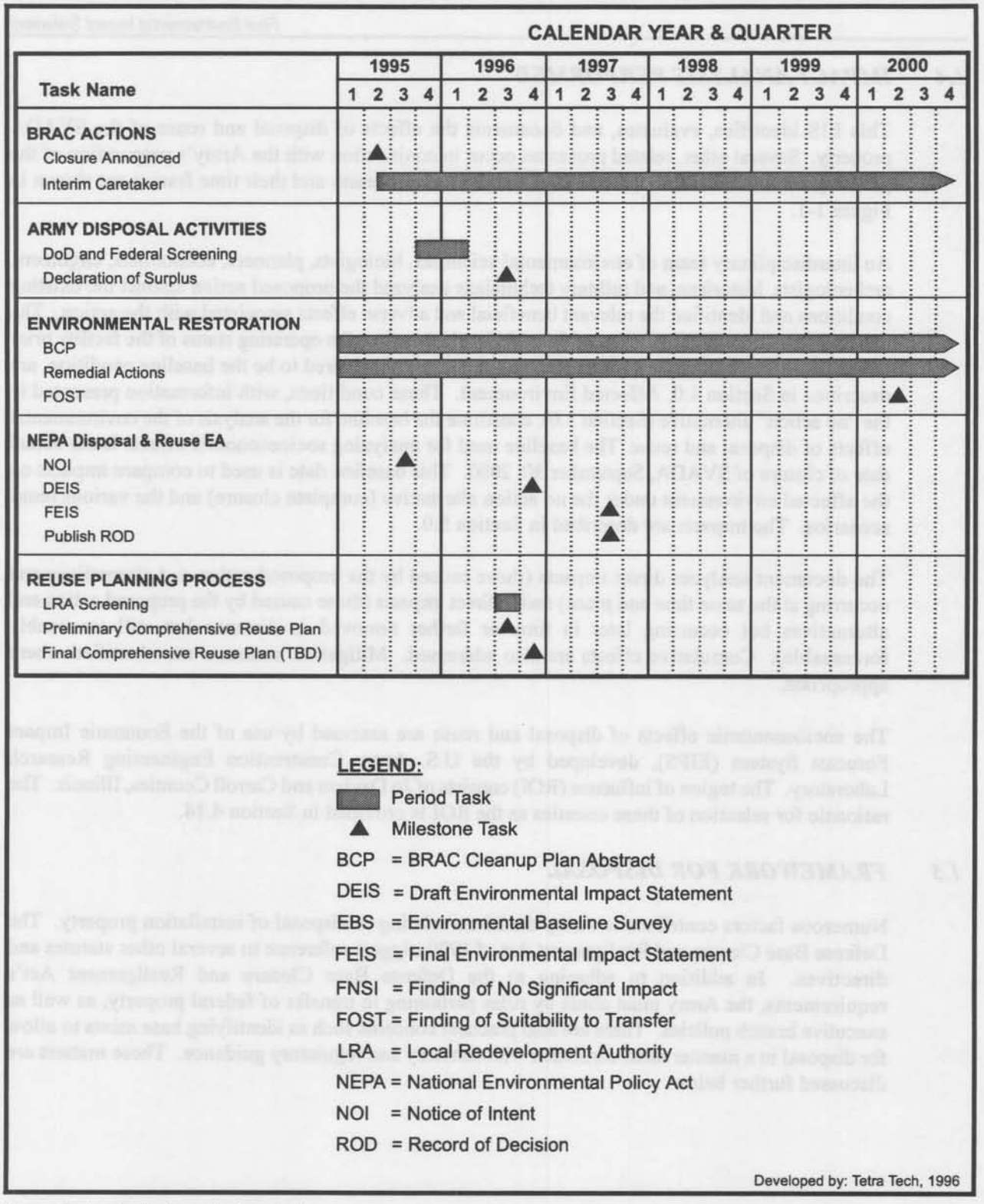
An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archeologists, historians, and military technicians analyzed the proposed action against the existing conditions and identified the relevant beneficial and adverse effects associated with the action. The existing conditions at SVADA as of July 1995, which reflect the operating status of the facility prior to the BRAC Commission's recommendation and are considered to be the baseline condition, are described in Section 4.0, Affected Environment. These conditions, with information presented in the "no action" alternative (Section 3.0), constitute the baseline for the analysis of the environmental effects of disposal and reuse. The baseline used for analyzing socioeconomic effects is the actual date of closure of SVADA, September 30, 2000. This baseline date is used to compare impacts on the affected environment under the no action alternative (complete closure) and the various reuse scenarios. The impacts are described in Section 5.0.

The document analyzes direct impacts (those caused by the proposed action and alternatives and occurring at the same time and place) and indirect impacts (those caused by the proposed action and alternatives but occurring later in time or farther removed in distance but still reasonably foreseeable). Cumulative effects are also addressed. Mitigation measures are identified where appropriate.

The socioeconomic effects of disposal and reuse are assessed by use of the Economic Impact Forecast System (EIFS), developed by the U.S. Army Construction Engineering Research Laboratory. The region of influence (ROI) consists of Jo Daviess and Carroll Counties, Illinois. The rationale for selection of these counties as the ROI is provided in Section 4.14.

1.5 FRAMEWORK FOR DISPOSAL

Numerous factors contribute to Army decisions relating to disposal of installation property. The Defense Base Closure and Realignment Act of 1990 triggers reference to several other statutes and directives. In addition to adhering to the Defense Base Closure and Realignment Act's requirements, the Army must abide by rules pertaining to transfer of federal property, as well as executive branch policies. There are also practical concerns such as identifying base assets to allow for disposal in a manner most consistent with statutory and regulatory guidance. These matters are discussed further below.



Concurrent actions leading to property disposal and reuse include environmental restoration, reuse planning, and environmental documentation.

Schedule of BRAC Actions

Savanna Army Depot Activity
Savanna, Illinois

Figure 1-1

1.5.1 BRAC Procedural Requirements

Statutory Provisions. The disposal process is governed by the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510, as amended) and the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 471 et seq., as amended). The latter is implemented by the Federal Property Management Regulations at Title 41 of the *Code of Federal Regulations* (CFR), Subpart 101-47. The disposal process is also governed by 32 CFR Part 174 (*Revitalizing Base Closure Communities*) and 32 CFR Part 175 (*Revitalizing Base Closure Communities - Base Closure Community Assistance*), regulations issued by DoD to implement BRAC law, the Pryor Amendment, and the President's Program to Revitalize Base Closure Communities (see below).

Screening Process. Having been recommended for closure, the SVADA property has been determined to be excess to Army needs and, therefore, subject to specific procedures to identify potential subsequent public sector users. That is, the property has been offered to a hierarchy of potential users via procedures called the screening process. This process and its results to date are discussed in Section 2.3.4.

The President's Program to Revitalize Base Closure Communities. On July 2, 1993, the President announced a major new program to speed the economic recovery of communities near closing military installations. The President pledged to give top priority to early use of each closing installation's most valuable assets. A principal goal of the initiative is to provide for rapid redevelopment and creation of new jobs. In announcing the program, the President outlined the five parts of his community revitalization plan:

- Jobs-centered property disposal that puts local economic redevelopment first.
- Fast-track environmental cleanup that removes delays while protecting human health and the environment.
- Appointment of transition coordinators at installations slated for closure.
- Easy access to transition and redevelopment help for workers and communities.
- Larger economic development planning grants to base closure communities.

The Army is fully committed to the President's Program to Revitalize Base Closure Communities. A Base Transition Coordinator has been appointed for SVADA property, and the Army has taken an active role in providing assistance to the local community.

The Pryor Amendment. Congress endorsed the President's plan by enacting Title XXIX of Public Law 103-160, the Base Closure Communities Assistance Act, popularly known as the "Pryor Amendment" in recognition of its principal legislative sponsor. Title XXIX, as amended, provides legal authority to carry out the President's plan by granting conveyances of real and personal property at or below fair market value to LRAs. Title XXIX creates a new category of public benefit

transfer, the economic development conveyance (EDC). An EDC can help induce a market for the property and thereby enhance economic recovery and generate jobs. Flexibility is given to the military departments and the communities to negotiate the terms and conditions of the EDC. A detailed application, including the approved community redevelopment plan, serves as the basis for a determination of whether an LRA will be eligible for an EDC. The DoD's final rule implementing the Pryor Amendment appears at 32 CFR Parts 174 and 175. The EDC is further described in Section 2.3.4.

1.5.2 Relevant Statutes and Executive Orders

Several statutes and Executive orders bear specifically on the disposal and reuse of the SVADA property. The following summaries note their relevance to the disposal and reuse process.

Comprehensive Environmental Response, Compensation, and Liability Act. CERCLA, better known as Superfund, addresses cleanup of past hazardous substance sites that pose threats to human health or the environment. The Superfund Amendments and Reauthorization Act of 1986 (SARA) expanded applicability of this law to federal facilities. SARA provides procedures to clean up toxic or hazardous substances at closed or abandoned hazardous substance sites.

Procedures for conducting cleanup are governed by the National Oil and Hazardous Substances Pollution Contingency Plan. Major steps in the cleanup process include preliminary assessment and site investigations of hazardous substance releases, remedial investigation and preparation of feasibility studies for cleanup, a ROD for selecting among cleanup alternatives, and design of remedial measures and implementation of remedial action. The process includes creation and maintenance of an administrative record for public review and notices to the public for review and comment at major junctures.

Army compliance with the National Oil and Hazardous Substances Pollution Contingency Plan occurs through the BRAC Installation Restoration Program (IRP). The BRAC IRP is conducted at locations that have past hazardous substance sites requiring remediation.

Past practices at SVADA with respect to hazardous substances have resulted in spills and releases requiring action pursuant to CERCLA. SVADA was placed on the National Priorities List in March 1989. Requirements and procedures established in CERCLA apply in full to restoration activities at the installation.

Community Environmental Response Facilitation Act. In October 1992, Congress amended Section 120(h) of CERCLA with the Community Environmental Response Facilitation Act (CERFA), Public Law 102-426. CERFA establishes new requirements for contamination assessment, cleanup, and regulatory agency notification and concurrence for federal facility transfers.

CERFA requires federal agencies to identify uncontaminated parcels, with regulatory concurrence. It allows transfer by deed of remediated parcels at the point when successful operation of an approved remedy has been demonstrated to EPA.

CERFA requires that the identification consider petroleum products as well as CERCLA hazardous substances. For property that is part of a facility listed on the National Priorities List, the identification cannot be considered complete until the EPA Administrator concurs. For real property not on the National Priorities List, the identification cannot be considered complete until the state concurs.

The law requires an agency transferring parcels identified as uncontaminated to provide a covenant that any response action or corrective action found necessary will be undertaken by the United States. The deed for such parcels must also provide for a right of access to perform any additional response action, including appropriate investigations. CERFA does not mandate that the Army transfer real property identified as available; rather, it is the first step in satisfying the objective of identifying real property where no CERCLA-regulated hazardous substances or petroleum products were disposed of or released. The procedures mandated by CERFA will be observed in property disposal actions at SVADA.

Resource Conservation and Recovery Act. Under the Resource Conservation and Recovery Act (RCRA), EPA defines those substances which are hazardous and regulates their generation, treatment, storage, transportation, and disposal. EPA also establishes technical and performance requirements for hazardous substance management units and exercises responsibility over a permit system for hazardous substance management facilities. RCRA is also the source for regulations pertaining to solid waste management and underground storage tank management. Hazardous substance activities at SVADA are subject to the provisions of RCRA.

Clean Air Act. The Clean Air Act (CAA) controls the emission of pollutants into the atmosphere. Under the CAA, EPA has established national air standards. These standards, which express concentrations of designated pollutants, are called the National Ambient Air Quality Standards (NAAQS). The NAAQS, uniformly applied throughout the Nation, are time-averaged concentrations of the specified pollutants that cannot be exceeded in the ambient air more than a specified number of times. Standards have been established for the pollutants sulfur dioxide, carbon monoxide, ozone, nitrogen oxides, lead, and inhalable particulate matter. The NAAQS are to be achieved by the states through state implementation plans, which provide for limitations, schedules, and timetables for compliance with NAAQS by stationary sources and transportation control plans for mobile sources.

Amendments to the Clean Air Act in 1990 introduced, at Section 176(c) of the act, a requirement that "[N]o department, agency, or instrumentality of the Federal Government shall engage in, support in any way, or provide financial assistance for, license or permit, or approve any activity which does not conform to an implementation plan . . . approved or promulgated. The assurance of conformity . . . shall be an affirmative responsibility of the head of such department, agency, or instrumentality." Conformity to an implementation plan means conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. It further refers to conducting activities so that they will not cause or contribute to any new violation of any standard in any area, increase the frequency or severity of any existing violation of any standards in any area, or delay timely attainment of any standard of any required interim emission reductions or other milestone in any

area. Regulations regarding determining conformity of general federal actions to implementation plans appear at 40 CFR Parts 51 and 93.

As shown by the discussion in Section 4.4, operational activities at SVADA are subject to the provisions of the Clean Air Act.

Clean Water Act. Since major amendments in 1977, the Federal Water Pollution Control Act has been known as the Clean Water Act (CWA). This statute, which seeks to restore and maintain the chemical, physical, and biological integrity of the Nation's waters, identifies certain pollutants and sets required treatment levels for those pollutants. The CWA addresses both point source and nonpoint source discharges. Point sources are distinct entities that discharge wastewater with pollutants into rivers or lakes through distinct conveyances such as pipes, ditches, or canals. Nonpoint sources are those which do not discharge wastewater from a discrete conveyance (e.g., agricultural lands, construction sites, parking lots, streets).

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) program. NPDES permits are required for all point source discharges to waters of the United States, including discharges of stormwater associated with industrial activities.

Section 404 of the Clean Water Act contains provisions for protection of wetlands and establishes a permitting process for activities having potential effects in wetland areas. Wetlands and riverine and open-water systems are considered waters of the United States under section 404 and, as such, fall under the regulatory jurisdiction of the USACE. The USACE's definition of waters of the United States includes all interstate waters and lakes, as well as rivers, streams, mudflats, sandflats, sloughs, prairie potholes, wet meadows, and other wetland communities. Section 404 regulates the discharge of dredge or fill into wetlands, or other waters of the United States, and requires sequencing for proposed impacts. Sequencing requires the avoidance of wetland losses, minimization of impacts, and replacement of unavoidable losses. All development activities that might involve impacts on wetlands, through dredging and filling, require consultation with the USACE. If a given wetland is determined to meet the regulatory definition, either a nationwide permit is issued or an individual permit application is required, depending on the development proposal for fill or land disturbance activities.

Section 401 of the Clean Water Act addresses water quality certification and authorizes the review and conditioning, approval, or denial of federal permits or licenses that might result in discharges to waters of the United States.

Clean Water Act provisions apply to SVADA with respect to operations at the installation's wastewater treatment facilities, which are subject to the NPDES permitting provisions, and to wetlands that are present.

National Historic Preservation Act. The National Historic Preservation Act of 1966 (NHPA) protects buildings, sites, districts, structures, and objects that have significant scientific, historic, or cultural value. The act establishes affirmative responsibilities of federal agencies to preserve historic and prehistoric resources. Effects on properties that are on, or eligible for, the National Register of Historic Places must be taken into account in planning and operations. Any property that

may qualify for inclusion on the National Register of Historic Places must not be inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate.

National Register of Historic Places criteria are those qualities of significance in American history, architecture, engineering, archeology, and culture present in districts, sites, buildings, structures, and objects of state, local, regional, or national importance. These properties possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Fulfillment of the purposes of the NHPA is assisted through coordination with the Advisory Council on Historic Preservation (ACHP) and with each State Historic Preservation Officer (SHPO). Prior to final disposal action, the Army must ensure that measures for the preservation of historical resources are undertaken at SVADA.

Archeological Resources Protection Act. The Archeological Resources Protection Act (ARPA) prohibits the removal, sale, receipt, and interstate transportation of archeological resources obtained illegally (without permits) from public or Indian lands and authorizes agency permit procedures for investigations of archeological resources on public lands under the agency's control. Limited surveys at SVADA to date reveal the potential presence of archeological resources subject to the protections afforded by the ARPA.

The law requires that the Secretaries of the Interior, Agriculture, and Defense and their respective employees and agents develop plans for surveying the lands under their control. Their tasks are to determine the nature and extent of archeological resources, to prepare a schedule for surveying those lands which are likely to contain the most scientifically valuable archeological resources, and to develop documents for reporting suspected violations of the ARPA. The ARPA requires the issuance of permits for authorized professional excavation or removal of archaeological resources. The ARPA imposes civil and criminal penalties for unauthorized excavation, removal, damage, alteration, or defacement of archeological resources or attempt to perform such unauthorized acts. Implementing regulations of the ARPA are contained in 18 CFR Part 1312, 32 CFR Part 229, 36 CFR Part 296, and 43 CFR Part 7.

American Indian Religious Freedom Act. The American Indian Religious Freedom Act of 1978 (AIRFA) states the policy of the United States to protect and preserve for American Indians, Eskimos, Aleuts, and native Hawaiians their inherent rights of freedom to believe, express, and exercise traditional religions. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and freedom to worship through ceremony and traditional rites. They also include the right of tribal leadership to be consulted by federal agencies before burial sites that appear to relate to tribal ancestors are disturbed by agency projects. Limited surveys at SVADA reveal the potential presence of sites that conceivably could be subject to American Indian requests founded on AIRFA. Regulations implementing AIRFA are located at 43 CFR Part 7.

Endangered Species Act. Under the Endangered Species Act (ESA), federal agencies are required to conserve biological or wildlife species that have been federally listed as endangered or threatened. All federal agencies must consult with the USFWS to ensure that any actions authorized, funded, or carried out by the agencies are not likely to jeopardize the continued existence of any endangered or threatened species or to result in the destruction of or substantial damage to its critical habitat.

This consultation, deriving from Section 7 of the act, is often referred to as the Section 7 consultation process. While this consultation is in progress, an agency must not make an irretrievable commitment of resources to its project. A consultation typically leads to the USFWS's suggestion of alternatives or mitigating measures that can be incorporated into the project, thereby allowing its completion. In connection with disposal of SVADA, consultation with the USFWS is required to ensure thorough consideration of potential effects on endangered and threatened species.

The ESA prohibits the taking of endangered fish and wildlife species. Taking includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to do any of these things. With respect to the taking of endangered plants, it is prohibited to remove or reduce to one's possession any listed species. Under the ESA, the Secretary of the Interior issues regulations to conserve threatened species.

Amendments to the ESA in 1982 allow the Secretary of the Interior to approve "incidental" taking of listed species if, after notice and comment, the Secretary finds that the taking will be incidental, the applicant will exert maximum effort to minimize and mitigate the effects of taking, the applicant will ensure adequate funding for the plan, and the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA), Title 16 of the *U.S. Code*, Sections 703-712, and its implementing regulations (1988) make it unlawful for any person to take (i.e., pursue, hunt, shoot, wound, trap, capture, or collect) any migratory bird without first receiving a permit to do so. "Take," under the MBTA, does not include "harass" or "harm" as in the Endangered Species Act and pertains predominately to actions involving the deliberate killing or collecting of species (i.e., not destruction of habitat). The USFWS is responsible for issuing take permits and for enforcing the MBTA and its implementing regulations. Although the MBTA does not provide for incidental take of migratory birds, it does authorize the USFWS to issue "special purpose" permits. These permits are required before any person can lawfully take or otherwise possess migratory birds, their parts, nests, or eggs for any purpose not otherwise covered by the general permit regulations. The USFWS does not have an official policy governing issuance of such permits to federal agencies.

Executive Orders. Seven Executive orders (EOs) address topics relevant to the Army's disposal of SVADA.

- *Executive Order 11988, Floodplain Management* (May 24, 1977), requires federal agencies to take action to reduce the risk of flood loss; to minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the national and beneficial values served by floodplains in carrying out their responsibilities for managing and disposing of federal lands. Before taking an action, an agency must determine whether the proposed action will occur in a floodplain; if so, alternatives to avoid adverse effects and incompatible development in floodplains must be considered. SVADA's proximity to the Mississippi River renders this EO relevant to land use planning at the installation.

- *Executive Order 11990, Protection of Wetlands* (May 24, 1977), requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for managing and disposing of federal lands and facilities. For any proposal for lease, easement, right-of-way, or disposal to nonfederal public or private parties, the federal agency is to reference in the conveyance document those uses which are restricted under federal, state, or local wetland regulations and to attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successor, except where prohibited by law, or withhold such properties from disposal. The presence of wetlands at SVADA makes this EO relevant to resource protection and land use planning at the installation.

- *Executive Order 12088, Federal Compliance with Pollution Control Standards* (October 13, 1978) provides that federal agencies are to comply with all federal, state, and local environmental requirements. In the context of property to be disposed of at SVADA, these requirements will continue as long as the Army retains ownership of the property, including the period during which any portion of the property would be held in caretaker status prior to disposal.

- *Executive Order 12580, Superfund Implementation* (January 23, 1987), delegates to agency heads several decision-making authorities under CERCLA. In the context of SVADA, certain responsibilities related to environmental restoration may not be transferred to non-federal parties.

- *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations* (February 11, 1994), requires that federal agencies conduct their programs, policies, and activities that substantially affect human health or the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under such programs, policies, and activities because of their race, color, or national origin. On February 11, 1994, the President also issued a memorandum for heads of all departments and agencies, directing that EPA, whenever reviewing environmental effects of proposed actions pursuant to its authority under Section 309 of the CAA, ensure that the involved agency has fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects. The essential purpose of the EO is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

- *Executive Order 13007, Indian Sacred Sites* (May 24, 1996), requires that, to the extent practicable, federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such

sacred sites. This EO pertains to SVADA disposal and reuse planning in light of the potential for the presence of Native American sacred sites at the installation.

- *Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks* (April 21, 1997), recognizes a growing body of scientific knowledge which demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks seem to arise because children's bodily systems are not fully developed; because they eat, drink, and breathe more in proportion to their body weight; because their size and weight may diminish protection from standard safety features; and because their behavior patterns may make them more susceptible to accidents. Based on these factors, the President directed each federal agency to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The President also directed each federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

1.5.3 Other Reuse Regulations and Guidance

DoD's Office of Economic Adjustment published its *Community Guide to Base Reuse* in May 1995. The guide describes the base closure and reuse processes that have been designed to help with local economic recovery and summarizes the many assistance programs administered by DoD and other agencies. DoD's Office of the Assistant Secretary of Defense for Economic Security published the *DoD Base Reuse Implementation Manual* in July 1995. This volume serves as a handbook for the successful execution of reuse plans. DoD and the Department of Housing and Urban Development have published guidance (at 32 CFR Part 175) required by Title XXIX of the National Defense Authorization Act for Fiscal Year 1994. The guidance establishes policy and procedures, assigns responsibilities, and delegates authority to implement the President's Program to Revitalize Base Closure Communities, July 2, 1993.

SECTION 2.0: DESCRIPTION OF THE PROPOSED ACTION

2.1 INTRODUCTION

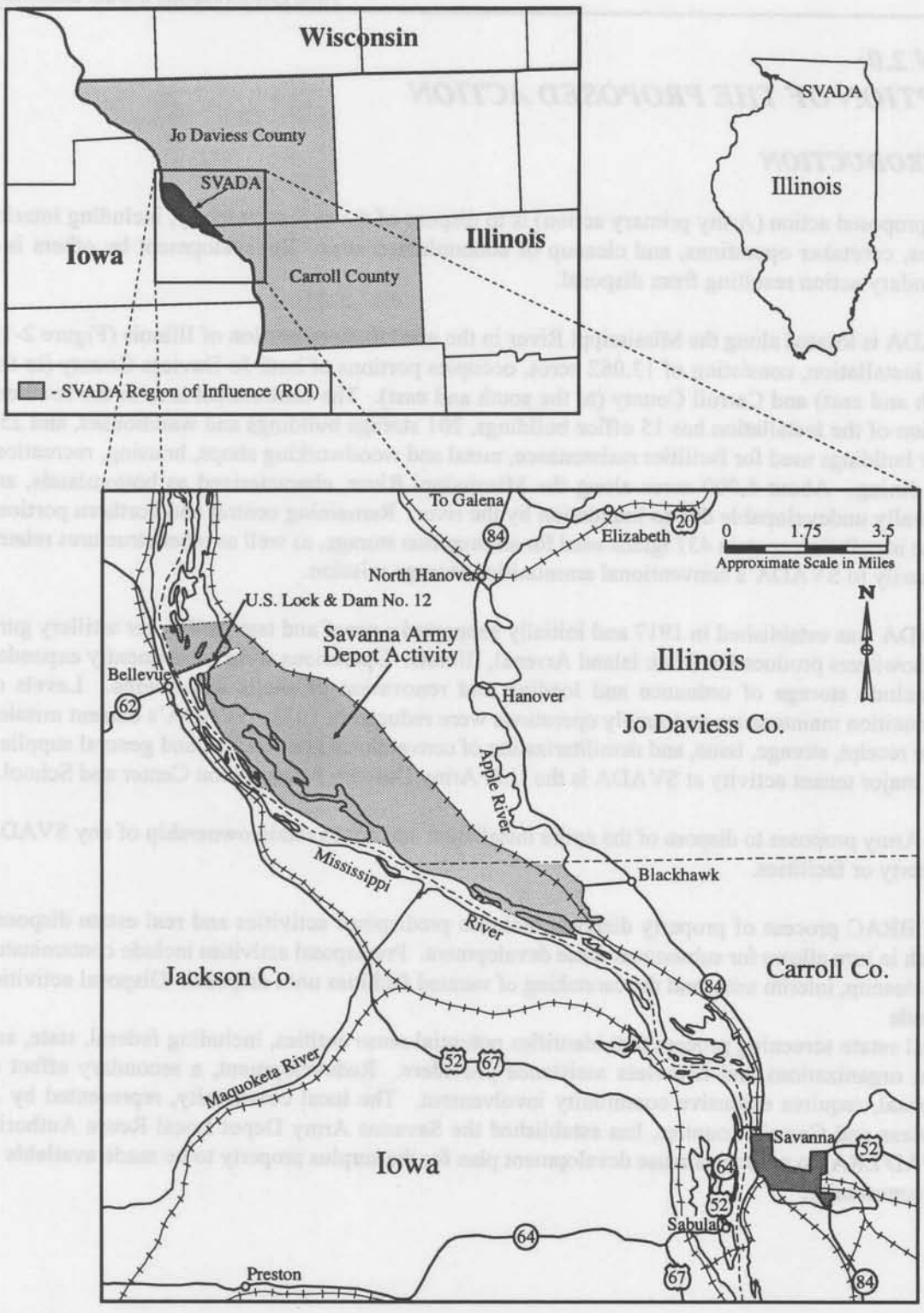
The proposed action (Army primary action) is to dispose of the excess property, including interim leases, caretaker operations, and cleanup of contaminated sites. Redevelopment by others is a secondary action resulting from disposal.

SVADA is located along the Mississippi River in the northwestern portion of Illinois (Figure 2-1). The installation, consisting of 13,062 acres, occupies portions of both Jo Daviess County (to the north and east) and Carroll County (to the south and east). The cantonment area in the southern portion of the installation has 15 office buildings, 201 storage buildings and warehouses, and 251 other buildings used for facilities maintenance, metal and woodworking shops, housing, recreation, and dining. About 6,000 acres along the Mississippi River, characterized as bottomlands, are generally undevelopable due to inundation by the river. Remaining central and northern portions of the installation contain 437 igloos used for ammunition storage, as well as other structures related primarily to SVADA's conventional ammunition storage mission.

SVADA was established in 1917 and initially supported a proof and test facility for artillery guns and howitzers produced at Rock Island Arsenal, Illinois. Operations were subsequently expanded to include storage of ordnance and loading and renovation of shells and bombs. Levels of ammunition maintenance and supply operations were reduced in 1972. SVADA's current mission is the receipt, storage, issue, and demilitarization of conventional ammunition and general supplies. The major tenant activity at SVADA is the U.S. Army Defense Ammunition Center and School.

The Army proposes to dispose of the entire installation and not to retain ownership of any SVADA property or facilities.

The BRAC process of property disposal includes predisposal activities and real estate disposal, which in turn allows for subsequent reuse development. Predisposal activities include contaminated site cleanup, interim uses, and the caretaking of vacated facilities until disposal. Disposal activities include
a real estate screening process that identifies potential reuse entities, including federal, state, and local organizations and homeless assistance providers. Redevelopment, a secondary effect of disposal, requires extensive community involvement. The local community, represented by Jo Daviess and Carroll Counties, has established the Savanna Army Depot Local Reuse Authority (SVAD LRA) to produce a reuse development plan for the surplus property to be made available to the community.



Location of Savanna Army Depot Activity (SVADA), Illinois

Source: USACE, 1986b.

Figure 2-1

Property disposal can be either encumbered or unencumbered. Encumbered disposal involves conveying the property with conditions imposed by the Army. This disposal method might be required to protect Army interests, such as easements to ensure access to a retained piece of property in order to address on-site contamination problems or to limit certain types of future activities based on the past uses of that particular parcel. Encumbrances may also be appropriate to preserve or protect federally protected resources such as wetlands or endangered species. Unencumbered disposal would result in conveying the property with no Army-imposed conditions. The Army favors encumbered disposal, as described in Section 2.2. Encumbered and unencumbered disposal alternatives are further described in Section 3.0.

At SVADA, redevelopment would occur under the guidance and management of the SVAD LRA. The Army fully supports community-planned reuse of the facilities and recognizes that determining specific reuses is beyond its direct responsibility or control. Among the goals established by the SVAD LRA are:

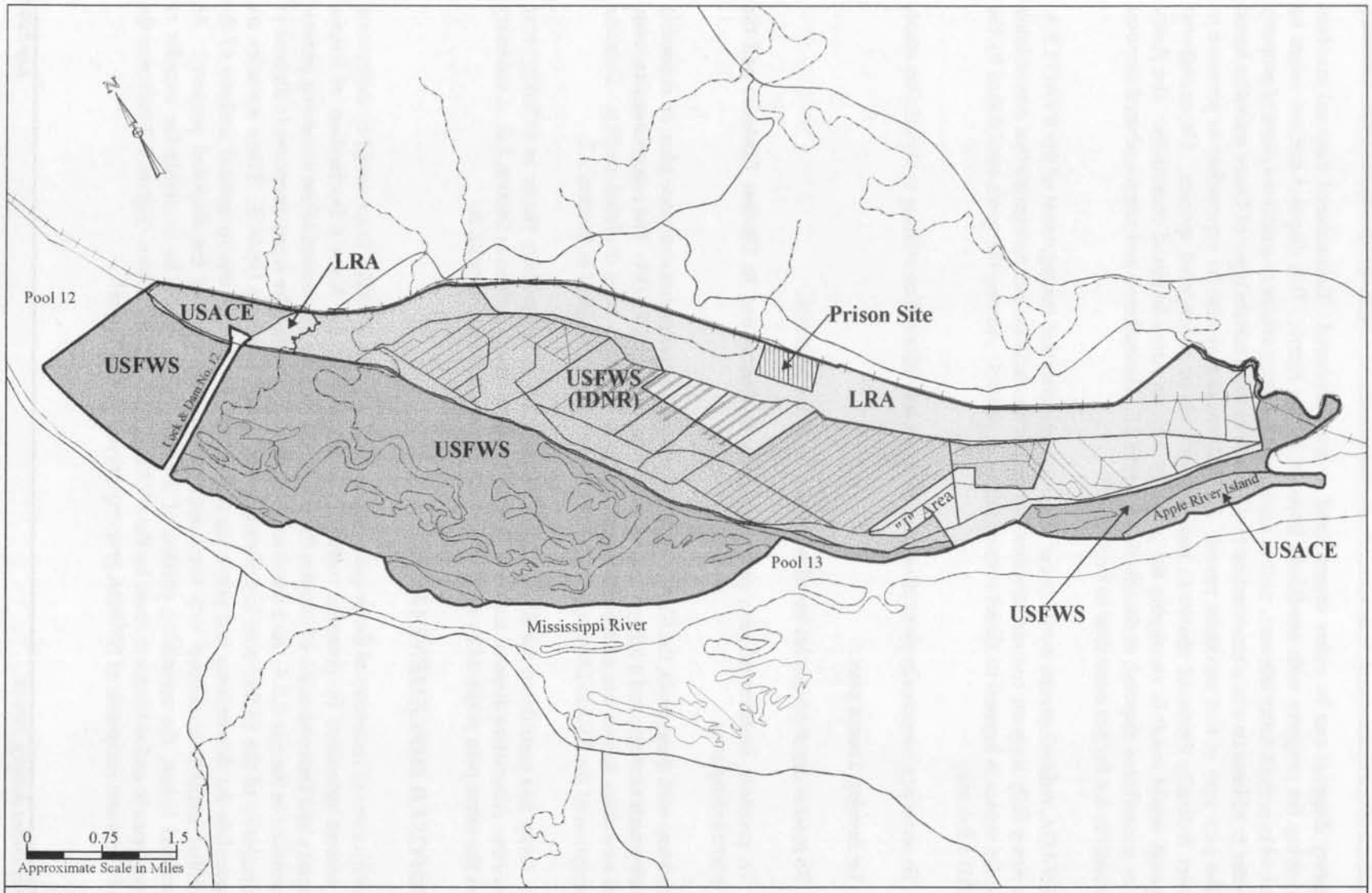
- To serve as a community point of contact for input and information relating to installation reuse.
- To develop a reuse plan.
- To market depot properties based on long-term reuse potential.
- To promote creation of new, permanent jobs in Carroll and Jo Daviess Counties and the surrounding area.

Consistent with these goals, the SVAD LRA has prepared a comprehensive reuse plan, an economic development strategy, and a job-generating market analysis for SVADA. The comprehensive reuse plan envisions mixed use of the lands and facilities that have been declared surplus. Detailed description of the SVAD LRA comprehensive reuse plan is provided in Section 2.2.

The Army has considered the SVAD LRA's reuse plan as the primary factor in defining reuse scenarios. Alternative disposal actions and reuse scenarios are described in Section 3.0. A summary from the reuse plan prepared by the SVAD LRA is provided as Appendix B.

2.2 PROPOSED IMPLEMENTATION

Identification of recipients of the property being disposed of at SVADA is governed by expression of interest submitted by potential recipients in response to the Army's Declaration of Excess Property and Determination of Surplus Property. A complete discussion of the screening process is provided in Section 2.3.4. As a result of the screening process, the Army proposes to dispose of the majority of the 13,062-acre installation to the USFWS and the USACE. These agencies are responsible for determining and preparing an appropriate level of environmental analysis of the potential impacts associated with their management and reuse of the disposed property. As described below, the remaining portion of the installation would be available for transfer or conveyance to and subsequent reuse by the SVAD LRA or other entities. Figure 2-2 indicates the land areas and recipients of SVADA property proposed for disposal.



Parcel Disposition at SVADA

Figure 2-2

- *Fish and Wildlife Service Area.* The Army would transfer 9,445 acres to the USFWS for creation of the Savanna Wildlife Management Unit (SWMU) as part of the Upper Mississippi River National Wildlife and Fish Refuge, Savanna District, under the USFWS's administration of the National Wildlife Refuge System. The area along the Mississippi River consists of 6,000 acres characterized as bottomlands; an upland area consists of 3,445 acres. This property contains 489 buildings, including 437 ammunition storage igloos, 43 warehouses, 3 large rail line loading docks, 5 loading dock platforms, and 1 classroom building/change house.

  The USFWS has prepared a Draft Conceptual Management Plan for the SWMU (Appendix A). Under the plan, the property would be operated and managed by the USFWS and, under a cooperative agreement, by the Illinois Department of Natural Resources (IDNR). The primary objective of this addition to the National Wildlife Refuge System would be the expansion of habitat for migratory birds. Secondary objectives would include continued conservation of wetlands and prairie habitat for the benefit of all wildlife species, provision of public recreational activities, and environmental education.

  The transfer of SVADA property to the USFWS would provide opportunity to the USFWS and IDNR to continue preservation of an ecologically significant environment. Habitat management techniques would be used to promote biological diversity and stability within the ecological system. Due to the military mission, most of the habitat has remained in relatively good condition, with the bottomlands and uplands reflecting historic environments containing large contiguous tracts of riverine and upland habitat. The SWMU Draft Conceptual Management Plan provides information on the general management techniques that the USFWS and IDNR would employ with respect to the wetlands, grasslands, and forests composing the SWMU. The plan also addresses biological monitoring, public access, public recreational activities and management, and facilities management.

  The SWMU Draft Conceptual Management Plan also indicates that the USFWS would request not only receipt of the 9,445 acres identified for the SWMU but also a reversionary interest in 139 additional acres in the area presently known as the J area (see Figure 2-2). The J area consists primarily of sand prairie associations, but it also includes an oak-ash association. There are 23 ammunition storage igloos in this area. Under the terms of the reversionary clause, the J area would revert to the USFWS in the event the LRA does not find a viable economic use for the igloos within 20 years from the date the area becomes available for economic use.

- *U.S. Army Corps of Engineers Areas.* The Army would transfer two parcels totaling 455 acres to the U.S. Army Engineer District, Rock Island (USACE). One parcel, consisting of 282 acres near the northern end of the installation, would be developed and managed by the USACE for a variety of recreational uses. The other 173-acre parcel, Apple River Island, would be used by the USACE primarily for placement of dredge material from the Mississippi River Nine Foot Channel Navigation Project.

  In July 1996, the USACE prepared a Conceptual Management Plan for lands at Savanna Army Depot. A copy of this plan is provided as Appendix C. Under the Conceptual Management Plan, the USACE would manage a portion of the 282 acres as a public recreation area, thereby

providing access to camping, an existing clubhouse, open field use, and the Beaty House (a site eligible for the National Register of Historic Places). Except for roads in the area, the majority of the 282 acres is undeveloped and would provide opportunities for hiking, biking, wildlife observation, sightseeing, photography, horseback riding, bank fishing, and similar types of dispersed recreational activities. The Conceptual Management Plan also provides information on proposed vehicle access, parking, and improvement maintenance activities that would be necessary to operation of the recreational area.

Under the Conceptual Management Plan, the 173-acre Apple River Island, which is currently unused, would be used to support dredging operations. Material obtained from dredging would be transported to the island hydraulically (through a portable pipeline) and placed in the interior areas of the island.

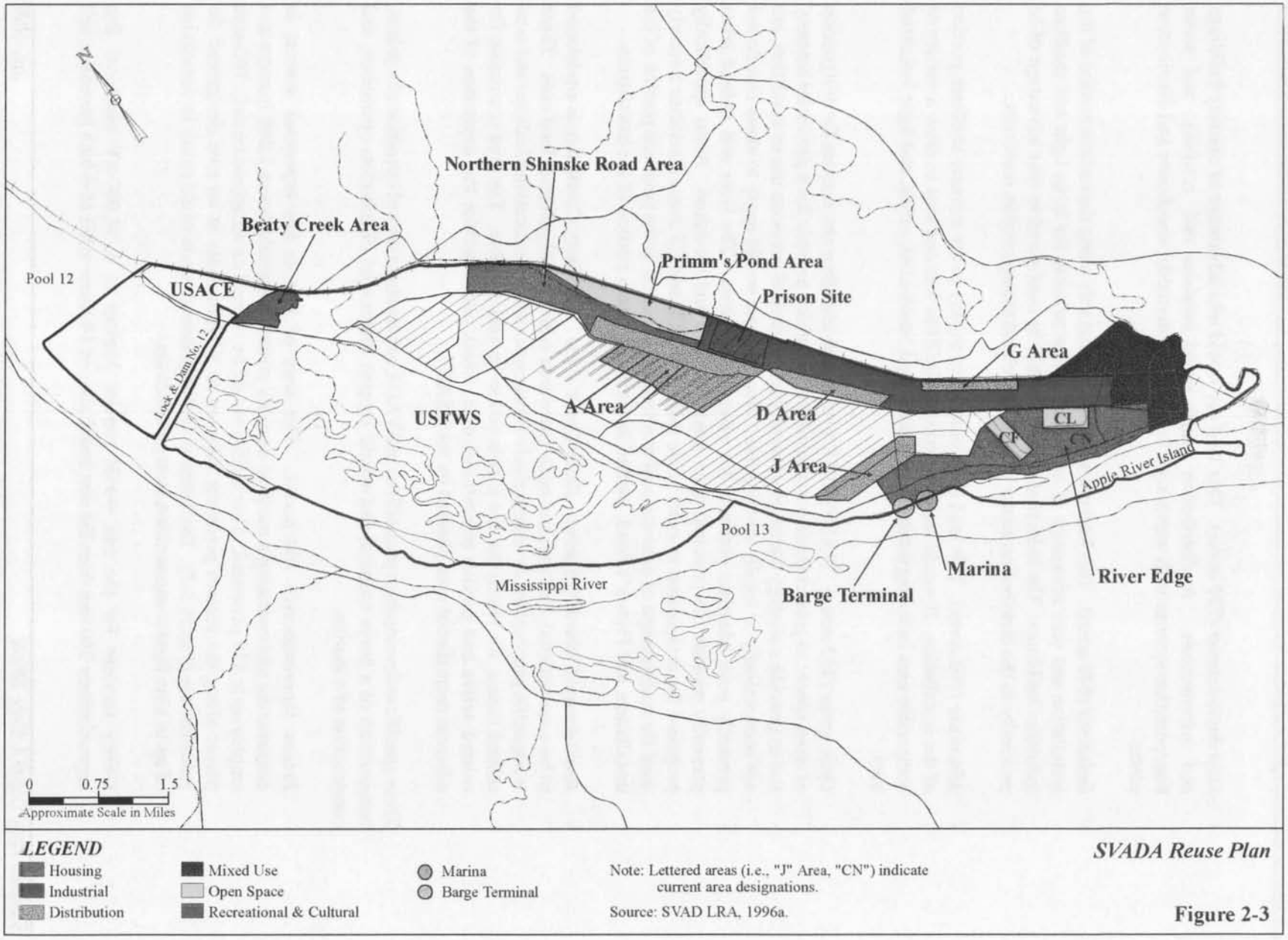
The plan also anticipates the USACE's retention of an easement, granted by SVADA in 1937, to permit overflow on approximately 6,544 acres of depot property. This overflow results from operation of the navigation dams, which submerge or increase the frequency of inundation of SVADA property along the Mississippi River. Additionally, the USACE would request permanent easements for road right-of-way purposes on approximately 75 acres, which include about 13 miles of existing roads within SVADA. The precise location of this acreage would be negotiated by the Army and the USACE. All USACE reuse planning would be subject to negotiations between the USACE and the Army pertaining to responsibilities for future issues connected with unexploded ordnance that might be present in the northern area sought by the USACE for public recreation purposes.

- *SVAD LRA Reuse Area.* Based on the foregoing two transfers, 3,162 acres[1] would be available for conveyance to the LRA or other entities. This property lies predominantly along the eastern edge and at the southern end of the installation. Property in the southern portion of the installation supports most of the depot's facilities and is where principal SVADA infrastructure assets are located.

The SVAD LRA reuse plan envisions redevelopment of 3,157 acres of the installation based on six land use areas. Figure 2-3 identifies major land use areas contemplated in the SVAD LRA reuse plan. These are summarized as follows:

- *Housing (1,010 acres).* This land use would occur at two sites and would support recreational, retirement second home, and primary housing. Homes would generally be built on 1- to 2-acre lots. It is anticipated that recreational amenities such as a marina, golf course, and resort or conference center could be developed to complement the proposed single-family homes.

[1] Acreage for the USFWS (9,445) and the USACE (455), subtracted from the total acreage of SVADA, yields 3,162 acres surplus and available for transfer to the SVADA LRA. The SVADA LRA reuse plan considers receipt of 3,157 acres. Final negotiations by the Army with the USFWS and USACE might result in minor adjustments of acreage to be transferred to either of those agencies. The apparent discrepancy is minor and does not affect the EIS impact analyses.



SVADA Reuse Plan

Figure 2-3

- *Distribution center (720 acres).* This land use would take advantage of existing buildings and infrastructure. A distribution center could combine rail, roadway, and water transportation systems with warehouses to create an intermodal warehouse and distribution center.

- *Industrial (640 acres).* This land use would occur primarily along the eastern portion of the installation and take advantage of open, flat terrain suitable for large light and medium industrial buildings. The industrial use area would be configured to take advantage of its proximity to the distribution center use and its related transportation resources.

- *Mixed use (400 acres).* This land use would occur mostly in the extreme southern portion of the installation. It would combine existing facilities into one area to draw a variety of compatible uses including institutional, educational, residential, office, and light industrial uses.

- *Open space (302 acres).* The SVAD LRA reuse plan identifies two reasons for designation of open space: to protect those portions of the site which provide for a particular amenity and to provide a strategy for reuse of areas that, because of previous use or condition, are not economically or legally developable. This land use would apply to areas that do not presently pose adequate potential for other, higher uses. The river and upland areas presently provide the principal open space resource and viewshed. Areas specifically proposed for designation as open space include the CL and CF areas (facilities formerly used for maintenance of conventional ammunition), located in the southern portion of the installation, and Primm's Pond, located in the northeastern portion of the installation.

- *Recreational/Cultural (85 acres - Beaty Creek Area).* The Beaty Creek area is envisioned to be a recreational, cultural, and open space area with several potential land uses. There is a specific proposal for an interpretive/visitors center with an educational/cultural and arts-related theme, for which the site is believed to be very suitable. The area is suitable for related active and passive recreational uses, which could include the expansion of the adjacent recreational uses planned by the USACE.

Three specific redevelopment possibilities at SVADA are construction and operation of a prison, construction of a barge terminal that would support intermodal distribution operations, and construction of a marina.

- *Prison (approximately 100 acres).* The state of Illinois has expressed interest in constructing and operating a medium-security prison that would house 1,808 inmates and employ up to 450 personnel. This facility would be located on an approximately 100-acre parcel along the eastern perimeter adjacent to Whitton Gate in an area designated for industrial use (Figure 2-2). The footprint for the prison grounds could result in demolition of up to nine former ammunition storage buildings.

  Utility services for the site would require hookup to a 34,000-kV electrical line approximately 300 feet from the site; installation of 14 linear miles of 4-inch gas main; and

installation of 5,000 feet of 12-inch gravity sewer line, 10,000 linear feet of 6-inch force main, and a duplex submersible pump lift station. It is estimated that site preparation, utilities, and building construction costs would total more than $60 million and result in a facility with an annual operating budget in excess of $25 million.

- *Barge terminal.* Interest has been expressed in a barge terminal that could be located along a portion of the LRA-designated shoreline. Construction and operation of a barge terminal would enhance any proposed use of SVADA assets for a distribution center having intermodal capabilities.

- *Marina.* In connection with proposed housing development, the SVAD LRA reuse plan contemplates construction of a marina. Taking advantage of land having prominent views of the river, a 360-acre "River Edge" parcel would be used primarily for second home and retirement housing. The exact location of the marina along the river would be determined by engineering and ecological considerations.

Other potential uses of the property could occur in conjunction with notices of interest submitted to the SVAD LRA during the screening process. In addition to the State of Illinois's request for land to support a potential prison, the SVAD LRA received three requests for use of the property. The Savanna Community Unit District No. 300 requested use of seven buildings and associated real estate for various educational purposes. Rainbow Ridge, Incorporated, requested several buildings in the cantonment area for use as community-based housing for the disabled population. Rolling Hills Progress Center, Incorporated, requested use of existing facilities and equipment to provide jobs for developmentally disabled, homeless, and displaced workers.

The SVAD LRA reuse plan emphasizes reuse of existing facilities for like-kind use. Residential housing would be the predominant type of new construction that would occur. Other types of construction could occur based on individual initiatives submitted to the SVAD LRA by private-sector entities. No time frame is provided for demolition of facilities in the CF and CL areas (locations designated for open space use). If the prison site were developed, a maximum of four ammunition magazines would be demolished. Other building demolition could also occur.

It is anticipated that the SVAD LRA would seek an economic development conveyance (see Section 2.3.4) to facilitate reuse of the property.

Under the Defense Base Closure and Realignment Act, closure is required no later than the end of the 6-year period beginning on July 13, 1995, the date on which the President transmitted his report to Congress containing the recommendations of the BRAC Commission. The Army plans to cease operations at SVADA not later than September 30, 2000.

Transfer or conveyance of the SVADA property following closure could be subject to encumbrances. These could include unexploded ordnance (UXO), wetlands, historical resources, endangered species, utility dependencies, utility easements, access easements, an overflow easement, road easements, and remedial activities. These encumbrances, arising from Army imposition or legal restraint, would be expected to influence future uses of the property. Section 3.2.1 provides information on the Army's procedures for identifying encumbrances.

2.3 DISPOSAL PROCESS

The following subsections discuss actions that will occur prior to transfer or conveyance and the steps required to accomplish disposal.

2.3.1 Caretaking of Property Until Disposal

Facilities and equipment at SVADA would be important to the eventual reuse of the installation. The Army would provide for maintenance procedures to preserve and protect those facilities and items of equipment needed for reuse in an economical manner that facilitates base redevelopment. Following closure, SVADA facilities and equipment would be subject to caretaker operations until transfer or conveyance occurs.

In consultation with the SVAD LRA, the Army would determine the required levels of maintenance and repair of the installation's facilities and equipment. Initial levels of maintenance would not exceed the standard of maintenance and repair in effect on the date of closure approval; would not be less than maintenance and repair required to be consistent with government standards for excess and surplus properties; and would not require any property improvements, including construction, alteration, or demolition, except when the demolition would be required for health, safety, or environmental purposes or would be economically justified in lieu of continued maintenance expenditures.

The Army would also determine the duration of the initial levels of maintenance and repair for SVADA. In the event the Army completes its NEPA analysis of disposal and reuse prior to the planned closure date, the time period for the initial levels of maintenance and repair would normally be no longer than one year after operational closure of the base. In the event the Army does not complete its NEPA analysis of disposal and reuse prior to the planned closure date, the time period for the initial levels of maintenance and repair would normally be 180 days after the Secretary of the Army approves the NEPA analysis. The Army may extend the time period for the initial levels of maintenance and repair for property still under its control for an additional period if it determines that the SVAD LRA is actively implementing its redevelopment plan and that such levels of maintenance are justified.

Once the time period for the initial or extended levels of maintenance and repair elapses, the Army would reduce the levels of maintenance and repair to levels consistent with federal government standards for excess and surplus properties. Initiation of indefinite period caretaker status would result in continuing activities needed to ensure the appropriate levels of safety, security, and health standards for the entire installation. Maintenance activities would occur with respect to the entire installation or those portions not yet transferred or conveyed.

Typical maintenance activities that would continue while in caretaker status include the maintenance of fenced areas to ensure adequate security, mowing and weed control on grounds within the lower post area for aesthetics and fire protection, and trimming and maintenance of trees and brush to avoid interference with roadways, fences, or buildings. Diseased trees and vegetation would be identified and removed as appropriate. Irrigation and erosion control would be addressed as required. For natural resources management, the commercial fishing lease and wildlife management programs

would also be continued. It has not yet been determined if the cattle grazing outlease program will be continued. Security at SVADA would be assumed by Sheriff patrols, as in the region of influence county jurisdictions.

2.3.2 *Cleanup of Contaminated Sites*

Based on the cleanup schedule established, certain portions of SVADA may be transferred prior to cleanup of others.

In March 1989, EPA placed SVADA on the National Priorities List based on scoring of hazardous substance sites under the Hazard Ranking System. As provided for by CERCLA, the Army subsequently entered into a Federal Facilities Agreement with USEPA and IEPA to guide hazardous substance site assessment and remediation at SVADA. In preparing to dispose of the SVADA property, the Army is obligated in the event of a transfer by deed of the property to abide by CERCLA Section 120(h)(3), which requires that:

> (A)(ii) A covenant warranting that all remedial action necessary to protect human health and the environment with respect to any such substances remaining on the property has been taken before the date of transfer . . .
>
> (iii) For purposes of subparagraph (A)(ii), all remedial action described in such subparagraph has been taken if the construction and installation of an approved remedial design has been completed, and the remedy has been demonstrated to the (USEPA) Administrator to be operating properly and successfully. The carrying out of long-term pumping and treating, or operation and maintenance, after the remedy has been demonstrated to the Administrator to be operating properly and successfully, does not preclude transfer of the property.[2]

Under CERFA, federal agencies are required to identify expeditiously real property that offers the greatest opportunity for immediate reuse and redevelopment. Although CERFA does not mandate that the Army transfer real property so identified, the first step in satisfying this objective is the requirement to identify real property where CERCLA regulated hazardous substances or petroleum products were not disposed of or released. To these ends, the Army's final Environmental Baseline

[2] Section 334 of the National Defense Authorization Act for Fiscal Year 1997 enlarges authority for transfer of property prior to completion of all remedial action. To make such an earlier transfer, a federal agency must give public notice and provide the public the opportunity to submit written comments. Moreover, an agency must provide assurances that the deed or other agreement used to govern property transfer will provide that restrictions will be placed on use necessary to ensure required remedial investigations, actions, or oversight activities will not be disrupted; provide that all remedial action will be taken and will identify schedules for investigation and completion; and provide that the federal agency responsible for the property subject to transfer will submit a budget request to the Director of the Office of Management and Budget that adequately addresses schedules, subject to congressional authorizations and appropriations. Procedures to carry out this amendment of CERCLA are being developed by DoD, EPA, and state officials.

Survey (EBS) identifies areas at SVADA where storage, release, or disposal of hazardous substances or petroleum products or their derivatives has occurred. The EBS also identifies non-CERCLA-related environmental or safety issues (i.e., asbestos, lead-based paint, radon, polychlorinated biphenyls (PCBs), radionuclides, and unexploded ordnance) that would limit or preclude the transfer of property for unrestricted use; completed or ongoing removal or remedial actions taken at the installation; and possible sources of contamination on adjacent properties that could migrate to the SVADA real property.

Previous investigations conducted at SVADA identified 76 sites that required study. Remedial actions have been completed at one of these sites and are under way at three others. As a result of the EBS, 157 new areas have been identified, bringing to 233 the number of sites or areas that require further evaluation or remedial action. No date may presently be estimated for completion of remediation of these sites. The Army will prepare a BRAC Cleanup Plan to provide guidance for taking remedial actions at these sites as appropriate. The sites are described more fully in Section 4.9.

The EBS further serves as a database describing environmental conditions related to remediation issues. It also will be a contributing factor in formulation of the BRAC Cleanup Plan. Finally, the EBS is a major source for information in developing a Finding of Suitability to Lease (FOSL) for interim leases and a Finding of Suitability for Transfer (FOST).

2.3.3 *Interim Uses*

Prior to disposal, the Army may execute interim leases to facilitate state and local economic adjustment efforts and to encourage economic redevelopment. Pending issuance of a ROD regarding the NEPA analysis for disposal and reuse of SVADA, the Army may not make commitments that would significantly affect the quality of the human environment or irreversibly alter the environment in a way that would preclude any reasonable alternative for disposal of the property. Hence, leases in furtherance of conveyance prior to completion of the NEPA analysis of disposal and reuse and issuance of a ROD will not be considered. The Army may, however, enter into an interim lease having a duration beyond the expected completion date of the NEPA analysis of disposal and reuse of the installation. In such a case, the Army would consult with the SVAD LRA prior to entering into the lease. Such interim leases could only allow limited use of the property and facilities such that no reasonable reuse options would be foreclosed prior to the publication of the conclusions of the basewide disposal NEPA analysis. Before granting any lease, the Army would comply with NEPA requirements relevant to the lease and would prepare a Finding of Suitability to Lease to document the environmental condition of the property.

2.3.4 *Real Estate Disposal Process*

Disposal as a Package or in Parcels. Army policy provides that, upon completion of all required hazardous substance cleanup activities and cleanup that may be required for other environmental conditions such as asbestos, fuel, or other substances, property subject to disposal under BRAC should generally be disposed of as a single entity. Alternatively, the Army may dispose of the SVADA property in parcels. Based on identified reuse proposals, potential for tax revenue

generation, and potential for job creation, disposal of individual parcels upon completion of site-specific hazardous waste cleanup activities could be found to be most appropriate.

The covenant assuring completion of hazardous waste cleanup under CERCLA, discussed in Section 2.3.2, applies to conveyances of property from the Army to any non-federal entity. To assist the SVAD LRA in achieving its reuse objective of job creation, the Army may identify substantial areas of discrete parcels at SVADA that require no further action under CERCLA. These parcels may appropriately be conveyed, rather than awaiting completion of all hazardous waste remedial actions applicable to the entire area following completion of the EIS process. Potential parcels are shown in Figure 2-2.

Disposal Process. Methods available to the Army for property disposal include transfer to another federal agency, public benefit discount conveyance, economic development conveyance, negotiated sale, and competitive sale.

- *Transfer to another federal agency*. The Army may transfer the real property to another federal agency.
- *Public benefit discount conveyance*. State or local government entities may obtain property at less than fair market value when sponsored by a federal agency for uses that would benefit the public such as education, parks and recreation, wildlife conservation, or public health.
- *Economic development conveyance*. The 1994 Defense Authorization Act provides for conveyance of property to an LRA at or below fair market value using flexible payment terms. The EDC is intended to promote economic development and job creation in the local community. An EDC is not intended to supplant other federal property disposal authorities and cannot be used if the proposed reuse can be accomplished through another authority. If certain criteria are met for a rural installation, an EDC may be made at no cost. To qualify for an EDC, the LRA must submit a request to the Department of the Army describing its proposed economic development and job creation program.
- *Negotiated sale*. The Army may negotiate the sale of the property to state or local agencies or private parties at fair market value.
- *Competitive sale*. Sale to the public may occur through either an invitation for bids or an auction.

The method of disposal is determined, in part, by a two-step screening procedure that assesses the demand for the facilities by DoD, other federal agencies, homeless assistance providers, and state and local agencies and organizations.

DoD and Federal Agency Screening. The screening process first offers the property to other DoD agencies and federal agencies. A DoD or other federal agency indicating an initial interest must follow up with a firm proposal for the future use of the property. Under the 1994 Defense Authorization Act, DoD and other federal screening was to have been completed within 6 months after September 28, 1995, the date of approval of the BRAC Commission's recommendations.

Federal screening has been completed for SVADA, resulting in an expression of interest by the USFWS for approximately 9,445 acres along the Mississippi River and in the central portion of the installation. Also, the USACE has expressed interest in Apple River Island and 282 acres at the northern tip of the installation.

LRA Screening. Pursuant to the Base Closure Community Redevelopment and Homeless Assistance Act of 1994, which amended the Defense Base Closure and Realignment Act of 1990, property that is surplus to the federal government's needs is to be screened via an LRA's soliciting notices of interest from state and local governments, representatives of the homeless, and other interested parties. An LRA's outreach efforts to potential users or recipients of the property include working with the Department of Housing and Urban Development and other federal agencies that sponsor public benefit transfers under the Federal Property and Administrative Services Act. Incorporating the notices of interest submitted to it, the LRA then prepares a redevelopment plan that reflects an overall reuse strategy for the installation.

Four notices of interest were submitted to the SVAD LRA. The Illinois Department of Corrections has sought an area for a state correctional facility and storage and miscellaneous buildings. Rolling Hills Progress Center, Incorporated has sought buildings for housing, equipment, and acreage in support of its program to help developmentally disabled, homeless, and displaced workers. The Savanna School Community Unit District No. 300, as lead agency for several educational entities, has sought buildings, equipment, and personal property for expansion of educational programs. Rainbow Ridge, Inc. has sought buildings for housing and personal property to support the needs of developmentally disabled children and adults.

SECTION 3.0: ALTERNATIVES

3.1 INTRODUCTION

This section addresses alternatives to the Army's primary action (property disposal) and to the secondary action (property reuse by other parties).

Disposal alternatives are developed to help the Army decide whether to dispose of the property with or without restrictions. Disposal alternatives, with and without restrictions (called encumbrances; see Sections 3.2.1 and 3.2.2), as well as a no action alternative, are evaluated. Future reuse of surplus SVADA property is analyzed in the context of land use intensity categories as described in Section 3.4.2. The land use-intensity-based scenarios are used to inform Army decision makers and the public of environmental impacts expected to occur given the reasonable range of reuses future property owners might implement. The SVAD LRA reuse plan is the primary factor in development of the proposed action, reuse alternatives, and effects analysis in the Army's NEPA process for the disposal action. Use of the reuse plan in this manner meets the requirement imposed by the National Defense Authorization Act for Fiscal Year 1996 that the reuse plan be treated as part of the proposed federal action. The alternatives evaluation process is shown in Figure 3-1.

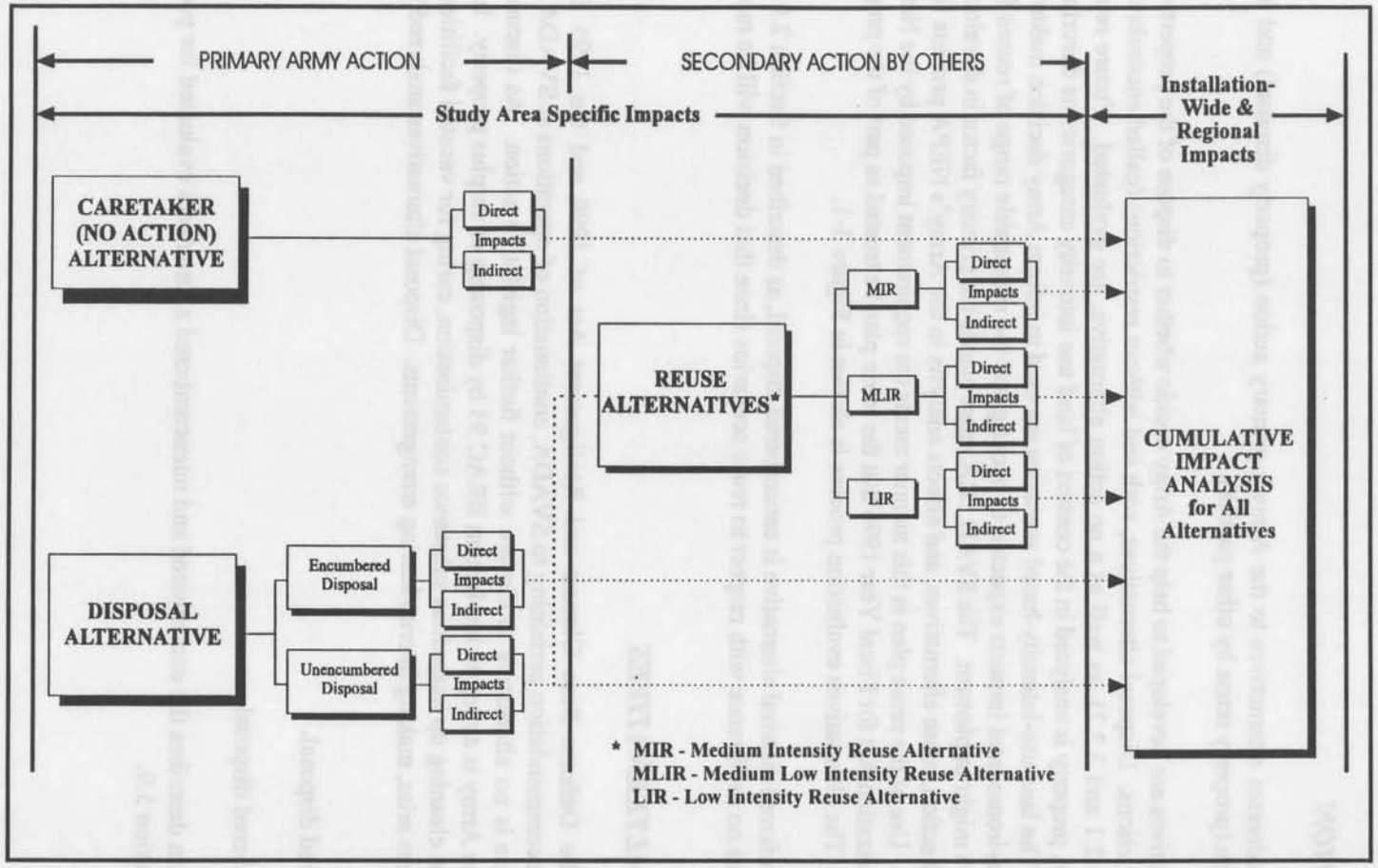
The Army's preferred disposal alternative is encumbered disposal, as described in Section 2.0. The Army expresses no preference with respect to reuse scenarios since that decision will be made by others.

3.2 DISPOSAL ALTERNATIVES

Pursuant to the Defense Base Closure and Realignment Act of 1990 and the 1995 BRAC Commission recommendation pertaining to SVADA, continuation of operations at SVADA is not feasible. There is no alternative to closure without further legislative action. As discussed in Section 2.0, the Army is acting to implement BRAC 95 by disposing of surplus property. Interim actions include cleaning up hazardous substance contamination, caring for vacated facilities, and, as circumstances arise, making interim leasing arrangements. Disposal alternatives analyzed in this EIS are:

- Encumbered disposal.
- Unencumbered disposal.

This subsection describes the encumbered and unencumbered alternatives evaluated for potential impacts in Section 5.0.



Alternatives Evaluation Process
Disposal and Reuse EIS

Seneca Army Depot Activity
Romulus, NY

Figure 3-1

3.2.1 *Encumbered Disposal*

The Army methodology to ensure environmentally sustainable redevelopment of BRAC disposal property identifies natural and man-made resources that must be used wisely or protected after ownership transfers out of federal control. This information is developed by the Army from the environmental baseline information early in the NEPA process and provided to the local redevelopment authority with the recommendation that the reuse plan consider protecting these resources. In this way, an environmentally sustainable plan is achieved. This process is endorsed by regulatory and environmental agencies.

This methodology describes these valuable resources plus any other constraints that influence reuse, such as retention of real estate easements or an extended cleanup process. Using this methodology, the LRA develops a reuse plan that satisfies community redevelopment goals and objectives, while achieving a high environmental standard.

Typical encumbrances that the Army might place on disposal include the protection and preservation of threatened and endangered species, jurisdictional wetlands, critical habitat, historic properties and sites, archeological sites, and legacy resources; access to remediation sites; and retention of easements and utility/infrastructure rights-of-way. Other types of constraints that may be identified to the LRA are excessive slope areas, poor construction soil conditions, a high water table, overflow easements, heavy rock outcrops, zoning ordinances, and the need to consider the homeless in the plan.

Conditions of special hazardous materials, such as asbestos-containing material, lead-based paint, radon, polychlorinated biphenyls, and radiological material, require specific handling or disposition, much like contaminated sites, but usually can be handled without limiting redevelopment.

The Army may determine from the encumbrances identified that it may be necessary to impose legal constraints to future use on the property ownership transfer documents to protect environmental values, or as required by federal law, or resulting from agency negotiations, or specific Army needs.

Major Categories of Encumbrances (General). Six major categories of encumbrances can be identified:

- *Easements and rights-of-way.* Real estate may be burdened with utility system, other infrastructure-related, roadway, or access easements and rights-of-way.
- *Use restrictions.* Activities on property may be limited by existing conditions or in recognition of adjacent land uses. For example, use of a former landfill site would preclude ground disturbance of a clay cap but could otherwise permit passive uses such as recreation. The presence of unexploded ordnance would preclude many uses of a parcel because of the potential safety hazards. In other instances, restrictive covenants could impose or maintain buffer zones between incompatible uses.
- *Habitat protection.* The presence of federally threatened or endangered species of wildlife or plants may constrain unlimited use of property.

- *Historic building or archeological site protection*. Negotiated terms of transfer or conveyance may result in requirements for new owners to maintain the status quo of historic buildings or archeological sites or may impose a requirement for consultation with the State Historic Preservation Office prior to any actions affecting such resources.
- *Water rights*. Protective covenants may be required to protect existing well fields or aquifers.
- *Utility dependencies*. Utilities operated as a single system create dependencies with future owners unless the systems are individualized to separate parcels or facilities. Wastewater collection and treatment, potable water supply and distribution, solid waste, telecommunications, gas, electric, and storm drainage must be available to each property owner. An encumbrance exists wherever a parcel's or facility's future use depends on a common or intermediary provider of these services. Following property disposal, utilities would not be available from the Army, though the Army would cooperate with new owners and local utilities companies to make arrangements for utility services, including obtaining appropriate easements across federally owned land.

Encumbrances Identified at SVADA. The Army's identification and imposition of encumbrances takes into consideration opportunities for the protection and preservation of several types of environmental values. Consistent with the stewardship principles by which it operates its installations, the Army has a vital interest in perpetuating important resource protections. In some cases, the Army is able to promote the sustainability of environmental resources by use of encumbrances. Establishment of encumbrances reflects the Army's objective of returning property to public and private sector use in a manner that will result in continued environmental resources stewardship. The Army's identification of valuable resources will help the SVAD LRA to arrive at a reuse plan that sustains the environment. Certain features of the environment warrant protection; reuse planning must take those features into consideration.

The following encumbrances can be expected to apply at the time of transfer or conveyance of SVADA property:

- *Unexploded ordnance*. The EBS identifies 13 sites at SVADA known or suspected to have UXO. Together, these sites represent the majority of the land at the installation. The presence of UXO could present a hazard to numerous kinds of activities such as construction, intrusive investigation of hazardous waste site contamination, and most types of agricultural or silvicultural operations. Restrictive covenants may be placed in transfer or conveyance documents to prohibit future owners from terrain-disruptive activities and to impose other requirements to ensure safety and protection of human health and the environment.
- *Wetlands*. Wetlands of varying types and areal sizes, totaling about 6,000 acres, occur at SVADA both in the bottomland and upland areas. To provide for continued wetland protection, the Army may impose restrictive covenants prohibiting land uses that would eliminate or degrade wetlands.
  Depending on proposed land uses, such covenants could also impose a requirement for buffer zones adjoining wetlands.

- *Historical resources*. The Beaty House, located at the northern end of the installation in the area requested by the USACE, is eligible for inclusion in the National Register of Historic Places. Transfer documentation to the USACE would identify the structure's eligibility for the National Register. If properties eligible for the NRHP are present within installation disposal parcels, encumbrances (deed restrictions) requiring protection of the historic properties could be passed on to the new owner(s) as a condition of the sale or transfer of the installation property. If the new owner(s) choose to lessen or remove the deed restrictions requiring preservation, the deed will delineate a process for the new owner(s) to consult with the SHPO to arrive at mutually agreeable and appropriate measures for mitigating the adverse effects of the proposed undertaking.

- *Threatened and endangered species*. SVADA property provides habitat for federally and state-listed threatened, endangered, and candidate species of plants and animals. To provide for enhanced habitat protection, the Army may impose restrictive covenants prohibiting land uses that would eliminate or degrade habitat occupied or frequented by federally listed species. Depending on proposed land uses, such covenants could also impose requirements for buffer zones adjoining particularly sensitive habitat areas. Based on results of the LRA's ecological study of SVADA lands, the Army, through consultation with the USFWS, will determine whether to encumber any land transfer or conveyance to the SVAD LRA in order to protect federally listed species and their habitat that may be present.

- *Utility dependencies*. Steam heat at SVADA is provided from Buildings 114 and 704, which produce steam for the lower post and the 700 Series area. Smaller boilers and furnaces serve individual buildings or small areas. These facilities are described in Section 4.8.7. Conveyance of property would require, among transferees, establishment of an entity to continue providing this function for existing facilities.

- *Utility easements*. Easements burdening SVADA property would continue after transfer or conveyance. These include, for instance, a 1.6-acre easement for road access and a dike for the sewage treatment plant and a 0.08-acre easement for a 15-inch intercepting sewer.

- *Access easements*. Easements could be imposed across property conveyed to the SVAD LRA to provide access by the USFWS and the USACE to areas that would be transferred to them. These easements would maintain access that USACE has enjoyed in the past. Two perpetual right-of-way easements for ingress and egress of private property immediately adjacent to the depot would not be affected by transfer or conveyance of depot property.

- *Reversionary interest*. The USFWS has requested that it be granted a reversionary interest in the 139 acres and 23 ammunition storage igloos comprising the J area. This area of surplus property, available for transfer or conveyance to the SVAD LRA, would revert to the USFWS in the event the SVAD LRA failed to find a viable economic use for the igloos within 20 years of their being made available for economic use.

- *Overflow easement*. In 1937 the SVADA Commander granted the USACE permission to overflow, and to remove trees and brush from the lands subject to overflow, on approximately

6,544 acres of the depot's property. This grant was required for operation and maintenance of the Mississippi River Nine Foot Channel Navigation Project. Perpetuating this permission by formalizing this overflow easement would burden the property requested for transfer to the USFWS.

- *Road easements*. Roadway easements for right-of-way purposes on approximately 75 acres of depot property, including about 13 miles of existing roads, could be granted to the USACE. These easements would facilitate access to the navigation dam for maintenance and rehabilitation work.

- *Remedial activities*. Operations at SVADA over several decades have resulted in localized hazardous waste contamination. The contaminants and substances of concern include volatile organic compounds, semivolatile organic compounds, and metals. For the most part, details of remedial actions remain to be determined. As indicated in Section 4.9, several buildings and areas at SVADA would be subject to some level of cleanup activity. In conjunction with remedial activities that might be required during an interim lease or upon conveyance, the Army would retain a right to conduct investigations and surveys; to conduct field activities of Government personnel
and contractors; and to construct, operate, maintain, or undertake any other response or remedial action as required.

- *Lead-based paint*. The Residential Lead-Based Paint Hazard Reduction Act of 1992 (Public Law 102-550) applies to buildings constructed prior to 1978 and transferred for residential use. Under that law, residential structures built between 1960 and 1978 must be inspected for lead-based paint (LBP) and LBP hazards (as defined in the Act) and the results of the inspection must be provided to prospective purchasers of the property. For buildings constructed prior to 1960, LBP hazards must be abated if the property is to used for residential purposes, as defined in and in accordance with the Residential Lead-Based Paint Hazard Reduction Act. As shown in Section 4.9.5, several buildings used for residential at SVADA are subject to this law. The presence of LBP or LBP hazards may preclude occupancy by some portions of the population. Upon transfer or conveyance, with respect to buildings constructed between 1960 and 1978, the Army will provide notice to the new owners as required by the law.

- *Beaty Creek access*. Disposition of the Beaty Creek area to the SVAD LRA would result in that portion of property being entirely surrounded by federal lands (in the future controlled by USFWS and USACE). An easement burdening both USFWS and USACE properties, providing right of access over existing roads, would be granted to the SVAD LRA to ensure access to this location.

3.2.2 *Unencumbered Disposal*

Unencumbered disposal would involve transfer or conveyance of the property with the Army's not having created any encumbrances or with the Army's having removed encumbrances that could be removed. Removal of certain encumbrances is not feasible. For instance, elimination of easements providing for electric power line service could result in loss of that service.

Creation, retention, and removal of encumbrances must be considered in light of land use planning flexibility, market value, environmental concerns, potential increased management burdens on subsequent owners, and the potential for future property owners to be liable for failure to comply with encumbrance-related requirements. The Army examines the potential for removal of encumbrances to determine feasibility, costs, and other issues (e.g., timing) that could be involved in transfer or conveyance of property in an unencumbered status.

3.3 NO ACTION ALTERNATIVE

Under the no action alternative, the Army would not dispose of the property but would maintain it in caretaker status. Inclusion of the no action alternative is prescribed by the Council on Environmental Quality regulations and serves as a benchmark against which federal actions can be evaluated. Since no dates for disposal are presently known, the duration of caretaker status cannot be predicted; it could continue for an indefinite period. Maintenance activities would be at levels reduced from the initial levels of maintencance described in the first two paragraphs of Section 2.3.1. Army caretaker operations would be in accordance with Army Regulation 210-17 (*Inactivation of Installations*) and would include:

- Inspection, maintenance, and use of utility systems, telecommunications, and roads to the extent necessary to avoid their irreparable deterioration.
- Periodic maintenance of landscaping around unoccupied structures, as necessary, to protect them from fires or nuisance conditions.
- Maintenance of access to permit servicing of publicly owned or privately owned utility or infrastructure systems.
- Maintenance of security patrols, security systems, fire prevention, and protection services.
- Continuation of natural resources management programs including land management, pest control, forest management, and erosion control.

3.4 REUSE ALTERNATIVES

Consistent with Congress's mandate, the Army must cease performance of active missions at SVADA no later than July 13, 2001. Depending on numerous factors, including information presented in this EIS, disposal might occur as a single event involving transfer of the entire facility to one or more subsequent owners, or it might occur over time with multiple transactions involving the same or several new owners. Regardless of the method of disposal, timing, or identity of new owners, reuse of SVADA is reasonably foreseeable. Consistent with statutory requirements, this EIS treats the reuse plan as the primary factor in developing the proposed action and alternatives.

This EIS analyzes reuse of SVADA, which is expected to occur. Council on Environmental Quality regulations require evaluation of reasonably foreseeable actions, without limitation on the party conducting them, and evaluation of consequent environmental impacts. Accordingly, reuse of the property is evaluated as an action secondary in time, following the Army's primary action of

disposal. The following subsections discuss the methodology used to define the reuse scenarios to be considered. The nature of the reuse cannot be identified precisely. The Army considers the SVAD LRA's redevelopment plan the primary factor in defining the reuse scenarios to be considered and evaluates that reuse plan for potential environmental effects.

3.4.1 *Development of Reuse Alternatives*

Reuse planning for SVADA consists of establishing reuse objectives, planning for compatible land uses that support the community's needs, and marketing among potential public and private sector entities to obtain interest in use of the property. The reuse planning process is dynamic and often dependent on market and general economic conditions beyond the control of the reuse planning authority.

In recognition of the dynamics attending reuse planning, the Army uses intensity-based probable reuse scenarios to identify the range of reasonable reuse alternatives required by NEPA and by DoD implementing directives. That is, instead of speculatively predicting exactly what will occur at a site, the Army establishes ranges or levels of activity that reasonably *might* occur. These levels of activity, referred to as intensities, provide a flexible framework capable of reflecting the different kinds of uses that could result at a location. Reuse intensity levels also can take into account the effects that encumbrances can exert on reuse.

3.4.2 *Land Use Intensity Categories Described*

The Army has identified five intensity-based levels for evaluating the potential environmental and socioeconomic effects of facility redevelopment. These are low intensity reuse (LIR), medium-low intensity reuse (MLIR), medium intensity reuse (MIR), medium-high intensity reuse (MHIR), and high intensity reuse (HIR). At any given installation, analysis of all five levels of intensity might not be appropriate due to historical usage, physical limitations, or other cogent reasons.

The five levels of reuse intensity can be viewed as a continuum. At the low end, LIR represents a minimal level of activity, such as might be found in undeveloped lands or in uses not requiring substantial building or infrastructure improvements (e.g., parks, recreation areas, or golf courses). At the high end, HIR approximates the maximum amount of activity that could occur over a given area. Indicators of levels of intensity may be quantified by counting the number of people at a location (employees or residents), the potential number of vehicle trips generated as a result of the nature of the activity, or the number of dwelling units. Other indicators of the intensity of use are the rates of resource consumption (electricity, natural gas, water) and the amount of building floor space per acre (identified as the floor area ratio [FAR], expressed as the amount of square feet per acre).

Development of intensity parameters is based on several sources, including existing land use plans for various types of projects and planning jurisdictions, land use planning reference materials, and prior Army BRAC land use planning experience. Under AR 210-20, *Master Planning for Army Installations*, land use planning for Army installations is based on development of facilities and physical plants that support an overall environment of quality for the force and that provide the basis for projecting power assets (trained personnel, equipment, and supplies) necessary for national

security. In contrast to the wide variety of zoning classifications used by local jurisdictions, Army planning relies on 12 land use classifications: airfields, maintenance, industrial, supply/storage, administration, training/ranges, unaccompanied personnel housing, family housing, community facilities, medical, outdoor recreation, and open space. Private-sector redevelopment of property subject to BRAC action, on the other hand, seeks different objectives and uses somewhat different planning concepts in that it focuses on creation of jobs and capital investment costs, and it typically uses traditional community zoning categories. Upon evaluation of various types of indicators in light of their applicability to Army lands subject to BRAC action, the Army has selected five representative, illustrative intensity parameters. These are residential density, employee density for general spaces, employee density for warehouse spaces, floor area ratio, and development ratio. These intensity parameters aid in evaluation of environmental effects at various levels of redevelopment. The parameters are discussed in the following paragraphs.

Residential Density. This parameter identifies the number of dwelling units per acre. It indicates the number of people who might reside or work in an area.

Employee Density (General Space). This parameter indicates the number of square feet available per employee in all types of facilities at an installation except family housing and warehouses or storage structures.

Employee Density (Warehouse and Storage Space). This parameter indicates the number of square feet available per employee engaged in warehouse or storage activities at an installation. Only built, fully enclosed and covered storage space is calculated; shed or open storage areas are excluded from computation. In describing Army uses of facilities, estimates of the number of employees engaged in warehouse or storage operations are used to determine the portion of the installation workforce in this employee density category.

Floor Area Ratio. This ratio reflects how much building development occurs at a site or across an area. For example, a 3-story building having a 7,500-square-foot footprint on a 4-acre site would represent an FAR of 0.13 (22,500 square feet of floor space over 4 acres (174,240 square feet)).

Development Ratio. A final indicator of intensity is based on the amount of developed property in relation to the total amount of property subject to land use planning at a given location. Developed property includes the acreage of not only those specific sites on which structures have been erected, but also immediately adjacent areas capable of being easily served by existing infrastructure elements such as roadways, electrical service, water and sewer, natural gas, heating steam, and telecommunications systems. For purposes of this ratio, developed property includes buildings, roadways, parking lots, and other structures such as storm water retention basins. The developed property ratio is expressed as the ratio of acres of developed property to the whole acreage within the area under consideration. This indicator is useful to provide a general estimate of the degree of build-out, or potentially full development, that has occurred at a location.

Employee density, FAR, and development ratio considerations shown in Table 3-1 are appropriate to describe intensity levels for reuse planning at SVADA. The intensity parameters shown in Table 3-1 reflect generalized values or ranges appropriate to describe the variety of installations subject to Army management, as well as the variety of redevelopment situations. The intensity parameters

should be considered together in evaluating the intensity of reuse of a site so as to provide full context. Use of any single parameter in isolation may unduly emphasize certain aspects of a site or preclude broader consideration. As applied to any particular parcel or area, or the whole of the installation, the values given may require some adjustment to account for the context in which an activity is located. For instance, the size of a redevelopment project may result in distorting effects on the generalized values for the parameters provided.

3.4.3 *Application of Intensity Categories*

At present, use of SVADA is characterized as low intensity. The total floor area of all facilities is 4,165,827 square feet spread over 13,062 acres, resulting in an FAR of 0.0073. The density of employees occupying general space is 3,217 square feet per employee, and the density of employees associated with warehouse and storage space is 33,619 square feet per employee. Both of these parameters indicate a low intensity use. It is estimated that about 1,000 acres of the installation are developed, yielding a development ratio of 0.08.

One important land use consideration skews the FAR. With minor exceptions such as the open burning and open detonation ground located within the Mississippi River bottomlands, about 8,000 acres of SVADA are undeveloped and serve as buffer zones around the ammunition storage areas. Eliminating

Table 3-1
Land Use Intensity Parameters

Intensity Level	Residential Density[1]	Square Feet per Employee (General Space)	Square Feet per Employee (Warehouse Space)	Floor Area Ratio	Development Ratio
Low	< 2	> 800	> 15,000	<0.05	<0.2
Medium-Low	2-6	601 - 800	8,001 - 15,000	0.05 - 0.10	0.2 - 0.4
Medium	6-12	401 - 600	4,001 - 8,000	0.10 - 0.30	0.4 - 0.6
Medium-High	12-20	200 - 400	1,000 - 4,000	0.30 - 0.70	0.6 - 0.8
High	> 20	< 200	< 1,000	>0.70	0.8 - 1.0
SVADA	NMV[2]	3,217[3]	33,619[4]	0.0073	0.08

[1] Dwelling units per acre.

[2] No meaningful value.

[3] Based on 323 employees occupying 1,039,238 square feet of general space (including tenant organization personnel).

[4] Based on 93 employees using 3,126,589 square feet of warehouse space (one-half the workforce, excluding tenant organization personnel).

Sources: Fairfax County, 1990; HQDA, 1993; Lynch and Hack, 1994; Tompkins and White, 1984; ULI, 1982, 1985, 1987, 1988, 1989, 1994; USACE, 1993.

approximately 8,000 acres of buffer areas from the FAR calculation results in a revised FAR of about 0.019. Notwithstanding exclusion of buffer zones from the FAR calculation, it is concluded that use of the installation is presently at a low intensity.

Consideration of other factors also tends to confirm that present use of SVADA is at a low intensity. The installation is in a rural setting, bordered on one side by the Mississippi River and on other sides by agricultural activities and widely dispersed single-family residential sites. The SVADA conventional ammunition storage mission, characterized by the static storage of materiel, involves minimal collateral activities such as movement, handling, or maintenance of materiel. Minimal electricity and water consumption rates reflect principal support of administrative and maintenance functions, as opposed to production or manufacturing.

3.4.4 Local Reuse Plan

The SVAD LRA reuse plan envisions residential, distribution center, industrial, mixed, and open space use of the surplus property available to the community (SVAD LRA, 1996). As discussed below, the SVAD LRA reuse plan would most closely resemble an LIR scenario. The SVAD LRA reuse plan would use primarily existing facilities in the southern portion of the installation to attract private-sector and public job opportunities. Existing facilities are amenable for use in connection with light industrial, commercial, storage, residential, and administrative activities. The SVAD LRA would also assist potential users of the property in developing facilities specific to their needs. Undeveloped parcels throughout the SVAD LRA area are available to support demand for new construction. It is assumed that full build-out or redevelopment would occur over 20 years.

Facilities in the southernmost portion of the installation provide existing and immediately available assets for SVAD LRA redevelopment. These include administrative buildings (127,000 square feet), instructional buildings (78,400 square feet), family housing (50,500 square feet), troop housing (80,900 square feet), community and recreational facilities (30,100 square feet), health clinic (2,300 square feet), shops and utilities buildings (143,700 square feet), storage buildings (112,200 square feet), and miscellaneous structures (14,500 square feet). Areas historically used as industrial areas by the Army include 8 buildings in the J area (28,000 square feet), 65 buildings in the CF area (188,600 square feet), and 31 buildings at dispersed locations (about 104,000 square feet). The SVAD LRA has determined that industrial-type facilities in two areas used for maintenance of conventional ammunition, the CL and CF areas, are not usable and has classified their location as open space in the reuse plan. Other facilities outside the southernmost areas of the depot and available to the SVAD LRA include 28 warehouses (920,000 square feet), 83 magazines (743,000 square feet), and 31 ammunition storage igloos (61,000 square feet).

Nonresidential space available to the SVAD LRA for redevelopment totals about 2,552,800 square feet. This available space across the entire SVAD LRA area results in an FAR of 0.018. Assuming the SVAD LRA could achieve full use of all these facilities with essentially like-kind activities, this would indicate a low intensity reuse. The SVAD LRA reuse plan, however, designates 1,010 acres for residential use and another 302 acres for open space. Assuming all the built space occurs in the

remaining 1,845 acres designated for distribution center, industrial, and mixed uses, the FAR would be 0.032. This, too, would indicate a low intensity reuse.

Intensity-based probable reuse scenarios based on the SVAD LRA reuse plan can be described. Realization of these scenarios may require several years because of impediments such as encumbrances (see Section 3.2.1), lack of capital, fluctuating market conditions, and competition among development authorities to attract businesses and jobs to their locations.

Table 3-2 identifies major indicators associated with reuse of SVADA at the LIR, MLIR, and MIR levels that could occur as a result of implementation of the SVAD LRA reuse plan. Estimates of residential population are based on provisions of the SVAD LRA reuse plan that provide for only low intensity residential development. Of the 1,010 acres set aside for residential development, it is estimated that 200 acres would be used to support a golf course and resort or conference center. At 1 dwelling unit per acre, there would be about 800 dwelling units. In light of the reuse plan's stated intention to attempt to attract people interested in building retirement homes, it is assumed that each household would have an average of 2.5 persons, resulting in a residential population of 2,000 persons. The time period required to achieve this level of population cannot be reliably estimated.

The residential and employee population estimates shown in Table 3-2 pertain to redevelopment that would occur over 1,010 acres of residential land use areas and 1,845 acres planned for distribution, industrial, and mixed uses. Consistent with the reuse plan's emphasis on use of existing facilities and development of distribution center activities, it is estimated that in the LIR, MLIR, or MIR scenario

Table 3-2
Reuse Attributes

Reuse Intensity	Residential Population[1]	Square Feet per Employee (General Space)	Square Feet per Employee (Warehouse Space)	Floor Area Ratio	Square Feet in Use	Employee Population
LIR	2,000	> 800	> 15,000	0.025	2,009,205	728
MLIR	2,000	601-800	8,001-15,000	0.05	4,018,410	1,040
MIR	2,000	401-600	4,001-8,000	0.10	8,036,820	5,625

[1] The population figure of 2,000 represents full build-out.

three-fourths of all nonresidential space would be warehouse and storage space. Except for the residential component of the reuse plan, SVADA's facilities would, in large part, accommodate the LIR or MLIR scenario. Attainment of MIR would require a nearly 100 percent increase in additional built space over that which presently exists at the installation.

3.5 ALTERNATIVES NOT TO BE ADDRESSED IN DETAIL

Medium-High and High Land Use Intensity. Medium-high intensity reuse of the surplus property available for redevelopment would involve an FAR of at least 0.30 applied to the 1,845 acres designated for distribution center, industrial, and mixed uses. This would result in 24,110,460 square feet of space. Assuming that three-fourths of the space would be warehousing, there would be more than 27,300 employees. This number of employees exceeds the 1990 population of 21,821 residents in Jo Daviess County. This magnitude of redevelopment would be wholly inconsistent with surrounding land uses and would represent an unrealistic outcome of reuse. Accordingly, an MHIR is not feasible and is not further evaluated. For similar reasons, based on even more unlikely employment levels, the HIR scenario is not feasible and is not further evaluated.

SECTION 4.0: AFFECTED ENVIRONMENT

4.1 INTRODUCTION

Section 4.0 describes the environmental and socioeconomic conditions at SVADA as they were in July 1995. It provides information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes resulting from implementation of the proposed action. Impacts of the proposed action and alternatives are discussed in Section 5.0.

4.2 LAND USE

4.2.1 Regional Geographic Setting and Location

SVADA is located in Jo Daviess and Carroll Counties in northwestern Illinois, approximately 8 miles north of Savanna, Illinois. The installation comprises 13,062 contiguous acres. Most of the installation is composed of ammunition storage areas and the Mississippi River "bottomlands" located in Jo Daviess County. The remainder of the installation consists of administrative areas and ammunition plants and is located in Carroll County.

4.2.2 Installation Land and Airspace Use

SVADA is the host to six tenant activities: U.S. Army Defense Ammunition Center and School (USADACS), Occupational Health Nursing Office, Defense Reutilization and Marketing Office (DRMO), 300th Quartermaster Company, Defense Printing Service (DPSDO), and an Agricultural Outlease Program for cattle grazing.

The installation consists of improved, semi-improved, and unimproved grounds. There are approximately 300 acres of improved grounds encompassing the headquarters, training, research, maintenance, medical, troop housing, and community and family housing areas. The approximately 4,162 acres of semi-improved grounds consist of the ammunition storage and plant facilities and include areas of wetlands, forest, and sand prairie. Most open areas of the semi-improved grounds are grazed by cattle. Unimproved grounds on the depot, comprising approximately 8,600 acres, include the Mississippi River backwater complex, as well as portions of the sand prairie, oak savanna, and upland forest communities.

Land use categories within the property include administrative, housing, storage, training, recreation, service areas, shops, a heliport, a hospital, and special weapons storage (Figure 4-1).

SVADA has 923 permanent and semi-permanent buildings, 437 ammunition storage igloos, 156 above-ground magazines, and 28 general supply warehouses (SAIC, 1996). The buildings cover 4,165,827 square feet with about 132,000 square feet of office space. Housing areas are divided into family housing, troop housing, and bachelor housing. There are 31 military family housing units within 10 buildings and 16 troop housing buildings (SVAD LRA, 1996). Other housing is available in Jo Daviess and Carroll Counties.

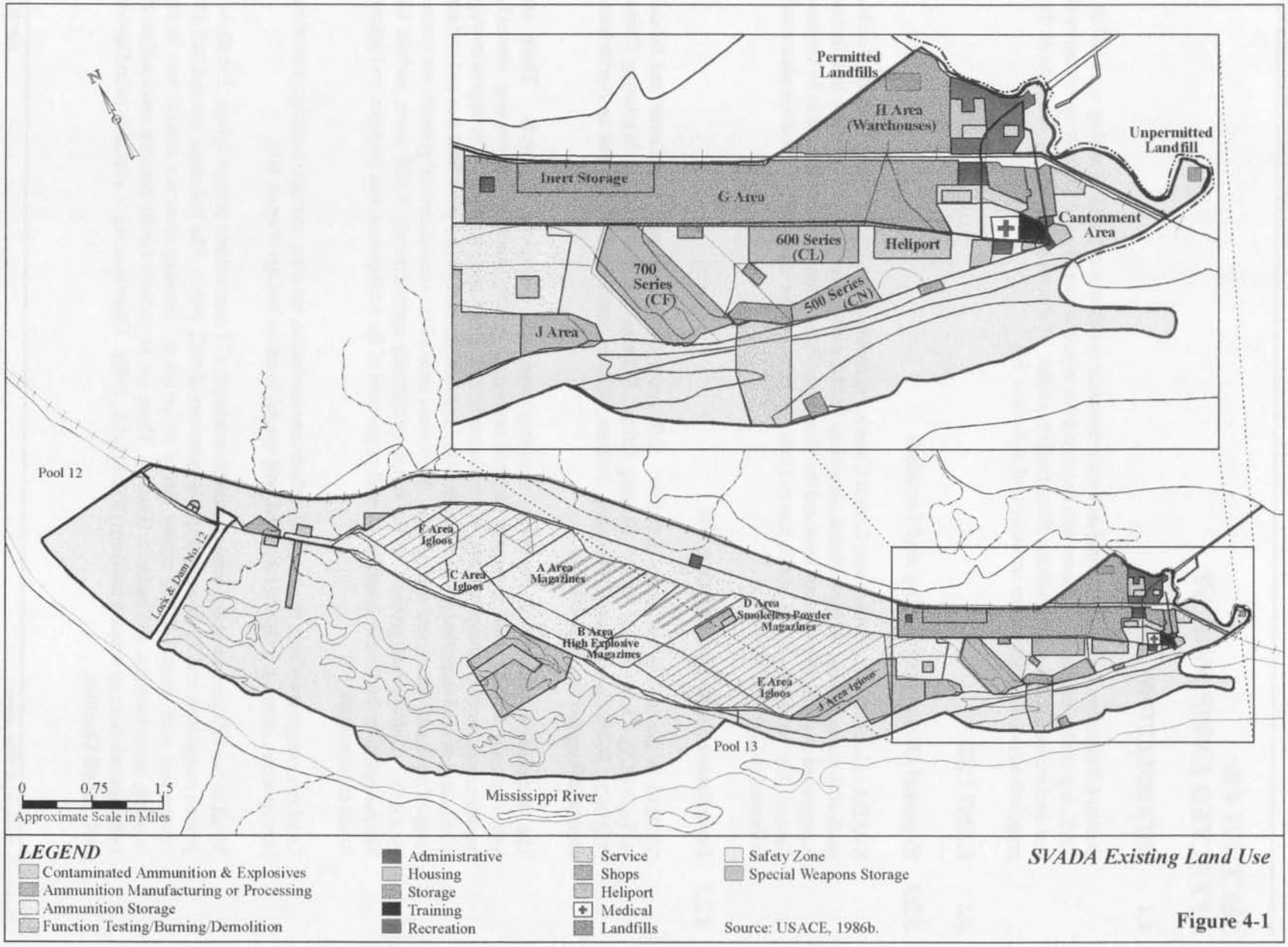

N
Permitted Landfills
H Area (Warehouses)
Unpermitted Landfill
Inert Storage
G Area
Cantonment Area
600 Series (CL)
Heliport
700 Series (CF)
500 Series (CN)
J Area
Pool 12
Lock & Dam No. 12
E Area Igloos
C Area Igloos
A Area Magazines
D Area Smokeless Powder Magazines
B Area High Explosive Magazines
E Area Igloos
J Area Igloos
Pool 13
Mississippi River
0 0.75 1.5
Approximate Scale in Miles
LEGEND
Contaminated Ammunition & Explosives
Ammunition Manufacturing or Processing
Ammunition Storage
Function Testing/Burning/Demolition
Administrative
Housing
Storage
Training
Recreation
Service
Shops
Heliport
Medical
Landfills
Safety Zone
Special Weapons Storage
SVADA Existing Land Use
Source: USACE, 1986b.

Figure 4-1

The cantonment area in the southern portion of the installation contains office buildings, storage buildings and warehouses, and other buildings used for facility maintenance, metal and woodworking shops, housing, recreation, and dining. About 6,000 acres along the Mississippi River, characterized as bottomlands, are generally undevelopable due to inundation by the river and receive limited use. The remaining central and northern portions of the installation contain igloos used for ammunition storage and aboveground magazines.

SVADA provides a wide variety of recreational activities for employees and their families. Recreational facilities including swimming pools, basketball and tennis courts, softball fields, a youth center, a bowling center, a post theater, a gymnasium, and other recreation areas for campgrounds, fishing, and hunting (SAIC, 1996).

Airspace use at the installation is not restricted except for over the demolition range and burning grounds, where commercial flights are restricted to 2,500 feet or higher (Bahr, personal communication, 1996a). Helicopter flights over SVADA are infrequent, with approximately four flights occurring per year. Other airspace uses include ammunition testing and demolition.

4.2.3 Surrounding Land and Airspace Use

SVADA is bounded by the Mississippi River to the southwest, the Apple River to the south and southeast, the Burlington Northern Santa Fe Corporation railroad to the east, and the Blanding's Landing Public Recreation Area (owned by the USACE) to the north. The largest nearby towns are Savanna, Illinois (approximately 8 miles to the southeast); Hanover, Illinois (approximately 6 miles to the east); and Bellevue, Iowa (approximately 30 miles to the northwest). Chicago, Illinois, lies 155 miles to the east, and Cedar Rapids, Iowa, 90 miles to the west. Dubuque, Iowa, is 47 miles to the north of SVADA. The Quad Cities region, composed of Davenport and Bettendorf, Iowa, and Rock Island and Moline, Illinois, is 65 miles to the south of SVADA. Galena, a historic district for the region, is located approximately 20 miles to the north.

Agricultural lands border the installation along its southern and eastern boundaries. The major crops in this area are corn, soybeans, wheat, hay, and oats. There is also abundant undeveloped land to the south and east of the installation.

Recreational areas are abundant around the installation, and the region is promoted as a "sportsman's paradise" given its many opportunities for hunting, fishing, hiking, and water sports. These recreational areas are located along the Mississippi River, southeast of Bellevue, Iowa, and include Bellevue State Park, Mississippi Palisades State Park, Upper Mississippi River Wildlife and Fish Refuge, and Green Island State Wildlife Management Area (SAIC, 1996).

4.3 CLIMATE

SVADA has a typical continental climate with cold winters, warm summers, and frequent short-term fluctuations in temperature, humidity, cloudiness, and wind direction. Winds are controlled primarily by storm systems and weather fronts that move eastward and northeastward. Storm systems are most prevalent in winter and spring. Summer thunderstorms are relatively short, and autumn is generally warm, ending abruptly with renewed storm systems in November (SAIC, 1996).

Winter temperatures drop below 0 degrees Fahrenheit (°F) several times each year, and SVADA receives frequent snow. The soil freezes to a depth of approximately 2 feet below the ground surface. The ground might remain snow-covered for weeks at a time. Average annual snowfall is 30 inches, with heavy snows of 4 to 6 inches occurring once or twice a year. Moderate to heavy ice storms occur once every 4 to 5 years. Damaging winds may develop into tornadoes at any time of year, but tornadoes are more likely to occur from March through June (SAIC, 1996).

The temperature rises to 90°F or above at least 20 days of the year. Extreme heat and humidity seldom last more than a few days due to the cool air masses moving down from Canada (SAIC, 1996).

Total mean precipitation for December through March is approximately 7 inches in northwestern Illinois. For April through September, mean total precipitation is 21 to 24 inches. February is generally the driest month, and May and June are the wettest. Precipitation during the fall, winter, and spring is generally uniform over large areas. Summer is characterized by short, local showers. Summer thunderstorms might be severe and are sometimes accompanied by hail or destructive wind. Flooding occurs in late winter and early spring and is associated with the breakup of river ice and snowmelt.

4.4 AIR QUALITY

4.4.1 Ambient Air Quality Conditions

Ambient air quality refers to the atmospheric concentration of specific pollutants experienced at a particular geographic location. It is determined by the interaction among three groups of factors: the types, amounts, and locations of pollutants emitted into the atmosphere; the physical processes affecting the distribution, dilution, and removal of these pollutants; and any chemical reactions that transform pollutant emissions into other chemical substances.

As discussed in Section 1.5.2, National Ambient Air Quality Standards (NAAQS) have been set for six "criteria" pollutants (sulfur dioxide, carbon monoxide, ozone, nitrogen oxides, lead, and inhalable particulate matter). The state of Illinois monitors the concentrations of these pollutants and has developed a state implementation plan to ensure that the national standards are achieved and maintained. Areas within the state that fail to meet the NAAQS are designated as "nonattainment areas."

SVADA is located in the Jo Daviess and Carroll County air quality control regions, which are both classified as attainment areas. Both regions have always remained in compliance for each of the NAAQS and generally have good air quality (Davidson, personal communication, 1996; Morris, personal communication, 1996). Air quality is affected by emissions from vehicles, windblown soils, farming activities, and miscellaneous other sources (e.g., construction, fuel-dispensing, and painting activities). Prevailing westerly winds from Iowa also affect the regional air quality; a coal-burning power plant and a corn wet milling plant in Clinton, Iowa, contribute to nitrogen oxide, sulfur dioxide, and inhalable particulate matter concentrations in the Savanna region (Bartachek, personal communication, 1996; Brandt, personal communication, 1996).

4.4.2 *Air Pollutant Emissions at SVADA*

Periodic reports describing emission sources at SVADA are filed with the IEPA. The most recent report on emissions at SVADA identifies sources and provides estimates of pollutants (IEPA, 1995). Emission sources at SVADA include numerous boilers, heaters, and hot air units; six emergency generators; several fuel-dispensing facilities; a contaminated waste processor unit; welding and grinding operations; five paint booths; nine degreasing units; woodworking operations; photographic/printing operations; firefighter training operations; wastewater treatment operations; and pesticide applications. Most of the emission sources are located in or near the cantonment area and are regulated by the depot's federally enforceable state operating permit (#015810AAB). Estimated emissions of criteria pollutants at SVADA for 1995 totaled 2.3 tons of carbon monoxide, 21.8 tons of nitrogen oxides, 4.6 tons of particulate matter, 52.6 tons of sulfur dioxide, and 7.3 tons of volatile organic materials. The IEPA conducted an air quality inspection on January 16, 1996, and reported no deficiencies for the air pollution control operations at SVADA.

An air pollution emissions study conducted for SVADA in 1993 estimated that the total emission of hazardous air pollutants (HAPs) at the depot was 1.87 tons per year (Woodward-Clyde Federal Services, Inc., 1994). Toluene, hydrochloric acid, and chlorine were the three highest quantity HAPs reported to be released. The activities primarily responsible for these emissions were, respectively, painting operations, incineration of TNT-contaminated waste, and treatment of drinking water. Proper storage and handling of the HAPs in accordance with applicable federal, state, and local laws and regulations ensures that threats to the public health and safety are minimized.

In addition to the stationary sources of air pollutants at SVADA, vehicle traffic associated with the installation also contributes to emissions. These emissions result from employees being driven to and from the depot and trucks being used to deliver and distribute ammunition and miscellaneous materials (Melaas, personal communication, 1996c). With a 1995 SVADA workforce of approximately 400 persons and assuming that 20 truck trips are made per working day (Melaas, personal communication, 1996c), the following emissions can be approximated: 9 tons of reactive organic compounds, 10 tons of nitrogen oxides, 12 tons of inhalable particulate matter, 82 tons of carbon monoxide, and 1 ton of sulfur oxides. These emissions were estimated based on EPA emission inventory guidance and the MOBILE and EMFAC7F vehicle emission rate models. Vehicle emission rates were based on typical rates for gasoline and diesel cars and trucks operating in a low-altitude region such as Savanna. Average speeds and travel times were used based on a composite of previous studies representing a mix of rural, suburban, and urban areas.

4.5 *NOISE*

An Installation Compatible Use Zone (ICUZ) analysis was performed for SVADA in 1987 (SVADA, 1987). An ICUZ analysis evaluates noise conditions produced by activities at a military installation and identifies incompatible land uses on or adjacent to the installation. The analysis provides noise contours that are spatial graphic representations of noise levels around a noise-emitting source. The contours are defined by noise zones, which correspond to exposure guidelines. The following description of noise sources and events at SVADA is drawn from the ICUZ analysis and information provided by SVADA employees.

Current noise sources at SVADA include a helicopter landing pad, railway operations, an explosives test range, and an ordnance demolition area. On-base and off-base noise-sensitive land uses are generally far enough from these noise sources to prevent unacceptable noise exposure. Noise complaints from surrounding communities are very infrequent and have declined with the downsizing of the depot (Bahr, personal communication, 1996b). Complaints have typically been associated with activities at the test range and demolition area. There was one noise complaint each year in 1994 and 1995. There were two complaints in 1993 and four complaints in 1992 (Bahr, personal communication, 1996b).

The helicopter landing pad is located just west of the cantonment area. It is used very infrequently, approximately four times per year (Bahr, personal communication, 1996b). It has not been the source of any noise complaints. Rail activities at SVADA (both on the base and along the neighboring rail line) have also never resulted in any noise complaints.

The primary environmental noise sources associated with SVADA are the test range and the demolition area, both of which were designated as having Zone 3 noise conditions in the ICUZ analysis. (DoD guidelines specify that Zone 3 areas are compatible with only industrial and manufacturing land uses. They are not compatible with residential, medical, or educational land uses.) The test range is used to determine if ammunition stored at the depot is functioning properly. Tests are conducted on representative ammunition samples to determine their functional safety, serviceability, and reliability. Normally, no firing of rounds is performed on weekends or at night to minimize adverse noise impacts.

The demolition area, located in the center of the depot's explosives safety area, is used to detonate conventional ammunition that has been declared unserviceable, irreparable, obsolete, or unsafe. The U.S. Army Defense Ammunition Center and School also uses the demolition area for training purposes. To minimize blast noise from the demolition area, the ammunition is detonated at least 4 feet below ground. SVADA personnel also refrain from performing demolition activities during unfavorable meteorologic conditions (such as when a steady wind is blowing toward residential areas) and during nighttime hours or on weekends.

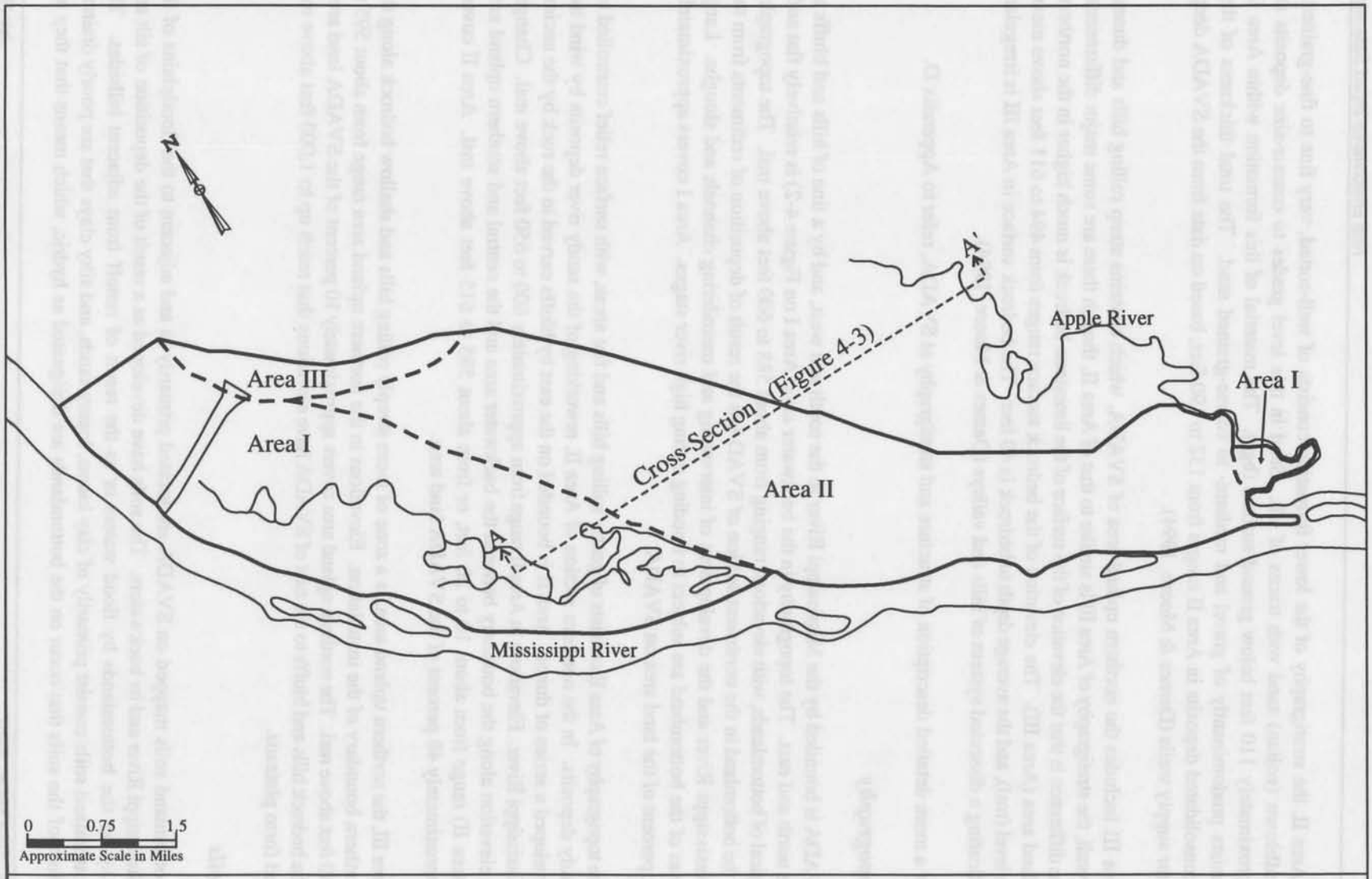
4.6 GEOLOGY

4.6.1 Physiography

SVADA is located in the Driftless Area of the central lowlands of the Interior Plains Physiographic Province. The Driftless Area of the central lowlands was surrounded, but not covered, by the most recent continental glaciation; as such, the region does not have the characteristics typical of glaciated areas of the north-central United States.

4.6.2 Structure and Stratigraphy

The installation can be divided into three physiographic divisions (Figure 4-2). The total thickness of the unconsolidated strata in Area I is approximately 145 to 155 feet. The unconsolidated layers near the surface are composed of clay, silt, and sand, which overlie coarser stream deposits. The underlying deposits are also generally alluvial in origin. Soil of the near surface layers is classified generally as clay with some silt and sand or as sand with varying amounts of silt and clay (SAIC, 1996).



Physiographic Divisions of SVADA

Source: ESE, 1982.

Figure 4-2

In Area II, the stratigraphy of the lower formation consists of well-sorted, very fine to fine-grained, windblown (eolian) sand with traces of silt. Sand in this level grades to coarser-size deposits at approximately 110 feet below ground surface (bgs). The material of this formation within Area II consists predominantly of gravel and medium- to coarse-grained sand. The total thickness of the unconsolidated deposits in Area II ranges from 132 to 190 feet, based on data from the SVADA deep water supply wells (Dames & Moore, 1994).

Area III includes the northern upland area of SVADA, which contains steep rolling hills and dunes. Overall, the stratigraphy of Area III is similar to that of Area II, though there are some major differences. One difference is that the elevation of the surface of the limestone bedrock is much higher in the northern upland area (Area III). The elevation of the bedrock surface ranges from 494 to 611 feet above mean sea level (msl), and the average depth to bedrock is 40 feet. The bedrock surface in Area III is irregular, indicating a dissected system of hills and valleys (Dames & Moore, 1994).

For a more detailed description of structure and stratigraphy at SVADA, refer to Appendix D.

4.6.3 Topography

SVADA is bounded by the Mississippi River to the south and west, and by a line of hills and bluffs to the north and east. The topography in the backwater area (Area I on Figure 4-2) is relatively flat and typical of bottomlands, with elevations ranging from about 588 to 600 feet above msl. The topography of the bottomland in the northwest section of SVADA is the result of deposition of sediments from the Mississippi River and the development of intervening and meandering channels and sloughs. Large areas of the bottomland are subject to flooding during high river stages. Area I covers approximately 42 percent of the land area on SVADA.

The topography of Area II consists of gently rolling hills and flat areas, with surface relief controlled by sandy deposits. In the northern section of Area II, reworking of the sandy river deposits by wind has developed a series of dunes. Area II is bounded on the east by bluffs carved in the rock by the ancient Mississippi River. Elevations in Area II range from approximately 600 to 650 feet above msl. Changes in elevation along the boundary between the backwater area and the central and southern upland area (Area II) range from about 10 to 20 feet, or from about 595 to 615 feet above msl. Area II covers approximately 48 percent of the SVADA land area.

Area III, the northern upland area, is a zone of more steeply rolling hills and shallow bedrock along the northern boundary of the installation. Elevations in the northern upland area range from about 595 to 640 feet above msl. The northern upland area covers approximately 10 percent of the SVADA land area. The bedrock hills and bluffs to the east of SVADA have elevations that reach up to 1,000 feet above msl and form plateaus.

4.6.4 Soils

Bottomland soils mapped on SVADA are located primarily in and adjacent to the floodplains of the Mississippi River and its backwaters. The soils have developed as a result of the deposition of silt and clay on the bottomlands by flood waters or as the result of runoff from adjacent hillsides. The bottomland soils consist primarily of clay loams, loamy sands, and silty clays that are poorly drained. Most of the soils that occur on the bottomlands are designated as hydric, which means that they are

saturated, flooded, or ponded for long enough during the growing season to develop anaerobic (oxygen-deficient) conditions in their upper part. The presence of hydric soils is one of the three criteria used to determine the presence of USACE jurisdictional wetlands—hydric soils, hydrophytic vegetation, and wetland hydrology.

Dominant soils on the bottomlands on SVADA include the Birds silt loam, the Wakeland silt loam, the Algansee fine sandy loam, the Dorchester silt loam, the Sparta loamy sand, and mixed alluvial land. Soils that occur in the upland section of SVADA are predominantly alluvial in nature and are the result of deposition by the Mississippi River. Dominant soils on the uplands include the Sparta loamy sand, the Bloomfield fine sand, the Chelsea series, the Dickinson sandy loam, the Beaucoup silty clay loam, the Orion silt loam, the Raddle silt loam, and the Wakeland silt loam. A more detailed description of these soils and their occurrence on SVADA is provided in Appendix D.

4.7 WATER RESOURCES

4.7.1 Surface Water

The surface water hydrology on SVADA is influenced primarily by rivers and streams, the east-central wetland area, and the backwater (bottomland) areas of the upper Mississippi River. The region of the upper Mississippi River contains much undeveloped land, including part of the upper Mississippi River National Wildlife Refuge on more than 200,000 acres of wooded islands, forest, prairie, marsh, and water. These lands extend 261 miles south from Wabasha, Minnesota, to just above Rock Island, Illinois.

Higher elevations on and to the northeast of SVADA form the drainage divide between the Apple River and the Mississippi River. Runoff from the Hanover bluffs to the northeast of SVADA drains onto the depot.

At least six streams flow onto SVADA from the bluffs to the north and east. Beaty Hollow, the only known perennial stream on the installation, flows to the southwest across the northern section of SVADA into the bottomland area and discharges into Prairie Lake, a component of the Crooked Slough backwater complex. An intermittent stream flows from the higher elevations to the northeast onto SVADA, where it flows northwest along the Burlington Northern Railroad and then southwest. The brook empties into Straight Slough, which forms the eastern boundary of the Crooked Slough backwater complex. Five other intermittent streams flow onto SVADA from the northeast uplands. Three of the streams combine and flow to the east, generally along the Burlington Northern Railroad, and empty into the east-central wetland area, which is located between the railroad and Shinski Road. The remaining two intermittent streams flow to the southwest onto SVADA and into the east-central wetland area (SAIC, 1996).

The east-central wetland area is approximately 50 acres in size. It is located in the central section of SVADA along the eastern boundary. Three intermittent streams contribute runoff to the area. Water accumulates due to the presence of slowly permeable soils, resulting in seasonal inundation and saturated soil conditions that generally last throughout the year.

Two Mississippi backwater areas are located within the boundaries of SVADA. The backwater areas include the Crooked Slough complex and another smaller area located near the mouth of the Apple River.

They consist of braided and meandering sloughs and isolated catchments. Surface water elevations are close to those of the Mississippi River and are subject to seasonal flooding (SAIC, 1996).

The Crooked Slough complex encompasses approximately 40 percent of SVADA and includes Crooked Slough, Straight Slough, and Prairie Lake. The largest component of the complex, Crooked Slough, generally flows south-southeast through the center of the backwater area (SAIC, 1996). During high river stages water flows from Pool 12, down a 1,400-foot spillway located on Lock and Dam No. 12, and into Pool 13. Water from the spillway flows into the Crooked Slough complex. During periods of low flow, water flows from Pool 13 into Crooked Slough at the northwest corner of the backwater area and in the central depot area at the mouth of Crooked Slough.

Straight Slough is located on the eastern boundary of the Mississippi River backwater area adjacent to the uplands. It is the main channel that connects large areas of the eastern depot backwater system with the Mississippi River.

The backwater complex located adjacent to the mouth of the Apple River consists primarily of the Ordnance School Lake and a smaller impoundment. The Ordnance School Lake is approximately 30 acres in size and is bounded on the north by the Burlington Northern Railroad, on the west by the facilities area of SVADA, and on the south by the Apple River. The lake is an oxbow feature of the Apple River and is connected to it by a drainage channel located at its southern end (SAIC, 1996). Runoff from the southeastern section of SVADA flows into the lake.

The smaller impoundment is about 1 acre in size and is located next to the Burlington Northern Railroad, approximately 400 feet north of the railroad bridge that crosses the Apple River. The impoundment receives water primarily from storm water runoff and groundwater discharge.

There are no pronounced drainage patterns on most of SVADA. The western half drains directly or indirectly by sloughs into the Mississippi River. Runoff from the central section of SVADA flows to the southeast along the eastern boundary into the Apple River. Drainage in the southern section is to the north into a broad depression, where it either infiltrates the soil or is directed by storm drains into the Apple River.

A storm sewer system provides drainage for the various sections of the southern depot. The system consists of 10-inch and 12-inch vitrified clay with bell joints. There are 17 brick and concrete catch basins with steel covers. A 30-inch storm sewer also runs from near the intersection in front of the fire station (Building 100), past the garage (Building 103) and central heating plant (Building 114), and empties into the slough area (USACE, 1986a).

Storm water on the remainder of SVADA is drained into the Mississippi River, the Apple River, creeks, sloughs, and low spots. Because soil textures on SVADA are predominantly sandy, infiltration rates are rapid and water that drains to low areas dissipates at a fairly rapid rate.

On July 1, 1992, SVADA applied for an individual Stormwater Discharge Permit. IEPA notified SVADA on January 5, 1995, that an NPDES permit was not required under 40 CFR Part 122 because the Standard Industrial Classification code on SVADA's application was not listed in the storm water regulations (SAIC, 1996).

4.7.2 *Hydrogeology/Groundwater*

Shallow groundwater in the central and southern sections of SVADA occurs in the sandy deposits of the Parkland sand and Cahokia alluvium. In the northern section of SVADA, groundwater first occurs in the shallow bedrock of the Galena dolomite. These aquifers have the greatest potential to be affected by activities at SVADA because they are generally unconfined, except near the old lagoons and the bomb disassembly plant in the northern bottomland area, where a layer of soft clay overlies the sand and creates a localized confined condition. Groundwater flow in the shallow unconfined aquifer in the northern and central section of SVADA is predominantly to the southwest, toward the Mississippi River and bottomland of Crooked Slough, although seasonal variations occur. In the extreme southern area of SVADA, groundwater flows in a radial pattern northeast toward the Apple River and southeast toward the Mississippi River (SAIC, 1996).

Based on hydrogeologic data and consistent with the geologic subdivisions, SVADA can be divided into the three general areas shown in Figure 4-2 and described in Section 4.6.3. Each area exhibits unique hydrogeologic characteristics due to differing environmental settings. A generalized geologic cross section through the central depot area is shown in Figure 4-3. Within SVADA, unconsolidated sediments, ranging in geologic age from Pleistocene to Recent, overlie Ordovician dolomitic bedrock of the Galena group (Dames and Moore, 1994).

The hydrogeology of Area I, which includes the backwater area and present floodplain of the Mississippi River, is bisected by Crooked Slough and a number of smaller associated sloughs and isolated catchments. Because the backwater complex is subject to seasonal flooding by the Mississippi River, it experiences low surface flow, and therefore numerous groundwater discharge seeps occur along land/water interfaces through the predominantly sandy deposits.

Overall, water levels and flow directions in the backwater area of SVADA are determined completely by the variable low and high stages of the Mississippi River. Rising river stages will hinder, stop, or reverse groundwater movement toward the river. During high river stages, groundwater flows generally east toward SVADA with a southeast downstream component, which reflects the surge of higher flood waters upstream. Falling river stages encourage groundwater flow toward the river. Given the short duration of yearly flooding, and the southwestern slope of groundwater surface, the net long-term direction of groundwater flow is toward the river with a downstream component within the backwater area.

The hydrogeology of Area II, which includes the central and southern upland areas, is strongly controlled by the rivers and sloughs bordering the uplands. Features that directly affect the hydrogeology include the Mississippi River, Straight Slough, and Crooked Slough to the south and west and the Apple River to the east. These rivers and sloughs provide large areas for the recharge and discharge of shallow groundwater in the uplands. Permeable sandy deposits in the Parkland formation in Area II result in the relatively rapid infiltration of surface water and the discharge of groundwater along the banks of the river and sloughs. In addition, groundwater stored in the elevated bluffs northeast of the uplands provides a large vertical hydraulic effect, and groundwater recharge into the Parkland aquifer also occurs as the result of vertical leakage. The depth to groundwater in this area typically ranges from 5 to 50 feet bgs (Dames & Moore, 1994).

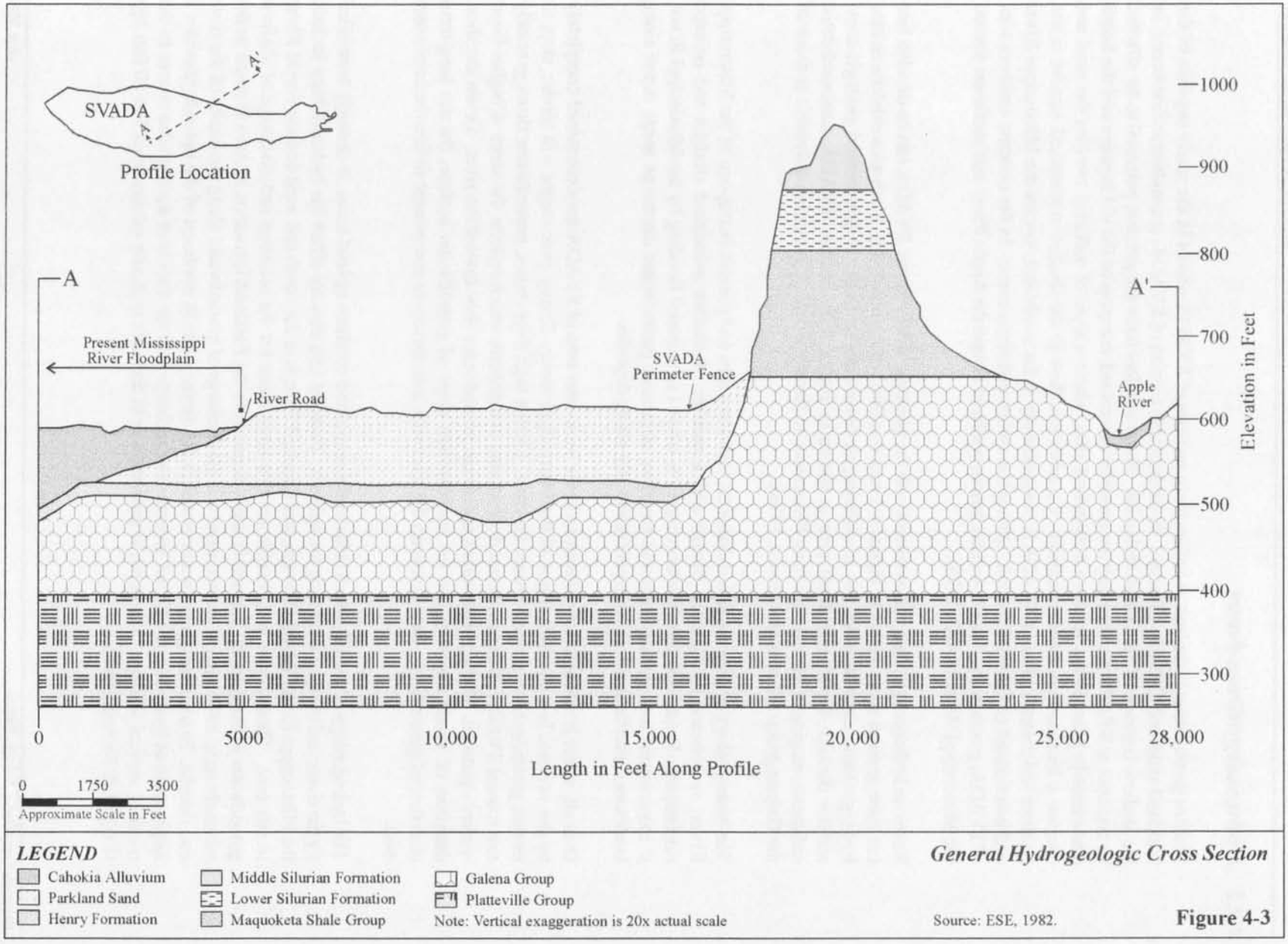

SVADA
A
A'
Profile Location
A
A'
Present Mississippi River Floodplain
River Road
SVADA Perimeter Fence
Apple River
1000
900
800
700
600
500
400
300
Elevation in Feet
0
5000
10,000
15,000
20,000
25,000
28,000
Length in Feet Along Profile
0 1750 3500
Approximate Scale in Feet
LEGEND
Cahokia Alluvium
Parkland Sand
Henry Formation
Middle Silurian Formation
Lower Silurian Formation
Maquoketa Shale Group
Galena Group
Platteville Group
Note: Vertical exaggeration is 20x actual scale
General Hydrogeologic Cross Section
Source: ESE, 1982.

Figure 4-3

The hydrogeology of Area III, which includes the northern upland area, is characterized by a consistent direction of groundwater flow toward the southwest throughout seasonal changes in the Mississippi River stage height. Shallow groundwater occurs more commonly in the Galena dolomite aquifer than in the sandy deposits of the Parkland aquifer in Area III. Numerous solution cavities and fracture zones were observed in dolomite cores retrieved from the Galena formation during well installation activities in Area III. Groundwater flow through such openings may be much faster than would be indicated by the gradient and bulk hydraulic conductivity. The depth to groundwater in northern upland area ranges from 12 to 52 feet bgs (Dames & Moore, 1994).

Regionally, there are at least three general bedrock sources of potable groundwater in the vicinity of SVADA. The Galena formation, which was formed 440 million to 500 million years ago, is approximately 120 to 215 feet thick at SVADA and lies below the sandy deposits of the Mississippi River Valley (SAIC, 1996). The aquifer, which consists of fractured limestone, is unconfined and, to varying degrees, is connected with the overlying sand. Just east of SVADA, in the upland plateaus of central Jo Daviess County, the aquifer is locally confined by overlying shale (Dames & Moore, 1994). It is recharged both by vertical seepage through overlying sandy deposits on SVADA and by rainfall in northern Jo Daviess County, where the Galena formation is exposed at the surface.

The majority of private water wells within 1 mile of SVADA pump from the Galena formation (SAIC, 1996). These wells yield moderate quantities of water that are sufficient for household use.

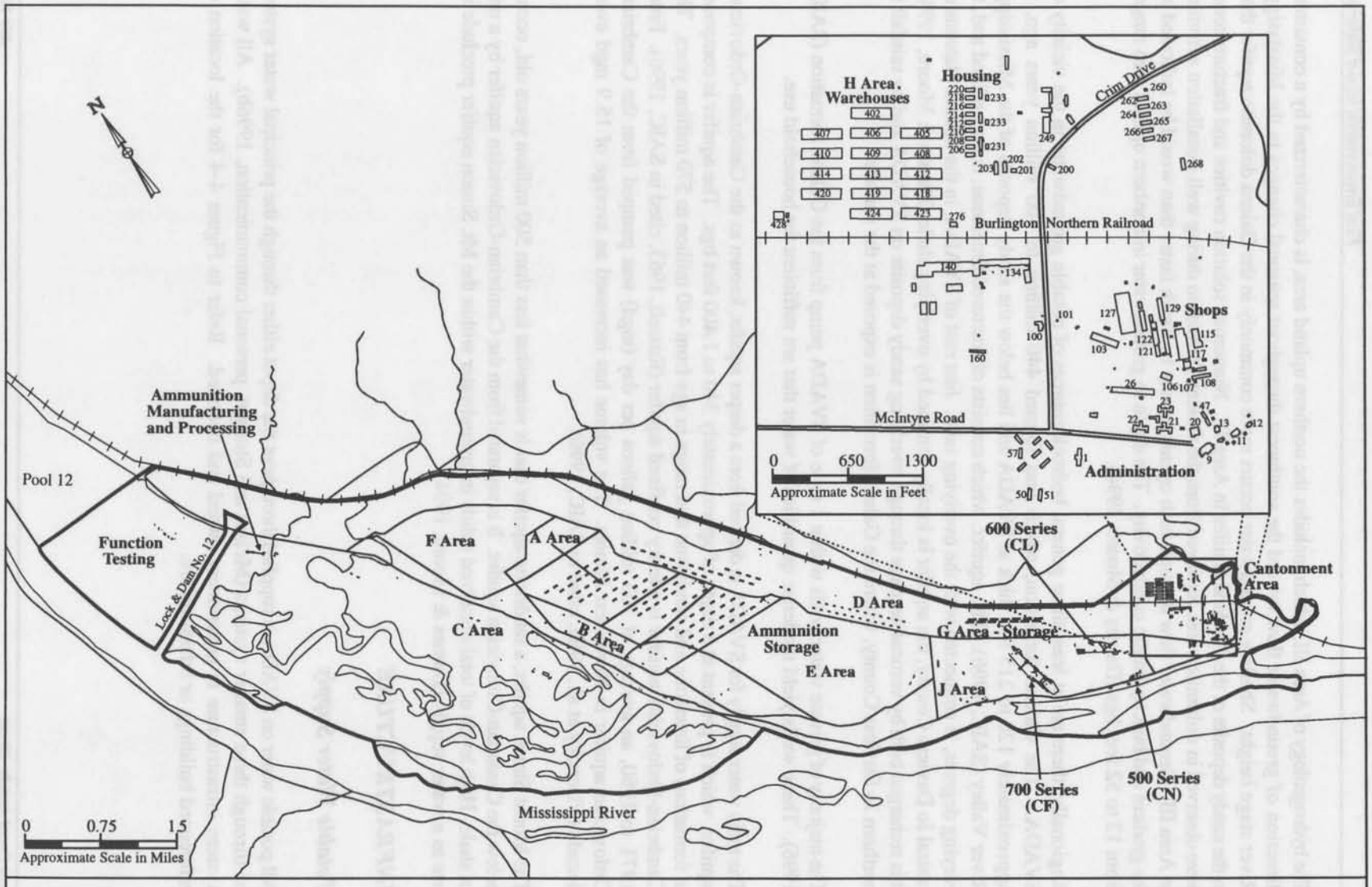
The main water supply for SVADA is derived from a deeper aquifer, known as the Cambrian-Ordovician aquifer, which is present at a depth of approximately 340 to 1,400 feet bgs. The aquifer is composed of formations of limestone and sandstone that range in age from 440 million to 570 million years. The Cambrian-Ordovician aquifer is a leaky confined aquifer (Russell, 1963, cited in SAIC, 1996). From 1971 to 1980, an average of 103 million gallons per day (mgd) was pumped from the Cambrian-Ordovician aquifer in Northwest Illinois. The volume has increased an average of 15.9 mgd every decade (Viscocky et al., 1985, cited in SAIC, 1996).

The Mount Simon aquifer, a sandstone aquifer that is somewhat less than 500 million years old, occurs below the Cambrian-Ordovician aquifer. It is separated from the Cambrian-Ordovician aquifer by a unit of shale. High levels of total dissolved solids in groundwater within the Mt. Simon aquifer preclude its use as a water supply (Dames & Moore, 1994).

4.8 INFRASTRUCTURE

4.8.1 Potable Water Supply

All potable water on SVADA is supplied throughout the depot either through the principal water system or through three smaller systems (Melaas and Straight, personal communication, 1996b). All water system infrastructure is government owned and operated. Refer to Figure 4-4 for the location of referenced buildings or infrastructure.



LEGEND

— SVADA base boundary

Note: Numbers refer to building IDs.

Source: SAIC, 1996.

SVADA Building Locations

Figure 4-4

Main System. The main potable water system at SVADA serves the entire lower post and extends to the ammunition area. There are four wells in the system, one of which is inoperable. A detailed description of all four wells is included in Appendix D. The working deep wells that currently serve the main water system are located in Buildings 260, 107, and 170. Building 645 houses the fourth well in the system, but this well does not currently serve the system due to a lack of controls on the pump control panel and aboveground piping connecting the system (Melaas and Straight, personal communication, 1996b). There are approximately 140,000 linear feet (LF) of water pipes on SVADA. The main system is looped and sublooped in and around the lower cantonment area, the 600 Series area, and the 700 Series area. Loops in building areas are predominantly cast iron pipe ranging between 4 and 12 inches and are interconnected to other building areas by either cast iron or transite distribution pipes, ranging up to 12 inches in size. The system was installed between 1921 and 1956, with the large majority built in 1941 (Melaas, personal communication, 1996d). Since the system has had only minor upgrades since its original installation, its condition can be described as fair.

The main system is operated by four pumps controlled by an automatic control transmitter located in an elevated tank in the G area (Building 904). Currently, only three of the four pumps are operable. The three operable pumps work in sequence on a 6-hour rotating basis. The system operates at an average of 70 pounds per square inch (psi). As the water pressure lowers in the elevated tank, the transmitter activates the controls in the main pump receiver located in one of the wellhouses. As the water demand increases, another pump is activated at a second well. All three pumps are capable of operating simultaneously (Melaas and Straight, personal communication, 1996a; USACE, 1986a). Manual operation controls for all pumps are installed in Building 100, the Fire Station.

Usage. The major use of water on SVADA is domestic. The main system has a water pumping capacity of 2,736,000 gallons per day (gpd). In Fiscal Year 1995 (FY95), 105,000 gpd were used, leaving available a reserve of 2,631,000 gpd. The FY95 usage was low compared to that of former years due to downsizing of the depot staff. In 1994, for example, the average daily demand was 191,000 gpd.

Water from each well is treated by chlorination and fluoridation, and with polyphosphate at the well head (Melaas and Straight, personal communication, 1996b). Potable water is treated with polyphosphate because rust has been detected in the water. The presence of rust is likely to be associated with system age and underuse.

Elevated Water Storage Tank. The water storage tank, Structure 904, was constructed in 1950 and upgraded in 1991. The tank has a capacity of 250,000 gallons, but only 100,000 gallons are currently being pumped. The result of underusing the available water has been an unpleasant taste because the excess water remains in the storage tank too long (Melaas and Straight, personal communication, 1996a).

Additional Systems. In addition to the main system, three smaller systems, each operated by one well, serve those facilities located in the middle and upper ends of the depot and act as alternative water supplies for SVADA. These smaller systems provide water to outlying facilities and are not connected to the main system. Each system is shot-chlorinated and tested for bacteria once a year (Melaas and Straight, personal communication, 1996b).

Twelve other wells are located throughout the depot grounds. Two of these wells do not have provisions for chlorination at their well heads and therefore are not considered potable (Melaas, personal

communication, 1996b). Four of the twelve wells are pumped by windmills and are used for cattle watering purposes only. The remaining six shallow and deep wells supply water to outlying areas of SVADA. SVADA is currently in compliance with EPA health-based standards established under the Safe Drinking Water Act.

Fire Protection. There are approximately 185 fire hydrants on the depot that provide fire protection to the built-up area and the ammunition workshops. No water is available for firefighting in ammunition bunker areas. The water system available for firefighting is looped with one 250,000-gallon elevated tank. There are four deep wells cycled to an Autocon distribution system. The total output of the wells is 1,900 gallons per minute (gpm).

4.8.2 Wastewater Treatment

SVADA has one sanitary wastewater system, which is Army owned and operated. Several locations on SVADA have individual sewer systems with gravity disposal and septic tanks or Imhoff tanks and leaching beds or drain fields. Several small septic systems are located at individual buildings. Every 1 to 2 years, sludge from the sewage treatment plant is spread on the depot grounds near the J area (Melaas and Straight, personal communication, 1996a; Roberts, personal communication, 1996a).

Main System. The main wastewater treatment plant connects 80,000 LF of sewage lines. The Lower Post Treatment Plant in Building 275 uses the Jenks Process treatment system, which is capable of purifying 75 to 90 percent of the total volume at a secondary level and serves the entire lower post. The plant has a pump house, primary and secondary settling tanks, two trickling filters, and a digester. Although there are several cracks in the cement, no structural or functional problems are associated with the plant. Pumps at the plant were updated approximately 15 years ago, and a new aerator was recently installed in one of the tanks. In 1996, SVADA received a permit not to chlorinate its sewage effluent because bacterial concentrations were below chlorination requirements (Roberts, personal communication, 1996a).

The sewage treatment plant is located upslope from the Apple River, into which it discharges, and has been subjected to flooding. In 1971, the plant was diked to prevent future flooding and damage. Two 2,500-gpm pumps control flood water within the dike (Melaas, personal communication, 1996b).

All gravity sewer lines are constructed of vitrified clay tile with mortar joints (except in the 500 Series, where bituminous joints are used). Force mains are constructed of transite pipe. Collection is through 10- and 12-inch vitrified clay pipe, and laterals are 6- and 8-inch vitrified clay tile with mortar joints. Infiltration is minor. Two lift stations are located in the troop housing area. Each lift station is driven by two electrical centrifugal sewage pumps, and each pump has a capacity of 350 gpm.

Usage. There is no minimum flow required to maintain the functions of the sewage treatment plant (Roberts, personal communication, 1996a). In 1995, SVADA generated 63,000 gpd of wastewater, which was lower than the usage when SVADA was operating at full capacity. The design capacity of the system is 300,000 gpd, leaving 237,000 gpd excess capacity.

Industrial Wastewater Treatment. A former industrial wastewater plant and its corresponding wastewater lagoons are present on the depot. The industrial wastewater treatment plant, constructed in

1956, is located between the 600 Series area and the Mississippi River and serves the 500 Series, 600 Series, and 700 Series areas. This plant has not been used in approximately 20 years and is largely overgrown by vegetation. The industrial wastewater system has a 9,000-LF collection system consisting of 8-inch vitreous clay pipes (Melaas and Straight, personal communication, 1996b). Capacity at the plant is 60,530 gpd. The system has not been in use for over 20 years, and deterioration to the system has occurred such that it is no longer operable.

Septic Systems. Several buildings throughout the depot property contain onsite sewage disposal systems. These areas include the Gatehouse; 500, 600, and 700 Series; the G area; and Buildings 1007, 1017, 1023, 2208, and 2212.

4.8.3 Solid Waste Disposal

SVADA generates approximately 14.2 tons of solid waste monthly. Of this total, the contents of an average of two 30-cubic-yard roll-off dumpsters are disposed of each month (Melaas and Straight, personal communication, 1996b). Scrap metal is segregated from the solid waste stream and is sold through the Defense Reutilization Marketing Office (DRMO). Scrap wood is recycled by making it available to the public for purchase. There is no formal program for recycling of office wastes such as cans, paper, or other office supplies. Since September 1993, all solid waste generated on the depot has been disposed of by Mooring Disposal, Freeport, Illinois, which transports the waste approximately 50 to 60 miles to a transfer station.

4.8.4 Landfills

Until 1993, solid waste management on SVADA consisted of a 10-acre landfill located in the northern section of the H area (Figure 4-1). The landfill consisted of two cells constructed with a 5-foot-thick clay liner. Cell 1 was filled with approximately 15,700 cubic yards of municipal-type waste. Cell 2 was partially filled to nearly two-thirds capacity with approximately 10,000 cubic yards of waste. Both cells were closed in 1993 and covered with a 2-foot final cover (Melaas, personal communication, 1996b). The landfill is licensed by the State of Illinois and has eight monitoring wells installed for monitoring leachate. Six of the eight monitoring wells are sampled quarterly; two are not sampled because the wells are too far from the landfill. Landfill contaminants have never been discovered in any of the wells (Melaas, personal communication, 1996c).

Old landfill cells are located north of the H area and west of the closed sanitary landfill between Shinske Road and the installation fence line. Soil was removed from this area in the early 1970s and hauled to cover the solid waste disposal areas of the abandoned landfill. After the closure of these cells in the early 1970s, approximately 8 to 10 unlined trenches were dug in the vicinity of the H area and used for solid waste disposal. This solid waste consisted of office and household wastes. The trenches were used until 1984, when two clay-lined cells were permitted by IEPA for solid waste disposal. According to a 1977 SVADA Technical Data Report, approximately 19,600 cubic yards of solid waste were disposed of in these trenches during 1977. The total volume of solid waste disposed of at this location is unknown.

An abandoned landfill occupies 3 acres along the extreme southern edge of SVADA, near the Apple River. The landfill was used from 1920 to the late 1960s/early 1970s. There are no records that describe the types of wastes disposed of at this site (Dahlman, 1996; Dames & Moore, 1992; ESE,

1982; USAEHA, 1988; all cited in SAIC, 1996). Soil sampling in the vicinity of the abandoned landfill has indicated the presence of polycyclic aromatic hydrocarbons, as well as other semivolatiles. Remediation of the site is scheduled for Fiscal Year 2030 (see also Section 4.9.4).

The Stables Landfill is an abandoned disposal area behind the old stables, located near the installation boundary in the southeastern portion of the installation along the Apple River. There are no known disposal records available for this area.

4.8.5 *Incineration*

The Explosive Waste Incinerator (EWI) is located in Building 2217, southeast of the Contaminated Waste Processor (CWP), Building 2215. The EWI was constructed in 1979 to destroy off-specification and outdated munitions and to dispose of bulk propellants and explosives wastes generated during manufacture and assembly. The EWI was never put into operation because SVADA never received a RCRA Part B Hazardous Waste Permit for its use (SAIC, 1996). The costs to upgrade the EWI to meet permit standards were too high, so the Army decided not to pursue the permit. The CWP is still used but has been temporarily shut down until the fiberglass insulation is replaced (Irwin, personal communication, 1996; Melaas and Straight, personal communication, 1996b).

Materials taken from the burning grounds, such as munitions fragments and undetonated explosive material, are brought to the CWP to be "flashed." This process removes residues from metal fragments. Decontaminated metals are sent to the DRMO for disposal or reuse.

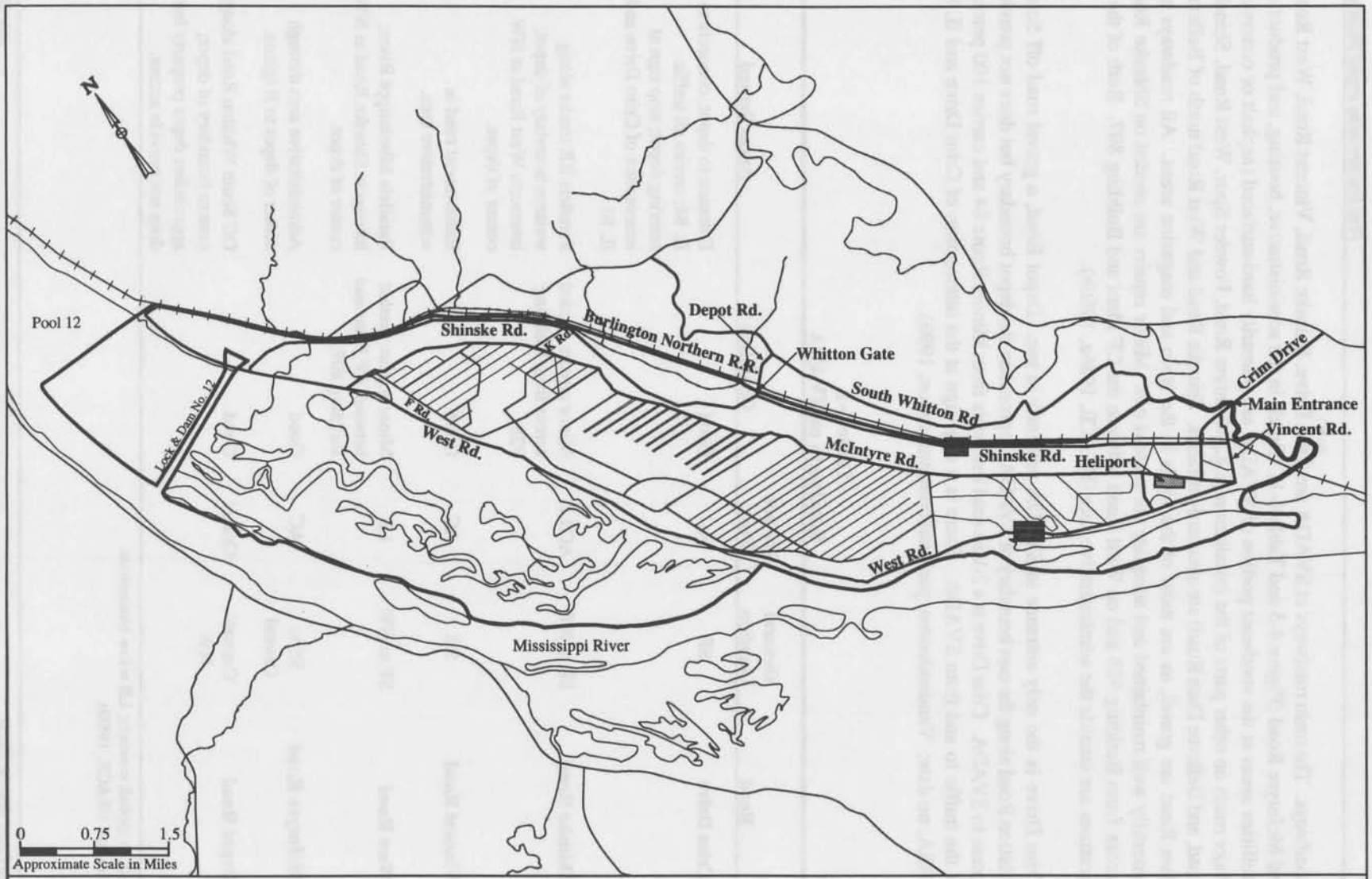
Typically, SVADA generates up to 35 tons of decontaminated metals each year. In 1996, with the initiation of cleanup efforts on the installation, the depot generated approximately 30.75 tons (Irwin, personal communication, 1996).

4.8.6 *Traffic and Transportation*

Existing roadways serve as the primary transportation system for SVADA. The region of influence (ROI), Jo Daviess and Carroll Counties, in which most SVADA employees live and work, includes the regional and local highway system serving SVADA.

The installation has approximately 140 miles of roads and streets and 72 miles of railroad tracks. Burlington Northern railways run along the eastern boundary of SVADA (Figure 4-5). There is a heliport on the northeast portion of the installation that can accommodate helicopters up to the size of the CH47 (Chinook) Helicopter. There is no airfield on the installation.

Chicago O'Hare International Airport is approximately 150 miles northeast of the installation, and Quad Cities Airport is 65 miles to the south. Clinton, Iowa, has air service 27 miles to the south; Dubuque, Iowa, has an airport 47 miles to the north; and a small airport servicing Savanna, Illinois, is located 10 miles to the south.



LEGEND

- Major roads (labeled) on or near depot
- Areas where repairs are needed
- SVADA base boundary

Source: SAIC, 1996.

SVADA Local Transportation Network

Figure 4-5

Roadways. The main roadways at SVADA are Crim Drive, Shinske Road, Vincent Road, West Road, and McIntyre Road (Figure 4-5 and Table 4-1). Roads in the administrative, housing, and production facilities areas at the southeast portion of SVADA are primarily hard-surfaced (asphalt or concrete). Major roads on other parts of the installation (e.g., McIntyre Road, Powder Spur, West Road, Shinske Road, and Bellevue Dam Road) are also hard-surfaced. Shinske Road and West Road north of Bellevue Dam Road are gravel, as are most of the roads in the igloo and magazine areas. All roadways are generally well maintained and adequate for present use. Minor repairs are needed on Shinske Road across from Building 928 and on West Road between the CF Plant and Building 807. Both of these locations are outside the administrative area (USACE, 1986a, 1986b).

Crim Drive is the only entrance to SVADA presently in use. Depot Road, a gravel road off South Whitton Road along the east boundary of SVADA, approaches the depot boundary but does not provide access to SVADA. Crim Drive is a 2-lane road that leads from Illinois Route 84 and carries 100 percent of the traffic to and from SVADA. There is a stop sign at the intersection of Crim Drive and IL 84 (MSA, no date; Vandendooren, personal communication, 1996).

Table 4-1
Roadways on SVADA

Road	General Location	Surface Type	Condition	Areas Served
Crim Drive	SE	AC	Good	Entrance to depot; connects to IL 84; carries all traffic entering depot; stop sign at intersection of Crim Drive and IL 84.
Shinske Road	SE to NW	AC/LB	Minor repairs needed across from Building 928.	Parallels RR tracks along western boundary of depot; intersects West Road at NW corner of depot.
Vincent Road	SE	AC	Good	Easternmost road in administrative area.
West Road	SE to NW	LB	Minor repairs needed between CF Plant and Building 807.	Parallels Mississippi River; intersects Shinske Road at NW corner of depot.
McIntyre Road	SE to Central	AC	Good	Administrative area through center of depot to E igloos.
Depot Road	Central/ NW	Gravel	Good	Off South Whitton Road along eastern boundary of depot; approaches depot property but does not provide access.

AC = asphalt concrete; LB = low bituminous.
Source: USACE, 1986b.

The major highways serving the installation are U.S. Highway 20, which lies 9 miles to the north of SVADA; Interstate 80, which lies 50 miles to the south; and Illinois Route 84, which provides U.S. Highway 52 a north-south arterial that runs south along the Mississippi River from Dubuque, Iowa, and crosses the river at Savanna, Illinois (Figure 4-6).

Existing Traffic Conditions. In the baseline year of 1995, 421 employees were stationed at SVADA. Virtually all employees commuted to their jobs on the base. Approximately 22 percent lived in Jo Daviess County, 50 percent lived in Carroll County, 5 percent lived in other Illinois counties, 21 percent lived in Iowa, and 2 percent lived in Wisconsin. About 90 percent drove to work alone, and 10 percent commuted in car pools (Melaas, personal communication, 1996a).

SVADA traffic is generated primarily by employee commuting and secondarily by trucks and other vehicles that service the depot. Regular workday hours at SVADA are 7:00 a.m. to 4:30 p.m., Monday through Friday, and alternate Fridays are non-working days. Consequently, SVADA does not contribute to weekend traffic in the SVADA region. Shift changes at SVADA generate peak traffic between 7-7:30 a.m. and 4- 4:30 p.m. Regional weekday morning commute traffic peaks between 6 a.m and 8 a.m., and evening commute traffic peaks between 3:30 p.m. and 5:30 p.m. Therefore, SVADA's morning and afternoon commute peaks coincide with the morning and afternoon peak traffic hours in the region (Melaas, personal communication, 1996a; SVADA, no date b). Approximately 15 to 20 trucks visit SVADA daily. They carry ammunition and miscellaneous materials that are delivered to the depot (Melaas, personal communication, 1996a).

An estimate of average annual daily traffic (AADT), which is the daily traffic averaged over a full year, on IL 84 is available from a 1995 traffic survey conducted by the Illinois Department of Transportation. North of Crim Drive (the entrance road to SVADA), the AADT is 2,150 vehicles per day (vpd); south of Crim Drive the AADT is 2,250 vpd. Based on a 1991 survey, conducted by the Carroll County Highway Department, traffic volume on Crim Drive in that year was 950 vpd (Morrison, personal communication, 1996; Vandendooren, personal communication, 1996).

Peak hour traffic counts for IL 84 are estimated as 11.5 percent of the AADT. This yields 247 vehicles per hour (vph) on IL 84 north of Crim Drive and 293 vph south of Crim Drive. The capacity of IL 84, a 2-lane rural road, is estimated at 1,900 vph (Tervo, personal communication, 1996; Transportation Research Board, 1994). Existing traffic volumes are well within the capacity of IL 84.

Crim Drive is the only road that provides access to SVADA from IL 84. All other persons driving to SVADA must approach it on IL 84 either from Savanna to the south or from Hanover to the north.

Public Transportation. There is no public transportation service to SVADA, nor is taxi service available from the surrounding communities. Rail service to SVADA is for freight only. The helipad is used for administrative purposes and infrequently for visitors and medical emergencies (Melaas, personal communication, 1996a; SVADA, no date b).

Runways and Helipads. The heliport was built in 1973. For safety purposes, additional facilities were constructed in 1974. The complete heliport facilities consist of two helipads, three 100-foot-by-100-foot helicopter loading areas, and a 40-foot-wide taxiway that connects the two helipads to the loading areas (USACE, 1986a, 1986b).

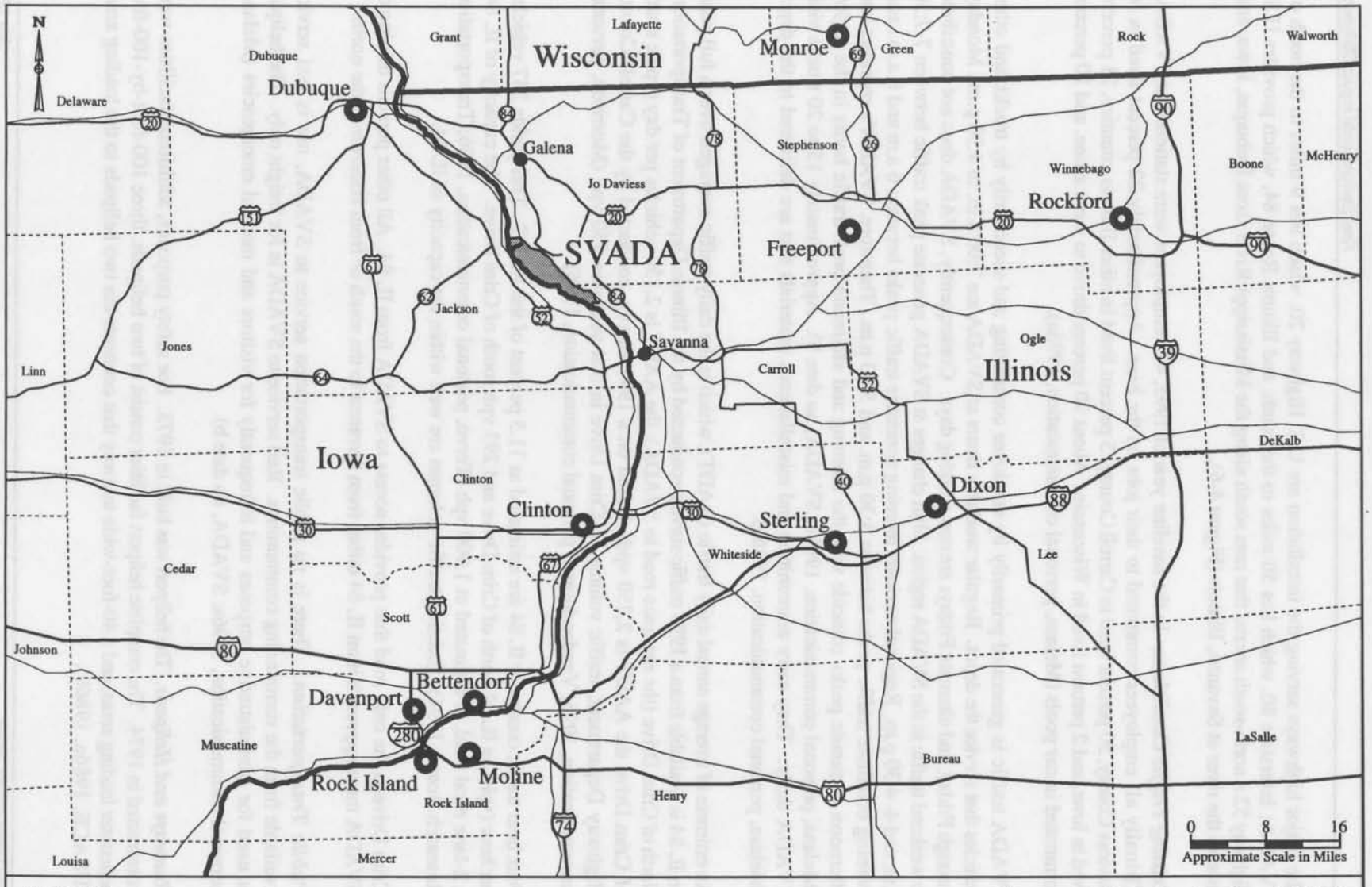

N
Wisconsin
Illinois
Iowa
SVADA
Dubuque
Delaware
Grant
Lafayette
Monroe
Green
Rock
Walworth
Galena
Jo Daviess
Stephenson
Winnebago
Boone
McHenry
Rockford
Freeport
Jackson
Savanna
Carroll
Ogle
Jones
Linn
DeKalb
Dixon
Clinton
Sterling
Whiteside
Lee
Cedar
Scott
Johnson
Bettendorf
Davenport
Muscatine
Rock Island
Moline
Henry
Bureau
LaSalle
Louisa
Mercer
0 8 16
Approximate Scale in Miles
LEGEND
City (Population > 10,000)
Town of Significance
Interstate
U.S. Route
State Route
Railroad
County Boundary
State Boundary
Transportation Routes Near SVADA

Figure 4-6

Railways. SVADA's internal railroad network consists of 72 miles of track. It is accessible from the main line via the Robinson Spur, and holding and classification yards. There are no railroad bridges or trestles on the depot. Holding capacity for the classification yard is 157 cars. A temporary holding yard has an additional capacity of 233 cars. Railroads at SVADA are in good condition and adequate for continued use (USACE, 1986a, 1986b).

The Burlington Northern Santa Fe Corporation (BNSF) serves SVADA, and a line of BNSF passes through the southern end of the depot and forms its northeastern boundary. BNSF has the largest railroad network in the United States and transports primarily coal, grain, intermodal containers and trailers, chemicals, metals and minerals, forest products, automobiles, and consumer goods. The BNSF line at SVADA continues north to Minneapolis/St. Paul, Minnesota, and northwestern states, and south to Galesburg, Illinois (BNSF, 1996; USACE, 1986a).

Passenger rail service does not serve SVADA. The closest passenger rail service is available at Rockford, Illinois, 70 miles to the east, and at Galesburg, Illinois, 105 miles to the south. Rockford is on an Amtrak line from Chicago to Madison, Wisconsin (Amtrak, 1996).

Water Transportation. Shipping is widely used as a low-cost, energy-efficient mode of transportation for moving bulk commodities along the Mississippi River. The navigation season on the Mississippi River in Illinois lasts 10 months, though the length of the season varies with ice conditions and the need to transport materials. Grain accounts for more tonnage shipped than any other single commodity, followed by coal and petroleum. Average annual quantities of these goods transported through the locks on the river in northern Illinois and Iowa in the early 1990s were 8-13 million tons of grain, 2-3 million tons of coal, and 0.5-1.5 million tons of petroleum. An additional 3-4.5 million tons of other goods were transported annually as well (ECIA, 1996).

According to the Navigation Information Connection of the USACE, there are 29 barge terminals for bulk materials and coal along the Mississippi River from Dubuque, Iowa (river mile 581) to Le Claire, Iowa (river mile 498). For reference, Savanna, Illinois, is located at river mile 537 and Bellevue, Iowa (at the northwestern tip of SVADA) is located at river mile 559. Of the 29 terminals, 15 are in Iowa and 14 are in Illinois. One grain terminal is located in Savanna, Illinois. Twenty of the 29 terminals have railway connections.

There are 28 locks on the Mississippi River. The U.S. Army Corps of Engineers estimates that one-half of them will reach capacity by the year 2000. The Corps is performing ongoing small-scale rehabilitation projects of some locks and dams, including those along the northern Illinois stretch of the river, to increase their capacity without undertaking major construction. An Upper Mississippi River Navigation Study is under way to address long-term improvements to the system (ECIA, 1996).

4.8.7 Energy

Electricity. Interstate Power Company provides 99 percent of the electrical service to SVADA by a 34,500-volt, 3-phase line from Hanover, Illinois. Jo-Carroll Electric provides the remaining 1 percent for use at the sportsman club, at a well, and for the lights that illuminate the two depot signs at the beginning of the access road.

All power lines and transformer stations are government-owned, except for the main substation transformer, which is owned by Interstate Power. The main substation is a 2,500-kilovolt ampere, 3-phase system where the servicing 34.5-kilovolt (kV) power supply is stepped down to 13.8 kV for distribution power. Approximately half of the powerlines are aboveground and half are underground. The 34.5-kV, 3-phase line is an overhead line that was replaced in 1986. The incoming utility line ends at the main substation next to Building 106.

In 1988, the installation installed a new 13.2-kV outdoor metal-clad 250-megavolt ampere, 1200-ampere switchgear, located next to the main transformer, which distributes power throughout the installation via five feeders. All of the feeders and most of the distribution transformers on base have been replaced since 1988. Feeders are both aboveground and underground. All electrical underground vaults have been abandoned except one near Building 100 (Melaas and Straight, personal communication, 1996b).

A new 34.5-kV, 3-phase overhead electrical line was installed in 1991 from Whitton Gate to the area around Building 2208 and was used to power equipment during cleanup/remediation activity. This line is not presently in use.

Standby generators are located at Buildings 106, 114, and 706. The backup generator in Building 106 was recently upgraded and is able to provide electricity for the entire installation. The standby generator at Building 114 provides backup to the boilers in the building and to the well pump in Building 107. The standby generator in Building 706 provides standby power for boilers in Building 704.

The monthly electrical usage average for FY95 was 402 kilowatt-hours.

Fuel Oil and Coal. Combustion sources at SVADA are fired using two types of fuels: residual oil and distillate oil. Residual oil is used to fire the boilers in the central heating plant, while distillate oil is used to fire the smaller boilers and furnaces. The fuel oils are also distinguished by grade numbers. The residual oil is a number 5 fuel oil, and the distillate oil is a number 2 oil. Coal is no longer used to fire combustion sources at SVADA (Melaas and Straight, personal communication, 1996b). In FY95, heat production by all combustion sources at SVADA totaled about 94,535 thousand British thermal units.

Natural Gas. SVADA does not use natural gas. Interstate Power and Jo-Carroll Electric have expressed interest in providing the depot with natural gas, but currently there are only a few liquid propane (LP) tanks onsite (Melaas and Straight, personal communication, 1996a).

Steam. Heating at SVADA is mainly by steam or hot water boilers fired by fuel oil. Two active central steam systems serve SVADA with 25,297 LF of steam distribution lines. The main boiler plants are Buildings 114 and 704, which produce steam for the lower post and the 700 Series area. The main boiler stations were installed in the early 1940s, and they continue to operate at their rated capacity. The burners for all boilers in Buildings 114 and 704 were replaced in 1994. These modifications allowed the boilers to run on #5 fuel oil, rather than coal, which had been used previously. In addition, a smaller number of boilers and furnaces (some using LP gas) serve individual buildings or small areas. Steam use on SVADA is entirely for heating. There is no steam processing at the depot (Melaas and Straight, personal communication, 1996a).

The steam lines are in good condition, and several portions of the steam and condensate lines have been upgraded. Production monitoring equipment was installed in 1986 at the main boiler plants and is being used to establish a baseline for steam usage.

All heating plants at SVADA use fuel oil or LP gas. The two main boiler plants could be converted to natural gas if it were available on the depot (Melaas and Straight, personal communication, 1996b).

The Lower Post Central Heating Plant in Building 114 has four 261-horsepower (HP) boilers that are oil-fired. Steam pressure at the lower post central heating plant is 80 psi, with reducing valves supplying steam at various pressures. Condensate is returned by vacuum. Steam mains are located underground in both concrete tunnels and conduits.

The 500 Series area heating plant (Building 502) is equipped with three boilers. Each boiler has a capacity of producing 318HP, though they have been found to operate efficiently up to 350HP. The maximum design load demand is 900HP, and steam pressure is maintained at 150 psi. The 600 Series area heating plant contains two 109HP boilers. Plant capacity there is 218HP, with steam pressure maintained at 60 to 70 psi. The 700 Series area heating plant (Building 704) has three 261HP boilers. Steam pressure at this plant is maintained at 70 psi. The Ammunition Washout Facilities heating plant (Building 2204) has two furnaces, each with a steam capacity of 125 psi.

4.8.8 Communications Systems

SVADA has desktop interface to the AUTODIN Host (DINAH) Telecommunications Center. AUTODIN is the DoD automated information network that provides phone, fax, and data communications between DoD facilities worldwide.

DINAH System. The DINAH system, as installed, provides worldwide narrative traffic communications. This enables SVADA to transmit and receive unclassified and classified record traffic at 2,400 bits per second through a major switching station to other AUTODIN-connected systems.

Telephone. The Army-owned telephone system consists of a GTE Corporation GTD5-MV common control stored-program Electronic Switching System installed in 1987-1988. It is equipped with 1,050 single-line analog ports, 12 digital (FeaturePhone) ports, and 200 integrated voice and data (Data Adapter) ports, used as commercial, FTS2000, and Defense Switching Network (DSN) trunks. Ten outgoing commercial, 8 incoming commercial, 18 two-way DSN, and 8 FTS2000 trunks are presently configured. Cable record management and number assignment are provided by COTS PC hardware and Cable Assignment Information Retrieval System software. An automated directory assistance system is installed to aid users in the completion of operator-assisted calls.

Approximately 75 miles of direct buried cable is installed, connecting administrative buildings. All cables were installed by the Outside Cable Rehabilitation (OSCAR) II (1987) and OSCAR III (1990) programs.

One hundred forty-four strands of multi-mode fiber optic cable are installed at various administrative buildings; eight strands of single-mode fiber are installed to the installation/CENTELSPRINT demarcation point at Route 84. All fiber optic cables terminate in Building 1.

Radio Communications. Internal radio communications are provided by nontactical radio equipment. The installation is authorized to transmit on seven different radio frequencies, including three depot networks, two fire networks, and two state police and local law enforcement networks. Equipment includes 7 base stations, 85 mobile radios, 62 portable radios, and 9 remote stations.

Datafax. SVADA is equipped with one common-user, over-the-counter secure datafax system capable of transmitting and receiving classified information. Numerous user-operated desktop unclassified datafax machines are installed throughout the installation.

4.9 HAZARDOUS AND TOXIC SUBSTANCES AND ORDNANCE AND EXPLOSIVES

Preliminary investigations have been completed for the identification of hazardous and toxic substances and ordnance and explosives for the characterization of baseline conditions. The results are presented in the following subsections.

4.9.1 Storage and Handling Areas

SVADA is a Resource Conservation and Recovery Act (RCRA) large-quantity generator; a treatment, storage, and disposal facility with RCRA interim status; and a hazardous waste transporter. Hazardous waste storage areas on the installation include Buildings E1414, E701, E702, E704, H420, and C101 (see C, E, and H areas in Figure 4-4).

Buildings E701 and E702 are used for the storage of 55-gallon drums of lead azide sludge generated on post from a lead azide electrolysis process that is no longer operational. Building E704 is used to store potentially reactive and ignitable wastes. Building E1414 is used to store listed hazardous wastes, characteristic wastes, and suspected hazardous wastes (pending receipt of analytical results). Buildings E701, E702, E704, and E1414 are inspected weekly (SAIC, 1996).

Buildings C101 and H420 are designated 90-day hazardous waste storage areas. Building C101 is designated to receive propellants, explosives, and pyrotechnics, but circumstances requiring its use have never occurred and it has never been used as a 90-day hazardous waste storage facility. Building H420 receives wastes from satellite accumulation areas and has been used to store ash generated at the Contaminated Waste Processor, coolants, lubricants, paints, PCB transformers, propellants, and explosives. Satellite accumulation areas for hazardous wastes are located at the cement pad underneath the baghouse at the Explosive Waste Incinerator/Contaminated Waste Processor complex, the Motor Pool (Building 103), the APE Fabrication Shop (Building 117), and the Pilot Model Shop (Building 140; SAIC, 1996).

4.9.2 Uses

Activities that have occurred at SVADA involving the use of hazardous materials or the production of hazardous substances include ammunition demilitarization, which involves disassembly of ammunition into component parts usually for the removal of a hazardous component, and cleaning and preservation of ammunition subject to deterioration (SVADA, no date b). Hazardous materials used or stored include gasoline, diesel fuel, automotive fluids, vehicle batteries, paints, lubricants, cleaning agents, pesticides, herbicides, insecticides, chromium ore, zinc ingot piles, chemical warfare agents, photographic

chemicals, sodium hydroxide, nitric acid, hydrochloric acid, sulfuric acid, ether, acetone, benzene, hexylene glycol, asbestos, RDX (an explosive), trichlorotrifluoroethane, mercuric chloride, and methanol (SAIC, 1996).

Hazardous substances generated at SVADA have included chemically reactive waste; chemical warfare agent residue; explosives; incinerator ash containing arsenic, cadmium, chromium, and mercury; smoke pot ash containing lead; corrosive liquid containing sulfuric acid or potassium and sodium hydroxides; paint materials; solvents, including petroleum naphtha and degreasers; flammable liquids containing ethanol and mercuric cyanide; and paint chips containing lead and cadmium.

4.9.3 *Disposal*

Disposal of hazardous substances generated at SVADA (such as in 1994 when 161,408.8 pounds were produced) is the responsibility of DRMO. When accumulations reach prescribed levels, DRMO is responsible for collecting the waste from hazardous waste storage areas and removing it from the installation for off-site treatment and disposal (SAIC, 1996). No disposal occurs on the installation. A contractor is typically hired by DRMO to remove the hazardous materials. SVADA's U.S. Environmental Protection Agency identification number is IL3210020803.

4.9.4 *Contaminated Sites, Soils, and Groundwater*

SVADA was listed as a National Priorities List (NPL) site under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in March 1989. There are 233 sites at SVADA identified as being involved in storage, release, or disposal of hazardous substances. The environmental conditions of these sites are summarized on Tables 4-2a and 4-2b.

In December 1989, SVADA, EPA, and IEPA entered into a Federal Facilities Agreement (FFA) pursuant to CERCLA Section 120. The purpose of this interagency agreement is to ensure that the environmental impacts associated with past and present activities at SVADA are thoroughly investigated and appropriate remedial action is taken as necessary to protect the public health, welfare, and the environment. The FFA provides a procedural framework and schedule for developing, implementing, and monitoring appropriate response action at SVADA in accordance with CERCLA and other authorities related to remediation of environmental contaminants. It also facilitates cooperation, exchange of information, and participation of the parties to the agreement. The FFA provides overall direction to efforts related to conducting work at operable units (specific contamination sites), the remedial investigation, and the feasibility study, and for developing and implementing remedial action alternatives.

4.9.5 *Special Hazards*

Asbestos. An installation-wide asbestos survey of SVADA was conducted in 1989 for the U.S. Army Corps of Engineers, Louisville District. The results of the survey indicated that asbestos was present in most of the surveyed buildings in cement shingles, panels, and piping; insulation material; tile; mastic; and wall panel. Transite piping was used in the construction of the depot's water main. Asbestos-containing material was placed in the Abandoned Landfill (Site 20) while it was operative (Figure 4-7). The Motor Pool (Building 103) is classified as an area where asbestos was stored because of removal

Table 4-2a
DoD Categorization of Contaminated Sites at SVADA: Categories 1-6

Category	Parcels/ Acres	Site of Concern	Type of Contamination	Scheduled Remediation
Category 1[1]	8/11,744.8	N/A	N/A	N/A
Category 2[2]	31/63.9	N/A	N/A	N/A
Category 3[3]	5/6.4	N/A	N/A	N/A
Category 4[4]	4/2.64	N/A	N/A	N/A
Category 5[5]	3/157.1	TNT Washout Facility Old Leaching Ponds and New Leaching Ponds (Sites 21 and 22)	Groundwater, surface water, soil, sediment	Onsite incineration of TNT-contaminated soils completed in 1993; remediation of explosives-contaminated soil completed in 1994; groundwater treatment (FY30)
		Old Burn Area in Bottomlands and Burn Site for 155mm Mustard-Filled Projectiles (Sites 13 and 14)	Groundwater, surface water, soil, sediment	Groundwater monitoring (FY10); remediation underway but not completed; demonstration project involving materials separation completed in 1996
		Fire Training Area (Site 67)	Soil, groundwater	Remediation (onsite incineration of contaminated soils) has begun; groundwater treatment (FY30)
Category 6[6]	10/65.5	Mustard Burn Area (75mm Munitions) (Site 7) and Beaty Hollow Creek Dump (Site 74)	Unspecified/Known or suspected UXO	Remediation (Site 7): FY00 remediation (Site 74): FY02
		Mustard Burn Area (75mm Munitions) (Site 8)	Unspecified/Known or suspected UXO	Undetermined
		Small Arms Ammunition Burn Area and Artillery Ballistic Test Site (Mounds) (Sites 15, 33)	Soil and groundwater/ known or suspected UXO	Remediation: FY01
		Abandoned Landfill (Site 20)	Surface water, sediment, groundwater	Remediation: FY30
		CF Melt/Pour Facility (Leaching Field and Sump) (Sites 24 and 25)	Surface water, soil, sediment, groundwater	Remediation: FY99 Groundwater treatment: FY 31
Category 6 (continued)		Nitric Acid Storage Area (H Area) (Site 44)	Soil	Undetermined

Table 4-2a
DoD Categorization of Contaminated Sites at SVADA: Categories 1-6

Category	Parcels/ Acres	Site of Concern	Type of Contamination	Scheduled Remediation
		Army Reserve Motor Pool (Site 75)	Soil and groundwater	Undetermined
		Stables Landfill (Site 73)	Unspecified	Remediation: FY30 Groundwater monitoring: FY31
		Active Demolition Area in Bottomlands (Site 50)	Unspecified/Known or suspected UXO	Undetermined
		CF Plant Leach Field	Soil and groundwater	Undetermined

[1]Areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
[2]Areas where only storage of hazardous substances or petroleum products has occurred (but no release, disposal, or migration from adjacent areas has occurred).
[3] Areas where storage, release, disposal and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action.
[4]Areas where storage, release, disposal and/or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken.
[5] Areas where storage, release, disposal, and /or migration of hazardous substances or petroleum products has occurred, removal and /or remedial actions are underway, but all required actions have not yet been taken.
[6]Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but required response actions have not yet been implemented.

Note: Since preparation of the EBS, CERCLA and DoD implementing guidance have been amended. Based on the amendments, Category 1 parcels now include locations where no hazardous substances or petroleum products were released or disposed of, and Category 2 parcels now include locations where no release or disposal of petroleum products occurred. In light of these changes, storage of hazardous substances or petroleum products no longer prevents property from being identified as uncontaminated.

Source: SAIC, 1996.

Table 4-2b
DoD Categorization of Contaminated Sites at SVADA: Category 7 and Qualified Parcels

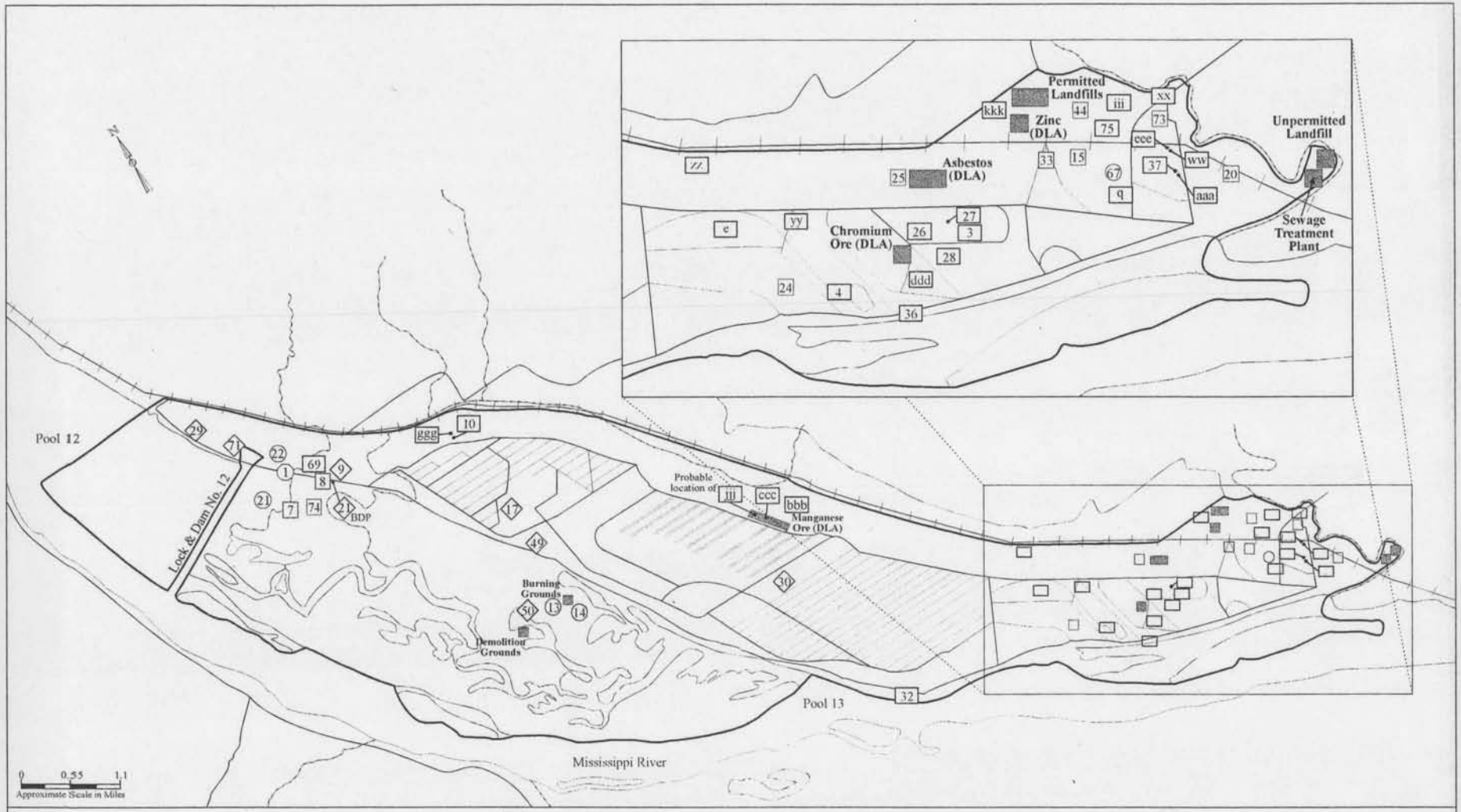
Category	Sites of Concern
Category 7[1] 88 parcels 1022.2 acres	• Areas down gradient of Site 20 • Main Sewage Disposal Plant (Site 35) • Sewage Disposal Plant ASTs and USTs (Building 275) • Vincent Road septic system (Lower Post) • USADACS Ammunition School building (Building 24) • Building 107 (Site 51) and AST • Areas in the vicinity of the APE Shop (Building 117) • Building 105 and Building 106 (Emergency/Auxiliary Power Plant) • Building 106 USTs and ASTs • Building 120 (Flammable Materials Warehouse) • Building 103 tin shed • Motor Pool (Site 94 - Building 103 and AST) • Building 126 (storage area) • Area north and west of Building 127 • Building 101 (Active Service Station USTs) • Coal pile north of building 127 • Gasoline spill area - Crim Drive • ASTs between Buildings 100 ad 132 (FTA Remediation Project (ASTs)) • Buildings 6 and 7 (NCO Quarters ASTs) • Building 2 (standby generator AST) • NCO Quarters USTs • Diluted herbicide spill north of Building 127 • PCB spill between Buildings 132 and 134, transformer vault adjacent to the southeast end of Building 134, and washrack northwest of Building 132 • Former Gatehouse No. 3 UST • Hydraulic fluid spill area southwest of Building 267 • 1917 era Powder Magazines (Site 77); washrack at former location of Building 274; Building 200 (BOQ Area well and pump house (Site 52) and AST and UST); USTs and ASTs in Barracks 263 through 267; Building 273 (Troop Activities AST); Building 274 (NCO Club ASTs) • Building 256 (former Gatehouse UST) • Building 26 (USADACS Ammunition School) • Building 234 (Administrative Building USTs) • Building 233 (Automotive Workshop); USTs and ASTs for storage of heating oil for Buildings 200 through 204, even-numbered 206 through 226, 227, 229, 231, 232, 233, 245, 246, 247, 249, 250, 252, 253, 255 • Artillery Ballistic Test Site (Mounds) (Site 33); New Small Arms Pistol Range (Site 85) • Open Rubble Dump (Site 61) • Building 276 (Reserve Motor Pool USTs) • "H" Area open storage • Closed Sanitary Landfill (Site 19) • H-Area Old Landfill cells (Site 90) • Zinc ingot piles near "H" Area Warehouses • CL Plant, CN Plant (Site 16) • Industrial Sewage Plant (Building 937) (Site 36) • Scrap wood Open Burn Area (Site 84) • CF Plant • Special Weapons Maintenance and Storage Area (Site 60); Building 800 (Special Weapons Administrative Building USTs) • Building 800 (Liquid Propellant Storage Area Change House and Laboratory) • Liquid Propellant Vehicle Cleaning Pad • Liquid Propellant Storage Building chemical waste trench (Building 802 chemical waste trench); Building 802 (Special Weapons Depot USTs) • Building 933 (LCL Building and septic system)

Table 4-2b
DoD Categorization of Contaminated Sites at SVADA: Category 7 and Qualified Parcels

Category	Sites of Concern
Category 7 (continued)	• Building 932 (LCL Heating Plant USTs) • Building 812 (Standby Generator Plant UST and diesel fuel spill) • Building 931 (Gatehouse A UST) • G-Area Corral fuel spill (Site 79) • Building 928 (Administrative Building USTs) • Pistol Range for National Guard (Site 32) • Hazardous Waste Storage Area Igloo E701 (Site 62) • Hazardous Waste Storage Area Igloo E702 (Site 63) • Hazardous Waste Storage Area Igloo E704 (Site 64) • Hazardous Waste Storage Area Igloo E1414 (Site 65) • Former detonation pits near "D" Area • Explosive Melt/Pour Facility and Leach Field (Sites 2, 23, 59, 72); 1005-Explosive Melt/Pour (AST, USTs) • Building 1010 (Care & Preservation Building) • Building 1011 (Care & Preservation Building) • Building 1017 (Battery Shop Leach Field) (Site 81); Battery Shop USTs • Building 1022 (Ammunition Storage Area well (Site 55); Pump House AST • Building 1023 (Lunch Room ASTs) • Building 1023 (I-Gate Cafeteria) septic system and Oil Changing Area (Site 82) • Building 2003 (Shallow Well (Site 58) AST and USTs) • Former Building 2105 (2105 Lunch Room AST) • Manganese ore storage pits (Site 46) • Hand grenade burial site (Site 17) • Straight Slough • TNT and Ammonium Nitrate Burn Area (Site 11) • White Phosphorus Burn Area (Site 10) • Railroad Tie Pile Disposal Area and Reserves Maneuvers Area (Site 87) • Pesticide Burial Area (Site 89) • K Road Trench Site (Site 101) • Site 9, Site 69, and Building 2215 UST • Bomb Disassembly Plant (Site 21BDP) and Acid Burning Pad • Buildings 2204, 2206, 2207, and 2208 (TNT Washout Facility) (Site 1) • Utah Shock and Test Detonation Area (Site 48) • Burn Pits (Function Test Area) (Site 71) • Liquid Propellant Burn Area (Site 5); Upper Function Test Range (Site 100) • Building 2211 (Recreational Building AST) • AST at Function Test Area (Site 29) • Function Test Area (Site 29); shallow well at Building 2213 (Site 57)
Qualified Parcels[2] 87 Parcels 6.917.6 acres	See section *4.9.5 Special Hazards*

[1] Category 7 sites are unevaluated or require further investigation. The type and extent of contamination, and scheduled remediation, are unknown at this time and are therefore not included in this table.
[2] Qualified parcels contain either known or suspected asbestos, lead-based paint, PCBs, radon, radionuclides, or unexploded ordnance.

Source: SAIC, 1996.



Locations of Sites of Known or Potential Contamination on SVADA

Figure 4-7

and disposal of asbestos brake pads. The Open Rubble Dump (site 61) and Stables Landfill (site 73), sites where construction material was dumped, might also hold asbestos-containing material (SAIC, 1996). Building 130 is used for storage of asbestos taken from other buildings during asbestos removal work (SAIC, 1996). A 1984 study (USDOI, 1984, cited in SAIC, 1996) also indicated that corrugated cement-asbestos sheets were used in the construction of roofs for the CL Plant, the CF Plant, the CN Plant, and the Unit Training Center.

Asbestos-containing material has been removed from the piping of most buildings. In some cases asbestos-containing floor tiles, siding shingles, cement panels, and other insulating materials have been removed. All visible asbestos-contaminated soil has been removed (SAIC, 1996).

Most of the conventional ammunition magazines and igloos, special weapons magazines, some shelters, and some small buildings were not surveyed for the 1989 report. Since they were all built before 1985, they are categorized as possibly containing asbestos (SAIC, 1996).

Three storage tanks on the southeastern portion of the depot (site 42, tanks 905, 906, and 907) have been used for storage of raw amosite asbestos since the late 1940s (Figure 4-7). These tanks are managed by the Defense Logistics Agency as part of the National Defense Stockpile Program for storage of strategic materials. The material in the tanks is scheduled to be transferred off-site and the tanks removed by September 1998. All asbestos-contaminated soil will also be remediated at that time.

Radon. A radon monitoring survey was conducted at SVADA in 1989. Radon detectors were operative in 30 buildings from March through June 1989. The survey indicated that all of the family housing units and most other buildings tested below the EPA action level of 4 picocuries per liter (pCi/L). Building 20, an open dining hall, and Building 263, a former prisoner-of-war barracks, tested at 16.4 pCi/L and 6.8 pCi/L, respectively. Since neither of these buildings is classified as a priority 1 structure (e.g., day care center or living area), no radon mitigation is required (SAIC, 1996).

Lead-Based Paint. A comprehensive lead-based paint survey has not been conducted at SVADA. The provisions of the Residential Lead-Based Paint (LBP) Hazard Reduction Act of 1992 (Public Law 102-550) apply to any buildings constructed prior to 1978 and transferred for residential use. According to the act, housing constructed after 1960 and prior to 1978 must be inspected for LBP and LBP hazards, and the results of the inspection must be provided to prospective purchasers of the property. Housing constructed prior to 1960 must be inspected for LBP and LBP hazards, and all LBP hazards must be abated if the property is to be used for residential purposes. (See Appendix F of the *DoD Base Reuse Implementation Manual* [DoD 4165.66-M] for DoD policies on LBP at BRAC properties.) SVADA buildings constructed prior to 1978 are categorized as possibly having LBP.

Reports and LBP surveys conducted on selected buildings at SVADA provide the following information regarding nonresidential buildings at SVADA:

- Lead-based paint was applied to standard ammunition magazines and the stables.
- Buildings 13, 642, 1011, and A404 had detectable percentages of lead in paint samples, though only the paint from Building 642 had levels in excess of the hazardous level (0.5 percent).
- Two rail cars had lead levels in excess of 0.5 percent.

- Paint samples from the playground had lead levels in excess of 0.5 percent.

Table 4-3 provides information on housing structures at SVADA that are potentially contaminated with LBP. SVADA currently has no plans for lead abatement because the affected structures where LBP has been detected are not in use (SAIC, 1996).

Table 4-3
Lead-Based Paint Hazard Information for Housing at SVADA

Building[1]	Use	Year Built	LBP Hazard
1	Post Headquarters	1942	Potential; must be abated.[2]
6, 7	Family housing	probably pre-1960	Potential; must be abated.
10	Family housing	1921	Potential; must be abated.
11, 12	Family housing	1918	None detected in surveys; potential due to age.
13	Family housing	1921	Known; must be abated.
14, 15	Family housing	1921	Potential; must be abated.
50	Family housing	1965	None detected in surveys; potential due to age.
51	Family housing	1965	Potential; must notify prospective purchasers.
52	Family housing	1965	None detected in surveys; potential due to age.
53-58	Family housing	1965	Potential; must notify prospective purchasers.
204, 206, 208	Troop housing	1941	Potential; must be abated.
210	Troop housing	1941	Potential.
212	Troop housing	1941	Potential; must be abated.
214, 216, 218, 250	Troop housing	probably pre-1960	Potential; must be abated.
253	Troop housing	1945	Potential; must be abated.
262-267	Bachelor housing (barracks)	1941	Potential; must be abated.

[1] See Figure 4-4 for general location of listed buildings.
[2] Must be abated if used for residential purposes, as defined in the Residential LBP Hazard Reduction Act of 1992.
Source: SAIC, 1996.

Polychlorinated Biphenyls (PCBs). All PCB-containing transformers/components located on the lower post areas (500, 600, 700, and 1000) have been removed and disposed of, the majority as a result of an electrical upgrade project completed in 1995. The three known PCB-containing components still remaining, two capacitors in Building 807 and one transformer in Building 1038, need to be removed. There are 11 untested components with no projected use and no need to be tested. They are located at CF Lift Station (3), 807 Saliport (1), E area (4), and Burning Grounds (3). There are 36 electrical transformers/components in use at various locations. It is not feasible to test these items for PCBs, though they are inspected quarterly. The balance of the electrical transformers/components on the depot do not contain PCBs.

Radiological Materials. An industrial radiation historical data review was conducted for SVADA between February 12 and May 28, 1996. The review is a preliminary survey that establishes the history of radioactive material usage on the installation and includes information such as locations of radioactive materials, radioisotopes used, accidents/incidents or radioactive material leaks that may have resulted in contamination, and general history of all units involved in radiological activities.

Initial results of the survey revealed 89 buildings and 3 outdoor areas where radioactive materials were potentially used or stored. No sanitary landfills were found to have been used for the disposal of low-level radioactive waste. Classifications used in the survey to describe the potential for radioactive contamination of an area or facility include Affected Area, Affected/Non-Uniform Area, Affected/Uniform Area, Unaffected Area, and Non-Impact Area. Simplified definitions of each classification are provided below. (Refer to the glossary for more complete definitions.)

- *Affected Area*: An area that has the potential for radioactive contamination or known contamination.
- *Affected/Non-Uniform Area*: An affected area having the potential for a non-uniform or spotty residual radioactivity pattern.
- *Affected/Uniform Area*: An affected area with little or no potential for non-uniform or spotty residual radioactivity.
- *Unaffected Area*: An area that is not expected to contain any residual radioactivity, based on a knowledge of site history and previous radiological survey information.
- *Non-Impact Area*: Any area that has no potential for residual radioactive contamination.

Of the 89 buildings identified in the survey, 16 are classified as Affected/Non-Uniform, 67 as Unaffected, 1 as both Affected/Non-Uniform and Unaffected, and 5 as Non-Impacted (HQDA, 1996). Of the three potentially contaminated outdoor areas, one is Affected/Non-Uniform and the two others are Unaffected. A complete listing of the buildings, rooms, and areas with the potential for contamination and their classifications is provided in Appendix D.

In general, results of the survey indicate a low potential for radioactive contamination. The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) will conduct a radiological evaluation and/or field survey on each site prior to property transfer. Field work is scheduled for fiscal years 1998 and 1999. Upon completion of this effort, USACHPPM will determine all necessary

remediation measures. If remediation of any site is required, it will be conducted in compliance with Nuclear Regulatory Commission requirements.

4.9.6 Ordnance and Explosives

SVADA was originally used for proof-firing artillery during the years 1918 and 1919. Ammunition storage facilities were built at that time, and ammunition loading facilities were constructed later. Over the years, many different ordnance and explosives (O&E) operations have been conducted, from the original proof-firing to ammunition testing, maintenance, and demilitarization. The operations have resulted in sites with known or suspected O&E contamination. These sites include Sites 7, 8, 9, 17, 21BDP, 29, 30, 33, 49, 50, and 71 (Figure 4-7). A suspected World War I artillery impact area has been delineated as an 8-mile area extending from Building 125 to the far northwestern boundary of the depot and excluding the Burlington Northern Railroad right-of-way and the Mississippi River (Figure 4-8; SAIC, 1996; SVADA, 1990, no date b).

To more accurately determine areas on the depot suspected to have O&E contamination, an archive search, consisting of a thorough review of national and state record depositories, tests, manuals, reports, historical photos and maps, interviews, and visual field inspections, is being conducted. The archive search report is scheduled for completion by autumn 1997. Results of the search could include an expanded suspected WWI artillery impact area.

Further evaluation of suspected areas in the form of unexploded ordnance (UXO) sweeps (metal detector surveys) will be conducted to identify sites requiring remediation. To date, complete UXO sweeps have been performed at Sites 13, 14, and 33 and the proposed prison parcel. The prison site sweep, conducted to 4 feet in depth, uncovered no UXO (Dahlman, personal communication, 1996). Limited sweeps have been performed at Sites 30 and 71 (SAIC, 1996).

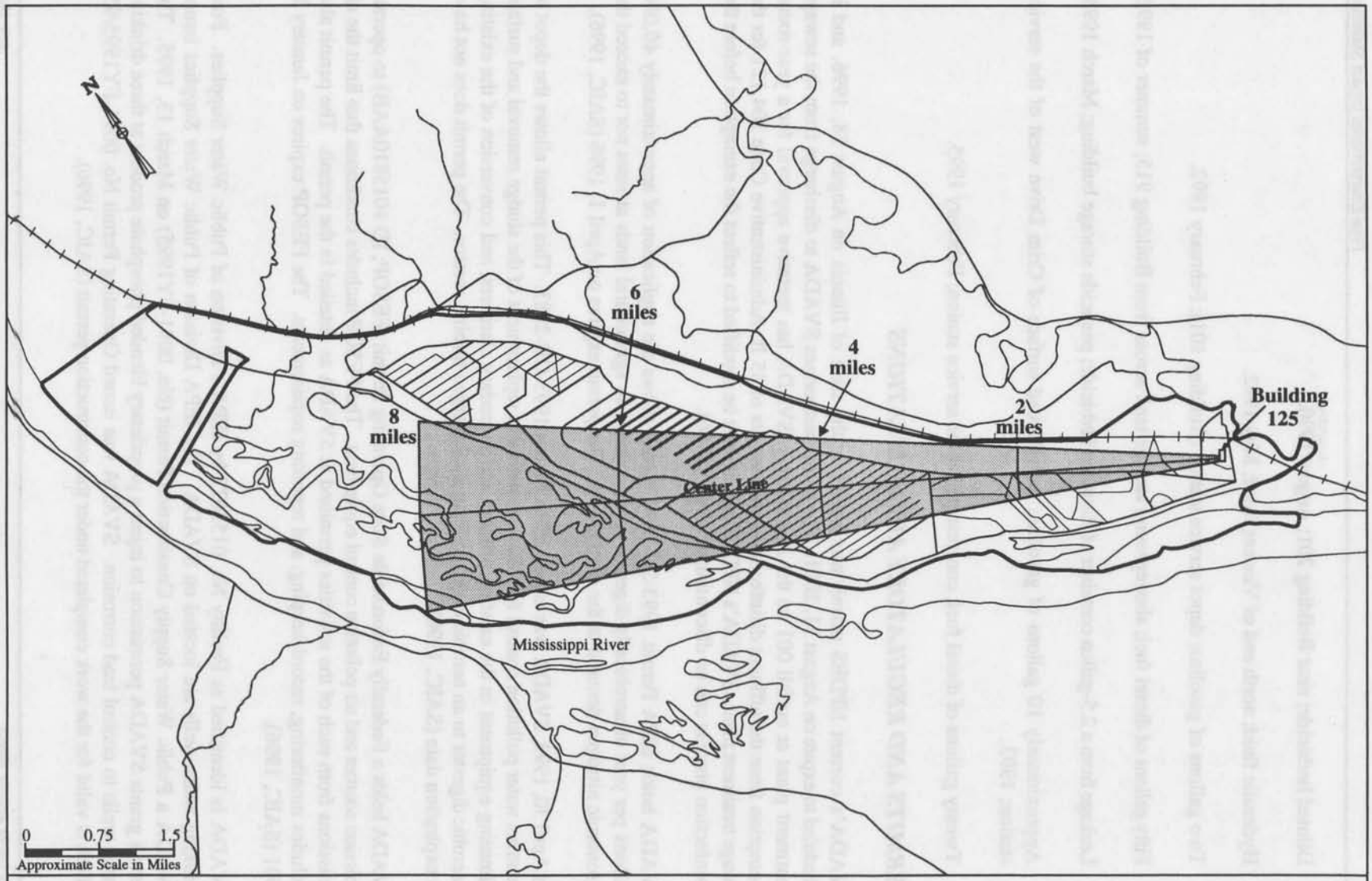
4.9.7 Storage Tanks

Thirty-six underground storage tanks (USTs) located at SVADA are registered as active tanks with the State of Illinois. Of the total 36 USTs, 2 are liquid petroleum gas, 1 is diesel/gas, 1 is diesel, and the remaining 32 are heating oil. A total of 38 USTs have been removed, and all remediation activities at these sites have been completed. Four USTs that are not in use and were built in place have been approved by the State of Illinois to be disposed of in place. One UST is not in use and has been emptied, but it cannot be removed because it is located under Building 812. It formerly contained diesel fuel.

4.9.8 Spills

A few minor spills have occurred at SVADA. In all instances, the spills were collected and cleaned up and, where necessary, any contaminated soil was excavated and disposed of off site (SAIC, 1996). The substance spilled and location and date of the spill are provided below for all spills known to have occurred at the depot:

- Diesel fuel; Building 812; April 1988.
- Thirty gallons of diluted herbicide; road shoulder and railroad bed north of Building 127; May 1990.



LEGEND

Suspected Artillery Impact Area

SVADA base boundary

Source: SVADA, 1990.

Suspected WWI Artillery Impact Area on SVADA

Figure 4-8

- Diluted herbicide; near Building 201; August 1990.
- Hydraulic fluid; north end of Vincent Road; May 1992.
- Two gallons of gasoline; depot service station (Building 101); February 1992.
- Fifty gallons of diesel fuel; aboveground storage tank across from Building 915; summer of 1992.
- Leakage from a 2.5-gallon container of Roundup herbicide; pesticide storage building; March 1993.
- Approximately 10 gallons of gasoline; asphalt road surface of Crim Drive west of the service station; 1993.
- Twenty gallons of diesel fuel; concrete pad at the service station; February 1995.

4.10 PERMITS AND REGULATORY AUTHORIZATIONS

SVADA's current NPDES permit was issued by the state of Illinois on August 28, 1996, and is scheduled to expire on August 31, 2001. The permit authorizes SVADA to discharge from the sewage treatment plant at outfall 001 on the Apple River. SVADA has tentative approval for a year-round exemption from the effluent disinfection requirements of 35 IL Administrative Code 304.121 for the sewage treatment plant. SVADA's NPDES permit must be modified to reflect the exemption before the disinfection process can be discontinued (SAIC, 1996).

SVADA holds IEPA Permit 1993-SC-2894, which allows the application of approximately 40,000 gallons per year of aerobically digested sewage sludge to agricultural lands at rates not to exceed the agronomic nitrogen demand of the crop grown. The permit expires on April 1, 1998 (SAIC, 1996).

On April 30, 1993, SVADA was issued IEPA Permit 1993-GB-2883. This permit allows the depot to construct water pollution control facilities consisting of replacement of the sludge removal and surface skimming equipment in the existing primary and secondary clarifiers, and conversion of the existing anaerobic digester to an aerobic digester using a submerged turbine aerator. The permit does not have an expiration date (SAIC, 1996).

SVADA holds a Federally Enforceable State Operating Permit (FESOP; ID #015810AAB) to operate emission sources and air pollution control equipment. The FESOP includes conditions that limit the air emissions from each of the activities permitted at SVADA as detailed in the permit. The permit also includes monitoring, record-keeping, and reporting requirements. The FESOP expires on January 1, 2001 (SAIC, 1996).

SVADA is identified as Facility No. 0155077 by IEPA's Division of Public Water Supplies. Four drinking water wells are located on SVADA. The IEPA Division of Public Water Supplies issued SVADA a Public Water Supply Construction Permit (No. 0091-FY1995) on March 13, 1995. The permit grants SVADA permission to inject a proprietary blended phosphate product at three drinking water wells to control lead corrosion. SVADA was issued Operating Permit No. 0091-FY1995/95, which is valid for the work completed under the construction permit (SAIC, 1996).

Thirty-six underground storage tanks located at SVADA are registered with the State of Illinois (SAIC, 1996).

SVADA holds a source material license (No. SUC-1394) from the Nuclear Regulatory Commission (NRC) for transportation, storage, inspection, minor maintenance, and demilitarization of 30mm and smaller depleted uranium ammunition. Special weapons were formerly stored in the J area of the depot, but the area no longer contains any special weapons. Monazite sand, a radioactive product, was stored in a storage tank in the G area, but monitoring has indicated that the area is safe. Small containers of uranium nitrate were stored in Building 22, but were disposed of properly (SAIC, 1996).

The Industrial Operations Command and USADACS also hold NRC licenses for use in their activities at SVADA. These licenses are No. 12-00722-13 for chemical agent detectors; No. 12-00722-14 for chemical agent monitoring systems; No. 12-00722-06 for tritium fire control devices (no longer on site); No. 12-00722-07 for front sights for old light antitank weapon rocket systems (no longer on site); and a license for tritium compasses (Scott, personal communication, 1996).

SVADA has been authorized by the Federal Aviation Agency (FAA) since May 1984 to operate a Controlled Firing Area to an altitude of 3,000 feet in the airspace above the installation. The Controlled Firing Area permits the testing of pyrotechnics (e.g., pop-up flares) at the Universal Function Test Range, an activity at SVADA that is part of the Army's program for ensuring reliability of explosives and pyrotechnics in long-term storage. At least 24 hours before test events, SVADA officials notify the FAA Flight Service Station in Rockford, Illinois, of pending tests so that Notices to Airmen can be issued.

4.11 BIOLOGICAL RESOURCES

The U.S. Fish and Wildlife Service (USFWS) and Illinois Department of Natural Resources (IDNR) were consulted regarding sensitive species and habitats on SVADA. (See Section 5.1.4 for description of USFWS consultation process.) Response letters from these agencies are provided in Appendix E.

4.11.1 Vegetation

SVADA lies within a major ecological region, known as the "prairie peninsula," that extends in an eastward arc from Minnesota to Texas. Within this region, a transition occurs from the Eastern Deciduous Forest biome to the Prairie and Plains phytogeographic provinces, encompassing almost a quarter of a million square miles (Gleason and Cronquist, 1964). The region projects eastward of the Mississippi River and then into Illinois, Indiana, Ohio, and Kentucky (Transeau, 1935). The depot is typical of this natural division with its drought-adapted sand prairie and savanna vegetation. Many of the plants and animals inhabiting SVADA occur as western relicts or near their eastern range limits (Bowles, 1993). Because of the poor moisture-holding capacity of the sandy soils, much of the vegetation becomes dormant during drought conditions and can appear very different between years with different precipitation levels.

In the area slated for disposal and reuse, there are approximately 7,000 acres of sand prairie, oak savanna, and river dune complex; 500 acres of upland forest; and 6,000 acres of bottomland hardwood forest, backwater lakes, wetlands, and side channels adjacent to the Mississippi River (USFWS, 1996a).

Six simplified vegetation communities have been identified on the installation and are described below (Figure 4-9).

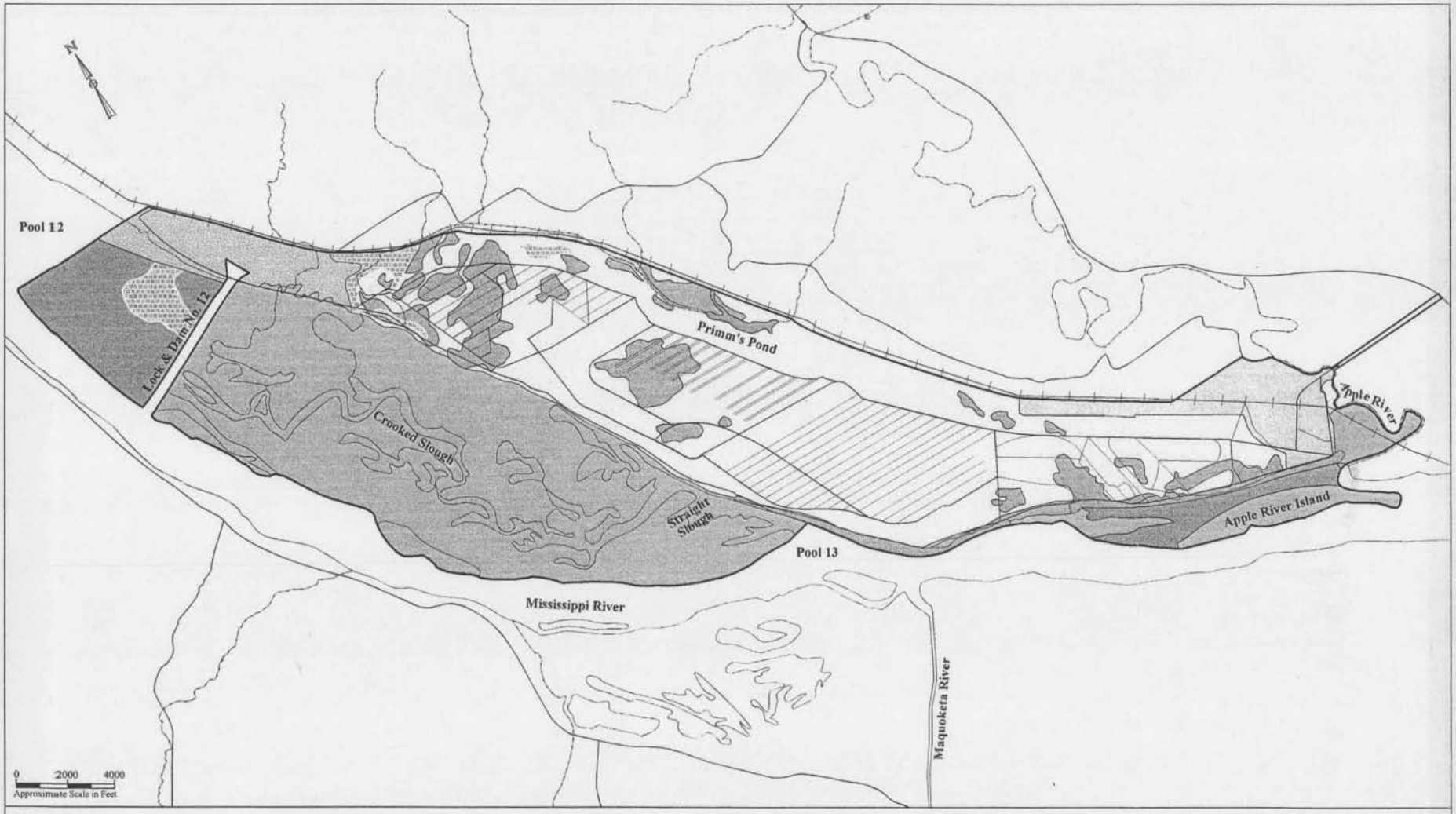
Sand Prairie. Sand prairie occupies about 45 percent of SVADA and is dominant throughout the excessively well drained soils of the uplands. The abundance of this habitat type has been reduced throughout Illinois by development and agriculture, and only a small percentage of natural sand prairie remains statewide. SVADA contains examples of high-quality sand prairie habitat (also see Section 4.11.4). Most of the sand prairie community lies within a munitions bunker and storage building complex that contains over 40 parallel east-west roads spaced at 150 meters. Sand prairies are dominated by grasses, sedges, and rushes, but also contain forbs, which are seasonally dominant in some locations. Common plants found in this community include little bluestem (*Adropogon scoparius*), June grass (*Koeleria macrantha*), and umbrella sedge (*Carex muhlenbergii*; Bowles, 1993). Some introduced trees, such as the black locust (*Robinia pseudoacacia*), are also scattered throughout the area. The majority of grasslands on SVADA are disturbed from heavy cattle grazing, though some isolated areas of relatively undisturbed bluestem prairie do still exist.

Oak Savanna. Oak savanna (also called sand savanna) is found on SVADA in areas where geomorphic and hydrologic conditions are suitable for continuous grass cover, but with scattered trees that contribute up to 30 percent of the vegetative cover. Typical savanna species observed in this area include black oak (*Quercus velutina*), little bluestem, and June grass. Other plant species observed include box elder (*Acer negundo*), honey locust (*Gleditsia triacanthos*), Missouri gooseberry (*Ribes missouriense*), and fragrant sumac (*Rhus aromatica*; Bowles, 1993).

River Dune Complex. This community occurs along the narrow ridge of dunes that border the Mississippi River. It sits 20 to 50 feet higher in elevation than the sand prairies located to the east and up to 70 feet above the river. To more completely characterize vegetation, the community is divided into two subdivisions—open slopes and dune forest. Sensitive species found on the dune's open slopes include the state endangered James' clammyweed (*Polanisia jamesii*), shaved sedge (*Carex tonsa*), and false heather (*Hudsonia tomentosa*). Other species frequent on the slopes include green milkweed (*Asclepias viridiflora*), sand croton (*Croton glandulosus*), rough buttonweed (*Diodia teres*), hairy puccoon (*Lithospermum caroliniense*), and goat's-rue (*Tephrosia virginiana*).

Woody vegetation comprising the dune forest (also referred to as dry, upland sand forest) includes river birch (*Betula nigra*), bittersweet (*Celastrus scandens*), hackberry (*Celtis occidentalis*), hazelnut (*Corylus americana*), honey locust, red cedar (*Juniperus virginiana*), black oak, carrion flower (*Smilax lasioneuron*), American elm (*Ulmus americana*), and prickly ash (*Zanthoxylum americanum*). Herbaceous species found in the understory include wild sarsaparilla (*Aralia nudicaulis*), Jack-in-the-pulpit (*Arisaema triphyllum*), pointed tick trefoil (*Desmodium glutinosum*), and heart-leaved skullcap (*Scutellaria ovata*). The state threatened kittentails (*Besseya bullii*) is also found in one area of the forest.

Upland Forest. The upland forest is located at the northern reaches of the depot and spreads south into the oak savanna. Classification of this forest type can best be described as mixed deciduous. The canopy consists primarily of white oak (*Quercus alba*), red oak (*Q. rubra*), and black oak, with sugar maple (*Acer saccharum*), hackberry, white ash (*Fraxinus americana*), hickory (*Carya* sp.), black cherry (*Prunus serotina*), black walnut (*Juglans nigra*), red cedar, black locust, and basswood (*Tilia*



SVADA Habitat Communities

Figure 4-9

americana) occurring to a lesser extent (USFWS, 1996a). No inventory has yet been conducted of the shrub and herbaceous layers.

Wetlands. Certain wetland communities occur within the upland region on the depot and grade from emergent to palustrine scrub-shrub. No formal vegetation inventory of these areas has been conducted, though typical scrub-shrub wetland plants in northern Illinois include black willow (*Salix nigra*), pussy willow (*S. discolor*), buttonbush (*Cephalanthus occidentalis*), red osier dogwood (*Cornus stolonifera*), reed canarygrass (*Phalaris arundinacea*), and halberd-leaved rose mallow (*Hibiscus laevis*). Typical emergent wetland vegetation includes lesser duckweed (*Lemna minor*), common cattail (*Typha latifolia*), water purslane (*Ludwigia palustris*), and rice cutgrass (*Leersia oryzoides*).

Bottomland Hardwood Forest. The bottomland portion of the depot is found adjacent to the Mississippi River and extends along the river shore for over 7 miles. The entire area is a complex of backwater lakes, sloughs, wetlands, and bottomland hardwood forest cover. Within the forested area, dominant tree species are silver maple (*Acer saccharinum*) and cottonwood (*Populus deltoides*). The understory is composed primarily of stinging nettle (*Urtica dioica*), wood nettle (*Laportea canadensis*), wild cucumber (*Echinocystis lobata*), and reed canary grass (*Phalaris arundinacea*; USFWS, 1996a).

Other wet areas in the bottomlands grade from riverine emergent marsh to wet fringe forest. Emergent marsh typically occurs in poorly drained depressional areas and along fringes of ponds, lakes, streams, and rivers and usually contains less than 30 percent areal vegetative cover. Typical species include American lotus (*Nelumbo lutea*), swamp milkweed (*Asclepias incarnata*), marsh spikerush (*Eleocharis palustris*), common cattail, and river bulrush (*Scirpus fluviatilis*; IDOC, 1988). Wet meadows are also found in the bottomlands, occurring in moist-to-saturated soil with standing water present for only brief to moderate periods during the growing season. Herbaceous species are dominant, with woody vegetation composing less than 30 percent of the total ground cover. Characteristic plants of Illinois wet meadows include cordgrass (*Spartina pectinata*), reed canary grass, winged loosestrife (*Lythrum alatum*), and spotted water hemlock (*Cicuta maculata*; IDOC, 1988). The wet fringe forest communities of SVADA occur along recently disturbed portions of Crooked Slough and the Mississippi River waterway. Typical plant species found there include sweetgum (*Liquidambar styraciflua*), pin oak (*Quercus palustris*), box elder, river birch, and stout woodreed (*Cinna arundinacea*; IDOC, 1988).

4.11.2 Wildlife

Mammals. Thirty-one mammalian species have been detected at SVADA. Large mammals include the bobcat (*Felis rufus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), and red fox (*Vulpes vulpes*). White-tailed deer (*Odocoileus virginianus*) are prevalent on the depot, and the population is open to hunting during the hunting season. Small mammal species observed on the depot include the beaver (*Castor canadensis*), muskrat (*Ondatra zibethica*), short-tailed shrew (*Blarina brevicauda*), masked shrew (*Sorex cinereus*), deer mouse (*Peromyscus maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), white-footed mouse (*Peromyscus leucopus*), prairie vole (*Microtus ochrogaster*) and meadow vole (*M. pennsylvanicus*). The deer mouse and white-footed mouse are by far the most abundant small mammals. The prairie vole is common, and the meadow vole is uncommon (Mankowski, 1994).

Birds. During grassland bird surveys conducted by IDNR in 1994 and 1995, a total of 101 species were recorded in the uplands region of the installation (Anderson et al., 1995). The most common grassland

species detected during the survey were the grasshopper sparrow (*Ammodramus savannarum*) and western meadowlark (*Sturnella neglecta*). Other grassland birds identified include the mourning dove (*Zenaida macroura*), eastern meadowlark (*Sturnella magna*), field sparrow (*Spizella arborea*), and lark sparrow (*Chondestes grammacus*). All of the grassland species observed, except the northern harrier (*Circus cyaneus*), were confirmed nesting on the installation (Anderson et al., 1995).

Another avian survey, conducted in the bottomlands of the depot, identified 112 bird species occupying the bottomland hardwood forests during migrational periods (McKay et al., 1995). Of the total birds observed, 16 species were determined to be year-round residents, 38 species were North American migrants, and 58 species were neotropical migrants. Among the birds observed were the tree swallow (*Tachycineta bicolor*), northern oriole (*Icterus galbula*), warbling vireo (*Vireo gilvus*), double-crested cormorant (*Phalacrocorax auritus*), bald eagle (*Haliaeetus leucocephalus*), wild turkey (*Melagris gallopavo*), and pileated woodpecker (*Dryocopus pileatus*; McKay et al., 1995).

In past years, great blue heron (*Ardea herodias*) and great egret (*Casmerodius albus*) rookeries have existed in the bottomlands. The first to be recorded by SVADA biologists was located in the north section of the bottomlands and contained up to 81 nests. It persisted from 1984 to 1991. This same rookery was apparently relocated in 1992 to the middle section of the bottomlands, along the northeast fork of Crooked Slough. It contained 78 nests and persisted until the 1993 flood of the Upper Mississippi River, when it was abandoned and not repopulated the following year. More recently, a heron colony containing 78 nests was observed during an aircraft survey in May 1995. The exact location of this rookery is unknown (USFWS, 1996a).

Migrating waterfowl and other wetland birds have also been observed using wetland areas in the upland region of SVADA, particularly Primm's Pond. Some of these birds include the pied-billed grebe (*Podilymbus podiceps*), northern shoveler (*Anas clypeata*), common merganser (*Mergus merganser*), greater yellowlegs (*Tringa melanoleuca*), lesser yellowlegs (*Tringa flavipes*), solitary sandpiper (*Tringa solitaria*), semipalmated sandpiper (*Calidris pusilla*), and least sandpiper (*Calidris minutilla*; Anderson et al., 1995).

Reptiles and Amphibians. Thirteen species of reptiles and 11 species of amphibians have been documented on SVADA (USFWS, 1996a). Reptiles observed include the spiny softshell turtle (*Apalone spinifera*), western painted turtle (*Chrysemys picta bellii*), blue racer (*Coluber constrictor foxii*), map turtle and false map turtle (*Graptemys geographica* and *G. pseudogeographic*, respectively), ornate box turtle (*Terrepene ornata*), and garter snake (*Thamnophis sirtalis*). Amphibians observed include the gray treefrog (*Hyla versicolor*), spring peeper (*Pseudacris crucifer*), northern leopard frog (*Rana pipiens*), wood frog (*Rana sylvatica*), and American toad (*Bufo americanus*; Moll and McCallum, 1994a, 1994b).

Fish. A fish species list for the depot was compiled from electro-fishing data collected by the IDNR and the commercial fishing harvest records of one commercial fisherman. Although the list is comprehensive and provides the best available data on fish species on SVADA, it is not complete. Some of the fishes identified from the harvest records include the bowfin (*Amia calva*), gizzard shad (*Dorosoma cepedianum*), emerald shiner (*Notropis atherinoides*), bigmouth buffalo (*Ictiobus cyprinellus*), river carpsucker (*Carpiodes carpio*), white bass (*Morone chrysops*), and largemouth bass (*Micropterus salmoides*). A more comprehensive fish survey of the upper Mississippi River was conducted in 1991 by the USFWS as part of a wildlife inventory of the Upper Mississippi River National Wildlife and Fish

Refuge (USFWS, 1991). Though the survey was not conducted in the waters directly adjacent to SVADA, given its close proximity to the refuge, it is likely that most species detected in the refuge survey would also be found in the section of river along the depot.

The area of SVADA along the main channel of the Mississippi River (Pool 13) has been identified as a significant spawning site for resident walleye (*Stizostedion vitreum vitreum*) and sauger (*Stizostedion canadense*) populations due to suitable substrate, a large mussel bed, and the protected backwater conditions of Crooked Slough (Pitlo, personal communication, 1996; Pitlo, 1989). Although Pool 10 is considered the most productive pool along the upper Mississippi River for walleye and sauger spawning, the mussel bed appears to be the center of spawning activity for 32 miles of Pool 13.

Research conducted as part of Iowa DNR's Long Term Resource Monitoring Program has shown that the Crooked Slough backwater complex is a wintering area for a variety of fish species, including bass, crappie, and bluegill, as evidenced by the large concentrations of fish documented there during the late fall and winter months (Gent and Griffin, personal communication, 1996). Winter habitat has been identified as one of the most important habitat requirements for fish populations in the upper Mississippi River, especially since sedimentation has filled in many backwater lakes previously used by fish as winter habitat.

Telemetry studies of paddlefish (*Polyodon spathula*) in Pool 13 have shown that Crooked Slough is used extensively by this species, probably as a feeding area. The USFWS has petitioned to have the paddlefish included on the Illinois Watch List because of declining populations throughout most of its range (Pitlo, personal communication, 1996).

Invertebrates. Two freshwater mussel beds exist in portions of the Mississippi River adjacent to the depot. The first, purported to be the largest and best developed bed in Pool 13, is located just downstream of Lock and Dam 12 and is believed to contain at least 10 species of native mussels (Gent and Griffin, personal communication, 1996; Pitlo, personal communication, 1996). The federally endangered Higgins' eye pearly mussel (*Lampsilis higginsi*) was collected most recently from this site in 1990 by Dr. E. Cawley of Loras College, Dubuque, Iowa. This species was also collected here in 1975. The other mussel bed in the area is a state-designated mussel refuge. It is located from Lock and Dam 12 (river mile 556.7) upstream to a line extending from river mile 558.4 to Blandings Landing boat ramp (Cottrell, personal communication, 1997).

A survey of insects on SVADA conducted in 1995 and 1996 identified 242 species, representing 8 orders and 49 families. While the bulk of these animals were determined to be wide-ranging generalists, 37 were identified as uncommon or rare, remnant-dependent species (Panzer and Stillwaugh, 1995, 1996). One of the rare species, *Prairiana* sp., may be new to science.

Other rare species identified in the survey include the leadplant flower moth (*Schinia lucens*), listed as endangered in Michigan and a "watch" species in Illinois; prairie katydid (*Conocephalus saltans*), known from less than 20 sites and considered an uncommon, prairie-requiring species; western walking stick (*Diapheromera velii*), a rare species in Illinois; and long-winged toothpick (*Mermeria bivatatta*), bandedwing grasshopper (*Pardalophora haldemanii*), and grasshopper (*Eritettix simplex*), seldom encountered in Illinois and considered regionally rare. Records of three leafhopper species, the rye grass leafhopper (*Commellus colon*), *Flexamia abbreviata*, and *F. gramica*, represent the first to be reported in Illinois in 50 years.

4.11.3 Sensitive Species

Sensitive species are those species listed by the USFWS or by the IDNR as endangered, threatened, or candidates for endangered or threatened status. Other species may be considered sensitive because of the concern they elicit from local groups or other federal agencies. A complete listing of sensitive species that are known or suspected to inhabit the area of SVADA, their status, and their preferred habitat/habitat associations is provided in Appendix E. Locations of these species on the depot are shown in Figure 4-10.

Federally Listed Species. The American bald eagle (*Haliaeetus leucocephalus*) is federally threatened (and state endangered) and known to nest in the bottomlands along the Mississippi River. As of August 28, 1995, two active nests and one inactive nest had been identified on the depot. Large numbers of bald eagles also occupy the depot's bottomlands during the winter months, where they feed below Lock and Dam No. 12, perch along the river shore, and roost in the hardwood forest.

Suitable habitat for four federally endangered animal species, one mammal and three invertebrates, has been identified both on and in close proximity to the depot, though the animals themselves have not recently been detected. These species include the Indiana bat (*Myotis sodalis*), Higgins' eye pearly mussel (see Section 4.11.2), Iowa Pleistocene snail (*Discus macclintocki*), and Karner blue butterfly (*Lycaeides melissa samuelis*).

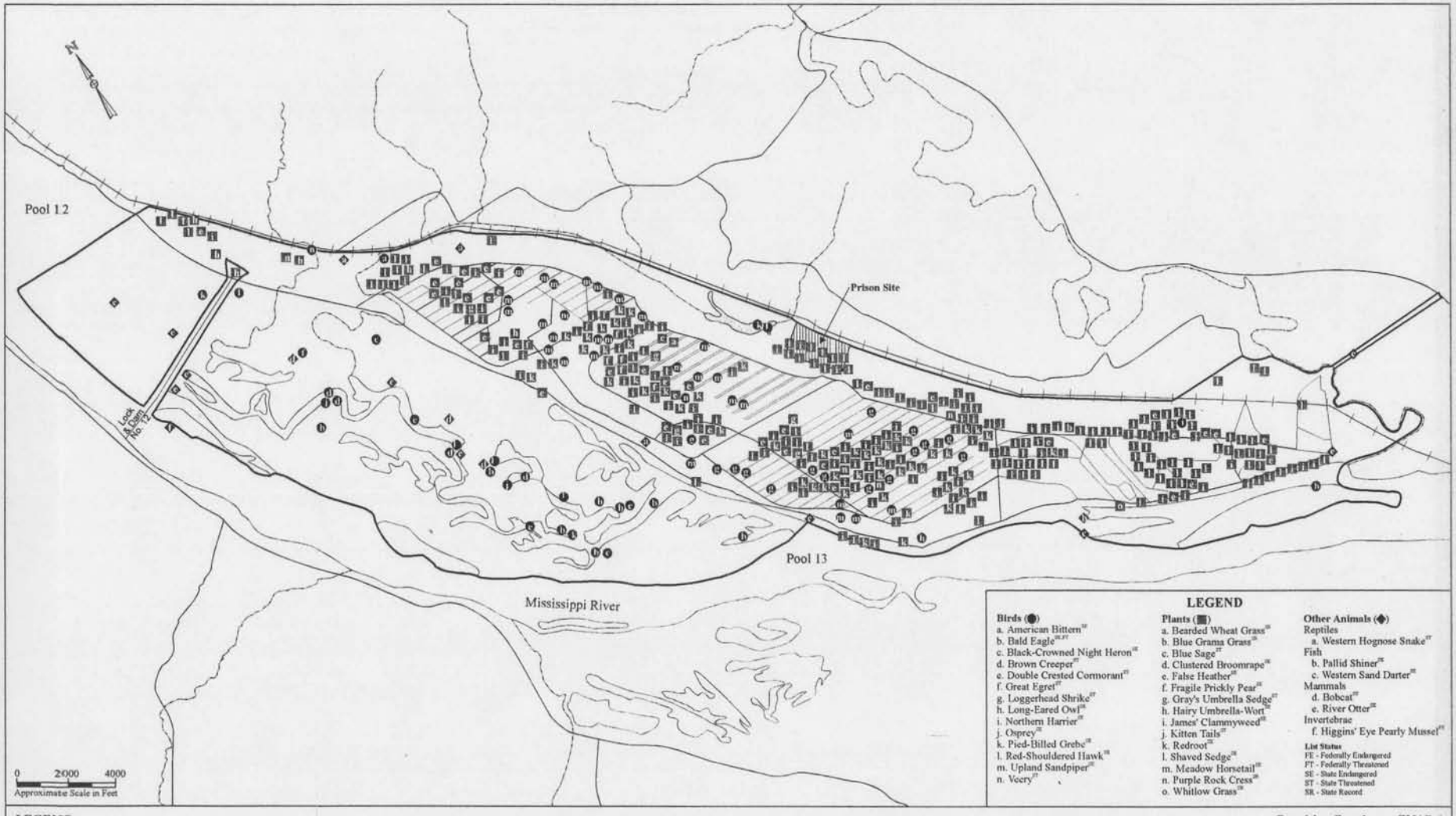
State-Listed Species. Two state-listed mammals, the river otter (*Lutra canadensis*) and bobcat (*Lynx rufus*), have been observed on the installation. The river otter, a state endangered species, has made several appearances in recent years at SVADA. Sightings have occurred in Pool 12 of the Mississippi River, on the Lock and Dam No. 12 access road, along Crooked Slough, and near the base commander's house. Fewer sightings have been made of the bobcat, a state threatened species, though a bobcat was recently found dead within a mile of the installation and bobcat tracks were observed in the snow near the north heron rookery (Nyboer, personal communication, 1996a).

At least 12 state-listed birds have been found at SVADA. These birds and their status include the following: American bittern (*Botaurus lentiginosus*), state endangered (SE); brown creeper (*Certhia americana*), state threatened (ST); double-crested cormorant (*Phalacrocorax auritus*), ST; great egret (*Casmerodius albus*), ST; loggerhead shrike (*Lanius ludovicianus*), ST; long-eared owl (*Asio otus*), SE; Northern harrier (*Circus cyaneus*), SE; osprey (*Pandion haliaetus*), SE; pied-billed grebe (*Podilymbus podicep*), SE; red-shouldered hawk (*Buteo lineatus*), SE; upland sandpiper (*Bartramia longicauda*), SE; and veery (*Catharus fuscescens*), ST. The red-shouldered hawk has been observed nesting in the bottomlands (Stravers and McKay, 1994).

The western hognose snake (*Heterodon nasicus*) is the only state endangered reptile known to inhabit the installation.

Two state endangered fish, the pallid shiner (*Notropis amnis*) and western sand darter (*Etheostoma clarum*), have been identified in close proximity to the depot. Both fishes were identified in side channels of the Mississippi River within depot boundaries (4 miles west of Blackhawk).

At least nine state endangered and three state threatened plant species have been observed on the depot. The state endangered plants include bearded wheat grass (*Agropyron subsecundum*), shaved sedge



Sensitive Species at SVADA

Figure 4-10

(*Carex tonsa*), redroot (*Ceanothus ovatus*), false heather (*Hudsonia tomentosa*), hairy umbrella-wort (*Mirabilis hirsuta*), fragile prickly pear (*Opuntia fragilis*), clustered broomrape (*Orobanche fasciculata*), James' clammyweed (*Polanisia jamesii*), and meadow horsetail (*Equisetum pratense*). The state threatened plants are kittentails (*Besseya bullii*), Gray's umbrella sedge (*Cyperus grayioides*), and blue sage (*Salvia pitcheri*).

The state-listed species found at SVADA are afforded protection under the Illinois Endangered Species Protection Act. The act is intended to promote conservation of Illinois threatened and endangered species by encouraging state and local agencies to enter into consultation with the Illinois Department of Natural Resources before carrying out actions likely to jeopardize the continued existence of these species. Although the consultation program is required by state and local units of government, it is not a regulatory program. Rather, the process involves a voluntary agreement, following negotiations, between development interests and IDNR.

During recent vegetation surveys by IDNR (August 1996), three additional plant species—purple rock cress (*Arabis divaricarpa*), blue grama grass (*Bouteloua gracilis*), and whitlow grass (*Draba nemorosa*)—were discovered in the uplands portion of the depot. Until further investigation, these three plants are considered sensitive due to the fact that they had not been previously identified in the state of Illinois. At this time, they are designated as "state record," meaning that no formal protection has yet been recommended.

4.11.4 Sensitive Habitats

Wetlands. Wetlands present within the upland regions of SVADA (Area II on Figure 4-2) occur primarily along the east-central and northeastern boundary, in the northern section of the depot to the south of Bellevue Dam Road associated with Beaty Hollow and the unnamed intermittent stream to the south of Beaty Hollow, and along Shinski Road between Beaty Hollow and the unnamed tributary (Figure 4-9). A small extension of the wetland associated with Beaty Hollow also occurs to the north of Bellevue Dam Road along the northeastern boundary of the installation. Six small depressional wetlands have also been identified along a line extending in a north-to-south direction on the western boundary of the upland area, west of F Road and south of the F area.

Soils that occur over most of the upland area (Sparta loamy sand, Bloomfield fine sand) are well drained to excessively well drained, have poor water-holding capacities, and are droughty. Areas underlain by these soils, because of their sandy textures and resultant drainage characteristics, do not support wetlands in these areas. Wetlands present within the upland area have formed on soils that are primarily located along drainageways (Beaucoup silty clay loam, Wakeland silt loam) and in low areas adjacent to drainageways, and they are somewhat poorly drained to poorly drained. The hydrology of these wetlands is controlled primarily by surface water runoff, moderate to slow soil permeabilities, and water tables that occur at or near the surface.

The east-central wetland area (Primm's Pond), which is located along the east-central boundary of the depot, is approximately 50 acres in size. The east-central wetland receives runoff from three intermittent streams that flow onto SVADA from the bluffs to the east. Runoff accumulates in the area due to the slow permeability of underlying soils, so the area is seasonally flooded and generally remains saturated throughout the year. Primm's Pond consists of an emergent wetland in its northern section and grades from a scrub shrub to young forested wetland to the south. The two tributaries that flow into Primm's

Pond from the north also have associated overbank wetlands. The area surrounding Primm's Pond has been fenced to reduce impacts on the habitat associated with cattle grazing.

Another emergent/scrub shrub wetland occurs to the north of Primm's Pond along the northeast border of the depot between Shinske Road and K Road. The wetland is about the size of Primm's Pond, but is predominantly scrub shrub with less open emergent areas and some wet meadows present. This wetland area also has two smaller emergent areas at its northern end to the east and west of K Road.

The wetlands in the northern section of the upland area on SVADA occur along stream channels and on both sides of Shinske Road between Beaty Hollow and the unnamed tributary to the south.

The wetlands occurring in the upland area support local populations of amphibians and reptiles, especially species of frogs and toads. Migrating waterfowl and shorebirds also use these areas. Several threatened and endangered or candidate species have been observed in Primm's Pond, including the great egret, which is state threatened, and the pied-billed grebe, which is state endangered. A formal inventory of vegetation that occurs in the upland area wetlands has not been conducted; however, plant species typical of emergent, wet meadow, scrub shrub, and forested wetlands in northern Illinois would be expected. Refer to Section 4.11.1 for a more complete characterization of plant species typically found in these wetlands.

The Mississippi River Backwater Area comprises the Crooked Slough Complex and a separate backwater area located near the mouth of the Apple River. These backwater areas extend for over 7 miles along the Mississippi River and include approximately 6,000 acres of bottomlands. Most of the bottomlands that occur within the Crooked Slough Complex and the backwater area associated with the Apple River are wetlands that occupy a mosaic of open deepwater habitats (lakes, ponds, Prairie Lake, Mississippi River), meandering backwater sloughs (Crooked Slough, Straight Slough), floodplain forests, emergent wetlands, and wet meadows. Emergent marshes in the backwater area occur in poorly drained depressional areas and along the fringes of the Mississippi and Apple Rivers, backwater lakes (Prairie Lake), and the sloughs. The wet meadows occur in areas that are less frequently flooded than the emergent wetlands in poorly drained depressional sections in the bottomlands. The bottomland forested wetlands occur in elevations that range on average between 585 and 600 feet. The lower end of the bottomland forested wetlands is the Mississippi River.

The main portion of the bottomland wetlands occurs within Mississippi River Pool 13. This area begins just downstream of Lock and Dam No. 12 and continues downstream for about 6 miles. Less extensive wetlands occur as strips along the shoreline and as scattered islands toward the southeastern end of the depot. The backwater located near the mouth of the Apple River consists of the Ordnance School Lake, which is about 30 acres, and a smaller separate unnamed impoundment of about 1 acre. The Ordnance School Lake is bounded on the east by the Burlington Northern Railroad, to the south by the Apple River, and to the west by the depot facilities area. The smaller impoundment is located adjacent to the Burlington Northern Railroad about 400 feet north of the railroad bridge that crosses the Apple River. Both of these areas are dominated by emergent wetland plant species. The smaller impoundment consists primarily of an emergent wetland, and the larger lake consists of both open water and emergent wetlands.

Overall, the hydrology of the bottomland wetlands is controlled by variable low and high stages of the Mississippi River. Ordinary rising and falling of the water elevation associated with seasonally

controlled river flow levels has a major effect on wetland hydrology in the backwater area. The change in hydrology associated with the installation of the lock and dam system has caused a shift toward more prolonged wet conditions and an associated shift in vegetation toward more flood-tolerant species. Over time hardmast species such as oak have decreased in numbers and more flood-tolerant species such as silver maple and cottonwood have increased to become the dominant canopy species.

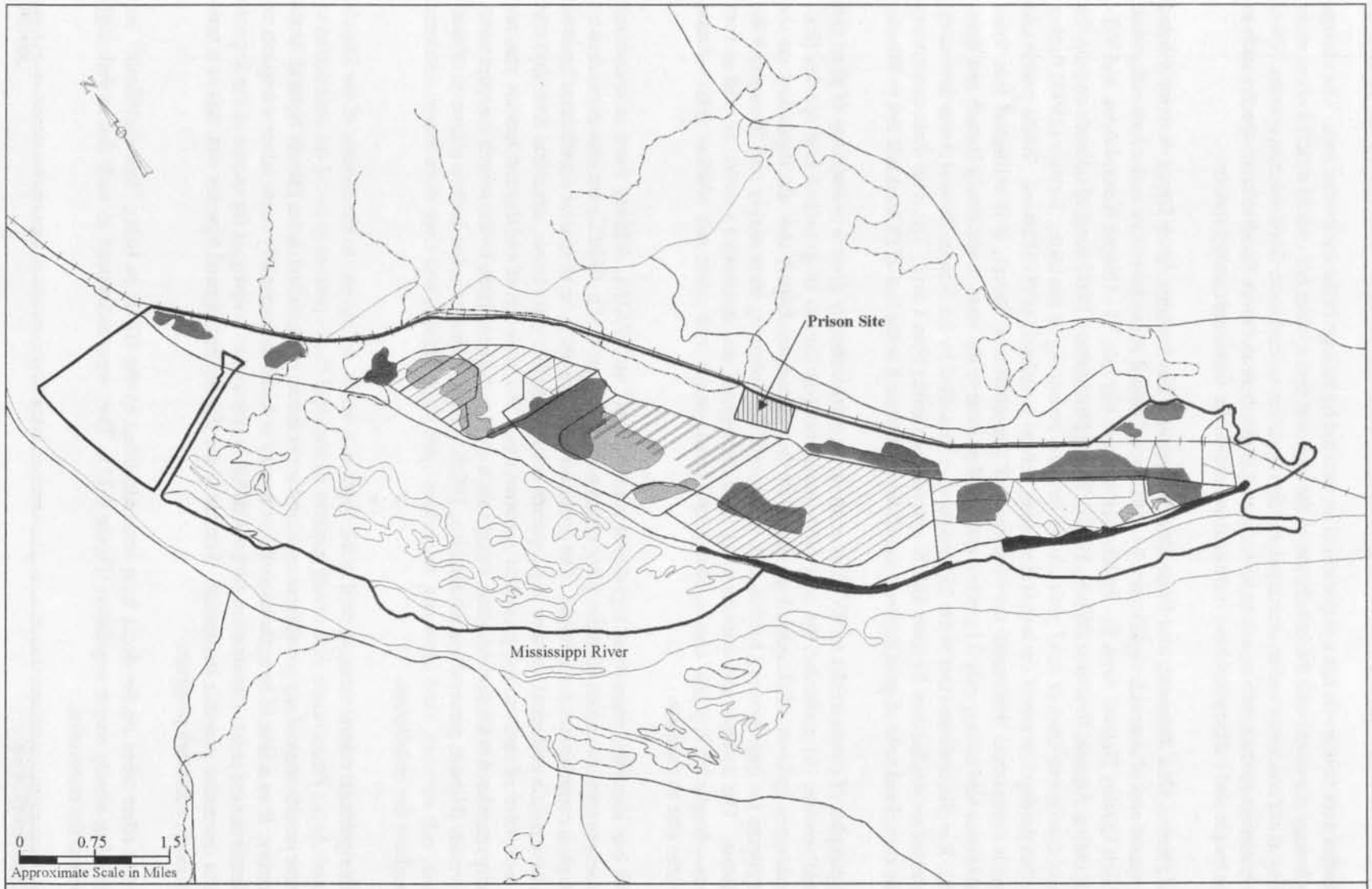
Sand Prairie, Oak Savanna, and River Dune Complex. The Savanna Army Depot Activity is listed as a natural area of statewide significance by the Illinois Natural Areas Inventory under four categories: I - High Quality Natural Area, II - Endangered Species Habitat, VI - Unique Natural Area, and VII - Outstanding Aquatic Resource (White, 1978). The approximately 7,000 acres of uplands contain the largest contiguous tract of sand prairie/sand savanna remaining in the state. Bowles (1993) further identifies the depot as one of the largest remaining natural grasslands in the Midwest. While prairie and savanna ecosystems dominated the landscape of pre-settlement Illinois, it is estimated that these communities now occupy only 0.1 percent and 0.004 percent of the state, respectively (Leach and Ross, 1995). It is also estimated that of the 253 prairie sites identified by the Illinois Natural Areas Inventory, 83 percent are smaller than 10 acres and 30 percent are smaller than 1 acre. The river dune community is also considered to be of great regional significance because it is the last of its kind still left in Illinois.

This complex of communities on SVADA contains an extraordinarily diverse assemblage of plant and animal species. In particular, the area hosts numerous populations of grassland bird species (e.g., grasshopper sparrow, dickcissel, loggerhead shrike, upland sandpiper) that are dependent on the ecosystems for their primary habitat and, as a result, are becoming increasingly rare throughout the Midwest. The uplands also contain many state endangered and threatened species, as well as four plants—fragile prickly pear cactus, blue grama grass, purple rock cress, and whitlow grass—found nowhere else in the state.

IDNR has identified numerous "significant natural areas" on SVADA, defining them as containing relatively pristine examples of native plant communities (Figure 4-11). Wildlife are also dependent on these plant communities for survival. The areas were determined to be of special significance because they have certain ecological features (e.g., species richness, native grass cover, structural diversity) that are indicative of undisturbed grassland communities. The presence of endangered species was not directly considered in the determination, though such species did contribute to the overall measurements of diversity (Nyboer, personal communication, 1996b). The designated areas include remnants of sand prairie, oak savanna, sand blowouts, river dune open slope habitat, and river dune forest, scattered throughout the installation.

These significant natural areas, as well as the depot as a whole, are subject to the dictates of the Illinois Natural Areas Preservation Act, which requires all state and local agencies to avoid the destruction or adverse modification of any natural area registered under the act or identified in the Illinois Natural Areas Inventory. If an action to be undertaken by an agency is found to potentially cause adverse impacts on protected natural areas, consultation with the IDNR is required to investigate the extent of the impacts and to determine possible mitigation. Similar to the Illinois Endangered Species Act, this is a non-regulatory, voluntary program.

Several other areas on the depot have been identified by the IDNR as being "less significant" but containing mostly native vegetation (Figure 4-11). They were recognized as such due to their high potential for restoration.



Significant Natural Areas of SVADA

Source: IDNR, 1996b.

Figure 4-11

4.11.5 Natural Resource Management

Grassland Management. The land management program at SVADA consists primarily of controlling vegetative growth through cattle grazing, mowing, and plantings (SAIC, 1996). Cattle grazing has occurred on site since 1946 (SVADA, 1996) and is ongoing. Current grazing practices can be described as continuous or long-season grazing with some limited rotational grazing (USFWS, 1996a). The leasing system allows the lessee to use the depot from May 1 through November 15. At this time, approximately 1,000 head of cattle are grazing within approximately 3,000 acres. Dames & Moore (1994) reported that intensive cattle grazing, used to keep potentially burnable grass cover low in the munitions igloo areas, has reduced the quality of much of the grassland area of the installation.

Fire is recognized by the USFWS as a valuable grassland management tool and has been used on the depot to a limited extent (USFWS, 1996a). In recent years and working closely with IDNR, SVADA resource managers burned 140 acres of grassland over a 3-year period for the purpose of increasing the number of native grassland plants.

Research conducted on the effectiveness of fire management in prairie ecosystems has demonstrated the positive effects of prescribed burning on native vegetative communities, including the control of woody encroachment, extirpation of invasive species, and exposure of seedling establishment sites by removing litter (Collins and Wallace, 1990; Leach and Ross, 1995). All of these conditions contribute to a more characteristic and structurally diverse prairie environment and increase the amount of habitat available to prairie-adapted wildlife. Although the depot contains a relatively large tract of sand prairie and savanna, these habitats have become isolated from the disturbance regimes that once controlled and maintained them as healthy, functioning ecosystems. The lack of disturbance over the years has taken its toll on these native plant communities, resulting in the loss of their competitive advantage over exotics.

Hunting and Fishing. Hunting opportunities on the depot include deer (firearm and bow), turkey, waterfowl, small game, and racoon. Hunting is restricted to employees, retired Army personnel, and their guests. In 1991 in response to a concern of overpopulation, SVADA reviewed its deer hunting program and increased the number of issued permits from 75 to 100. IDNR recommends a deer hunting density of one hunter per 40 acres of accessible, huntable land. It also recommends a turkey hunting density of approximately one hunter per 150 acres.

A 1,105-acre site of floodplain wetlands, located adjacent to Blanding's Landing, is managed by the IDNR and USFWS for waterfowl hunting. This hunting opportunity is open to the general public, and access to hunting blinds is competitive.

SVADA has an ongoing fishing lease with one commercial fisherman whose harvest is restricted to ubiquitous species such as buffalo, carp, drum, and catfish (USFWS, 1996a). Reports are submitted annually to the depot indicating the particular species and total number of pounds harvested. Some sportfishing occurs and is mostly limited to employees and retired Army personnel, though the public is able to access many of the backwater lakes and sloughs from the main river channel. SVADA is cooperating with IDNR in a fish-stocking program, which stocks Crooked Slough with 14,000 walleye (*Stizostedion vitreum vitreum*) fingerlings on an annual basis.

Although the area has been identified as a significant spawning area for walleye (see Section 4.11.2), the stocking program is part of a mitigation action associated with the nuclear power plant cooling effluent at Cordova, Illinois, located approximately 60 miles south of SVADA (Griffin, personal communication, 1996). The juvenile walleye stock used are native to the upper Mississippi River. While the majority of fingerlings are stocked in pool 14, pool 13 also receives stock, which is placed in the backwater reaches immediately offshore from SVADA.

4.12 CULTURAL RESOURCES

The Army is required to comply with the National Historic Preservation Act (NHPA) of 1966, as amended. Section 106 of the NHPA, along with its regulations at 36 CFR Part 800, requires that federal agencies identify cultural resources on federal property, evaluate those resources for eligibility to the National Register of Historic Places (NRHP), and estimate potential effects from Army actions, as well as identify mitigation measures to be taken. These regulations also require that the effects of proposed federal activities (e.g., new construction or new leases) on significant resources be considered. Section 106 also requires consultation with the State Historic Preservation Officer (SHPO) and other interested parties where necessary.

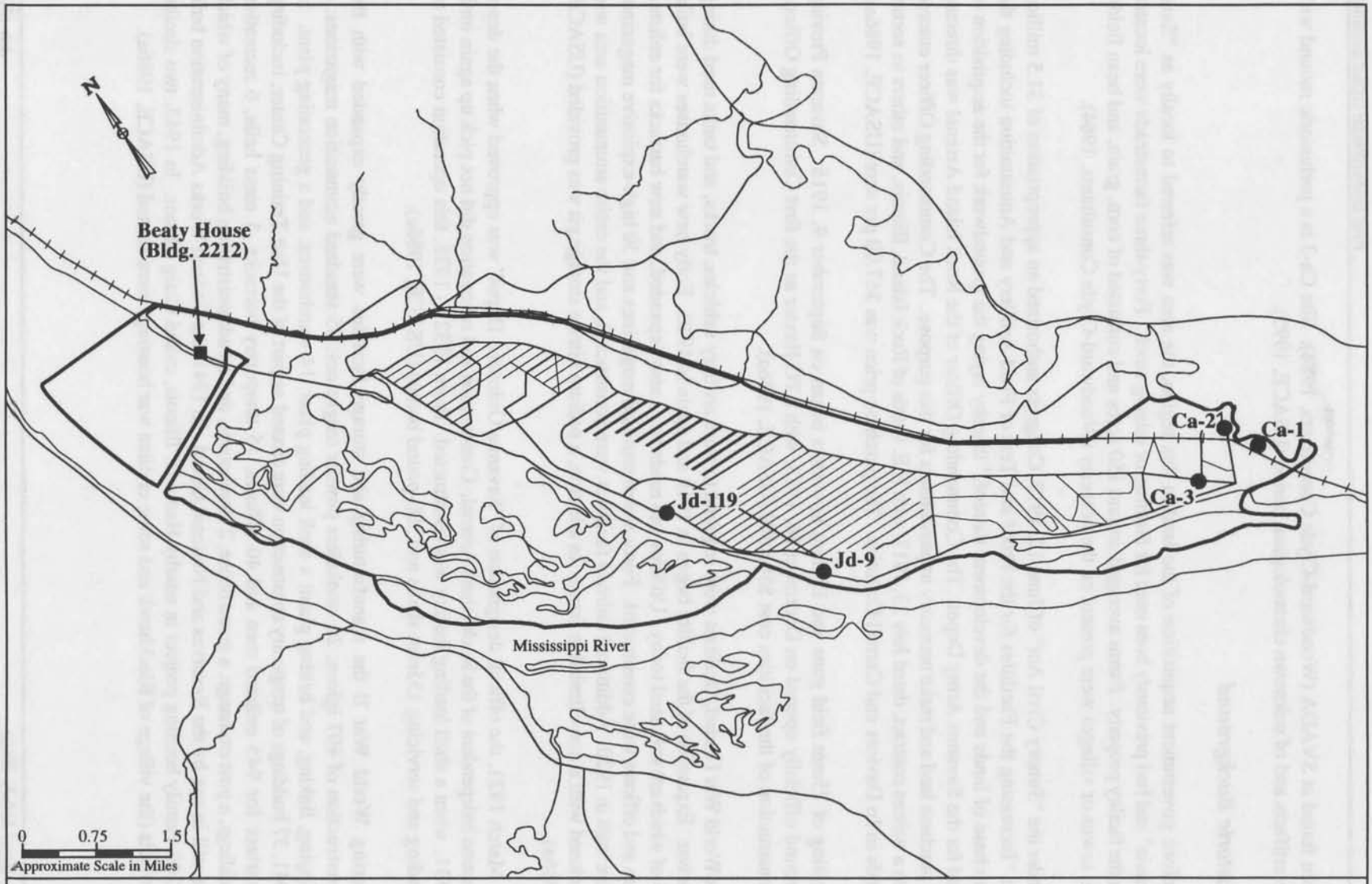
4.12.1 Prehistoric Background

Four prehistoric periods are recognized in northwestern Illinois. They include the Paleo-Indian era (12,000 to 8,000 B.C.), the Archaic era (8,000 to 1,000 B.C.), the Woodland era (1,000 B.C. to A.D. 700), and the Mississippian era (A.D. 700 to present). The Paleo-Indian era was distinguished by a low population density with occupants residing in seasonal or base camps. The Paleo-Indian era was also noted for diagnostic fluted projectile points and exploitation of Pleistocene megafauna. No Paleo-Indian artifacts or sites have been found on SVADA (Woodward-Clyde Consultants, 1984).

The Archaic era is divided into the early, middle, and late periods. Inhabitants of the Archaic era experienced a population increase and are characterized by semi-permanent or repeatedly occupied habitation sites. The Archaic period was also known for the appearance of ground stone tools, which suggested an increased reliance on plant foods in the inhabitants' diet and changes in projectile points types from those used during the Paleo-Indian period. No sites from this period have been recorded on SVADA (Woodward-Clyde Consultants, 1984).

The Woodland era shows the first evidence of ceramic technology in Illinois. The Middle and Late periods of that era are well represented at SVADA. Woodland period hunters and gatherers became increasingly sedentary as the period progressed. Cultivated species of squash and bottle gourd were introduced during the Middle Woodland period. There was an increase in trade, ceremonialism, burial mound building (classified as the Hopewell tradition of burial mounds), and distinctive pottery during the Middle Woodland period. In the Savanna area, archeological remains from this period have been classified as the Nickerson Focus. The Jd-9 site on SVADA dates to the Middle Woodland period (Figure 4-12) (Woodward-Clyde Consultants, 1984).

The Mississippian era is characterized by rises in population, settlements, and social complexity, characteristics all evident in the artifactual assemblages and mortuary plans. Three Mississippian habitation areas (sites Ca-1, Ca-2, and Jd-119) and one Mississippian burial mound (site Jd-119) have



LEGEND

● Known prehistoric site and corresponding identification number

— SVADA base boundary

Source: Woodward-Clyde, 1984.

Known Archeological Resources on SVADA

Figure 4-12

been found at SVADA (Woodward-Clyde Consultants, 1984). Site Ca-3 is a prehistoric mound with no artifacts and of unknown chronological period (USACE, 1995).

4.12.2 Historic Background

Before government acquisition of the land in this region, the area was referred to locally as "Sand Prairie" and had previously been used for farming or raising stock. Forty-three farmsteads were located on the facility property. Farms averaged around 150 acres and consisted of corn, grain, and bean fields. No towns or villages were present on the property (Woodward-Clyde Consultants, 1984).

Under the "Sundry Civil Act" of June 12, 1917, Congress authorized an appropriation of $1.5 million for "Increasing the Facilities for the Proof and Test of Field Artillery and Ammunition including the purchase of lands and the development thereof," thereby laying the groundwork for the acquisition of land for the Savanna Army Depot. The Commanding Officer of the Rock Island Arsenal was directed to purchase land and make necessary improvements for this purpose. The Commanding Officer entered into a written contract, dated July 23, 1917, with H.E. Curtis of Rock Island, Illinois, and others to secure lands in Jo Daviess and Carroll Counties. The purchase price was $67.00 per acre (USACE, 1986a).

Testing of 75mm field guns and 155mm howitzers began on September 9, 1918. Savanna Proving Ground officially opened on December 26, 1918, with LTC Baxter as the first Commanding Officer. Construction of the facilities cost $585,000 (USACE, 1986a).

As World War I ended, facilities were required to store artillery vehicles, trucks, and tanks used during the war. Expansion of the facility began in 1919 and again in 1920. Forty new warehouses were built, 15 of which are still used today. Utilities and roads were also expanded, and new barracks for enlisted men and officers were constructed. Forty-seven standard magazines and 30 high-explosive magazines were built in 1920. Additional railroad facilities were constructed, and the entire ammunition area was enclosed with a non-climbable fence. In addition, a sodium nitrate storage pit was provided (USACE, 1986a).

In March 1921, the official designation of "Savanna Ordnance Depot" was approved when the depot became independent of the Rock Island Arsenal. Construction and renovation did not pick up again until 1931, when a shell loading facility was constructed. From 1932 to 1938, this operation consisted of loading and servicing 155mm shells and 300-pound bombs (USACE, 1986a).

During World War II the manufacturing and storage facilities were greatly expanded with the construction of 407 igloos; 26 smokeless powder magazines; 55 standard ammunition magazines; a clipping, linking, and belting plant; a shell loading plant; 14 warehouses; and a generating plant. In 1941, 37 buildings of temporary construction were erected as part of the Unit Training Center, including quarters for 945 enlisted men and 40 officers, 15 temporary barracks, 5 mess halls, 6 recreation buildings, a post exchange, a guard house, 2 storehouses, and an administration building, many of which are still in use by the Reserves and National Guard. In 1941, the Federal Works Administration built a 200-family housing project in nearby Hanover, Illinois, called Craig Manor. In 1943, two similar projects (the village of Blackhawk and some civilian war housing) were started (USACE, 1986a).

Depot activity slowed after World War II but rose again during the Korean War. In 1950 the Ordnance Ammunition, Surveillance, and Maintenance School was opened at SVADA. It was later renamed the Army Materiel Command Ammunition School (USACE, 1986a).

The depot was renamed Savanna Army Depot in 1962. In 1971, the DARCOM Ammunition Center was established as a collocated activity and in 1979 was renamed the U.S. Army Defense Ammunition Center and School. In 1976, the depot was placed under the command of Letterkenny Army Depot in Chambersburg, Pennsylvania, and was renamed Savanna Army Depot Activity (USACE, 1986a).

4.12.3 Previous Historic Resource Investigations

An Archeological Overview and Management Plan for SVADA was completed in 1984. It documented known as well as potential archeological resources within the facility boundaries. Five known prehistoric sites were reported, and 43 potential historic sites were identified (Woodward-Clyde Consultants, 1984). The five known sites date from middle to late prehistoric times. Three of the five known sites (Ca-1, Ca-2, and Ca-3) are located at the southern tip of the installation. The fourth (Jd-9) is located near the middle of the installation beside the river's edge. The fifth site (Jd-119) lies at the boundary between the bottomlands and the main part of the installation (Figure 4-12). No comprehensive archeological survey has been completed for SVADA. Identification of the 43 potential historic site locations was based on map research conducted as part of the 1984 study.

A Historic American Buildings Survey/Historic American Engineering Record survey was conducted in 1984 by the National Park Service, U.S. Department of the Interior. The survey focused on the identification, evaluation, and preservation of historic properties at SVADA.

Approximately two-thirds of the existing buildings on the SVADA property were built during World War II. Only one building built prior to the establishment of SVADA, the Beaty House (also known as the Old Stone House), remains on its original site (National Park Service, 1984). It was constructed in 1850 by Martin Beaty, who had purchased the land from the federal government in 1845. Beaty sold the house in 1900 to Robert Martin, who then sold it to the United States government in 1918. This property is eligible for listing on the National Register because it possesses sufficient integrity of location, design, materials, workmanship, and association with early settlement history (National Park Service, 1984). However, the paperwork to nominate the house to the National Register of Historic Places has never been submitted to the State Historic Preservation Officer for certification.

In 1995 the U.S. Army Corps of Engineers, St. Louis District's Mandatory Center of Expertise for the Curation and Management of Archeological Collections (MCX) assisted SVADA in complying with the requirements of the Native American Graves Protection and Repatriation Act (NAGPRA) . The MCX locates and assesses archeological collections derived from Army-owned lands (1) to identify the federally recognized Native American tribes most likely affiliated with archeological collections, (2) to draft Section 6 Summary Letters to affected tribes, and (3) to conduct physical inventories of any collections that contain human skeletal remains. No archeological surveys or excavations have been conducted on SVADA since before World War II. Excavated site collections were not found to contain any human remains, funerary artifacts, or sacred objects.

4.12.4 BRAC 95 Section 106 Consultation

The Army has initiated National Historic Preservation Act Section 106 consultations with the Illinois SHPO for the identification and disposal of historic properties at SVADA. (See Appendix E for SHPO consultation letters.) As described in the following text, historic property inventory studies are ongoing for those SVADA lands which are to be excessed from federal ownership. The results of these surveys will be coordinated with the Illinois SHPO for comment as they are completed. After the SVADA historic property inventory has been finalized, the Army will enter into a programmatic agreement with the Illinois SHPO and Advisory Council on Historic Preservation concerning the treatment of SVADA National Register-eligible properties during the disposal of BRAC excess lands. No historic properties will be disposed of by the Army until all appropriate Section 106 consultations are complete.

The U.S. Army Corps of Engineers, Louisville District, recently completed a Phase I Archeological Survey on the proposed prison site. The systematic examination of 164 acres produced no evidence of prehistoric occupation and only minimal indication of historic era land use over the area. Two discrete historic period sites were observed near the parcel's northeastern corner. The first site is an area described as a "whistle stop depot," and evidence (broken glass) of a building site believed to be a turn-of-the-century residence was found there. The second site, located approximately 700 feet west of the first site, is believed to be a turn-of-the-century trash pile. Based on their recent origin and disturbed nature, no further studies are recommended for these sites, and they are to be recommended as ineligible for the NRHP (Ball, personal communication, 1996).

The Louisville District has contracted for an archeological survey of those excess lands scheduled to be conveyed to the LRA which have been determined to be clear of unexploded ordnance (approximately 440 acres). When completed, the report of investigations for this effort will be coordinated with the Illinois SHPO. The requirements for additional archeological investigations at SVADA will be determined by the Army in consultation with the Illinois SHPO as unexploded ordnance safety clearances are received for those lands scheduled for transfer to the LRA.

Louisville District contractors have recently completed a Phase I Historic Architectural Survey of the 465 SVADA buildings scheduled to be transferred to the LRA as part of this BRAC action. The draft report of investigations, *Architectural Inventory of a Portion of the Savanna Army Depot, Carroll and Jo Daviess Counties, Illinois* (Hardlines, 1997), recommends that none of the 465 buildings examined by Hardlines are eligible for the NRHP. Following Army review, this draft report will be coordinated with the Illinois SHPO. Buildings scheduled for transfer to other federal agencies were not examined by this study since those agencies must also comply with the National Historic Preservation Act and will have to take into account the effects of their actions on historic properties that they receive.

4.12.5 Native American Resources

Native American groups known to have inhabited the lands on and around SVADA property include the Mascouten, the Sac and Fox, Miami-speaking tribes, and the Winnebago (Callender, 1978; Goddard, 1978; Tanner, 1987; Waldman, 1988, all cited in USACE, 1995).

The 1978 Indian Land Claims map shows the Sac and Fox Tribe of the Mississippi in Iowa as aboriginally residing in what is presently the location of SVADA (USGS, no date, cited in USACE, 1995). The Sac and Fox submitted a Federal Screening Application expressing interest in obtaining

approximately 4,000 acres of uplands on the installation. The application was denied by the Department of the Interior because the proposal lacked supporting documentation that clearly stated the tribe's need and use of the property. The Sac and Fox Tribe believes that site Ca-1 might contain ancestral remains (Buffalo, 1995). However, in 1932 Robert McCormik Adams, a graduate student from the University of Chicago, excavated the site and found no evidence of human remains; he found only pottery, rock artifacts, animal bones, and plant remains (Wiant, 1995).

Based on previous research, there are no known archeological sites at SVADA that can be directly tied to a specific American Indian group (Woodward-Clyde Consultants, 1984).

4.13 LEGACY RESOURCES

The Legacy Resource Management Program, established by the 1991 Defense Appropriations Act, provides funding for the integrated stewardship of all DoD natural and cultural resources. Under the act, priority is given to identifying legacy resources on BRAC-listed bases and providing for their protection after closure. The following projects at SVADA have been funded through the Legacy Resource Program:

- Prairie Fauna Survey, 1991.
- Establishment of Watchable Wildlife Sites, 1992.
- Sand Prairie Rehabilitation, 1992.
- Herpetology Survey - upland/lowland, 1993.
- Avian Ecological Survey - upland/lowland, 1993.
- Sand Prairie Restoration, 1993.
- Invertebrate Survey, 1994 and 1995.
- Monitoring of Flora and Fauna in Sand Prairie Exclosures, 1994.
- Fish and Wildlife Plan Assistance, 1994.
- Corps of Engineers Forest Management Plan, 1994.
- Wetland Restoration (Primm's Pond), 1995.

4.14 ECONOMIC DEVELOPMENT

Background. This section describes the contribution of SVADA to the economy and social conditions in the region. The socioeconomic indicators for this study include regional economic development (employment and income), population, housing, public health and safety, environmental justice, and homeless and other special programs. In addition, school, social services, recreational and community facilities, and visual and aesthetic values are discussed. These indicators characterize the region of influence (ROI) that would be most affected by the SVADA disposal action and subsequent reuse.

An ROI is a geographic area selected as a basis on which social and economic impacts of project alternatives are analyzed. The criteria used to determine the ROI are the residency distribution of SVADA employees, the commuting distances and times, and the location of businesses providing goods and services to SVADA and its personnel and their dependents. Based on these criteria, the ROI for the social and economic environment at SVADA is defined as the Illinois counties of Carroll and Jo Daviess (Figure 2-1). The two-county ROI covers an area of 1,085 square miles. These counties receive the

majority of SVADA procurement and contractual spending and provide necessary goods and services for SVADA, including housing, public services, and transportation.

Most of the SVADA land area, consisting of the ammunition storage area and the Mississippi River bottomlands, is located in Jo Daviess County. The remainder, consisting of the administrative area, housing, and ammunition plants, is located in Carroll County (Jo Daviess COC, 1996). The county seats for Carroll and Jo Daviess are Mt. Carroll and Galena, respectively.

The disposal and subsequent reuse actions are not expected to affect all areas of the ROI equally. Although Carroll County's population is smaller than that of Jo Daviess County, Carroll County houses the majority of the SVADA workforce and dependents and thus will realize the most direct socioeconomic impacts. Jo Daviess County has a larger population and a stronger, tourism-based economy.

Economic development data include local industry trends, income distribution, occupational composition of the labor force, employment trends, and installation contribution to the regional economy.

4.14.1 Regional Economic Activity

The total workforce population for the two-county ROI is approximately 19,700 (Carroll County, 8,274; Jo Daviess County, 11,426). Unemployment in Carroll County has increased from 5.9 percent in 1990 to 6.3 percent in 1995. Unemployment in Jo Daviess County has shown a slight decrease from 4.7 percent in 1990 to 4.5 percent in 1995 (see Table 4-4). Unemployment in the state of Illinois is 5.2 percent, which is similar to the U.S. average of 5.6 percent (Blackhawk Hills, 1996a, 1996b; Jo Daviess COC, 1996; USDOC, 1990).

The top industries in Jo Daviess County are agriculture and tourism. Agriculture and related businesses generate revenues from dairy and beef production, cheese processing, grain marketing, commodity transport, and equipment sales and service. All livestock and products' cash receipts totaled more than $69 million in 1992 (Jo Daviess COC, 1996). In 1993, Illinois ranked fifth in the United States for domestic tourism. The industry generates $15 billion a year in the state of Illinois. Jo Daviess County hosts more than a million visitors annually. Tourism dollars generated in Jo Daviess County increased from $60 million in 1992 to $94 million in 1995 (Jo Daviess COC, 1996).

Table 4-4
Unemployment Trends

	Carroll County	Jo Daviess County	State of Illinois	United States
1990	5.9%	4.7%	6.2%	5.6%
1995	6.3%	4.5%	5.2%	5.6%

Sources: Blackhawk Hills, 1996a , 1996b; BLS, personal communication, 1996; Jo Daviess COC, 1996; USDOC, 1990.

The top industries in Carroll County are manufacturing, retail trade, and agriculture. Cash receipts for farm marketing alone (including crops and livestock and poultry products) totaled $92 million in 1993 (Savanna COC, 1995).

In 1992, approximately 12 percent of jobs within the two-county ROI were in the agricultural industry, and 88 percent were in nonagricultural industries. The four primary categories of nonagricultural employment were services, wholesale and retail trade, manufacturing, and government. Together, services and trade employed approximately 42 percent of the total labor force (USBEA, 1994). Table 4-5 presents employment structure by occupational category in the ROI.

The service industry was the largest source of jobs in the two-county ROI, employing 23 percent of the total workforce. Wholesale and retail trade was the second-largest source of jobs, providing approximately 19 percent. Government and manufacturing each employed approximately 13 percent of the labor force. As the nonagricultural industry grew by 8 percent between 1980 and 1992, the service sector grew fastest, with the government sector showing the greatest decline (USBEA, 1994). This decline in government sector employment is due in large part to downsizing at SVADA between 1980 and 1992.

Table 4-5
Employment by Industry

Occupation of Employed Persons	ROI (Distribution of Earnings)	% Change in Distribution of Earnings (1980-1992)
Services	4,542 (23%)	+7%
Wholesale and Retail Trade	3,677 (19%)	+1%
Manufacturing	2,692 (14%)	stayed the same
Government	2,631 (13%)	-5%
Finance, Insurance, and Real Estate	1,553 (8%)	-2%
Construction	1,020 (5%)	+1%
Transportation and Public Utilities	787 (4%)	-2%
Other	338 (2%)	+.3%
Mining	38 (.2%)	-.2%
Total Nonagricultural	*17,278 (88%)*	*+8%*
Total Agricultural	*2,411 (12%)*	*-8%*
TOTAL EMPLOYMENT	**19,689**	**---**

Source: USBEA, 1994.

Tables 4-6 and 4-7 list the major employers for Carroll and Jo Daviess counties, respectively. In 1992, the largest employer in Carroll County was a water cooler manufacturer, and the second-largest was the federal government. Currently, the largest employer in Jo Daviess County is an auto parts manufacturer; the second-largest is a resort. Altogether, these major businesses employ approximately 4,700 members (24 percent) of the ROI workforce (Carroll County OECD, 1994; Jo Daviess COC, 1996).

The average household size for the two counties combined is approximately 2.8 persons. The 1990 median household income in Carroll County was $25,754 (Savanna COC, 1995). The 1990 median household income in Jo Daviess County was $26,882 (Jo Daviess COC, 1996). Table 4-8 compares the median household income to state and national figures.

Currently, per capita personal income in Carroll County is $15,213. It is projected to increase by nearly 7 percent to $16,271 by 2000. Per capita personal income in Jo Daviess County is $16,866. It is projected to rise to $19,078 by 2000, an increase of 13 percent.

4.14.2 Installation Contribution, Local Expenditures

SVADA employs 429 persons, including 312 civilians, 6 military, 100 wage grade, and 11 contractual personnel (baseline year 1995). Average annual salaries total approximately $17 million (Dahlman, questionnaire response, 1996).

SVADA's estimated local nonsalary (operational) expenditures are approximately $3 million (FY 95). This figure reflects expenditures for utilities, services, supplies, construction, and operations but does not include expenditures for technical procurements (Dahlman, questionnaire response, 1996).

Table 4-6
Carroll County Major Employers (1994)

Employer's Name	Number of Employees
Elkay Manufacturing Co.	416
U.S. Defense Center and School	259
Metform Corporation	209
Savanna Army Depot Activity	190
Swiss Colony Inc.	166
Atwood Industries Inc.	150
Rolling Hills Progress Center	135
Savanna School District	108
Eastland School District	105
Total number employed	*1,738*

Source: Carroll County OEDC, 1994.

Table 4-7
Jo Daviess County Major Employers (1996)

Employer's Name	Number of Employees
Atwood Industries	650
Eagle Ridge Inn and Resort	500-700
Chestnut Mountain Resort	200-400
Honeywell - Microswitch	345
Public Schools	308
Eaton Corporation	200
Jo Daviess County Workshop	135
Phoenix Chemical	120
Galena Hospital & Nursing Care	115
Total number employed	*2,973*

Source: Jo Daviess COC, 1996.

Table 4-8
1990 Median Household Income

Carroll County	Jo Daviess County	State of Illinois	United States
$25,754	$26,882	$32,252	$30,056

Sources: Grolier, 1995; Jo Daviess COC, 1996; Savanna COC, 1995; USDOC, 1990.

4.14.3 Installation Workforce Structure and Salaries

Table 4-9 lists 1995 personnel levels and salaries for SVADA.

4.15 SOCIOLOGICAL ENVIRONMENT

The sociological indicators for this section include population, housing, public safety, environmental justice, and homeless and other special programs.

4.15.1 Demographics

Population characteristics in the ROI are provided for the baseline year of 1995. To illustrate trends, data are also provided for 1980 and 1990, as well as forecasts for 2000 where appropriate. Demographic data include population trends and forecasts, and other key socioeconomic indicators.

Table 4-9
1995 Personnel Levels and Salaries

Employee Type	Number	Average Salary/Wage
Permanent Military - Officer	1	$39,000
Permanent Military - Enlisted	5	$21,000
Permanent Civilian - GS series	312	$42,000
Wage Grade	100	$36,000
Exchange and Commissary	0	—
Other Nonappropriated Funds	0	—
Contractual Workers	11	$21,000
TOTAL	429	$17,079,000

Source: Dahlman, questionnaire response, 1996.

Currently, the population in the two-county ROI is 38,895 (Carroll County, 16,787; Jo Daviess County, 22,108). Overall population has decreased by approximately 10 percent since 1980. The decline in population during the 1980s was primarily a result of the economic downturn in the local agriculture industry, which was typical of the entire state during that period (Blackhawk Hills, 1996a, 1996b; Carroll County OEDC, 1994).

The population of both counties has steadily decreased since 1980. Between 1990 and 1999, the population of Carroll County is projected to decrease by 6.4 percent from 16,805 to 15,722; the population of Jo Daviess County is projected to decrease by 3.6 percent from 21,821 to 21,025 (Blackhawk Hills, 1996a, 1996b). The continued, steady decrease in population reflects two trends: (1) families are becoming smaller, and (2) most young people who obtain a higher education are forced to find employment outside the county due to the lack of jobs that require technical skills and advanced education (Carroll County OEDC, 1994). Table 4-10 shows the population changes from 1980 to 1990 and projections from 1990 to 1999. Seventy-seven percent of Carroll County's residents, and 71 percent of Jo Daviess County's residents live in rural areas. Seventeen percent of those living in rural areas within the ROI make up the farm population (Blackhawk Hills, 1996a, 1996b).

Table 4-10
Population Trends

Area	Population Changes 1980-1990	Projected Changes 1990-1999
Carroll County	-11%	-6.4%
Jo Daviess County	-7%	-3.6%
Total ROI	-9%	-5%

Source: Blackhawk Hills, 1996a, 1996b.

The majority of the population within the two-county ROI is approximately 40 years of age, higher than the national average of 34 years of age. However, Carroll County has a much higher percentage of people over 55 and has the highest average age in the state of Illinois (Carroll County OEDC, 1994). Fifty-one percent of the population is female; 49 percent is male (USDOC, 1990).

4.15.2 Housing

On-Base Housing. There are 10 family housing buildings containing 31 units, and 16 troop housing buildings capable of housing soldiers located on SVADA. Currently, only 15 military personnel and their dependents live on the installation (Dahlman, questionnaire response, 1996; Jo Daviess COC, 1996).

Off-Base Housing. Forty-eight percent of the SVADA workforce resides within Carroll County, 21 percent within Jo Daviess County, 20 percent in the state of Iowa, and 11 percent within other Illinois counties (SVADA, no date a). The ROI contains a range of primarily rural housing environments (USDOC, 1990).

There are more than 18,000 housing units in the two-county ROI, approximately 3,200 (18 percent) of which were vacant in 1990 (Table 4-11). Of those which were vacant, nearly 900 were up for rent or sale. The remaining units are classified as being for seasonal or recreational use. About 75 percent of housing units are located in rural areas, and 25 percent are designated urban. The median value of an owner-occupied housing unit in the ROI is approximately $43,500. Median contract rent in the area averages $200 per month (USDOC, 1990).

4.15.3 Public Services

Law Enforcement Services. Security for SVADA is provided by the Security Branch, which operates out of Building 132. The branch provides guard service, personnel security, data security, vehicle registration and safety, traffic control, visitor control, and key control at SVADA (Kamper, personal communication, 1996).

When law enforcement activities beyond those provided by the Security Branch at SVADA are required, the Security Division contacts local sheriff departments, with which it works cooperatively. SVADA has a total of 20 civilian employee security officers, including 18 guards, a director, and an assistant director. Three to four patrol vehicles are available for the use of the Security Branch (Kamper, personal communication, 1996).

Law enforcement services in Carroll County are provided by the Carroll County Sheriff's Department, which employs a sheriff and seven deputies, maintains eight patrol cars, and has one jail with a 24-person capacity. There are also eight police departments in the county. One of these, the Savanna Police Department, provides 24-hour police protection services. The other seven provide limited coverage. The Illinois State Police Headquarters for District 1 (which includes Carroll, Whiteside, Lee, and Ogle Counties) is located in Whiteside County in Sterling. Two Conservation Officers with the Illinois Department of Natural Resources live in Carroll County and patrol state parks and other natural areas in the county, including the SVADA region (Herrick, personal communication, 1996a, 1996b).

Table 4-11
ROI Housing Quantity, Quality, and Price

Housing Characteristics	Carroll County	Jo Daviess County
Quantity:		
Number of units	7,481	10,757
Occupancy rates		
Owner-occupied	64%	58%
Renter-occupied	25%	20%
Vacant	11%	22%
Quality:		
Median rooms of all housing units	6	6
Median persons per housing unit	2	2
Median age of units (years)	50+	50+
Percent lacking complete kitchen facilities	1.4%	0.8%
Percent lacking complete plumbing facilities	1.5%	0.7%
Costs:		
Median sale price	$38,300	$48,700
Median rental rate	$196	$212

Note: There is a current trend of vacation and retirement home buyers from the Chicago metropolitan region migrating to the ROI. It is estimated that up to 75 percent of home buyers in Savanna are from the Chicago area (Handel, personal communication, 1996).
Sources: Blackhawk Hills, 1996a, 1996b; USDOC, 1990.

The Carroll County Sheriff's Department undertakes routine patrols, enforces traffic laws, and responds to reports of theft, disturbance, and other emergencies. The Sheriff's Department assists the county fire department with water rescue on the Mississippi River. An auxiliary group of persons from the community is available to assist with lost person searches. The department also has a general-purpose canine unit; provides educational services to schools such as drug abuse education and a stranger awareness program; and, upon request, conducts security checks on homes for persons on extended leave (Herrick, personal communication, 1996a, 1996b).

The Jo Daviess County Sheriff's Department provides law enforcement services in Jo Daviess County. The department employs a sheriff, chief deputy, nine road officers, and three investigators. The department maintains 10 patrol cars and a boat (for river patrol) and is scheduled to receive another boat from drug enforcement supplies soon. The department has a jail with a 27-person capacity. In addition to the Sheriff's department, seven police departments are located in towns throughout Jo Daviess County, and the Illinois State Police are located in Pekatonica (Melton, personal communication, 1996a, 1996b).

The Jo Daviess Sheriff's Department undertakes routine patrols, enforces traffic laws, and responds to reports of theft, disturbance, and other emergencies. The department has a bloodhound for tracking and another canine used for apprehension, narcotics, and tracking. One officer is certified for hazardous materials response, and the Department is in the process of establishing a certified hazardous materials response team (Melton, personal communication, 1996a, 1996b).

Fire Protection Services. The SVADA Fire Prevention and Protection Branch is located in Building 100. It has 13 full-time and 9 auxiliary civilian employee firefighters. The branch provides standard fire protection services and HAZMAT response. The HAZMAT response team is trained to technician status. In addition, the SVADA rescue team responds to special situations such as confined space rescue, for which they are OSHA-certified. This service is provided to surrounding communities as well. The department also has a high-angle rescue team for rescues in circumstances such as on cliffs, under grain bins, or in silos. Surrounding communities also provide this service, but do not have the specialized training or equipment of the SVADA rescue team. All SVADA firefighters are certified as emergency medical technicians (Kuk, personal communication, 1996; SVADA, no date b).

The Fire Prevention and Protection Branch is equipped with a 1,000-gallon per minute (gpm) pumper, a 750-gpm pumper, a 250-gpm mini-pumper/heavy rescue truck, a 1200-gallon tanker, a rescue boat, an ambulance, and a HAZMAT response trailer. Fire hydrants on SVADA have outlets of 2.5, 3.5, and 4.5 inches and barrel sizes of 4.5, 6, and 8 inches (SVADA, no date b; USACE, 1986a, 1986b).

The SVADA fire department has interservice agreements with 18 surrounding communities that provide mutual backup fire protection service when necessary (Kuk, personal communication, 1996). Most fires on SVADA are brush fires near the railroad tracks that result from railroad activity (Bainbridge, personal communication, 1996).

Medical Services. Medical services at SVADA are provided by the Occupational Health Nursing Office, which employs one nurse, one medical clerk, and one part-time physician. The office provides physical exams, immunizations, and treatment for minor illnesses for SVADA employees. The office's focus is the prevention of work-related injuries. For work-related injuries the office provides emergency first aid and medical treatment. The office runs an industrial hygiene program for civilian employees and gives limited medical support to active military personnel at SVADA (Dahlman, personal communication, 1996; SVADA, no date b).

Emergency medical and ambulance service at SVADA is provided by the installation fire department. If an injury is life-threatening, the SVADA fire department responds initially and provides transport of the injured person to either a local medical facility or an ambulance, which is met en route to a medical facility. If an injury is severe but not life-threatening, the fire department provides emergency care and the Savanna Ambulance Association in Savanna, Illinois, is called for transport to an area medical facility (Dahlman, personal communication, 1996).

There are a number of medical centers in the Savanna region. The Samaritan Health System in Clinton, Iowa, and the Freeport Memorial Hospital in Freeport, Illinois, are the medical centers closest to SVADA. Four other major medical centers are located in the nearby area–the Morrison Community Hospital in Morrison, Illinois; the CGH Medical Center in Sterling, Illinois; the Saint Anthony Medical Center in Rockford, Illinois; and the Galena Stauss Hospital and Nursing Care Facility in Galena, Illinois.

Medical facilities available in neighboring Iowa include the Marcy Health Center and the Finley Hospital in Dubuque and the Genesis Health System in Davenport.

4.15.4 Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The purpose of the order is to avoid the disproportionate placement of any adverse environmental or economic impacts from federal policies and actions on minority and low-income populations. Data for the analysis of environmental justice include race and ethnicity, and poverty status of populations within the ROI. The racial and economic population characteristics of Carroll and Jo Daviess Counties are very similar. As identified by the 1990 census, approximately 99 percent of the two-county ROI is white and less than 1 percent is black (USDOC, 1990). (See Section 4.15.1 for a discussion of regional demographics.)

The median household income for the two-county ROI was approximately $26,300. Median household incomes in both counties measured well above the U.S. poverty threshold of $9,890 for a family of three (Grolier, 1995). The Census Bureau bases the poverty status of families and individuals on 48 threshold variables, including income, family size, number of family members under 18 and over 65 years of age, and amount spent on food.

In 1990, approximately 10 percent of ROI residents were classified by the U.S. Census as living in poverty, ranging from 12 percent in Carroll County to 8 percent in Jo Daviess County (Blackhawk Hills, 1996a, 1996b; Savanna COC, 1995). Approximately 12 percent of the total population of Illinois lives below the poverty level (USDOC, 1990).

As identified by the 1990 census, less than 1 percent of the population of the ROI is American Indian, Eskimo, or Aleutian. Less than 1 percent of the population is Asian or Pacific Islander. Approximately 1 percent of the population has been identified as being of Hispanic origin (USDOC, 1990).

4.15.5 Homeless and Other Special Programs

Both county housing authorities offer special programs for individuals and families in need of temporary placement due to lack of a fixed, regular, or adequate residence. According to the Housing Authority of Jo Daviess County, there is currently no homeless shelter in the area, nor is there a need for a shelter (Julliene, personal communication, 1996). The Carroll County Housing Authority reports that there is a need for a short-term facility in Savanna (Raphordy, personal communication, 1996).

4.15.6 Protection of Children

Executive Order 13045 seeks to protect children from disproportionately incurring environmental health risks or safety risks that might arise as a result of Army policies, programs, activities, and standards. Historically, children have been present at SVADA as residents and visitors (e.g., users of recreational facilities). On such occasions, the Army has taken precautions for their safety by a number of means, including use of fencing, limitations on access to certain areas, and provision of adult supervision.

4.16 QUALITY OF LIFE

4.16.1 Schools

The U.S. Department of Education provides federal impact aid to school districts that have federal lands within their jurisdiction because federal property is exempt from local taxes. This federal impact aid is authorized under Public Law 103-382 as payment in lieu of taxes. School districts receive federal funding for each student whose parents live on or work on federal property. The amount of federal school aid a school district receives is dependent on the number of "federal" students the district supports in relation to the total district student population. Schools receive more funding for students whose parents both live and work on federal property. Total funding varies year by year according to congressional appropriations for the program, but in general funding has ranged from $250 to $1,750 per pupil.

There are no schools for dependents of SVADA personnel located on the installation. The majority of SVADA dependent students attend school in Carroll and Jo Daviess Counties. In 1994-1995, the school districts within the two-county ROI had 158 students affiliated with SVADA (SVADA, no date a). The staff-to-student ratio is approximately 1:14 (Jo Daviess COC, 1996). The staff-to-student ratio is a ratio of how many students there are for each teacher. It is an indicator of the amount of personal attention each student receives. Similar information is not available for Carroll County. Table 4-12 provides 1995 local school enrollment data comparing total local students by grade to total students with parents at SVADA by grade. There are nine vocational and post-secondary schools within approximately 40 miles of SVADA. They include Highland Community College, Illinois; University of Wisconsin-Platteville, Wisconsin; and University of Dubuque, Clarke College, and Loras College, Iowa (Jo Daviess COC, 1996).

4.16.2 Family Support

Carroll County offers a variety of community services, including D.A.R.E., a drug awareness program for children; Sinnissippi, a drug and alcohol prevention, education, and counseling center; CASTLE, a legal assistance children's advocacy program; Tri-Counties Opportunities, a program to aid low-income and elderly citizens; and Meals on Wheels and Food Pantries. The Carroll County Department of Health provides additional public health services, including family planning (Handel, personal communication, 1996).

Jo Daviess County offers a variety of family support services, including the YWCA Choices Domestic Violence Program, a 24-hour crisis and information hotline and shelter; Family T.I.E.S., an early childhood parental training program; Catholic Social Services, a licensed Children's Welfare Agency; Northwestern Adult Day Care, allowing the elderly to delay or avoid nursing home placement; and Riverview Center, a sexual assault crisis intervention service. Jane Adams, Inc. provides individual, family, and group counseling; Youth Services Network; youth counseling; Drug-Free Schools Program; marriage counseling and divorce mediation; drug and alcohol prevention education for youth; case management services for the mentally ill; psychiatric services and medication monitoring; and 24-hour crisis service. The Jo Daviess County Health Department's services include environmental health monitoring, school health, and family planning (Jo Daviess COC, 1996).

Table 4-12
1994-1995 Local School Enrollment and Number of SVADA Dependent Students

Grade Level	Savanna Students with Parents at Depot	Total Savanna Students	Mount Carroll Students with Parents at Depot	Total Mount Carroll Students	River Ridge Students with Parents at Depot	Total River Ridge Students	Thomson Students with Parents at Depot	Total Thomson Students	Total Students with Parents at Depot	Total Local Students
Kdg	5	52	0	42	4	45	0	24	9	163
1st	3	84	1	43	2	50	0	25	6	202
2nd	8	67	2	28	2	44	0	26	12	165
3rd	4	62	4	45	3	41	0	26	11	174
4th	6	65	3	41	3	30	0	23	12	159
5th	1	61	3	40	1	45	0	34	5	180
6th	4	76	0	36	1	43	1	17	6	172
7th	9	62	3	40	3	48	1	43	16	193
8th	8	67	6	49	7	37	0	25	21	178
9th	4	73	1	47	5	60	1	25	11	205
10th	10	59	4	57	5	36	0	24	19	176
11th	3	53	2	42	4	38	0	21	9	154
12th	11	61	3	37	7	44	0	32	21	174
Total	**76**	**842**	**32**	**547**	**47**	**561**	**3**	**345**	**158**	**2,295**

4.16.3 Shops and Services

There are numerous shopping opportunities in the area. Galena serves as a major tourist attraction within Jo Daviess County and is famous for its wide variety of shops. However, according to the Systematic County-wide Analysis of Needs survey, more than half of Carroll County's residents go outside the county to shop for automobiles, appliances, groceries, medical services and supplies, furniture, gifts, and apparel. Carroll County is currently making an effort to increase the volume of local retail trade (Carroll County OEDC, 1994).

In addition to local shops and services, the major metropolitan areas of Chicago, Illinois, and Milwaukee, Wisconsin, are located within a 250-mile radius of SVADA.

4.16.4 Recreation

Outdoor recreation is popular year-round in the Savanna area. The installation lies within 30 miles of seven Illinois and Iowa state parks. It is located less than 20 miles from Chestnut Mountain Ski Resort and Plumtree Ski Area. Golf courses are numerous. The two-county ROI contains an abundance of wild game, especially white-tailed deer and wild turkey. The waters of the Mississippi River and its tributaries provide fish and offer riverboat cruises and casinos. Lake Michigan-oriented facilities are less than 200 miles from the depot.

Eighty-five percent of the town of Galena is a National Register Historic District, which attracts a large number of tourists. It is the second-most visited town in the state of Illinois. Galena offers festivals, home tours, art and craft fairs, farmers' markets, dances, bazaars, and a wide variety of other special events.

The Upper Mississippi River National Wildlife and Fish Refuge offers a variety of outdoor activities including hunting, fishing, boating, and hiking.

4.16.5 Visual and Aesthetic Values

SVADA, and much of northwestern Illinois, is part of a landscape with very appealing aesthetic values. Regionally, most of the landscape is rural in character with rolling hills and undulating agricultural fields. Trees cover ridges, ravines, and small valleys. Many of the major highways are winding, often aligned atop ridge crests, enabling a distant view of open hills and farms. Rolled hay bundles and planted crops provide visual diversity along hillsides and valleys. Oak forests along hilltop elevations provide a closed canopy, with shade interspersed by streams of light. Above the hills and tree lines, views of the sky are expansive against the horizon.

SVADA's visual character is similar to the region's with respect to open space, but lacks farmland views. Instead, SVADA's landscape offers a visual impression of how the environment might have looked prior to agricultural conversion. SVADA's viewshed is highly diverse. To the east, tall karst bluffs rise above the depot displaying cliff faces and crevices. A green plain separates the cliffs and the railroad adjacent to SVADA's eastern boundary.

The cantonment area appears orderly with military-style architecture surrounded by mowed lawns and landscaping. In the center of SVADA, the earthen mound igloos are consistent with the rolling landscape of native prairie grasslands. A large pond on SVADA's eastern border, along with various wetlands and upland forests, creates additional aesthetic character. The interspersed buildings used for munitions assembly, storage, and utilities now show their age and leave the impression of a time now past.

Along the Mississippi River, the southern third of SVADA is bordered by tall bluffs with sharp escarpments to the water. Sand mounds often lie inland behind the cliff face, separated by water views of the Mississippi and Crooked Slough. Farther north, the relief subsides, so that flat land joins the river's edge where bald eagles are known to roost and nest. Large expanses of wooded swamp and calm backwater typify vistas of flooded bottomlands.

4.17 INSTALLATION AGREEMENTS

SVADA has an agreement with the Savanna Ambulance Association to provide ambulance service to the depot for medical emergencies. The agreement is a yearly contract. The SVADA fire department can provide initial emergency medical care only and relies on the Savanna Ambulance Association for further emergency response (Dahlman, personal communication, 1996; Hutten, personal communication, 1996).

The SVADA Fire Prevention and Protection Branch is party to a memorandum of agreement among 18 fire departments in the northern Illinois and eastern Iowa region (Northwest Illinois Firefighters Association). Back-up fire-fighting response is provided on an as-needed basis by fire departments that are signatories to the agreement (Kuk, personal communication, 1996).

SVADA has a service agreement with the Burlington Northern Santa Fe Corporation to provide pickup and dropoff of rail cars at the site on an as-needed basis (Straight, personal communication, 1996).

SVADA has an ongoing fishing lease with one commercial fisherman. Reports are submitted annually to the depot indicating the species and number of pounds harvested.

SECTION 5.0: ENVIRONMENTAL AND SOCIOECONOMIC CONSEQUENCES

5.1 INTRODUCTION

5.1.1 Background

This section describes the environmental and socioeconomic consequences of implementing the primary Army proposed action (disposal of excess property) and the secondary action to be taken by other parties (property reuse). The proposed actions are evaluated in the context of the disposal alternatives and reuse scenarios presented in Section 3.0.

The discussion of consequences is divided into four major subsections:

- *No Action Alternative.* Analysis of impacts on resource areas associated with caretaker status (Section 5.2).
- *Disposal Alternatives.* Analysis of impacts on resource areas associated with implementation of the encumbered disposal alternative and the unencumbered disposal alternative (Section 5.3).
- *Reuse Scenarios.* Analysis of impacts on resource areas associated with reuse scenarios (alternatives) of various levels of intensity (Section 5.4). The SVAD LRA reuse plan for housing (1,010 acres), distribution center (720 acres), industrial (640 acres), mixed use (400 acres), open space (302 acres), and recreational and cultural (85 acres) uses represents an LIR level. An MLIR and MIR are also evaluated to account for future, additional redevelopment that might occur.
- *Cumulative Effects.* Analysis of impacts of each alternative action on all resource areas to evaluate cumulative effects likely to occur given the disposal and reuse of all excess installation property and other reasonably foreseeable actions within the affected environment/ROI (Section 5.6).

5.1.2 Definition of Key Terms

Evaluation of potential impacts on the physical, economic, and sociological environments as a result of disposal and reuse relies on use of several key terms and concepts. These include direct and indirect impacts, short- and long-term impacts, cumulative effects, mitigation, and significance. Detailed discussions of these terms are provided in Appendix F.

5.1.3 Methodology for Reuse Alternatives

This EIS analyzes potential environmental effects of implementing the SVAD LRA reuse plan in terms of intensity-based probable reuse scenarios. Resource demands and outputs potentially affecting the environment that could occur as a result of implementing the reuse plan must be compared to the resource demands and outputs that have occurred in the past. Characteristics of the baseline have been identified to permit comparisons.

- For matters related to infrastructure, baseline information is founded on there being 1,040,000 square feet of usable built space that requires electricity, water, sewer, heat, and other services. This baseline figure is derived by subtracting the installation's unmanned warehouse and storage space from its total built space. The unmanned warehouse and storage space required only nominal electrical service and no water, sewer, or heating services. Resource areas relying on infrastructure elements include electricity, fuel oil or coal, natural gas, steam, solid waste landfill or incineration capacity, industrial wastewater, industrial potable water, industrial traffic, and railways.

- For matters related to population, baseline information is founded on an on-base population of 400 personnel, approximating the number of employees at SVADA at the time of announcement of closure. Resource areas relying on the population element include amounts of sanitary wastewater, potable water usage, employee traffic, and public transportation.

5.1.4 Summary of Reuse Obligations and Limitations

Army disposal of SVADA would result in management of the property by other federal agencies or ownership by public and private sector entities. Except as encumbrances might affect reuse, upon transfer or conveyance the Army would no longer manage or control activities that would occur on the land. Elimination of the Army from land use decision making would have several ramifications.

Proponency. The Army would not be the proponent for future activities on SVADA lands. For their respective areas, proponency obligations would fall upon the USFWS, USACE, and SVAD LRA. The USFWS and USACE would be responsible for determining and preparing the appropriate level of environmental impact analysis of proposed actions occurring on the property transferred to their agencies. The whole host of possible matters that could occur, including land use planning, economic development, management of facilities, capital improvements, and further transfer or conveyance, would rest in the discretion of future managers and owners.

Applicable Controls. Transfer or conveyance of SVADA lands to other federal agencies would result in continuation of federal land management practices and application of federal statutes pertaining to numerous resources. Transfer or conveyance of SVADA lands to non-federal entities would result in continuation of many federally-sponsored protections, such as those prohibiting takings of species protected pursuant to the Endangered Species Act and requiring permits with respect to activities associated with wetlands. Transfer or conveyance of SVADA lands to non-federal entities could also result in application of several additional statutes and regulations not previously applicable to federal ownership. For instance, under SVAD LRA control the property would be subject to the Illinois Natural Areas Preservation Act, an Illinois statute that provides for registration and protection of natural areas and preserves, and the Illinois Endangered Species Act. Subsequent non-federal owners of SVADA property would be responsible for complying with the provisions of these state environmental statutes.

Threatened and Endangered Species Consultation. In accordance with Section 7(c) of the Endangered Species Act, on June 17, 1996, the Army initiated informal consultation with the USFWS on issues related to threatened and endangered species. As a result of this process, the USFWS concurred, in their letter dated December 24, 1996, with the Army's conclusion that disposal of the property would not directly affect federally listed species. However, the USFWS is concerned that subsequent reuse activities could adversely affect listed species and/or their habitats. To address this concern, it was

decided between the two agencies that formal consultation would be deferred until an ecological study of the lands to be transferred to the SVAD LRA is completed. The study is to be conducted by the LRA. The Army plans to consider the results of this study to determine if a permanent encumbrance on the property to protect threatened and endangered species should be included in the disposal deed at the time of transfer.

The agreement to defer formal consultation was contingent on the Army's enforcement of four interim use restrictions, outlined in the USFWS letter of December 24, 1996. The Army has agreed to limit, prior to disposal, all activities along the Mississippi shoreline to only those consistent with the intent of the USFWS' recommended use restrictions. The Army has further agreed to include the use restrictions in the appropriate real estate documents should any riverfront lands be optioned for interim lease. The USFWS concurred in its April 17, 1997, letter with the Army's consultation and interim use restriction proposals. Correspondence from the agencies is provided in Appendix E.

Cultural Resources Consultation. In addition to sensitive natural resources, the Army is in the process of fulfilling its cultural resources consultation requirement. Section 106 of the National Historic Preservation Act, along with its regulation at 36 CFR Part 800, requires federal agencies to work with the State Historic Preservation Officer to identify cultural resources on federal property, evaluate those resources for eligibility to the National Register of Historic Places, and estimate potential effects from Army actions, as well as identify mitigation measures to be taken. In complying with these requirements for SVADA, a Phase I archeological survey of the proposed prison site has been completed, with another one planned for the northern portion of the depot to be conveyed to the LRA. Also, a Phase I architectural survey was conducted on all buildings designated for non-federal conveyance and recommended no buildings as eligible for the NRHP. Results of the prison site survey are presented in Section 4.12.4.

Magnitude of Redevelopment. Upon transfer or conveyance, the SVAD LRA would be solely responsible for redevelopment of the SVADA property. The magnitude of redevelopment would be a function of several factors, all of which, with the exception of appropriate encumbrances, would be beyond the control of the Army. While this EIS evaluates up to a medium intensity reuse of that portion of the installation available for transfer or conveyance to the SVAD LRA, the likelihood of such reuse's occurring is completely speculative. Some constraints identified in this EIS suggest that a medium intensity level of reuse would be difficult to attain. For instance, the prevalence of plant species protected under state law as endangered and threatened species might preclude redevelopment of portions of the installation or result in specific areas' being found unsuitable for further development. Analysis of an MIR level does not constitute an endorsement by the Army that such redevelopment would be warranted or prudent.

Authority to Grant Uses. As determined in the Army's declaration of surplus property, title to submerged lands between the Mississippi River main channel and a large portion of the shoreline of the property available for reuse by the SVAD LRA will be transferred to the USFWS. Plans by the SVAD LRA to redevelop SVADA by construction of either a barge terminal or a marina on this portion of the shoreline would be subject to negotiation with and approval by that agency for use of lands titled to the USFWS. Whether to grant use of the submerged lands for a barge terminal or marina would be at the discretion of the USFWS. However, approval by the USFWS would not be required for construction on the remaining one mile of shoreline (contiguous with the main channel of the Mississippi River) that will be conveyed to the LRA. The foregoing, which pertains to real estate grants of use, is distinct from

the matter of approvals that would be required under regulatory frameworks. For instance, proposals for action along the river that might affect sensitive resources would be subject to USFWS review.

Mitigation. Examination of potential impacts resulting from disposal and reuse of SVADA includes identification of mitigation actions that could avoid, reduce, or compensate for the severity of those predicted impacts. Upon disposal, and except as circumscribed by encumbrances, responsibility for implementation of mitigation actions would rest with the agencies or entities receiving the property. Where appropriate, this EIS identifies mitigation actions that subsequent managers or owners could implement to ameliorate adverse impacts. Whether such mitigation would be effected, however, rests in the sound discretion of those future managers and owners. The Army's listing of mitigation actions that could be taken represents a beginning point for future managers and owners to consider as they assume stewardship of the property.

5.2 NO ACTION ALTERNATIVE

5.2.1 Introduction

Closure of SVADA would result in the Army's placing all installation assets into an inactive or "caretaker" status until the property disposal process is complete. Because the decision to close SVADA has been mandated by law, the no action alternative has been defined as maintaining the installation in caretaker status indefinitely.

As described in Section 2.3.1, for a period of at least 12 months following operational closure the Army could provide for levels of maintenance that would ensure transfer of facilities in optimal condition for reuse. Subsequent to that time frame, however, the Army may reduce the level of maintenance to that consistent with federal government standards for excess and surplus property. This latter caretaker activity would be less intense than that immediately following closure and pending transfer of assets to the SVAD LRA. The caretaker status evaluated in this section refers to the latter type of maintenance activities, which could occur for an indefinite period until transfer or disposal of the installation.

The environmental consequences identified in this section reflect the absence of current mission-related activities at the installation.

5.2.2 Land Use

Direct. Long-term minor beneficial impacts would be expected. Under caretaker status, the installation would no longer test pyrotechnics. This mission change would remove a limitation on airspace by no longer requiring operation of the Function Test Range.

Indirect. No impacts would be expected.

5.2.3 Climate

Direct. No impacts would be expected.

Indirect. No impacts would be expected.

5.2.4 Air Quality

Direct. Long-term minor beneficial impacts would be expected. Caretaker activities at SVADA would involve fewer emission-producing activities than normal mission-related operations at the installation. Activities associated with infrastructure maintenance, site remediation, and security operations would contribute only minor quantities of emissions from the use of motor vehicles, paints and solvents, and small internal combustion engines such as mowing equipment. Emissions from stationary sources such as the depot's boilers and space heaters would decrease from their current levels. No new air emission sources would be created as a result of caretaker activities.

Indirect. No impacts would be expected.

5.2.5 Noise

Direct. Long-term minor beneficial impacts would be expected. In contrast to normal operations, caretaker activities would not involve disposal or demolition of conventional ammunition, detonation of explosives during testing of materials, or use of the helipad, except possibly in unusual circumstances.

Indirect. Long-term minor beneficial impacts would be expected. Reduced noise levels might have a beneficial effect on wildlife that use SVADA habitat for nesting and roosting.

5.2.6 Geology

Direct. No impacts would be expected.

Indirect. No impacts would be expected.

5.2.7 Water Resources

Direct. No impacts would be expected.

Indirect. Long-term minor beneficial impacts would be expected. Caretaker activities would involve fewer vehicles as potential sources of contaminants that could be conveyed in storm water runoff. In a similar manner, caretaker activities would involve less use of fertilizers, fuels, and pesticides, and reduced maintenance shop activities, which also contribute to storm water contaminant loads.

5.2.8 Infrastructure

Direct. Long-term minor adverse impacts and long-term minor beneficial impacts would be expected. The SVADA roadway network could deteriorate, though caretaker efforts would include minimal maintenance necessary to support caretaker operations on the installation. No impacts on regional traffic patterns would be expected. Compared to normal operations, less water, heating fuel, and electricity would be used during caretaker status, representing a lower level of consumption of resources.

Indirect. Long-term minor adverse impacts and long-term minor beneficial impacts would be expected. Utilities systems elements (pipes, wires, and cables) could deteriorate, notwithstanding caretaker efforts

to maintain the systems at a level sufficient to permit resumption of full operations. Based on the duration of the caretaker status, reduced use or nonuse of infrastructure systems such as the sewage treatment plant and sewage collection system, potable water system, and the water tower and its associated system could result in their degradation. The industrial waste treatment plant would likely not be affected given its current state of deterioration. Reduction in solid waste generation during caretaker status would result in beneficial impacts on landfill capacities. No impacts on regional traffic patterns would be expected.

5.2.9 *Hazardous and Toxic Substances and Ordnance and Explosives*

Direct. Long-term minor beneficial impacts would be expected. The Army would continue to remediate any contaminated sites at the depot. Storage and use of hazardous materials at SVADA would decline to a minimal level. Unused storage tanks would be drained and closed or removed in accordance with applicable federal, state, and local regulations.

During caretaker status, deteriorated asbestos and lead-based paint would continue to be subject to Army management policies and practices. Any remedial activities such as repair of deteriorated asbestos-containing materials would be managed and such materials would be disposed of properly and in accordance with all applicable federal, state, and local regulations. Likewise, remediation of any buildings or areas potentially contaminated by radioactive materials would be subject to Army policy and conducted in compliance with Nuclear Regulatory Commission requirements.

Indirect. No impacts would be expected.

5.2.10 *Permits and Regulatory Authorizations*

Direct. No impacts would be expected.

Indirect. No impacts would be expected.

5.2.11 *Biological Resources*

Direct. Long-term minor beneficial and long-term minor adverse impacts would be expected. Beneficial impacts on all biological resources, including the federally threatened bald eagle, would occur in both the uplands and bottomlands as the result of decreases in human disturbances, such as automobile traffic and trampling of vegetation. With the continued administration of the cattle grazing lease at its current intensity, however, continued adverse impacts on vegetation and wildlife could be expected. These impacts would most likely be in the form of reductions in late-successional species over much of the depot, increases in opportunistic invasives, and an overall decrease in plant structural diversity. As is often the case, an increase in the number of exotic plants reduces structural diversity typically by outcompeting natives and forming monocultures. Grassland birds, as well as other wildlife species, could be adversely affected by this change in community structure as habitat abundance and quality were diminished. No impacts would be expected from cattle grazing in the northern portion of the high sand banks area, because the number of cattle allowed in this area has been reduced.

Additional adverse impacts on wetlands would be expected if cattle continue to use and disturb these sensitive habitats on SVADA. Many wetlands on the depot are not fenced, allowing cattle direct access to them (particularly during hot months). This disturbance results in vegetation trampling, soil compaction and disturbance, and reduced water quality in the form of increased nutrient loading and increased concentrations of suspended sediments.

Upon relocation of stored ammunition, the economic and safety benefits and environmental costs associated with the cattle grazing lease program would be reevaluated by SVADA resource managers to assess whether the program should be continued during caretaker status.

Indirect. Long-term minor adverse impacts would be expected. Impacts on the sand prairie and oak savanna communities, including the state threatened and endangered plants contained therein, would be expected under the less-intense level of natural resource management associated with caretaker status. Under this alternative, it is likely that the degree and types of management (e.g., prescribed burning, planting native vegetation, select cutting or girdling of non-natives) necessary to maintain healthy grasslands would not be employed. This assumption is made based on the labor-intensive nature of the management methods and the biological expertise required.

Natural resource management activities under caretaker status would have little to no impact on biological resources in the bottomlands, since existing conditions are mostly influenced by the hydrologic characteristics of the area.

5.2.12 Cultural Resources

Direct. Long-term minor beneficial impacts would be expected. Cessation of operations would reduce the probability that construction or renovation activities, except for restoration activities, might affect the integrity of properties potentially eligible for the NRHP.

Indirect. Long-term minor adverse impacts would be expected. Decreased levels of maintenance activities and fewer personnel could increase the possibility of significant deterioration over time of SVADA buildings that are potentially eligible for the NRHP.

5.2.13 Legacy Resources

Direct. No impacts would be expected.

Indirect. No impacts would be expected.

5.2.14 Economic Development

Direct. Long-term minor adverse impacts would be expected due to the decrease in employment from baseline conditions. The amount of direct spending and procurement would fall to levels that would exceed historical fluctuations.

Indirect. Long-term minor adverse impacts would be expected. Facilities and local infrastructure could degrade over time, increasing costs for future development. Such effects, while adverse to the long-term

socioeconomic conditions, are not considered to be significant. Caretaker status would represent a foregone economic opportunity for reuse. For example, benefits of job creation as a result of reuse activities would be lost until the property is conveyed to the community.

5.2.15 Sociological Environment

Direct. Long-term minor adverse impacts would be expected. Due to the reduced numbers of employees present on a daily basis, there could be increased opportunity for vandalism, loss of property, and other criminal activity such as poaching. In a similar manner, reduced staffing could result in less timely discovery of fire and longer fire fighting response times. There could also be lengthier response times in cases of medical emergency for the caretaker force or visitors to the installation.

No impacts would be expected concerning demographics, housing, environmental justice, or homeless and special programs.

Indirect. Long-term minor adverse impacts would be expected. Caretaker status would represent a foregone economic opportunity for reuse. For example, benefits of job creation as a result of reuse activities would be lost until the property is conveyed to the community.

5.2.16 Quality of Life

Direct. No impacts would be expected.

Indirect. No impacts would be expected.

5.2.17 Installation Agreements

Direct. No impacts would be expected.

Indirect. Long-term minor adverse impacts would be expected. The loss of fire protection from the Northwest Illinois Firefighters Association could result in adverse impacts on the safety and well-being of caretaker employees and facilities at SVADA.

5.2.18 Cumulative Effects

Long-term minor adverse cumulative effects are expected as a result of caretaker status. Infrastructure within the installation would be expected to deteriorate over time if not maintained or used within design specifications, resulting in adverse effects on SVADA as a whole and on the surrounding area.

5.3 DISPOSAL ALTERNATIVES

5.3.1 Introduction

Section 3.1 discusses the rationale associated with the development of alternatives to the primary Army action of disposal of excess property at SVADA. The encumbered disposal alternative has been

formulated to consider the type and degree of reuse constraints to be imposed on future owners as a condition of disposal and reuse. These encumbrances are imposed by the Army to protect future Army requirements or interests; to make available as soon as possible, through expedient disposal, BRAC property that is determined to be available and suitable for the planned reuse; to transfer the responsibility to protect important natural or cultural resources to future owners through the use of deed restrictions or covenants; or to meet special mitigation requirements or additional deed restrictions that are mutually agreed upon by the Army and a regulatory agency. The unencumbered disposal alternative evaluates impacts that would be associated with disposal of the property without constraints on reasonably foreseeable reuse. Encumbrances applicable to SVADA property are identified in Section 3.2.1.

Sections 5.3.2 through 5.3.17 identify the potential direct and indirect impacts of encumbered and unencumbered disposal of SVADA property.

5.3.2 Land Use

Encumbered Disposal, Direct. Long-term minor adverse impacts would be expected. In the traditional view of land use, where the best use of real estate was typically perceived as development to the highest level possible, encumbrances related to UXO, wetlands, threatened and endangered species, reversionary interest in favor of the USFWS, overflow easement in the 6,000 acres along the Mississippi River (which gives permanent effect to the long-standing agreement between the Army and USACE), and road and access easements would impair development of SVADA. Periodic flooding of the bottomlands would further limit development options.

The Army also recognizes that encumbrances, to the extent they deter land use, may contribute to and support a "no growth" objective. Many members of a community may prefer that development not occur. The Army's conclusion that impacts on land use would be adverse is based on the traditional view of land use described above and reflects the job creation element of the President's Program to Revitalize Base Closure Communities.

Encumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. The tendency caused by encumbrances to deny development of SVADA would maintain or increase the amount of land within the ROI associated with conservation and preservation of environmental resources such as wildlife or habitat. Retention of SVADA as generally undeveloped would maintain the existing multiplicity of conservation areas in the ROI.

Unencumbered Disposal, Direct. Long-term minor beneficial and short-term minor adverse impacts would be expected. Elimination or removal of encumbrances that constrain development would permit greater potential for flexibility in land use planning. Transfer or conveyance of SVADA property without restrictions could result in its having a higher economic value. Elimination of the remedial activities encumbrance, however, would necessitate completion of UXO and hazardous substance site cleanup which, by law, is required prior to transfer or conveyance. This would delay return of the property to the inventory of usable lands and forestall reuse.

Unencumbered Disposal, Indirect. Long-term significant adverse impacts could be expected. Elimination or removal of encumbrances consistent with wetlands and species protection could expose

biological resources to loss or damage, resulting in degradation or loss of land conservation and wildlife habitat values.

5.3.3 Climate

Encumbered Disposal, Direct. No impacts would be expected.

Encumbered Disposal, Indirect. No impacts would be expected.

Unencumbered Disposal, Direct. No impacts would be expected.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.4 Air Quality

Encumbered Disposal, Direct. Short-term minor beneficial and long-term minor adverse impacts would be expected. Decentralization of heating functions to individual buildings would result in there being numerous but smaller air emissions sources, which would provide a benefit by requiring less rigorous permitting, monitoring, and enforcement. The remedial activities encumbrance would grant access to the Government to attend to equipment used in remediation of hazardous waste at locations that have been transferred for reuse. Depending on the nature of the remediation and the type of treatment, this equipment has the potential to release trace amounts of contaminants into the air since it is not always possible to achieve complete breakdown of pollutants in contaminated soil and groundwater. The Government will need access to the remediation equipment to ensure its proper maintenance and operation, both of which will minimize the release of air contaminants.

As stated previously, Section 176(c) of the Clean Air Act requires federal agencies to ensure that their actions are consistent with the CAA and with federally enforceable air quality management plans. EPA's General Conformity Rule requires a formal conformity determination document for federal actions occurring in nonattainment or maintenance areas (i.e., areas that are violating or have in the past violated the federal ambient air quality standards), though transfers of ownership and leases for similar activities are exempt from conformity determinations. Because Jo Daviess and Carroll Counties are both in attainment for all national ambient air quality standards, the General Conformity Rule does not apply to the Army's proposed disposal of the SVADA land and facilities.

Encumbered Disposal, Indirect. No impacts would be expected.

Unencumbered Disposal, Direct. Long-term minor beneficial and minor adverse impacts would be expected. Similar to encumbered disposal, decentralization of heating functions to individual buildings would result in smaller air emissions sources that would require less rigorous permitting, monitoring, and enforcement. Decentralization of SVADA's utilities, however, could result in an increased use of fossil fuel-burning heating units. This situation could cause long-term minor adverse impacts on regional air quality by increasing particulate matter and hydrocarbon emissions.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.5 Noise

Encumbered Disposal, Direct. Short-term minor adverse impacts would be expected. Some remedial activities, such as well installation, construction of a pump-and-treat facility, or transport of contaminated media, could create localized short-term noise impacts. These would affect only the immediate vicinity, however, and would occur only during daytime hours. None of the site remediation actions or equipment used would be out of character with the current land uses and associated activities at SVADA. Elimination of some UXO would also be required under encumbered disposal and would require sweeping for, excavation of, and possible onsite detonation of any ordnance that might be present. These activities could result in short-term increases in noise levels.

Encumbered Disposal, Indirect. No impacts would be expected.

Unencumbered Disposal, Direct. Short-term minor adverse impacts would be expected. Elimination of the UXO encumbrance would be required under unencumbered disposal and would result in short-term increases in noise levels.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.6 Geology

Encumbered Disposal, Direct. No impacts would be expected.

Encumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. Long-term beneficial effects on soils would occur as a result of the remedial action encumbrance ensuring cleanup of hazardous substance sites that occur on SVADA.

Unencumbered Disposal, Direct. Short-term minor adverse impacts would be expected. Elimination of the UXO encumbrance would involve excavation and removal of UXO and possibly its detonation in place. This would have adverse impacts on soils and microtopography, which would be short-term based on the success of surface regrading and restoration of vegetative cover where appropriate. Long-term minor adverse impacts on the subsurface geology could occur as the result of UXO detonation. Fracturing of the underlying Galena Dolomite could occur, and subsequent solution weathering along newly formed fractures would be expected.

Unencumbered Disposal, Indirect. Long-term minor adverse impacts would be expected. Removal or detonation of UXO could result in long-term adverse effects in the form of severe wind erosion of the dominant upland soils (Sparta loamy sand, Bloomfield fine sand, Chelsea series, and Dickinson sandy loam) as the result of the removal of vegetative cover. Removal or detonation of UXO could also result in long-term adverse effects in the form of overbank, rill, and gully erosion of the bottomland soils as the result of the removal of vegetative cover. Elimination of the wetlands encumbrance could result in long-term adverse impacts on soil stability.

5.3.7 Water Resources

Encumbered Disposal, Direct. Long-term minor beneficial impacts would be expected. The wetlands encumbrance would preserve and protect those areas of SVADA that have wetlands and would permit the wetlands to continue to provide services such as surface water management and retention, nutrient cycling, and habitat for resident and migratory wildlife.

Encumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. The remedial activities encumbrance would permit the Army to perform necessary operations and maintenance work at hazardous substance sites. This would ensure that, over a long term, surface water and groundwater would be restored to conditions consistent with federal and state water quality standards.

Unencumbered Disposal, Direct. Long-term minor adverse impacts would be expected. Elimination of the wetlands encumbrance could result in long-term adverse effects on water and water-dependent resources at SVADA. In the absence of the wetlands encumbrances, potential construction of buildings or other structures adjacent to or within wetlands could result in direct adverse impacts on water and habitat quality.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.8 Infrastructure

Encumbered Disposal, Direct. No impacts would be expected.

Encumbered Disposal, Indirect. No impacts would be expected.

Unencumbered Disposal, Direct. Short-term minor adverse impacts would be expected. The historical patterns of infrastructure development and management under a single entity have resulted in utilities dependencies. Utilities (electricity, sewers, and potable water) are currently operated as single systems, and all facilities on SVADA that use these utilities are interconnected. Thus, operation of the infrastructure in its present configuration would require management by a single entity. Modification for future development could result in a need to install replacement systems serving diverse locations at SVADA and a loss of economies of scale.

No impacts on traffic and transportation, solid waste disposal, or landfills would be expected.

Unencumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. Elimination of utilities dependencies would likely result in an increased potential for reuse of SVADA facilities and thereby improve the installation's capability to provide jobs. This would positively affect socioeconomic conditions of the ROI.

5.3.9 Hazardous and Toxic Substances and Ordnance and Explosives

The presence of hazardous substances is a condition that is neither directly nor indirectly affected by the disposal process. CERCLA requires that before property is transferred, necessary remedial actions must be completed or remedial action must be in place, proven to be operating effectively, and approved by

the EPA Regional Administrator.[1] If additional remediation is needed beyond the transfer date, the government will be responsible only for a remediation that is attributable to activities of the federal government prior to transfer. CERCLA also requires that on properties where hazardous materials were released or disposed of, the type, quantity, and time at which disposal or release occurred must be disclosed in the deed.

DoD policy with regard to lead-based paint (LBP) and asbestos-containing materials (ACM) is to manage them in a manner protective of human health and the environment. DOD will manage LBP at SVADA in accordance with the provisions of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of Public Law 102-550), which requires that federal property transferred for residential use and constructed after 1960 and before 1978 be inspected for LBP and LBP hazards and the results of the inspection provided to prospective purchasers or transferees. Residential property constructed before 1960 must be inspected and all LBP hazards abated if the property is to be used for housing purposes. Information pertaining to ACM on the property will be provided to prospective purchasers or transferees. Where ACM is determined to be in such condition as to pose a threat to human health at the time of transfer, it will be remediated.

Radioactive material contamination is also subject to Army policy and practices and, where required, will be remediated in compliance with Nuclear Regulatory Commission requirements.

For real property contaminated with ammunition, explosives, or chemical agents, DoD policy requires that the contaminated property be decontaminated with the most appropriate technology to ensure protection of the public consistent with the proposed end use of the property (DoD 6055.9-STD, *Ammunition and Explosive Safety Standards*). For UXO remediation, DoD has established standard assessment depths where depth of UXO removal is dependent upon the projected end use of an area. For unrestricted uses (e.g., commercial, residential, utility, subsurface recreation, construction activity), UXO must be remediated to a 10-foot depth. Assessment planning at construction sites for any projected use requires assessing the presence of UXO at 4 feet below planned excavation depths. For public access uses, including farming, surface recreation, vehicle parking, and surface supply storage, UXO remediation is required to a 4-foot depth. Limited public access (e.g., livestock grazing, wildlife preserve) requires a 1-foot UXO sweep and cleanup; and for uses not yet determined, only a surface cleanup is required.

Cleanup of the hazardous substance condition to eliminate contamination that is potentially threatening to human health and the environment would occur in conjunction with either encumbered or unencumbered disposal. Decontamination of Army property to remove ordnance and explosives, however, considers the proposed end uses of property. The extent of ordnance removal may vary across the whole of an installation due to different types of site-specific proposed uses. For example, construction of an industrial-type building would involve UXO remediation to four feet below footings and foundations, while the building's associated parking lot would be remediated only to a depth of 4 feet below the surface grade.

[1] An additional mechanism for property transfer prior to completion of remediation is described in Footnote 2 at Section 2.3.2.

Impacts related to hazardous substance and ordnance and explosives condition are discussed below. Where hazardous substance conditions or encumbrances (use restrictions pending cleanup and provision of site access for cleanup) indirectly affect other resources or conditions, their impacts are described in the appropriate sections.

Encumbered Disposal, Direct. No impacts would be expected. Contamination related to hazardous substances would be remediated in accordance with approved plans concurred in by the appropriate regulatory agencies. Use restrictions, in the event of interim lease activities, and the site access encumbrance would facilitate the Army's performance of its remediation efforts. Inclusion of the UXO encumbrance in transfer and conveyance documentation would reflect Army policy to perform ordnance and explosives removal to a level which reasonably accommodates both future property uses and human safety.

Encumbered Disposal, Indirect. No impacts would be expected.

Unencumbered Disposal, Direct. Long-term minor beneficial impacts would be expected. Unencumbered disposal could occur only upon completion of cleanup of all hazardous substance sites, at which time the need for site access and use restrictions would be moot. Complete UXO remediation and elimination of the need for the UXO encumbrance would result in beneficial impacts to human safety.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.10 Permits and Regulatory Authorizations

Encumbered Disposal, Direct. Long-term minor beneficial impacts would be expected. The utilities dependencies encumbrance reflects the Army's centralized operation and management of utilities systems supporting the installation. Existing permits enabling various aspects of operations at the wastewater treatment plant, potable water supply system, and heating plant may be transferrable to or renewable by subsequent users of the property upon disposal, thus facilitating economic redevelopment.

Encumbered Disposal, Indirect. No impacts would be expected.

Unencumbered Disposal, Direct. No impacts would be expected.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.11 Biological Resources

Encumbered Disposal, Direct. Long-term significant beneficial impacts would be expected. Recognition of the encumbrance for federally listed species would provide long-term protection to bald eagles nesting and roosting in the bottomlands and Higgins' eye pearly mussel habitat in the adjacent Mississippi River by ensuring compliance with the Endangered Species Act. The Army has committed to entering into consultation with the USFWS prior to disposal to determine whether encumbrances protecting these species should be placed on the property (see Section 5.1.4). The determination will include consideration of the LRA's ecological study and could establish conditions limiting

redevelopment (e.g., creation of buffer zones around sensitive resources). Recognition of the wetland encumbrance would provide long-term protection of the wetlands that occur on SVADA by requiring the avoidance of adverse impacts on these resources. Threatened and endangered species occurring within wetlands would also benefit as a result of increased protection provided by the wetland encumbrance. Other laws and regulations (e.g., provisions for permits in Section 404 of the Clean Water Act) could require the USACE to consult with the USFWS on biological issues if a federal permit is required prior to approval of a proposed development project.

Formalization of the overflow easement that allows the USACE to flood the bottomlands along the Mississippi River, giving permanent effect to the long-standing agreement between the Army and USACE, would preclude most uses of development in the bottomlands and maintain its rich habitat values. (Refer to the definition of water resources in Section 5.1.2 for an explanation of the importance of flooding.)

Encumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. The threatened and endangered species encumbrance would provide indirect positive impacts on nonstatus vegetation and wildlife by protecting those individuals and populations located in close proximity to a threatened or endangered species. Moreover, the encumbrance would continue the involvement of the USFWS in decision making about natural resource management and future land uses. The UXO encumbrance would indirectly benefit biological resources over the entire installation by minimizing the destruction of habitat that would inevitably be associated with the remediation of contaminated sites. These encumbrances would also benefit biological resources by precluding some reuses, because of potential human safety hazards, that would disturb or destroy biota.

Unencumbered Disposal, Direct. Long-term significant adverse impacts would be expected. Transfer of SVADA property without establishing conditions on redevelopment to protect listed species could result in long-term adverse impacts on the federally threatened bald eagle and federally endangered Higgins' eye pearly mussel. Impacts could result in direct harm to these species' habitat—the bottomland hardwood forest for the bald eagle and the mussel bed in Pool 13 for the Higgins' pearly eye mussel—by allowing for the possibility of future development in these areas. The absence of Army consultation with the USFWS prior to redevelopment undertakings could result in initiation of actions without the benefit of complete knowledge of potential effects on federally listed species and suitable habitat that may be present. State-listed species would not be affected under this alternative because state and local laws would still be enforced.

Elimination of the UXO encumbrance could involve the complete search for and removal of each item of UXO by digging to depths of up to 10 feet and detonation either in place or in a designated area (see Section 5.3.9). Depending on the areal location and number of UXO items, the procedures needed to fully remediate potential UXO threats could affect listed species and their habitat by directly destroying vegetation. These adverse impacts could also affect the locally and regionally valued sand prairie and oak savanna ecosystems found on SVADA, as well as adjacent mussel beds. The removal of the UXO encumbrance could have direct significant impacts on wetland habitats resulting from associated land disturbances. Elimination of the wetland encumbrance would adversely affect wetland habitats through potential loss of acreage as a result of possible drainage, filling, or building in or adjacent to wetlands.

Unencumbered Disposal, Indirect. Long-term minor adverse impacts would be expected. Deposition of soils eroded from areas impacted by the removal or detonation of UXO could adversely impact

wetland habitats as the result of lost acreage, deposition of sediments, or modification of wetland substrates, thereby negatively affecting vegetation and wildlife found there. Also, increased runoff associated with increased impervious surfaces and increased sedimentation from construction activities would have adverse impacts on flora, fauna, water quality, and soils in adjacent and downstream wetlands. Sediment displaced by the blasts could smother nearby prairie plants, inhibiting photosynthesis and reducing survival. Potentially hazardous by-products of the detonations could contaminate species exposed to the blast.

5.3.12 Cultural Resources

Encumbered Disposal, Direct. No impacts are expected. Section 106 consultations concerning the disposal of SVADA historic properties are ongoing. Under this alternative, deed restrictions with specific reference to SVADA and the Illinois SHPO would be passed on to the new owners as a condition of the sale or transfer of SVADA property, ensuring protection of properties eligible for the NRHP. Example deed restrictions entitled *Standard Preservation Covenant for Conveyance of Property that Contains Historic Buildings and Structures* and *Standard Preservation Covenant for Conveyance of Property that Includes Archeological Sites*, are presented as Appendices G and H. They describe processes for consulting with the SHPO to arrive at mutually agreeable and appropriate measures for mitigating the adverse effects of a proposed undertaking.

Encumbered Disposal, Indirect. No impacts would be expected. The new owners might seek to lessen or remove the preservation deed restriction in the future, resulting in a degradation or loss of properties eligible for the NRHP. If the properties cannot be preserved intact, the preservation deed restriction requires the new owner to consult with the SHPO and to undertake recordation of the properties, in accordance with the Secretary of the Interior's standards for recordation and any applicable state standards. Such recordation would mitigate any potentially adverse effects of such an undertaking to an insignificant level.

Unencumbered Disposal, Direct. Long-term minor adverse impacts would be expected. Under this alternative, properties eligible for the NRHP would be adversely affected by the withdrawal of federal protection. If SVADA historic properties must be disposed of without preservation covenants, the Army, Illinois State Historic Preservation Officer, and Advisory Council on Historic Preservation will consult in accordance with Section 106 of the NHPA to determine appropriate measures for treating the loss of these properties.

Unencumbered Disposal, Indirect. Significant long-term adverse impacts would be associated with the potential degradation or loss of properties eligible for the NRHP. As a result, people living near SVADA would lose these components of their historical heritage. The adverse effects of the undertaking could be mitigated to an insignificant level by implementing appropriate treatment measures, which would be determined through Section 106 consultations between the Army, Illinois SHPO, and ACHP.

5.3.13 Legacy Resources

Encumbered Disposal, Direct. Long-term minor beneficial impacts would be expected. The restoration of Primm's Pond is subject to a protective wetland encumbrance based on Section 404 of the Clean Water Act. The wetland encumbrance would continue to provide protection of this resource. The other

Legacy Resource projects detailed in Section 4.13 are not under conditions directly subject to federal regulatory law. Consequently, no impacts on these completed projects would be anticipated.

Encumbered Disposal, Indirect. No impacts would be anticipated.

Unencumbered Disposal, Direct. Long-term minor adverse impacts would be expected. Elimination of the wetland encumbrance could result in adverse actions affecting Primm's Pond, a site accorded development under the Legacy Resource Management Program.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.14 Economic Development

Encumbered Disposal, Direct. Long-term minor beneficial impacts would be expected. Under some circumstances, the Army may transfer property with deed restrictions related to implementing an approved remedial action or relating to a situation in which a remedy is in place and working effectively but the contamination has not yet been remediated. Deed restrictions might be required to protect any remaining remedial action and to provide the Army with access for continued remediation operation and monitoring. At specific sites requiring hazardous substance remediation, the remedial activities encumbrance would allow economic development activities to begin immediately, having a beneficial effect on local sales volume, employment, and income. Disposal of the SVADA property would also result in new property tax revenues.

Encumbered Disposal, Indirect. No impacts would be expected.

Unencumbered Disposal, Direct. Short-term minor adverse and long-term minor beneficial impacts would be expected. The Army's inability to transfer the property by deed prior to completion of remedial activities would directly affect the potential reuse of portions of SVADA, resulting in the foregone economic benefit of immediate reuse. However, removal of the utility dependencies encumbrance, and thus the limit on total utility use, could result in an increased development potential by providing future property owners with greater options for reuse. The increased potential for development could then lead to the creation of new jobs and increased economic activity in the region.

Unencumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. Elimination of encumbrances would allow for more rapid economic development of the property. This would boost the employment level of the area, as well as increase local expenditures.

5.3.15 Sociological Environment

Encumbered Disposal, Direct. Short-term minor beneficial and long-term minor adverse impacts would be expected. The remedial activities encumbrance would allow immediate initiation of economic redevelopment, resulting in job creation and an increased population. Other encumbrances, such as an overflow easement in favor of the USACE, however, could preclude many uses of portions of the installation and thereby limit potential economic redevelopment. Encumbrances would not contribute

to the creation of disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community. No impacts on public services would be expected.

The Army's proposed action to dispose of property at SVADA essentially consists of transferring or conveying title of real estate to other entities. The proposed disposal action does not involve activities that would pose any disproportionate environmental health risks or safety risks to children.

Encumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. Portions of the installation, especially along the elevated areas overlooking the Mississippi River elevations, could satisfy housing demands of retirees or persons wishing to have a vacation home. No impacts on demographics, public services, environmental justice, or homeless and other special programs would be expected.

Unencumbered Disposal, Direct. Short-term minor adverse and long-term minor beneficial impacts would be expected. Elimination of the remedial activities encumbrances would result in the Army's inability to transfer property by deed prior to completion of remedial actions. This would directly affect the potential reuse of portions of the installation. Removal of the utility dependencies encumbrance could enhance the economic value and development potential of facilities, especially those in the southern portion of the installation. This could lead to more rapid redevelopment and creation of jobs. Rapid redevelopment would lead to a population increase and an increased demand for housing. There would also be an increased need for public services. No impacts on environmental justice or homeless and other special programs would be expected.

Unencumbered Disposal, Indirect. Long-term minor beneficial impacts would be expected. Elimination of encumbrances hindering rapid economic redevelopment would also result in benefits to the local economy in secondary job creation and increased population and housing demand. No impacts on public services, environmental justice, or homeless and other special programs would be expected.

5.3.16 Quality of Life

Encumbered Disposal, Direct. No impacts would be expected. Encumbrances would not affect the availability of schools, public support services, or visual and aesthetic values.

Encumbered Disposal, Indirect. No impacts would be expected. Several encumbrances, taken together, contribute to maintenance of the installation's rural attributes (low intensity development) and protection of natural resources.

Unencumbered Disposal, Direct. No impacts would be expected.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.17 Installation Agreements

Encumbered Disposal, Direct. No impacts would be expected.

Encumbered Disposal, Indirect. Minor adverse impacts would be expected. The remedial activities encumbrance would necessitate the Army's maintenance of fire fighting agreements with local fire departments to respond to emergencies concerning hazardous substance site remediation at the installation. In a similar manner, the Army would maintain agreements with local emergency medical care providers for services available to personnel employed to operate and maintain hazardous substance site remediation equipment. Because the Army will dispose of its own fire fighting and medical service units, emergency response times to the depot could increase, resulting in a greater potential for adverse impacts on natural resources and human safety.

Unencumbered Disposal, Direct. No impacts would be expected. Completion of remedial actions prior to disposal would eliminate the need for both a remedial activities encumbrance and continued agreements with local fire departments and emergency medical care providers.

Unencumbered Disposal, Indirect. No impacts would be expected.

5.3.18 Cumulative Effects

No cumulative effects would be expected as a result of either encumbered or unencumbered disposal.

5.4 REUSE SCENARIOS

5.4.1 Introduction

The reuse scenarios evaluated in this document are referenced as the medium intensity reuse scenario (MIR), medium-low intensity reuse scenario (MLIR), and low intensity reuse scenario (LIR). As noted in Section 3.4.1, these reuse scenarios do not attempt to predict the exact nature or pattern of reuse activities that will ultimately occur at SVADA. The scenarios are beneficial in identifying likely activities and the range of associated impacts that would be expected to occur under various levels of reuse intensity. The SVAD LRA reuse plan most closely resembles an LIR scenario. Higher levels of intensity use would occur upon reaching the objectives expressed in the present reuse plan and then exceeding them, obtaining an even greater degree of redevelopment.

The disposal of excess property made available through a BRAC-mandated closure is evaluated in Army BRAC NEPA documents as a direct action. Redevelopment of the property, undertaken by others, is evaluated in Army BRAC NEPA documents as a secondary action at the planning concept level. There are no guarantees that every reuse concept proposal will be implemented, and detailed information often has not been prepared for such proposals. Therefore, reuse is defined in terms of intensity of considered developments to best describe what will be experienced by the environment from a yet-to-be-designed action. The reuse intensities identified and evaluated in this document include the intensity of developing a prison or a manufacturing plant, or similar levels of development, at SVADA. The cumulative analyses consider the prison development intensity as well. The EIS also acknowledges that future environmental compliance actions will be undertaken by the responsible parties when concrete proposals and plans become available. The public will be afforded the opportunity to comment on and influence the scope of those action through appropriate public notification and involvement processes. Therefore, sufficient impact information is provided in the document so that the decision maker is fully aware of the range of secondary effects that could be generated by the disposal action.

Sections 5.4.2 through 5.4.17 identify and discuss the environmental or socioeconomic consequences of the three reuse scenarios. The reuse scenarios are evaluated based on the assumption that the Army would implement its preferred alternative, encumbered disposal. Reuse of the SVAD LRA area (3,157 acres) is proposed to involve six major types of use: residential, distribution center, industrial, mixed use, open space, and recreational and cultural. In the following sections the six reuse categories of the LRA plan, and examples of the range of activities that might occur within a given category, are discussed under each reuse intensity scenario (MIR, MLIR, and LIR) and alternative impact (direct and indirect) as they may apply. Full build-out to MIR could occur over a 20-year time frame.

5.4.2 *Land Use*

Medium Intensity, Direct. Long-term significant adverse impacts would be expected. Assuming an average FAR of 0.1, the MIR scenario would involve more than 8 million square feet of built space over 3,157 acres of property and an estimated 5,196 jobs. This amount of built space would represent about twice that presently at SVADA. The residential density of 6 to 12 dwelling units per acre and corresponding employee densities under the MIR scenario would be an order of magnitude greater than current uses of the installation. While land use typically seeks to develop real estate to its highest and best use, the intensity would be wholly inconsistent with adjacent agricultural land uses that are predominant in the vicinity of SVADA and with proposed natural area/conservation uses in areas directly abutting the SVAD LRA portion of the installation.

Under the MIR scenarios, approximately 2,000 residents would be expected to be present on the property. Many of these 2,000 residents would potentially hold some of the 5,196 proposed jobs and therefore would not necessarily be in addition to the 5,196 jobs (i.e., 7,196 additional people are not expected). The addition of 2,000 residents would have direct impacts on the land use in the ROI. The ROI is typically agricultural, and the creation of a higher residential density would change the current patterns of the area.

Medium Intensity, Indirect. Long-term minor adverse impacts would be expected. Development of an MIR scenario over a 20-year period would likely involve the relocation of most development and investment capital from other development projects within the ROI. This could adversely affect the ability of those other locations to create or maintain jobs. This effect on the ability of locations to create and maintain jobs could impact the land use patterns of the area.

Medium-Low Intensity, Direct. No impacts would be expected. Assuming an average FAR of 0.05, the MLIR scenario would involve about 4 million square feet of built space over the 3,157 acres of property and an estimated 1,040 jobs. While this scenario represents an increase in built space compared to that which now exists, the intensity of reuse would not be of such magnitude as to cause substantial changes in land use patterns either on or off the installation.

Medium-Low Intensity, Indirect. No impacts would be expected.

Low Intensity, Direct. No impacts would be expected. Assuming an average FAR of 0.025, an LIR scenario would involve slightly more than 2 million square feet of built space and an employee population of about 728. Areas designated for distribution center and industrial uses would be large enough to accommodate associated activities without adversely affecting nearby residential areas.

Low Intensity, Indirect. No impacts would be expected.

5.4.3 Climate

Medium Intensity, Direct. No impacts would be expected.

Medium Intensity, Indirect. No impacts would be expected.

Medium-Low Intensity, Direct. No impacts would be expected.

Medium-Low Intensity, Indirect. No impacts would be expected.

Low Intensity, Direct. No impacts would be expected.

Low Intensity, Indirect. No impacts would be expected.

5.4.4 Air Quality

Medium Intensity, Direct. Long-term minor adverse impacts would be expected. Activities under the MIR scenario would add various emission sources associated with industrial operations, construction activity, and residential furnaces. These activities would replace Army activity that previously contributed emissions from fuel combustion, paint and solvent use, fuel storage and dispensing, degreasing operations, woodworking operations, firefighter training operations, and pesticide applications. It is expected that there would be an overall net increase in emissions under the MIR scenario.

New industrial uses at SVADA would likely contribute to emissions of the criteria pollutants sulfur dioxide, carbon monoxide, nitrogen oxides, and inhalable particulate matter. Occasional emissions of hazardous air pollutants would also likely occur. Some common industrial products classified as hazardous air pollutants include certain pesticides, chlorine, several types of solvents, and petroleum products. These chemicals, as well as a variety of others associated with industrial uses, can be harmful to human health and the environment if released at excessive concentrations. Because no specific industrial use proposals are available, it is not possible to estimate the quantity of criteria pollutant emissions, thereby making it difficult to estimate the use of potentially hazardous chemicals. It is unlikely that there would be any significant impacts on ambient air quality, however, because the operators of any new emission sources would be required to comply with state air quality regulations. These regulations include a requirement to obtain appropriate air emission permits that specify emission limits and appropriate air pollution control equipment. The permit process is designed to control sources that might cause significant adverse impacts on air quality.

Construction activities associated with the MIR scenario would create temporary sources of fugitive dust and vehicle emissions that would primarily be confined to immediate project areas. Because no detailed construction plans were available, generalized estimates were made for the size of the disturbed area, the duration of construction activities, and the pace at which construction would take place. The analysis assumed that a total construction area of approximately 200 acres would be disturbed under the 20-year, full-build-out scenario. This acreage is based on the anticipated need for new industrial buildings,

warehouses, residential homes, and roads. To determine estimates of annual emissions, it was assumed that construction would occur evenly over the 20-year build-out period. Complete data assumptions used for the construction emissions analysis are presented in Appendix G.

Estimated construction emissions would be 0.3 ton per year of reactive organic compounds, 4.5 tons per year of nitrogen oxides, 2.2 tons per year of carbon monoxide, 0.4 ton per year of sulfur oxides, and 2.7 tons per year of inhalable particulate matter. Construction-related emissions are not expected to create any significant permanent ambient air quality impacts due to the limited size and dispersed locations of construction sites. The exhaust emissions from a limited number of heavy equipment vehicles moving around dispersed construction sites would not cause any violations of ambient air quality standards.

Demolition of existing facilities on the depot, expected to occur during redevelopment to remove buildings that have exceeded their usefulness, would likely result in the release of particulate matter. One general indicator of the amount of particulate released provides for approximately 42 pounds of particulate per every 100,000 cubic feet of structure (unspecified building materials) demolished. Such particulate would become airborne and affect downwind regions, the extent of which would be determined by prevailing wind velocities.

Development of 1,010 acres for residential, golf course, and convention center purposes could result in construction and occupancy of approximately 800 residences. In the absence of the availability of natural gas, these homes would be heated with other fossil fuels, which typically produce greater amounts of nitrogen oxides and other criteria pollutants during combustion. Assuming proper installation and operation, the emissions produced by these furnaces would have only a minor adverse impact on regional ambient air quality.

Medium Intensity, Indirect. Long-term minor adverse impacts would be expected. Indirect impacts on air quality will result primarily from the increased level of vehicle traffic that would be expected to occur under the MIR scenario. Commuting travel by future employees, as well as heavy truck travel associated with industrial and distribution center activities at the property, would contribute to vehicle emissions in Jo Daviess and Carroll Counties.

Once the new and renovated industrial, distribution center, and office space at SVADA is occupied, associated vehicle travel would generate emissions in the Savanna region. Table 5-1 summarizes the expected annual emissions that would occur with 5,625 employees commuting to and from the property and heavy truck traffic increasing by a factor of 8 from 1995 baseline conditions. Although vehicle travel associated with residential reuse of the SVADA property would also contribute to emissions in the region, these emissions have not been quantified because of the uncertainty regarding the characteristics of the future population (e.g., the portion in the workforce, the portion working at SVADA as opposed to elsewhere, and the number of seasonal versus permanent homes).

The emission estimates in Table 5-1 are based on data and procedures from USEPA emission inventory guidance and the MOBILE5A and EMFAC7F vehicle emission rate models. Industrial and heavy truck emission rates were based on typical rates for gasoline and diesel trucks operating in a low-altitude region such as Savanna. Average speeds and travel times for commuters were used based on a composite of previous studies representing a mix of rural, suburban, and urban areas. Complete data assumptions used for the vehicle travel emissions analysis are presented in Appendix G.

Table 5-1
Summary of Quantifiable Direct and Indirect Air Emissions, MIR Scenario

	Emissions (tons/year)				
	ROG	NO_x	PM_{10}	CO	SO_x
1995 Emission Estimates[1]					
Private Vehicle Emissions	8.5	8.0	11.1	78.5	0.7
Truck Emissions	0.5	2.0	0.9	4.0	0.2
Total	9.0	10.0	12.0	82.5	0.9
Reuse Emission Estimates[2]					
Private Vehicle Emissions	120.0	112.7	156.2	1,103.5	9.7
Truck Emissions	2.9	12.3	5.3	24.1	0.9
Total	122.9	125	161.5	1127.6	10.6
Change in Emissions from Baseline to Reuse	113.9	115	149.5	1045.1	9.7
EPA's De Minimis Threshold for Maintenance Areas	100	100	100	100	100

Note: ROG = reactive organic compounds
No_x = nitrogen oxides
CO = carbon monoxide
PM_{10} = inhalable particulate matter
So_x = sulfur oxides

[1] 1995 emission estimates are based on 400 employees and 20 truck trips per day.

[2] Reuse emission estimates are based on 5,625 employees and 160 truck trips per day.

Source: Tetra Tech, 1996.

Table 5-1 shows that the net change in emissions associated with an increased workforce and greater heavy truck activity would increase emissions of reactive organic compounds, nitrogen oxides, inhalable particulate matter, and carbon monoxide above EPA's de minimis levels. (De minimis levels are thresholds established by the EPA General Conformity Rule to help evaluate the significance of federal actions. Although the General Conformity Rule does not apply to the Army's disposal of SVADA [see Section 5.3.4], the de minimis concept can still be used to help interpret these predicted changes in emissions). Because the de minimis thresholds would be exceeded, it is likely that there would be an adverse impact on ambient air quality. It is unlikely, however, that these increased emissions would be enough to affect the region's ability to remain an attainment area for all federal ambient air quality standards. This conclusion is based on the good air quality that currently exists in the Savanna region and the fact that the predicted increase in emissions would represent a small percentage of total regional emissions.

Medium-Low Intensity, Direct. Long-term minor adverse impacts would be expected. Considerations relevant to the MIR scenario would apply to the less intense MLIR scenario.

Medium-Low Intensity, Indirect. Long-term minor adverse impacts would be expected. Table 5-2 displays the estimated vehicle emissions that would result under the MLIR scenario. These estimates are based on fewer employee commutes and heavy truck trips compared to the MIR scenario. It is even less likely that the emissions under the MLIR scenario would cause the region to fall into nonattainment for federal ambient air quality standards. Only the carbon monoxide emissions are above EPA's de minimis threshold levels.

Low Intensity, Direct. No impacts would be expected. Emissions from stationary sources would be expected to remain similar or decrease from their 1995 levels. Since adequate usable built space exists to accommodate requirements for the LIR, no new construction would be required.

Low Intensity, Indirect. No impacts would be expected. Vehicle emissions would be similar to those occurring under the 1995 baseline conditions.

5.4.5 *Noise*

Medium Intensity, Direct. Long-term minor adverse impacts would be expected. Industrial activities could involve use of equipment that would produce noise affecting adjacent areas. Operation of a prison near Whitten Gate would involve periodic use of sirens or horns. Operation of a barge terminal would

Table 5-2
Summary of Quantifiable Direct and Indirect Air Emissions, MLIR Scenario

	Emissions (tons/year)				
	ROG	**NO_x**	**PM_{10}**	**CO**	**SO_x**
1995 Emission Estimates[1]					
Private Vehicle Emissions	8.5	8.0	11.1	78.5	0.7
Truck Emissions	0.5	2.0	0.9	4.0	0.2
Total	9.0	10.0	12.0	82.5	0.9
Reuse Emission Estimates[2]					
Private Vehicle Emissions	22.2	20.8	28.9	204.0	1.8
Truck Emissions	1.5	6.1	2.6	12.0	0.5
Total	23.7	26.9	31.5	216	2.3
Change in Emissions from Baseline to Reuse	14.7	16.9	19.5	133.5	1.4
EPA De Minimis Threshold for Maintenance Areas	100	100	100	100	100

[1] 1995 emission estimates are based on 400 employees and 20 truck trips per day.

[2] Reuse emission estimates are based on 1,040 employees and 60 truck trips per day.

Source: Tetra Tech, 1996.

involve craft with large power plants that produce noise and could also involve periodic use of ship whistles and bells. These noise generators have the potential to adversely affect people or wildlife, depending on the types of equipment in use, the effectiveness of any noise abatement measures, and the distances between the noise-generating sources and the receptors.

The residential area in the southeastern portion of the Northern Shinske Road area would be most susceptible to adverse noise impacts. Houses in this area would be adjacent to the A distribution area, the industrial area, and the proposed prison site. Proper siting and abatement measures (such as structural barriers, buffer zones, and special acoustic treatments) might be required to keep noise exposure levels below disturbance levels (65 dBA) in this area. Residential areas in the River Edge subdivision would also be exposed to noise levels from the J distribution area, the industrial area, and the mixed use area. The open spaces proposed for this area would be expected to minimize the potential for noise-related land use compatibility problems.

Medium Intensity, Indirect. Short-term minor adverse impacts would be expected. Short-term adverse impacts on the noise environment would be created as a result of construction of an additional 4 million square feet of space and potential renovation of existing space. These impacts would be localized and temporary, and they would most likely occur only during daylight hours. Traffic generated by reuse activities and travel by an employee population estimated to nearly 5,200 persons would also affect the noise environment. Noise from traffic would be most noticeable in the vicinity of the present Main Gate. Offices and residences located within 50-100 feet of the Main Gate access road could be affected by incompatible noise levels. Because of their distance from major roadways, traffic noise would not be expected to affect most of the houses in the Northern Shinske Road and River Edge subdivision areas.

Medium-Low Intensity, Direct. No impacts would be expected. Use of 4 million square feet of built space and an employee workforce of just over 1,000 persons would pose substantially less occasion for noise than an MIR scenario.

Medium-Low Intensity, Indirect. No impacts would be expected. The amount of construction or renovation to establish an MLIR scenario and noise associated with traffic principally attributable to approximately 1,000 employees would pose substantially less occasion for noise than an MIR scenario.

Low Intensity, Direct. No impacts would be expected. Considerations relevant to the MLIR scenario would apply to the less intense LIR scenario. The noise levels expected to occur would be similar to current levels, which are within an acceptable range for all land uses.

Low Intensity, Indirect. No impacts would be expected. Considerations relevant to the MLIR scenario would apply to the less intense LIR scenario.

5.4.6 Geology

Medium Intensity, Direct. Long-term minor adverse impacts would be expected. As a consequence of construction, the MIR scenario could result in long-term adverse impacts on soil resources and existing landforms in the LRA parcel. Ground breaking and the clearing of vegetation associated with any construction that occurs in the LRA areas would expose the highly wind-erodible soils to erosion. Construction along the Mississippi River could result in adverse impacts in the form of increased

shoreline erosion, impacts on downstream wetlands, and impacts associated with necessary dredging and dredge material disposal.

Medium Intensity, Indirect. Long-term minor adverse impacts would be expected. Due to very rapid permeability, the majority of soils occurring in the LRA parcel have very low available water capacity. Very low water capacity and the instability (due to wind erosion) of dominant soils that occur over the LRA parcel would make the reestablishment and maintenance of vegetation following construction activities difficult. Construction along the Mississippi River could result in loss of downstream wetland habitats due to eroded sediments.

Medium-Low Intensity, Direct. Long-term minor adverse impacts would be expected. Impacts similar to but less severe than those expected for the MIR scenario would also occur in the MLIR scenario.

Medium-Low Intensity, Indirect. Long-term minor adverse impacts would be expected. Indirect impacts similar to but less severe than those expected for the MIR scenario would also occur in the MLIR scenario.

Low Intensity, Direct. No impacts would be expected. The LIR scenario is generally comparable to baseline conditions.

Low Intensity, Indirect. No impacts would be expected. The LIR scenario is generally comparable to baseline conditions.

5.4.7 Water Resources

Medium Intensity, Direct. Long-term minor adverse impacts would be expected. Built space at the MIR level would grow from about 4 million square feet to about 8 million square feet. Also, the employee workforce, estimated at 5,625 persons, would result in a need for the addition of approximately 37.5 acres of parking lot at a capacity of 150 vehicles per acre. Construction of 800 residential units (each footprint estimated at an average of 1,200 square feet) and provision of driveways (each footprint estimated at an average of 500 square feet) would create another 1,360,000 square feet (31 acres) of impervious surface. This additional construction of buildings and parking lots would increase the amount of impervious surface within the SVAD LRA area by nearly 7 million square feet (160 acres). These estimates do not include any additional roadways that might be needed.

Medium Intensity, Indirect. Long-term minor adverse impacts would be expected. Greater volumes of storm water runoff would be expected as a result of the increased amounts of impervious surface. Concentrations of pollutants, such as metals, nutrients, lubricants, fuels, and antifreeze, in storm water runoff from increased impervious surfaces associated with the MIR scenario could result in adverse impacts on surface waters and shallow, unconfined groundwater aquifers in the SVAD LRA areas. These could in turn have long-term adverse impacts on aquatic resources and wildlife dependent on aquatic resources for their food. Pollutants carried in concentrated stormwater flows could also impact water quality in adjacent surface water features. Adverse impacts on water quality in shallow, unconfined aquifers could result, where nearby surface water drainages are not present, due to the very rapid infiltration rates of the dominant soils in the SVAD LRA areas.

Construction of facilities on the banks of or within the Mississippi River, such as a marina or barge terminal, could result in short-term adverse impacts on water quality. Long-term adverse impacts, in the form of changing erosion and depositional patterns, could also occur as a result of shoreline and near-shore modifications associated with the construction of such facilities. Adverse impacts from dredging and dredge material disposal required to maintain channels for terminal operations would be expected.

In addition to construction impacts, the metal-containing compounds used in barge fleeting and marina operations could result in on-site and off-site adverse impacts on water and sediment quality. Lead, used as a fuel additive, could be released into the water column as a result of incomplete fuel combustion. Arsenic, found in paint pigments; zinc anodes, used to deter corrosion of metal hulls and engine parts; and copper and tin, used in biocides and antifoulant paints, could also be released into the water column and sediments over time. Chemical spills and shoreline erosion associated with barge fleeting operations could result in both on-site and off-site adverse impacts on wildlife and adverse impacts on downstream recreational areas. Other pollutants could be introduced into the aquatic environment during loading and unloading operations.

Increased vessel operations associated with a marina or barge facility could have adverse impacts on aquatic habitat by resuspending river bottom sediments and increasing turbidity. Propeller-induced flows could contribute to bottom scour in shallow areas and reduce overall water clarity and quality. Increased propeller-driven vessel activity could also result in changes in wave frequency and velocity, causing increased shoreline erosion and associated downstream deposition.

Medium-Low Intensity, Direct. Long-term minor adverse impacts would be expected. Direct impacts similar to but less severe than those expected for the MIR scenario would also occur in the MLIR scenario.

Medium-Low Intensity, Indirect. Long-term minor adverse impacts would be expected. Indirect impacts similar to but less severe than those expected for the MIR scenario would also occur in the MLIR scenario.

Low Intensity, Direct. No impacts would be expected. The LIR scenario is generally comparable to baseline conditions.

Low Intensity, Indirect. No impacts would be expected. The LIR scenario is generally comparable to baseline conditions.

5.4.8 Infrastructure

Medium Intensity, Direct. Both long-term significant and minor adverse impacts would be expected. As discussed in Section 3.4.4, the MIR scenario would involve an additional 2,000 residents and 5,196[2] employees occupying and using the SVAD LRA's parcels (see Table 3-2). These figures compare to about 429 personnel at SVADA during 1995. Increased populations would pose additional demands on infrastructure elements involving potable water, wastewater, and solid waste disposal.

[2] The number of additional employees under each reuse scenario is generated by subtracting the number of employees at SVADA in 1995 (429) from the employee population provided in Table 3-2 (e.g., 5,196=5,625-429).

The existing sanitary wastewater treatment system at SVADA has a design capacity of 300,000 gpd. In 1995, SVADA's 429 employees generated 63,000 gpd of wastewater, resulting in 158 gpd/person. Assuming wastewater generation at this average rate, in the MIR the 5,196 employees and 2,000 residents would generate 1,136,968 gpd. This quantity would exceed the design capacity of the present wastewater treatment system by 836,968 gallons. The industrial wastewater treatment system at SVADA has not been operated for many years and is overgrown with vegetation. It is, however, believed capable of being restored to an operable status and retrofitted to process domestic wastewater, though extensive repairs might be required (Roberts, personal communication, 1996b). These circumstances indicate that new construction or substantial renovation and upgrade of existing systems would be necessary to meet wastewater treatment capacity requirements in an MIR scenario. The LRA reuse plan proposes construction of a new wastewater treatment facility that would accommodate the plan's proposed build-out, as well as the needs of the state prison. The plan considers siting the plant either where the existing wastewater treatment facility is, or in the "H Area" with an outfall to be directed to the Apple River. Construction and operation of an upgraded or new wastewater treatment facility at either of these locations would not be expected to adversely affect use of other properties being disposed of by the Army (transfer of lands to USFWS). Facility siting and construction and pipeline burial requirements would also affect environmental resources, but these effects would be minor because the areas served by the sanitary wastewater treatment system are mainly in the cantonment area and would not likely be located in areas of threatened and endangered vegetation.

Interstate Power Company, which currently supplies electricity to SVADA, has indicated that increases associated with an MIR scenario would not impact electrical supply in the ROI. Mooring Disposal, which supports solid waste removal requirements at SVADA, has also indicated that even with an increase in solid waste generation under the MIR scenario, solid waste removal services in the ROI would not be adversely impacted (Pate, personal communication, 1996). Electricity and solid waste would not be impacted under the MIR scenario because the electric companies can provide for the increases in electricity use expected under the MIR.

The existing potable water system at SVADA is capable of supplying 2,736,000 gpd. The U.S. standard for water usage is 100 to 200 gpd/person. Using a mean of 150 gpd/person, an increase to 2,000 residents would require 300,000 gpd. In addition, 5,196 employees would use the water supply available at SVADA. In 1995, SVADA's 429 employees used 105,000 gpd, resulting in 245 gpd/person. Using this figure, the 5,196 employees would use 1,273,020 gpd. This amount of water usage, combined with the usage by residents, would result in 1,573,020 gpd. This calculation indicates that there would be a capacity surplus of 1,162,980 gpd. No impacts on potable water supply would be expected. The potable water system, however, currently runs on only three of its four pumps. For the system to operate at full capacity, the fourth pump would require repair for leakage. In the MIR scenario, 1,773,750 gpd of potable water would be required. To meet this demand, the fourth well would require repair.

Significant adverse impacts on traffic could be expected. In the MIR scenario, based on a combination of reuses including residential, industrial, and warehouse, an additional 1,476 trips (trips in excess of those generated under the LIR scenario) on IL 84 would be generated in the vicinity of Crim Drive. The capacity of IL 84 is 1,900 vehicles per hour (vph). The estimated peak hour volume on IL 84 under this scenario would be 2,115 vph, which is considerably more than the baseline estimate of 247 to 293 vph (see Section 4.8.6). Expansion of IL 84 in the vicinity of Crim Drive might become necessary, as well as expansion of Crim Drive and improvements to the roadway network presently on the installation property to serve new uses. It should be noted, however, that the vehicle per hour estimates presented

above relate only to traffic during peak hours and would not be expected at all hours of the day. The proposal for an intermodal warehouse and distribution center operation cited in the LRA's reuse plan could involve use of a variety of transportation means (barge, truck, and rail). As understood by the Army, the intermodal warehouse and distribution center operation could involve the use of resources beyond those within the areas that would be transferred or conveyed to the LRA. For instance, such an operation might find it beneficial to use the railway and loading dock assets within the areas that would be transferred to the USFWS. Such use would be at the discretion of the USFWS, and whether authorization was granted would rest in the sound discretion of the USFWS based on a level of detail of information that cannot be presently formulated

Medium Intensity, Indirect. Short-term minor adverse impacts would be expected. Separating the utility systems so that facility owners or tenants would be independent, or adding submeters to the systems at point of service, would result in upgrades to the infrastructure. Noise and soil disturbance would be associated with laying or replacing infrastructure components such as electrical lines, pipes, or telecommunications cables. These impacts, however, would be temporary and negligible.

Natural gas is not presently used at SVADA. Interstate Power Company and Jo-Carroll Electric have offered to install natural gas piping for new owners wanting to use natural gas. This would be beneficial to the electrical utility system and might help reduce the impacts from separating the electrical systems. Installation of natural gas piping would cause minor impacts, predominantly temporary, on soils and vegetation and would affect use of property by adding right-of-way easements.

Medium-Low Intensity, Direct. Short-term minor adverse impacts would be expected. In the MLIR scenario, the additional 2,000 residents and 611 employees would generate 412,538 gpd of sanitary wastewater. This would exceed by 112,538 gallons the design capacity of the existing wastewater treatment plant. The industrial wastewater system at SVADA is believed capable of being restored and retrofitted to an operable status as a domestic wastewater treatment plant, though extensive repairs would probably be required. These circumstances indicate that new construction or substantial renovation and upgrade of existing systems would be necessary to meet wastewater treatment capacity requirements in an MLIR scenario. Facility siting and construction and pipeline burial requirements would affect environmental resources, but these effects would likely be minor and temporary.

Infrastructure pertaining to electricity and solid waste would not be affected in an MLIR scenario because the utility services in the ROI would continue to operate effectively under the increases in electricity and solid waste use that would be expected in this scenario. The potable water supply system would not be affected because fewer employees would be associated with this reuse (611 as compared to 5,196 in the MIR scenario).

The estimated peak hour volume on IL 84 under this scenario is 860 vph. Given that the capacity of IL 84 is 1,900 vph, no impacts on traffic would be expected under the MLIR scenario.

Medium-Low Intensity, Indirect. Short-term minor adverse impacts would be expected. Indirect impacts similar to but less severe than those expected for the MIR scenario would also occur in the MLIR scenario.

Low Intensity, Direct. Short-term minor adverse impacts would be expected. In the LIR scenario, the additional 2,000 residents and 299 employees would generate 363,242 gpd of sanitary wastewater. This

would exceed by 63,242 gallons the existing wastewater treatment plant's design capacity. New construction or substantial renovation and upgrade of existing systems, including possibly retrofitting the idle industrial wastewater treatment plant, would be necessary to meet wastewater treatment capacity requirements in an LIR scenario. Facility siting and construction and pipeline burial requirements would affect environmental resources, but these effects would be minor and temporary.

Low Intensity, Indirect. No impacts would be expected.

5.4.9 *Hazardous and Toxic Substances and Ordnance and Explosives*

Medium Intensity, Direct. No impacts would be expected. As discussed in Section 5.3.9, the Army would take necessary remedial action to protect human health and the environment in any transfer of property. Reuse activities associated with industrial, commercial, or mixed use of the SVAD LRA areas could create the potential for hazardous spills and would be required to be in accordance with federal and state requirements pertaining to hazardous materials and hazardous substances. Permitting and enforcement mechanisms would provide assurance against contamination of environmental media and would be protective of human health and the environment.

Medium Intensity, Indirect. No impacts would be expected.

Medium-Low Intensity, Direct. No impacts would be expected. Conditions in an MLIR scenario would be similar to those in the MIR scenario.

Medium-Low Intensity, Indirect. No impacts would be expected.

Low Intensity, Direct. No impacts would be expected. Conditions in an LIR scenario would be similar to those in the MIR and MLIR scenarios.

Low Intensity, Indirect. No impacts would be expected.

5.4.10 *Permits and Regulatory Authorizations*

Medium Intensity, Direct. No impacts would be expected. Operating permits and regulatory authorizations for activities in an MIR scenario would be required for infrastructure systems and specific activities by reuse entities. Where feasible and allowed by regulatory agencies, the Army may transfer existing permits and authorizations to new owners. For operational matters not now covered, future owners and operators would be required to obtain permits and authorizations independently. In the event a prison is constructed, appropriate air emission permits for boilers and any site-specific sources (e.g., fuel storage or dispensing equipment) would be required. In the event a barge terminal is constructed, permits from the Corps of Engineers for dredge and fill of wetlands might be required. Activities occurring in the industrial use area would likely require a variety of permits and authorizations. Existing permitting and enforcement mechanisms would provide assurance against contamination of environmental media and would be protective of human health and the environment.

Medium Intensity, Indirect. No impacts would be expected.

Medium-Low Intensity, Direct. No impacts would be expected. Conditions in an MLIR scenario would be similar to those in the MIR scenario.

Medium-Low Intensity, Indirect. No impacts would be expected.

Low Intensity, Direct. No impacts would be expected. Conditions in an LIR scenario would be similar to those in the MIR and MLIR scenarios.

Low Intensity, Indirect. No impacts would be expected.

5.4.11 Biological Resources

Medium Intensity, Direct. Short- and long-term significant adverse impacts would be expected. Figure 4-10 shows the numerous populations of state threatened and endangered species located throughout the LRA parcel. Given their ubiquitous distribution, most ground-breaking activities, unless occurring within the footprint of an existing building, would have the potential to cause significant adverse impacts on sensitive plants. Ground breaking would also adversely affect non-listed vegetation.

Because the depot is listed on the Illinois Natural Areas Inventory (Section 4.11.4) and areas of relatively pristine native prairie communities (referred to as "significant natural areas" and identified on Figure 4-11) have been further recognized by the state, any proposed destruction or disturbance of native plant communities on the depot could constitute a significant adverse biological impact. Consultation between future property owners and the IDNR would be required for all reuse proposals that could adversely impact sensitive resources on SVADA, including state threatened or endangered species, state-designated significant natural areas, and non-designated native plant communities.

In addition to impacts associated with the construction of industrial, institutional, and residential facilities, direct impacts on vegetation could occur as the result of road-realignment activities. Shinske Road, for example, runs along the eastern perimeter of the installation and cuts through the northeastern portion of the proposed prison site (the majority of which has been designated as a significant natural area). If an industrial facility were constructed on this parcel, it would be necessary to realign Shinske Road outside the parcel. Regardless of where the road was rebuilt, adverse impacts on vegetation, and possibly on grassland birds and/or small mammals, would be expected from direct ground disturbance. However, if the road were rerouted such that it followed the southwest boundary of the prison site, significant adverse impacts on the state-endangered plants found there could occur. Road realignment impacts on wetlands adjacent to the proposed prison site (Primm's Pond), in the form of lost acreage, could occur if the road were improperly placed. Modifications to existing hydrology, increased sedimentation and stormwater runoff, and adverse impacts on water quality would also be expected.

Adverse impacts on biological resources in the northernmost LRA reuse parcel could occur as a result of fragmenting this parcel from the surrounding vegetation (i.e., fencing the parcel directly or having surrounding parcels fenced by other parties). Fragmentation of this parcel could impede plant pollination and the movement of small land mammals by blocking the terrestrial habitat corridor that follows the Mississippi River. Also, given the regional significance of the SVADA sand prairie ecosystem and the fact that 83 percent of the high-quality prairie remnants in Illinois are smaller than 10 acres, any fragmentation of the prairie would constitute an adverse impact on both a local and regional scale.

Reuse of land along the Mississippi River for water-dependent activities (e.g., barge terminal, marina, docks) has the potential to cause significant adverse impacts on portions of existing local bald eagle habitat. Given this potential to directly disturb bald eagle nesting and roosting activity, the Army has committed to consult with the USFWS prior to disposal to determine whether encumbrances should be established limiting redevelopment of the property in areas supporting sensitive resources. Proposed reuses in and along the river might also require dredging and dredged material disposal for construction and long-term maintenance, which could adversely affect wetland habitats within, adjacent to, or downstream of the dredge or disposal sites. Use of this land could also result in adverse impacts on wetlands in the form of lost acreage, increased shoreline erosion, and resultant impacts on surface water quality and downstream wetlands.

Because of this potential for wetland impacts, future reusers of the property would likely be required to comply with Section 404(b)(1) of the Clean Water Act prior to implementation of proposed projects. If it is determined that wetland acreage loss would occur, a 404(b)(1) permit must be obtained from USACE. In most cases, mitigation of wetland losses would be required. Proposed reuse along the Mississippi River could also require a Section 10 permit under the Federal Rivers and Harbors Act of 1899. The act, also administered by USACE, regulates construction activities such as placement of structures, dredging and filling in waters of the United States.

Medium Intensity, Indirect. Long-term significant adverse impacts would be expected. Long-term impacts would be expected throughout the SVAD LRA parcel should wildlife be displaced due to less available habitat and an increased human presence. A reduction in total habitat area would be expected to affect area-sensitive species to a greater extent than those species not requiring larger tracts of habitat. Area-sensitive species found in the SVADA uplands include the upland sandpiper (state endangered), northern harrier (state endangered), and savanna sparrow (Anderson et al., 1995).

Adverse impacts associated with a greater human presence could be especially felt by bald eagles nesting and roosting in the bottomlands. Since bald eagles tend to require isolation from humans during the breeding season (Ehrlich et al., 1988), implementation of the proposed water-dependent reuses could indirectly harass eagles in the bottomlands such that the area would no longer be adequate for successful reproduction or desirable for over-wintering. It should be noted, however, that the Army's inclusion of encumbrances in transfer and conveyance documents could temper or entirely preclude these outcomes.

The presence of more buildings and exotic trees (probably planted as ornamentals) on the SVAD LRA parcel also has the potential to cause adverse impacts on grassland birds by encouraging use of the habitat by nongrassland, cavity-nesting species (Bowles, 1993) and increasing competition for resources.

Another potential adverse impact on biological resources could result from intense, long-duration lighting typically associated with industrial uses (e.g., warehouses, a prison facility). A literature review revealed limited research on the impact of artificial lighting on species or natural communities. Only one reference identified discussed the potential impacts of artificial lighting on bird kills and found that lunar periodicity influenced the frequency of mortality (Verheijen, 1981). At present, more research is needed to accurately assess the effects of artificial lighting on terrestrial systems, including potential impacts on herbaceous plants.

In addition to the potential for more intense lighting, it is expected that the proposed reuses envisioned by the LRA would cause an increase in automobile traffic. The substantially increased number of

vehicles expected under the MIR scenario, and the corresponding increases in noise, could disturb wildlife such that species might migrate out.

For wetlands located in close proximity to proposed construction sites, such as Primm's Pond, increased sedimentation and storm water runoff resulting from greater impervious surface area could adversely impact water quality. Runoff from new roads and parking lots could result in higher pollutant concentrations (e.g., lubricants, fuels and antifreeze) entering wetland ecosystems. Wildlife using these wetlands could also be adversely impacted as overall habitat quality was diminished.

Modification to hydrology as a result of the proposed water-dependent reuses, and the associated dredging and dredge material disposal, could result in the modification of existing shorelines through changed erosion and sedimentation characteristics, resulting in increased erosion or deposition in adjacent or downstream waters and wetland areas. Dredging and dredge material disposal could also adversely affect water quality in adjacent and downstream habitats.

Medium-Low Intensity, Direct. Short- and long-term significant adverse impacts would be expected. Direct impacts on biological resources in an MLIR scenario are expected to be comparable to, though less severe than, those impacts occurring in an MIR scenario. The same significant adverse impacts remain, however, if potential reuses directly harm (or harass) threatened or endangered plants and wildlife, wetlands, or significant natural areas in the uplands. Adverse impacts on nonstatus species would be expected to occur as a result of lost habitat from new construction or road realignment, though again to a lesser extent than in an MIR scenario.

Though less development and human activity would be anticipated in an MLIR scenario, the adverse impacts on biological resources in the northernmost SVAD LRA reuse parcel, occurring as a result of habitat fragmentation, would be the same as those in an MIR scenario.

Medium-Low Intensity, Indirect. Long-term significant adverse impacts would be expected Similar to those expected in an MIR scenario, though to a lesser degree, adverse impacts on wildlife located throughout the SVAD LRA parcel could occur as species were displaced from existing habitat as the result of an increased human presence.

Low Intensity, Direct. Long-term minor adverse impacts could occur. The LIR scenario for the SVAD LRA parcel is generally comparable to baseline conditions. However, if new construction or other ground-breaking activities were to occur that would directly affect threatened or endangered species or sensitive habitats (wetlands, sand prairies, oak savanna), significant, localized adverse impacts on these resources could occur.

Low Intensity, Indirect. Long-term minor adverse impacts could occur. If human activity were contained within the cantonment area or other built-up areas, no indirect impacts on biological resources would be expected in an LIR scenario. If, however, human activity were to expand into previously undeveloped areas on the depot and disturb sensitive species, significant, localized adverse impacts could occur.

5.4.12 Cultural Resources

Medium Intensity, Direct. Long-term minor adverse impacts could be expected. If the encumbered disposal alternative is used to dispose of SVADA properties, deed restrictions for properties eligible for the NRHP will be developed in consultation with the Illinois SHPO and the ACHP. (See Appendices H and I for example deed language and Section 5.3.12 for a discussion of deed restrictions.) If the unencumbered disposal alternative is used to dispose of SVADA properties, the Army, the Illinois SHPO, and the ACHP will consult in accordance with Section 106 of the NHPA to determine appropriate measures for treating the loss of these properties. Recordation of the properties to a standard agreed upon by the Section 106 consultations will mitigate the adverse impacts to a minor level. Therefore, adverse impacts can either be avoided through the use of deed restrictions or mitigated to a minor level through recordation measures.

Medium Intensity, Indirect. No impacts on properties eligible for the NRHP would be expected.

Medium-Low Intensity, Direct. Long-term minor adverse impacts would be expected. The impacts on SVADA historic properties under this scenario are the same as those defined for the MIR scenario.

Medium-Low Intensity, Indirect. No impacts on properties eligible for the NRHP would be expected.

Low Intensity, Direct. Long-term minor adverse impacts would be expected. The impacts on SVADA historic properties under this scenario are the same as those defined for the MIR scenario.

Low Intensity, Indirect. No impacts on properties eligible for the NRHP would be expected.

5.4.13 Legacy Resources

Medium Intensity, Direct. No impacts would be expected. The Legacy Resources Management Program has provided funding to DoD installations for projects related to natural resources conservation and preservation. Projects that have been carried out at SVADA are listed in Section 4.13. In addition to natural resources surveys and preparation of management planning documents, Legacy funding has supported establishment of Watchable Wildlife sites, Sand Prairie rehabilitation and restoration, and wetland restoration (Primm's Pond). These sites remain at SVADA; their care and custody would be at the discretion of future owners and other federal and state agencies. Existing regulatory requirements, both federal and state, would provide for continued conservation and preservation of these resources in an MIR scenario.

Medium Intensity, Indirect. No impacts would be expected.

Medium-Low Intensity, Direct. No impacts would be expected. Conditions affecting specific natural resources in an MLIR scenario would be similar to those in an MIR scenario.

Medium-Low Intensity, Indirect. No impacts would be expected.

Low Intensity, Direct. No impacts would be expected. Conditions affecting specific natural resources in an LIR scenario would be similar to those in the MIR and MLIR scenarios.

Low Intensity, Indirect. No impacts would be expected.

5.4.14 Economic Development

Methodology. To determine the socioeconomic secondary effects of the implementation of the reuse scenarios, the Economic Impact Forecast System model (EIFS model) was used. The EIFS model is a computer-based economic tool that calculates multipliers to estimate the direct and indirect impacts resulting from a given action. The model requires the following input data: the names of counties composing the ROI, the number of civilian and military personnel and their salaries affected by the scenario, and the change in local procurement due to the action. The model also requires the number of civilians expected to relocate. Due to the rural nature of the area surrounding SVADA and the low unemployment rates in Carroll and Jo Daviess counties, it would be expected that approximately 30 percent of the new jobs created would require relocation of civilians from outside the ROI to areas within the ROI. The change in employment and change in spending represent direct effects resulting from the action. Based on the input data and calculated multipliers (see Table 5-3 for input parameters), the model forecasts ROI changes in sales volume, employment, income, population, housing, and schooling, accounting for the indirect effects resulting from the action. Appendix J describes the EIFS model in more detail and contains the model input and output tables.

The impact analysis uses the social and economic indicators presented in Section 4.14. The EIFS model outputs for each reuse scenario represent net change in sales volume, employment, income, population, housing, and schools from BRAC parcel closure levels.

For the purposes of this analysis, a change is considered significant if it falls outside the normal range of ROI economic variation. To determine normal variability, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. This analytical process uses historical data for the ROI and calculates fluctuations in sales volume, employment, income, and population patterns. The historical extremes for the ROI become the threshold of significance for social and economic change. If the calculated effect of a reuse scenario falls outside the RTVs, the impact is considered significant.

Table 5-3
EIFS Model Input Parameters

Reuse Intensity	Employee Population[1]	Change in Employee Population[2]	Total Expenditure Per Employee[3]	Change in Total Expenditure[4]
LIR	728	299	$22,300	$6,667,700
MLIR	1,040	611	$22,300	$13,625,300
MIR	5,625	5,197	$22,300	$115,893,100

[1] See Table 3-2 for derivation of employee populations for reuse scenarios.
[2] Projected reuse population minus 1995 baseline population (429).
[3] Under the MIR scenario, expenditures per employee could be as high as $22,300 (Economics Research Associates et al., 1996).
[4] Total expenditure per employee multiplied by the change in employee population.

Medium Intensity, Direct. Long-term significant beneficial impacts would be expected. An MIR scenario could create a substantial beneficial impact on long-term job creation, income generation, and spending. Approximately 1,150 direct jobs could be created under this scenario. This direct job creation could generate an increase in income of more than $14 million (Table 5-4). In addition, sales volume could increase by an estimated $180 million (Table 5-4). These increases in business volume would exceed historical fluctuations and result in significant beneficial impacts on the economy of the ROI.

Medium Intensity, Indirect. Long-term significant beneficial impacts would be expected. Direct job creation, income generation, and spending related to reuse could also result in secondary job creation, income generation, and spending. An estimated 7,137 jobs could be created (direct plus indirect), an increase of 39 percent (Table 5-4). In addition, income generation could increase by $203.6 million, or 29 percent, and total sales volume could increase by more than $300 million, or nearly 53 percent (Table 5-4). These increases would exceed historical fluctuations and result in significant beneficial impacts on the economy of the ROI.

Table 5-4
EIFS Standard Model Output for MIR

Indicator	Projected Change	Percentage Change	RTV Range
Direct sales volume	$179,396,000	---	
Total sales volume	$303,283,000	52.592	-9.467% to 7.398%
Direct employment	1,147	---	
Total employment	7,137	38.570	-3.950% to 3.393%
Direct income	$14,375,000	---	
Total income	$203,599,000	28.581	-9.640% to 17.102%
Local population	3,302	8.40	-1.210 to 1.965
Local off-base population	3,302	N/A	N/A
Number of school children	646	N/A	N/A
Demand for housing Rental	412	N/A	N/A
Owner-occupied	1,147	N/A	N/A
Total housing demand increase	1,559	N/A	N/A
Government expenditures	$10,131,000	N/A	N/A
Government revenues	$12,777,000	N/A	N/A
Net government revenues	$2,646,000	N/A	N/A
Civilian employees expected to relocate	1,559	N/A	N/A

Note: N/A = not applicable.
Source: EIFS model.

Medium-Low Intensity, Direct. Long-term minor beneficial impacts would be expected. An MLIR scenario could create beneficial impacts on long-term job creation, income generation, and spending. An estimated 135 direct jobs could be created under this scenario. This direct job creation could generate an increase in income of nearly $1.7 million (Table 5-5). In addition, sales volume could increase by an estimated $21 million (Table 5-5). These increases in business volume would not exceed historical fluctuations.

Medium-Low Intensity, Indirect. Long-term significant beneficial impacts would be expected. Direct job creation, income generation, and spending related to reuse could also result in secondary job creation, income generation, and spending. An estimated 840 jobs could be created (direct plus indirect), an increase of approximately 5 percent (Table 5-5). In addition, income generation could increase by nearly

Table 5-5
EIFS Standard Model Output for MLIR

Indicator	Projected Change	Percentage Change	RTV Range
Direct sales volume	$21,091,000	---	
Total sales volume	$35,656,000	6.183	-9.467% to 7.398%
Direct employment	135	---	
Total employment	839	4.535	-3.950% to 3.393%
Direct income	$1,690,000	---	
Total income	$23,937,000	3.360	-9.640% to 17.102%
Local population	388	0.99	-1.210 to 1.965
Local off-base population	388	N/A	N/A
Number of school children	76	N/A	N/A
Demand for housing Rental	48	N/A	N/A
Owner-occupied	135	N/A	N/A
Total housing demand increase	183	N/A	N/A
Government expenditures	$1,191,000	N/A	N/A
Government revenues	$1,502,000	N/A	N/A
Net government revenues	$311,000	N/A	N/A
Civilian employees expected to relocate	183	N/A	N/A

Note: N/A = not applicable.
Source: EIFS model.

$24 million, or more than 3 percent, and total sales volume could increase by more than $35 million, or approximately 6 percent (Table 5-5). These increases in business volume would exceed historical fluctuations and have a significant beneficial impact on the economy of the ROI.

Low Intensity, Direct. Long-term minor beneficial impacts would be expected. An LIR scenario could create a beneficial impact on long-term job creation, income generation, and spending. An estimated 66 direct jobs could be created under this scenario. This direct job creation could generate an increase in income of approximately $827,000 (Table 5-6). In addition, sales volume could increase by an estimated $10.3 million (Table 5-6).

Low Intensity, Indirect. Long-term minor beneficial impacts would be expected. Direct job creation, income generation, and spending related to reuse could also result in secondary job creation, income

Table 5-6
EIFS Standard Model Output for LIR

Indicator	Projected Change	Percentage Change	RTV Range
Direct sales volume	$10,321,000	---	
Total sales volume	$17,449,000	3.026	-9.467% to 7.398%
Direct employment	66	---	
Total employment	411	2.219	-3.950% to 3.393%
Direct income	$827,000	---	
Total income	$11,714,000	1.644	-9.640% to 17.102%
Local population	190	0.48	-1.210 to 1.965
Local off-base population	190	N/A	N/A
Number of school children	37	N/A	N/A
Demand for housing Rental	24	N/A	N/A
Owner-occupied	66	N/A	N/A
Total housing demand increase	90	N/A	N/A
Government expenditures	$583,000	N/A	N/A
Government revenues	$735,000	N/A	N/A
Net government revenues	$152,000	N/A	N/A
Civilian employees expected to relocate	90	N/A	N/A

Note: N/A = not applicable.
Source: EIFS Model.

generation, and spending. Approximately 411 jobs could be created (direct plus indirect), an increase of 2.2 percent (Table 5-6). In addition, income generation could increase by more than $11.7 million, or approximately 1.6 percent, and total sales volume could increase by approximately $17.4 million, or 3 percent (Table 5-6). These increases are well within historical RTV fluctuations for the ROI.

5.4.15 Sociological Environment

Medium Intensity, Direct. Long-term significant beneficial impacts would be expected. The direct jobs created under this scenario could increase the local population. This population increase would exceed historical fluctuations in the ROI and result in significant beneficial impacts on the local economy. Because 3,200 housing units in the ROI are vacant, a housing demand of 1,559, as forecasted by the EIFS model for the MIR scenario, would be easily absorbed by the surrounding area. A portion of this demand could be met by housing already available on SVADA (31 family housing units and 16 troop housing buildings) and housing units proposed for construction in the LRA's reuse plan. The plan estimates 1,010 acres of primary and secondary housing to be built. Therefore, no impacts on housing would be expected.

The addition of 5,197 employees under this reuse scenario would create a need for additional law enforcement personnel and equipment in Carroll and Jo Daviess Counties. The loss of the federal SVADA fire protection services and the increase in activities at the property under this scenario could also create a need for additional fire protection services at the property or from surrounding communities. No need for additional medical service capacity would be expected.

Reuse of the SVAD LRA areas would not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Low-income populations could benefit from any creation of low-skill and unskilled jobs associated with implementation of this scenario.

Medium Intensity, Indirect. Both significant beneficial and long-term minor adverse impacts would be expected. Assuming 30 percent of employees could relocate from outside the ROI, total population (direct plus indirect) could increase by an estimated 3,302 people, more than 8 percent (Table 5-4). This increase would significantly exceed the RTV for the ROI.

Total demand for rental and owner-occupied housing units could increase by nearly 1,559 (Table 5-4). The current ROI vacancy rate would be sufficient to meet this demand. However, due to the high median age of available housing units, the demand for new housing construction could increase.

In the long-term, public support services could adapt to the demands of the enlarged population base, funded by new property tax revenue and sales taxes. Expansion of law enforcement services in the ROI to meet new demands could lead to an overall improvement in the services provided. Minor long-term beneficial impacts, such as enhanced business and sales volumes and an increase in social programs due to a population increase, could result.

Reuse could require substantial building construction and infrastructure development in the ROI such as roads, utilities, schools, and the like, generating short-term construction jobs and increasing the population in the local area. Given the present rural character of the ROI, the increase in population and

the creation of supporting infrastructure of the project magnitude could result in a variety of long-term adverse social and environmental impacts, the exact nature and magnitude of which cannot be quantified from current information.

No impacts on environmental justice or homeless and other special programs would be expected.

Medium-Low Intensity, Direct. Long-term minor beneficial impacts would be expected. The direct jobs created under an MLIR scenario could increase the local population. This increase in population (less than 1 percent) would not result in significant impacts on the ROI. Current housing vacancy rates would be sufficient to absorb the increased demand. Public support services would be sufficient to accommodate the population increase.

Reuse of the BRAC parcel would not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Low-income populations could benefit from the creation of low-skill and unskilled jobs.

No impacts would be expected on environmental justice or homeless and other special programs.

Medium-Low Intensity, Indirect. Long-term minor beneficial impacts would be expected. Assuming 30 percent of employees could relocate from outside the ROI, total population (direct plus indirect) could increase by an estimated 388 people, nearly 1 percent (Table 5-5). This increase would not exceed the RTV for the ROI.

Total demand for rental and owner-occupied housing units could increase by 183 (Table 5-5). The current ROI vacancy rate would be sufficient to meet this demand. Public services could adapt to the demands of the enlarged population base, funded by new property tax revenue and sales taxes.

Reuse could require some building construction and infrastructure development such as roads, utilities, schools, and the like, generating short-term construction jobs and increasing the population in the local area (to a much lesser degree than an MIR scenario). These moderate increases in population and activities would be manageable from a local planning and services perspective and could result in long-term beneficial impacts on the ROI.

Low Intensity, Direct. No impacts would be expected. The direct jobs created under the LIR scenario could increase the local population by less than 1 percent. No significant impacts on the sociological environment would be expected.

Reuse of the BRAC parcel would not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Low-income populations could benefit from any creation of low-skill and unskilled jobs associated with implementation of this scenario.

Low Intensity, Indirect. No impacts would be expected. Assuming 30 percent of employees could relocate from outside the ROI, total population (direct plus indirect) could increase by 190 people, less than 1 percent (Table 5-6). This increase would be well within historical RTV fluctuations and would have no impact on the ROI. Total demand for rental and owner-occupied housing units could increase

by approximately 90 (Table 5-6). The current ROI vacancy rate would be sufficient to meet this demand. Public services would be sufficient to adapt to the demands of the enlarged population base.

5.4.16 Quality of Life

Medium Intensity, Direct. Short-term minor adverse impacts would be expected. The impact on the ROI's school system could exceed historical fluctuations, possibly resulting in overcrowding or the need for new construction.

Medium Intensity, Indirect. Long-term minor adverse impacts would be expected. An estimated 646 students could enter the ROI's school system, an increase of approximately 28 percent of the current total local student population (Table 5-4). New school construction could be required.

An increase in population and the need for new construction could have an adverse impact on visual and aesthic values in the area, as well as create an increased demand for family support, shops and services, and recreational resources.

Medium-Low Intensity, Direct. No impacts would be expected. The impact on the ROI's school system would not be significant.

Medium-Low Intensity, Indirect. Long-term minor adverse impacts would be expected. As under the MIR scenario, population increases and new construction could have an adverse impact on visual and aesthic values, as well as create an increased demand for family support, shops and services, and recreational resources.

No impacts on schools would be expected due to an increase of only 76 students to the ROI's school system, an increase of approximately 3 percent of the current total local student population (Table 5-5).

Low Intensity, Direct. No impacts would be expected. Any changes in the demand for housing, schools, and public support services would be well within historical fluctuations.

Low Intensity, Indirect. No impacts would be expected. Only an estimated 37 students would enter the ROI's school system under this scenario, an increase of less than 2 percent of the current total local student population (Table 5-6).

5.4.17 Installation Agreements

Medium Intensity, Direct. No impacts would be expected. Installation agreements between the Army and local agencies for the provisions of various services would be continued until disposal of the installation was complete. Those services are presently provided, and would continue to be provided by local agency suppliers outside the boundaries of the SVAD LRA areas.

Medium Intensity, Indirect. No impacts would be expected.

Medium-Low Intensity, Direct. No impacts would be expected. Conditions affecting an MLIR scenario would be similar to those in an MIR scenario.

Medium-Low Intensity, Indirect. No impacts would be expected.

Low Intensity, Direct. No impacts would be expected. Conditions affecting an LIR scenario would be similar to those in the MIR and MLIR scenarios.

Low Intensity, Indirect. No impacts would be expected.

5.4.18 Cumulative Effects

Medium Intensity Reuse. Cumulative effects from the MIR scenario would occur on SVADA and within the ROI. General land use trends are currently being defined for both Jo Daviess and Carroll Counties. Jo Daviess County exhibits land use patterns that are consistent with controlled economic growth through tourism, recreation, and retirement-oriented uses. In Carroll County, trends may also emphasize recreation, but do so in combination with a resident population seeking agriculture, land development, and economic expansion and growth.

A review of planned or ongoing activities within the ROI identified the following developments (SVAD LRA, personal communication, 1996):

Development Under Way or Completed

- Sullivan's County Market has been expanded from approximately 11,000 square feet to 38,000 square feet.
- Pamida, Inc., a discount store, is constructing a new 45,000- square foot store in Savanna. The grand opening is scheduled for March 1997.
- East of Savanna ground has been broken for a small, middle-income and higher housing development.
- In Lanark, 20 miles east of Savanna, a new housing subdivision, a new car wash, and long-term storage units are under construction. Housing demand in the Lanark area is currently high.
- In Hanover, an industrial park development is growing, and a new medical clinic that will offer three or four doctors on a rotating basis is being constructed.

Planned Within the Next 2 Years

- The city of Savanna continues pursuit of approval for a state-funded bicycle path through Savanna, and possibly routed north into SVADA.
- Through the IDNR and private development interests, the city of Savanna is pursuing establishment of a 40- to 50-room lodge in or near the Mississippi Palisades State Park.
- American Xyrofin Company, which processes corn cobs into fructose, is seeking a facility expansion south of Savanna in 1997-1998.

- A 25-room motel will be constructed on the north end of Main Street in Savanna.
- In Carroll County, 10 miles east of Savanna, a small housing subdivision is planned for Mount Carroll.

Based on this review, it is clear that current and planned activities are not likely to be comparable to the potential changes proposed for reuse of SVADA. Consequently, non-Army activities are not expected to significantly contribute to cumulative effects in concert with SVADA reuse within the ROI at present.

Depending on the specific land uses chosen by the SVAD LRA, land use changes on the installation would likely influence land uses in the ROI. Trends toward more rural land use patterns may remain predominant in the north, but land uses closer to SVADA under an MIR scenario would change. Agricultural and forest land uses would change, likely affecting the area's present rural character. Air, land, water, and biological resources would all be affected to varying degrees. Growth-induced changes to land use would be expected to cause a cumulative reduction in available habitat within the ROI.

The increase in land development, construction, and traffic would also result in increases in air emissions and particulates. Whether this increase would result in the region's becoming nonattainment for certain criteria pollutants cannot be determined at present. Cumulative adverse impacts on water resources, particularly surface water quality and quantity, could occur as a result of increases in percent impervious surface for the region.

Cumulative changes in economic development, socioeconomic conditions, and quality of life would occur as more jobs were created and the tax base increased. This would affect public services, schools, housing, and infrastructure. Whether these impacts would be individually or collectively beneficial or adverse cannot be determined at present.

Medium-Low Intensity Reuse. Change under this scenario would be similar to MIR, but on a lesser scale.

Low Intensity Reuse. No cumulative impacts would be expected. Implementation of this scenario would more closely resemble the activity levels, economic conditions, and environmental conditions of baseline operations.

5.5 *MITIGATION SUMMARY*

No Action Alternative. As discussed in Section 5.2, the no action alternative could, or in some areas would be expected to, create impacts adversely affecting land use, protected plant species, wetlands, cultural resources, buildings and structures, and quality of life (schools).

The longer SVADA were to remain in caretaker status, the greater would be the potential for the predicted adverse impacts to affect various resources. The Army would implement the following mitigation measures to reduce or avoid adverse impacts associated with caretaker status as they might occur:

- Conduct installation security and maintenance operations to the extent provided by Army policies and regulations for the duration of the caretaker period, and transfer responsibilities for these functions to non-Army entities as soon as practicable to minimize disruption of service.

- Identify clean or remediated portions of the installation for disposal and reuse and prioritize restoration and cleanup activities to ensure timely disposal and reuse of remaining portions. Recycle solid wastes and debris where practicable.

- Maintain necessary natural resources management measures, including continued close coordination with other federal agencies such as the USFWS and state agencies such as the IDNR.

- Review the advisability of continuing the current grazing lease given its seemingly detrimental impacts on native prairie vegetation.

- Construct physical barriers (e.g., fencing) around sensitive natural areas, including wetlands and the river dune complex, to prevent intrusion and damage by cattle.

- Actively support interim leasing arrangements, where environmental restoration efforts permit, to provide for job creation, habitation and maintenance of structures, and rapid reuse of the installation.

Disposal. To avoid, reduce, or compensate for adverse impacts that might occur as a result of disposal, the Army would:

- Continue to work with local entities to identify available options for the use of buildings not having independent utility systems. If necessary to ensure access to utility lines, the Army would encumber the transfer of the buildings with appropriate easements across federally-owned land.

- Continue to work with the SVAD LRA to ensure that, to the maximum extent feasible, encumbered disposal transactions are consistent with the community reuse plan.

- Prior to final disposal, complete cultural resources surveys of the SVAD LRA parcel to the maximum extent possible so as to ensure no adverse effects on the resource that might be present.

- Until final disposal, maintain installation buildings, infrastructure, and natural resources in caretaker status to the extent provided by Army policy and regulations.

Conveyance documents would notify future owners of the property of particular obligations concerning natural and cultural resources that would be imposed as a result of the Army's determination of the applicability of an encumbrance. Conveyance documents would also identify past hazardous substance activities at each site, as required by CERCLA.

Reuse. The Army does not propose the implementation of specific mitigation actions for intensity-based reuse scenarios. This is appropriate because reuse planning and execution of redevelopment actions are a responsibility of non-Army entities. The following are general mitigation actions that could be implemented by other parties for the reduction, avoidance, or compensation of impacts resulting from their actions. Potential mitigation actions are suggested for those resources areas most likely to be affected by adverse impacts as a result of reuse.

- *Land use.* Adverse impacts associated with development of SVADA to a level of intensity equal to an MIR could be at least partially reduced through sound site planning and design and creation of appropriate buffer zones. County officials could also evaluate the desirability of establishing land use zoning mechanisms to provide for orderly growth throughout the ROI.
- *Air quality.* The permit process established in the Clean Air Act provides effective controls over potential stationary air emission sources. Adherence to the State Implementation Plan's provisions for mobile sources could address that source category. Additional mechanisms, such as application of best management practices to control fugitive dust during construction, could be used to control airborne contaminants.
- *Water resources.* Application of best management practices to reduce sediment loading to surface waters could aid in reducing impacts on water quality. Construction of stormwater retention systems could help mitigate impacts associated with storm water runoff from impervious surfaces.
- *Geology.* Disturbance of highly erodible soils should be avoided wherever possible. Should these or other soil types be disturbed, desilting basins, sediment traps, silt fences, straw barriers, and other erosion control measures could be constructed.
- *Biological resources.* Adverse impacts on biological resources would occur primarily as a result of construction. Two principal measures for conservation of significant biological resources are ensuring consultation with natural resources experts and regulatory agencies prior to initiating actions and implementing best management practices in association with approved construction projects. Operational controls could also be applied to minimize any adverse effects of noise and light on sensitive biological resources.

5.6 CUMULATIVE EFFECTS SUMMARY

As defined in Appendix F, cumulative impacts are considered those which result from the incremental effects of an action when considering past, present, or reasonably foreseeable future actions, regardless of the agencies or parties involved. In other words, cumulative impacts can result from individually minor, but collectively significant, factors taking place over time as they may relate to the entire installation and ROI. As stated in Section 5.4.18, current and proposed development activities within the ROI are limited compared to those proposed for SVADA. The following section summarizes the potential cumulative impacts for each action, and within each resource area, where appropriate.

No Action. Minor adverse cumulative effects are expected as a result of caretaker status. Infrastructure within the installation would be expected to deteriorate over time if not maintained or used within design specifications. Adverse effects resulting from reduced upkeep and deterioration of various resources or conditions during caretaker status would cause cumulative impacts on SVADA as a whole, as well as on the surrounding area.

Encumbered Disposal. No cumulative impacts for any of the resource areas are expected. The act of transferring or conveying title in and of itself would not create impacts that could contribute to a cumulative effect for any resource.

Unencumbered Disposal. No cumulative impacts are expected.

Medium Intensity Reuse. Under this scenario, cumulative effects would occur on SVADA and within the ROI. General land use trends are currently being defined for both Jo Daviess County and Carroll County. To the north, Jo Daviess County exhibits land use patterns that are consistent with controlled economic growth through tourism-related, recreational, and retirement-oriented uses. Many people from the Chicago metropolitan area are investing in tourism- and recreation-related businesses and retirement or second homes in Jo Daviess County, with Galena serving as a focal point and growth center. In Carroll County, although trends might also emphasize recreation, it is evolving in combination with a resident population seeking agriculture, land development, and economic expansion and growth. Savanna serves as the growth center near SVADA.

Depending on the specific land uses chosen by the SVAD LRA, land use changes on the installation would likely influence land uses in the ROI. Trends toward more rural land use patterns might remain predominant in the north, but land uses closer to SVADA under an MIR scenario would change. Agriculture and forest land uses would change; consequently, the area's present rural character would change. Air, land, water, and biological resources would all be affected to varying degrees. Growth-induced changes to land use would be expected to cause a cumulative reduction in available habitat within the ROI. These changes would not be expected to occur on the properties being transferred to USFWS and USACE. Those properties would remain under federal control and would, thus, tend to act as a constraint on land use changes in the immediate vicinity of the LRA redevelopment activities. On a broader perspective, the retention of 9,900 acres under federal management for essentially passive uses would help maintain the inventory of property in the ROI dedicated to conservation values. It is also possible that the LRA's long-term redevelopment of the approximately 3,000 acres in and around the installation's cantonment area could negatively affect wildlife communities on adjacent property, especially the portion designated for USFWS and IDNR management. Such impacts, however, should be minor and restricted to the immediate margins of the wildlife management areas in closest proximity to redevelopment.

Over the long term, LRA development could affect biological resources throughout the USFWS and USACE properties. Under the SVAD LRA reuse plan, the Beaty Creek area (approximately 85 acres toward the northern end of the installation) would be developed as a recreational and cultural center. The Beaty Creek development would attract visitors. In similar vein, the USFWS refuge areas and areas under management by IDNR would attract visitors, and the USACE expansion of the Blandings Landing site would attract visitors. Altogether, these projects could develop an even greater demand for nature-related educational and recreational facilities and sites. The increased levels of human presence could, at some point, adversely affect wildlife and plants in the area. USFWS and USACE could control this type of effect through limits on the numbers of visitors within their areas on an annual or seasonal basis.

The increase in land development, construction, and traffic would also result in increases in air emissions and particulates. Whether this increase would result in the region's becoming nonattainment status for certain criteria pollutants cannot be determined at present. Cumulative impacts on water resources, particularly surface water quality and quantity, might occur as a result of increases in percent impervious surface for the region.

Cumulative changes in economic development, socioeconomic conditions, and quality of life would occur as more jobs were created and the tax base increased. These changes would affect public services, schools, housing, and infrastructure. Whether these impacts would be individually or collectively beneficial or adverse cannot yet be determined.

Medium-Low Intensity Reuse. Change under this scenario would be similar to that under the MIR scenario, but on a lesser scale.

Low Intensity Reuse. No cumulative effects would be expected. Implementation of this scenario would more closely resemble activity levels, economic conditions, and environmental conditions of baseline operations.

5.7 ENVIRONMENTAL JUSTICE SUMMARY

On February 11, 1994, the President issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. The order requires that federal agencies conduct their programs, policies, and activities that substantially affect human health or the environment so that there are not disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

The Army's proposed action is not designed to create a benefit for any group or individual. As part of the screening process, entities may express interest in installation assets to provide assistance to homeless persons. Upon completion of the screening process, there may be expression of interest by individuals or groups to purchase by competitive bid or negotiated sale parts or all of the installation. In either case, the disposal method would not create disproportional environmental impacts on any group.

Disposal of SVADA, therefore, would not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community.

5.8 CLEAN AIR ACT CONFORMITY

Section 176(c) of the Clean Air Act requires that no federal agency shall engage in, support, or provide financial assistance for license or permit, or approve any activity which does not conform to an approved or promulgated state implementation plan. Conformity to an implementation plan means conformity to a plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of such standards. It further refers to conducting activities so that they will not cause or contribute to any new violation of any standard in any area, increase the frequency or severity of an existing violation of any standard in any area, or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. These requirements apply regardless of an area's attainment status, though property transfers and leases for similar actions are excluded from conformity determinations.

Under Clean Air Act regulations at 40 CFR Part 93, Subpart B, conformity determinations must be made for actions occurring in nonattainment areas and maintenance areas for National Ambient Air Quality Standards for sulfur dioxide, carbon monoxide, ozone nitrogen oxides, lead, and particulates (matter less than 10 microns in diameter). The proposed action occurs in an attainment area for all of these pollutants; a conformity determination is not required. Moreover, no information has come to light indicating that the proposed action would cause classification of the local air quality as in a nonattainment status or otherwise constitute a violation of Section 176(c) of the Clean Air Act as set out in the preceding paragraph.

5.9 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

The following paragraphs identify major adverse environmental impacts that cannot be avoided in connection with the no action, encumbered disposal, and unencumbered disposal alternatives.

No Action. Notwithstanding Army efforts to maintain the installation's assets, deterioration of SVADA facilities would occur as a function of age. Loss of jobs and attendant adverse impacts on socioeconomics in the ROI would occur as a result of Congressional approval of the BRAC Commission recommendation for closure of the installation.

Encumbered Disposal. Several encumbrances applicable to SVADA, taken together, would impede redevelopment of the SVAD LRA portions of the installation. Removal of many of these encumbrances ultimately would occur (e.g., the Army would eventually be able to certify the absence of UXO on the property). Predictions are not available for how quickly the SVAD LRA would be able to redevelop the installation in the absence of such encumbrances.

Unencumbered Disposal. Without encumbrances, transfer of the property would involve no deed-recorded limitations to reuse, although new property owners would still be subject to laws and regulations at the federal, state, and local levels. Based on the SVAD LRA reuse plan, the proposed reuse scenarios could involve numerous adverse impacts. Whether such impacts would be unavoidable cannot be presently determined because the future reuse actions would be by non-Army entities in ways not presently defined to the degree necessary to quantify impacts. The presentation of suggested mitigation actions in Section 5.5 serves as a starting point so that subsequent owners can avoid generating adverse impacts during reuse.

5.10 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species).

The no action alternative and disposal alternatives would not result in any irreversible or irretrievable commitment of resources. Reuse, however, could result in irreversible or irretrievable commitments of resources if land development were to physically eliminate rare or endangered plant or animal species or if subsequent secondary impacts from land development resulted in defilement of natural resources immediately adjacent to committed developed areas.

5.11 SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Short-term uses of the biophysical components of man's environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over

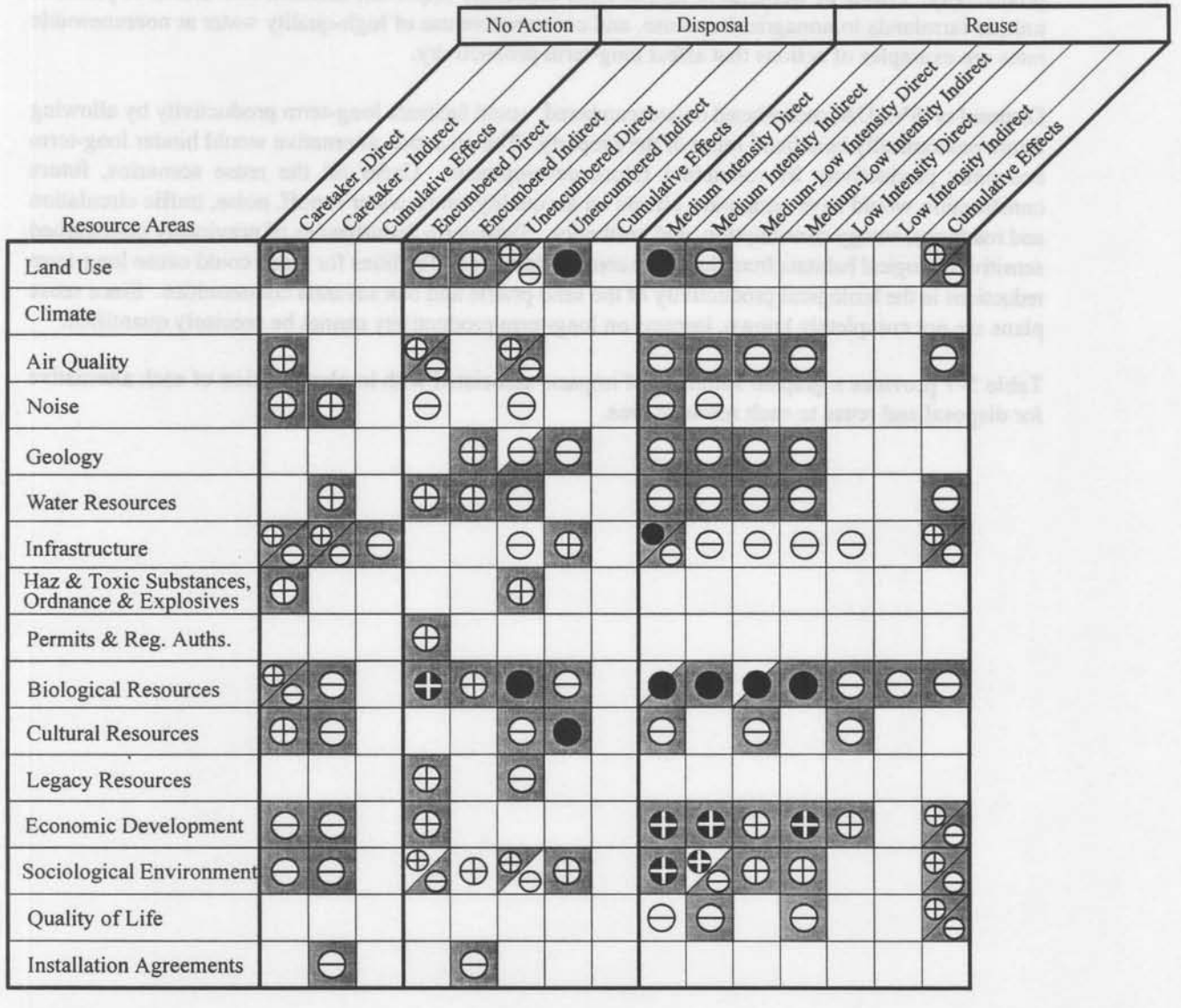
a period of less than 5 years. Long-term uses of man's environment include those impacts occurring over a period of more than 5 years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats, conversion of prime or unique farmlands to nonagricultural use, and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

Disposal of SVADA, encumbered or unencumbered, would facilitate long-term productivity by allowing future economically beneficial reuse of the property. The no action alternative would hinder long-term economic productivity by restricting future development. Under all the reuse scenarios, future construction would have temporary effects on air quality, stormwater runoff, noise, traffic circulation and roadways, energy consumption, and aesthetics. Short-term disturbances of previously undisturbed sensitive biological habitats from the future construction of new facilities for reuse could cause long-term reductions in the biological productivity of the sand prairie and oak savanna communities. Since reuse plans are not completely known, impacts on long-term productivity cannot be precisely quantified.

Table 5-7 provides a graphic summary of impacts associated with implementation of each alternative for disposal and reuse to each resource area.

Table 5-7
Impact Summary



Impacts Legend

- Long-term Minor Beneficial Effect
- Short-term Minor Beneficial Effect
- Long-term Minor Adverse Effect
- Short-term Minor Adverse Effect
- Long-term Significant Beneficial Effect
- Short-term Significant Beneficial Effect
- Long-term Significant Adverse Effect
- Short-term Significant Adverse Effect
- No Effects Expceted

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APPENDIX A

USFWS Draft Conceptual Management Plan

SAVANNA ARMY DEPOT
WILDLIFE MANAGEMENT UNIT
Savanna, Illinois

DRAFT CONCEPTUAL MANAGEMENT PLAN

U.S. Department of the Interior
Fish and Wildlife Service
Upper Mississippi River National Wildlife and Fish Refuge
Savanna District
Post Office Building
Savanna, Illinois 61074
July 1996

DRAFT CONCEPTUAL MANAGEMENT PLAN

SAVANNA ARMY DEPOT
WILDLIFE MANAGEMENT UNIT

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DRAFT CONCEPTUAL MANAGEMENT PLAN

INTRODUCTION

The Savanna Army Depot (SVAD) is a 13,062 acre military installation selected for closure by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510 with a scheduled closing date no later than July 13, 2001. Approximately 9,445 acres of SVAD are proposed to be transferred to the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service (FWS), Upper Mississippi River National Wildlife and Fish Refuge, Savanna District (District). The acreage proposed for addition will become public lands identified as the Savanna Army Depot Wildlife Management Unit (SWMU). FWS acreage will include about 6,000 acres of bottomlands and about 3,445 acres of uplands. The Illinois Department of Natural Resources (IDNR) will enter into cooperative agreement with FWS to manage the uplands. The primary objective of this addition is to expand habitat for migratory birds. Secondary objectives include: the continued conservation of wetlands and prairie habitat for the benefit of all wildlife species; provide public recreational activities; and environmental education.

This Draft Conceptual Management Plan for the proposed SWMU (Figure 1) presents a general outline on how the unit will be operated and managed by FWS and IDNR once it is established. Both agencies are included in this planning document to facilitate coordination of management efforts. As a conceptual plan, it does not provide extensive detail, pinpoint exactly where facilities would be, or show where public recreational use would be allowed. This plan includes a general discussion of biological needs relative to Federal trust resource responsibilities within that portion of the Upper Mississippi River/Tallgrass Prairie Ecosystem found in Illinois and the management actions required to meet those specific biological needs. It is not intended to cover in detail the development or implementation of specific programs for administration, public recreational use, or management of these public lands. Specific access sites and activities would be determined through future planning in compliance with the National Environmental Policy Act (NEPA). However, this plan should answer those questions commonly posed by landowners and the general public during the planning and public involvement process which is now beginning with respect to establishment of SWMU.

There are three additional partners (one federal agency, one state agency, one local entity) that will acquire a primary interest in SVAD. Coordination with each of these partners will be required to cooperatively manage the SVAD complex. FWS and IDNR will enter

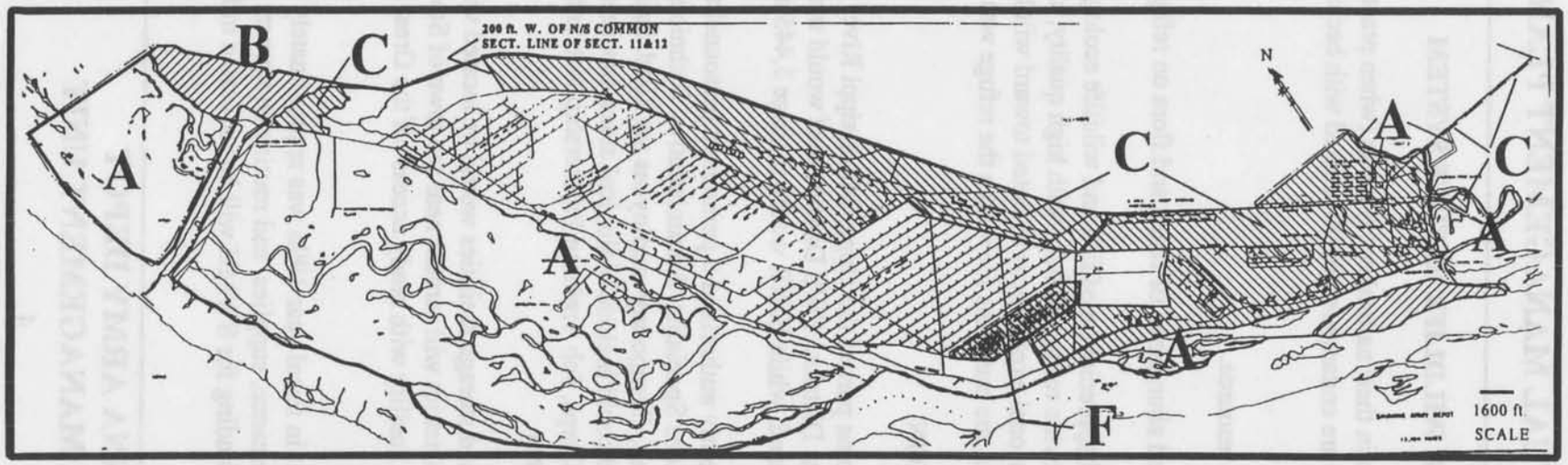
into cooperative agreement to allow IDNR to manage 3,445 acres of upland habitat. The U.S. Army Corps of Engineers (COE) has requested 460 acres to include the 183 acre Apple River Island and 277 acres to expand the Blanding's Landing recreation area. The Local Redevelopment Authority (LRA) has requested 3,157 acres for economic development purposes which may include: a medium security prison with 1,800 inmates; light and heavy industry; Native American tribal community facilities; and housing development. An environmental impact statement will be developed to evaluate the disposal of SVAD property and the reuse alternatives proposed by the four partners.

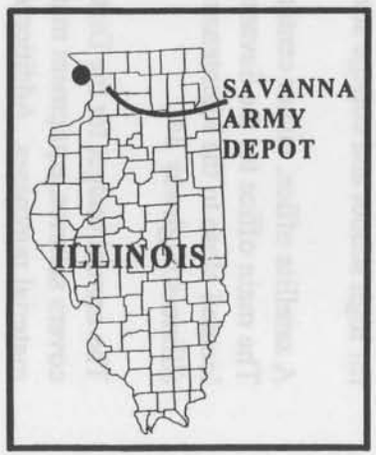
SVAD was purchased by the U.S. Army in 1917 and was used as a proof and test facility for artillery guns and howitzers. Operations expanded with the addition of ordnance storage facilities and loading and renovating shells and bombs. In 1972, ammunition maintenance and supply operations were reduced. The current mission is the receipt, storage, issue, and demilitarization of conventional ammunition and general supplies. The U.S. Army Defense Ammunition Center and School (USADACS) is located on SVAD. The Depot has been closed to general public access due to military use restrictions. SVAD was placed on the National Priorities List for Superfund clean-up in 1989 due to environmental contaminant issues.

FWS is the primary Federal agency responsible for conserving, protecting, and enhancing the Nation's fish and wildlife resources and their habitats. FWS shares this responsibility with other Federal, State, tribal, local, and private entities; however, FWS has specific trustee responsibilities for migratory birds, endangered species, interjurisdictional fish, certain marine mammals, and lands and waters administered by FWS for the management and protection of these resources.

FWS operates over 500 national wildlife refuges nationwide, waterfowl production areas in ten states, and 51 coordination areas in 19 states, covering more than 92 million acres. These areas comprise the National Wildlife Refuge System, the world's largest collection of lands specifically managed for fish and wildlife. Approximately 76 million acres of these lands are in Alaska, with the remaining 17 million acres spread across the other 49 states and several Territories. There are 7 national wildlife refuges in Illinois. The Savanna District presently manages over 46,000 acres stretching 90 miles along the Mississippi River from Rock Island, Illinois to Dubuque, Iowa. The SWMU is located within this area and will complement ongoing management programs.

FIGURE 1. Map of the Proposed Savanna Army Depot Wildlife Management Unit, Savanna, Illinois.





KEY:

A	AREA REQUESTED BY THE FISH & WILDLIFE SERVICE (FWS)
B	AREA REQUESTED BY CORPS
C	AREA REQUESTED BY LRA
F	AREA REQUESTED BY LRA WITH DEED RESTRICTION TO FWS

DRAFT CONCEPTUAL MANAGEMENT PLAN

I. GOALS OF THE NATIONAL WILDLIFE REFUGE SYSTEM

*To preserve, restore, and enhance in their natural ecosystems (when practicable) all species of animals and plants that are endangered or threatened with becoming endangered.

*To perpetuate the migratory bird resource.

*To preserve a natural diversity and abundance of fauna and flora on refuge lands.

*To provide an understanding and appreciation of fish and wildlife ecology and man's role in his environment, and to provide refuge visitors with high quality, safe, wholesome, and enjoyable recreational experiences oriented toward wildlife to the extent these activities are compatible with the purposes for which the refuge was established.

II. REFUGE ADMINISTRATION

The proposed SWMU would become part of the Upper Mississippi River National Wildlife and Fish Refuge, Savanna District. FWS District staff would manage and administer 6,000 acres of bottomland, while IDNR would manage 3,445 acres of uplands.

The Savanna District staff is currently authorized 5 permanent personnel to include a District Manager, Refuge Operations Specialist, Administrative Technician, Maintenance Worker, and Biological Technician. Temporary employees are hired during the field season when funding permits, and could include biological aides, laborers, and interns through the Youth Conservation Corps, Job Training Partnership Act, and other programs for high school and college students.

A satellite office, visitor center, and storage facilities would be located within SWMU. The main office for the Savanna District will remain near the town of Savanna, Illinois, located close to the Maintenance Facility with ready access off the Great River Road (Illinois Highway 84).

The annual budget for the District in fiscal year 1996 was approximately $268,000, which covers salaries, equipment maintenance, supplies, and routine equipment and construction material purchases. Additional funding for SWMU will be requested in future budgets.

IDNR would manage the uplands at SWMU as a stand alone management unit, that is, it would not be assigned as a satellite to an existing IDNR facility. Increased budgeting for additional staff for this additional management activity will be examined. There is currently an IDNR field management office in Mt. Carroll that is staffed by 6 district resource/law enforcement managers and support staff. Depending on existing office availability and economic feasibility, this office may consider relocating to SWMU. Existing facilities within the SWMU would be utilized, with no new facilities being developed. IDNR and FWS have discussed the possibility of co-locating office space. This would improve coordination of the two programs and provide a central location for the public to make contact with these management agencies. Natural resource management activities at SWMU would be conducted by IDNR staff.

III. ENVIRONMENTAL CONTAMINATION, HEALTH, AND SAFETY ISSUES

SVAD was placed on the National Priorities List for Superfund cleanup in 1989. Approximately $320 million may be budgeted during the next 20 years for contaminants removal. Presently 69 environmental sites may require cleanup. Some of these contaminants include solvent, petroleum, lead, cadmium, and mercury. TNT contamination has been confirmed to have reached the groundwater and has spread three-fourths of a mile westward toward the Mississippi River. It is reported that 90% of the Depot has the potential to contain some unexploded ordnance (UXO) to include 155 mm and 75 mm howitzers, mortars, grenades, and small arms ammunition.

These environmental contamination, health, and safety issues will be considered in identifying areas for public access to SWMU. The 9,445 acres that are proposed for addition to the National Wildlife Refuge System are to be used for conservation purposes, therefore the degree of clean-up will not be as strict as if housing or industry were proposed for the site. The U.S. Environmental Protection Agency (EPA), the Illinois Environmental Protection Agency (IEPA), and the Department of Army (DA) will ultimately determine when, and if, the contaminated sites are cleaned up to the extent that there are no environmental contamination, health, and safety concerns.

IV. HABITAT MANAGEMENT

The transfer of SVAD lands presents FWS and IDNR with a unique opportunity to continue to preserve an ecologically significant environment. Habitat management goals

will focus on providing natural ecological systems. Habitat management techniques will be used to promote biological diversity within the ecological systems. Due to the military mission, a majority of habitat has remained in relatively good condition. The bottomlands and uplands are representative of historic environments containing large contiguous tracts of riverine and upland habitat.

WETLANDS

Approximately 6,000 acres of floodplain wetlands are found within the SWMU boundary. The wetlands include a mosaic of open water (lakes, ponds, Mississippi River), meandering backwater sloughs, floodplain forest, emergent marshes, and wet meadows. FWS proposes to leave these wetlands in a natural condition and to manage these areas in a manner similar to other areas being managed by the District. Burning and/or mowing could be used to remove undesirable vegetation or to control encroachment of woody vegetation. Riverine habitat would be protected from livestock grazing and other intensive uses to reduce erosion and subsequent siltation of waters.

GRASSLANDS

Approximately 3,445 acres of uplands are found within the SWMU boundary. These areas consist primarily of sand prairie associations, but also includes an oak-ash savanna association. There are 488 buildings scattered throughout the grasslands. FWS has requested a deed restriction on 139 additional acres in the LRA designated use-area, identified as "J" area, to allow the management and maintenance of grassland habitat.

The uplands will be managed by IDNR under cooperative agreement with FWS. Grasslands would be managed to promote migratory birds, native vegetation, species diversity, and endangered species conservation. Areas of existing native prairie would be managed to retard encroaching shrubs, trees, and non-native grasses. Management techniques would include burning, limited grazing, mechanical, biological, and chemical treatment. Areas of non-native grasslands would be restored to native plants by seeding and/or transplanting. The feasibility of developing a plant nursery, as suggested by the LRA, will be examined by the

IDNR. Management of the wetlands and the grasslands will contribute to meeting objectives of the Upper Mississippi River/Tallgrass Prairie Ecosystem.

FORESTS

Approximately 6,470 acres of forest are found within SVAD and includes 4,743 acres of bottomland forest and 1,727 acres of upland forest. Forest management practices on FWS and IDNR lands would include burning, harvesting, seedling planting, or habitat manipulation depending on the particular objective of each area. The feasibility of developing a tree seed orchard will be examined by IDNR.

V. BIOLOGICAL MONITORING

SVAD contains diverse biological communities that support 228 species of fish and wildlife and 102 species of plants. There are 34 species present that are included on Federal and State - Threatened and Endangered Species lists. Important biological considerations include the presence of bald eagle nesting and roosting areas, heron rookeries, waterfowl concentration areas, grassland bird populations, fisheries and shellfisheries habitat, and extensive floodplain forest that is used by many species of neo-tropical migrant birds.

Since the primary purpose for establishing a national wildlife refuge is to conserve wildlife and habitat, extensive biological surveys are conducted throughout the year to identify animal and plant population trends. This information is the basis for refuge management decisions. A variety of wildlife surveys will be conducted to identify population densities and habitat use areas. Habitat surveys would include forest, wetland, and grassland inventories to document species diversity and densities.

Biological surveys would be conducted as a cooperative effort between IDNR and FWS. College, university, and other agencies would be encouraged to conduct research and population studies on plant and wildlife species.

The northern portion (approximately 850 acres) of SVAD is presently identified in State of Illinois regulations as a mussel sanctuary and does not allow the commercial harvest of mussels. FWS will pursue mussel population investigations to determine the importance

that this sanctuary provides as well as other open water areas within SVAD. Native mussel populations are threatened within the Mississippi River system due to several factors that include zebra mussel invasion, pollution, and sedimentation.

VI. PUBLIC ACCESS

Providing public access to IDNR and FWS managed lands will be important in keeping with the goal of the National Wildlife Refuge System. SWMU would provide a unique opportunity for outdoor enthusiasts to enjoy these public lands. The environmental contamination, health, and safety issues previously mentioned could restrict public access in certain areas.

Access to SWMU will need to be coordinated between the four partners (LRA, COE, IDNR, FWS) due to the individual designated areas of use. SVAD extends thirteen miles and includes over 100 miles of interior roads. Presently there is only one entrance road open. There are other access roads into SVAD, but due to security requirements, these roads are closed. The present entrance road is located on proposed LRA lands. FWS has requested an easement for access to the entrance road as well as to other interior roads.

Geographically, the LRA area would be located at the southern end of the Depot and extend along the eastern boundary for nearly ten miles. FWS bottomlands would extend along the northeastern boundary for about 10 miles and IDNR upland areas would extend in the approximate middle two-thirds of SVAD, and lying west of the LRA area. The COE upland area would be located at the northern end (See Figure 1).

The number of public entrances to FWS and IDNR lands would be limited for several reasons. The high speed rail crossings make additional entrances cost prohibitive and multiple entrances compound visitor use control, resource abuse, and increase manpower costs that could be used for resource management. An internal circulation route will be developed in coordination with all partners on the SVAD complex to determine public vehicular access routes. The needs of persons with disabilities will be considered during access planning for any refuge activity or facility.

FWS and IDNR will not have the resources to maintain the many miles of roads that are present within the proposed SWMU. Primary routes of travel for public access will be designated and the remainder of the roads closed to vehicular traffic. Many of the interior

roads provide access to the igloos and warehouses, which will not be opened to general public vehicular access. Foot access into these areas would be allowed for hikers, birdwatchers, photographers, and others. Signs and leaflets would clearly indicate the open and closed areas of the refuge.

Some habitat areas may become seasonally restricted sanctuary areas. These may include areas containing eagle nests and/or eagle roosts, heron rookeries, concentration areas for waterfowl, and areas where threatened and endangered plants are found.

VII. PUBLIC RECREATIONAL ACTIVITIES AND MANAGEMENT

Wildlife and wildlands oriented public recreational use is encouraged on national wildlife refuges as long as it is compatible with the primary purpose of the area. SVAD presently allows hunting, fishing, and trapping programs to Depot employees, retirees, active and retired military personnel, and their guests. FWS and IDNR propose to offer these recreational activities to the general public, as well as add new programs.

Public recreational activities would be varied and could include both consumptive and non-consumptive uses. Actual uses will be identified through community involvement, public meetings, and planning efforts of a Citizen's Advisory Committee. General public use regulations, based on the National Wildlife Refuge System Act, are shown in Table 1.

Table 1. General Refuge Regulations

*Public entry is permitted year round in those areas shown in the Refuge leaflet and marked by appropriate signs.

*Vehicles are allowed only on main roads and trails where gates are open.

*Use of the Refuge is limited to daylight hours only. No overnight parking is allowed.

*Possessing or discharging firearms is prohibited except during established hunting seasons in areas open to hunting.

*Disturbing or collecting any plant or animal is prohibited except under special use permit. Berry, nut, and mushroom picking are allowed in designated areas.

*No person may search for, disturb, or remove from the Refuge any Native American artifact or other historical object.

*Entering or remaining on the Refuge while under the influence of alcohol or other drugs is prohibited.

*Dogs and other pets must be kept under control at all times.

The Savanna District presently offers many public recreational activities. It is anticipated that the following public use activities would be allowed at SWMU.

HUNTING AND TRAPPING

Hunting of waterfowl, small game, turkey, and white-tail deer would be permitted in some refuge areas in accordance with State regulations. Areas to be opened for hunting and trapping would depend on the outcome of management planning conducted with public input.

FISHING

Sport fishing would be permitted in accordance with State regulations. Commercial fishing could be allowed under a Special Use Permit issued by the Refuge Manager.

BOATING, HIKING, CROSS-COUNTRY SKIING, AND OTHER USES

Many wildlife and wildlands oriented activities would be encouraged including hiking, bike riding, photography, cross-country skiing, canoeing, and wildlife observation. A designated hiking, bike riding, and skiing trail system is planned to be established. A self-guided auto tour route covering several miles would be established. Boating and canoeing would be permitted.

The Upper Mississippi River National Wildlife and Fish Refuge is somewhat unique in that it allows primitive camping on islands. FWS policy is that camping is only permitted on refuges where no other alternatives are available. FWS will not maintain the developed campground area located adjacent to the Coast Guard

landing boat launch. Presently there are 16 known campgrounds providing over 1,000 campsites within 30 miles of Savanna. These areas provide ample opportunity for camper trailer enthusiasts. FWS will maintain the Coast Guard landing boat ramp. The ramp may need to be upgraded to handle perceived use.

ENVIRONMENTAL EDUCATION AND INTERPRETATION

Environmental education and interpretation programs would be designed to enhance the visitor's understanding of natural resource management programs and ecological concepts. SWMU would serve as an important "outdoor classroom" for area school districts. Teacher workshops would be offered to provide ongoing environmental education programs. Visitor facilities would be planned with the needs of students and teachers in mind. Interpretive programs would focus on self-guiding facilities such as auto tour routes, signed trails, leaflets, and interpretive signs located near interesting features. A visitor center would be set up within one of the existing buildings and contain an auditorium for slide and film presentations, exhibits, a classroom/meeting room, and possibly a bookstore offering natural resource materials to the public.

LAW ENFORCEMENT

Enforcement of State and Federal laws on national wildlife refuges is important to safeguard resources and to protect and manage visitors. FWS intends to seek concurrent jurisdiction from the State of Illinois. Refuge Officers would work closely with IDNR Conservation Officers and local enforcement personnel.

VIII. FACILITIES MANAGEMENT

FWS will receive a total of 489 buildings including 437 igloos, 43 warehouses, 3 large rail line loading docks, 5 loading platforms, and 1 classroom building. The igloos have concrete floors, walls, and ceilings with steel doors and earthen exteriors. The warehouses have concrete floors and tile walls with metal doors and shingled roofs. Some of the warehouses may be used for storage, but initially most of the igloos and warehouses will be left vacant. In the event that LRA finds suitable leasing for all of its warehouses and still needs additional storage areas for economic use, FWS has agreed

with LRA to lease/rent these igloos and warehouses. If no other use can be identified for these buildings, as funds become available in future years, they may be removed.

FWS has requested a reversionary clause on 139 acres within the LRA designated use-area identified as the "J" area. The reversionary clause requests that this area containing 23 igloos revert to FWS should the LRA not find a viable economic use for the igloos within 20 years from the date it is available for economic use.

There are over 50 miles of railroad tracks on SVAD. FWS would acquire several miles of these tracks. The igloos and warehouses have a loop system of rail lines with loading docks and loading platforms. It will be important to keep this system intact until the LRA reuse opportunities have been investigated. If no other use can be identified for these rail lines, as funds become available in future years, they may be removed.

There are no administrative buildings located on proposed FWS lands. Talks have been initiated with the LRA for FWS and IDNR use of one of the administrative buildings located within the LRA use-area.

The boundary of all FWS and IDNR lands would be posted with national wildlife refuge signs at regular intervals to identify to the public where the refuge boundary is. Fencing or other types of barriers may be constructed to control grazing or to control off-road vehicle use which can damage sensitive habitat, such as the upland sand prairie areas. Interpretive signs and kiosks would be placed throughout SWMU to inform the public of refuge regulations.

FWS will cooperate with LRA, COE, IDNR, State, County, and township officials in the maintenance of roads that cross SWMU. Roadside mowing would be completed in accordance with State and local laws.

IX. MISCELLANEOUS

FIRE MANAGEMENT

It is the policy of FWS and IDNR to use fire when it is the most appropriate management tool for reaching habitat objectives. For example, a prescribed fire within the sand prairie uplands can serve to maintain the prairie area at the desired

successional stage. Wildfires, however, would be aggressively suppressed unless natural fires are a part of the approved fire management plan. The use of prescribed fire will be dependent upon areas being cleared of explosives and/or hazardous materials that would create a health and safety issue if fire were used.

IDNR and FWS have staffs trained in fire management and an array of equipment for fire suppression. To supplement these capabilities, cooperative agreements and contracts with State agencies and community fire departments would be put together to tap local firefighting expertise. This is especially important for structural fires since local fire departments have the special training and experience required for this type of fire fighting.

CROP DEPREDATIONS, OTHER PEST CONTROL

FWS and IDNR would provide technical advice to landowners surrounding SWMU if crop losses occur from migratory birds, deer, or other refuge wildlife. The U.S. Department of Agriculture has an Animal Damage Control Division that can provide more direct assistance.

It is FWS policy to control those weeds listed as noxious by the State. This control would emphasize non-chemical methods.

X. ISSUES OF CONCERN

SVAD presents several issues of concern for the future management of proposed refuge areas.

ENVIRONMENTAL CONTAMINATION, HEALTH, AND SAFETY CONCERNS

It is reported that 90% of SVAD has the potential to contain UXO's. In addition, 69 environmental sites may require cleanup. It is imperative that liability for the future cleanup of known as well as unknown environmental contaminant areas be the responsibility of the Department of Army. A sweep of UXO's to one foot depth may be conducted on all FWS and IDNR areas. FWS has no plans to construct any buildings at SVAD, however, some refuge activities as well as

public use activities will require subsurface disturbance. These activities include: the placement of boundary posts, sign posts, kiosks; scenic overlook construction; and trapper stakes and/or hunting blind supports driven into the ground. The transfer of property should identify: 1) the Department of Army is responsible for any future hazards from UXO's and environmental contamination and, 2) the Department of Army should pay for the cost of sweeping an area if it is identified for construction at a later date.

RAILROAD RIGHT-OF-WAY AND OTHER RAIL LINES

The Burlington Northern Railroad Company has a major railroad line located along the east edge of SVAD and traveling the entire length. Trains pass through SVAD on an hourly basis at speeds reaching 50 miles per hour. Only one railroad crossing has warning lights. FWS must consider the liability for public access at several railroad crossings. The purchase, installation, and maintenance of railroad crossing signals would be an expensive proposition.

The rail line loop system that provides accesses to some of the FWS igloos and all of the warehouses would be an important asset to LRA reuse opportunities. However, FWS will not be able to maintain the rail lines unless there is economic reuse of them to provide the financial assistance needed for maintenance.

UTILITY INFRASTRUCTURE

There are many miles of overhead electrical power lines and underground telephone cables. FWS will not be able to maintain the utility infrastructure unless there is economic reuse of them to provide the financial assistance needed for maintenance.

STAFF, MATERIALS, AND EQUIPMENT NEEDS

SWMU will provide a unique opportunity for FWS to acquire an area of high environmental value. This natural area will require some habitat enhancement and maintenance. In addition, there will be many roads to close off (presumably with gates) and miles of roads to maintain.

Savanna District presently has 5 permanent staff that cover 46,000 acres extending 90 miles and located within 3 navigational pools in 8 counties and 3 states. Staff work loads are heavy with some refuge activities not being accomplished. It will be necessary to reprioritize the existing work load, cut back existing programs, and to use outside help, if the opportunities at SVAD are to be implemented.

The District fully utilizes volunteer and other support programs. In 1996, volunteer hours are expected to exceed 3,000 hours. Presently, there are two Project Chance workers and one Green Thumb worker assisting the District on a daily basis. These are excellent programs that do not cost FWS salary dollars, but do require time and effort to train and to supervise. The District has also utilized Job Training Partnership Act (JTPA) personnel and the Youth Conservation Corps (YCC) in past years.

The closure of SVAD has generated much public interest because now people will be given the opportunity to see and do things that could not be allowed previously. The ultimate success of SWMU will be dependent upon how much time, effort, and dollars FWS can put into this new program. There are many opportunities available at SWMU to include public recreation, environmental education, and outreach programs. However, it will require some significant sacrifices of other District programs to operate above the "caretaker" status, unless funding and personnel are increased. The degree of success of the resource and facility management of SWMU will depend to a large degree upon additional funding for the Savanna District, partnerships with the IDNR, LRA, COE, and others, and volunteer assistance and support from private individuals and groups.

APPENDIX B

Summary of Savanna Army Depot Local Redevelopment Authority Reuse Plan

Savanna Army Depot Reuse Plan and Implementation Strategy

Prepared for:
Savanna Army Depot LRA

By:
Economics Research Associates
with
Mid States Associates, Inc.
Sasaki Associates, Inc.
EDS (William Laubernds)

January, 1997

EXECUTIVE SUMMARY

The Savanna Army Depot LRA has developed a strategic land use and implementation plan to convert the Depot property to civilian uses that meet the LRA's overriding objectives of economic development and job creation. The plan also accounts for environmental issues. It was prepared by a team of consultants headed by Economics Research Associates (ERA). Key elements are discussed in this section.

A. THE PLAN

The Land Use Plan for the reuse of the Savanna Army Depot is a response to a number of important factors. The process for development of the plan included an analysis of existing conditions: the physical characteristics of the site such as topography, landscape character, the physical structures and infrastructure; the land uses and forms surrounding the site; and access characteristics including roadways, rail, and water transportation. The second key set of influences that affect the Land Use Plan are the market demand factors and community needs that define new uses which could potentially be accommodated on the Depot.

Potential uses were identified through market studies as well as input from local individuals and organizations, who indicated an interest in specific properties. The process of arriving at the Land Use Plan involved a series of LRA work sessions at which there was an exchange of views and facts. This exchange considered, among other things, what could physically be accommodated on the Depot; what the market might support on the Depot; which assets on the Depot had been requested for reuse by individuals, organizations, and institutions; and what priorities the Local Redevelopment Authority had set to guide the reuse plan. The plan also incorporated input generated through several public hearings, LRA staff presentations in the community, and written responses to the draft report.

The Land Use Plan accommodates five principal land uses plus open space, and identifies an area of land on the Depot for each of the proposed uses. Each is located to take advantage of both the existing natural assets, including the river and the abutting wetland and grassland open space, and the physical assets, including the multi-modal transportation infrastructure and the inventory of reusable buildings. The land use areas shown on the plan at the end of the Executive Summary are sized to respond to the magnitude of the anticipated market, and include:

Housing - 1010 acres for recreational and retirement second home housing (at the south end) and for primary residences (close to the north end). Recreational amenities proposed include a marina, a golf course, and a resort/conference center to be developed to complement the proposed retirement/second home component of the housing.

Distribution Center - 720 acres that take advantage of existing buildings and infrastructure with the potential for combining rail, roadway, and water transportation systems with warehouses to implement an intermodal warehouse and distribution center.

Industrial - a 640-acre area that is configured to take advantage of the adjacency to the proposed distribution center, related transportation resources, and the open and flat land which is suitable for large-footprint light and medium industrial buildings.

Recreational/Cultural - an 85-acre site at the northern boundary of the LRA property is proposed for an interpretive and visitors' center that will capitalize on and enhance the eco-tourism potential of the LRA and adjacent Fish and Wildlife properties.

Mixed Use - a 400-acre area that combines the core of the existing Post facilities into a mix of compatible uses including institutional, educational, residential, office, and light industrial.

Open Space - 302 acres of land designated as open space because it is otherwise difficult to develop, but is configured in a way that provides benefit to abutting uses. This includes the proposed Stewardship Park concept at Primm's Pond.

B. MARKET SUPPORT

The LRA reuse plan identifies a range of reuse alternatives, based upon an overview of local economic and market conditions, the characteristics of the facilities and land available, and ERA's market knowledge and experience. The market evaluation identified development alternatives that present the best opportunities given local assets and conditions. The research showed uses with adequate feasibility and market demand to ensure that private investors would find the development realistic. Impacts associated with each option were identified to provide input into the decision process. A review of national and regional trends, local demand, compatibility with LRA land characteristics, and development timing helped refine priority reuse alternatives:

- second homes for vacation and retirement
- resort/conference center
- industrial park
- distribution center
- prison
- marina and golf
- entertainment (dinner train)
- office.

This report also concludes that potential exists for eco-tourism and cultural activities. The details and extent of demand are being developed as part of several community-related concepts.

C. PHYSICAL CONTEXT

The comprehensive review of existing physical conditions detailed the past and present status, capacity and capabilities of Depot infrastructure, utilities, and buildings/structures. It also examined the scope and impact of environmental conditions on LRA lands as well as opportunities and restraints imposed from adjacent US Fish and Wildlife Service (USFWS), US Army Corps of Engineers (ACOE), and Illinois Department of Natural Resources (IDNR) lands.

Currently, there are over 13,062 acres of Savanna Army Depot lands that will be transferred to new public and private ownership upon Depot closing. The LRA is seeking to acquire approximately 3,157 acres (about one-fourth of the total); these lands are almost equally portioned between both Jo Daviess and Carroll Counties.

Due to the present capacity, condition and distribution coverage of the existing infrastructure systems, it is anticipated that the majority of the infrastructure (sewer systems, water system storm/flood controls, roads and rail systems), will be used and/or expanded for future use as the LRA lands are developed. Depending upon individual infrastructure needs of prospective new tenants, the following major capital improvements will most likely be needed: 1) WWTF upgrades or replacement with increased capacity; 2) new elevated storage tower along Shinske Road corridor with increased capacity; 3) major sewer and water extensions along Shinske Road, River Road and near the WWTF; 4) existing pump (lift) stations replacement/upgrades; 5) maintenance upgrades to existing well houses and the water tower; 6) road improvements and bike trails; and, 6) abandonment and closure of old leaching fields, small septic tanks, non-compliant wells, and deteriorated sanitary sewer and water mains.

Utility distribution and condition on the LRA lands is an asset to the LRA and the future development plan. Electrical systems have recently been upgraded and the network of power lines throughout the Depot is comprehensive. The Central Heating System (CHS-Steam) has two functional boilers which were recently upgraded that provide coverage for two large areas of the Lower Post section of the Depot. This system provides potential for future use if physical and administrative mechanisms can be installed to regulate and calculate steam usage by structure/tenant. Currently, there is no gas service available on Depot lands. Telecommunications and fiber optics capabilities are mostly available on the Lower Post section of LRA lands.

Of the 433 existing buildings on LRA lands that were analyzed, many have unique internal and structural characteristics, with potential for adaptive reuse. Buildings currently used for Office/Administration and Storage/Warehousing purposes provide the largest reuse potential. Most, if not all, buildings will require minor improvements to accommodate future commercial or industrial tenants and mitigate ADA, asbestos and

general UBC guidelines requirements. Approximately 23 buildings have been identified for demolition due to their condition and potential threat to human health and safety.

LRA lands contain numerous environmental conditions that affect the timing, scale and level of development that can occur. Two major conditions are State and Federally Threatened and Endangered Species and environmental contamination and remediation. One federally *threatened* species, two species of federal *concern*, and 34 state *threatened* and *endangered* species have been identified on Depot lands. The Environmental Baseline Study outlined 175 potential contaminated sites and 86 storage tanks. The EIS, due in January, 1997 will identify the impact on the environment by disposal and reuse activities.

Acreage Breakout:

LRA -- 3,157 acres
- Lower Post
- Shinske Corridor plus Incinerator

USFW -- 9,445 acres
- 6,000 bottom lands
- 3,445 Uplands

ACOE -- 460 acres
- 183 Apple River Island
- 277 Blandings Landing Campground Expansion

D. IMPLEMENTATION

The major elements of the implementation strategy show how to put the plan and reuse concepts into reality, and include an estimate of capital improvement costs, a business plan, physical implementation requirements, and an action plan. The full report details these; however, acquisition of the property is critical to the LRA and is described below:

There are three major methods for transferring, or conveying, this property. They are:

- Public Benefit Conveyance
- Negotiated Sale, and
- Public Bid Sale.

Public Benefit Conveyances transfer land or structures, which serve a public purpose, to a public entity like a reuse authority. Parks, ports, and educational institutions are examples. Under this method, property is transferred at reduced cost, or even free. The Economic Development Conveyance, loosely a public benefit conveyance, is unique to

closing military bases, and allows for no-cost transfer or transfers at negotiated terms. The objective of this is to enable the affected community to effectively attract business and create jobs.

Negotiated Sale is a transfer of property to a public body, to serve a public purpose, but the sale price is the fair market value of the property. There are no discounts, however the payment terms are negotiable.

Public Bid Sale is a competitive bid sale, open to the public, in which the property is sold to the highest bidder.

The most effective manner for the implementation LRA to take ownership of Depot property is:

- Economic Development Conveyance (EDC) for the industrial and distribution areas
- Public Benefit Conveyance of the Recreational/Cultural area for the proposed interpretive center and other possible uses
- Public Benefit Conveyance of the Mixed Use area targeted for educational and cultural purposes, and an inclusion of job-generating properties under the EDC
- Public Bid Sale of Residential land, with recreational elements within those lands transferred as either an Economic Development Conveyance or a Recreation (public benefit) Conveyance
- Public Benefit Conveyance for the prison.
- An alternative approach to the residential areas would be for the LRA to acquire the property through a negotiated or public bid sale to ensure tight control over development. Funding would be needed from an outside source to accomplish this.

E. MANAGEMENT

Six models of organizational structures are often used by LRAs in forming their implementation authority. These models fit into three basic categories, each with its strengths and weaknesses. The three general categories are:

- Municipal Authority, an operating department of the counties, responsible to their commissions. Such an organization may save money, and can in result county financial support early in the process. However, county governments are not ideally set up to deal with industry confidentiality.

- Quasi-Public Authority, a non-governmental organization which answers to the counties, and possibly to the state, as well. This may result in the Depot functioning in a business-like manner, but may sacrifice some county financial contributions.

- Economic Development Corporation, a completely private entity that can operate in an effective, businesslike manner and be insulated from local politics. Some public

accountability is sacrificed, as is access to some public subsidy and incentive programs.

The specific management models which could be used in Illinois include:

- Implementation LRA - empowered by the passage of special legislation, this format attempts to include all the development powers and tools desired
- Port Authority - appropriate only if a port is constructed, this kind of authority possesses a broad range of development powers
- Regional Economic Development Authority - created through special legislation, this kind of body possesses a broad range of tools, but is difficult to form
- Community Development Corporation - this for-profit corporation is limited in its ability to accept grants, which is crucial to the redevelopment effort
- Non-Profit Economic Development Corporation - this kind of corporation has few financial powers that are useful in development
- Intergovernmental Agreement - such an agreement involves special legislation, and can be structured to give the two counties the joint development powers they require.

In Illinois, no entity other than a municipality may set up a Tax Increment Finance district, and only government entities can issue bonds. These two powers are critical to redevelopment. Therefore, the planning LRA should secure special legislation which gives it access to the full range of development powers. The LRA is currently pursuing such legislation in the form of an Intergovernmental Agreement which allows the two Counties to be jointly empowered through an authority to develop and maintain the Depot.

The redevelopment authority must hire paid staff to carry out the Depot reuse: an Executive Director, a Director of Finance and Administration (responsible for all accounting and finance functions), a Research Specialist (responsible for marketing functions such as finding prospective tenants), and a Director of Property and Assets (responsible for Depot maintenance and daily operations). If the budget allows, a Property and Asset Manager (the Director's assistant) should also be included.

F. BUSINESS PLAN

The business plan reflects expected market demand for space at the Depot, and the future attraction of businesses will generate lease revenues. The plan prepared by ERA provides detailed cost estimates -- management, capital improvement, and marketing -- and takes into consideration a wide variety of financial resources, including the Department of Defense Office of Economic Adjustment, the Economic Development Administration, revenues from taxes and leasing, and proceeds from bonds which an implementation LRA could issue. The cash flow analysis, which is the culmination of all the financial forecasts, indicates that with the revenue from grants and other sources, it should be possible to maintain a positive annual cash flow in most years, with an overall positive cumulative result at the end of the forecast 10-year period. This financial performance is

contingent upon the Depot being managed in an extremely efficient manner, with an aggressive and successful tenant marketing campaign. A variety of incentives and programs are available from different government entities, and the implementation LRA should be creative about pursuing these.

G. MARKETING

The marketing effort is central to the success of the Depot reuse. The key aspects of the Depot which must be marketed are: the industrial areas, institutional users, residential areas, and recreational areas.

Each area will require a tailored strategy involving marketing materials and personal contacts with the public and private sectors. There are two main approaches to marketing. One is the active pursuit of developers and tenants to get them interested in the Depot, and the other is to respond aggressively to opportunities which have already been generated. Specific marketing techniques and products include:

- cold-calling prospects
- advertising
- attending trade shows
- data base of existing buildings
- brochures.

H. ACTION PLAN

Successful implementation will only occur with a carefully orchestrated, comprehensive plan that incorporates all elements of conversion: property acquisition, staffing and management, securing financial assistance, creating ordinances to oversee operations and land development, upgrading the infrastructure in a timely manner, marketing and leasing, etc. This must be flexible enough to adopt to changes in policy, the economy, and other key elements like available programs and tools. The full reuse plan document outlines these requirements.

APPENDIX C

USACE Conceptual Management Plan for Lands at Savanna Army Depot

US Army Corps
of Engineers
Rock Island District

CONCEPTUAL MANAGEMENT PLAN FOR LANDS AT SAVANNA ARMY DEPOT

JULY 1996

PREPARED BY: U.S. ARMY ENGINEER DISTRICT, ROCK ISLAND
P.O. BOX 2004
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I - INTRODUCTION

The U.S. Army Engineer District, Rock Island has requested that approximately 455 acres of land owned by the United States at the Savanna Army Depot be reassigned (transferred) to the Rock Island District for management and use in connection with the Mississippi River Nine Foot Channel Navigation Project. The Rock Island District has also requested continued easements to overflow approximately 6,619 acres, and roadway easements on approximately 75 acres of Savanna Army Depot lands, also required for the Upper Mississippi River Nine Foot Channel Navigation Project. The purpose of this document is to provide a conceptual plan of the types of management and use intended for the areas requested.

II - MANAGEMENT AND USE

A. - PUBLIC RECREATION AREA

Approximately 282 acres requested for reassignment are to be managed and used for public recreation purposes. This area is located at the northerly most end of Savanna Army Depot and immediately adjacent to the existing Blanding Landing Public Recreation Area, which is managed by the Rock Island District. Blanding Landing Recreation Area currently occupies 25 acres which have been developed for intensive public recreational use, including a campground containing 37 camping sites and a day use area with a boat launching ramp and picnicking and play ground facilities. A limiting factor to the recreational opportunities currently available at Blanding Landing Recreation area is that there are no adjacent public lands available for disbursed recreational activities. The recreation area is bordered by private cabins to the north, the Savanna Army Depot boundary fence to the south, a public road and railroad to the east, and the Mississippi River to the west. Those using the recreation area are confined to the campground and day use area. The addition of the 282 acres to Blanding Landing Recreation Area will provide a variety of additional recreational opportunities to the users of the area and should also increase the level of use of the existing public recreational facilities. Following is a summary of how the 282 acres will be managed and used for public recreation purposes.

(1) - DEVELOPED RECREATION AREA

A small portion of the 282 acres located adjacent to the shoreline is currently developed with a clubhouse, picnic shelter, vault toilets, camp sites and a boat launching ramp. This area has been historically used by Savanna Army Depot

employees their guests and other groups for recreational purposes. The Rock Island District proposes to manage and use this area for intensive types of public recreational use. The Rock Island District has requested that buildings including Building No. 2110 (picnic shelter), Building 2211 (sportsman's club), Building No. 2213 (well house), and Building No. 2221 (vault toilets) be included in the transfer. The Rock Island District does not anticipate any further significant development of the area.

(a) - Camping

The existing camping sites will be available for camping by individuals or groups for fees similar to those charged at other Rock Island District camping areas. This will provide the first area available for use as a group camping facility operated by the Rock Island District along the Mississippi River. The picnic shelter and boat launching ramp at this site will be available to those using the camp site, but will not generally be available for picnicking and boat launching by others, as no additional parking area will be developed for the boat ramp and picnic shelter. It is anticipated that shallow water conditions in this area may limit the usefulness of the boat launching ramp. The usefulness of the boat launching ramp will be evaluated and, if it is determined to be not usable, the boat ramp will probably be removed.

(b) - Clubhouse

The building currently known as the sportsman's club will be used as a center for environmental education and interpretive programs for the public. The building will also be available for meetings and other types of group use, for a fee.

(c) - Open field

On the landward side of the road near the clubhouse and camping area is an open grassy area. This area will be made available for use by groups for special events such as scout jamborees, ecology meets, rendezvous, or craft shows; or as a staging area for group activities such as canoe trips, bicycle rides, or equestrian activities. Consideration will be given to allowing short term primitive group camping in this area.

(d) - Batey House

A historical structure known locally as the Batey House is also located at the developed recreation site. The Rock Island District has not requested this structure, but it is assumed the transfer of the land would include this structure. The Rock Island District has no plans to restore or manage this structure. There are apparently local individuals or groups that are interested in preserving or restoring this building. The Rock Island District would be willing to pursue an agreement with

local interests to manage or restore the building and use it for interpretation or as an attraction for visitors, as long as it is consistent with the management of the area for public recreational purposes.

(2) - UNDEVELOPED RECREATION AREA

A majority of the 282 acres is undeveloped, with the exception of some existing roads. This area will remain undeveloped and be open to public recreational activities such as hiking, biking, wildlife observation, sightseeing, photography, horseback riding, bank fishing and similar types of disbursed recreational activities. Depending upon the type and level of use the recreation area receives, the Rock Island District may consider allowing certain types of hunting in the area, provided it would not create significant public safety concerns. Any proposal to allow hunting would be coordinated with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources to determine if it is consistent with their wildlife management objectives on adjacent lands.

(3) - VEHICLE ACCESS

All public motorized vehicle access to the recreation area will be through the existing Blanding Landing Recreation Area. The fence currently separating Blanding Landing Recreation Area from the Savanna Army Depot will be opened to allow vehicle access to the area. Public motorized vehicle traffic in the recreation area will be limited to the roadway that parallels the river and connects Blanding Landing to the clubhouse and camping area. The Rock Island District may widen this roadway slightly, in the future, if the type and volume of traffic warrants it. A gate will be installed on this roadway somewhere south of the clubhouse and camping area to restrict vehicle access to and from the remainder of the Savanna Army Depot property. Public vehicle access will not be allowed to and from the remainder of the Savanna Army Depot property south of the recreation area. Gates will also be installed to restrict public vehicles from entering other roadways in the area. There has been some discussion by other interests of providing a public roadway entrance and exit towards the north end of the remaining Savanna Army Depot property, for the purpose of allowing through traffic. The Rock Island District will give consideration to possibly allowing another entity to use and maintain a short distance of the existing roadway in the southeasterly portion of the recreation area, solely for the purpose of connecting to the existing public roadway that parallels the Depot boundary in that area. Public vehicle access would not be permitted from that roadway into the recreation area.

(4) - PARKING

If the level of recreational use in the area of the clubhouse and to the south warrants it, the Rock Island District may establish gravel parking areas to allow parking for walking into the clubhouse area and the Dam 12 overflow dike.

(5) - IMPROVEMENTS

The Rock Island District will maintain those existing improvements on the area that are suitable for public recreational use. No significant additional improvements are planned. The following facilities will likely be added to the property and will involve some subsurface disturbance. These will need to be addressed from the unexploded ordinance standpoint:

(a) - Gates

It is anticipated that approximately 5 gates will be installed to control vehicle access in the area. Each gate will require the installation of two gate posts.

(b) - Signs

Information and traffic control signs will be installed on the area. It is anticipated that 15-20 sign posts will be installed.

(c) - Boundary Markers

Boundary markers will be installed along the southern boundary of the recreation area. These consist of carsonite posts located approximately 100 feet apart and driven approximately 2-3 feet into the ground.

(d) - Roadways

The roadway that connects Blanding Landing Recreation Area and the clubhouse and group camping area may eventually be widened slightly, if the type and volume of traffic warrant it.

(e) - Parking Areas

Gravel parking areas may be added along the roadway that is open to public vehicles, if the volume of use warrants it.

B. DREDGED MATERIAL PLACEMENT SITE

Approximately 173 acres requested for reassignment are to be managed and used for placement of dredged material produced from the maintenance of the Mississippi River Nine Foot Channel Navigation Project. The area is known as Apple River Island.

This area is near a location in the navigation channel that requires recurring dredging to maintain adequate channel depths for commercial navigation. Material obtained from dredging will be transported to the island hydraulically, through a portable pipeline, and placed in the interior areas of the island. The Rock Island District follows established procedures to coordinate the placement of dredged material with various natural resource management agencies, in an effort to minimize the environmental impacts of the action. Prior to using a dredge material placement site there is generally an onsite meeting with the agencies to evaluate the alternatives for placement of the material. The agencies provide their input to identify practical alternatives that will minimize the environmental impacts of the dredged material placement action. Often there is more than one alternative for the placement site, and Apple River Island may not be the placement site selected for each dredging occurrence at this location. The placement of dredged material in areas that are bottomland forest is generally limited to a depth of material that will not significantly affect the existing tree growth. Much of the undeveloped bottomlands acquired by the Rock Island District for the navigation project have been made available to the U.S. Fish and Wildlife Service for fish and wildlife management purposes through a cooperative agreement. If the U.S. Fish and Wildlife Service determines that Apple River Island is an area they would also like to manage for fish and wildlife purposes, the Rock Island District will consider including the area in that agreement.

C. - OVERFLOW EASEMENT

In 1937 the Commander of the Savanna Ordinance Depot granted the U. S. Army Corps of Engineers permission to overflow, and to remove trees and brush from the lands subject to overflow, on approximately 6,544 acres of the Depot property, as required for the operation and maintenance of the Mississippi River Nine Foot Channel Navigation Project. The operation of the navigation dams submerges or increases the frequency of inundation of these lands. The Rock Island District must retain the rights to overflow and remove obstructions from these lands as necessary for the continued operation and maintenance of the navigation project.

D. - ROADWAY EASEMENTS

The Rock Island District has requested permanent easements for road right-of-way purposes on approximately 75 acres, which include approximately 13 miles of existing roads within the Savanna Army Depot property. These roadway easements will be used for occasional access to the navigation dam for maintenance and rehabilitation work. The Rock Island District is willing to negotiate the route of the easements, to identify a route that

will provide reasonable access to the dam and also minimize conflicts with other uses of roadways on the Depot property.

E. - UNEXPLODED ORDINANCE

The request for reassignment of this property provides that Rock Island District will not assume costs for disposal of ordinance or cleanup of hazardous materials that may be on the property requested. Magnetometer sweeps of the area will be needed at appropriate depths to determine that unexploded ordinance does not exist, and that the uses and improvements proposed will not pose a safety hazard to employees, contractors or the visiting public. The Rock Island District is not in a position to pay the cost of these sweeps or any other measures necessary to detect or remove unexploded ordinance. The uses and improvements proposed for these areas may be limited, if appropriate levels of unexploded ordinance clearance cannot be obtained prior to the property being reassigned to Rock Island District. The reassignment of this property should include documentation of the level of unexploded ordinance clearance and what agency will pay for future detection and removal of unexploded ordinance.

III - POINT OF CONTACT

For further information regarding this conceptual management plan or the proposed use of properties requested by the Rock Island District, contact Dick Mattson, Chief Management and Disposal Branch, Real Estate Division, U.S. Army Engineer District,Rock Island (309)794-6063.

APPENDIX D

Technical Annex

Appendix D: Technical Annex

Description of Wells on SVADA (see Figure 4-4)

Lower Post Well and Pump House (Building 107). This well is a deep rock well, 1,200.5 feet deep with top elevation of 601.24 feet. This well has a 12-inch steel casing to 345-foot depth, grouted in 16-inch drive pipe, and a 12-inch drill hole to bottom. The water level is static at an elevation of 611 feet and when test-pumped at a rate of 750 gpm, the water level dropped to an elevation of 604. An electric motor drives the deep well pump with a 750-gpm capacity at a 170-foot head. The pump setting is approximately 60 feet, which is well below the expected drawdown for pumping, at 1,650 gpm.

BOQ Area Well (Building 260). This deep rock well is 1,114 feet deep with a top elevation of 609.25 feet. It has a 12-inch steel casing to 345 feet, grouted in a 16-inch drive pipe and a 12-inch hole to bottom. The water level is static at an elevation of 609 feet and when test-pumped at the rate of 800 gpm, the water level remained at 609. The water turbine pump is rated at 400 gpm against a 200-foot head. The top bowls are set at an elevation of 561 feet (Melaas and Straight, personal communication, 1996a).

"600 Series" Area Well and Pump House (Building 645). This deep rock well is at a depth of 1,200 feet with a top elevation of 639.5 feet. It has a 12-inch steel casing to 155 feet, an 8-inch steel casing from 155 to 767 feet, a 10-inch G.W.I. casing that extends to 911 feet, and a 10-inch hole to the bottom. The linings are grouted to 373 feet in a 16-inch drive pipe. The water level is static at 623.7 feet and when pumped at the rate of 750 gpm, the water level drops to 582.5. Equipment includes a deep well turbine pump with a capacity of 750 gpm at a 240-foot head. The underground pressure tank is 15,800 gallons operating at 70 to 80 psi. The pump setting is approximately 60 feet. This pump is currently inoperable due to the lack of a pump control panel and aboveground piping connecting the system (Melaas and Straight, personal communication, 1996a).

"700 Series" Area Well and Pump House (Building 701). This well is 1,200.3 feet deep with a top elevation of 622.58 feet. This well has a 12-inch steel casing to 435.5 feet, cemented in a 16-inch drive pipe, and a 12-inch drill hole to bottom. The water level is static at 634.5 feet. When test-pumped at 1,000 gpm, the water level dropped to an elevation of 603 feet. The equipment on this pump and well includes an electric-motor-driven deep-well turbine pump with a 750-gpm capacity at a 240-foot head with top bowls set at an elevation of 574.58 feet. The operating pressure on the underground 15,000-gallon pressure tank is 70 to 80 psi (Melaas and Straight, personal communication 1996a).

Ammunition Washout Facilities Well and Pump House. Building 2205 has a deep rock well at 1,078 feet with a top elevation of 594.33 feet. The system has a 12-inch drilled hole to 340 feet, grouted in 16-inch drive pipe to 195 feet, a 12-inch hole from 340 to 760 feet, a 10-inch casing from 700 to 760 feet, a 10-inch hole from 760 to 960 feet, an 8-inch casing from 900 to 960 feet, and an 8-inch drilled hole to the bottom. This system includes a 750-gpm turbine well pump at a 200-foot head with a pump bowl at 80 feet. The underground pressure tank is 15,000 gallons operating at a pressure of 60 to 65 psi (Melaas and Straight, personal communication, 1996a).

Burning Grounds Change House. Building 2112 has a new well drilled in 1991. The well is 280 feet deep with 178.5 feet of 6-inch steel casing and an 8-inch hole drilled grouted around the casing. The system includes a 40-psi submersible pump operating at 60 gpm (Melaas and Straight, personal communication, 1996a).

Shallow Well. Building 2213 has a 20-foot shallow well that pumps water by means of an electrically operated jet-type pump with a 720-gallon per hour capacity (Melaas and Straight, personal communication, 1996a).

Additional Wells. Two wells that have no provisions for chlorination of the well heads are not considered potable (Melaas and Straight, personal communication, 1996a).

Ammunition Storage Area (Pump House 1022). This well is a deep rock well that is 1,180 feet deep with a top elevation of 631 feet. It has a 12-inch wrought iron casing to 420 feet, grouted in 16-inch drive pipe, and a 12-inch drilled hole to the bottom. Water is static at 645 feet but at a pumping rate of 500 gpm, the water level drops to an elevation of 631. A turbine pump with a capacity of 500 gpm and a head of 170 feet is set at 80 feet. The pump is operated by automatic pressure float controls on underground pressure tanks. This pump currently does not have power (Melaas and Straight, personal communication, 1996a).

Whitton Station Gate House. Building 2003 has a 60-foot-deep well with sand point cased in a 6-inch steel pipe. The water level is 23 feet below the building floor. A 10-gpm pump and pressure tank were installed in 1993 for watering cattle (Melaas and Straight, personal communication, 1996a).

Building 1005. Building 1005 has a 72-foot-deep well with an 8-inch metal casing. The pump has been removed, and no electrical power is available for this area (Melaas and Straight, personal communication, 1996a).

Geology, Structure, and Stratigraphy on SVADA

SVADA can be divided into three general geologic divisions, as discussed in Section 4.6 (see Figure 4-2). A generalized geologic cross section through the central depot area is shown in Figure 4-3. Within SVADA, unconsolidated sediments, ranging in age from Pleistocene to Recent, overlie Ordovician dolomitic bedrock of the Galena group (Dames and Moore, 1994).

The total thickness of the unconsolidated strata in Area I is approximately 145 to 155 feet. The unconsolidated stratigraphy near the surface is composed of clay, silt, and sand of the Cahokia alluvium, which overlies the coarser, alluvial deposits of the Parkland formation. The Cahokia alluvium was deposited from sediment carried by meandering waters of the Mississippi River, Apple River, and other smaller tributaries during the Recent age. The lithology of the Cahokia ranges from dark gray, medium plastic clay to silt and fine- to medium-grained sand. Soil of the Cahokia alluvium is classified generally as clay with some silt and sand or sand with varying amounts of silt and clay (SAIC, 1996).

In the backwater area around the vicinity of the former old washout lagoons, a layer of silty clay on the surface forms a shallow confining layer. This clay deposit appears to be associated with local deposition by Beaty Hollow during high-runoff events. The headwaters of Beaty Hollow bisect the upland outcroppings of the Maquoketa shale. This eroded material, consisting of clay and silt, has been carried downstream into the northern backwater area and redeposited over much of the northern portion of Area I (Dames and Moore, 1994).

The Parkland formation, which underlies the Cahokia alluvium in Area I, is Late Holocene in age and generally alluvial in origin. The formation consists of fine to coarse-grained, moderately well-sorted, brown sand with traces of silt and occasional layers of fine, multicolored, rounded gravel. The sand and gravel of the Henry formation lies between the Parkland sand and the bedrock floor of the ancient Mississippi Valley (Willman et al., 1970, cited in SAIC, 1996). During the Wisconsin glacial period, the Mississippi Valley carried an enormous load of glacial outwash deposits. This material makes up the sands and gravels now classified as the Henry formation. At SVADA, the Henry formation is composed of well-graded glacial outwash material consisting of rounded granitic cobbles, large boulders of dolomite, multicolored gravel, and medium- to coarse-grained quartz sand (Dames & Moore, 1994).

Bedrock of the Ordovician aged Galena formation underlies the Henry formation. Well log data on the Galena formation are limited in Area I. Based on observations made by Dames and Moore (1994), the dolomite of the Galena formation grades from slightly weathered, light brownish-gray to fresh, light gray dolomite within the first 5 feet encountered. The elevation of the top of the Galena dolomite averages 450 feet above mean sea level (msl) within Area I (Dames & Moore, 1994).

The stratigraphy of the upper Parkland formation in Area II consists of well-sorted, very fine to fine-grained, windblown (eolian) sand with traces of silt. The eolian deposits are interbedded with layers of alluvium consisting of medium to coarse-grained, subangular sand with occasional fine, rounded gravel. The trace amounts of silt and clay and the amount of sorting within the Parkland formation probably resulted from swift-moving currents within shallow braided channels of the Late Holocene Mississippi River. In the lower section of the Parkland formation, the lithology is typical of alluvial deposits (SAIC, 1996).

The Parkland sand grades to coarser-size deposits representing the Henry formation at approximately 110 feet bgs. The lithology of the Henry formation within Area II consists predominantly of gravel and medium to coarse-grained sand. The total thickness of the unconsolidated strata in Area II ranges from 132 to 190 feet, based on data from the SVADA deep water supply wells (Dames & Moore, 1994).

As shown in the generalized cross section through the central portion of the depot (Figure 4-3), the bedrock dolomites of the Galena group underlie the Henry formation. Based on boring data, the surface of the dolomitic bedrock is light gray, slightly weathered, and broken. The dolomite grades to fresh rock 3 feet into the formation. The erosional surface of the Galena dolomite dips steeply southwest along the edge of the bluffs in the central portion of SVADA. In the southern portion, the surface elevation of the bedrock averages 450 feet above msl and dips 0.7 degrees south-southwest, based on well logs from the Illinois State Geological Survey of SVADA deep production wells. These data indicate the thickness of the Galena group ranges from 145 feet in the central part to 215 feet in the southern part (Dames & Moore, 1994).

Area III includes the northern upland area of SVADA, which contains steep, rolling hills and dunes of the Parkland sand. Overall, the stratigraphy of Area III is similar to that of Area II, though there are some major differences.

The lithology of the Parkland sand is consistent throughout Areas II and III. In Area III, well-sorted, fine eolian sand typically overlies medium to coarse-grained, clean, alluvial sand with few fine gravels. The sand of the Parkland formation thins out in the extreme northern portion of the area and grades to yellowish-brown silt that has the characteristics of residual soil from completely weathered and altered dolomitic rock (known as rock flour; Dames & Moore, 1994).

The Henry formation is generally thin or absent in Area III. The thickness of the unconsolidated overburden varies with the topography of the bedrock, and it is normally thicker in valleys and thin in areas where the bedrock is elevated. The total thickness of the overburden in Area III ranges from 5 feet in the northeast to 100 feet in the southeast (Dames & Moore, 1994).

One major difference between the geology of Area III and that of Area II is that the elevation of the surface of the dolomite bedrock is much higher in the northern upland area (Area III). The elevation of the bedrock surface ranges from 611 to 494 feet above msl. The average depth to bedrock is 40 feet. The bedrock surface in Area III is irregular, indicating a dissected system of hills and valleys (Dames & Moore, 1994).

The lithology of the Galena bedrock consists of light gray, fine crystalline fresh rock to light yellowish-brown moderately weathered rock. Bedrock in the northwestern portion of Area III exhibits a greater amount of weathering and fracturing than bedrock in the southeastern portion, based on bedrock cores retrieved during well

installation activities. Solution cavities are prevalent in fresh and weathered dolomite and contain recrystallization minerals (predominantly calcite). Traces of pyrite and galena have also been observed in rock cores from one well boring (Dames & Moore, 1994).

Soils on SVADA

Table D-1 presents descriptions of both upland and bottomland soils that have been mapped on SVADA.

Table D-1
Soils Mapped on SVADA

Soil Series	Drainage Class	Hydric	Limitations	Occurrence at SVADA
Algansee fine sandy loam	_	Yes	Water table at or near the surface	Low-lying areas on islands in the bottomlands
Beaucoup silty clay loam	_	Yes	Flooding and association with wetlands	Wetlands along the eastern and northeastern boundaries
Bird silt loam	Very poorly drained	Yes	Runoff from higher land, bank erosion, and flooding	Dominant soil in the bottomlands
Bloomfield fine sand	Well drained to excessively drained	No	Severe wind erosion, low available water, potential hazards associated with groundwater pollution	Gentle to steep slopes on terrace benches and upland dunes
Chelsea series	Excessively drained	No	Wind erosion, low available water, potential hazards associated with groundwater pollution	Terrace positions or on bluffs
Dickinson sandy loam	Well drained to somewhat excessively drained	No	Severe wind erosion, low available water, potential hazards associated with groundwater pollution	Nearly level to very strongly sloping terrace benches and uplands
Dorchester silt loam (wet phase)	Moderately well drained	No	Occasional high water table, potential for flooding	Southern section of the bottomlands near the confluence of the Apple and Mississippi Rivers

Table D-1
Soils Mapped on SVADA

Soil Series	Drainage Class	Hydric	Limitations	Occurrence at SVADA
Mixed alluvial land (include a variety of bottomland soils that occur in areas that are poorly accessible)	–	–	Similar to other soils listed as occurring in the bottomlands	Dominant soil unit mapped in the bottomlands in Carroll County
Orion silt loam	Somewhat poorly drained	Yes, in low lying areas	High water tables and association with wetlands	Northern section and along the east central boundary associated with drainageways
Raddle silt loam	Moderately well drained	No, but hydric inclusions may be present	Occasional flooding (less frequently than other bottomland soils)	Adjacent to wetlands on the northeast and east-central boundaries
Sparta loamy sand	Excessively drained	No	Erosion, draughtiness, potential hazards associated with groundwater pollution	Dominant soil in the uplands, occurring on nearly level to very strongly sloping terrace positions, upland dunes, and ridges
Wakeland silt loam	Somewhat poorly drained	Yes	High water tables and association with wetlands	Northern section in wetlands along Beaty Hollow and in small isolated wetlands to the north of Beaty Hollow

Daily Vehicle Trip Generation and Estimated Distribution of Added Traffic

Trip generation was estimated based largely on the reuse plan available from the SVADA LRA as of September 1996. The following assumptions formed the basis of the calculations:

- Potential reuse intensities of the property include low, medium-low, and medium.
- Reuse of the property will include separate areas for residential, light industrial, warehouse, and business (mixed use) activities.
- Residential use will be in the form of single-family dwellings and will be located primarily at the southern end of the property, and secondarily along Shinske Road north of the proposed prison site. Residential areas will accommodate 800 dwelling units.
- Industrial use will be located along Shinske Road south of the proposed prison site.

- Warehouse use will be located primarily east of the proposed prison site.
- Business (mixed) use will be located primarily at or near the Crim Drive entrance to the property.
- The property will be accessible by Crim Drive, the Whitton Gate entrance, and an entrance near Blanding Crossing. Crim Drive will serve as the main point of entry. The Whitton Gate and Blanding Crossing entrances will serve as secondary entrances and will be accessible by cars and small trucks, but not by large trucks such as those delivering or removing supplies from warehouses.
- The number of employees per land use (light industrial, warehouse, and business) for each of the three reuse intensities was calculated based on reuse attributes contained in the revised DOPAA. Warehouse use was assumed to account for three-fourths of all used floor space under all three reuse scenarios. Calculations for the LIR scenario are provided below as an example.

  Residential use is at full build-out; 800 single-family units; population 2,000
  Total floor space used = 200,920 ft^2
  Total employees under LIR = 335
  Warehouse use = (0.75)(200,920) = 150,690 ft^2
  Warehouse employees = 1/10,000 ft^2; 150,920/10,000 = 15 employees
  Employees for light industrial and mixed uses are distributed according to the percentage of the area occupied by each use:
  Light industrial use = 640 acres = 57%; (0.57)(320) = 182 employees
  Mixed use = 485 acres = 43%; (0.43)(320) = 138 employees

- Trips were estimated using equations provided in *Trip Generation* (Institute of Transportation Engineers, 1991) for single-family detached housing (land use 210), warehousing (land use 150), general light industrial (land use 110), and general office building (land use 710).
- Only trips generated in excess of those attributed to the LIR scenario add traffic volume on IL 84. The LIR scenario is similar to use at baseline conditions, and thus a traffic count made in 1995 is assumed to be representative of volume at the LIR intensity.

Table D-2
Summary of Trip Generation Estimates for the LIR Reuse Scenario

		Daily Vehicle Trip Generation	
	Development Supported	**Average Daily Trips**	**Average Peak Hour Trips**
Residential	800 units	7,006	598
Warehouse	15 employees	335	63
Light Industrial	182 employees	568	115
Business	138 employees	620	87
TOTAL		**8,529**	**863**

Table D-3
Summary of Trip Generation Estimates for the MLIR Reuse Scenario

		Daily Vehicle Trip Generation	
	Development Supported	**Average Daily Trips**	**Average Peak Hour Trips**
Residential	800 units	7,006	598
Warehouse	136 employees	708	113
Light Industrial	515 employees	1,550	208
Business	389 employees	1,468	205
TOTAL		**10,732**	**1,124**

Table D-4
Summary of Trip Generation Estimates for the MIR Reuse Scenario

		Daily Vehicle Trip Generation	
	Development Supported	**Average Daily Trips**	**Average Peak Hour Trips**
Residential	800 units	7,006	598
Warehouse	603 employees	2,148	303
Light Industrial	2,863 employees	8,479	860
Business	2,159 employees	6,109	851
TOTAL		**23,742**	**2,612**

Table D-5
Estimated Distribution of Added Traffic for Reuse Scenarios

Road	LIR ADT	LIR Peak	MLIR ADT	MLIR Peak	MIR ADT	MIR Peak
Crim Drive						
Residential	4,904	419	4,904	419	4,904	419
Warehouse	268	50	566	90	1,718	242
Industrial	454	92	1,240	166	6,783	688
Business	558	78	1,321	185	5,498	766
Subtotal	**6,184**	**639**	**8,031**	**860**	**18,903**	**2,115**
Whitton Gate						
Residential	2,102	179	2,102	179	2,102	179
Warehouse	67	13	142	23	430	61
Industrial	114	23	310	42	1,696	172
Business	0	0	0	0	0	0
Subtotal	**2,283**	**215**	**2,554**	**244**	**4,228**	**412**
IL 84 TOTAL	**8,467**	**854**	**10,585**	**1,104**	**23,131**	**2,527**
Blanding Crossing						
Residential	0	0	0	0	0	0
Warehouse	0	0	0	0	0	0
Industrial	0	0	0	0	0	0
Business	62	9	147	20	611	85
Subtotal	**62**	**9**	**147**	**20**	**611**	**85**
Totals	**8,529**	**863**	**10,732**	**1,124**	**23,742**	**2,612**

NOTES:
Residential trips are assumed to be distributed as follows: 70% - Crim Drive, 30% - Whitton Gate.
Warehouse trips are assumed to be distributed as follows: 80% - Crim Drive, 20% - Whitton Gate.
Industrial trips are assumed to be distributed as follows: 80% - Crim Drive, 20% - Whitton Gate.
Business trips are assumed to be distributed as follows: 90% - Crim Drive, 10% - Blanding Crossing.
Traffic attributed to the Blanding Crossing access point does not contribute to regional volume on IL 84.
Peak-hour counts are in units of vehicles per hour.
Low intensity reuse contributes no additional traffic to IL 84 peak-hour traffic because the LIR scenario is comparable to baseline conditions.
MLIR and MIR contribute traffic to peak hour traffic only insofar as they exceed LIR peak-hour traffic.

Radiological Materials

Table D-6
Buildings, Rooms, and Areas Where Radioactive Material Might Have or Have Been Used or Stored at SVADA

Location	Square Feet	Classification
Building 6, Room 113	250	Affected/Non-Uniform
Building 22	600	Non-Impacted
Building 23	193	Affected/Non-Uniform
Building 26, Old Hot Room	135	Affected/Non-Uniform
Building 127	54,667	Unaffected
Building 231	450	Affected/Non-Uniform
Building 620	5,760	Affected/Non-Uniform
Building 711	32,125	Affected/Non-Uniform
Building 716, Bay E and H	6,800	Affected/Non-Uniform
Building 729	4,000	Affected/Non-Uniform
Building 742	27,550	Affected/Non-Uniform
Building 768	2,430	Affected/Non-Uniform
Building 905, Tank	625	Affected/Non-Uniform
Building 933	7,523	Affected/Non-Uniform
Building 938	7,433	Unaffected
Building 939	2,434	Unaffected
Building G914	27,101	Affected/Non-Uniform
Building H423	38,648	Unaffected
Building A603	11,000	Unaffected
Building A613	11,000	Unaffected
Building A701	11,000	Non-Impacted
Building A805	11,279	Unaffected
Building A1001	11,000	Affected/Non-Uniform
Building A1002	11,000	Unaffected
Building A1104	11,279	Unaffected
Building A1201	11,000	Unaffected

Table D-6
Buildings, Rooms, and Areas Where Radioactive Material Might Have or Have Been Used or Stored at SVADA

Location	Square Feet	Classification
Building A1202	11,000	Unaffected
Building A1203	11,000	Unaffected
Building A1304	11,279	Unaffected
Building A1403	11,279	Unaffected
Building A1404	11,279	Unaffected
Building A1504	11,279	Unaffected
Building A1505	11,279	Unaffected
Building A1602	11,279	Unaffected
Building A1604	11,279	Unaffected
Building A1610	11,279	Unaffected
Building A1611	11,279	Unaffected
Building D0207	4,171	Unaffected
Building D0208	4,171	Unaffected
Building D0209	4,171	Unaffected
Building D0210	4,171	Unaffected
Building D0302	4,171	Non-Impacted
Building D0406	1,798	Unaffected
Building D0511	1,798	Unaffected
Building E0611	1,798	Unaffected
Building E0615	1,798	Unaffected
Building E0616	1,798	Unaffected
Building E1413	1,798	Unaffected
Building E1805	1,798	Non-Impacted
Building J0208 SW	2,450	Unaffected
Building J0301 SW	2,450	Unaffected
Building J0302 SW	2,450	Unaffected
Building J0303 SW	2,450	Unaffected
Building J0304 SW	2,450	Unaffected

Table D-6
Buildings, Rooms, and Areas Where Radioactive Material Might Have or Have Been Used or Stored at SVADA

Location	Square Feet	Classification
Building J0305 SW	2,450	Unaffected
Building J0306 SW	2,450	Unaffected
Building J0307 SW	2,450	Unaffected
Building J0401	1,798	Unaffected
Building J0402 SW	1,798	Unaffected
Building J0403 SW	1,798	Unaffected
Building J0404 SW	1,798	Unaffected
Building J0501 SW	1,798	Unaffected
Building J0502 SW	1,798	Unaffected
Building J0503 SW	1,798	Unaffected
Building J0504 SW	1,798	Unaffected
Building J0505 SW	1,798	Unaffected
Building J0506 SW	1,798	Unaffected
Building J0601 SW	1,798	Unaffected
Building J0602 SW	1,798	Unaffected
Building J0603 SW	1,798	Unaffected
Building J0604 SW	1,798	Unaffected
Building J0605 SW	1,798	Unaffected
Building J0606 SW	1,798	Unaffected
Building J0607 SW	1,798	Unaffected
Building J0608 SW	1,798	Unaffected
Building J0609 SW	1,798	Unaffected
Building J0610 SW	1,798	Unaffected
Building J0611 SW	1,798	Unaffected
Building J0612 SW	1,798	Unaffected
Building J0613 SW	1,798	Affected/Non-Uniform
Building J0800 SW	2,534	Unaffected
Building J0802 SW	4,185	Unaffected

Table D-6
Buildings, Rooms, and Areas Where Radioactive Material Might Have or Have Been Used or Stored at SVADA

Location	Square Feet	Classification
Building J0807 SW	7,759	Unaffected
Building J0808 SW	437	Non-Impacted
Building J0809 SW	10,014	Unaffected
Building J0810 SW	9,758	Unaffected
Bldg. J0810, RPO Lab, Storage Room	96	Affected/Non-Uniform
Building J0810, RPO Lab	432	Affected/Non-Uniform
Building J0938	7,433	Unaffected
Building J0939	2,434	Unaffected
Building 0905, Tank	625	Affected/Non-Uniform
Outdoor Areas:		
DRMO YD	43,560	Affected/Non-Uniform
Site 19, Closed Landfill(Cell 1 closed 1939 and Cell 2 closed 1995; 8 Groundwater Monitoring Wells)	560,182	Unaffected
Site 20, Abandoned Landfill (From 1920 to early 1970's)	130,680	Unaffected

Source: HQDA, 1996.

APPENDIX E

Biological Resources Data and Agency Correspondence

Table E-1
Sensitive Wildlife Species Found on and in Proximity to Savanna Army Depot Activity

Species	Status	Preferred Habitat	Occurrence on or in Proximity to SVADA
MAMMALS			
Lutra canadensis River otter	SE	Streams edges and lake borders with densely wooded areas nearby.	Numerous sitings along Crooked Slough; also seen near Base Commander's residence.
Lynx rufus Bobcat	ST	Rimrock and chaparral areas in the West; swamps and forests in the East. Dens in rock crevices, in hollow logs, and beneath downfalls. Home range estimated at 12 square kilometers.	Tracks observed in snow in SVADA bottomlands near north heron rookery; individual found dead on side of road approx. 1 mile outside installation.
Myotis sodalis Indiana bat	FE	Caves and small streams with riparian woods.	Suitable habitat exists on SVADA, but no sampling for this species has occured here.
BIRDS			
Accipiter striatus Sharp-shinned hawk	SE	Deciduous woodlands and mountainous coniferous/deciduous forest.	Occurrences recorded within 5 miles of SVADA. Not detected on installation.
Asio otus Long-eared owl	SE	Coniferous and mixed coniferous/ deciduous forest, especially near water; also found in parks, orchards, and farm woodlands.	Observed on SVADA in grove of cedar trees where road goes down to Mississippi River.
Bartramia longicauda, N Upland sandpiper	SE	Prairies, pastureland, and hay fields with an average grass height of <30 centimeters.	Individuals observed at several upland survey points. Nesting activity observed in 1995.
Botaurus lentiginosus American bittern	SE	Freshwater and brackish marshes. Usually associated with dense stands of cattails, bulrushes, and sedges at marsh edge.	Observed in SVADA uplands at NH SWQ SEC 11 T26N R1E.
Buteo lineatus, N Red-shouldered hawk	SE	Riparian forest and wooded swamp. Requires large tracts of mature bottomland timber for nesting and foraging.	Nest seen at north end of SVADA, just south of east end of L&D 12 access road; individuals detected along Crooked Slough. Observed breeding on the depot.
Casmerodius albus Great egret	ST	Marshes, swamps, irrigation ditches, tidal estuaries, fresh- and brackish-water margins.	Heron rookery located on SVADA near Crooked Slough; most recently abandoned in 1993. Individuals seen foraging at Prim's Pond and in bottomlands.

Table E-1
Sensitive Wildlife Species Found on and in Proximity to Savanna Army Depot Activity

Species	Status	Preferred Habitat	Occurrence on or in Proximity to SVADA
Catharus fuscescens Veery	ST	Prefers moist deciduous forest with understory and perches, but has been documented nesting in savannas, bogs, and fields.	Observed in uplands on east side of road along stream.
Certhia americana, N Brown creeper	ST	Nests in coniferous, mixed, and swampy forests. In winter, found in most any woodland.	Individuals observed nesting in SVADA bottomland hardwood forests along Crooked Slough.
Circus cyaneus Northern harrier	SE	Nests in large undisturbed grasslands and marshes. Hunts in large tracts of open grassland, fallow fields, and wetlands.	Observed at SVADA upland survey point.
Grus canadensis Sandhill crane	SE	Shallow wetlands and freshwater margins.	Occurrences recorded within 5 miles of SVADA; species not detected on installation.
Haliaeetus leucocephalus, N Bald eagle	FT, SE	Forests along the coasts of rivers and large lakes; builds nest in large trees from 10'-180' off the ground.	Active nests on SVADA along Crooked Slough and on Apple River Island; two new nests were found in the winter of 1997. Adults observed roosting in bottomlands along Crooked Slough.
Lanius ludovicianus, N Loggerhead shrike	ST	Open fields with scattered trees, open woodland, and scrub. Forages by diving from low perches.	Nests found in cedar tree north of Bunker E1403 and east of Bunker E714; individuals observed around upland survey points.
Nycticorax nycticorax Black-crowned night heron	SE	Marshes, swamps, ponds, lakes, lagoons, mangroves; occasionally found in grasslands.	Individuals observed on SVADA along Crooked Slough. Found nesting in great blue heron rookeries on depot.
Pandion haliaetus Osprey	SE	Nests in trees, poles, platforms, or docks near fresh or salt water; eat fish almost exclusively. Considered a migrant in Illinois.	Observed foraging on SVADA along Crooked Slough.
Phalacrocorax auritus Double-crested cormorant	ST	Rocky coasts, beaches, inland lakes and rivers. Mostly considered a migrant in Illinois.	Individuals observed flying over SVADA upland survey points and foraging along Crooked Slough.
Podilymbus podiceps, N Pied-billed grebe	ST	Well-vegetated lakes, ponds, sluggish streams, and marshes.	Observed in uplands at Prim's Pond; also recorded in backwaters north of L&D 12 access road and along Crooked Slough.

Table E-1
Sensitive Wildlife Species Found on and in Proximity to Savanna Army Depot Activity

Species	Status	Preferred Habitat	Occurrence on or in Proximity to SVADA
Tyto alba Common barn owl	SE	Open and partly open habitat, such as grassland or farmland.	Occurrences recorded within 5 miles of SVADA; species not detected on installation.
Xanthocephalus xanthocephalus Yellow-headed blackbird	SE	Freshwater marshes and reedy lakes; also found foraging in open farmlands and grainfields.	Occurrences recorded within 5 miles of SVADA; species not detected on installation.
REPTILES AND AMPHIBIANS			
Crotalus horridus Timber rattlesnake	ST	Den in or near woody rocky ledges with a southern exposure.	Occurrences recorded within 5 miles of SVADA; species not detected on installation. There is a timber rattlesnake sanctuary located east of SVADA in Hanover Bluffs.
Heterodon nasicus, N Western hognose snake	ST	In Illinois, sand prairie and savannas and open woodlands.	Individuals observed at north end of SVADA; specimens identified in uplands near River Road.
FISH			
Acipenser fulvescens Lake sturgeon	SE	Rivers and lakes.	Occurrences recorded within 5 miles of SVADA; species not detected on installation.
Etheostoma clarum Western sand darter	SE	Rivers.	Specimens identified from 4 miles west of Blackhawk in Mississippi River.
Notropis amnis Pallid shiner	SE	Rivers.	Specimens identified from 4 miles west of Blackhawk in Mississippi River.
INVERTEBRATES			
Discus macclintocki Iowa Pleistocene snail	FE, SE	Algific talus slopes.	None observed on depot; habitat exists in Carroll and Jo Daviess Counties near SVADA property.
Lampsilis higginsi Higgins' eye pearly mussel	FE, SE	Nontidal mud flats.	Mississippi River south of Lock and Dam 22.

Table E-1
Sensitive Wildlife Species Found on and in Proximity to Savanna Army Depot Activity

Species	Status	Preferred Habitat	Occurrence on or in Proximity to SVADA
Lycaeides melissa samuelis Karner blue butterfly	FE, SE	Pine barrens, oak savannas, sandy soils containing wild lupines (*Lupinus perennis*)	Suitable habitat exists on depot, but no species found during past surveys.

Status
FE = Listed as endangered under the Endangered Species Act.
FT = Listed as threatened under the Endangered Species Act.
FC = Candidate for federal listing. Includes species for which the USFWS has on file enough information on biological vulnerability and threat to support proposals on them.
SE = Listed as endangered under the Illinois Endangered Species Protection Act.
ST = Listed as threatened under the Illinois Endangered Species Protection Act.

N = found nesting on SVADA.

Sources: Anderson, 1996a, 1996b; Ehrlich et al., 1988; IDNR, 1996a; Mankowski, 1994; Nelson, personal communication, 1996; USFWS, 1996a (Appendix 8).

Table E-2
Sensitive Plants Found on Savanna Army Depot Activity

Species	Status	Habitat Association	Occurrence on SVADA
Agropyron subsecundum Bearded wheat grass	SE	Occurs in mesic sand prairie. Almost entirely restricted to extreme northern Illinois.	One population found on depot, located in magazine area. Refer to Figure 4-10 for mapped location.
Arabis divaricarpa Purple rock cress	SR	Occurs in mesic sand prairie.	Approximately 3 populations on depot. Refer to Figure 4-10 for mapped locations.
Besseya bullii Kittentails	ST	Occurs in gravel and sand prairie and sand savanna across northwestern Illinois. Often found on north slopes or in partial shade of savanna.	About 10 populations on SVADA, mostly found along river bluffs in SE. Refer to Figure 4-10 for mapped locations.
Bouteloua gracilis Blue grama grass	SR	Open sand prairie.	One population in southeast portion of depot. Previously considered extirpated from Illinois.
Carex tonsa Shaved sedge	SE	Restricted to deep, dry sand deposits in northern half of Illinois. Occupies open sand prairie.	Relatively common on depot. Refer to Figure 4-10 for mapped locations.
Ceanothus ovatus Redroot	SE	Occurs in sandy or gravel prairies and savannas accross northern Illinois.	Numerous populations on SVADA. Refer to Figure 4-10 for mapped locations.
Cyperus grayioides Gray's umbrella sedge	ST	Occurs in natural sand blowouts in excessively dry sand prairie and sand savanna. Restricted to sand deposits along the Illinois and Mississippi Rivers.	A few populations in southern igloo and central magazine areas. Refer to Figure 4-10 for mapped locations.
Draba nemorosa Whitlow grass	SR	Occurs in mesic sand prairie.	One population found on river bluff in SE portion of depot. Refer to Figure 4-10 for mapped locations.
Equisetum pratense Meadow horsetail	SE	Occurs in Illinois on north-facing slopes of dry-mesic sand forests. Recently discovered on the depot; only four other populations known to exist.	One population found in northern portion of the depot. Refer to Figure 4-10 for mapped locations.
Hudsonia tomentosa False heather	SE	Occurs in natural blowouts in dry sand prairie and sand savanna.	Many populations found in uplands. Refer to Figure 4-10 for mapped locations.
Mirabilis hirsuta Hairy umbrella-wort	SE	Associated with dry-mesic sand prairie. Only remaining native locations are SVADA and Hanover Bluff Nature Preserve, Jo Daviess County.	Approximately five populations on depot. Refer to Figure 4-10 for mapped locations.
Opuntia fragilis Fragile prickly pear	SE	Associated with mesic and dry-mesic sand prairie. Occurrence in Illinois only in sand prairie at SVADA.	Exists on depot in three populations. Refer to Figure 4-10 for mapped locations.
Orobanche fasciculata Clustered broomrape	SE	Occurs in mesic sand prairie.	Locations still being determined.

Table E-2
Sensitive Plants Found on Savanna Army Depot Activity

Species	Status	Habitat Association	Occurrence on SVADA
Polanisia jamesii James' clammyweed	SE	Obligate colonizer of open sand blowouts and disturbances.	Numerous populations throughout uplands. Refer to Figure 4-10 for mapped locations.
Salvia azurea pitcheri Blue sage	ST	Occurs in mesic sand prairie.	Only one population found on depot and is located in magazine area. Refer to Figure 4-10 for mapped locations.

Status
FC = Candidate for federal listing. Includes species for which the USFWS has on file enough information on biological vulnerability and threat to support proposals on them.
SE = Listed as endangered under the Illinois Endangered Species Protection Act.
ST = Listed as threatened under the Illinois Endangered Species Protection Act.
SR = Species under Illinois state record as declining throughout its range.

Sources: Bowles and Jones, 1991, 1995; IDNR, 1996a (map); SVADA, 1996 (Appendix 8).

IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office (ES)
4469 - 48th Avenue Court
Rock Island, Illinois 61201

COM: 309/793-5800
FAX: 309/793-5804

August 16, 1996

Tetra Tech, Inc.
Attention: Wendy Brown
10306 Eaton Place
Suite 340
Fairfax, Virginia 22030

Dear Ms. Brown:

This responds to your letters dated June 17 and July 3, 1996, concerning the Department of Army's Disposal and Reuse Environmental Impact Statement for the closure of the Savanna Army Depot, Illinois.

Federally-listed Endangered Species

In response to your request for information on endangered species and in accordance with Section 7(c) of the Endangered Species Act of 1973, as amended, we are providing the following list of federally-listed endangered or threatened species that may be present in the area of the Savanna Army Depot, JoDaviess and Carroll Counties, Illinois.

This site is within the range of five federally-listed endangered and threatened species:

Classification	Common Name	Scientific Name	Habitat
Endangered	Indiana Bat	Myotis sodalis	Caves and small streams with riparian woods
Threatened	Bald eagle	Haliaeetus leucocephalus	Breeding sites & wintering near large rivers with open water

Endangered and threatened species list continued.

Endangered	Higgins' eye pearly mussel	Lampsilis higginsi	Mississippi River north of Lock and Dam 22
Endangered	Iowa Pleistocene	Discus macclintocki	Algific talus slopes snail
Endangered	Karner blue butterfly	Lycaeides melissa samuelis	Pine barrens oak savannas on sandy soils containing wild lupines (Lupinus perennis)

Specific habitats for the Higgins' eye pearly mussel and the Iowa Pleistocene snail are not found on the Depot, however these habitats do exist in Carroll and JoDaviess Counties near the Depot property. The Higgins' eye pearly mussel may occur along the main channel of the Mississippi River and in the confluence of Crooked Slough.

Suitable habitat for the Indiana bat and Karner blue butterfly exist on the Depot, but the species were not found during past surveys. We recommend that these habitats be identified and protected for the enhancement of these endangered species.

Three bald eagle breeding territories have been identified on the Depot. The Depot is also an important wintering area for bald eagles. During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluent of power plants and municipal and industrial discharges, or in power plant cooling ponds. The more severe the winter, the greater the ice coverage and the more concentrated the eagles become. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements. They perch in large shoreline trees to rest or feed on fish. There is no critical habitat designated for this species. The eagle may not be harassed, harmed or disturbed when present nor may nest trees be cleared.

Should proposed activities affect a listed species, the Federal agency responsible for actions authorized, funded, or carried out in furtherance of the construction project must enter into consultation with the U.S. Fish and Wildlife Service and prepare a Biological Assessment.

State-listed Endangered Species

The Illinois Department of Natural Resources should be contacted for additional information and technical assistance regarding species listed as endangered or threatened by the State of Illinois. A list provided to our Refuge from the State is enclosed for your information.

Other Comments for the Environmental Impact Statement

Other comments regarding the Environmental Impact Statement will be forwarded under separate cover by our Upper Mississippi River National Wildlife and Fish Refuge, Savanna District.

These comments provide technical assistance only and do not fulfill the requirements under Section 7 of the Endangered Species Act of 1973, as amended, unless you have been designated, in writing, to the Regional Director of the U.S. Fish and Wildlife Service, Region 3, by the appropriate Federal agency, as a non-Federal representative for the purposes of conducting informal consultation on the subject Federal action, pursuant to 50 CFR 402.08.

Sincerely,

for Richard C. Nelson
Supervisor

Enclosure

cc: ILDNR (Ed Anderson)
ILDNR (Bob Schanzle)
UMRNW&FR (Ed Britton)

MC:sjg

United States Department of the Interior

Fish and Wildlife Service
Upper Mississippi River National Wildlife and Fish Refuge
Savanna District
Post Office Building
Savanna, IL 61074

August 15, 1996

Wendy L. Brown
Tetra Tech, Inc.
10306 Eaton Pl., Suite 340
Fairfax, VA 22030

Dear Ms. Brown:

Enclosed are our concerns that should be addressed in the Environmental Impact Study on the environmental and socioeconomic impacts associated with disposal of the Savanna Army Depot and its anticipated reuse. Our Enhancement Field Office located in Rock Island, Illinois, will send to you under separate cover a list of the federal-listed threatened, endangered, and candidate species, that occur on or adjacent to the Depot. They will also identify their concerns regarding the federal Endangered Species Act and the need for consultation for the proposed action. The Illinois Department of Natural Resources will identify the state-listed threatened, endangered, and candidate species known to occur in the vicinity of the Savanna Army Depot and the need for consultation with their agency.

You specifically requested that we provide you with a determination of potential impacts on natural resources both within the preferred prison site and in the area immediately adjacent to it. Our concerns for potential impacts are listed under item 7, Economic Development.

If you have questions or require additional information, please call me at (815) 273-2732.

Sincerely,

Ed Britton

Ed Britton
District Manager

EIS CONCERNS FOR CLOSING AND REUSE OF THE SAVANNA ARMY DEPOT

1. Environmental Contamination

The Savanna Army Depot was placed on the National Priorities List for Superfund cleanup in 1989. There have been over 300 sites identified that contain environmental contamination. Sixty-nine sites have been identified that may require cleanup. Contaminants include solvent, petroleum, lead, cadmium, and mercury. TNT contamination has been confirmed to have reached the groundwater and has spread three-fourths of a mile westward toward the Mississippi River. Lead azite sludge is reported to be present. Creosote contamination has probably leached from the railroad ties. It is reported that workers within some of the warehouses have become sick after being in the buildings for a short while. Many of the warehouses have been used to store radioactive materials and there is concern that residues within these buildings may present health and safety issues.

Related issues that need to be addressed include:
a. Future plans for environmental cleanup and long term contaminant monitoring.
b. Identify which agency will pay for the long term maintenance of fences or other enclosure devices in the "Encumbered" areas that will be closed to public access due to environmental contamination.
c. Determine if an annual or long-term Hazardous Waste Permit will be required from the State of Illinois or the Environmental Protection Agency to identify the Depot area as containing toxic contamination.
d. Identify which agency will apply for the Hazardous Waste Permit and insure that it is kept up to date.
e. Health and safety issues regarding public access into areas that may contain environmental contamination.

2. Unexploded Ordnance

It is reported that 90% of the Depot has the potential to contain some unexploded ordnance (UXO) to include 155 mm and 75 mm howitzers, mortars, grenades, and small arms ammunition.

Related issues that need to be addressed include:
a. A minimum need for a subsurface scan to the one foot depth to locate buried UXO's to be conducted on the entire Depot area.
b. The need to determine if additional deeper scanning below the one foot depth should be conducted.
c. Identify which agency will pay for a subsurface scan needed to detect UXO's in future years (after Depot areas are turned over to other agencies) prior to construction activities.
d. The need for the Department of Army to supply metal detectors to the agencies that receive Depot land in order to conduct scanning of UXO's prior to conducting general maintenance activities that require subsurface disturbance.
e. Health and safety issues regarding public access into areas

that may contain UXO's.
f. The risk factors of UXO's exploding upon impact from the placement of steel boundary/sign posts to identify the wildlife refuge areas.
g. A contingency plan to identify how UXO's will be handled when found in the future.
h. A Cooperative Agreement or Memorandum of Understanding between the two agencies to identify who is responsible for UXO related activities.
i. Identify the agency that will be responsible for the demolition of UXO's found in the future.
j. The method to be used when UXO's are found as to whether they will be exploded in place or be removed.
k. When UXO's are to be exploded in place who will mitigate the resource damage, e.g. endangered plant loss, and which agency will be responsible for public safety in the demolition area.
l. The need to post warning signs throughout the Depot area to advise the public of the danger of UXO's.
m. Identify the agency that will pay for the warning signs, posts, hardware for mounting, placement, and their maintenance.
n. Identify the agency responsible for liability when a member of the public removes a UXO and takes it off of the Depot area.

3. Old Wells

It is reported that there are several old wells located on the Depot.

Related issues that need to be addressed:
a. The need for a map that identifies the location of all old wells.
b. The need to cap all old wells to prevent health and safety hazards.

4. Barge Terminal and Fleeting

The Local Redevelopment Authority (LRA) has identified a barge terminal in their reuse proposal. This section of river is highly unique in its relative isolation from industrial or urban development. Millions of dollars have been spent on enhancing the resources of nearby Brown's Lake and Pleasant Creek. We recommend the LRA seek alternative development which would enhance the natural values of the area and reduce potential conflicts.

Development of a barge terminal at this site could have a major impact on the resource. Such impacts may include extensive industrial shoreline development, dredging and dredged material disposal, toxic spills, and shoreline erosion at the terminal site with a potential for similar impacts to occur at a nearby fleeting site. The land-based facility will have direct resource impacts in addition to noise, dust, lights, and possible spills potentially occurring at the facility and related highway and rail traffic.

Any barge fleeting or barge terminal located on the Upper Mississippi River National Wildlife and Fish Refuge must undergo a compatibility review. Historically, the refuge has found such uses not compatible with resource management objectives.

The barge terminal and fleeting area will require permits from the Corps of Engineers and possibly the State of Illinois.

We recommend the following information be addressed:
a. A diagram be presented of the proposed facility indicating all areas of use, products proposed to be shipped, location of the terminal and the fleeting site, dredging requirements, disposal alternatives, and any related pertinent information.
b. An evaluation of the direct and indirect impacts of the proposed facility on the fish and wildlife resources of the Depot and Mississippi River. Special attention should be focused on the unique values of this area of the Mississippi River. We would be pleased to assist you with gathering this information.
c. Plans to mitigate impacts.
d. Development of alternatives to the barge terminal.

5. Threatened and Endangered Species

There have been at least 34 species (plant and animal) that have been identified as being present on the Depot and are included on both Federal and State - Threatened and Endangered Species Lists.

Related issues that need to be addressed include:
a. Identify compatible reuse areas that avoid sites where threatened and endangered species occur.
b. Define the safe guards required for threatened or endangered species on lands which will be developed for economic purposes.

6. Livestock Operations

The LRA has proposed a livestock (cattle, hogs) holding facility where a large number of animals would be held in confinement before being shipped to the processing plant.

Related issues that need to be addressed include:
a. Identify procedures for offensive odor abatement.
b. Identify waste treatment requirements.

7. Economic Development

The 3,157 acres to be acquired by the LRA will be used for economic development. Light and heavy industry has been proposed as well as a medium security prison housing 1,500 - 2,000 inmates. Economic development should be "friendly" to the environmental preservation of the areas requested by the Service, encouraging economic and environmental development that is complimentary.

Related issues that need to be addressed include:
a. Identify the types of specific economic uses that are compatible with the site.
b. Identify the direct and indirect impacts of proposed economic development. Direct impacts would include those associated with a specific site proposed for construction and consideration for any impacts upon wetlands, unique ecosystems, and/or the presence of threatened and endangered species. Indirect impacts would include those associated with increased traffic, increased noise, air and light pollution, which may adversely impact the bald eagle, other threatened or endangered species, or the natural areas.
c. Identify plans and potential impacts for increased water, power, and sewage treatment facilities due to economic development.
d. Identify restrictions that the increase in water, power, and sewage treatment facilities will be limited to the LRA designated use areas.
e. Identify the economic impacts of all the various uses planned for the Depot.

8. Wetlands

The LRA has proposed several economic development uses that will occur in wetlands. A marina and a barge terminal and fleeting facility are proposed for the bottomlands and industry is proposed in the uplands.

The EIS should identify possible impacts upon wetlands by future economic development and potential mitigation.

9. Cultural Sites

There are several historical and cultural sites located on the Depot.

Related issues that should be addressed include:
a. Need for a cultural resources survey to be completed for the entire Depot area.
b. Need to identify historic preservation issues per federal guidelines.

10. Apple River Island Dredge Spoil Site

The U.S. Army Corps of Engineers has proposed areas within the 183 acre Apple River Island to be used for dredge material deposition.

Related issues that should be addressed include:
a. Impact upon bald eagle use, other wildlife species, and wetlands.
b. Compliance with Federal Executive orders designed to preserve wetlands.

c. Mitigation for adverse impacts.

11. Public Recreation

When the Army's mission is complete the Depot will be opened for public access with several public recreational activities planned.

Related issues that need to be addressed include:
a. Identify the current level of wildlife-dependent public use occurring on the Depot.
b. Identify the demand for wildlife-dependent recreational opportunities in the area.
c. Identify possible public recreational impacts upon the natural resources and wildlife at the Depot.

12. Habitat Management Plans

The Service proposes to conduct habitat management on the Depot. An important habitat management technique that is used in restoring grasslands is the use of prescribed fire.

A related issue that needs to be addressed is to determine if any environmental contamination or UXO hazards are present that would prevent the use of prescribed fire.

13. Presence of UXO's and Shrapnel in Backwater Sloughs

There are UXO's and large pieces of sharp-edged shrapnel located under the water within the extensive backwater sloughs of the Depot.

Related issues that need to be addressed include:
a. Health and safety issues regarding public access to areas containing these underwater hazards.
b. Identify access restrictions for public recreation or commercial activity, e.g., the commercial harvest of mussels involves the dragging of a metallic brail bar along the bottom or a diver searching the bottom.

ILLINOIS
DEPARTMENT OF
NATURAL RESOURCES

524 South Second Street, Springfield 62701-1787 Jim Edgar, Governor ● Brent Manning, Director

August 21, 1996

Wendy Brown
Natural Resource Scientist
Tetra Tech, Inc.
10306 Eaton Place, Suite 340
Fairfax, VA 22030

Dear Ms. Brown:

I am enclosing a number of documents you requested that will assist you in preparing the EIS for the Savanna Army Depot. Three large scale topo maps are included. Two of the maps were developed by the Illinois Natural History Survey staff we have contracted to work on the site. One map details new locations of E/T plants that were found on the Depot this year. The second map delineates the significant natural areas for the Depot. A twelve page report that accompanies this packet, authored by Robertson, etal. will give you support data for both maps. The third map is an updated version of the endangered, threatened and rare species found at the Depot, that includes the new location of plants and animals found in this years surveys.

The following reports are also being sent to provide support information for the EIS:

* 1995, Panzer and Stillwaugh: Insect survey.
* 1996, memo from Bertrand: SAD fish data.
* 1996, Endangered species consultation process.
* 1994, IDENR - Summary Report, Chapter 6 Prairies.
* 1994, IDENR - Volume 3, Ecological Resources, Prairies.
* 1996, INHS - Prison site 3 E/T plant survey

The two 1994 documents pertain to the importance of prairies and savannas in Illinois. There are specific references to sand prairies in this literature. Essentially, the sand prairies are our most common prairie type remaining in Illinois. The sand prairies and savannas found at SAD, although disturbed, are extremely important in conserving the biological diversity of our state.

The combination of large, contiguous acreages of prairie and savanna habitat; high concentrations of endangered resources; and healthy populations of grassland wildlife, especially birds, provide an opportunity for applying conservation biology that is of a mid-continental significance. It is this type of an opportunity that prevents the "ecological train wrecks" the federal government is trying to avoid. From an Illinois standpoint, the ecological significance is paramount. The Mississippi River stretches 385 miles along the state's western border. That portion the Depot occupies is the only remaining ecological continuum of floodplain forest, prairie and adjacent upland forest remaining in the state.

If you have questions pertaining to any of the information enclosed, please contact me.

Sincerely,

Randy W. Nyboer
Regional Heritage Administrator
2612 Locust Street
Sterling, IL 61081
815/625-2968

cc: Carl Becker
Ed Anderson
Arlan Dahlman
Bob Speaker, SAD
Ed Britton, USFWS
Steve Haring, LRA
Jim Rachey, LRA
File

enc.

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

December 2, 1996

REPLY TO
ATTENTION OF:

Environment and Resources Branch
Planning and Environmental Division

Mr. Richard Nelson, Supervisor
Rock Island Field Office (ES)
U.S. Fish and Wildlife Service
4469 - 48th Avenue Court
Rock Island, Illinois 61201

Dear Mr. Nelson:

The Mobile District of the U.S. Army Corps of Engineers has contracted with Tetra Tech, Inc., to prepare the Environmental Impact Statement (EIS) addressing disposal and reuse of the Savanna Army Depot Activity (SVADA) as part of the Base Realignment and Closure requirements mandated by Congress. Tetra Tech corresponded with your agency on October 2, 1996, regarding threatened and endangered species issues at SVADA. This was followed by a November 19, 1996, meeting at your office between you, your staff and Department of the Army representatives.

This letter clarifies the Army's position on the manner in which threatened and endangered species issues related to SVADA will be addressed in the EIS. In accordance with established Army policy, the EIS will evaluate property disposal as the primary action. Property disposal will be evaluated as either encumbered (with certain restrictions placed upon transfer) or unencumbered (with no restrictions). The EIS will also consider and evaluate subsequent reuse of the property following disposal as a secondary action since reuse will be undertaken by others once the Army transfers the property. The potential impacts of reuse will be addressed in a conceptual fashion by considering several alternative reuse intensity scenarios. The actual future redevelopment actions will be pursued by non-Army entities. During the course of their planning and permitting activities, the requirements for consultation with your agency on threatened and endangered species issues will be determined as the need arises. To help you understand how the EIS will address the reuse issue, enclosed are copies of the following:

First, sections 1, 2, and 3 from the EIS describing the proposed action and alternatives being evaluated for the SVADA disposal and reuse action. Included is a conceptual map showing potential reuse activities within the LRA parcel. (Please note that the Local Reuse Authority (LRA) is considering deleting the proposed northern barge terminal site. The LRA will hopefully reach a decision on this site prior to approval of their reuse plan which is scheduled to occur on December 18, 1996.) These sections

explain the purpose and extent to which the Army is required to assess environmental impacts for the primary action of property disposal and for the secondary impacts from foreseeable potential reuse.

Second, Appendix B to the EIS presents a summary of the LRA's Reuse Plan. The draft LRA plan provides an indication of the types of reuses that may be proposed once the property has been transferred.

Based on information received from your agency and other information collected during data gathering for the EIS, it is clear that the bald eagle (Halieetus leucophalus) occurs on and adjacent to SVADA and the Higgin's pearly-eyed mussel (Lampsilis higginsii) may occur immediately adjacent to SVADA in the Mississippi River. The bald eagle's activity is largely restricted to installation lands immediately adjacent to the Mississippi River, and within portions of the SVADA property that your agency has requested as the site of a future wildlife refuge. The bald eagle has also been observed to roost and forage along the bluffs and shoreline of a portion of waterfront property designated for use by the LRA. While larger numbers of migratory eagles roost and forage along the river during winter months, the resident population, including nesting pairs, using the area on a year-round basis is smaller in number. The Higgin's pearly-eyed mussel is believed to occur in the Mississippi River adjacent to SVADA; however, there are no current studies to substantiate its occurrence. At the November 19 meeting, Army representatives explained the LRA's plan to proceed with a detailed ecological study in the spring of 1997 that would clarify the presence and abundance of these two species, as well as other important resource areas within the SVADA property.

Considering the above information, it remains our opinion that the Army's disposal of the property to another entity would not in itself affect any threatened or endangered species on SVADA. However, the Army recognizes that the potential exists for certain reuses to affect Federally listed species and their habitat. Since sufficient information on the details and implementation strategies of specific reuse actions are not currently available, it is not possible to address these impacts in detail in the EIS. Consequently, the Army does not believe it is appropriate to pursue Formal Consultation at this time. Rather, the Army maintains that it should be the responsibility of the LRA and any subsequent property users to conduct the necessary follow-up evaluations regarding threatened and endangered species issues to assure that development plans comply with the Endangered Species Act and other relevant regulatory requirements. The EIS will state this position and will recommend that the preferred action of encumbered disposal to any transferee should require consultation with the U.S. Fish and Wildlife Service prior to undertaking a reuse activity, with the specific objective of protecting any Federally listed species and critical habitat that may be present. Additionally, the Army will consult with the FWS, as required by the Endangered Species Act, on any proposed lease

or transfer actions to a non-Federal entity with respect to whether any mitigation is required with regard to specific transfers and leases.

The LRA's proposed ecological study, addressed above, should provide the biological data necessary to fully consider the impacts of proposed reuse actions and should be beneficial in future consultations with your agency on threatened and endangered species issues. We believe any Formal Consultation should be deferred until the results of the ecological study become available and details on the scope of the reuse plans have been fully developed.

Based on this information, we request your concurrence with our position that property disposal with the above encumbrance will not adversely affect any Federally listed threatened and endangered species. Further we request your concurrence that Formal Consultation is not required for the EIS to address disposal of the SVADA property. We believe that the proposed encumbrance provides: (1) adequate assurance that your agency will be consulted in the future by those entities pursuing reuse actions to determine if any Federally listed species may be affected by their actions. and (2) provides sufficient opportunity for your agency to influence modifications to future reuse plans as may be appropriate to avoid potential impacts to any listed species.

We would appreciate your agency's expeditious review of our request in view of our accelerated schedule to complete the SVADA EIS. Should you have any questions, please contact Glen Coffee of our office at 334/690-2729.

Sincerely,

Curtis M. Flakes
Chief, Environment and
Resources Branch

Copies Furnished:

Commander, US Army Materiel Command
ATTN: AMS-CO (Ms. Shirley Barnett)
Alexandria, VA 22333-0001

Commander, Savanna Army Depot
ATTN: Arlie Dahlman (Base Transition Coordinator)
Savanna, IL 61074

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office (ES)
4469 - 48th Avenue Court
Rock Island, Illinois 61201

COM: 309/793-5800
FAX: 309/793-5804

IN REPLY REFER TO:

December 24, 1996

Department of the Army
Corps of Engineers
Mobile District
Attn: Mr. Curtis M. Flakes
Chief, Environment and Resources Branch
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Flakes:

This is in response to your letter dated December 2, 1996, regarding the disposal and reuse of the Savanna Army Depot, Savanna, Illinois. We concur that disposal of the property to another entity would not directly affect Federally listed endangered and threatened species. We also agree with the Army's suggestion to defer formal consultation provided the below listed interim restrictions are included in the encumbrance on lands along the Mississippi River.

- No clearing of trees from the top of the river bluff to the shoreline that are greater than 12 inches in diameter at chest height.
- No habitat modification from the shoreline up to 100 feet of the river bluff.
- Establish a no disturbance zone within one-eighth of a mile from the top of the bluff inland and from the shoreline out into the river from October 15 to March 15.
- Establish a no disturbance zone within one half a mile and a no habitat modification zone within one quarter of a mile of any bald eagle nest sites. There is an active nest territory at the downstream tip of the bottomland complex near river mile 550.1.

The Army should initiate consultation with our agency once the Local Reuse Authority ecological study is completed and reuse plans are fully developed for the riverfront lands.

It is important that the Local Reuse Authority Ecological Study determine if the listed species identified in your letter are present and if proposed reuses will affect the species. Consultation must be conducted with the Army because the Army is the lead Federal action agency and ultimately responsible for obligations under the Endangered Species Act. It is our responsibility as Federal departments and agencies to conserve listed species and utilize our authorities and resources in furtherance of the purpose of the Endangered Species Act.

If you have any questions, please contact Mike Coffey of my staff. We look forward to working with you in the future.

These comments are provided under the authority of and in accordance with the Endangered Species Act of 1973, as amended.

Sincerely,

for Richard C. Nelson
Supervisor

cc: Commander Ms. Shirley Barnett (USA Material Command)
Base Transition Coordinator Arlie Dahlman
Ed Britton (USFWS)
Randy Nyboer (IL Department of Natural Resources)

MC:sjg

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

February 25, 1997

Environment and Resources Branch
Planning and Environmental Division

Mr. Richard C. Nelson, Supervisor
U.S. Fish and Wildlife Service
Rock Island Field Office
4469 48th Avenue Court
Rock Island, Illinois 61201

Dear Mr. Nelson:

Thank you for your December 24, 1996, letter conveying your agency's views on the actions that should be undertaken by the Army to comply with the Endangered Species Act in following through with disposal of the Savanna Army Depot Activity (SVADA). We have discussed your agency's views on this matter with key elements of the Army Materiel Command. Based on these discussions, we have developed a proposed course of action that we believe will allow the timely completion of the Environmental Impact Statement addressing disposal and reuse of SVADA; assure that the Army fulfills its responsibilities under the Endangered Species Act; and protect those resources that are important to the bald eagle and Higgin's pearly-eyed mussel. We offer the following summary of this process for your consideration and concurrence.

Your letter concurred with our recommendation that Formal Consultation with your agency on the disposal action be deferred until the results of the Local Reuse Authority's (LRA) proposed ecological study are available. Your concurrence was conditioned on the inclusion of four interim restrictions in an encumbrance on the installation lands occurring along the Mississippi River proposed for disposal. Since the Army will continue to own and control this property through 2000, we see no practical purpose to the development of an interim encumbrance at this time. To help you understand our position on this matter we believe it would be beneficial to: (1) explain how we perceive the ecological study and subsequent consultation with your agency relate to the overall disposal process and (2) identify when a decision would be appropriate on the need for and content of an encumbrance for this property.

Closure of SVADA is not scheduled to occur until September 30, 2000. Although disposal of the majority of the installation property will occur after that date, some parcels may be transferred or leased prior to SVADA's closure. However, none of the installation parcels that we believe could be involved in an early transfer or lease are located within the Mississippi River shoreline area of most concern to your agency. However, should a viable lease option develop for a portion of the installation that could potentially affect the shoreline area, the Army will include your agency's recommended use restrictions in the appropriate real estate documents. In the interim, the Army will continue to retain ownership of the installation and exercise its stewardship control of activities potentially affecting the property in question. During this period, the Army will limit all activities along the Mississippi shoreline to only those that are consistent with the intent of the interim restrictions proposed in your letter. This would essentially represent a continuation of the same type of use the Army has traditionally made of this property.

The LRA's ecological study is anticipated to begin in early 1997. Work is already underway to prepare the scope of work for this study and it is our understanding that your agency's advice and guidance has been sought by the LRA in developing the study's scope of work. The LRA projects the study will be completed within 12 months of initiation. This means the results should be available for the Army to use to enter into Formal Consultation with your agency prior to disposal of installation property. We anticipate this information will be adequate to consider in determining if a permanent encumbrance on the property should be included in the disposal documents to protect resources important to the continued use of this area by threatened and endangered species.

Therefore, based on the above time-line we believe the Army will have adequate time to consider the results of the LRA's ecological study prior to disposing of installation property along the Mississippi River shoreline and to assure that sufficient measures are included within the real estate disposal documents to protect those resources that are important to threatened and endangered species. However, should events prevent the results of the LRA study from being available for use in the Formal Consultation process, the Army will work with your agency to determine what data needs and actions are necessary to comply with the requirements of the Endangered Species Act. The Army will commit in the Record of Decision to conduct appropriate consultations with your agency on any property identified for disposal prior to arriving at a decision to place an encumbrance on the involved installation parcel.

We would appreciate your agency's expeditious review and confirmation that you agree with the proposed approach. Should you agree, we will incorporate this commitment into the Final Environmental Impact Statement and its accompanying Record of Decision. If you have any questions, please call Glen Coffee of our office at 334/690-2729.

Sincerely,

Curtis M. Flakes
Chief, Environment and Resources
Branch

Copies Furnished:

Commander, US Army Materiel Command
ATTN: AMS-CO (Ms. Shirley Barnett)
Alexandria, VA 22333-0001

Commander, Savanna Army Depot
ATTN: Arlie Dahlman (Base Transition Coordinator)
Savanna, IL 61074

Tetra Tech, Inc.
ATTN: Kristen Shields (Project Manager)
10306 Eaton Place, Suite 340
Fairfax, Virginia 22030

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

IN REPLY REFER TO:

April 17, 1997

ER-97/137

Mr. Glen Coffee
U.S. Army Corps of Engineers
Mobile District (ATTN: CESAM-PD-E)
109 St. Joseph Street, P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Coffee:

The Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (EIS) for BRAC 95 Disposal and Reuse of the Savanna Army Depot Activity, Savanna, Illinois. We offer the following comments for your consideration.

General Comments

The Army proposes to transfer the majority of the 13,062-acre installation to the U.S. Fish and Wildlife Service (Service) and the U.S. Army Corps of Engineers. The Service has expressed interest in receiving approximately 9,445 acres into the National Wildlife Refuge System and has prepared a draft conceptual management plan. The Department will thoroughly review all aspects of this proposal before reaching its decision. The Department may request additional information from the Department of the Army (Army), including detailed information about the planned cleanup or remediation of the Depot contamination and unexploded ordnance, in order to insure that the land and waters which may be managed by the Service do not pose significant post-remedial short or long term hazards to fish, wildlife and the visiting public.

The reuse scenarios presented in the draft EIS may affect federally listed endangered and threatened species. Biologists from the Service are in consultation with the Army regarding potential project impacts and possible future encumbrances for the protection of federally listed species. The Service concurs with the steps outlined for Section 7 consultation provided in Army's letter to the Service, dated February 25, 1997. It is our understanding that a detailed description of the status and consultation process for the Depot will be outlined in the final EIS.

Problems of contamination and unexploded ordnance may limit the management of Depot lands that may become part of the National

Wildlife Refuge System. Public recreational use on these lands would be an important refuge objective. The draft EIS does not describe the extent of this conflict or evaluate the seriousness of the impact to land management from regulated hazardous waste sites and unexploded ordnance located within tracts of proposed recreational areas. The need for our agencies to continue to work closely on this important issue and future responsibilities for the Army and other Federal agencies should be explained in the final EIS. The addition of a chart in the final EIS, outlining the overall responsibilities of the Army and the Service, including hazardous and toxic substances and materials, would be of assistance to the affected stakeholders.

The draft EIS does not adequately identify indirect (i.e., reuse) impacts to natural resources that are reasonably foreseeable. The EIS should contain estimates of future impacts to natural resources as related to the probable development trends by non-Army entities. Local agencies and several private parties have indicated their interests and some plans are in advanced stages.

Specific Comments

Affected Environment

The information in Section 4.11.2 under Invertebrates indicates that the only record for the federally listed endangered Higgin's eye pearly mussel in the portion of the Mississippi River near the Depot is from 1972. It should be noted that another specimen of this endangered species was recovered from an area bordering the Depot during a 1990 survey conducted by Dr. E. Cawley, Loras College, Dubuque, Iowa.

The information provided in Section 4.11.3 for federally listed species indicates that the Gray's umbrella sedge is a candidate species. The designation for federally listed candidate species has been changed. This species is no longer recognized as a candidate species by the Service.

The description of sensitive habitats under Section 4.11.4 does not contain an expanded subsection on the river dune community that borders the Mississippi River, similar to the subsections on wetlands, prairie, and savanna. This river dune complex is of considerable significance because no other similar habitat exists in Illinois (based on information available from the Illinois Natural History Survey). It is possibly the only such site along the Mississippi River.

Hazardous and Toxic Substances

The first paragraph of Section 5.3.9, Hazardous and Toxic Substances, indicates that before property is transferred,

necessary remedial actions for hazardous material must be completed or remedial action in place and proven to be operating effectively. This section should also discuss interim plans, protective measures, or institutional controls that will be used to protect human health and public safety.

Risks posed by unexploded ordnance and contingency planning to deal with these risks are not discussed after the Section on Affected Environment (Section 4.9.6). The concerns and limitations imposed on new land owners from any unexploded ordnance that is not found in the screening processes should be addressed in Sections 5.3.9 and 5.4.9, Hazardous and Toxic Substances.

Critical Habitat

The term "critical habitat" is used several times in the discussion of endangered species in Section 5.3.11. There is no critical habitat designated for the Higgin's eye pearly mussel. Nor is there any "essential habitat" around the Depot for the Higgin's eye pearly mussel, as defined by the recovery plan for the species. There is suitable habitat for this mussel species in the Mississippi River bordering the Depot property and in the Apple River side channel which is within Depot property. The terms "critical habitat" and "essential habitat" have specific definitions and usages under the Endangered Species Act. We recommend that these terms not be used in this case.

Reuse Alternatives

There may be long-term water quality impacts in addition to those addressed in Section 5.4.7. Potential impacts that should be discussed in this section include off-site impacts from barge fleeting operations, erosion to shorelines from commercial and recreational water craft operations, and concerns over chemical spills in an area surrounded lands intended for wildlife and recreational use.

The various parts of the section on Infrastructure (5.4.8) do not, but should, address infrastructure compatibility and conflicts between economic development and public recreation reuse scenarios. The final EIS should identify any potential infrastructure encroachment on undeveloped lands that will be used for public recreation. Increased transportation, utilities and wastewater treatment operations may all have short-term and long-term impacts on the function and structure of lands managed for the National Wildlife Refuge System.

Section 5.4.11 (Biological Resources) should contain a subsection on effects to the above mentioned river dune complex and acknowledge the Army's interim restrictions that may be set up

for the dune lands in order to avoid impacts to endangered species.

Summary

The Department views the use of encumbered disposal, if properly developed, as a reasonable alternative to protect natural resources and to avoid impacts to federally listed endangered and threatened species. The Department will carefully review all aspects of this proposed action before reaching its decision on the proposed transfer of lands into the National Wildlife Refuge System.

The Service contacts for continued coordination on endangered species, natural resources, and planning issues are Mr. Richard Nelson, Supervisor and Mr. Mike Coffey, Biologist, U.S. Fish and Wildlife Service, 4469 48th Avenue Court, Rock Island, Illinois 60201, telephone 309-793-5800. For coordination on National Wildlife Refuge issues contact Mr. Ed Britton, District Manager, Savanna District, Upper Mississippi River National Wildlife and Fish Refuge, Post Office Building, Savanna, Illinois 61074, telephone 815-273-2732.

We appreciate the opportunity to provide these comments.

Sincerely,

Don Henne

Don Henne
Regional Environmental Officer

c:\wp60\er97-137.fin

RECEIVED

JUN 18 1996
960618001/MJD
Preservation Services

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

June 14, 1996

IHPA REVIEW
H/A Steven
AC
AR
File

Planning Division

SUBJECT: Proposed Methodology for Historic Properties Investigations at Savanna Army Depot (SVAD), Savanna, Illinois

Dr. Mark E. Esarey
Illinois Historic Preservation Agency
Preservation Service Division
1 Old State Capitol
Springfield, Illinois 62701-1512

Dear Dr. Esarey:

The purpose of this letter is to propose an archeological and architectural field methodology for selected parcels of land at Savanna Army Depot (SVAD) located near Savanna, Illinois. SVAD has been identified as a closure action initiated by the Defense Closure and Realignment Act of 1990 (Public Law 101-510), 1995 authorized action, and this transmittal is part of our commitment to begin the National Historic Preservation Act (NHPA) Section 106 requirements for the installation.

The current action plan has identified approximately 3200 acres of SVAD which will be excessed to the State of Illinois and the Local Reuse Authority for development. The remaining 11,800 acres will be transferred to other Federal agencies. Part of the transfer action to the State has been expedited and is time sensitive.

During our meeting at SVAD on March 21, 1996, we discussed appropriate archeological field methodologies for the different portions of the installation. Enclosure 1 to this letter identifies the proposed field methodologies to be applied to the selected portions identified on Enclosure 2 (site map). The field methodology for architectural and engineering elements is also presented on Enclosure 1.

If you accept the proposed methodology, please reply to this office as soon as possible. For your convenience we have added a concurrence line below for your signature which may be sent by facsimile or by return mail. We appreciate your assistance with this action and look forward to working with the Illinois Historic Preservation Agency on this matter. If you have any questions, please contact Mr. Stephen P. Austin at (817) 885-6385.

Sincerely,

William Fickel, Jr.
Chief, Planning Division

Enclosures (2)

Concurrence:

Mark E. Esarey 6-20-96 4/2 AK Amendments to Enclosure 1. (ME)

Dr. Mark E. Esarey Date
Preservation Service Division
Illinois Historic Preservation Agency
Chief Archaeologist

ENCLOSURE 1

The following discussion is based on a meeting held on March 21, 1996, at Savanna Army Depot (SVAD) between agents of the U.S. Army Corps of Engineers, Fort Worth District representing the U.S. Army Materiel Command and agents of the Illinois Historic Preservation Agency representing the Illinois State Historic Preservation Officer. Our meeting at SVAD was to discuss appropriate archeological field methodologies for the different portions of the installation following the decision to close the installation under the 1995 authorized action of the Defense Closure and Realignment Act of 1990 (Public Law 101-510). Accordingly, we have identified selected portions of SVAD where different procedures and field methodologies will be implemented.

Approximately 3200 acres of the 13,000 acre SVAD has been identified for excess and disposal. The remaining portion will be transferred to another Federal agency. The enclosed site map (Enclosure 2) shows four hand colored areas. The portion show as yellow and outlined by red is the portion to be transferred to other Federal agencies. No further work will occur in those portions and all known or previously identified cultural resources will be identified to the receiving agency. The portions shown in blue will receive intensive shovel probe testing consisting of a minimum distance of fifteen (15) meter intervals on fifteen (15) meter wide transects unless a justifiable alternate distance can be demonstrated while in the field. Sites located during the field survey will receive additional shovel probe testing to determine the extent and potentially intact nature of the site. Variations from the standard will be documented in the field and fully described in the resulting report. The portions shown in pink will be selectively shovel probe tested in areas ~~of high probability or~~ in areas where land disturbing activities have been limited. Disturbed portions will be documented in the field and fully described in the resulting report. The portion shown in green will be examined using strip plowing of approximately twenty percent (20%) coverage. The 1984 *Archeological Overview and Management Plan for Savanna Army Depot* identified areas of disturbance, high potential, and archival locations of historic sites at the installation. This document and other existing archeological documentation on the region will be utilized extensively in guiding the proposed field work. All properties located will be fully recorded on State of Illinois site data forms and, where possible, an eligibility determination will be made based on the field assessment of the property.

delete words

The proposed archeological field methodology may require adjustments based on initial surveys where the site potential is lower, or higher, than expected. Adjustments may also be necessary where environmental hazards preclude normal field methodology. Any variation from the proposed methodology will be staffed with your office prior to implementing.

Architectural review will conduct on-site assessments of all buildings/structures within the excess portions not going to another Federal agency to determine potential National Register of Historic Places eligibility for those buildings and structures. Existing Historic American Building Survey/Historic American Engineering Record (HABS/HAER) information will be updated and additional data sheets with photographic documentation prepared for all structures 50 years or older. No assessment of World War II wood temporary buildings will occur. Buildings or structures which are duplicated in design and material will be noted on a single data sheet but list the identical building numbers to denote the additional structures. Any component of SVAD which is identified as a potential Cold War significant property will also receive a data sheet with photographic documentation. The data sheet and photographic documentation will be similar to HABS/HAER Level IV cards or a similar format as requested by the Illinois Historic Preservation Agency. The architectural inventory and assessment will review existing documentation, including the 1984 *Historic Properties Report* for SVAD and all installation records such as real property inventories and construction completion reports. All assessed properties will be clearly identified and potential eligibility, or ineligibility, fully described.

All research will be incorporated into final reports which clearly identify the purpose of the work, the methodology utilized, and the results. The reports will contain appropriate contextual overviews and all photographs, charts, and graphics as necessary to support the document.

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

JUN 24 1996

Preservation Services

IHPA REVIEW
H/A _____ _____
AC _____ _____
AR ok MG. 6-24-
File CA Airport

June 20, 1996

Planning Division

SUBJECT: Unexploded Ordnance Investigations and Section 106 Coordination at Savanna Army Depot (SVAD), Savanna, Illinois

Mr. William L. Wheeler
Illinois Historic Preservation Agency
State Historic Preservation Officer
1 Old State Capitol
Springfield, Illinois 62701-1512

Dear Mr. Wheeler:

Savanna Army Depot (SVAD) located near Savanna, Illinois, has been identified as a closure action initiated by the Defense Closure and Realignment Act of 1990 (Public Law 101-510), 1995 authorized action. Portions of SVAD are scheduled to be excessed to the State of Illinois and the Local Reuse Authority for development. The purpose of this letter is to coordinate the proposed unexploded ordnance (UXO) sweep of portions of the facility and as part of our commitment to comply with the National Historic Preservation Act (NHPA) of 1966 as Amended Through 1992 (P.L. 89-665 *et seq.*) Section 106 requirements for the installation.

SVAD was a munitions test range for a short period during the first quarter of this century before becoming a depot storage facility. It is reasonable to suggest that SVAD may have UXO contamination located over major portions of the facility which will need to be located and removed before completion of other compliance actions and the proposed transfer can take place. The U.S. Army will be proceeding with the magnetometer sweeps of portions of SVAD in the near future in an effort to locate and remove any hazardous material. As potential munitions are located during the sweep they will have to be excavated, removed to another location for demolition, or demolished in place if deemed unsafe for removal.

We understand that the excavation, removal and demolition process may have an effect on undiscovered archeological properties located at SVAD. No archeological surveys have been completed on the identified excess portions of SVAD to this time and because of safety concerns no surveys will be completed until the UXO clearance is completed. Given that it is unsafe to initiate such archeological investigations until after completion of the first phase of UXO sweeps we intend to utilize the following procedures which will minimize the impact of the removal and demolition process on the potential archeological sites.

The U.S. Army contractor completing the UXO work will be briefed on the potential for cultural resources in the areas of investigation. The contractor will use a minimum level of excavation to uncover the potential UXO and to determine if the ordnance may be safely removed for demolition elsewhere or if it must be demolished in-place. If the ordnance must be demolished where it is uncovered the procedure will be to cover the ordnance with several sandbags and use the lowest charge level possible to minimize the effect to the surrounding area.

If archeological material or artifacts are discovered during the excavation to expose the potential UXO the contractor will contact the archeologist at the U.S. Army Corps of Engineers, Rock Island District for consultation. The Rock Island District archeologist will determine if the discovered material requires a site visit and if additional steps are needed to preserve as much of the remaining site as possible.

In the event of the discovery of potentially significant archeological sites during the UXO task the Rock Island District archeologist will mark the locations and provide a brief description to the Illinois Historic Preservation Agency, Preservation Services Division Chief Archeologist, Dr. Mark E. Esarey, at the end of the task. All sites located during the UXO investigations will be reexamined during the follow-up archeological survey of the proposed excess areas. This survey was discussed during the meeting between our respective offices at SVAD on March 21, 1996, and subsequently addressed in our letter to the Preservation Services Division on June 17, 1996, concerning the field methodology for the archeological and architectural survey

We ask for your concurrence with the procedure described above. For your convenience we have added a concurrence line below for your signature. We appreciate your assistance with this action and look forward to working with the Illinois Historic Preservation Agency on this matter. If you have any questions please contact Mr. Stephen P. Austin at (817) 885-6385.

Sincerely,

William Fickel, Jr.
Chief, Planning Division

Concurrence:

6/24/96

Mr. William L. Wheeler — Date
Illinois State Historic Preservation Officer
Illinois Historic Preservation Agency

Copies Furnished:

Department of the Army
Assistant Chief of Staff for Installation Management
ATTN: DAIM-ED-R (Mr. Chuck Wright)
600 Army Pentagon
Washington, District of Columbia 20310-0600

Commander
HQ U.S. Army Materiel Command
ATTN: AMCEN-R (Ms. Maria Chuck)
5001 Eisenhower Avenue
Alexandria, Virginia 22333-0001

Commander
U.S. Army Environmental Center
ATTN: SFIM-AEC-EC (Ms. Mary Shipe)
Aberdeen Proving Ground, Maryland 21010-5401

Commander
U.S. Army Savanna Army Depot
ATTN: SIOSV-A (Mr. John Clark)
Savanna, Illinois 61074

Commander
U.S. Army Corps of Engineers, Mobile District
ATTN: CESAM-PD-M (Dr. Neil Robison)
P.O. Box 2288
Mobile, Alabama 36628-0001

Commander
U.S. Army Corps of Engineers, Louisville District
ATTN: CEORL-PD-R (Mr. Robert Woodyard)
P.O. 59
Louisville, Kentucky 40201-0059

Advisory Council on Historic Preservation
ATTN: Ms. Valerie DeCarlo
Old Post Office Building, Suite 809
1100 Pennsylvania Avenue, NW
Washington, DC 20004

Illinois Historic
Preservation Agency
Old State Capitol Springfield, Illinois 62701 (217) 782-4836
Suite 4-900 State of Illinois Center 100 W. Randolph Chicago, IL 60601 (312) 814-1409

JODAVIESS COUNTY
Savanna Army Depot
164 acre survey tract, near Whitton
State tract from BRAC

PLEASE REFER TO:
IHPA LOG #960919001PJD
COE-LV, 164 Acres, 2 sites
9 buildings

March 12, 1997

Mr. Joseph B. Stewart
Savanna Army Depot
US ARMY
Savanna, IL 61047

Dear Sir:

Thank you for submitting the results of the archaeological reconnaissance. Our comments are required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties".

Our staff has reviewed the archaeological Phase I reconnaissance report performed for the project referenced above. The Phase I survey and assessment of the archaeological resources appear to be adequate. We concur with the report recommendations that archaeological sites 11-Jd-476 and 11-Jd-477 are not eligible for listing on the National Register of Historic Places.

As you are aware, architectural survey of the entire base is in progress. Usually, our office does not comment on the eligibility of any structures until the entire architectural survey is completed and acceptable final report is reviewed by our office. Nine buildings lie within the boundaries of the proposed prison site. Based on information provided by Donald Ball, none of the nine buildings (A1701, 1702, 1703, 1704, 1601, 1602, 1603, D301 and 302) is eligible for listing in the National Register of Historic Places.

The eligibility of the remaining archaeological sites, structures, or other historic properties at the Savanna Army Depot will be determined after the survey of the rest of the base is completed.

Accordingly, we have determined, based upon this report, that no significant historic, architectural, and archaeological resources are located in the 164 acre project area.

Please retain this letter in your files as evidence of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Sincerely,

Anne E. Haaker
Deputy State Historic
Preservation Officer

AEH:JSP

cc: Mr. Donald Ball, USACOE-LV, CEORL-PD-R

APPENDIX F

Definition of Key Terms

Appendix F:
Definition of Key Terms

Direct versus Indirect Impacts. The terms *impact* and *effect* are synonymous as used in this EIS. Impacts may be beneficial or adverse and may apply to the full range of natural, aesthetic, historic, cultural, and economic resources of the BRAC parcel and its surrounding area. Definitions and examples of direct and indirect impacts as used in this document are as follows:

- ***Direct Impact.*** A direct impact would be caused by implementation of the proposed action and occur at approximately the same time and place.

- ***Indirect Impact.*** An indirect impact would be caused by implementation of the proposed action and could occur later in time or farther removed in distance but still be a reasonably foreseeable outcome of the action. Indirect impacts may include induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural and social systems.

- ***Application of Direct versus Indirect Impacts.*** For direct impacts to occur, a resource must be present. For example, if highly erodible soils were disturbed, there could be a direct impact on water quality through storm water runoff. This runoff could indirectly affect aquatic species through sedimentation downstream from the construction site.

Short-Term versus Long-Term Impacts. In addition to indicating whether impacts are direct or indirect, the impact matrix summaries included in this section also distinguish between short- and long-term impacts. In this context, short-term and long-term do not refer to any rigid time period and are determined on a case-by-case basis in terms of the environmental consequences of implementing the proposed action or alternatives.

Cumulative Effects. As stated in 40 CFR 1508.7 (Council on Environmental Quality Regulations), cumulative effects are defined as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions."

Mitigation. Where adverse impacts are identified, this document describes measures that will or could be used to mitigate these effects. Mitigation generally includes:

- Avoiding the impact altogether by stopping or modifying an action.

- Minimizing the impact by limiting the degree or magnitude of the action and the activities associated with its implementation.

- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

- Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation may be ensured through restrictive covenants in a deed, transfer document, or other legal agreements between the party implementing an action and the federal, state, or local government agencies.

Mitigation of adverse impacts associated with the reuse of SVADA BRAC property is generally the responsibility of the federal, state, and local agencies and private entities that implement reuse plans. Mitigation by non-Army entities that could avoid or reduce adverse impacts caused by reuse, should they be undertaken, are expressed in the conditional (i.e., "could") throughout Section 5.0.

Significance. The term *significance* as used in NEPA requires consideration of both the context and intensity of the effect under consideration. For proposed actions, context may include consideration of effects on a national, regional, or local basis. Both short-term and long-term effects may be relevant.

Effects are also evaluated in terms of their intensity or severity. Factors contributing to an impact's intensity may include:

- The degree to which the action affects public health or safety.
- The proximity of the action to resources that are legally protected by various statutes (e.g., wetlands, regulatory floodplains, federally listed threatened or endangered species, or resources listed in the National Register of Historic Places).
- The degree to which the effects of the action on the human environment are likely to be highly uncertain or controversial.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.
- Whether the action threatens to violate federal, state, or local laws imposed for the protection of the environment.

Impact assessment is typically based on an assumption that the full effect of the predicted conditions would occur at once. In reality the projected conditions would likely be less intense than the maximum and would also be likely to happen incrementally rather than all at once. Thus, effects identified may well be less severe than those described here. A brief example of significance criteria for each resource area follows.

- ***Land Use.*** If an alternative would conflict with adopted plans and goals of the community or if it would result in a substantial alteration of the present or planned land use of an area, it could have a significant effect. If an alternative would result in substantial new development or prevent such development elsewhere, it could have a significant indirect impact.
- ***Climate***. If an action had the effect of substantially altering the weather or climatic parameters of an area, it would be considered significant.
- ***Air Quality***. An alternative could have a significant air quality impact if it would result in substantially higher air pollutant emissions or cause air quality standards to be exceeded.
- ***Noise***. An alternative could have a significant noise impact if it would generate new sources of substantial noise, increase the intensity or duration of noise levels to sensitive receptors, or result in exposure of more people to high levels of noise.
- ***Geology.*** If an alternative would result in an increased geologic hazard or a change in the availability of a geologic resource, it could have a significant impact. Such geologic hazards would include, but not be

limited to, seismic shaking, land subsidence, and slope instability. Geologic resources would include, but not be limited to, soils, mineral deposits, geothermal resources, and geomorphic features.

- ***Water Resources***. If an alternative were to result in a reduction in the quantity or quality of water resources for existing or potential future uses, it could have a significant impact. Based on existing water rights, a significant impact would occur if the demand exceeded the capacity of the potable water system. Such uses include, but are not limited to, human consumption, irrigation, recreation, protection of wildlife, and aesthetics.

  An alternative could have a significant impact on water resources if it would cause substantial flooding or erosion or subject people or property to flooding or erosion, if it would adversely affect a significant water body such as a stream or lake, or if it would substantially reduce surface water or groundwater quality or quantity. However, under controlled circumstances, flooding can have beneficial environmental impacts to water resources by increasing available wetland habitat for use by wildlife or fishery resources.

- ***Infrastructure***. An alternative could have a significant impact on infrastructure if it would increase demand over capacity, requiring a substantial system expansion, or if it would result in substantial system deterioration over the current condition. For instance, an alternative could have a significant impact on traffic if it would increase the volume of traffic beyond the existing road capacity, cause parking availability to fall below minimum local standards, or require new or substantially improved roadways or traffic control systems.

- ***Hazardous and Toxic Materials***. An alternative could have a significant impact if it would result in a substantial increase or decrease in the generation of hazardous substances, an increase or decrease in the exposure of persons to hazardous or toxic substances, or an increase or decrease in the possibility of release of hazardous or toxic materials to the environment.

- ***Permits and Regulatory Authorizations***. An alternative could have significant impacts on permits and regulatory authorizations if proposed activities or activity levels are not permissible. New permits or regulatory authorizations could be required for any additional activity.

- ***Biological Resources and Ecosystems.*** The effect of an alternative on biological resources and ecosystems could be significant if it would result in the disruption or removal of any federally listed endangered or threatened species, or its habitat, migration corridors, or breeding areas. The loss of a substantial number of individuals of any plant or animal species (sensitive or nonsensitive species) that could affect the abundance of a species or the biological diversity of an ecosystem beyond normal variability could also be considered significant. The measurable degradation of sensitive habitats, particularly wetlands, could be significant.

- ***Cultural Resources***. An alternative could have a significant impact on cultural resources if it would result in unauthorized artifact collecting or vandalism of identified important sites, or modifications to or demolition of a historic building or environmental setting, or if it would promote neglect, resulting in resource deterioration or destruction, audio or visual intrusion, or decreased access to traditional Native American resources. Impact assessment for cultural resources focuses on those properties which are listed in or are considered eligible for the National Register of Historic Places or that are National Historic Landmarks, and resources that are considered sensitive by Native American groups.

- ***Legacy Resources***. An alternative could have a significant impact on legacy resources if it would impair protection or program efforts designed to maintain those resources.

- ***Economic Development***. An alternative could have a significant impact if it would decrease or increase the employment levels in the ROI to a substantial extent.

- ***Socioeconomic Environment***. If an alternative would alter substantially the location and distribution of the population within the geographic "region of influence," cause the population to exceed historical growth rates, decrease jobs so as to substantially raise the regional unemployment rates or reduce income generation, substantially affect the local housing market and vacancy rates. A need for new schools or other public services could be identified as significant due to a lack of funding for new construction or a lack of space.

- ***Quality of Life***. An alternative could have a significant impact if it would substantially alter the quality of life in the surrounding area.

- ***Installation Agreements***. An alternative could have a significant impact on installation agreements if it required any alterations in the current agreements. Such alterations would require the establishment of new Memoranda of Agreement/Memoranda of Understanding or similar interagency or intergovernmental agreements.

APPENDIX G

Construction and Vehicular Traffic Emissions Calculations

Appendix G:
Air Conformity and Construction and Vehicular Traffic Emissions Calculations

General Conformity Provision of the Clean Air Act

Section 176(c) of the Clean Air Act (CAA) requires federal agencies to ensure that their actions are consistent with the CAA and with federally enforceable air quality management plans. EPA's General Conformity Rule requires a formal conformity determination document for federal actions occurring in nonattainment or maintenance areas (i.e., areas that are violating or have in the past violated the federal ambient air quality standards). Because Jo Daviess and Carroll Counties are both in attainment for all national ambient air quality standards, the General Conformity Rule does not apply to the Army's proposed disposal of the SVADA land and facilities.

Construction Emissions

Construction emissions were estimated using generalized equipment exhaust and fugitive dust emission factors for construction activities. No detailed construction plans were available, so estimates were made for the type of vehicles used during construction, size of disturbed areas, and the duration of construction activities. A 10 percent silt/clay fraction of soils was used to predict fugitive dust emissions based on the sandy nature of the alluvial soils that predominate the proposed construction areas. Normal dust control practices and natural precipitation patterns were assumed to provide a 50 percent control factor for these fugitive dust emissions.

MIR Scenario. To determine the area in the industrial and distribution center parcels that would be affected by construction under the MIR scenario, it was assumed that an additional 4,000,000 square feet of building area would need to be built. This figure is based on the 8,036,820 square feet that will be in use under the MIR scenario (Table 3-2) less the 4,165,827 square feet that are currently available. It was assumed that all of the new buildings would be one-story, warehouse-type buildings and, therefore, that the total of all construction footprints would equal 4,000,000 square feet. The peripheral area affected by construction (i.e., areas outside the footprint that would be disturbed by construction activities and equipment use) was assumed to be one-half as large as the footprint itself. The emission estimates assume that both the footprint acreage and the peripheral acreage are disturbed during the site and foundation preparation period (25 days). Only the construction area outside the footprint is assumed to be disturbed during the facility construction period (120 days). Because no specific construction plan is available, it was assumed that construction would occur evenly over the 20-year build-out period. These calculations result in 7 total acres per year being disturbed for construction in the industrial and distribution center parcels.

Footprint Acreage

$$4{,}000{,}000\ ft^2 \times \frac{1 acre}{43{,}560 ft^2} \times \frac{1}{20 years} \approx 5 \frac{acres}{year}$$

Peripheral Acreage

$$4{,}000{,}000 ft^2 \times 0.5\ factor \times \frac{1 acre}{43{,}560 ft^2} \times \frac{1}{20 years} \approx 2 \frac{acres}{year}$$

To determine the acreage in the residential areas that would be affected by construction under the MIR scenario, it was assumed that the 800 proposed residences would have an average footprint of 1,200 square feet. A factor of 0.5 was again used to calculate the peripheral area affected by construction. A further assumption was made that road construction in the residential areas would total 40 acres (5 percent of the 800 acres being used for homes). This limited acreage was based on the fact that some roads already exist in both residential areas. These calculations result in 4 total acres per year being disturbed for construction in the residential areas under the MIR scenario.

Footprint Acreage

$$1200 ft^2 \times 800\ houses \times \frac{1 acre}{43{,}560 ft^2} \times \frac{1}{20 years} \approx 1 \frac{acres}{year}$$

Peripheral Acreage

$$(1200 ft^2 \times 800\ houses \times 0.5\ factor \times \frac{1 acre}{43{,}560 ft^2} + 40 \frac{acres}{roads}) \times \frac{1}{20 years} \approx 3 \frac{acres}{year}$$

MLIR Scenario. To determine the area in the industrial and distribution center parcels that would be affected by construction under the MLIR scenario, it was assumed that an additional 1,000,000 square feet of building area would need to be built. This figure assumes that new construction will be required, even though the currently available building space exceeds the 1,808,285 square feet estimated to be used in the MLIR scenario. It is anticipated that the current buildings will not be entirely compatible with the needs of future industrial or distribution center operations. The estimates for the residential area disturbed by construction under the MLIR scenario are the same as those under the MIR scenario.

Footprint Acreage

$$1{,}000{,}000 ft^2 \times \frac{1 acre}{43{,}560 ft^2} \times \frac{1}{20 years} \approx 1.2 \frac{acres}{year}$$

Peripheral Acreage

$$1{,}000{,}000 ft^2 \times 0.5 factor \times \frac{1 acre}{43{,}560 ft^2} \times \frac{1}{20 years} \approx 0.6 \frac{acres}{year}$$

Vehicular Traffic Emissions

Vehicle emission estimates were made using data and procedures from EPA emission inventory guidance and the MOBILESA and EMFAC7 vehicle emission rate models. Vehicle emission rates were based on typical rates for gasoline and diesel cars and trucks operating in a low-altitude region such as Savanna. Average speeds and travel times were used based on a composite of previous studies representing a mix of rural, suburban, and urban areas.

Emissions from private vehicles for the MIR reuse scenario were estimated based on the 5,625 employees working 240 days per year. In the absence of more specific information, industrial truck use was estimated by multiplying the baseline number of truck trips (20 per day (Melaas, personal communication, 1996a)) by the ratio of the MIR Floor Area Ratio (0.2) to the LIR Floor Area Ratio (0.025). This resulted in 160 truck trips per day. The trucks were assumed to be in operation for 1 hour each (the approximate time they would spend driving within Jo Daviess and Carroll Counties).

Emissions from private vehicles and industrial trucks for the MLIR reuse scenario were estimated in the same manner as for the MIR scenario. A figure of 1,040 employees was used, and 60 truck trips were assumed to occur (20 baseline truck trips multiplied by the ratio of the MLIR Floor Area Ratio (0.075) to the LIR Floor Area Ratio (0.025)).

APPENDIX H

Standard Preservation Covenant for Conveyance of Property that Contains Historic Buildings and Structures

Appendix H:
Standard Preservation Covenant for Conveyance of Property that Contains Historic Buildings and Structures

1. In consideration of the conveyance of certain real property hereinafter referred to as (name of property), located in the (name of county), (name of state), which is more fully described as: (Insert legal description), (Name of property recipient) hereby covenants on behalf of (himself/herself/itself), (his/her/its) heirs, successors, and assigns at all times to the (name of SHPO parent organization) to preserve and maintain (name of property) in accordance with the recommended approaches in the *Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings* (U.S. Department of the Interior, National Park Service 1992) in order to preserve and enhance those qualities that make (name of historic property) eligible for inclusion in/or resulted in the inclusion of the property in the National Register of Historic Places. If (Name of property recipient) desires to deviate from these maintenance standards, (Name of property recipient) will notify and consult with the (name of state) Historic Preservation Officer in accordance with paragraphs 2, 3, and 4 of this covenant.

2. (Name of property recipient) will notify the appropriate (name of state) Historic Preservation Officer in writing prior to undertaking any construction, alteration, remodeling, demolition, or other modification to structures or setting that would affect the integrity or appearance of (name of historic property). Such notice shall describe in reasonable detail the proposed undertaking and its expected effect on the integrity or appearance of (name of historic property).

3. Within thirty (30) calendar days of the appropriate (name of state) Historic Preservation Officer's receipt of notification provided by (name of property recipient) pursuant to paragraph 2 of this covenant, the SHPO will respond to (name of property recipient) in writing as follows:

(a) That (name of property recipient) may proceed with the proposed undertaking without further consultation; *or*

(b) That (name of property recipient) must initiate and complete consultation with the (name of state) Historic Preservation Office before (he/she/it) can proceed with the proposed undertaking.

If the SHPO fails to respond to the (name of property recipient)'s written notice, as described in paragraph 2, within thirty (30) calendar days of the SHPO's receipt of the same, then (name of property recipient) may proceed with the proposed undertaking without further consultation with the SHPO.

4. If the response provided to (name of property recipient) by the SHPO pursuant to paragraph 3 of this covenant requires consultation with the SHPO, then both parties will so consult in good faith to arrive at mutually-agreeable and appropriate measures that (name of property recipient) will implement to mitigate any adverse effects associated with the proposed undertaking. If the parties are unable to arrive at such mutually-agreeable mitigation measures, then (name of property recipient) shall, at a minimum, undertake recordation for the concerned property—in accordance with the Secretary of Interior's standards for recordation and any applicable state standards for recordation, or in accordance with such other standards to which the parties may mutually agree—prior to proceeding with the proposed undertaking. Pursuant to this covenant, any mitigation measures to which (name of property recipient) and the SHPO mutually agree, or any recordation that may be required, shall be carried out solely at the expense of (name of property recipient).

5. The (name of SHPO parent organization) shall be permitted at all reasonable times to inspect (name of historic property) in order to ascertain its condition and to fulfill its responsibilities hereunder.

6. In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the (name of SHPO parent organization) may, following reasonable notice to (name of recipient), institute suit to enjoin said violation or to require the restoration of (name of historic property). The successful party shall be entitled to recover all costs or expenses incurred in connection with such a suit, including all court costs and attorneys fees.

7. In the event that the (name of historic property) (iesi) is substantially destroyed by fire or other casualty, or (ii) is not totally destroyed by fire or other casualty, but damage thereto is so serious that restoration would be financially impractical in the reasonable judgment of the Owner, this covenant shall terminate on the date of such destruction or casualty. Upon such termination, the Owner shall deliver a duly executed and acknowledged notice of such termination to the (name of SHPO parent organization), and record a duplicate original of said notice in the (name of county) Deed Records. Such notice shall be conclusive evidence in favor of every person dealing with the (name of historic property) as to the facts set forth therein.

8. (Name of recipient) agrees that the (name of SHPO parent organization) may at its discretion, without prior notice to (name of recipient), convey and assign all or part of its rights and responsibilities contained herein to a third party.

9. This covenant is binding on (name of recipient), (his/her/its) heirs, successors, and assigns in perpetuity, unless explicitly waived by the (name of SHPO parent organization). Restrictions, stipulations, and covenants contained herein shall be inserted by (name of recipient) verbatim or by express reference in any deed or other legal instrument by which (he/she/it) divests (himself/herself/itself) of either the fee simple title or any other lesser estate in (name of property) or any part thereof.

10. The failure of the (name of SHPO parent organization) to exercise any right or remedy granted under this instrument shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

11. The covenant shall be a binding servitude upon (name of historic property) and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that (name of recipient) agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

APPENDIX I

Standard Preservation Covenant for Conveyance of Property that Contains Archeological Sites

Appendix I:
Standard Preservation Covenant for Conveyance of Property that Includes Archeological Sites

1. In consideration of the conveyance of the real property that includes the [official number(s) designation of archeological site(s)] located in the County of [name of county], (name of state), which is more fully described as [insert legal description], [Name of property recipient] hereby covenants on behalf of [himself/herself/itself], [his/her/its] heirs, successors, and assigns at all times to the (name of SHPO parent organization), to maintain and preserve [official number(s) designation of archeological site(s)], in accordance with the provisions of paragraphs 2 through 11 of this covenant.

2. (Name of property recipient) will notify the (name of state) Historic Preservation Officer in writing prior to undertaking any disturbance of the ground surface or any other action on [official number(s) designation of archeological site(s)] that would affect the physical integrity of this/these site(s). Such notice shall describe in reasonable detail the proposed undertaking and its expected effect on the physical integrity of [official number(s) designation of archeological site(s)].

3. Within thirty (30) calendar days of the appropriate (name of state) Historic Preservation Officer's receipt of notification provided by (name of property recipient) pursuant to paragraph 2 of this covenant, the SHPO will respond to (name of property recipient) in writing as follows:

(a) That (name of property recipient) may proceed with the proposed undertaking without further consultation; or

(b) That (name of property recipient) must initiate and complete consultation with the (name of state) Historic Preservation Office before (he/she/it) can proceed with the proposed undertaking.

If the SHPO fails to respond to the (name of property recipient)'s written notice within thirty (30) calendar days of the SHPO's receipt of the same, then (name of property recipient) may proceed with the proposed undertaking without further consultation with the SHPO.

4. If the response provided to (name of property recipient) by the SHPO pursuant to paragraph 3 of this covenant requires consultation with the SHPO, then both parties will so consult in good faith to arrive at mutually-agreeable and appropriate measures that (name of property recipient) will employ to mitigate any adverse effects associated with the proposed undertaking. If the parties are unable to arrive at such mutually-agreeable mitigation measures, then (name of property recipient) shall, at a minimum, undertake recordation for the concerned property—in accordance with the Secretary of Interior's standards for recordation and any applicable state standards for recordation, or in accordance with such other standards to which the parties may mutually agree—prior to proceeding with the proposed undertaking. Pursuant to this covenant, any mitigation measures to which (name of property recipient) and the SHPO mutually agree, or any recordation that may be required, shall be carried out solely at the expense of (name of property recipient).

5. [Name of recipient] shall make every reasonable effort to prohibit any person from vandalizing or otherwise disturbing any archeological site determined by the (name of SHPO parent origination) to be eligible for inclusion in the National Register of Historic Places. Any such vandalization or disturbance shall be reported to the (name of SHPO parent organization) promptly.

6. The (name of SHPO parent organization) shall be permitted at all reasonable time to inspect [parcel designation] in order to ascertain its condition and to fulfill its responsibilities hereunder.

7. In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the (name of SHPO parent organization) may, following reasonable notice to [name of recipient], institute suit to enjoin said violation or to require the restoration of any archeological site affected by such violation. The successful party shall be entitled to recover all costs or expenses incurred in connection with any such suit, including all court costs and attorney's fees.

8. [Name of recipient] agrees that the (name of SHPO parent organization) may, at its discretion and without prior notice to [name of recipient], convey and assign all or part of its rights and responsibilities contained in this covenant to a third party.

9. This covenant is binding on [name of recipient], [his/he/its] heirs, successors, and assigns in perpetuity. Restrictions, stipulations, and covenants contained herein shall be inserted by [name of recipient] verbatim or by express reference in any deed or other legal instrument by which [he/she/it] divests [himself/herself/itself] of either the fee simple title or any other lesser estate in [parcel designation] or any part thereof.

10. The failure of the (name of SHPO parent organization) to exercise any right or remedy granted under this instrument shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

11. The covenant shall be a binding servitude upon the real property that includes [official number(s) designation of archeological site(s)] and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that [name of recipient] agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

APPENDIX J

Economic Impact Forecast System (EIFS) Model and Outputs

Appendix J:
Economic Impact Forecast System (EIFS) Model and Outputs

Socioeconomic Impact Assessment

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base for the region of influence (ROI). In this regard, the reuse of the SVADA BRAC parcel will have a multiplier effect on the local and regional economy. With reuse, direct jobs will be created, generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services. However, potential in-migration can reduce available housing. In contrast, if reuse is not implemented, jobs will not be created, and any negative economic effects from the realignment of SVADA would remain. This situation could lead to indirect effects, such as reduced income generation, reduced business volume, reduced housing demand, out-migration, and less funding for schools and other social services.

The Economic Impact Forecast System

The US Army, with the assistance of many academic and professional economists and regional scientists, developed the Economic Impact Forecast System (EIFS) to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS is mandated by ASA (IL&E) for use in NEPA assessment for Base Closure and Realignment. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS is included as one of the tools of the Environmental Technical Information System (ETIS) and is implemented as an on-line system supported by USACERL through the University of Illinois. The system is available to anyone with an approved login and password. It is available at all times through toll-free numbers, Telenet, and other commonly used communications. The ETIS Support Center at the university and the staff of USACERL are available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to "define" an economic region of influence (ROI) by simply identifying the counties to be analyzed. Once the ROI is defined, the system aggregates the data, calculates "multipliers" and other variables used in the various models in EIFS, and prompts the user for input data.

The EIFS Impact Models

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures and/or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to "basic" economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating "aggregate" impacts and makes the economic base model ideal for the EA/EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its basic sector; for example, a dollar increase in local expenditures due to an expansion of its military installation. EIFS estimates its multipliers using a "location quotient" approach based on the concentration of industries

within the region relative to the industrial concentrations for the Nation.

The user selects a model to be used from a menu of options. EIFS has models for three basic military activity scenarios: standard, construction, and training. The user inputs into the selected model those data elements which describe the Army action: civilian and military to be moved and their salaries, and the local procurement associated with the activity being relocated. Once these are entered into the system, a projection of changes in the local economy is provided. These are projected changes in sales volume, employment, income, and population. These four "indicator" variables are used to measure and evaluate socioeconomic impacts.

The Significance of Socioeconomic Impacts

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the "significance" of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, employment, income, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact to the historical fluctuation in a particular area. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

		Increase	Decrease
Business volume	x	100%	75%
Personal income	x	100%	67%
Total employment	x	100%	67%
Total population	x	100%	50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansions.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact models, in combination with the RTV, have proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

EIFS Input and Output Data for Reuse Scenarios

The following are the EIFS input and output data for each SVADA reuse intensity scenario. These data form the basis for the socioeconomic impact analysis presented in Section 5.0.

STANDARD EIFS FORECAST MODEL

Project name: SVADA Medium Intensity Reuse

Default Price deflators:

baseline year (ex. business volume)	(CPI - 1987)	= 100.0
output and incomes (ex b.v.)	(CPI - 1993)	= 126.3
baseline year (business volume)	(PPI - 1987)	= 100.0
local services and supplies	(PPI - 1993)	= 115.7
output and incomes (business volume)	(PPI - 1993)	= 115.7

Change in expenditures for services and supplies: $115,893,100
Change in expenditures for local services and supplies: $47,340,544.00 (calculated)
Change in civilian employment: +5,197
Average income of affected civilian personnel: $34,500
Percent expected to relocate (enter <cr> to accept default): 30%

********** STANDARD EIFS MODEL FORECAST FOR SVADA **********

Export income multiplier: 1.6906

Change in local			
Sales volume	Direct:	$179,396,000	
	Induced:	$123,886,000	
	Total:	$303,283,000	(52.592%)
Employment	Direct:	1,147	
	Total:	7,137	(38.570%)
Income	Direct:	$14,375,000	
	Total (place of work):	$203,599,000	
	Total (place of residence):	$203,599,000	(28.581%)
Local population .....:		3,302	(8.402%)
Local off-base population .....:		3,302	
Number of school children .....:		646	
Demand for housing	Rental:	412	
	Owner occupied:	1,147	
Government expenditures.....:		$10,131,000	
Government revenues .....:		$12,777,000	
Net Government revenues .....:		$2,646,000	
Civilian employees expected to relocate:		1,559	

```
STANDARD EIFS FORECAST MODEL

Project name:  SVADA Medium Low Intensity

Default price deflators:
   baseline year (ex. business volume) (CPI - 1987)      = 100.0
   output and incomes  (ex b.v.)       (CPI - 1993)      = 126.3
   baseline year (business volume)     (PPI - 1987)      = 100.0
   local services and supplies         (PPI - 1993)      = 115.7
   output and incomes (business volume)(PPI - 1993)      = 115.7

Change in expenditures for services and supplies: $13,625,300
Change in expenditures for local services and supplies: $5,565,725.00 (calculated)
Change in civilian employment: +611
Average income of affected civilian personnel: $34,500
Percent expected to relocate (enter <cr> to accept default):  30%


********** STANDARD EIFS MODEL FORECAST FOR SVADA  **********

Export income multiplier:                    1.6906
Change in local
  Sales volume ..............  Direct:    $21,091,000
                              Induced:    $14,565,000
                                Total:    $35,656,000    (   6.183%)
  Employment ................  Direct:            135
                                Total:            839    (   4.535%)
  Income ....................  Direct:     $1,690,000
                 Total (place of work):    $23,937,000
              Total (place of residence):  $23,937,000    (   3.360%)
  Local population ..................:            388    (   0.988%)
  Local off-base population .........:            388
  Number of school children .........:             76
  Demand for housing .........  Rental:             48
                              Owner occupied:       135
  Government expenditures............:     $1,191,000
  Government revenues ...............:     $1,502,000
  Net Government revenues ...........:       $311,000
Civilian employees expected to relocate:           183
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STANDARD EIFS FORECAST MODEL

Project name:  SVADA Low Intensity Reuse

Default price deflators:
   baseline year (ex. business volume) (CPI - 1987)       = 100.0
   output and incomes  (ex b.v.)       (CPI - 1993)       = 126.3
   baseline year (business volume)     (PPI - 1987)       = 100.0
   local services and supplies         (PPI - 1993)       = 115.7
   output and incomes (business volume)(PPI - 1993)       = 115.7

Change in expenditures for services and supplies: $6,667,700
Change in expenditures for local services and supplies: $2,723,652.50 (calculated)
Change in civilian employment: +299
Average income of affected civilian personnel: $34,500
Percent expected to relocate (enter <cr> to accept default):  30%


********** STANDARD EIFS MODEL FORECAST FOR SVADA  **********

Export income multiplier:                          1.6906
Change in local
  Sales volume ..... Direct:        $10,321,000
                     Induced:        $7,128,000
                       Total:       $17,449,000    (   3.026%)
  Employment ..... Direct:                  66
                       Total:              411    (   2.219%)
  Income ..... Direct:                $827,000
               Total (place of work):  $11,714,000
          Total (place of residence):  $11,714,000    (   1.644%)
  Local population ..................:         190    (   0.483%)
  Local off-base population .........:         190
  Number of school children .........:          37
  Demand for housing ......... Rental:          24
                       Owner occupied:          66
  Government expenditures............:     $583,000
  Government revenues ...............:     $735,000
  Net Government revenues ...........:     $152,000
Civilian employees expected to relocate:          90
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RATIONAL THRESHOLD VALUES

AREA: aggregated

All dollar amounts are in thousands of dollars.
Dollar adjustment based on Consumer Price Index (1987=100).

BUSINESS VOLUME (using Non-Farm Income)

YEAR	Non-Farm income	adjusted income	change	deviation	%deviation
1969	77,040	227,929			
1970	81,145	226,662	-1,267	-2,321	-1.018 %
1971	86,684	232,397	5,735	4,681	2.065 %
1972	96,692	250,497	18,101	17,047	7.335 %
1973	102,896	250,966	468	-585	-0.234 %
1974	107,619	236,525	-14,441	-15,494	-6.174 %
1975	111,008	223,356	-13,169	-14,223	-6.013 %
1976	125,922	239,851	16,495	15,441	6.913 %
1977	128,656	230,154	-9,698	-10,751	-4.483 %
1978	139,095	231,055	901	-153	-0.066 %
1979	147,284	219,827	-11,228	-12,282	-5.316 %
1980	152,253	200,070	-19,757	-20,811	-9.467 %
1981	167,435	199,565	-505	-1,559	-0.779 %
1982	176,369	198,390	-1,175	-2,228	-1.117 %
1983	190,796	208,293	9,902	8,848	4.460 %
1984	213,068	224,755	16,463	15,409	7.398 %
1985	220,237	224,503	-253	-1,307	-0.581 %
1986	228,738	237,034	12,532	11,478	5.113 %
1987	240,999	240,999	3,965	2,911	1.228 %
1988	253,638	243,883	2,884	1,830	0.759 %
1989	267,783	245,672	1,790	736	0.302 %
1990	268,761	234,316	-11,356	-12,410	-5.051 %
1991	281,019	235,359	1,043	-11	-0.005 %
1992	309,662	252,168	16,808	15,755	6.694 %

average yearly change:	1,054
maximum historic positive deviation:	17,047
maximum historic negative deviation:	-20,811
maximum historic % positive deviation:	7.398 %
maximum historic % negative deviation:	-9.467 %
positive rtv:	7.398 %
negative rtv:	-7.100 %

PERSONAL INCOME

YEAR	Personal income	adjusted income	change	deviation	%deviation
1969	144,819	428,459			
1970	151,964	424,480	-3,978	-9,929	-2.317 %
1971	168,444	451,593	27,112	21,161	4.985 %
1972	187,941	486,894	35,301	29,351	6.499 %
1973	204,343	498,398	11,504	5,553	1.140 %
1974	218,264	479,701	-18,696	-24,647	-4.945 %
1975	240,361	483,624	3,923	-2,028	-0.423 %
1976	267,937	510,356	26,732	20,782	4.297 %
1977	275,803	493,386	-16,970	-22,921	-4.491 %
1978	310,182	515,252	21,866	15,915	3.226 %
1979	342,327	510,936	-4,317	-10,267	-1.993 %
1980	355,867	467,631	-43,305	-49,256	-9.640 %
1981	415,539	495,279	27,648	21,697	4.640 %
1982	425,850	479,021	-16,258	-22,208	-4.484 %
1983	418,009	456,342	-22,680	-28,630	-5.977 %
1984	512,240	540,338	83,996	78,045	17.102 %
1985	551,469	562,150	21,812	15,862	2.935 %
1986	558,783	579,050	16,900	10,949	1.948 %
1987	564,013	564,013	-15,037	-20,987	-3.624 %
1988	567,979	546,134	-17,879	-23,830	-4.225 %
1989	607,565	557,399	11,265	5,315	0.973 %
1990	632,004	551,006	-6,393	-12,344	-2.215 %
1991	637,041	533,535	-17,471	-23,422	-4.251 %
1992	694,220	565,326	31,791	25,840	4.843 %

average yearly change:	5,951
maximum historic positive deviation:	78,045
maximum historic negative deviation:	-49,256
maximum historic % positive deviation:	17.102 %
maximum historic % negative deviation:	-9.640 %
positive rtv:	17.102 %
negative rtv:	-6.459 %

EMPLOYMENT

YEAR	Employment	change	deviation	%deviation
1969	16,799			
1970	16,828	29	-97	-0.575 %
1971	16,932	104	-22	-0.129 %
1972	17,119	187	61	0.362 %
1973	17,471	352	226	1.322 %
1974	17,298	-173	-299	-1.709 %
1975	16,754	-544	-670	-3.871 %
1976	17,019	265	139	0.832 %
1977	16,685	-334	-460	-2.701 %
1978	17,028	343	217	1.303 %
1979	17,055	27	-99	-0.579 %
1980	16,507	-548	-674	-3.950 %
1981	16,997	490	364	2.207 %
1982	16,867	-130	-256	-1.504 %
1983	17,565	698	572	3.393 %
1984	18,120	555	429	2.444 %
1985	18,294	174	48	0.267 %
1986	18,298	4	-122	-0.665 %
1987	18,503	205	79	0.434 %
1988	18,792	289	163	0.883 %
1989	19,255	463	337	1.795 %
1990	19,051	-204	-330	-1.712 %
1991	19,014	-37	-163	-0.854 %
1992	19,689	675	549	2.889 %

average yearly change:	126
maximum historic positive deviation:	572
maximum historic negative deviation:	-674
maximum historic % positive deviation:	3.393 %
maximum historic % negative deviation:	-3.950 %
positive rtv:	3.393 %
negative rtv:	-2.646 %

POPULATION

YEAR	Population	change	deviation	%deviation
1969	41,200			
1970	41,000	-200	-83	-0.201 %
1971	41,400	400	517	1.262 %
1972	41,900	500	617	1.491 %
1973	41,700	-200	-83	-0.197 %
1974	41,600	-100	17	0.042 %
1975	42,300	700	817	1.965 %
1976	42,300	0	117	0.278 %
1977	42,600	300	417	0.987 %
1978	42,500	-100	17	0.041 %
1979	42,600	100	217	0.512 %
1980	42,300	-300	-183	-0.429 %
1981	42,100	-200	-83	-0.195 %
1982	41,600	-500	-383	-0.909 %
1983	41,100	-500	-383	-0.920 %
1984	40,500	-600	-483	-1.174 %
1985	40,200	-300	-183	-0.451 %
1986	39,900	-300	-183	-0.454 %
1987	39,300	-600	-483	-1.210 %
1988	39,100	-200	-83	-0.210 %
1989	38,800	-300	-183	-0.467 %
1990	38,600	-200	-83	-0.213 %
1991	38,600	0	117	0.304 %
1992	38,500	-100	17	0.045 %

average yearly change:	-117
maximum historic positive deviation:	817
maximum historic negative deviation:	-483
maximum historic % positive deviation:	1.965 %
maximum historic % negative deviation:	-1.210 %
positive rtv:	1.965 %
negative rtv:	-0.605 %

Source: Bureau of Economic Analysis

APPENDIX K

Public Comments and Army Responses on the Draft EIS

DEPOT DEVELOPMENT COALITION
P.O. BOX 6062
GALENA, ILLINOIS 61036

February 24, 1997

Mr. Glen Coffee
U.S. Army Corps of Engineers, Mobile District
CESAM-PD-E
P.O. Box 2288
Mobile, AL 36628

Dear Mr. Coffee:

Having read and evaluated the Draft Environmental Impact Statement for The Savanna Army Depot Activity our organization has found a variety of concerns and discrepencies that we would like to address at this time.

Following is a list of those concerns:

[1] 1. On page 2-8 of the EIS under the heading PRISON, it states that, "The State of Illinois has expressed interest in constructing and operating a medium-security prison that would house 1,800 inmates and employ 400 personnel." This is not a valid statement as of the current date. This interest was expressed by the State in the Fall of 1995. The prison that was to be sited at that time was sited at Pinckneyville, Illinois. Our members have been told by Mr. Karl Becker, Deputy Director of the Illinois Department of Corrections that the next prison to be sited in this state will likely be a MAXIMUM security facility since such a facility has not been built here in 75 years.

[2] 2. On page ES-1 under PROPOSED ACTION, paragraph 3, it states, "The Army considers the Local Redevelopment Authority's reuse plan as the primary factor in defining reuse scenarios to be considered." The LRA's reuse plan proposes not just one 1,800 bed prison as a possibility but rather a multi-prison site to be placed on the proposed 100 acre site and possibly on adjoining property. No where in the EIS is the impact of such use addressed.

[3] 3. On page 1-4, paragraph 3 addresses concerns about the development of a prison complex at SVADA. The last sentence of this paragraph reads, "This document considers the socioeconomic effects within the socioeconomic region of influence, described in Section 4.14, of construction and operation of a prison at SVADA." If this refers to page 4-14, there is a map on that page. If it refers to section 4.14 on pages 4-56 and 4-57 there is only mention there of economic development unrelated to a prison. If it refers to some other document, what is it?

Response to Comments

Depot Development Coalition, Judy Cherry

[1] The LRA has requested application for a prison to be sited at SVADA. In a response letter from the Illinois Department of Corrections dated 28 February reference is made only to "siting of a new 1,808-bed medium security adult correctional center or a 400-bed juvenile facility."

[2] See response to comment [1]. The final reuse plan proposes only one prison but analyses four sites for siting it. Page 71 of the final plan states: "The concept: a medium-security, state correctional institution housing 1,700 to 2,000 inmates that would be run by the IDOC." Section 5.4 discusses as a function of intensity the potential impacts of siting a single prison at SVADA.

[3] Section 4.14 delineates the region of influence for socioeconomic matters related to disposal and reuse of SVADA. Section 5.4.14 identifies economic consequences and Section 5.4.15 identifies consequences of redevelopment on the sociological environment. The consequences of a prison are not separately identified. Rather, consistent with the methodology explained in Section 3.0, consequences of building a prison are described in terms of intensity of reuse. The economic and sociological effects of construction and operation by the State of a prison at SVADA are included within the range of impacts that could occur. For clarity, the sentence cited in page 1-4 has been revised to limit evaluations to reuse intensity.

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[4] 4. On page 1-3 under SCOPING PROCESS, paragraph 2, The first 2 sentences state,"A public scoping meeting was held June 27, 1996, at SVADA. Display advertisements for the meeting were published in the Savanna Times Journal on June 11 and 18, 1996, and in the Clinton Herald on June 13 and 20, 1996." Why was there no notice of this meeting in any paper distributed in Jo Daviess County even though over 70% of the Depot property lies in this county? The Army seem to constantly want to keep the citizens of Jo Daviess County unaware of what is going on in all processes and actions regarding the Savanna Army Depot.

[5] 5. On page 1-5 under PUBLIC REVIEW OF DRAFT EIS it states, "In addition, copies of the draft EIS will be provided to the Savanna Public Library in Savanna, Illinois; the Hanover Public Library in Hanover, Illinois; and the Galena Public Library in Galena, Illinois." However if you check the DISTRIBUTION LIST on page 7-1 only the Savanna Public Library received a copy. Both Galena and Hanover were overlooked, again an apparent effort to keep the people of Jo Daviess County uninformed.

[6] 6. To once again address the issue of the multi-prison site at SVADA, a full Environmental Impact Statement should be made before the commitment of land to any interested party. The segmentation, as has been done with the 100 acre prison site, is contrary to the requirements of NEPA and the regulations of the Council on Environmental Quality which mandate that all cumulative impacts be considered in a single document. Such attempts to avoid a complete preparation of the Environmental Impact Statements by segmenting large projects into smaller projects (ie. the prison site) is a deceptive strategy which has repeatedly been condemned by the federal courts as contrary to the intent of NEPA.

[7] 7. No where in the Draft EIS is there mention of the endangered species that are known to exist on the multi-prison site.

[8] 8. The prison site is in close proximity to the Primm's Pond wetlands area. The document does not address what impact a 100 acre multi-prison site would have on this area

[9] 9. Once again on page 2-8 in the paragraph headed PRISON, it states, "The footprint for the prison grounds would result in demolition of eight former ammunition storage buildings." No where does this document address the impact of such action. What are these buildings constructed of, what was stored in them and what will be released into the environment if they are demolished?

[4] The Army has in good faith tried to identify appropriate means for keeping members of the public informed of all opportunities to participate in the NEPA process. As a general rule, the Army advertises notice of the Scoping Meeting twice (both two weeks and one week prior to the meeting) in the two most widely circulated papers within the Region of Influence (ROI). Following the Scoping Meeting, the Army included a third newspaper to reach a broader audience within the ROI. Subsequently, notice of the DEIS Public Meeting was advertised in the *Dubuque Telegraph Herald*, the third most widely circulated paper within the region. Publication of the final EIS will also be advertised in the *Galena Gazette*.

[5] In the course of preparing the document an error was made in updating the electronic files and the Hanover Township and Galena Public Libraries were inadvertently deleted from the distribution list. Upon notification of the omission, copies were sent to the two libraries via overnight mail for a morning delivery on the next business day. The electronic files have been updated and the libraries will be included on the distribution list in all future iterations of the EIS.

[6] The Army does not believe this has been segmented in this EIS. The EIS has been written on the entire disposal action. The discussion in Section 5.4.1, under Reuse Scenarios, has been expanded to more clearly explain how particular reasonablely foreseeable actions have been addressed within the intensity-based reuse scenarios. The Army will not transfer any land, including the prison parcel, until the NEPA analysis process is complete.

[7] Figure 4-10 identifies two state endangered plant species, James' clammyweed (*Polanisia jamesii*) and shaved sedge (*Carex tonsa*), within the prison parcel, which is part of the LRA's proposed industrial reuse zone. Under the medium intensity reuse and medium-low intensity reuse discussions (Section 5.4.11), the potential for direct adverse impacts to the state endangered plant species found in the industrial reuse zone are identified.

[8] Under the medium intensity reuse and medium-low intensity reuse discussions, the potential for direct adverse impacts to the wetland area located in the industrial reuse zone are identified. See discussions in Section 5.4.11. For clarification "(Primm's Pond)" will be inserted after the word "wetlands."

[9] See the new discussion at Section 5.4.4 which provides air quality analyses for particulate matter resulting during demolition of structures. Construction of these buildings consists of cast in place concrete flooring,

DEPOT DEVELOPMENT COALITION
P.O. BOX 6062
GALENA, ILLINOIS 61036

While we find other errors and omissions in this document, this covers our groups main concerns. We hope that some action will be taken to address our concerns in the final EIS and that the Army will make some effort to inform, enlighten and consider the citizens of Jo Daviess County in all its decisions rather than trying to "keep us in the dark".

Sincerely yours,

Judy Cherry

Judy Cherry
Chairman

cc. Raymond J. Fatz

structural tile walls, and corrugated cement asbestos panels, ceiling, and roofing. Conventional ammunition, explosives and associated inert components were stored in these buildings. The Environmental Baseline Survey states: "There is no evidence of any hazardous substances having been stored for more than one year, released, or disposed of on the property."

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

IN REPLY REFER TO

April 17, 1997

ER-97/137

Mr. Glen Coffee
U.S. Army Corps of Engineers
Mobile District (ATTN: CESAM-PD-E)
109 St. Joseph Street, P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Coffee:

The Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (EIS) for BRAC 95 Disposal and Reuse of the Savanna Army Depot Activity, Savanna, Illinois. We offer the following comments for your consideration.

General Comments

The Army proposes to transfer the majority of the 13,062-acre installation to the U.S. Fish and Wildlife Service (Service) and the U.S. Army Corps of Engineers. The Service has expressed interest in receiving approximately 9,445 acres into the National Wildlife Refuge System and has prepared a draft conceptual management plan. The Department will thoroughly review all aspects of this proposal before reaching its decision. The Department may request additional information from the Department of the Army (Army), including detailed information about the planned cleanup or remediation of the Depot contamination and unexploded ordnance, in order to insure that the land and waters which may be managed by the Service do not pose significant post-remedial short or long term hazards to fish, wildlife and the visiting public.

The reuse scenarios presented in the draft EIS may affect federally listed endangered and threatened species. Biologists from the Service are in consultation with the Army regarding potential project impacts and possible future encumbrances for the protection of federally listed species. The Service concurs with the steps outlined for Section 7 consultation provided in Army's letter to the Service, dated February 25, 1997. It is our understanding that a detailed description of the status and consultation process for the Depot will be outlined in the final EIS.

[10] Problems of contamination and unexploded ordnance may limit the management of Depot lands that may become part of the National

[10] See revised discussions of ordnance and explosives in Sections 4.9.6 and 5.3.9. The Army looks forward to working with USFWS to determine the levels of cleanup required to ensure a safe environment in the lands to be transferred to other federal agencies. The Army is confident that negotiations will reach agreement on the method, timing, and funding requirements for the Army's transfer of property which will facilitate and support USFWS objectives. The Army will continue to work with USFWS in this important endeavor. The working relationship between the Army and USFWS in protecting federally listed species at SVADA, as well as Army's responsibilities in this process, is outlined in Section 5.1.4, *Threatened and Endangered Species Consultation.*

Wildlife Refuge System. Public recreational use on these lands would be an important refuge objective. The draft EIS does not describe the extent of this conflict or evaluate the seriousness of the impact to land management from regulated hazardous waste sites and unexploded ordnance located within tracts of proposed recreational areas. The need for our agencies to continue to work closely on this important issue and future responsibilities for the Army and other Federal agencies should be explained in the final EIS. The addition of a chart in the final EIS, outlining the overall responsibilities of the Army and the Service, including hazardous and toxic substances and materials, would be of assistance to the affected stakeholders.

[11] The draft EIS does not adequately identify indirect (i.e., reuse) impacts to natural resources that are reasonably foreseeable. The EIS should contain estimates of future impacts to natural resources as related to the probable development trends by non-Army entities. Local agencies and several private parties have indicated their interests and some plans are in advanced stages.

Specific Comments

Affected Environment

[12] The information in Section 4.11.2 under Invertebrates indicates that the only record for the federally listed endangered Higgin's eye pearly mussel in the portion of the Mississippi River near the Depot is from 1972. It should be noted that another specimen of this endangered species was recovered from an area bordering the Depot during a 1990 survey conducted by Dr. E. Cawley, Loras College, Dubuque, Iowa.

[13] The information provided in Section 4.11.3 for federally listed species indicates that the Gray's umbrella sedge is a candidate species. The designation for federally listed candidate species has been changed. This species is no longer recognized as a candidate species by the Service.

[14] The description of sensitive habitats under Section 4.11.4 does not contain an expanded subsection on the river dune community that borders the Mississippi River, similar to the subsections on wetlands, prairie, and savanna. This river dune complex is of considerable significance because no other similar habitat exists in Illinois (based on information available from the Illinois Natural History Survey). It is possibly the only such site along the Mississippi River.

Hazardous and Toxic Substances

[15] The first paragraph of Section 5.3.9, Hazardous and Toxic Substances, indicates that before property is transferred,

[11] The Army continues to assist and support further studies to develop the types of information identified by DOI. The LRA is in the process, with guidance from USFWS, to conduct ecological surveys along the Mississippi River where some of these proposals would occur. As the information is developed the Army would expect additional action in consultation with USFWS. See Section 5.1.4 for a more detailed discussion of the consultation process.

[12] Reference to the collection of a Higgins' eye pearly mussel specimen in 1990 has been added to Section 4.11.2 (Invertebrates subsection).

[13] Designation of Gray's umbrella sedge as a candidate species has been removed from the document.

[14] Description of river dune complex has been added to Sections 4.11.1 (Vegetation) and 4.11.4 (Sensitive Habitats).

[15] The covenant under CERCLA section 120(h)3 is recited at Section 2.3.2. The covenant applies to those instances of sale or transfer of title out of the government. It does not apply to transfer among federal agencies. In the later case, agencies may negotiate terms and conditions of transfer to include: interim plans, and protective measures or institutional controls. Negotiations between the Army and USFWS for the transfer of the property requested by USFWS have not yet occurred. The Army fully anticipates that the agencies will reach agreement on all steps necessary to protect human health and public safety. Details on such steps are not yet available but will be developed in coordination with the USFWS.

necessary remedial actions for hazardous material must be completed or remedial action in place and proven to be operating effectively. This section should also discuss interim plans, protective measures, or institutional controls that will be used to protect human health and public safety.

[16] Risks posed by unexploded ordnance and contingency planning to deal with these risks are not discussed after the Section on Affected Environment (Section 4.9.6). The concerns and limitations imposed on new land owners from any unexploded ordnance that is not found in the screening processes should be addressed in Sections 5.3.9 and 5.4.9, Hazardous and Toxic Substances.

Critical Habitat

[17] The term "critical habitat" is used several times in the discussion of endangered species in Section 5.3.11. There is no critical habitat designated for the Higgin's eye pearly mussel. Nor is there any "essential habitat" around the Depot for the Higgin's eye pearly mussel, as defined by the recovery plan for the species. There is suitable habitat for this mussel species in the Mississippi River bordering the Depot property and in the Apple River side channel which is within Depot property. The terms "critical habitat" and "essential habitat" have specific definitions and usages under the Endangered Species Act. We recommend that these terms not be used in this case.

Reuse Alternatives

[18] There may be long-term water quality impacts in addition to those addressed in Section 5.4.7. Potential impacts that should be discussed in this section include off-site impacts from barge fleeting operations, erosion to shorelines from commercial and recreational water craft operations, and concerns over chemical spills in an area surrounded lands intended for wildlife and recreational use.

[19] The various parts of the section on Infrastructure (5.4.8) do not, but should, address infrastructure compatibility and conflicts between economic development and public recreation reuse scenarios. The final EIS should identify any potential infrastructure encroachment on undeveloped lands that will be used for public recreation. Increased transportation, utilities and wastewater treatment operations may all have short-term and long-term impacts on the function and structure of lands managed for the National Wildlife Refuge System.

[20] Section 5.4.11 (Biological Resources) should contain a subsection on effects to the above mentioned river dune complex and acknowledge the Army's interim restrictions that may be set up

[16] See the added information on UXO in Section 4.9.6 and Section 5.3.9. The sections 4.9, 5.2.9, 5.3.9, and 5.4.9 are now under the heading "Hazardous and Toxic Substances and Ordnance and Explosives."

[17] All references to "critical" habitat for the Higgins' eye pearly mussel have been deleted from the document.

[18] Additional adverse impacts to water quality have been included in Section 5.4.7.

[19] Language has been added to section 5.4.8 to address the concerns identified in this comment.

[20] See section 5.1.4, *Reuse Limitations and Obligations.*

for the dune lands in order to avoid impacts to endangered species.

Summary

The Department views the use of encumbered disposal, if properly developed, as a reasonable alternative to protect natural resources and to avoid impacts to federally listed endangered and threatened species. The Department will carefully review all aspects of this proposed action before reaching its decision on the proposed transfer of lands into the National Wildlife Refuge System. [21]

The Service contacts for continued coordination on endangered species, natural resources, and planning issues are Mr. Richard Nelson, Supervisor and Mr. Mike Coffey, Biologist, U.S. Fish and Wildlife Service, 4469 48th Avenue Court, Rock Island, Illinois 60201, telephone 309-793-5800. For coordination on National Wildlife Refuge issues contact Mr. Ed Britton, District Manager, Savanna District, Upper Mississippi River National Wildlife and Fish Refuge, Post Office Building, Savanna, Illinois 61074, telephone 815-273-2732.

We appreciate the opportunity to provide these comments.

Sincerely,

Don Henne

Don Henne
Regional Environmental Officer

c:\wp60\er97-137.fin

[21] Comment noted.

Eagle Nature Foundation, Ltd.

300 East Hickory, Apple River, IL 61001
Phone 815-594-2306 Tax-exempt No. 36-4015400

March 14, 1997

Glen Coffee
Corps of Engineers, Mobile Dist.
Attn: CESAM-PD-E
PO Box 2288
Mobile, Alabama 36628-0001

Dear Sir:

The Eagle Nature Foundation's official position on the SAD Draft EIS is:

"We urge you to not be in a hurry to get the final copy of the EIS prepared, but to make it a full in depth statement of what will be the environmental impact of not just the disposal of the SAD by the Army but, what the impact will be, of each of the potential proposed reuses of the property. If it takes another 6 months or more, so be it, because it will take at least another 40 years for the Army to clean up the environmental mess that it has created on the site." [22]

It will be a lot easier to address these issues now, than it will be to address the inadequacies of this EIS in court. To be adequate this EIS should individually address each of the 234 contaminated sites on the SAD, plus any further sites which may come to light in the very near future. Each of these sites should be discussed as per the contamination's potential health hazard, and how it will affect the potential reuse of the site as proposed by the LRA. In addition, this EIS should analyze each potential reuse as proposed by the LRA and individually address each of the nine Acts and six EO's that must be considered before such reuse can be implemented.

The low level radioactive ammunition storage which has been conducted on the depot has been glassed over as being of little concern. I want this storage compared to the potential low level nuclear dump which the state of Illinois is planning for some place in Illinois. The criteria for this low level nuclear dump is such that the SAD could never be considered as a site, and yet, much of what would be stored in this proposed dump has a lower level of contamination than the ammunition which has been stored at SAD. [23]a

Because of the close groundwater supply, sandy soil and proximity to both the Mississippi and Apple Rivers perhaps the SAD should never have been used for the storage of some of these sources of contamination in the first place. Members of the public never had any input as to what was done while the Army owned this land, but now as the Army is leaving we are involved, after the fact, as we try to clean up this contamination which the Army will be leaving behind as it closes the depot in the year 2000. [23]b

Response to Comments
Eagle Nature Foundation, Terry Ingram

[22] The Army is examining the potential environmental impacts associated with disposal and reuse of SVADA. The Army is also addressing hazardous waste site contamination, which is the result of activities at the installation since its establishment. While the scope of the environmental impacts analysis process does not include final determinations concerning remediation of hazardous waste sites, the Army is fully committed to remedying the contaminated sites as required by CERCLA. The cleanup process is described in the EIS in Sections 1.3.7, 2.3.2 and 4.9.

[23]a Section 4.9.5 of the EIS summarizes the Army's investigatory efforts and understanding of radiological materials at SVADA. As noted in Section 5.3.9, the Army is committed to taking those steps needed as required by Nuclear Regulatory Commission regulations.

[23]b See response to comment [22].

Page 2

A few things which need to be addressed in greater detail are:

[24] 1. Prison site - What, where, how and who foots the bill for the septic waste produced? How will the concrete and blacktop covering this 100 acres affect the water in Prim's pond just north of the site?

[25] 2. How will the construction and operation of a marina affect the quality of water and the biological environment of the site. How will the Wetlands and Clean Water Act affect this operation?

[26] 3. Somewhere the affect of a "dirty" transfer for each of the reuses has to be adequately addressed. If the Army is to transfer most any of the property to the LRA for potential reuse, it will have to be as a "dirty" transfer. How will this affect each of the potential reuses as presently planned by the LRA?

[27] 4. In section 4.9.8 you address spills, many of them are so minor that they are almost laughable, and yet you ignore the dumps or burials, such as the burial of as many as 14 semiloads of insecticide in 1950 and the burial of mustard gas in the early 1950's. I am not talking about the mustard burn area we have been told about. In the 1950's leaking mustard gas containers were repackaged for burial. They would not be repackaged if they were just going to be burnt. Where were they buried and are they now starting to leak? Until the location of this burial is located we should be very careful about what activity we allow to take place in the possible area of the burial?

[28] 5. The landfill in H area as discussed in 4.8.4 is presently not leaking, if we are to believe the statements presented. When will it start leaking? When it does, what will it be leaking? How will it affect the neighbors when it does start leaking? This must be addressed as it may affect the potential for houses along that section of the River.

[29] 6. The Stables Landfill is not adequately addressed. What did Dames and Moore find in their study? What was it used for and what is there now? Even though we have no disposal records, their study should have determined these facts.

[30] 7. Your discussion of the radioactive materials in section 4.9.5 is not quite accurate, or at least does not match the tables which you refer to. You might recheck your numbers there. I would be very interested for your explanation of why the numbers are not in agreement.

[31] 8. In section 4.9.6 you state that "A total sweep of the impact area testing range is scheduled to be completed by 2002." How can you even think of making such a statement. There is no money for such a sweep and there is none even being planned. The cost for the sweep for the prison site cost over $2500 per acre and proper sweeps will run closer to $5000+ per acre. The Army has so many other contaminates which need to be addressed, this will not be done for many years into the future, especially if the budgets continue to get cut in Washington.

Page 3

[24] The new user would be responsible for solving the issue of "... what, where, how, and who foots the bill for the septic waste produced." Development could have a potential impact on Primm's Pond. Whatever the future use should be, the action will be subject to applicable to controls and mechanisms.

[25] A description of the potential impacts associated with the operation of a barge terminal or marina on water quality has been added to Section 5.4.7. Impacts, both direct and indirect, of the construction and long-term operation of a barge terminal or marina on biological resources are described at Section 5.11.4. Any proposal to construct a barge terminal or marina will be evaluated under appropriate regulatory programs.

[26] Absent using the new Section 334 disposal authority (see footnote 2 in Section 2.3.2), property will either be transferred as uncontaminated parcels or all necessary remediation will be in place prior to transfer.

[27] Tables 4-2a and 4-2b identify the sites of concern that remain to be addressed under the Army BRAC IRP at SVADA. Remedial actions are on-going. Additional evaluation is required on most of the sites to determine if remediation is warranted. The Army's progress in these efforts will be documented in the Base Cleanup Plan, which is under development. Information in this plan will be made available to the LRA and the community.

[28] The landfills were closed in accordance with Illinois EPA requirements to include post closure monitor well sampling.

[29] The Stables Landfill is cited in Table 4-2a as Category 6 (storage, release, or disposal of hazardous materials or petroleum products has occurred and no remedial actions have been taken). As with all Category 6 sites, additional evaluation is required to determine if remediation is warranted.

[30] The text reports what was contained in the document *(Draft Industrial Radiation Historical Data Review No. 27-MH-4554-H-96, Savanna Army Depot Activity, Savanna, Illinois, 12 February - 28 May 1996)* cited in Section 4.9.5. Since preparing the DEIS, the Army has updated a portion of that document to reflect the list of individual buildings/sites in Appendix D. The numbers in Section 4.9.5 have since been updated in the EIS.

[31] See the added information on UXO in Sections 4.9.6 and 5.3.9. Section 4.9 and the corresponding sections in 5.0 are now under the heading "Hazardous and Toxic Substances and Ordnance and Explosives." Upon

[32] 9. In section 4.11.1 you discuss the bottomland hardwood forest by listing only a couple species. I believe if you will address the timber sales which have been conducted by the SAD over the past 20 years, your analysis of the hardwood in the bottomlands will be much different.

[33] 10. In your discussion of mammals on the Depot you do not mention beaver. This mammal is playing havoc with the reforestation of the trees in the bottomland. It is economically the most destruction mammal in the SAD. Its population must be controlled if certain activities are to be conducted in those bottomlands.

[34] 11. The location of the freshwater mussel bed is not stated in your report. Its location is important to the potential reuse of the shoreline, whether it be for a marina, barge loading facility, or even houses.

[35] 12. Section 4.11.3, as of March 15, 1997, four bald eagle nests are on the property and three of them are actively being used. (Personal observation) For your information, there are three known bald eagle roosts in the bottomlands of the Depot. (See my past studies)

[36] 13. Will the two plant species,(4.11.3) found nowhere else in the state be impacted by any of the potential reuses of the area?

[37] 14. On page 5-6 you state that "approval by the USFWS would not be required for construction on the remaining one mile of shoreline(contiguous with the main channel of the Mississippi River) that will be conveyed to the LRA." This statement is very misleading. Approval from the USFWS will be needed if any proposed activity could impact the bald eagles using the area or if Higgin's pearly eye mussels are in the area, or if any other endangered species are determined to be using the area.

[38] 15. You state on 5-6, "this EIS identifies mitigation actions that subsequent managers or owners could implement to ameliorate adverse impacts." This statement should be implemented for each of the proposed reuses as determined by the LRA.

[39] 16. In 5.3.13 you state, " The restoration of Prim's Pond is the only ongoing Legacy Resource Management project on SVADA, and it is subject to a protective wetland encumbrance based on Section 404 of the Clean Water Act." How will the wash off from the Prison Site affect this Pond? And how is the prison site adjacent to Prim's Pond affected by this Act?

[40] 17. Your projections on page 5-21 are almost laughable. If we come even close to having enough industry to have 5,196 jobs, and 800 houses with 2,000 residents on the 3,000 acres of the LRA portion of the Depot, you do not even start to address how that population will affect the area. The reality of your nice numbers are that we would be moving 20 to 30 cars per minute on this one road coming into the Depot. To accomplish this feat we would have to have some major road reconstruction done at the site.

determination of the UXO removal actions needed, either the appropriate removal will be accomplished by the Army or appropriate restrictions or agreements will be made with the transferee prior to transfer.

[32] Listing all plant species found in the bottomland hardwood forest is unnecessary to sufficiently characterize the habitat type. For this reason, only dominant species are mentioned. Addressing past timber sales was not considered relevant to the analysis.

[33] Beaver has been added to the list of mammals provided in Section 4.11.2. The USFWS will be responsible for managing beaver populations in the bottomlands upon transfer of the property.

[34] Location of the freshwater mussel bed adjacent to the depot has been added to Figure 4-10 (Sensitive Species).

[35] Comment noted.

[36] Both of the plant species identified at SVADA that have been found nowhere else in the state of Illinois, the purple rock cress (*Arabis divaricarpa*) and whitlow grass (*Draba nemorosa*), are located within the LRA's portion of the depot. It is very possible that either or both of these species could be impacted by a future reuse. Purple rock cress is located in the southeastern portion of the depot designated by the LRA reuse plan as "industrial," and whitlow grass is located along the river dune in the area designated for housing. Neither species is located in the proposed prison site. Potential impacts to all state-listed plant species are described in the first paragraph of Section 5.4.11.

[37] Text at Section 5.1.4 *Reuse Limitations and Obligations* (*Authority to Grant Uses*) has been amended to indicate that reviews of biological species will be conducted when appropriate.

[38] The Army's identification of mitigation actions that the LRA might undertake reflects its commitment to environmental protection, even recognizing that the Army is without authority to enforce these mitigations. The Army would expect that the LRA and other entities participating in redevelopment would implement site specific mitigations as a matter of best management practices.

[39] Discussion of potential impacts to Primm's Pond resulting from construction (i.e., increased impervious surface area) in the industrial and residential areas adjacent to the wetland has been added in Section 5.4.11.

[41] 18. It is nice and showy to show your different impacts but somewhere we have to also be practical and face the reality of how the environment is going to be affected. Then on 5-26 you even expand the employee base to exceed 5600 persons. by what reasoning and for what purpose?

[42] 19. You discuss how the total number of people from even a prison will exceed the capacity of the septic systems now in place. However you do not add the extra problem that exists which is how will such septic waste and industrial waste that is created will be handled with a sandy soil, ground water within 25 feet of the surface and a river on each side of the area. I realize as you state that that is not the Army's problem. But it is important to everyone who is considering the reuse of the Depot, and that these touchy issues must be not just considered but actually solved. And which county will be responsible for the financing of such a treatment plant?

[43] 20. In 5.4.10 you mention that a barge terminal may require permits from the Army Corps for the fill of wetlands. What is the location of these wetlands that would need to be filled?

[44] 21. If for some reason the Army should maintain the property in caretaker status to the extent provided by Army policy and regulations, we, the public need to know exactly what this means before we can even consider it as an alternative. (page 5-45) Could some of these be explained, especially the important ones?

[45] 22. On page 5-50 you show that Medium Intensity Direct and Indirect will both have a significant postive effect on the Sociological Impacts of the area. Please explain how this is possible, when we know that increased populations have a very detrimental impact on the sociological reactions between many different species, whether they be lab rats or humans.

[46] 23. On page I-2 you state, "The percentage allowances are arbitrary, but sensible." Sensible to whom? They don't seem so sensible to me. In the next sentence you claim that "economic growth is beneficial." Beneficial to whom?

[47] 24. On page I-3 for your EIFS model you used 1987 as a baseline year for your comparisons. Why? Why not the year that the Army decided to close the Depot so we are comparing apples to apples. Why chose a year 10 years ago, when the Depot was in full operation? If we used 1994, your figures would not be as impressive.

I hope that you do address all of the above concerns, as you stated you would during the public comment period. The future of this area is very dependent upon the proper reuse of this Depot, in a manner that will not pollute it as much as the Army has during the past 80 years.

Sincerely,

Terrence N. Ingram, President
Eagle Nature Foundation, Ltd.

[40] These numbers represent a level of medium intensity, the analysis of which does not mean that the Army supports this level of buildout or believes that it will be achieved. Section 5.4.8 identifies the type of road improvements that would be required with the level of traffic predicted to occur with that particular reuse scenario.

[41] The text has been amended at Section 5.4.5 to reflect "nearly 5,200" rather than "exceed 5,600."

[42] As specifically noted in Section 5.1.4, the Army is not the proponent for future activities on SVADA lands. Accordingly, the Army must defer to those entities responsible for the future actions. One of many beneficial effects derived by the Army's examination of potential environmental impacts associated with reuse is the exposure of problems for which a community may have to develop appropriate solutions. The local community will be responsible for identifying and pursuing appropriate infrastructure solutions to facilitate reuse.

[43] The wetland resource associated with the proposed barge terminal is shown in Figure 2-3.

[44] A description of actions associated with caretaking of the property until disposal is provided in Section 2.3.1. Actions that the Army would take to preserve and protect the property during caretaker status are indicated in Section 3.2.3.

[45] The rationale for the Army's conclusions as cited are provided in Section 5.4.15. That text addresses sociological environment impacts. Potential impacts on biological resources are addressed at Section 5.4.11.

[46] Historically, managed economic growth has been viewed as beneficial. On page 2 of Appendix I, the Army has noted divergence from that viewpoint. The Army follows the President's lead to promote economic redevelopment of communities that have suffered base closures.

[47] The EIFS model uses baseline data for the Consumer Price Index (CPI) and Producer Price Index (PPI) for the base years of 1987 and 1993. These data are part of the model itself, not part of the data inputs the Army is using. Use of past-year data, as opposed to those more current, is simply a limitation of the model at this time.

Friends of the Depot
P.O. Box 261
Galena, Illinois 61036

Working for Thoughtful Redevelopment of the Savanna Army Depot

March 18, 1997 Via Facsimile and U.S. Mail

Mr. Glen Coffee
U.S. Army Corps of Engineers, Mobile District
Attn: CESAM-PD-E
P.O. Box 2288
Mobile, Alabama 36628-0001

Re: Draft Environmental Impact Statement for BRAC 95 Disposal and Reuse of the Savanna Army Depot Activity, Savanna, Illinois

Dear Mr. Coffee:

We have reviewed the Draft Environmental Impact Statement for BRAC 95 Disposal and Reuse of the Savanna Army Depot Activity, Savanna, ("DEIS") and would like to forward to you, in no particular order, the following comments.

[48] One general comment is that the DEIS is too vague regarding what the Army will do when it disposes of the property. The DEIS is replete with instances which, in effect, state that the Army "could" or "might" impose some restriction or encumbrance upon transfer. To cite just a few examples, see pages ES-3 and ES-4 which discuss the Army's mitigation responsibility and permit requirements. We would argue that the Army not only *could* but *must* "... prior to disposal, complete cultural resource surveys of the SVAD LRA parcel ..." Similarly, in reference to biological resources, we presume the Army *must* impose "operational controls ... to minimize any adverse effects ... on sensitive biological resources." A further example on page 2-9 states, "[t]ransfer or conveyance of the SVADA property following closure *could* [emphasis added] be subject to encumbrances. These could include unexploded ordnance (UXO), wetlands, historical resources, endangered species, ... and remedial activities." On page 3-3, the DEIS states that the "presence of federally or state listed threatened or endangered species of wildlife or plants *may* [emphasis added] constrain unlimited use of property." There are many, many other examples where the DEIS phrases things in the subjunctive, rather than stating affirmatively what action the Army will take. The DEIS should outline what the Army will do when it disposes of the SVADA.

Response to Comments

Friends of the Depot, Harry Drucker

[48] The purpose of the EIS is to identify potential impacts of proposals and associated mitigations to ameliorate those impacts. The Record of Decision will determine which mitigation measures and encumbrances will be adopted by the Army. Additional discussions have been added to the document to further explain the Army's limitations in identifying encumbrances at this time. These additional discussions also identify the processes the Army will follow prior to disposal to specify the exact nature of any encumbrances to be placed upon individual parcels.

Friends of the Depot

Working for Thoughtful Redevelopment of the Savanna Army Depot

We believe that in instances where the Army has sufficient information to determine that it <u>will</u> impose use restrictions or encumbrances to preserve resources, the DEIS should state this plainly. In instances where the Army has insufficient information to determine use restrictions or encumbrances, the DEIS should state this plainly also. In the latter case, the DEIS should then outline what surveys or other studies it will conduct to obtain the necessary information and, further, outline what the Army <u>will</u> impose in the way of use restrictions or encumbrances based on the information gathered from the studies.

We believe there are many cases where the Army already has sufficient data to impose use restrictions, easements or encumbrances on land it will convey or transfer. In such cases, the Army should impose permanent encumbrances prior to leasing or transfer. First, for example, pursuant to *Executive Order 11990, Protection of Wetlands*, the Army should encumber lands north of the Primms Pond area to protect it from polluted runoff and siltation. Second, while we will comment below that nothing should be constructed on Site # 3 (proposed prison site), if something is ever constructed there, the Army should also encumber Site # 3 to limit the adverse effects of noise and light on sensitive biological resources. Third, the DEIS mentions that the U.S. Fish & Wildlife Service ("USFWS") retains a reversionary interest in J Area, but it does not mention the use restrictions for J Area negotiated between the USFWS and the Savanna Army Depot Local Redevelopment Authority ("LRA"). Those use restrictions must be included in any lease or transfer of J Area. Fourth, on page 5-6 the DEIS discusses mitigation. The Army should require, as a condition of transfer or conveyance to future owners, that all mitigation efforts identified in the DEIS which are relevant to the parcel being conveyed or transferred be completed. Fifth, the DEIS notes on page 5-9 that "[a]dditional adverse impacts on wetlands would be expected under caretaker status if cattle continue to use and disturb these sensitive habitats ..." This being the case, the Army should immediately take action to prevent cattle from gaining access to the area near the high sand banks along the Mississippi River and anywhere else cattle would have an adverse impact.

[49]

For the following reasons, we believe nothing should be constructed on Site # 3. One, the DEIS fails to mention that Site # 3 is included in the list of "significant natural areas" prepared by the Illinois Department of Natural Resources ("IDNR"). This omission should be corrected. Two, the DEIS states on page 4-48 that "[w]hile prairie and savanna ecosystems dominated the landscape of

[50]

[49] See response to comment [48]. The depot will change the grazing contract to reduce the number of cattle allowed to graze in the northern portion of the high sand banks area. The Caretaker Plan is being reevaluated to determine the feasibility of eliminating the cattle grazing program entirely. Text at 5.2.11 has been revised to reflect further review of the cattle grazing lease program.

[50] The Illinois Department of Corrections has identified site #3 of the four possible locations for a prison facility as its preferred site. In prior coordination (separate and distinct from this EIS) concerning site selection for the prison, the Department of Natural Resources has concurred that site #3 would have the least impact of the sites identified (Flattery, personal

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pre-settlement Illinois, it is estimated that these communities now occupy 0.1 percent and 0.0004 percent of the state, respectively .... It is also estimated that of the 253 prairie sites identified by the Illinois Natural Areas Inventory, 83 percent are smaller than 10 acres and 30 percent are smaller than 1 acre." Site # 3, which is 150 acres, is part of "the largest contiguous tract of sand prairie/sand savanna remaining in the state. [Furthermore, it is part of] one of the largest remaining natural grasslands in the Midwest." In its discussion of the impact proposed alternative uses would have on biological resources and ecosystems, the DEIS states on page 5-4, that the "effect of an alternative on biological resources and ecosystems could be significant if it would result in the disruption or removal of any federally listed endangered or threatened species, or its habitat, migration corridors, or breeding areas. The loss of a substantial number of individuals of any plant or animal species (sensitive or nonsensitive species) that could affect the abundance of a species or the biological diversity of an ecosystem beyond normal variability could also be considered significant. The measurable degradation of sensitive habitats, particularly wetlands, could be significant." The IDNR has identified numerous listed species on Site # 3. Site # 3 is rare because it contains a rare ecosystem and is 150 acres. Site # 3 is even more unusual because it is part of a much larger whole. There are many other sites on the Savanna Army Depot where construction could take place without damaging such a rare ecosystem. In our opinion, the DEIS is wrong not to clearly state that any construction on Site # 3 would have a significant impact on an extremely rare and critical ecosystem. The significance of the negative impact resulting from construction on Site # 3 is plainly clear from information contained in the DEIS, and as a result, the DEIS should be amended to reflect this.

[51] Continuing our comments on the DEIS, we would like to point out that in certain places where the DEIS mentions encumbrances, it raises a question regarding whether the encumbrances will be perpetual or only temporary. For example, on page 3-4 in its discussion of historical resources, the DEIS states, "[i]f the new owner(s) choose to lessen or remove the deed restrictions requiring preservation, the deed will delineate a process ... for mitigating the adverse effects of the proposed undertaking." On the other hand, on page 3-5 the DEIS mentions "[t]wo perpetual right-of-way easements..." Consequently, we have some concerns regarding whether certain encumbrances will be permanent. Please tell us what easements, use restrictions and encumbrances placed on deeds and titles of transfer and conveyance by the Army will not be

communication, 1997). Section 5.4.11 clearly predicts that medium intensity reuse, which includes construction of a prison, could result in both short-term and long-term significant adverse impacts on biological resources. It is also stated in Section 5.4.11 that the proposed prison site has been identified as containing portions of an IDNR-designated significant natural area.

[51] Please see response to comments [47] and [48].

Friends of the Depot

Working for Thoughtful Redevelopment of the Savanna Army Depot

permanent and why.

[52] Please note that the map contained in Figure 2-3 on page 2-7, referred to as the SVADA Reuse Plan is not the same as the map contained in the Savanna Army Depot Reuse Plan. The map in the DEIS shows housing, as indicated by the "Northern Shinske Road Area," directly to the northwest of the area indicated as "Prison Site." On the Savanna Army Depot Reuse Plan the area directly to the northwest of the "proposed Prison Site" is the "Primm's Pond Area."

[53] The Army has made little to no evaluation of concerns raised by the public during the Scoping Process. During the Scoping Process the Army received numerous comments from the public. Those comments are highlighted in section 1.3.3 of the DEIS. After listing the comments, the DEIS refers to later sections of the DEIS in which the comments are discussed. However, in most instances the comments are not addressed by the DEIS. For example, on page 1-4 the DEIS states, "This document considers the socioeconomic effects within the socioeconomic region of influence, described in section 4.14, of construction and operation of a prison at SVADA." We can find no such discussion anywhere in the DEIS. Also on page 1-4, in response to comments submitted as part of the Scoping Process, the DEIS disposes of the comments as follows: "These matters are assessed in Section 5.0, where adequate data permit informed estimates of potential impacts." Since adequate data exist to perform such estimates, we believe the authors of the DEIS should perform those estimates and include their conclusions regarding such estimates in the DEIS. In short, by merely listing in the DEIS the comments raised during the Scoping Process, the Army has not responded to them. The army should respond to them.

Thank you for considering and responding to our comments.

Sincerely,

The Friends of the Depot

Harry W. Drucker
Director

HWD/sw

Our Mission: To support and promote economic redevelopment of the Savanna Army Depot in a manner compatible with preservation of the natural and cultural resources.

[52] The map shown in Figure 2-3 has been corrected, and a copy of the SVAD LRA's map has been included in Appendix B.

[53] As the commenter noted, issues raised during the scoping process are described in Section 1.3.3 of the EIS. Throughout Section 5.0, the Army has considered the broad listing of topics recited in the scoping process discussion. Most of the specifically identified topics relate to biological resources, concerning which the Army estimates that medium-low and medium intensity reuse scenarios would result in significant adverse impacts.

James L. Rachuy, Chairman
11219 E Stockton Road
Stockton, Illinois 61085
815-777-9525 (9599 fax)

SVAD LRA Environment Committee

March 18, 1997

Mr Glen Coffee
US Army Corps of Engineers, Mobile District
PO Box 2288 (CESAM-PD-E)
Mobile, Alabama 36628

Dear Mr. Coffee:

Subject: SVAD DEIS, LRA-ENV review

The Environment Committee of the SVAD Local Redevelopment Authority (LRA) has carefully studied the *SVAD Draft Environmental Impact Statement* (DEIS) recently prepared by your office. Locally, we have also sponsored several public forums designed to elicit a community response to this document.

The following is the Committee's response to your DEIS. It represents the views of its members and others in the community. It is composed of three parts:

- a cover sheet containing introductory information (the present text)
- an "Issues List" which discusses the Committee's general concerns
- and an "Errata Sheet" which deals with simpler matters

Although not contained within the body of this letter, the "Issues List" and "Errata Sheet" are to be considered an integral part of the Committee's response.

Sincerely,

James L. Rachuy, Chairman

JLR/amd
Cc: John Alesandrini, Ed Britton, John Clark, Phil Cray, Arlen Dahlman, Harry Drucker, Preston Duncan, Judy Gratton, Gene Gray, Bill Handel, Steve Haring, Dick Harmet, John Ivens, Randy Nyboer, Bob Speaker, Daryl Watson.

March 15, 1997

Issues List

- The SVAD DEIS is vague.
  - p. 2-9, ¶ 7: "Transfer or conveyance of the SVADA property following closure could be subject to encumbrances. These could include...". NEPA requires the Army to present for public review its evaluation of the environmental impacts of its actions and the mitigation measures it will use to limit those impacts. This document does a credible job of describing impacts, but is so vague on mitigation as to preclude any genuine review by the public. [54]a
  - p. ES-3, ¶ 3: "...there are several steps and minor actions that the Army could take to assist in lessening any future impacts upon disposal." But the succeeding list of actions referenced by this statement are actions that the Army has publicly stated that it will take. This gives the impression that the document is intentionally vague. [54]b
  - p. 3-4, ¶ 4: "...the Army may impose restrictive covenants prohibiting land uses that would eliminate or degrade wetlands. Depending on proposed land use, such covenants could also impose a requirement for buffer zones adjoining wetlands." This EIS must describe the encumbrances to be used in sufficient detail to show their probable effect. Otherwise, the Army's chosen alternative "encumbered conveyance" will be too vague to meet the NEPA requirement to present the chosen alternative to the public for review. [54]c
- The SVAD DEIS is arbitrary.
  - p. ES-3, ¶ 4: "...obligations concerning natural and cultural resources would be imposed as a result of the Army's determination of the applicability of an encumbrance." Such a "determination" clearly requires specific knowledge about the presence of a resource. If the Army does not know what the resources are and makes no effort to determine what they are, then it can only arbitrarily assign encumbrances to parcels. [55]a
  - p. 1-4, ¶ 2: "...impacts on threatened or endangered species, especially bald eagle nesting and roosting..." But the Army does not know what the winter roosting habits of the bald eagle are at the depot. Clearly, the Army is obliged to learn the location and extent of federally-listed biological resources at the depot and base its determinations on that information. Indeed, its determinations must be based on such information or risk later being judged arbitrary and capricious. [55]b
- The SVAD DEIS suggests that others do what only the Army can do.
  - p. ES-5, ¶ 5: "Operational controls could also be applied to minimize any adverse effects of noise and light on sensitive biological resources." But for projects beyond the operational control of local authorities, as for example a state prison, the only way to effect such controls is for the Army to require them. [56]

[54]a Encumbrances are a means by which the Army can sustain environmental values and, as such, represent a form of mitigation because their use can reduce or avoid the adverse impacts of certain types of actions. Section 3.2.1 identifies potential encumbrances in a general fashion that could be applicable to disposal of the installation. See also response to comment [48]. Section 5.5 summarizes mitigation actions appropriate to caretaker status, disposal, and reuse. The measures identify specific areas for which the Army will continue to expend funding and management focus, and they indicate specific ends sought by mitigation efforts (e.g., prior to final disposal, complete cultural resources surveys on the SVAD LRA parcel).

[54]b The sentence in the Executive Summary concerning mitigation responsibility and permit requirements has been amended to provide for the "... several steps and minor actions that the Army would take." This EIS is not the only means by which Army officials have announced the intended measures to the public.

[54]c See response to comment [48].

[55]a. Prior to disposal the Army will obtain relevant information needed to protect natural and cultural resources as required. If encumbrances are appropriate they will be applied. With the EIS, the Army has provided the public and future users of the property information on the Army's procedures and potential mechanism for maintaining environmental resources. For instance, Section 5.4.12 refers the reader to Appendices H and I, which contain specific information on the nature and application of this type of encumbrance.

[55]b. The issue of threatened and endangered species, including bald eagle nesting and roosting, was identified during the scoping process as a significant concern by the Friends of the Depot. This issue has been addressed in Section 5.1.4, which identifies the timing for conduct of formal consultation agreed to by the Army and USFWS. Correspondence between the Army and USFWS on this issue is provided in Appendix E.

[56] Limitations relevant to the Army's ability to ensure mitigation actions are addressed in Section 5.1.4. Activities involving noise, traffic, air quality, and building codes are the responsibility of designated federal and state agencies.

March 15, 1997

Issues List

- The SVAD DEIS is incomplete.
  - p. 1-2, ¶ 5: "Other federal agencies will independently conduct an environmental impact analysis of proposed uses, if required, following transfer of property to them." But what about impacts from readily foreseeable actions taken by state, local or private agencies? Given the following,
    - p. 2-1, ¶ 1: "Redevelopment by others is a secondary action resulting from disposal."
    - p. 2-3, ¶ 5: "The Army has considered the SVAD LRA's reuse plan as the primary factor in defining reuse..." [57]
    - p. 3-7, ¶ 2: "Council on Environmental Quality regulations require evaluation of reasonably foreseeable actions, without limitation on the party conducting them, and evaluation of consequent environmental impacts."

  this EIS must consider the impacts of all non-federal parties (where no separate impact analysis is required) or be judged incomplete.

- The Environment Committee would suggest that the following types of encumbrances, not mentioned by the SVAD DEIS, are required to meet the Army's obligations.
  - p. 1-14, ¶ 4: "to the extent practicable, federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners...". Executive Order 13007 requires an easement be provided to ensure protected religious use of all archeological sites and the entire depot shoreline. [58]
  - An easement is required to ensure private access to the "Beatty Creek Area", an LRA property which will be completely surrounded by federal land.

[57] The Army has consulted with the CEQ, EPA, and other federal agencies in developing its methodology for conducting environmental impact analyses of BRAC actions. The methodology employed in this document has been concurred with by those agencies as providing satisfactory examination of potential impacts, including those related to reuse of property disposed of by the Army. A copy of the Army's guidance on the procedures, *Base Realignment and Closure Manual for Compliance with the National Environmental Policy Act*, was provided to the SVAD LRA at the outset of the Army's evaluation process. By inclusion and evaluation of the SVAD LRA reuse plan and its analysis based on intensity levels of reuse, the Army has ensured a thorough consideration of the range of impacts that may be expected to occur at the installation. See also the text revisions in Section 5.1.4. Additional analysis of cumulative effects with respect to the medium intensity reuse scenario has been recorded at Section 5.6.

[58] Executive Order 13007 does not require federal agencies to ensure Native American religious practitioners access in perpetuity to properties once owned by the federal government. However, the executive order would remain applicable to lands transferred to the control of the USFWS and USACE. The observation that upon disposal the Beaty Creek Area would be "land-locked" by federal property is correct. An easement granting right of access would be appropriate. Additional information has been provided in Section 3.2.1 concerning such an encumbrance.

March 15, 1997

Errata Sheet

- p. ES-5, ¶ 2: "County officials could also evaluate the desirability of establishing land use zoning mechanisms to provide for orderly growth throughout the region of influence (ROI)." All jurisdictions within the ROI already have established zoning procedures.
- p. 2-7, Figure 2-3 erroneously depicts the location and extent of the "Prim's Pond Open Space Area", the "Mixed Use Area", and "Distribution Area D". These discrepancies go beyond mere inaccuracy.
- p. 2-8, ¶ 3: "Primm's Pond" is misspelled.
- p. 2-8, ¶ 3: "CN" should be "CF".
- p. 2-8, ¶ 4: "The area could also be suitable for lodging uses such as a rustic lodge and campground facility..." No such sentiment is contained within the LRA Reuse Plan.
- p. 2-8, ¶ 5: "400" should be "450". "100-" should be "120-". "Eight" should be "Four".
- p. 2-9, ¶ 2: "...would be determined by engineering consideration" should be "...would be determined by ecological and engineering considerations."
- p. 3-4, ¶ 4: "...totaling about 6,000 acres..." should be clarified to affirmatively include both the bottomlands (which are said to be 6,000 acres) and the upland wetlands.
- [59] p. 3-11, ¶ 1: "CN" should be "CF"
- p. 4-21, ¶ 1: "50 miles to the north" should be "50 miles to the south".
- p. 4-23, ¶ 5: "Two grain terminals are..." should be "One grain terminal is..."
- p. 4-41, "Nearly 31..." should be "Thirty-one...".
- p. 4-44, §4.11.3. Although §4.11.4 refers to the Illinois Natural Areas Protection Act, no mention is made here of the Illinois Endangered Species Protection Act (IL ESPA).
- p. 4-46, ¶ 4: Reference is made to "F Road" and "Section F" which are in no other way defined.
- p. 4-47, ¶ 1: Reference is made to "K Road" which is in no other way defined.
- p. 4-49, Figure 4-11: This table is incomplete (see, for example, Nyboer quote on p. 5-32, ¶ 1).
- p. 4-56, ¶ 6: "...Savanna and Galena..." should be "...Mt Carroll and Galena...".
- p. 4-59, Table 4-6: "Motform" should be "Metform". Also, the number "135" for Rolling Hills is suspiciously like the number "135" for JoDaviess County Workshop in Table 4-7.
- p. 4-62, ¶ 6: "...Carroll County..." should be "...Whiteside County..."

[59] Appropriate revisions have been made in the EIS to address these issues.

Illinois Nature Preserves Commission

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320 South Third St.
Rockford IL 61104
13 March 1997

Mr. Glen Coffee @ USACE
Mobile District (Attn: CESAM-PD-E)
109 St. Joseph Street
P.O. Box 2288
Mobile, Alabama 36628-0001

re: DRAFT EIS for BRAC 95 Disposal and Reuse of the
Savanna Army Depot Activity, Savanna, Illinois

Dear Mr. Coffee:

Thank you very much for the opportunities to review the DRAFT EIS, to have commented at the March 6, 1997 Public Meeting, and now to follow-up with written comment. I am familiar with much of the discussion in the DEIS -- having represented the IL Nature Preserves Commission (INPC) on the SVAD LRA Environmental Subcommittee. My interests as an INPC field representative are in the preservation and -- to whatever extent possible -- the permanent legal protection of the significant biological resources at SVAD. I address my comments to those parts of the DEIS dealing with Biological Resources and with Encumbrances for the protection of those resources.

I would like to compliment all of those involved in the long and difficult discussions that led to the proposed transfer of 9,445 acres to USFWS -- and the USFWS commitment to protecting significant biological resources in conjunction with the IL Department of Natural Resources (IDNR). I would also like to compliment the extensive evaluation of biological resources (4.11) -- in particular those natural areas and sensitive species that are of "state-level" importance; and the equally thorough discussions of various levels of protection afforded those resources within the State of Illinois.

[60] I do note that under the Proposed Implementation (2.2) eight of the Significant Natural Areas (Figure 4-11) will be transferred to USFWS; one to USACE; and seven to the SVAD LRA. In addition, the sand prairie area not identified on Figure 4-11 but later identified by Randy Nyboer (5.4.11) will be transferred to the SVAD LRA. And while many of the Endangered and Threatened Species resources that will be transferred are concentrated within significant natural areas, many others of those species occurrences are scattered throughout the entire SVAD on numerous "Less Significant" (Figure 4-11) but nonetheless valuable natural areas remnants.

[60] Comment noted.

To: Coffee
From: Alesandrini
Date: 13 March 1997
re: DRAFT EIS/SVADA / page 2 of 2

I also appreciate the strong stance taken in addressing encumbrances related to Federally protected wetlands and endangered and threatened species (and habitat)(3.2.1). I do believe, however, that the EIS and the Army could make a stronger statement, addressing with more "certainty" the prospects for encumbrances protecting "state-level" significant natural areas and endangered and threatened species (and habitat) on properties [61] to be transferred. Two programs that are available for permanent legal protection of significant biological resources in Illinois are dedication into the IL Nature Preserves System and registration into the IL Register of Land and Water Reserves. I have enclosed a brief summary of each; and request that you consider the possibility of including these as "Encumbrances Identified at SVAD" (3.2.1) -- as they may apply to "Wetlands", "Threatened and endangered species", and perhaps to an additional category, "Significant natural areas".

I understand that on some occasions, there will be conveyances that are not encumbered with a requirement for permanent protection of biological resources. I would hope that such conveyances would be required (by the EIS) to provide detailed [62] information about the biological resources on any given parcel and a complete review of potential impacts; and that such conveyances would also require (not merely recommend) appropriate consultation with the IDNR re: endangered and threatened species (and habitat) and significant natural areas.

In two places (4.11.4 and 5.1.4) specific references are made to protections afforded to significant natural areas in Illinois by the IL Natural Areas Preservation Act (INAPA). In addition, endangered and threatened species in Illinois are protected by [63] the Illinois Endangered Species Protection Act (IL ESPA). As per the extent of threatened and endangered species resources at SVAD, I think that the IL ESPA should also be specifically referenced under "Sensitive Species" (4.11.3)(re: "consultation") and "Applicable Controls" (5.1.4).

Thanks again for the opportunity to comment. And please extend my thanks to Kristin Shields for sending a copy of the DRAFT EIS so promptly.

Sincerely

John Alesandrini
Natural Areas Preservation Specialist

Enclosures

[61] Participation in the Register of Land and Water Reserves is voluntary and results in creation of limitations akin to a conservation easement. Participation in the Illinois Nature Preserve program is also voluntary and includes a property owner's agreement to give up rights to develop land or to make changes that would negatively affect the natural qualities of the property. The preservation and conservation goals of both of these programs resemble those of the Illinois Natural Areas Protection Act, which established the Illinois Natural Areas Inventory. Given that the Illinois Natural Areas Protection Act applies only to state and local government, their significant difference is that they enable private parties to support laudable environmental goals. The Army does not have the authority to subject future property owners, through the use of an encumbrance mechanism, to the requirements of what are evidently voluntary programs. Moreover, to do so would contravene an essential element of the President's Program to Revitalize Base Closure Communities, one essential element of which is that DoD agencies shall assist communities in redevelopment efforts, particularly through development of opportunities to replace jobs lost as a result of base closure. It is important to note that the Army's disposal action would not eliminate the last valuable resources at SVADA, since the considerable majority of significant natural areas would be transferred to entities whose charters emphasize protection of natural resources.

[62] The Army fully appreciates the benefits of consultation with expert agencies on issues concerning environmentally valuable resources. The experiences of the Army may serve as an example to non-federal entities of the advantages to be derived from consultation. The Army is constrained, however, not to make mandatory through use of an encumbrance that which would otherwise be a voluntary or discretionary action on the part of a future land owner. As indicated in Section 5.1.4, additional information will be obtained on biological resources and may affect the terms of encumbrances that would be imposed.

[63] A paragraph has been added to Section 4.11.3 (Sensitive Species) discussing the Illinois Endangered Species Act and its consultation requirement. It has been stated that the policy of the act is to provide protection to state threatened and endangered species through a non-mandatory, non-regulatory consultation process with the IDNR.

The Nature Conservancy® of Illinois

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March 24, 1997

Via Facsimile

Mr. Glen Coffee
U.S. Army Corps of Engineers, Mobile District
Attn: CESAM-PD-E
P.O. Box 2288
Mobile, Alabama 36628-0001

Re: Draft Environmental Impact Statement for Savanna Army Depot Activity, Savanna, Illinois

Dear Mr. Coffee:

We have reviewed the Draft Environmental Impact Statement for BRAC 95 Disposal and Reuse of the Savanna Army Depot Activity, Savanna, ("DEIS") and have the following comments for your consideration.

[64]a In general, the DEIS is vague regarding what the Army will do when it disposes of the property. The DEIS is replete with instances which, in effect, state that the Army "could" or "might" impose some restriction or encumbrance upon transfer. Where the Army has sufficient information to determine that it will impose use restrictions or encumbrances to preserve resources, the DEIS should state this plainly. In instances where the Army has insufficient information to determine use restrictions or encumbrances, the DEIS should state this plainly also. In the latter case, the DEIS should then outline what surveys or other studies it will conduct to obtain the necessary information.

[64]b There are many cases where the Army already has sufficient data to impose use restrictions, easements or encumbrances on land it will convey or transfer. In such cases, the Army should impose permanent encumbrances prior to leasing or transfer. Other parties have provided concrete examples of instances where restrictions might be imposed. Site 3, for instance, is an especially sensitive area ecologically.

[65] In certain places where the DEIS mentions encumbrances, it raises a question regarding whether the encumbrances will be perpetual or only temporary. The Army should indicate which easements, use restrictions and encumbrances placed on deeds and titles of transfer and conveyance by the Army will not be permanent and why.

[66] In many instances, the Army has made little or no evaluation of concerns raised by the public during the Scoping Process. During this process, the Army received numerous comments from the public. Those comments are highlighted in section 1.3.3 of the DEIS. After listing the comments, the DEIS refers to later sections of the DEIS in which the comments are discussed. In most instances, however, the comments are not addressed by the DEIS. By listing in the DEIS the comments raised during the Scoping Process, the Army has not responded to them. The army should respond to them.

Thank you for considering our comments.

Sincerely,

Bruce W. Boyd
Executive Director

[64]a See response to comment [48].

[64]b See response to comment [49].

[65] See response to comment [51].

[66] See response to comment [53].

BIG SKY FARM
5229 S. MASSBACH ROAD
STOCKTON, ILLINOIS 61085

20 March 1997

Mr. Glenn Coffee
US Army Corps of Engineers
Mobile District
P.O. Box 2288
Mobile, Alabama 36628

ATT: SESAM-PD-E

Dear Mr. Coffee,

With regard to the closure of the Savanna Army Depot, it is extremely discouraging to recognize how unsensitive the Army is to the concerns of the local citizens about the contamination there. The Environmental Impact Statement seems to be intentionally vague and non-committal about the impact the Army has had on the land not to mention accepting responsibility for clean up. It seems to be a serious conflict of interests for the Army to have in their EIS inspection team. Obviously, they cannot be expected to genuinely evaluate the degree of pollution on the land or the negative effect that said proposed re-uses or pesticides and barge terminals would have on the natural

[67] Comment noted. Actions by the Army to remediate past hazardous waste site contamination are subject to oversight and review by both federal and state environmental agency officials. The participation by those agencies, as well as members of the local community through the Restoration Advisory Board, should provide assurances of objective judgment and thoroughness of effort. Completion of all remediation efforts is not required in order to prepare the EIS, which evaluates the environmental impacts of disposal and reuse. The Army recognizes that those remediation efforts may extend well into the future and remains committed to carrying out its obligations to render SVADA lands safe from threats to human health and the environment.

and human resources of the area. (After all, dogs don't bite the hand that feeds them.)

The E.I.S. is so extraordinarily vague and inaccurate that it is hard to take it seriously, although we have no choice.

[68] The whole process of the base closure makes us highly distrustful of the Army's intentions and concern for the men it is leaving behind.

I hope that a more thorough E.I.S. will be performed by an independent (not Army employed) company.

Sincerely,
Nancy H. Winter

[68] Comment noted.

ILLINOIS
DEPARTMENT OF
NATURAL RESOURCES

524 South Second Street, Springfield 62701-1787 Jim Edgar, Governor ● Brent Manning, Director

March 27, 1997

Mr. Glen Coffee
USACE-Mobile District
(Attn: CESAM-PD-E)
109 St. Joseph Street
P.O.Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Coffee:

Staff of the Illinois Department of Natural Resources has reviewed the Draft Environmental Impact Statement (DEIS) for the Savanna Army Depot and the comments developed in response to this document are as follows:

[69] The Department fully supports the encumbered disposal alternative, preferred by the Army, to be implemented upon closure of the Savanna Army Depot. The DEIS did not identify a complete list of the types of encumbrances to be used nor did it identify how the Army will enforce those encumbrances upon the Army leaving after the base closes. The IDNR would like a list of encumbrances developed for the Final Environmental Impact Statement (FEIS) that would include protecting State endangered/threatened species and other sensitive natural resources that have been identified at Savanna. We would like to work with you in developing these encumbrances.

[70] The DEIS sections that detail the terrestrial biological components are thorough and adequately cover the land portions of the Depot. However, information on the aquatic biological component is severely lacking in several areas. The Army needs to collect and use this information to formulate EIS and NEPA decisions related to impacts to those natural resources found in the immediate riverine and backwater areas.

[71] The most notable shortcomings relate to non-game fish and invertebrates such as mussels. There is no mention of the designated state mussel refuge that is located from L/D 12 (river mile 556.7) upstream to a line extending from river mile 558.4 to the Blandings Landing boat ramp, "including but not limited to all the Area contained within the designated U.S. Military Reservation area." The federally endangered, Higgin's eye mussel location immediately downstream of L/D 12 adjacent to the Depot, is not identified on the map. A IDNR letter, dated 27 September 1996, to Tetra Tech that describes mussel beds, major walleye spawning areas, important paddlefish use areas, wintering habitat for bass, crappie, and bluegill, non-game fish use areas, and bald eagle roosting and nesting areas on the Depot, have not been included in the DEIS. We strongly recommend that this information be mapped and included in the FEIS. The Pool 13 mussel bed also needs to be delineated. This mussel bed is a sensitive resource and has habitat for the Higgin's eye mussel.

[72] There are several discrepancies dealing with the status and locations for endangered and threatened plants and animals. Included here are the Cooper's hawk, Higgin's eye mussel, Gray's umbrella sedge, and hairy grama grass. References for state statutes that provide protection for state listed species (Illinois Endangered Species Protection Act) need to be included. Corrections for the discrepancies will be forwarded to Tetra Tech for inclusion in the FEIS.

[73] We do not agree with the impact designations applied to the land use intensity categories described in Section 3.3.2. The low-end Low Intensity Reuse, may have serious direct impacts to sensitive resources at the Depot. The impacts to natural resources from proposed reuse developments need to be realistically examined and identified, rather than using a more generic approach which is currently described in the DEIS.

Response to Comments

Illinois Department of Natural Resources, Kirby Cottrell

[69] The Army recognizes that identification of appropriate encumbrances on SVADA property may not be complete. For instance, as a result of public review of the document, the Army has added an encumbrance to ensure LRA access over other federal lands to reach the Beaty Creek Area. The Army does not have the authority to create encumbrances in favor of protection of resources within the purview of state agencies. See also the responses to comments [60] and [61] in the Illinois Nature Preserves Commission letter and revised text in Section 3.2.1.

[70] The Army is satisfied that the level of information concerning aquatic biological resources is adequate to permit sound decision making on the issues at hand (i.e., whether disposal should be encumbered or unencumbered) and the expected impacts associated with reuse of the installation property available for transfer or conveyance to the SVAD LRA. Further detailed information, obtainable through literature search or field investigation, would be of interest from a scientific or natural resources management viewpoint but would not materially contribute to the decisions to be made. As indicated by the USFWS correspondence (now included in Appendix E) and the agreements reached by the SVAD LRA, additional studies of aquatic resources along the Mississippi River will be undertaken prior to proposed redevelopment. Consistent with its role to support responsible environmental stewardship, the Army has participated in coordinating these studies that are directly and immediately relevant to proposals involving a barge terminal or marina.

[71] Recommended additions have been inserted at Section 4.11.2 in *Fish* and *Invertebrates* subsections. Mussel bed locations have been added to Figure 4-10.

[72] Statuses of sensitive species (provided in Section 4.11.3 and Appendix E) have been updated per information provided by IDNR. Also, a discussion of the Illinois Endangered Species Protection Act has been included in Section 4.11.3.

[73] See new text in Section 5.4, which explains the rational for the reuse intensity approach. In describing the methodology the Army uses to distinguish various levels of intensity that might occur during reuse, Section 3.3.2 does not assign "impact designations." The duration and types of impacts that might occur are determined based on examination of proposed actions and the environment in which they would occur. The

[74] Legacy Resources were described and identified in sections 4.13, 5.3.13, and 5.4.13. These sections contradict each other and possess incorrect information. The Legacy Resource Management Program, established by the 1991 Defense Appropriations Act, is to give priority protection to legacy resources on BRAC-listed bases and provide protection to them after closure. Baseline surveys for legacy resources (prairie fauna, upland/lowland amphibians and reptiles, upland/lowland birds, and invertebrates), monitoring of prairie flora and fauna, and management plans for forest areas and fish/wildlife, are still active projects and will become even more instrumental upon base closure. They should be identified as active projects and the necessary protection measures should be described in the FEIS for Legacy Resources.

[75] The scientific data demonstrate that there is a preponderance of high quality natural resources located at the Savanna Army Depot. The IDNR believes the FEIS must demonstrate greater sensitivity and provide greater protection for the terrestrial and aquatic natural resources present at the Depot.

Thank you for the opportunity to review this document. As always, I offer the assistance of my staff to help in any way to successfully complete this process.

Sincerely

Kirby Cottrell, Director
Office of Resource Conservation

KC:CNB:mn

cc: Brent Manning
John Comerio
Debbie Bruce
Tom Flattery
Randy Nyboer

Army agrees that it would be possible for there to be significant impacts on sensitive resources even in a low intensity reuse scenario. Examination of a low intensity reuse scenario, however, has failed to identify any particular resource areas that would be significantly affected. The Army believes that its methodology (concurred in by CEQ, EPA, and other federal agencies) would have revealed such impacts if they were likely to occur.

[74] Section 4.13 identifies 11 actions at SVADA that have been funded by the Legacy Resource Management Program. Section 5.3.13 notes that the only such program action that is still on-going pertains to Primm's Pond. Absent Congressional action, funding for resources previously affected by Legacy Resource Management Program actions will not be available after Army disposal of the property.

[75] The Army agrees that SVADA possesses a remarkable preponderance of high quality natural resources. The information contained in the EIS is sufficient to ensure that Army decision making will effectively protect the installation's natural resources. Moreover, the information in the EIS will materially assist future owners of the property to undertake their respective activities in a manner that can afford appropriate protection to both terrestrial and aquatic resources.

University of Illinois
at Urbana-Champaign

Department of
Civil Engineering

217 333-8038
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March 17, 1996

Mr. Glen Coffee
US Army Corps of Engineers
Mobile District

Dear Mr. Coffee,

Thank you for your cooperation and quick response in sending a copy of the Draft EIS for BRAC 95 Disposal and Reuse of the Savanna Army Depot Activity, Savanna, Illinois. I have reviewed the DEIS and have summarized comments in this letter. I am a Ph.D. candidate at the University of Illinois at Urbana-Champaign in Environmental Engineering. I possess a BS degree in Biology and a MS in Environmental Sciences in Civil Engineering. In line with my areas of interest, I have focused my review on water resources, hazardous and toxic substances, and biological resources.

Water Resources

[76] Coverage of the water resources in the affected area and the possible impact on these resources from the proposed action was adequate. Several components should, however, be added to the water resources section (4.7): 1). quantitative information on the current quality of surface waters should be added to section 4.7.1 (pg 4-9), and 2). Quanititative information on the current quality of groundwater should be includedin section 4.7.2 (pg 4-11). This information should include chemical results from groundwater or surface water sampling. It is probable that such sampling has been conducted in the area by IEPA, USGS, DoD, or USFWS. Information on current quality gives a point of reference when considering future impacts. Also, the potential for contamination of water resources from cleanup and remediation efforts should be included in section 5.3.7 (pg5-14). To what extent do natural geology/hydrology and manmade control structures protect groundwater supplies from current or future contamination?

Hazardous and Toxic Substances

[77] It is evident that this section relies heavily on regulations for the cleanup and transferal of contaminated sites. The point was made that the proposed alternatives will not affect the cleanup of hazardous and toxic substances, since the Army is required by law to remediate these sites. The point that "cleanup will be conducted despite the alternative" cannot be emphasized enough. This, I trust, is a point of major local concern and should be stated clearly and succinctly early in the EIS, even in the executive summary (pg ES-3).

MAILING ADDRESS: NEWMARK CIVIL ENGINEERING LABORATORY MC 250 · 205 NORTH MATHEWS AVENUE · URBANA, ILLINOIS 61801-2352

Response to Comments

Robert N. Brent

[76] The detail requested is not necessary to reach the decisions on the proposed action. The data are, and will remain, available through documentation associated with the BRAC IRP.

[77] CERCLA has been applicable to federal facilities since passed in 1980; the Superfund Amendments and Reauthorization Act provided more detailed procedures for federal facilities. The Army's BRAC IRP implements CERCLA/SARA at Army installations. The Army fully recognizes its obligations to identify, investigate, and clean up contaminants from hazardous and toxic materials. Language reflecting this has been added to the Executive Summary's discussion of environmental consequences.

Biological Resources

[78] The coverage of biological resources (Sections 4.11, 5.2.11, 5.3.11, and 5.4.11) in this document is exceptional. It is obvious the Army Corps of Engineers has worked closely with USFWS and IDNR to compile the information provided. The inclusion of sensitive habitats and sensitive species is also favorably recognized. One suggestion in this area would be to perhaps provide lists of important species in tabular form for easier reading and summary in section 4.11.3 (pg 4-44). Also, the consequences section (5.4.11) could be more detailed and quantitative, however, it is recognized that the nature of classifying reuse levels into medium, medium-low, and low is not conducive to detailed and quantitative discussion.

General Comments

The structure and format of the document is well constructed and is amenable to easy reading and location of topics.

[79] My major concern about the overall document is as follows. The alternatives evaluated in this EIS (section 3.0) were the no action, encumbered, and unencumbered disposal of the facility. The questions of real concern (particularly of local concern), however, are not whether disposal should be encumbered or unencumbered. It is somewhat obvious and intuitive that the disposal needs some level of encumbrance. The question of real concern and debate is, "to what level of encumbrance should disposal be subject, and what is the proper implementation of disposal?" The document briefly describes the proposed implementation of the disposal (section 2.2) including areas designated for USFWS, USACE, industry, housing, prison, distribution center, barge terminal, and marina. The reuse of the facility for these distinct purposes (particularly use as a prison) will be the primary point of contention for local residents. If this implementation plan is to be adopted, the consequences of these particular activities should also be included in the DEIS (section 5.4). It is somewhat misleading and incomplete to consider consequences only of general reuse categories (medium, medium-low, and low intensity) when actual reuse implementation plans are already proposed. The EIS should consider specific consequences of the proposed reuse implementation plan.

Sincerely,

Robert N Brent

Robert N. Brent

[78] Comment noted. To this end, the EIS addresses these resources by use of both text discussion in Section 4.11 and tabular display in Appendix E.

[79] Please see revised discussion in Sections 5.4.1 and 5.1.4.

U.S. Department of Housing and Urban Development
Environmental Staff
Midwest Office
77 W. Jackson Blvd.
Chicago, Illinois 60604-3507

April 15, 1997

Mr. Glen Coffee
US Army corps of Engineers
Mobile District
Attn: CESAM-PD-E
POB 2288
Mobile, Alabama 36628
334-690-2605

Subject: Draft EIS for the Disposal & Reuse of the Savanna Army Depot Activity

Dear Mr. Coffee:

Thank you for the opportunity to comment on the Draft EIS. I apologize for the delay in getting these comments to you, but my agency did not receive the Draft EIS until March 7, 1997.

Your agency has done an excellent job in not only preparing such a cogent, well researched document, but also in preparing a reuse plan that makes sense. I only offer the following minor comments:

[80]

- The reuse plan should encourage alternative means of transportation (from the auto) by providing bicycle/walking paths

- Given the plans to provide a substantial number of jobs (over 5,000) the plan should provide for affordable housing once those jobs have been made available.

Very truly yours,

Eugene Goldfarb
Midwest Environmental Officer

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Internet: http://www.hud.gov/illinois.html

[80] These are matters within the sound discretion of the SVAD LRA and should be taken up at appropriate times during redevelopment.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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APR 06 1997

REPLY TO THE ATTENTION OF:

APR 08 1997

Mr. Glen Coffee
US Army Corps of Engineers
Mobile District
CESAM-PD-E, P.O. Box 2288
Mobile, Alabama 36628

RE: Comments on the Draft Environmental Impact Statement for the Disposal and Reuse of the Savanna Army Depot Activity

Dear Mr. Coffee:

We have reviewed the Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of the Savanna Army Depot Activity (Savanna), located in Savanna, Illinois, under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

[81] Due to the rich and unique biological resources located at Savanna, we recommend that any reuse activities preserve the integrity of these resources. We suggest that the U.S. Fish and Wildlife Service, the Illinois Department of Natural Resources, and interested conservation organizations are coordinated with in decisions with potential ecological impacts from reuse activities.

We have rated the DEIS an "EC-2." The "EC" indicates that we have environmental concerns with regard to this project, and the "2" indicates that additional information and analysis is needed with regard to the contents of the Final EIS.

Enclosed you will find our specific comments on the DEIS. Should you have any questions regarding this matter, please contact Carol Alexander at (312) 886-4244.

Sincerely,

Carol Alexander

Michael MacMullen, Manager
Federal Activities Program

[81] See response to comment [10].

ENCLOSURE
COMMENTS ON THE DEIS FOR THE DISPOSAL AND REUSE OF SAVANNA ARMY DEPOT ACTIVITY

Alternatives

[82] With regard to the Encumbered Disposal, we prefer this method for reuse actions. However, the Final EIS needs to be more specific regarding what is being proposed for lease/deed encumbrances. For example, page 3-4 states that "covenants could also impose a requirement for buffer zones adjoining wetlands." The Final EIS should include specific measures regarding buffer zones, such as 100-foot buffers will be designated around all wetlands areas.

[83] We agree with the conclusion on page 3-12 which states "This magnitude [medium-high and high land use intensity] of redevelopment would be wholly inconsistent with surrounding land uses and would represent an unrealistic outcome of reuse."

Categories of Intensity-Based Re-uses

[84] There is a need to include additional categories to be analyzed with regard to Table 3-2 on page 3-11 entitled "Reuse Attributes" which depicts impacts for Low Intensity Reuse, etc. In addition, there is a need to identify several specific re-use activities associated with each land use category (for example, where would a golf course be categorized under the stated categories based upon potential impacts to the biological resources at or around Savanna?).

Historic Properties

[85] It is important to identify which properties will be subject to the Section 106 process. The SHPO should be consulted with regard to appropriate covenants to protect and preserve the integrity of historic structures, as this responsibility should not be left for the new property owners.

Impacts to Biological Resources

[86] There are Federally-listed species at Savanna, and Formal Consultation under Section 7 of the Endangered Species Act should be implemented. Surveys should be conducted at the appropriate times for species where associated habitats have been identified (for example, at the Oak Savanna remnants for the Karner blue butterfly during May and July).

[87] Also, measures such as covenants and land transfers to appropriate natural resource organizations and agencies should be discussed due to the rich diversity of grassland bird species, many of which have experienced serious population declines in the U.S. In addition, there are species present at Savanna which are protected by the Migratory Bird Treaty Act, and therefore, U.S. Fish and Wildlife should be contacted for appropriate protection and mitigation measures that may result from re-use activities. Consideration should be given to nesting/breeding habitats, foraging areas, and migratory corridors.

[82] The EIS generally describes encumbrances believed to be applicable to SVADA. Based upon these presentations, the Record of Decision could specifically recommend their use, subject to site-specific circumstances such as the identity of the transferees and proposed use, and consistent within the Army's authority to require specific encumbrances in the disposal documents. Specifics about the nature of the encumbrance, such as the size of a buffer zone, will be determined by the appropriate regulatory agency at the time of transfer.

[83] Comment noted.

[84] The intensity parameters identified in Table 3-2 are those that most importantly bear on evaluation to reuse of the installation. As appropriate, text throughout Section 5.0 considers specific reuse proposals that would comprise the various reuse intensities under discussion. Under the methodology used to evaluate potential impacts, a golf course could occur in any of the three intensity-based reuse scenarios considered at SVADA.

[85] Consultation requirements under the National Historic Preservation Act are addressed in Sections 4.12.4 and 5.1.4. As noted, the consultation process is not complete because the inventory of resources at SVADA is not yet finished.

[86] As shown by the correspondence included in Appendix E, the Army has initiated appropriate consultation with the USFWS as required by the Endangered Species Act. Also see Section 5.1.4, which has been elaborated to discuss the consultation process. Regarding the Karner blue butterfly, in its letter of August 16, 1996 (Appendix E), the USFWS stated that "Suitable habitat for the Indiana bat and Karner blue butterfly exists on the depot, but the species were not found during past surveys."

[87] Numerous agencies and potential transferees have been afforded opportunities to provide commentary and other assistance as the Army prepares to dispose of SVADA property. The Army is satisfied that its actions to provide for the continued protection of valuable biological and other natural resources fully complies with both the letter and spirit of relevant statutes and regulations.

[88] We recommend that new property owners receive information on the damage to native plants and animals due to the introduction of exotic species (through landscaping, etc.).

Preferred Alternative

[89] Due to the potential for adverse impacts to biological resources at Savanna resulting from implementation of both the Medium Intensity and Medium-low Intensity uses (see Table 5-7 entitled "Impacts Summary" on page 5-50), we recommend that the Encumbered, Low Intensity re-use alternative be implemented. We agree with the Department of Interior's "Draft Conceptual Management Plan" for manag ement of the biological resources at Savanna.

[88] Information on impacts on native species resulting from the introduction of exotics is contained in Sections 5.2.11 and 5.4.11. The Army will make available to any transferee or other member of the public the information contained in the EIS.

[89] Evaluation of potential impacts associated with reuse of the installation shows that MIR and MLIR levels would likely produce more numerous and substantial adverse impacts than would occur under an LIR scenario. As noted in Section 5.1.4, the fact that the Army has evaluated an MIR scenario does not constitute an endorsement of such redevelopment. The extent of redevelopment would be within the discretion of subsequent owners of the property, and their decisions would be guided by present or evolving circumstances that are not wholly evident at this time. The new owners will also be responsible for complying with appropriate environmental statutes and regulations in the pursuit of the various actions required to reuse the former installation property.

PUBLIC HEARING

SAVANNA ARMY DEPOT

SAVANNA, ILLINOIS

MARCH 6, 1997

7:00 o'clock p.m.

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR THE DISPOSAL AND REUSE OF THE DEPOT

MR. DAHLMAN: Good evening. I'm Arlen Dahlman. I'm the base transition coordinator. I'd like to welcome you to tonight's public meeting on the Draft Environmental Impact Statement for the Disposal and Reuse of the Depot.

Since the scoping meeting back in '96 there's been a significant amount of interest from the public, and I'm glad to see there's a good turnout tonight.

Tonight is the most important meeting for the process of returning the installation to the community for a future reuse, and I'd like to introduce a few of the people that are involved in helping with that process. First off I'd like to introduce Captain Thomas Schorr, Jr., the commander of the depot, and Mr. Glen Coffee with the Mobile District Corps of Engineers in the back, and Shirley Barnett from Headquarters Army Material Command, Captain Rick Murphy from Headquarters Industrial Operations Command in Rock Island. Mr. John Clarke, the BRAC Environmental Coordinator. Mr. Steve Haring, Executive Director of the LRA.

One of the steps associated with the disposal and the reuse of an Army installation is the preparation of an environmental impact statement, and that's done in accordance with the National Environmental Policy Act,

and tonight Mr. Paul Wilbur will outline the EIS and conduct the balance of the meeting. Paul?

MR. WILBUR: Thank you, Mr. Dahlman. I've got a couple of slides I'd like to share with you and give you some additional information with respect to the process and where we are.

First I'd like to talk about why we're here this evening and, that is, the purpose of the meeting, The NEPA process, the National Environmental Policy Act, that process is regulated by regulations issued by the Council of Environmental Quality, and those regulations provide for public involvement, and part of the public involvement process is listening to the public as the document is being developed.

We have put out now a draft EIS, and under the regulations we are at that point in the process where we listen to the public about our document. And we're aiming at two things, if you will. First, can you help us? Can you provide us comments on the adequacy of that EIS? Is it sufficient, is it accurate? And second, what about the merits of the alternatives that are presented in that document. Are they good, are they bad, are they indifferent. And with respect to those alternatives bear in mind we have two things going on in our document. First, we have a proposal to dispose of

the real estate, that is, to transfer or convey it, and second we have reuse. And we're looking at reuse in terms of intensity, and in this case it's low-intensity reuse, medium low-intensity reuse, and medium-intensity reuse.

This public involvement process is very important to the decision-making that the Army will make. There are several ways that you can help us. Are they factual matters in the document? Someone has already written us a very nice letter and suggested we made a mistake. We have in the document a statement that says Savanna is 250 miles from Chicago. No, it isn't, but we made that mistake and we'll correct it with the next iteration of the document.

We have another problem in our process and it's one that you can take my word on we're going to fix, and that is ensuring that all the public has an opportunity to be involved. We found out the other day that through an administrative error at our company, Tetra Tech, we failed to provide the documents to the libraries in Jo Daviess County. When we were informed of that, those documents went out by overnight delivery. On behalf of the company I extend to you my apology for that oversight. As I say, you have my word it will not happen again.

Let's take one brief moment to talk about the National Environmental Policy Act. It is a Federal law that requires the identification and analysis of potential environmental effects of certain proposed Federal actions and alternatives before those actions take place. And the National Environmental Policy Act is what we call a full-disclosure law with provisions for public access to and public participation in the Federal decision-making process.

Now, if I might summarize these two descriptive paragraphs, this one says "Army, Look before you leap. Think it through." This one says, "Ask for directions. Ask for help." And we're hoping that this evening you'll be able to give us that help by providing your comments on the alternatives and on the adequacy of the document.

Let me refresh your memory and show you where we are in the time-line and how we're moving along this process. We asked the public and the agencies back in June to help us define the issues. We had a meeting here, in fact, it was this very same room and members of the public came in and helped us out and we got correspondence from the agencies helping us define what we ought to be looking at and what we should include in the document.

From that point on until a couple weeks ago our company and in conjunction with Mobile District and Army Material Command put the document together. We gathered data. We assembled it, we analyzed it and put the document together, and we also in that process looked for mitigation. We suspect there might be some sort of impact. How can we reduce it and make those suggestions in the process. Then last month we promulgated, that is, issued the document to the public.

This evening we're holding the public meeting on it, and over the next several days up until March 24, as a matter of fact, we solicit your input and your comments on it. Following this evening's meeting we'll take the comments that we receive, collate them and they will all appear as an appendix to the EIS. And for each comment that is there, the Army is obligated to provide a response and that's what we'll be working on over the next several weeks. I don't have dates for when the final EIS is due or when we'll be able to promulgate the Army's record of decision with respect to the proposal. I suggest to you the final EIS we're hoping will be out in late May or perhaps in June and then the record of decision should be promulgated this summer.

What is the EIS about? It's about two basic

things. First we have a proposed action for disposal of property, and this is the Army's primary action. With respect to alternatives for that action we have encumbered disposal, unencumbered disposal and no action.

Let's take the no action or caretaker status first. It is a fact of life that when the Army is finished with its operations here the Government cannot dictate that someone take the property, and thus in that case the Army would maintain it in caretaker status until someone comes along and says, "I'd like to have that transferred or conveyed to me."

Encumbered disposal is the Army's preferred alternative, and there are certain situations or conditions with respect to the property that will limit the reuse of the property.

A couple that come to mind are unexploded ordnance, remedial activities. There are some hazardous waste sites here as a result of past practices with respect to hazardous waste, and those hazardous waste sites must be cleaned up. The Army is in the process of doing that. There may be an opportunity to allow reuse of the property, but the Army still requires an ability to re-enter to operate machinery or to conduct further testing or whatever might be required. That ability of

the Army to re-enter the property is an encumbrance on its use. Probably not a very big one, but is one nevertheless.

We have also looked at unencumbered disposal, that is, what would be involved in terms of environmental impacts if the Army were able to dispose of the property without any limitations on it whatsoever.

With respect to re-development, we have looked at reuse scenarios in terms of intensity levels and we evaluate those as a secondary effect. We have looked at three intensity levels that would be perhaps appropriate to the property out here. First is low-intensity reuse. A step up from that would be medium low-intensity reuse, and a step up from that would be medium-intensity reuse.

These intensities are basically defined by parameters such as how much building is there on the property, how many square feet of facilities, how many employees are involved on a daily basis, because those primary indicators then help to define and understand what the environmental impacts would be in terms of outputs and demands on resources. And I have to tell you that with respect to those reuse alternatives the Army doesn't express a preference, because what happens

in reuse is a decision to be made by the community and the Army respects that community's authority and privilege of making those decisions and, thus, we won't express a preference in our document. We take these encumbered and unencumbered and no action alternatives and we take the reuse scenarios and we look at the direct effects, the indirect effects and the cumulative effects.

To refresh your memory from the document, a direct effect is one that you do something in one place and you have a measurable impact at that same place in about the same time. An indirect effect is one might occur later or you might do something to one resource that you have which would domino-style affect another resource. A cumulative effect is rather the entire collection of all the effects taken together synergistically, and you take a look and try to evaluate those. I assure you that trying to predict environmental impacts is a very difficult proposition, particularly with respect to reuse.

We make a few assumptions such as the build-out period for redevelopment might be 20 years and over that period of time there may be intervening factors. We may not fully appreciate some of the effects on some of the resources in today's situation.

It's a very difficult process.

This slide entitled Resources Analyzed in the EIS identifies for you what the resources are that the document addresses. You can take a look at it, land use, air quality, noise, on down the list.

There's one that's always difficult to grapple with. Quite frankly, it's one of the most important ones, and that is with respect to hazardous and toxic substances. Now, we don't think of a hazardous waste site as a resource, rather, it's a condition of the real estate. It's a very important one, because under many scenarios that hazardous waste site will present perhaps a threat to human health and the environment. We're very concerned about it. For hazardous waste sites this is an entirely separate process under the law.

To identify those hazardous waste sites, to determine the best method for remedying them and carrying out the remedy selected under the Comprehensive Environmental Response Compensation and Liability Act, CERCLA, and a lot of people call it Super Fund, there is that entirely different process the Army is obligated and, in fact, the Army does conduct the CERCLA process and it is going on here at this installation. But the authority to make certain cleanup decisions comes from CERCLA. What the Army is doing with respect to disposal

and reuse is making a different set of decisions. Our EIS doesn't have the authority to solve the hazardous waste issues, and why we spend so much effort in our document describing it is because it's important to reuse, it's important for the public to be aware of how extensive those problems are and for that reason we list but not necessarily analyze the hazardous waste condition.

With respect to those hazardous waste sites there is a Restoration Advisory Board here at Savanna, it's co-chaired by a member from the installation, a member of the community. That's a separate process. has a separate public involvement element, and I just point that out because it's sometimes blurred in people's minds. But we looked at these resources, and let me briefly summarize for you what we concluded. I won't get into so much the beneficial impacts that we are predicting as a result of disposal and reuse, those are good, but we did find nine occasions when it's our prediction that we could have significant adverse impacts. Now, how significant or how adverse they would be depends in great part on the success of mitigation to reduce or avoid or compensate for those impacts, and that's important. Being aware of the problem is the first step in being able to avoid it.

We found that biological resources in an unencumbered disposal would be adversely affected, and the reason for that is if we didn't have protections for this threatened or endangered species or wetlands there would be a risk to those resources following disposal.

It's our opinion that land use would be affected in unencumbered indirect disposal and there the elimination of certain encumbrances, particularly those with respect to threatened and endangered species would lead to loss of land conservation values here in the area. Cultural resources could be adversely affected if we had unencumbered indirect disposal.

Those are the three impacts that we predict with respect to disposal. The last two that I mentioned would not occur if the Army implemented its preferred alternative of encumbered disposal.

The other six what we predict to be significant adverse impacts will occur with respect to reuse. The majority of them would occur in the event that medium-intensity reuse happened here at Savanna. Two of them would occur in the case of medium low-intensity reuse. In our opinion there would be significant adverse impacts to land use, infrastructure and biological resources in a medium-intensity reuse scenario.

Again the difficulty is how long would it be from now, how long would it take for the Local Redevelopment Authority to achieve its build-out and achieve certain levels of reuse activities. It's rather unpredictable. With a lot of wise planning, and much of it is contained, the possibilities for it, the seeds for that plan are contained in that document.

So is it probable these things will come to pass? I don't know. We have been asked to identify what is potential, and I stress that's what it is. These are the potential impacts.

This slide is with respect to rather new authority for the Federal agencies. I'd like to share it with you because in the document we used a footnote, and I think it's only fair that we take this opportunity to update you on that footnote.

The Comprehensive Environmental Response Compensation and Liability Act has a section in it that says Federal agencies, if you transfer a piece of property you have got to include a covenant that says all the cleanup has been taken. Sometimes as a practical matter and for primarily economic reasons it's in the interest of the local community to transfer property a little before that cleanup action has been completed.

Section 334 of The Defense Authorization Act passed and enacted into law last February gave new authority for Federal agencies to do that. Under Section 334 the Army is able to transfer that property before the completion of cleanup if there is concurrence by the governor and EPA, and the Army has to make certain demonstrations and assurances prior to this transfer occurring and they have got to be able to assure and make the demonstrations to the governor and the EPA that the property is suitable for the intended use, that its intended use is consistent with protection of health, human health and the environment, that certain measures have been taken to ensure that the cleanup is going to occur in a timely way, that is, there has been a cleanup schedule approved and budget requests to conduct the work and its use will be restricted until completion of cleanup. And again the Congress in passing this law said let's not surprise the communities, the Army or any other agency that wants to rely on this authority. You have got to give public notice before that conveyance is made. To date the Army is working one case of trying to get this authority into place. Otherwise the Army and the DoD are working with EPA and the various states to come up with some guidelines or some regulations to implement this

authority.

Now, this is my last slide tonight. I call this the housekeeping slide. This is our procedures that we would like to use. There are two opportunities for everyone in this room to communicate with the Army. The first is by speaking this evening. If you would like to speak we have a sign-up roster at the back of the room and by all means you're encouraged to sign up. We'll take speakers on a first-come first-serve basis. We do have a microphone here. The purpose of that is that we get a good record, an accurate record, because the Army is interested in having an accurate record so that they can make accurate responses, and we have a goal of about five minutes.

A lot of people will come up to state their name, say where they live and give one paragraph and sit down. That's fine. Some people might take a few minutes more. And depending on how many people we have signed up, we can be a little flexible.

Okay. Let's try to keep it to five minutes. We also have a second way that you're invited to participate in the process and that is by the submission of written comments. We have what we call comment cards back here at the back of the room, and by all means you're asked to take one. Maybe you don't think of

something right now, and we know from experience that there are some people who just don't like to speak in public and that's okay too. You can fill out the comment card or write a letter, send it along to our boss whom we work for, who is Mr. Coffee down at the Mobile District Corps of Engineers. We do have a pretty hard and fast rule on it though, we need to receive those comments, please, by March 24th. Help us out there. If you're going to send us written comments we need them by March 24.

One last thing about the dynamics of the comments process and it's a difficult one, we're not here to answer the questions. A lot of people in this situation will want to ask questions. That's not what the meeting was designed for under regulations. There are other kinds of meetings and everything else, but this meeting is for the Army to listen. The Army has put out its document to look at it and talk about it and give us feedback. So we won't be able to answer questions in real time even though from time to time having conducted this kind of meeting, trust me, there is an urge to answer a question. But the second reason is a very practical one and that is the Army is very concerned that responses given to questions be accurate, and quite often those responses need to be staffed

through a couple of experts. Maybe it's a real estate question, maybe it's a question pertaining to biological species, whatever kind of question it is, the Army is very difficult or hard-pressed, rather, to put one person up here or even two or three people who would be able to responsibly answer all those questions. So rather than try, we go back and look at the purpose of the meeting, and the purpose of the meeting is to listen to the community.

What I'd like to do is we'll take a break about 10 minutes, and the ladies in the back of the room have the signup sheet. By all means you're encouraged to sign up if you want to speak, and when we reconvene we'll start taking comments and we'll take comments until we're finished. Still if someone is going to want to ask a question, maybe we can't answer it on the record, but I won't leave tonight if there's still people who want to chat for a few minutes.

All right. Let's take a break right now and we'll be back in about 10 minutes.

(A break was taken at this time.)

MR. WILBUR: Very well. Let's resume. I can share with you we have three people who have thus far asked to provide comments to us, and the first is Mr. Ed Britton. Please, sir, come up to the mike.

MR. BRITTON: I have two comments I'd like to see addressed. The first is on environmental contamination. As district manager of the Fish & Wildlife Service we receive over 9,000 acres and we can and apparently will receive acres that have environmental contamination on them. And we do foresee [90] public recreation use on the depot area, and I would like to see the Army identify how they intend to construct barriers around these environmental contaminated areas to protect public health and safety, the long-term maintenance plan and signage of how they would keep the public advised of possible dangers in these areas.

My second area of concern is natural resource impacts. The draft EIS does an excellent job of identifying how important and unique these resources are out here. We have got some very unique things that have been preserved here because of military mission. The EIS also identifies post-reuses and identifies some of [91] these reuses will adversely impact these very important and unique natural resources.

The EIS goes on to identify that encumbrances are needed to protect these important and unique natural resources from some of these economic redevelopments, but yet when you get down to your recommendations the

Ed Britton, USFWS

[90] See response to comment [15].

[91] See response to comment [48].

Army does not recommend any protection or encumbrances be provided to protect these important and unique natural resources. And the reason that you do that is that a non-Army entity will be determining reuse.

I feel that the Army as a Federal agency, as a Federal landowner, you both have the ability and the responsibility to provide encumbrances that will protect these unique and important natural resources, and I'm not trying to convey that we should protect every blade of grass and every tree and every bird, but we have identified some very unique, some very important natural resources here that don't occur anyplace else, and these are very important to the area. And we can't protect everything. Economic redevelopment is very important here also, and I think you also find with the unique and important natural resources that you have here that this will also benefit the economy in the long-run. Thank you.

MR. WILBUR: Mr. Britton, thank you. You have exposed I think two areas we haven't adequately addressed, and let's take the record back and explore those things, and now it being in the record the Army has to make a response. Let's look at it. Thank you. Mr. Ingram, please.

MR. INGRAM: I'm Terry Ingram from

Apple River. I am a member of the RAB board and also president and executive director of Eagle Nature Foundation. We're very pleased the see the nine acts and six executive orders that you had listed here in the beginning, and these should be addressed. These are acts or orders that have to be addressed by every person or organization, business or whatever that reuses the depot, and I don't think that they were adequately addressed in the EIS statement, but I realize the EIS statement is only to dispose of the depot, of the property, doesn't address all the things that are done later on. That's not the purpose of the Army. They just want to get rid of it if possible. But I would like to somehow make sure that someplace along the line every different reuse has to have an environmental impact statement and that this environmental impact statement if it's going to be utilized as the environmental impact statement for all of the other reuses it has to be re-worked tremendously, and every one of these nine acts and executive orders have to be addressed for every single reuse, which I don't feel has been done in the present condition in the shape it's in. To do that would take a long time.

I'm afraid a lot of different reuses are going to say this is the environmental impact statement,

[92]

Terry Ingram, Eagle Nature Foundation

[92] The EIS includes discussions of relevant laws and executive orders related to environmental protection to inform the public of the principal authorities most likely to affect the Army's decision making with respect to disposal. The Army adheres to these authorities to ensure promotion of environmental values. The extent of the applicability of each law to redevelopment actions would depend on their specific nature. The executive orders would not appear to apply directly to redevelopment, as such authorities are limited to the executive branch of the federal government.

authorize that reuse, and walk away from it. The prison is a fine example. I don't think right now we have got -- right now we have got in the EIS statement there is a schedule orderly of how things are done, and the draft EIS is done first and then a couple years later we [93] have the FOST. Well, right now we have already got the FOST for the prison before this environmental impact statement is completed, and the FOST for the prison states "This environmental impact statement adequately addresses the problem." And we don't even have the final copy of this yet so we don't know what it's really going to say and already got the FOST for the prison out there to be transferred, that 100 acres, and there's a lot of issues in that prison site that are not discussed in here.

One of the things you mention is the fact you have got 5,000 feet of 12-inch gravity pipe for a sewer line. It doesn't say where it's going to go. When I ask the general public they say, "Oh, it's going to go [94] straight to the river." I'm sure that's not the case, but it doesn't address what it's going to be going into. And the other thing it doesn't address if there is a sewage system in four years or whenever the prison is finally running, the Army is going to be out of here. They hope to be out of here in three years, in

[93] The Army has prepared and circulated for regulatory review a draft Finding of Suitability to Transfer (FOST) of 136 acres, which contain 9 buildings, to the State of Illinois, Department of Corrections. The draft FOST indicates that, based on review of an Environmental Baseline Survey and Remedial Investigation Report, as well as a physical UXO sweep and clearance project, the property is environmentally suitable for transfer to IDOC with certain restrictions and notices. Prepared in satisfaction of the Community Environmental Response Facilitation Act, the FOST addresses the suitability of property for transfer. The EIS is different, as it addresses potential environmental impacts of disposal and reuse. The FOST specifically recognizes that transfer of title will not occur until the EIS process is completed.

[94] See response to comment [42].

the year 2,000 or whatever. It may vary, but I'm just pointing this out. The prison wouldn't be running if they do go by then. If they run 5,000 feet, and that's a mile, is that sewage treatment plant in Carroll County or is it in Jo Daviess County? Who is going to be maintaining that? That's not addressed in this EIS. If it is sewage and is going to build a new one, which county is going to foot the bill for it? Are we going to have the prison in our county and Carroll County and they're going to have the sewage and have to worry about that without having the prison in their county to help offset the cost of it?

A few things you try to address in here when you get down to specifics and they're not here, I knew you tried to do it in general, but these are some things that bother me. I feel we shouldn't rush into this, and [95] personally I think that we -- I'd like to see the environmental impact statement. If you take another six months I'm not going to complain. I'd like to see it be good and done well and address these issues as necessary.

We have been in the RAB board now for a year and a half and we keep hearing about new dumps or new [96] things out there. Like just a couple of months ago we found out they had a dump of insecticide back in 1950

[95] See response to comment [22].

[96] See response to comment [27].

and never addressed it in the environmental baseline study because it was not brought out when that baseline study was done.

Now we find out in the last few weeks we also had a dump of or a burial site for mustard gas. That's not in the environmental baseline study. How many other things are not in the baseline study? How many other things are left out of that? If they're not in those studies they're not going to be addressed in this and that's one of the things I'm concerned about.

We're trying to rush through this whole thing and I just feel we have to take it a little easier and make sure we do things right, get the T's crossed and I's dotted. As he said, watch the plants and animals and at the same time let's do it right. I've got no complaint. I don't care what happens to the property as far as the reuse. [97] I just want to see it done correctly and I don't want to see children out here getting sick on land that might make them sick. I don't want them out here in houses where the ground water is going to be polluted. We have got many different sources of pollution here. If we don't look for them we don't find them. We don't even know how much it's going to cost to clean up this place, because we haven't even had the studies done to find out what the pollution is out here,

[97] See response to comment [26].

what the pollution level is in many places. And where many people feel, oh, we're going to be able to jump in and reuse this right away, well, the RAB board understands it won't be till the year 2035 at the earliest this place will be cleaned up to what level. If it's cleaned up to a level that industry can come in or cleaned up to a level that houses can come in and residential, those are two different levels and the cost is going to be a tremendous difference between the two. If they, the Army doesn't clean it up before they walk off and give us a dirty transfer like they can do now, they can give us a dirty transfer, and that's something we have to be concerned about, how fast and what kind. Thank you.

MR. WILBUR: Thank you, Mr. Ingram. A matter of depth of information, and as you point out, the question of where will the sewage treatment plant be and who is going to operate it gives us a chance to look at that again, and if we find some options or some good answers let us put it in the document, let us bring that information. I do urge you, please, to talk to John Clarke, the BRAC environmental coordinator with respect to that insecticide dump. He and I chatted about that and I think it is covered in there, so maybe you're thinking of a different one. We hope it's there,

because we cite it in our document. We try to incorporate the information. Thank you very much.

MR. WILBUR: Next on our sign-up sheet is Mr. John -- I apologize if I don't have this pronounced correctly, Alesandrini. And sir, if you could spell your name for the reporter.

MR. ALESANDRINI: I wasn't going to do this unless you got that right. Thank you. My name is John Alesandrini, A-l-e-s-a-n-d-r-i-n-i. I'm a preservation specialist in North Central and Northwest Illinois for the Illinois Nature Preserves Commission and to some extent I'm reiterating previous comments.

My interest in the draft environmental impact statement is primarily in these sections that deal with biological resources and with the encumbrances for the protection of those resources.

I'd like to compliment you on the extensive documentation of biological resources in the draft EIS, [98] not only those of Federal interest, but all of the significant natural areas in the endangered and threatened and sensitive species that are of particular interest and importance at the State level here in Illinois. The draft EIS also in some detail addresses a variety of ways in which those State-level biological resources could be protected. What I would like to see

John Alesandrini, Illinois Nature Preserves Commission

[98] See response to comment [61].

is the Army make a stronger statement in particular by addressing the possibility that encumbrances and special restrictions on conveyances should be used to protect biological resources that are of State-level importance.

It is also my intention to review the EIS one last time and submit a short written comment. Hopefully I'll be able to give you some more suggestions in terms of State-level resources. Thanks.

MR. WILBUR: Thank you, sir. Mr. Allesandrini, we look forward to your letter, please, for more ideas.

We have come to that junction in the meeting when all those that wanted to sign up had their chance. Does anyone want to not sign up but still speak? Does anyone want to speak twice?

Mr. Coffee, with your concurrence I will bring this meeting to a close. Thank you very much, ladies and gentlemen.

(The hearing concluded at 8:00 p.m.)

GLOSSARY

A-Weighted Decibel (dBA)	A number representing the sound level that is frequency-weighted according to a prescribed frequency response established by the American National Standards Institute (ANSI-S1.4-1971) and accounts for the response of the human ear.
Affected Area(s)	Area(s) that have the potential for radioactive contamination (based on facility operating history) or known radioactive contamination (based on past or preliminary radiological survey/surveillance). These would normally include areas where radioactive materials were used and stored, where records indicate spills or other unusual occurrences that could have resulted in the spread of radioactive contamination, and where radioactive materials were buried. Areas immediately surrounding or adjacent to locations where radioactive materials were used or stored, spilled, or buried are included in this classification because of the potential for the inadvertent spread of radioactive contamination. Affected areas are further divided into those areas of elevated residual radioactivity in excess of the regulatory guideline levels and those in which such areas of elevated radioactivity would *not* be anticipated. (If there is any doubt, the area should be designated as an affected area.)
Affected/Non-Uniform Area	An affected area that has the potential for a non-uniform or spotty residual radioactivity pattern. Indoor survey units classified as affected/non-uniform generally consist of a single room. NOTE: Any area that has been remediated or decontaminated will be designated as affected/non-uniform. *In general, all areas shall be treated as affected/non-uniform until substantial bases are provided to reclassify them as affected/uniform, unaffected, or non-impact area.*
Affected/Uniform Area	An affected area with little or no potential for non-uniform or spotty residual radioactivity.
Ambient Air Quality Standards	Standards established on a state or federal level that define the limits for airborne concentrations of designated criteria pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, lead), to protect public health with an adequate margin of safety (primary standards) and public welfare, including plant and animal life, visibility, and materials (secondary standards).
Artifact	Any product of human cultural activity; more specifically, any tool, weapon, artwork, etc., found in an archeological contexts.
Asbestos	A carcinogenic substance formerly used widely as an insulation material by the construction industry and often found in older buildings.
Attainment Area	An area that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act or meets state air quality standards.
Capacity (Transportation)	The maximum rate of flow at which vehicles can reasonably be expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions.
Capacity (Utilities)	The maximum load a system is capable of carrying under existing service

conditions.

Council on Environmental Quality (CEQ)	Established by the National Environmental Policy Act (NEPA), the CEQ consists of three members appointed by the President. CEQ regulations (40 CFR Parts 1500-1508, as of July 1, 1986) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and timing and extent of public participation.
Cultural History	The archeological sequence of cultural activity through time, within a defined geographic space or relating to a particular group.
Cultural Resource	Prehistoric or historic district sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for a scientific, traditional, religious, or other reason.
Cumulative Effects	Impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions.
Day-Night Average Sound Level (Ldn)	The 24-hour average-energy sound level expressed in decibels, with a 10-decibel penalty added to sound levels between 10.00 p.m. and 7:00 a.m. to account for increased annoyance due to noise during the night.
Decibel (dB)	A unit of measurement on a logarithmic scale that describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.
Developed	Said of land, a lot, a parcel, or an area that has been built upon, or where public services have been installed prior to residential or commercial construction.
Direct Impact	An impact caused by an action and occurring near the same time and place.
Disposal	Legal conveyance of Army property to other ownership.
Encumbrance	Any Army-imposed or legal constraint on the future use or development of property to be disposed of. Encumbrances, whether restrictive or for planning purposes only, may be natural or may result from Army activities or decisions.
Endangered Species	A species that is threatened with extinction throughout all or a significant portion of its range.
Environmental Impact Statement (EIS)	A document required of federal agencies by the National Environmental Policy Act for major projects or legislative proposals significantly affecting the environment. A tool for decision making, the EIS describes the positive and negative effects of the undertaking and lists alternative actions.
Groundwater	Water within the earth that supplies wells and springs.

Hazard Rating System	A system that provides a uniform method of scoring or ranking of the potential risk of a facility site where a hazardous substance has been present. EPA developed the HRS to prioritize its cleanup efforts. EPA evaluates the draft HRS packages and proposes any facilities scoring 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities listed on the NPL receive the highest priority for cleanup.
Hazardous Substance	A substance or mixture of substances that poses a substantial present or potential risk to human health or the environment; any substance designated by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or otherwise released into the environment.
Hazardous Waste	A waste or combination of wastes that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness, or may pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under the Resource Conservation and Recovery Act.
Hazardous Substance Accumulation Area	An area that may store a hazardous substance for up to 90 days.
Hazardous Substance Storage Area	An area that may store a hazardous substance for up to one year.
Historic	A period of time after the advent of written history dating to the time of first Euro-American contact in an area. Also refers to items primarily of Euro-American manufacture.
Impact Assessment	An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique.
Indirect Impact	An impact that is caused by an action and may occur later in time or farther removed in distance but still be a reasonably foreseeable outcome of the action.
Infrastructure	The basic installations and facilities on which the continuance and growth of a locale depend (roads, schools, power plants, transportation, and communication systems).
Installation Restoration Program (IRP)	A program established by the Department of Defense to meet requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the Superfund Amendments and Reauthorization Act of 1986 that identifies, assesses, and cleans up or controls contamination from past hazardous waste disposal practices and hazardous material spills.
Land Use Plans and Polices	Guidelines adopted by governments to direct future land use within their jurisdictions.

Long-term Impacts	Impacts that would occur over an extended period of time, whether they start during the construction or operations phase. Most impacts from the operations phase are expected to be long-term in nature since program operations essentially represent a steady-state condition (i.e., impacts resulting from actions that occur repeatedly over a long period of time). However, long-term impacts could also be caused by construction activities if a resource is destroyed or irreparably damaged or if the recovery rate of the resource is very slow.
McKinney Act	Act that gives recognized providers of assistance to the homeless a high priority in acquiring unneeded land and buildings on federal properties. The property can be used only for the homeless and only for 2 years. The homeless provider must be able to finance upgrades of facilities, pay a proportionate share of municipal service costs, and fund its program operations.
Mitigation	A method or action to avoid, minimize, rectify, reduce, or compensate for program impacts.
National Environmental Policy Act (NEPA)	Public Law 91-190, passed by Congress in 1969, established a national policy designed to encourage consideration of the influence of human activities on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made.
National Pollutant Discharge Elimination System (NPDES)	A provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA or an authorized state.
National Priorities List (NPL)	A list of sites where releases of hazardous materials might have occurred and might pose an unreasonable risk to the health and safety of individuals, property, or the environment.
Native Americans	Used in the collective sense to refer to individuals, bands, or tribes that trace their ancestry to indigenous populations of North America prior to Euro-American contacts.
Non-impacted Area	Any area that has no potential for residual radioactive contamination.
Ordnance and Explosives (O&E)	Bombs and warheads, guided and ballistic missiles; artillery and mortar; rocket ammunition, mines; demolition charges, pyrotechnics, grenades; containerized and uncontainerized explosives and propellants; military chemical agents; and all similar and related items or components, explosive in nature or otherwise designed to cause damage to personnel or material. Soils with explosive constituents are considered O&E if the concentration is sufficient to be reactive and present an imminent safety hazard.
PCB-contaminated Equipment	Equipment that contains a concentration of polychlorinated biphenyls (PCBs) from 50 to 449 ppm or greater. Disposal and removal are regulated by EPA.
Peak Hours	The hours of highest traffic volume on a given section of roadway, usually between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m.

Permit	An authorization, license, or equivalent control document to implement the requirements of an environmental regulation.
Polychlorinated Biphenyls (PCBs)	Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as an environmental pollutant that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.
Potable Water	Water that is suitable for drinking.
Prehistoric	The period of time before the written record.
Prehistory	The archeological record of nonliterate cultures; the cultural past before the advent of written records.
Radioactive Material	A material that spontaneously emits ionizing radiation.
Radon	A colorless, naturally occurring, radioactive, inert gaseous element formed by radioactive decay of radium in soil or rocks.
Record of Decision (ROD)	A document prepared under the federal government that documents the reasoning behind a decision.
Region of Influence	For each resource, the region affected by the proposed action or alternatives and used for analysis in the affected environment and impact discussion.
Remedial Investigation (RI)	An investigation performed to more fully define the nature and extent of the contamination at a site and evaluate possible methods of cleaning up the site. During the investigation, groundwater, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of contamination.
Removal Actions	In the event of an immediate threat or potential threat to human health or the environment, a short-term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spots and their source from all biological receptors. Usually, removal actions do not completely clean up a site and additional remediation steps are required.
Runoff	The noninfiltrating water entering a stream or other conveyance channel shortly after a rainfall event.
Short-term Impacts	Transitory effects of the proposed program that are of limited duration and are generally caused by construction activities or operations start-up.
Significance	The importance of a given impact on a specific resource as defined under the Council on Environmental Quality regulations.
Soil Type	A category or detailed mapping unit used for soil surveys based on phases or changes within a soil series (e.g., slope, salinity).

Solid Waste Management	Supervised handling of waste materials from their source through recovery processes to disposal.
State Historic Preservation Officer (SHPO)	The official within each state, authorized by the state at the request of the Secretary of the Interior to act as a liaison for purposes of implementing the National Historic Preservation Act.
Surface Water	All water naturally open to the atmosphere and all wells, springs, or other collectors directly influenced by surface water.
Threatened Species	Plant and wildlife species likely to become endangered in the foreseeable future.
Toxic	Harmful to living organisms.
Transfer	To deliver U.S. government property accountability to another federal agency.
Unaffected Area	Any area that is not expected to contain any residual radioactivity, based on knowledge of site history and previous radiological survey information.
Unexploded Ordnance (UXO)	An item of ordnance that has failed to function as designed, or has been abandoned or discarded, and is still capable of functioning and causing injury to personnel or material.
U.S. Environmental Protection Agency (EPA)	The independent federal agency established in 1970 to regulate federal environmental matters and oversee the implementation of federal environmental laws.
Wetlands	Areas that are inundated or saturated with surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil. This classification includes swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are those wetlands which meet the vegetation, soils, and hydrology criteria under normal circumstances (or meet the special circumstances as described in the U.S. Army Corps of Engineers' 1987 wetland delineation manual where one or more of these criteria may be absent) and are a subset of "waters of the United States."
Zoning	The division of a municipality into districts for the purpose of regulating land use, types of buildings, required yards, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map, and the text of the zoning ordinance specifies requirements for each zoning category.

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ACRONYMS AND ABBREVIATIONS

AADT	average annual daily traffic
ACHP	Advisory Council on Historic Preservation
AIRFA	American Indian Religious Freedom Act of 1978
ARPA	Archaeological Resources Protection Act
bgs	below ground surface
BLS	Bureau of Labor Statistics
BNSF	Burlington Northern Santa Fe Corporation
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COC	Chamber of Commerce
CWA	Clean Water Act
CWP	contaminated waste processor
dBA	A-weighted decibel scale
DoD	Department of Defense
DPSDO	Defense Printing Service
DRMO	Defense Reutilization Marketing Office
EBS	environmental baseline survey
ECIA	East Central Intergovernmental Association
EDC	economic development conveyance
EIFS	Economic Impact Forecast System
EIS	environmental impact statement
EO	Executive order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
ESE	Environmental Science and Engineering
ETIS	Environmental Technical Information System
EWI	explosive waste incinerator
°F	degrees fahrenheit
FAA	Federal Aviation Agency
FAR	floor area ratio
FESOP	Federally Enforceable State Operating Permit
FFA	Federal Facilities Agreement
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
ft^2	square foot/feet
FY	fiscal year
gpd	gallons per day
gpm	gallons per minute
HAP	hazardous air pollutant
HIR	High Intensity Reuse
HP	horsepower
HQDA	United States Department of the Army
ICUZ	installation compatibility use zone
IDNR	Illinois Department of Natural Resources
IDOC	Illinois Department of Conservation
IEPA	Illinois Environmental Protection Agency
IL	Illinois
IRP	Installation Restoration Program
kV	kilovolt
kW	kilowatt
LBP	lead-based paint
Ldn	day-night noise level
LF	linear feet
LIR	Low Intensity Reuse
LP	liquid petroleum
LRA	Local Redevelopment Authority
MBTA	Migratory Bird Treaty Act
MCX	Mandatory Center of Expertise for the Curation and Management of Archaeological Collections
mgd	million gallons per day
MIR	Medium Intensity Reuse
MHIR	Medium-High Intensity Reuse
MLIR	Medium-Low Intensity Reuse
MSA	Mid-State Associates
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	notice of availability
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRHP	National Register of Historic Places

O&E	ordnance and explosives
OEDC	Overall Economic Development Committee
OSCAR	Outside Cable Rehabilitation
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyls
pCi/L	picocuries per litre
psi	pounds per square inch
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
ROD	record of decision
ROI	region of influence
RTV	rational threshold value
SAIC	Science Applications International Corporation
SARA	Superfund Amendments and Reauthorization Act
SE	state-endangered
SHPO	State Historic Preservation Officer
ST	state-threatened
SVADA	Savanna Army Depot Activity
SVAD LRA	Savanna Army Depot Local Reuse Authority
SWMU	Savanna Wildlife Management Unit
USACE	United States Army Corps of Engineers
USADACS	United States Army Defense Ammunition Center and School
USAEHA	United States Army Environmental Hygiene Agency
USBEA	United States Bureau of Economic Analysis
USDOC	United States Department of Commerce
USDOI	United States Department of Interior
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
vpd	vehicles per day
vph	vehicles per hour