

Community Involvement Plan

St. Louis FUSRAP Sites

May 2015



US Army Corps
of Engineers®

THIS PAGE INTENTIONALLY LEFT BLANK.

**COMMUNITY INVOLVEMENT PLAN
FOR THE ST. LOUIS FUSRAP SITES
REVISION 0**

FOR

ST. LOUIS, MISSOURI

May 2015

Prepared for

U.S. Army Corps of Engineers,
St. Louis District
Contract No. W912P9-12-D-0506
Task Order No. 0003

Prepared by

U.S. Army Corps of Engineers,
St. Louis District Office
Formerly Utilized Sites Remedial Action Program

THIS PAGE INTENTIONALLY LEFT BLANK.

FOREWORD

Citizens have the right to be actively involved in decisions that affect their community. This Community Involvement Plan (CIP) is part of the remediation process performed by the U.S. Army Corps of Engineers (USACE), St. Louis District to support cleanup activities for the Formerly Utilized Sites Remedial Action Program (FUSRAP) in St. Louis, Missouri. The cleanup sites, referred to in this CIP as the St. Louis Sites, are the result of activities associated with the Manhattan Engineer District/Atomic Energy Commission. The St. Louis Sites include the St. Louis Downtown Site and the North St. Louis County Sites. The North St. Louis County Sites consist of the St. Louis Airport Site (SLAPS); the SLAPS Vicinity Properties (VPs); and the Latty Avenue VPs, which include the Hazelwood Interim Storage Site (HISS), Futura Coatings Company property, and Latty Avenue Properties. These properties are located in Hazelwood, Berkeley, and St. Louis, Missouri. Although collectively referred to as the St. Louis Sites, USACE recognizes the unique nature and perspective of each of the communities in which these properties are located.

The ultimate goal of this CIP is to plan for continuing to effectively inform and actively engage the community in the cleanup process. This CIP describes the community's concerns, as identified during community interviews conducted in 2015. It also describes past, present, and planned community involvement activities implemented in response to concerns and will facilitate public input in the decision-making process. This plan contains a brief description of the St. Louis Sites and community backgrounds, a summary of community concerns, highlights of the community involvement program since 1992, and the timing of community involvement activities. It contains a contact list of key community leaders and interested parties, suggested locations for public meetings, and actual locations of Administrative Records and Administrative Record Files.

The extent and focus of community involvement activities will be determined by the needs of each property and its related community. USACE complies with community involvement activities required by United States law [National Oil and Hazardous Substances Pollution Contingency Plan (NCP)] and its specific regulations (NCP 40 *Code of Federal Regulations* 300.425, 430, and 815).

This CIP is a "living" document and will be updated or revised as conditions change.

THIS PAGE INTENTIONALLY LEFT BLANK.

TABLE OF CONTENTS

<i>Section</i>	<i>Page</i>
1.0 INTRODUCTION.....	1-1
1.1 THIS COMMUNITY INVOLVEMENT PLAN’S ORGANIZATION	1-1
1.2 OVERVIEW OF FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM, ST. LOUIS SITES.....	1-2
2.0 THE CERCLA PROCESS, PROJECT ORGANIZATION, AND AGENCY AGREEMENTS	2-1
2.1 THE CERCLA REMEDIATION PROCESS	2-1
2.1.1 Site Identification	2-3
2.1.2 Preliminary Assessment/Site Inspection	2-3
2.1.3 Remedial Investigation.....	2-3
2.1.4 Feasibility Study/Proposed Plan.....	2-3
2.1.5 Record of Decision.....	2-3
2.1.6 Remedial Design/Remedial Action.....	2-4
2.1.7 Five-Year Review	2-4
2.1.8 Site Closeout	2-4
2.1.9 Long-Term Monitoring, Operations, and Maintenance	2-4
2.2 THE CERCLA REMOVAL PROCESS	2-5
2.2.1 Removal Action/Remedial Action	2-5
2.2.2 Engineering Evaluation/Cost Analysis.....	2-6
2.3 ROLES AND RELATIONSHIPS OF THE AGENCIES AND PARTIES INVOLVED AT FUSRAP	2-6
2.4 FORMAL AGREEMENTS AT THE ST. LOUIS SITES.....	2-8
2.5 COMMUNITY INVOLVEMENT ROLES AND RESPONSIBILITIES.....	2-8
3.0 FUSRAP ST. LOUIS SITE DESCRIPTIONS	3-1
3.1 ST. LOUIS DOWNTOWN SITE AND VICINITY PROPERTIES	3-2
3.1.1 Location.....	3-2
3.1.2 History.....	3-2
3.1.3 FUSRAP History at the St. Louis Downtown Site.....	3-6
3.2 ST. LOUIS AIRPORT SITE	3-9
3.2.1 Location.....	3-9
3.2.2 History.....	3-9

TABLE OF CONTENTS (continued)

<i>Section</i>	<i>Page</i>
3.2.3 FUSRAP Work Completed at SLAPS to Date.....	3-10
3.3 ST. LOUIS AIRPORT SITE VICINITY PROPERTIES	3-14
3.3.1 Location.....	3-14
3.3.2 History.....	3-14
3.3.3 FUSRAP Work Completed at SLAPS Vicinity Properties to Date	3-17
3.4 LATTY AVENUE VICINITY PROPERTIES.....	3-24
3.4.1 Location.....	3-24
3.4.2 History.....	3-25
3.4.3 FUSRAP Work Completed at Latty Avenue Properties to Date	3-29
4.0 COMMUNITY BACKGROUND.....	4-1
4.1 HISTORY OF ST. LOUIS AREA.....	4-1
4.2 COMMUNITY PROFILES	4-1
4.2.1 Downtown St. Louis Area.....	4-2
4.2.2 North St. Louis County Area.....	4-3
4.2.3 St. Louis Airport Site Vicinity Properties	4-4
5.0 COMMUNITY CONCERNS.....	5-1
5.1 CHRONOLOGY OF COMMUNITY CONCERNS.....	5-1
5.2 KEY CURRENT COMMUNITY CONCERNS	5-12
5.3 PAST COMMUNITY INTERVIEW CONCERNS	5-13
5.3.1 Primary Concerns Raised During 2009 Interviews.....	5-14
5.3.2 Other Important Issues Raised in the Community Involvement Activities	5-14
6.0 COMMUNICATION OBJECTIVES AND ACTIVITIES	6-1
6.1 COMMUNITY INVOLVEMENT OBJECTIVES.....	6-1
6.1.1 Inform Area Residents, Media, and Local Officials of the CERCLA Cleanup Process and the Role of the U.S. Army Corps of Engineers.....	6-1
6.1.2 Inform Area Residents, Media, and Local Officials of the Progress of Each Site in Relation to the Cleanup Process	6-1

TABLE OF CONTENTS (continued)

<i>Section</i>	<i>Page</i>
6.1.3 Address Potential Risks of Site Contaminants on Human Health, Wildlife, and the Environment.....	6-1
6.1.4 Provide Updated Information.....	6-2
6.1.5 Establish a Communication Link between the FUSRAP Project Team and Other Interested Parties Involved at the Sites	6-2
6.2 COMMUNITY INVOLVEMENT ACTIVITIES	6-2
6.2.1 Administrative Record	6-2
6.2.2 Public Comment Periods.....	6-3
6.2.3 Published Notices.....	6-3
6.2.4 Public Meetings.....	6-4
6.2.5 Public Meeting Transcripts	6-4
6.2.6 Responsiveness Summary	6-4
6.2.7 Meetings with Local Officials and Interested Groups	6-4
6.2.8 St. Louis Oversight Committee.....	6-5
6.2.9 St. Louis FUSRAP Sites Website	6-5
6.2.10 Fact Sheets.....	6-5
6.2.11 Newsletter.....	6-6
6.2.12 Press Releases	6-6
6.2.13 Mailing List.....	6-6
6.2.14 Information Contact	6-6
6.2.15 Revisions or Future Updates to This Community Involvement Plan.....	6-6

LIST OF FIGURES AND TABLES

<i>Figures</i>	<i>Page</i>
Figure 2-1. CERCLA Remediation Process	2-2
Figure 2-2. CERCLA Removal Process	2-5
Figure 2-3. FUSRAP Site Organization, St. Louis Sites	2-7
Figure 3-1. Locations of FUSRAP Properties in the St. Louis, Missouri, Area	3-1
Figure 3-2. Aerial View of SLDS (1998)	3-2
Figure 3-3. Locations of SLDS	3-7
Figure 3-4. Aerial View of SLAPS and the Ballfields Cleanup Area (circa 1998)	3-9
Figure 3-5. Locations of SLAPS	3-13
Figure 3-6. Locations of Vicinity Properties	3-19
Figure 3-7. Eight Monitoring Stations on Coldwater Creek	3-21
Figure 3-8. Coldwater Creek Watershed (Map) (2011)	3-22
Figure 3-9. Post Card Sent to Residents at Sampling Sites	3-24
Figure 3-10. Information Tags Left for Residents at Sampling Sites	3-25
Figure 3-11. Aerial View of HISS Piles (1999)	3-29
<i>Tables</i>	<i>Page</i>
Table 3-1. Work Completed at SLDS (as of 1/2014)	3-8
Table 3-2. Work Accomplished at SLAPS (as of 1/2014)	3-14
Table 3-3. Work Completed at SLAPS VPs (as of 1/2015)	3-17
Table 3-3. Work Completed at SLAPS VPs (as of 1/2014) (continued)	3-18
Table 3-4. Work Completed at Latty Avenue VPs (as of 3/2015)	3-30

LIST OF APPENDICES

<i>Appendices</i>	<i>Page</i>
APPENDIX A	Chronology of Community Involvement Activities to Date
APPENDIX B	2015 Community Interview
APPENDIX C	Administrative Record Locations
APPENDIX D	Key Points of Contact
APPENDIX E	List of Acronyms
APPENDIX F	Glossary of Terms
APPENDIX G	Fact Sheets Issued to Date
APPENDIX H	Newsletters Issued to Date

1.0 INTRODUCTION

Citizens have the right to be actively involved in decisions that affect their community. This Community Involvement Plan (CIP) outlines the strategies the U.S. Army Corps of Engineers (USACE), St. Louis District, plans to use to encourage community involvement throughout the cleanup process related to the St. Louis Sites. The ultimate goal of this CIP is to assist USACE in effectively informing and actively engaging the community in this cleanup process.

This CIP identifies avenues for sharing knowledge and encouraging community participation related to cleanup of radioactive contamination at sites in the St. Louis, Missouri area resulting from activities associated with the Manhattan Engineer District (MED)/Atomic Energy Commission (AEC). To obtain information about specific community concerns, USACE conducted interviews in the St. Louis, Missouri area. Recognizing the unique nature and perspective of the geographical areas in which the properties are located, USACE conducted interviews with community representatives from each area impacted by the sites. Interviewees included private citizens, elected officials, representatives of local municipalities, citizen and environmental groups, the business community, the educational community, and local environmental agencies. The original interviews were conducted during the summer of 1993. Follow-up interviews were conducted during the fall of 1998, spring of 2003, and again in 2009. Community interviews conducted in 2003, 2009, and 2015 were held in conjunction with the five-year review process for the St. Louis Sites.

This CIP will refer to the cleanup sites collectively as the St. Louis Sites. The St. Louis Sites are comprised of properties in two distinct geographical areas: the St. Louis Downtown Site (SLDS) and North St. Louis County Sites. The North St. Louis County Sites include the St. Louis Airport Site (SLAPS), the SLAPS Vicinity Properties (VPs), and the Latty Avenue VPs [Hazelwood Interim Storage Site (HISS), Futura Coatings Company (Futura) property, and the Latty Avenue Properties].

1.1 THIS COMMUNITY INVOLVEMENT PLAN'S ORGANIZATION

This section introduces the roles of the CIP and Formerly Utilized Sites Remedial Action Program (FUSRAP) in the St. Louis Sites cleanup process. Section 2.0 describes the cleanup process required by federal laws and regulations. Section 3.0 describes each property included in the St. Louis Sites and its history and cleanup actions. Section 4.0 identifies the affected communities and discusses their backgrounds. Section 5 discusses historic and current community concerns and issues. Section 6.0 outlines community involvement objectives, details specific activities USACE plans to use to address community concerns and planned timing of those activities. The remainder of the CIP consists of appendices containing resource guides.

Appendix A Chronology of Community Involvement Activities to Date

Provides a listing of community involvement activities that have been conducted to date

Appendix B 2015 Community Interviews

Contains the questions posed to and the answers received from community representatives

Appendix C Administrative Record Locations

Lists the locations of Administrative Records or Administrative Record Files, hereafter called Administrative Record, that contain documents related to the St. Louis Sites

Appendix D Key Points of Contact

Lists names, addresses, and telephone numbers of key representatives of the various local communities; federal, state, and local elected officials; citizen and environmental groups; federal, state, and local environmental agencies; and the local media

Appendix E List of Acronyms

Lists acronyms and abbreviations for technical terms used in this document

Appendix F Glossary of Terms

Defines technical terms used in this document

Appendix G Fact Sheets Issued to Date

Provides copies of public information fact sheets developed for the St. Louis Sites

Appendix H Newsletters Issued to Date

Provides copies of public information newsletters developed for the St. Louis Sites

1.2 OVERVIEW OF FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM, ST. LOUIS SITES

Cleanup activities at the St. Louis Sites are part of a larger U.S. Department of Defense/ USACE environmental program known as FUSRAP. The U.S. Congress transferred the responsibility for executing FUSRAP from the U.S. Department of Energy (DOE) to USACE in October 1997 under the Energy and Water Development Appropriations Act. Cleanup activities are conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, 42 U.S. Code §9601, et seq. and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations Part 300. CERCLA was enacted by Congress in 1980. CERCLA actions are funded by a trust fund that was established to pay for cleanup and enforcement activities at sites where the release or threatened release of a hazardous substance may endanger public health, welfare, or the environment. Section 2.0 describes the CERCLA response program at the St. Louis Sites. The NCP document guides the application of the CERCLA statute and prescribes a sequential process for conducting remedial response activities at sites where there is a potential threat to human health or the environment. Section 3.0 describes FUSRAP and the history and remedial response actions at the St. Louis Sites.

USACE completed the CERCLA cleanup process at the FUSRAP site in Madison, Illinois, as one of the St. Louis area properties. The Madison Site is now assigned to the DOE Office of Legacy Management for surveillance, operation, and enforcement of institutional controls. In the future, the other St. Louis Sites will be collectively transferred back to the DOE Office of Legacy Management control.

Much of the community involvement to date pertains to SLDS and North St. Louis County Sites. SLDS has been separated into two operable units: (1) the Accessible Soil and Ground Water Operable Unit and (2) the Inaccessible Soil Operable Unit (ISOU). The ISOU, which includes inaccessible soil, sewers, buildings, and other permanent structures, will be addressed under a CERCLA action. The ISOU was excluded from the scope of the SLDS Record of Decision (ROD) in 1998 because inaccessible soil did not present a significant threat in its current configuration. A remedial investigation (RI) characterized the nature and extent of contamination associated with the ISOU. USACE subdivided the areas included in the ISOU into two groups: Group 1 and Group 2.

USACE used the information from the RI to prepare the 2014 Proposed Plan (PP) for the SLDS ISOU Group 1. The goal of the PP for Group 1 was to develop and evaluate potential remedial alternatives. A public hearing to present the PP to stakeholders took place in January 2014. The public's verbal and written comments about the PP and USACE's responses to those comments are included in the ISOU ROD.

THIS PAGE INTENTIONALLY LEFT BLANK.

2.0 THE CERCLA PROCESS, PROJECT ORGANIZATION, AND AGENCY AGREEMENTS

USACE, St. Louis District is addressing the St. Louis Sites in accordance with CERCLA and the NCP. Cleanup activities at the sites are being conducted under FUSRAP.

The FUSRAP response to CERCLA is divided into two broad categories: remedial actions and removal actions. A remedial action is, generally, a longer-term action that eliminates or substantially reduces releases or threatened releases of hazardous substances that pose a threat to human health and the environment. A remedial action is a long-term action taken after the final remedy has been identified in a ROD.

A removal action is a short-term action intended to stabilize or cleanup an incident or site that poses an imminent threat to human health or the environment. Removal actions can be of three types: emergency, time-critical, and non-time-critical.

2.1 THE CERCLA REMEDIATION PROCESS

The CERCLA remedial action process is made up of several specific steps, with activities that must be performed at each step to ensure a thorough cleanup process. The actions taken at a site are recorded to identify where hazardous substances are, determine the potential threat they pose, and take appropriate cleanup measures. CERCLA requires that the public be informed and included in the decision-making process.

Remediation at the St. Louis Sites is conducted according to CERCLA cleanup or remedial action processes (Figure 2-1). These processes include the following steps:

- Preliminary assessment/site inspection
- Possible removal action
- RI
- Feasibility study (FS)/PP
- ROD
- Remedial design/remedial action
- Site closeout
- Five-year review/long-term monitoring, operations, and maintenance

The St. Louis Sites have been, and continue to be, addressed by the CERCLA process. The St. Louis Sites consist of:

- SLDS
- North St. Louis County Sites; including SLAPS, SLAPS VPs, HISS, Futura, and the Latty Avenue Properties

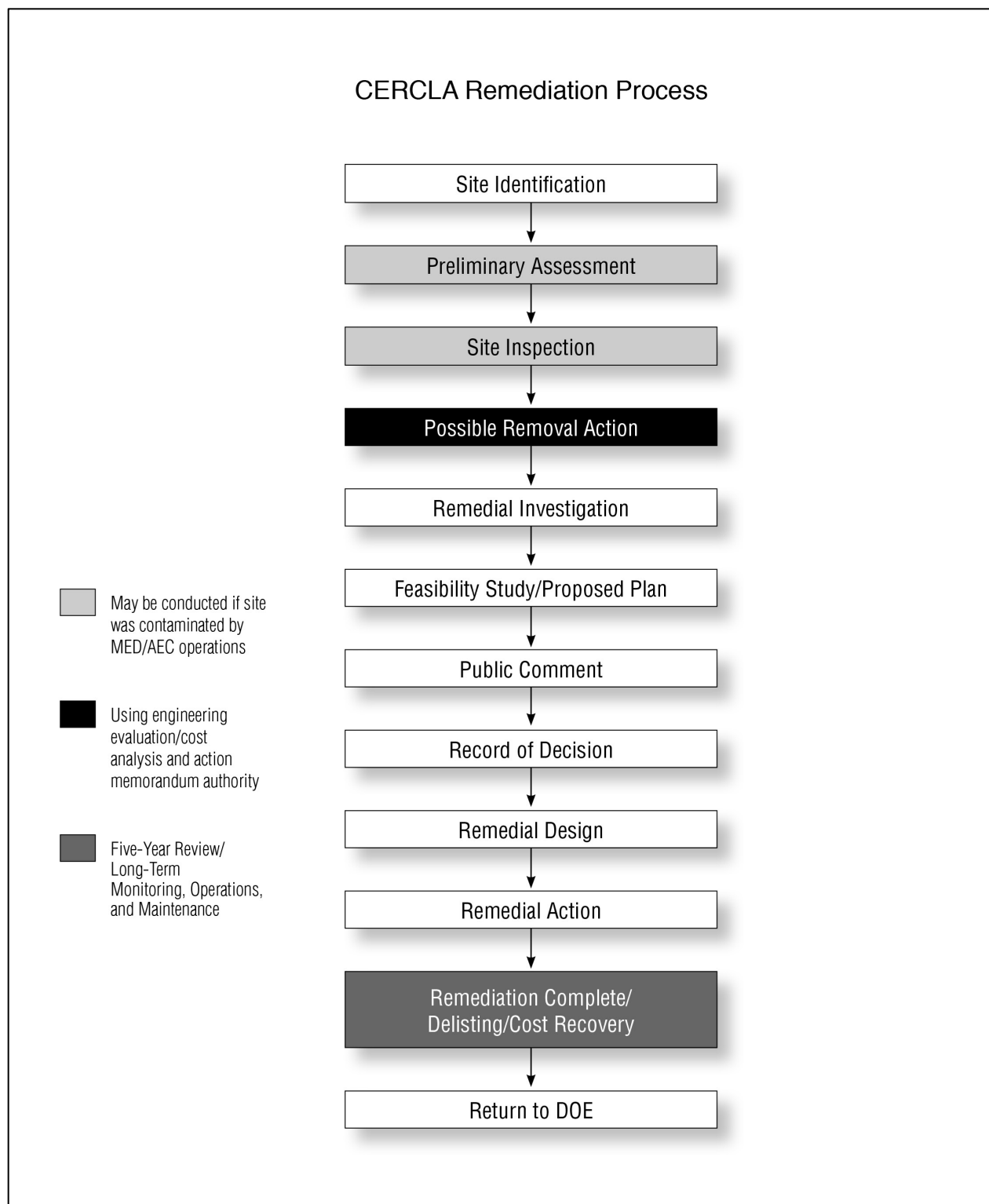


Figure 2-1. CERCLA Remediation Process

Since the SLDS ROD was signed in 1998, SLDS has been addressed under a CERCLA remedial action. The North St. Louis County Sites were addressed under a CERCLA engineering evaluation/cost analysis (EE/CA) response action until the North County ROD was signed in 2005. Since 2005, the North St. Louis County Sites have been addressed under a CERCLA remedial action. The defining characteristics of each of these sites are presented in detail in Section 3.0.

2.1.1 Site Identification

For a new site to be added to FUSRAP, DOE first performs historical research to determine if the site is eligible. DOE provides this research, along with geological boundaries of historical activities and the potential radioactive or chemical contaminants at the site to USACE. DOE maintains the Considered Sites Database to provide information to the public about sites that were formerly used in the nation's nuclear weapons and early atomic energy programs that had the potential for residual radioactive contamination. It is available at <http://energy.gov/lm/sites/lm-sites/considered-sites>.

2.1.2 Preliminary Assessment/Site Inspection

The preliminary assessment is a historical record review of activities at the site that is used to determine probable locations of hazardous waste disposal areas. Initially, the preliminary assessment establishes the extent of contamination.

This phase generally entails interviewing active and retired employees who work or worked at the site, as well as reviewing records, permits, and files. The site inspection is a physical inspection of the site to verify information obtained during the preliminary assessment. The site inspection often involves limited soil and water sampling.

2.1.3 Remedial Investigation

The RI identifies the type of contaminants present at or near the site, assesses the degree and extent of contamination, and characterizes the potential risks to public health and the environment. It may also determine where the contaminant is located.

2.1.4 Feasibility Study/Proposed Plan

The FS develops and analyzes various cleanup alternatives. Developed simultaneously with the FS, the PP summarizes cleanup alternatives and provides rationale for USACE's preferred alternative. When both documents are complete, USACE provides the public an opportunity to comment on the PP during a 30-day comment period. USACE publishes a notice of availability in a major local newspaper to announce the public comment period. Public comments on the PP may be written and submitted at a public meeting, mailed to USACE, or spoken during a public meeting.

2.1.5 Record of Decision

USACE selects the final cleanup alternative in consultation with the U.S. Environmental Protection Agency (EPA) and Missouri Department of Natural Resources (MDNR). The ROD is the final document that describes the selected cleanup alternative. As the primary decision document, the ROD gives the reasons for remedial action, describes the selected remedy, and justifies the action selected. Public comments, USACE responses, and any new information are detailed in a section of the ROD known as

the responsiveness summary. The responsible federal agency is required to commence physical on-site remedial action within 15 months of the effective approval date of the ROD.

2.1.6 Remedial Design/Remedial Action

The remedial design and remedial action involve designing, developing, and implementing the cleanup method(s) described in the ROD. The remedial design includes preparing technical drawings and engineering specifications for the remedial action, which is the physical cleanup of the site. Remedial actions are followed by surveys to verify that the site meets ROD goals. For properties requiring remedial action, Post Remedial Action Reports/Final Status Survey Evaluations (PRARs/FSSEs) are written to report survey findings. For properties not requiring remedial action, USACE writes Pre-Design Investigation Reports (PDIRs)/FSSEs.

2.1.7 Five-Year Review

Following initiation of a remedial action, each site is reviewed at least every five years to evaluate the performance of a remedial action remedy and to determine if the remedy continues to be protective of human health and the environment. The five-year review is mandated for all remedial actions conducted under CERCLA.

If, after a five-year review, further action or modification of the remedial action at a site is necessary in accordance with Section 104 or 106 of CERCLA, the lead agency or potentially responsible party for the site shall implement the additional or modified action.

CERCLA requires that remedial actions that result in hazardous substances, pollutants, or contaminants remaining at the site be subject to a five-year review. The NCP further provides that remedial actions resulting in any hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure be reviewed every five years to ensure protection of human health and the environment.

2.1.8 Site Closeout

The term “closeout” means that completion of cleanup and a published notice to the public are made in accordance with the provisions of CERCLA, NCP, and USACE procedures. USACE will take the necessary steps to closeout sites and certify them for appropriate future use. Areas disturbed by removal actions will be restored “in kind.” This means excavated areas will be restored with soil, concrete/asphalt, or vegetation to restore customary use of the property. FUSRAP activities are completed when USACE meets all responsibilities at active sites in accordance with the provisions of the Memorandum of Understanding (MOU). The MOU clarifies these responsibilities as agreed upon by DOE and the EPA and is carried out by USACE. USACE is responsible for all response actions at FUSRAP sites until two years after closeout. Beginning two years after closeout, DOE responsibilities include long-term monitoring, operation and maintenance, and enforcing institutional controls.

2.1.9 Long-Term Monitoring, Operations, and Maintenance

Long-term monitoring is conducted, as mandated by the ROD, to monitor conditions before removing the sites from the National Priorities List (NPL). After all reclamation activities are completed and approved,

a long-term monitoring plan will identify responsibilities for long-term care. These responsibilities may include security, inspections, ground water monitoring, and more remedial actions. The long-term monitoring plan may also establish institutional controls, like fencing and signage, which are protective of public health and the environment. A long-term stewardship (LTS) program will evolve through the collaboration of property owners, local municipalities, and state and federal agencies. At the federal level, responsibility for LTS is split between USACE and DOE. Under the MOU between the two agencies, DOE will be responsible for implementing the program two years after USACE completes the site remedy. Until that time, USACE will be responsible for site stewardship.

2.2 THE CERCLA REMOVAL PROCESS

The CERCLA removal process is similar to the remediation process described in Section 2.1. However, cleanup actions are performed much sooner in the process. A removal action may be performed to address imminent threats to human health and the environment. The resulting response might or might not be the final solution for the site involved. Removal actions are conducted in accordance with a CERCLA prescribed process (Figure 2-2).

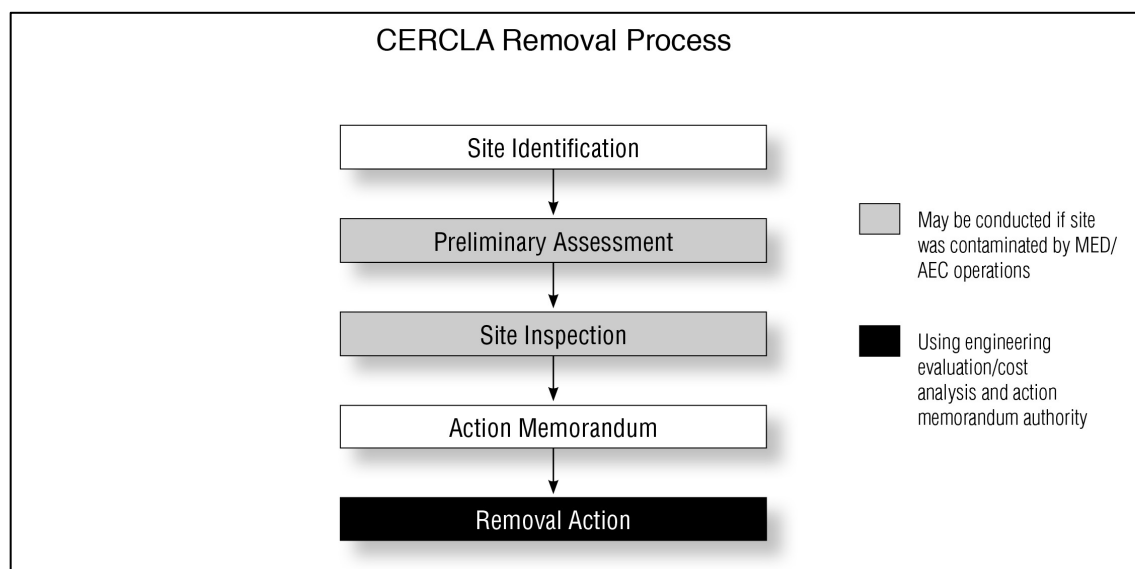


Figure 2-2. CERCLA Removal Process

CERCLA consists of a series of specific steps with activities that must be performed at each step to ensure a thorough cleanup process. It chronicles actions taken at a site to identify where hazardous substances are, assess the potential threat they pose, and take appropriate cleanup measures. CERCLA also requires that the public be informed and involved in the decision-making process.

2.2.1 Removal Action/Remedial Action

The CERCLA response program is divided into two broad categories: removal actions and remedial actions. Removal actions are intended to be relatively quick actions designed to address imminent threats to human health and the environment.

Remedial actions are longer-term activities that complete site cleanup if the removal action does not or cannot present a complete solution. Removal actions can be of three types: emergency, time-critical, and non-time-critical. They are authorized by Action Memoranda. Remedial actions take place after a ROD has been signed.

2.2.2 Engineering Evaluation/Cost Analysis

An EE/CA evaluates technical and administrative cleanup alternatives to address non-time-critical removals at a site. EE/CAs are used to identify cleanup alternatives for non-time-critical removals of current concern.

By reducing the potential for exposure to contaminants or other hazards, human health, wildlife, and the environment can be protected.

EE/CAs were used for removal actions at some North St. Louis County Sites. The SLAPS EE/CA was used to remove radioactively contaminated materials in 1991 and 1997. SLAPS had another EE/CA in place in 1999. HISS had removal actions under 1992, 1995, and 1998 EE/CAs.

To date, EE/CAs for the North St. Louis County Sites have been for removals that were non-time-critical. Non-time-critical removal actions could start more than six months after a response is determined to be necessary.

2.3 ROLES AND RELATIONSHIPS OF THE AGENCIES AND PARTIES INVOLVED AT FUSRAP

The roles and responsibilities of federal and state agencies and private parties at federal facilities under FUSRAP are defined in Section 120 of CERCLA, the Federal Facilities Agreement (FFA) with EPA, the MOU with DOE, and NCP.

The agencies and parties involved in CERCLA cleanup activities under FUSRAP are described below. The formal agreements between these agencies are also described in this section, and the St. Louis Sites project organization chart is presented in Figure 2-3.

USACE. A federal agency that assumed responsibility for executing FUSRAP from DOE as directed by U.S. Congress. USACE was directed by U.S. Congress in the Energy and Water Resources Appropriations Act of 1997 to conduct and execute response actions at the FUSRAP sites. USACE functions as the lead agency for FUSRAP actions. U.S. Congress authorized USACE as the lead agency for implementing the selected remedy. USACE selected the remedy in consultation with EPA and the concurrence of the MDNR.

EPA. A federal agency with responsibility delegated by the President to implement CERCLA and its regulations. EPA is involved in initiating, developing, selecting, and implementing response actions to be taken under FUSRAP. EPA has a regulatory role to the lead agency for the St. Louis Sites.

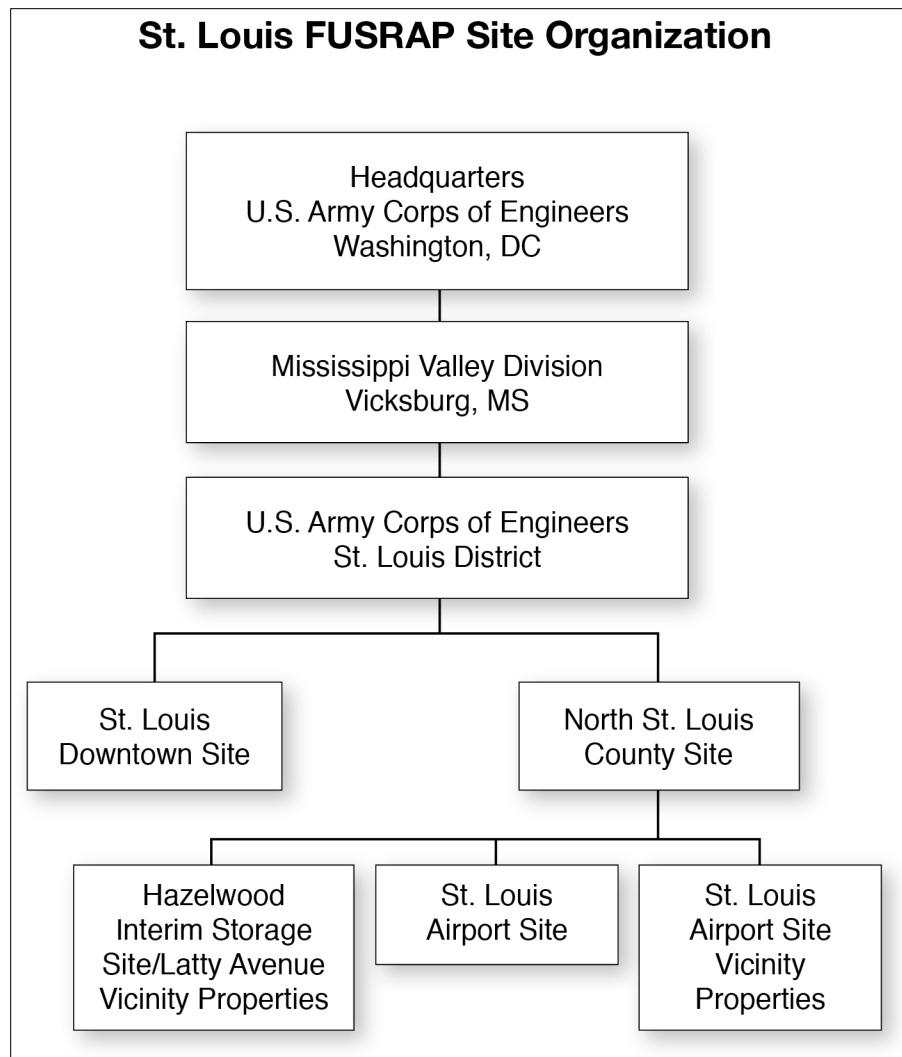


Figure 2-3. FUSRAP Site Organization, St. Louis Sites

Missouri Department of Natural Resources (MDNR). The designated state agency whose responsibility is to evaluate proposals, recommendations, and plans submitted by USACE in accordance with state or federal laws, regulations, policies, and guidance. MDNR provides independent field oversight of response actions carried out at the St. Louis Sites.

St. Louis Oversight Committee. A group of concerned citizens and community leaders interested in participating in the cleanup of the St. Louis Sites since 1994. As representatives of municipalities, utilities, property owners, regulatory agencies, civic and environmental groups, congressional delegations, and other concerned citizens, the St. Louis Oversight Committee provides comments, recommendations, and constructive criticism for USACE in its efforts to address the FUSRAP sites. Members of the St. Louis Oversight Committee are actively involved in their neighborhoods, businesses, and governmental units. Open to interested citizens, the committee assists by clarifying community concerns to USACE, conveying information to others, and providing an additional avenue for residents with

questions about response actions. The St. Louis Oversight Committee is not funded by FUSRAP or USACE. Their meetings are open to the public with time and locations announced in advance on the USACE St. Louis District FUSRAP website at <http://bit.ly/FUSRAPstl> and in the newsletter, *FUSRAP Update: The St. Louis Sites*.

DOE. Under the MOU between DOE and EPA, USACE is managing active cleanup operations, surveillance, and operations and maintenance through the first two years after site closeout. Beginning two years after closeout, DOE assumes long-term responsibility for surveillance and operation and maintenance, including monitoring and enforcing any institutional controls that have been imposed on a site or VPs.

2.4 FORMAL AGREEMENTS AT THE ST. LOUIS SITES

In June 1990, EPA Region VII (which oversees Missouri Sites) and DOE signed an FFA as required by CERCLA regulations. Although DOE is no longer involved in work on FUSRAP sites, USACE honors this agreement. MDNR oversight is funded by USACE under a Cooperative Agreement.

2.5 COMMUNITY INVOLVEMENT ROLES AND RESPONSIBILITIES

USACE, St. Louis District is the lead agency responsible for implementing specific activities at each site. Planned community involvement activities will be initiated to address community concerns and information needs identified through community interviews and other interactions with public officials, citizen interest groups, and residents. These activities are detailed in Section 6.2. Community involvement coordinators and points of contact are listed in Appendix E.

3.0 FUSRAP ST. LOUIS SITE DESCRIPTIONS

Even though FUSRAP sites may contain levels of radioactivity above current regulatory guidelines, none of the St. Louis Sites pose an immediate health risk to the public or environment given their current land uses. The materials at FUSRAP sites are considered a hazard because they will remain radioactive for thousands of years and health risks could increase if the use of the land were to change. The St. Louis District wants to ensure that each FUSRAP site under its jurisdiction is protective of human health and the environment and is protective to a standard that considers the future land use.

The St. Louis Sites are located in the St. Louis, Missouri, area and consist of SLDS, SLAPS, SLAPS VPs, and the Latty Avenue VPs (HISS, Futura, and Latty Avenue Properties). Figure 3-1 shows the locations of the St. Louis Sites. The following sections describe the sites and provide background information from 1997 to date.

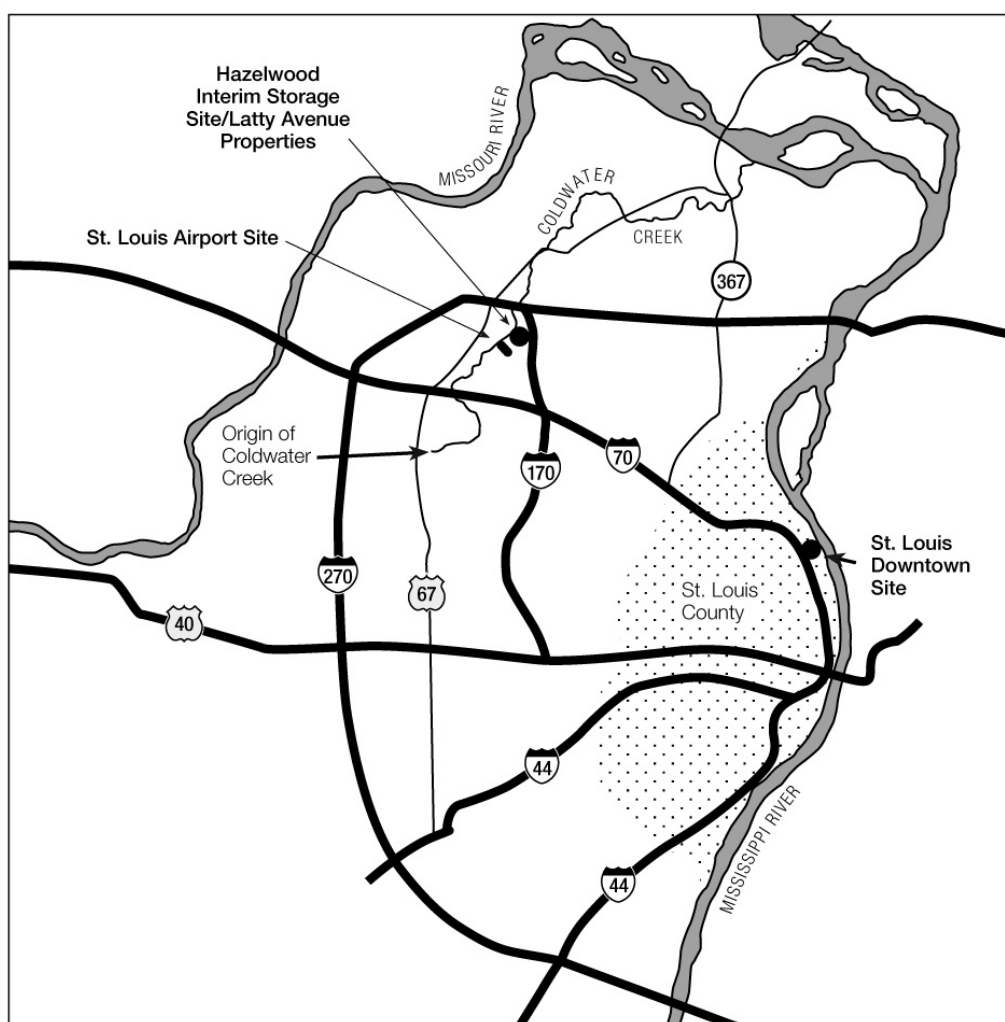


Figure 3-1. Locations of FUSRAP Properties in the St. Louis, Missouri, Area

3.1 ST. LOUIS DOWNTOWN SITE AND VICINITY PROPERTIES

3.1.1 Location

SLDS, which includes Mallinckrodt and VPs, is located in an industrial area on the eastern border of St. Louis, Missouri, approximately 300 feet west of the Mississippi River. The VPs are about 11 miles southeast of SLAPS and the Lambert-St. Louis International Airport. The surrounding 37 VPs are also a part of SLDS.

SLDS encompasses nearly 45 acres and is presently owned and operated by Mallinckrodt, LLC, a pharmaceutical and imaging business formerly known as Mallinckrodt Chemical Works. The SLDS property includes many buildings and other facilities involved in chemical production (Figure 3-2).



Figure 3-2. Aerial View of SLDS (1998)

3.1.2 History

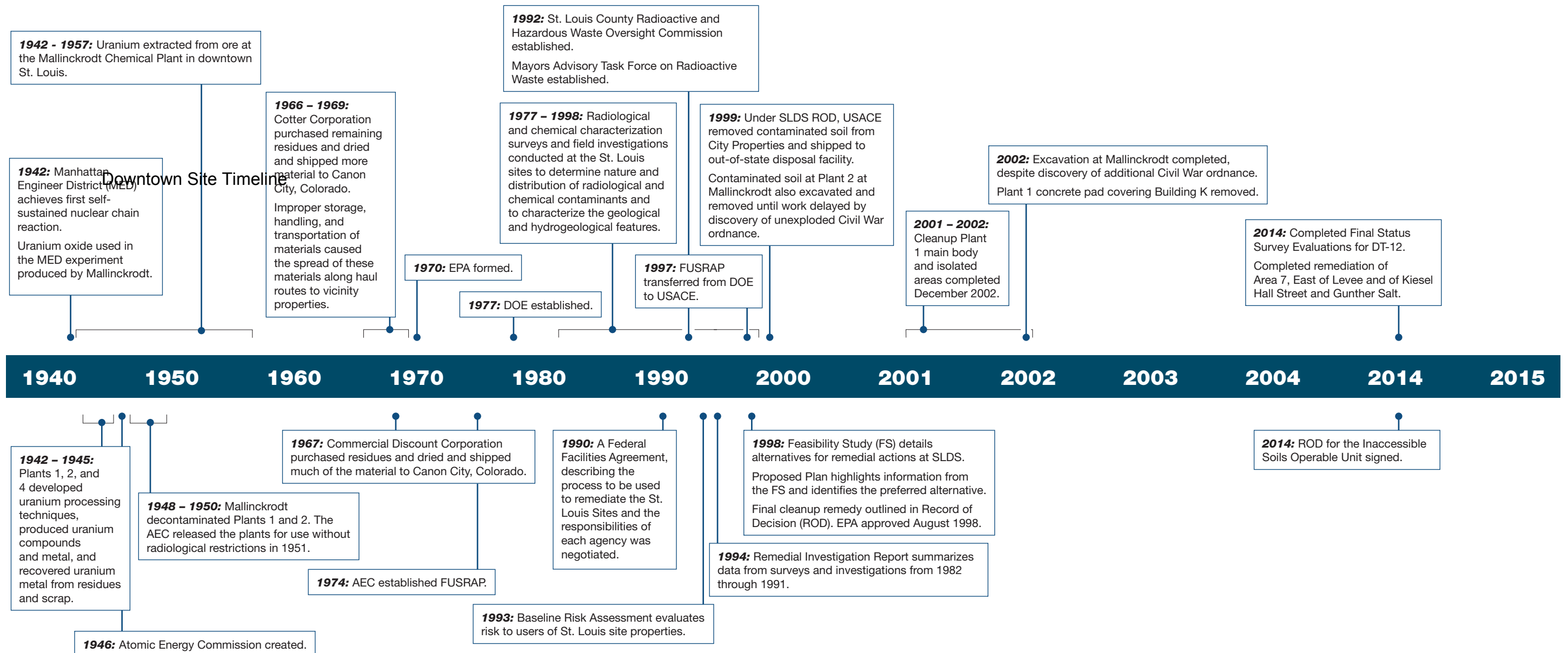
From 1942 to 1957, under contracts with MED and AEC, the site was used for processing various forms of uranium compounds, machining, and recovering uranium metal. At the time of MED/AEC operations, Mallinckrodt owned some of the land and buildings. Other buildings, built by MED/AEC, and land were owned by the federal government.

Experimental processing of radium-containing pitchblende ores began in Plant 1 in 1944. The pitchblende ore was acquired from the African Metals Company. Because this company retained ownership of the radium content of the ore, it was required that radium-226 and its daughter products be extracted along with the lead content. The radium and lead were precipitated, and the precipitate was sent to the Lake Ontario Ordnance Works in Lewiston, New York, and to the Feed Material Production Center in Fernald, Ohio, for storage.



FUSRAP History at the St. Louis Downtown Site and Vicinity Properties

FUSRAP



THIS PAGE INTENTIONALLY LEFT BLANK.

From 1942 through 1945, uranium processing was conducted at Plants 1, 2, and 4 (now known as Plant 10). Uranium-refining operations began at Plant 2 in April 1942, and by July 1942 approximately a ton of uranium oxide (UO₂) was produced per day. In 1945, operations at Plant 2 were terminated. Some uranium metallurgical research continued at Plant 4 through 1956. From 1945 to 1957, uranium concentrate ore was processed in buildings at Destrehan Street (Plants 6, 6E, and 7). All uranium extraction operations at the Destrehan Street location ceased in 1957.

AEC performed decontamination at Plants 1 and 2 from 1948 through 1950. In 1951, the plants were released to Mallinckrodt for use without radiological restrictions. From 1950 to 1951, an annex to Building 52 (presumably 52A) was modified and subsequently used as a metallurgical pilot plant for uranium metal operations until it was closed in 1956. Building 52 was released to Mallinckrodt in 1962 after decontamination work was conducted.

When St. Louis MED/AEC operations were terminated, buildings owned by the government were either demolished or transferred to Mallinckrodt as part of the settlement. Several plants within the Mallinckrodt facility, about 60 buildings, were involved; fewer than 20 of these buildings remain. Since 1962, some of the buildings have been used for commercial production of chemicals.

AEC managed decontamination efforts (removing radiologically contaminated buildings and equipment, and soil was disposed offsite) in Plants 4, 7, and 6 to meet AEC criteria and returned the plants to Mallinckrodt in 1962 for use without radiological restrictions.

A radiological survey conducted at SLDS in 1977 found radiological contamination that exceeded new guidelines. In response to this survey, it was determined that further investigation of the site was necessary to characterize the nature and extent of contamination. In 1990, EPA Region VII and DOE entered into an FFA that established schedules and deliverables for the CERCLA process at the St. Louis Sites. DOE submitted the RI report for the St. Louis Sites in 1994.

During DOE's involvement with FUSRAP in 1994, DOE helped establish two committees with the purpose of working closely with FUSRAP representatives and serving as the "voice of the people." These organizations consisted of the St. Louis Radioactive and Hazardous Waste Oversight Committee and the city of St. Louis Mayor's Advisory Task Force on Radioactive Waste. In 1994, the St. Louis Sites Remediation Task Force (SLSRTF) was also established, consisting of members from the two aforementioned groups, plus other community stakeholders. In 1996, SLSRTF issued a report detailing the community's recommendations for cleanup and removal of MED/AEC contaminants at the St. Louis Sites under FUSRAP. Eventually, in 1997, the smaller St. Louis Oversight Committee was formed from members of these organizations. This organization developed a strong working relationship with FUSRAP and served in a consultative and participatory role in the cleanup of the St. Louis Sites.

Until 1997, DOE led the cleanup of SLDS as part of its responsibility for the cleanup of FUSRAP sites. Responsibility for the execution aspect of FUSRAP was transferred from DOE to USACE in October 1997 under the Energy and Water Development Appropriations Act. Cleanup activities then followed CERCLA and the NCP. In 2000, Covidien, an international healthcare provider, bought Mallinckrodt, Inc. Mallinckrodt, LLC, officially separated from Covidien in June 2013 and kept ownership of the property. DOE will assume stewardship responsibility beginning two years after

completing the response action at the St. Louis Sites. Land and building assets reverted to Mallinckrodt in the 2013 separation from Covidien.

3.1.3 FUSRAP History at the St. Louis Downtown Site

MED/AEC partially decommissioned Plants 1 and 2 in 1950 and 1951. Further decommissioning was performed in the early 1960s. MED/AEC also decommissioned Plants 4, 6, and 7 in the early 1960s to the standards of the day. Decommissioning activities included building decontamination or demolition and removing some soils and subsurface materials.

In 1977, the Oak Ridge National Laboratory conducted a radiological survey of portions of SLDS at DOE's request. Results of the survey showed alpha- and beta-gamma contamination levels in excess of limits set by CERCLA and the NCP for release of property for use with no radiological restrictions. Elevated gamma radiation levels were measured at selected outdoor locations and in selected buildings. Concentrations of uranium and radium-226 above CERCLA and NCP criteria were found in subsurface soil samples, and elevated gamma radiation levels were measured in some indoor drains.

Radiological characterization, which consisted of sampling and analyses to determine the nature and extent of contamination, was performed at SLDS in 1988 and 1989. The scope of interim removal actions at SLDS was outlined in an EE/CA prepared in 1991 by DOE. The EE/CA was reviewed by the public, and DOE prepared a Responsiveness Summary to address the comments received.

In 1997, DOE decontaminated or demolished buildings 50, 51, 51A, 52, 52A, 116, 117, 219, 700, 704, 705, 706, 707, and 708 and other areas at the site. The purpose of these removal actions was to minimize human exposure to contaminated material and allow for consolidation of impacted materials at temporary on-site storage areas.

3.1.3.1 FUSRAP Work Completed at SLDS

USACE removed all accessible soil that exceeded ROD cleanup goals at the following SLDS properties: Plants 1, 2, 6 East Half (EH), 6 East (E), 7 North (N), 7 South (S), 7E, and 9; Norfolk Southern Railroad (DT-3); Gunther Salt (DT-4); Heintz Steel and Manufacturing (DT-6); Midwest Waste (DT-7); PSC Metals, Inc. (DT-8); Thomas and Proetz Lumber Company (DT-10); Illinois Department of Transportation (IDOT) and Missouri Department of Transportation (MODOT) (collectively, DT-11); Burlington-Northern Santa Fe Railroad (DT-12); Christiana Court (DT-17); Midtown Garage (DT-29); and Terminal Railroad Association Soil Spoils Area. A map of SLDS is presented in Figure 3-3.

The SLDS project required remediating 37 contaminated areas. Table 3-1 lists the status of work accomplished at FUSRAP at SLDS. All sites listed in Table 3-1 have been characterized, except DT-31. The FS for Group 2 properties is under USACE review. The RI for the ISOU is complete and includes Group 1 and Group 2 properties. No FS is required for Group 1. The PP for Group 1 properties is also complete. The ROD for Group 1 properties was issued in 2014.

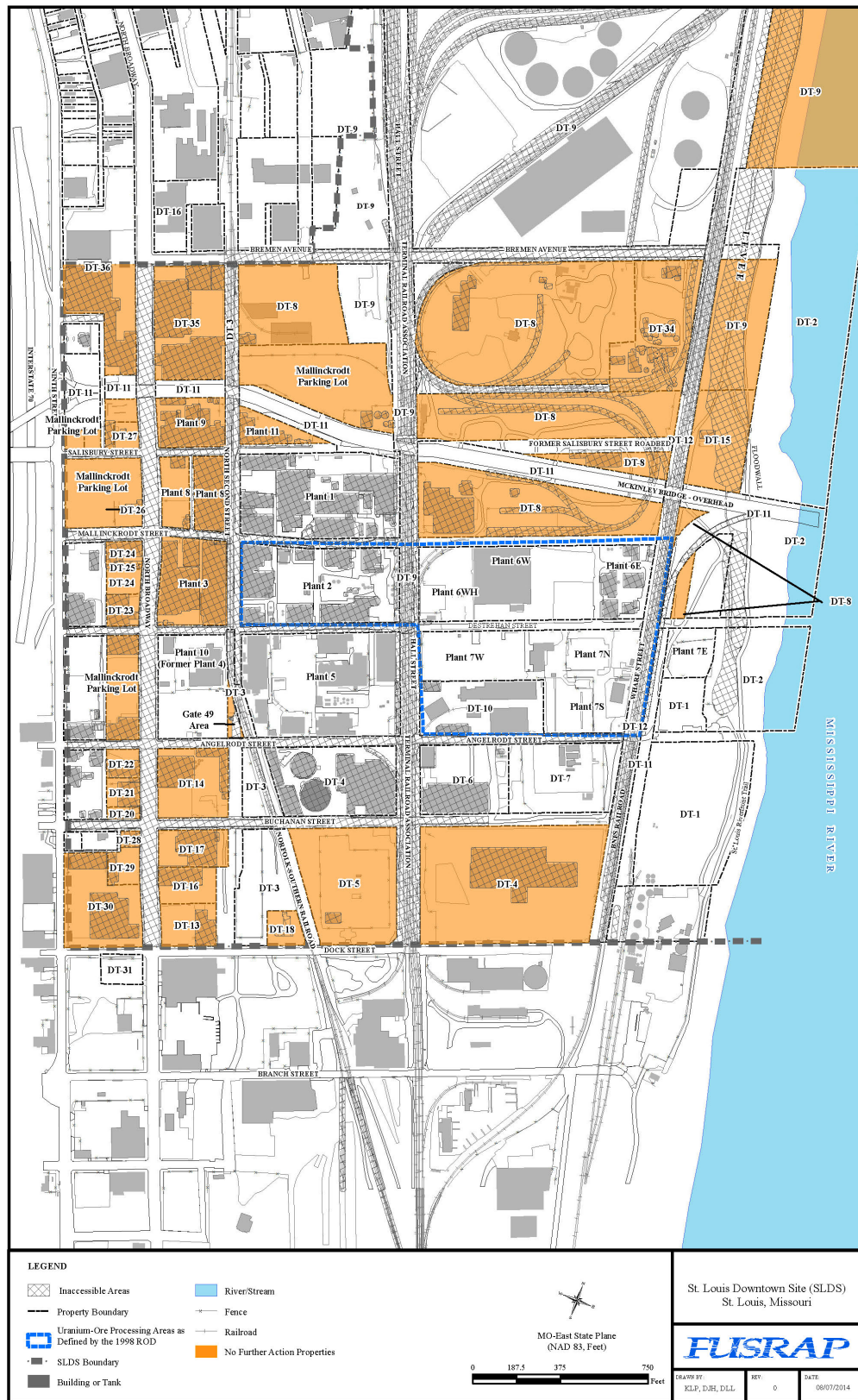


Figure 3-3. Locations of SLDS

Table 3-1. Work Completed at SLDS (as of 1/2014)

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey
Plant 1	×	×	× (3,076)	×
Plant 2	×	×	× (11,806)	×
Plant 6 East Half, East, and West Half	×	×	× (36,230)	
Plant 7 East, South, North, and West 700 Pad	×	×	× (29,057)	
Plant 9 Gate 49	×	×	× (22)	×
DT-1 (Kiesel; formerly Archer Daniels Midland)	×	not needed	not needed	×
DT-2 (St. Louis City Property)	×	×	× (30,400)	
DT-3 (Norfolk Southern Railroad)	×	×	× (125)	×
DT-4 (Gunther Salt North and South)	×	×	× (3,394)	×
South of Angelrodt (DT-5, -13, -14, -16, -18 and the Second Street Corridor)	×	not needed	not needed	×
DT-6 (Heinz Steel and Manufacturing)	×	×	× (1,790)	×
DT-7 (Midwest Waste)	×	×	× (3,910)	×
DT-8 (PSC Metals, Inc.)	×	×	× (12,219)	×
DT-9 (Terminal Railroad Association)	×	×	× (3,023)	
DT-10 (Thomas and Proetz Lumber Company)	×	×	× (2,560)	×
DT-11 (City of Venice, Illinois [Formerly McKinley Bridge] IDOT and MODOT)	×	×	× (2,674)	×
DT-12 (Burlington-Northern Santa Fe Railroad)	×	×	× (3,724)	
DT-15 (City Properties [Metropolitan St. Louis Sewer District Lift Station])	×	not needed	not needed	×
DT-17 (Christina Court)	×	×	× (68)	×
DT-29 (Midtown Garage)	×	×	× (40)	×
DT-34 (Hjersted)	×	not needed	not needed	×
DT-35 (Wholesale Tire) and DT-36 (OJM, Inc.)	×	not needed	not needed	×
DT-37 (Lange-Stegmann)	×	not needed	not needed	×
Terminal Railroad Association Soil Spoils Area	×	×	× (3,024)	×
Mallinckrodt Plants 3, 8, 9, 11 and Parking Lots (includes DT-32)	×	not needed	not needed	×
West of Broadway VPs (DT-20 to 30)	×	not needed	not needed	×

Characterized = Scientists surveyed the site to locate and identify contaminants.

Remedial Design = Engineers completed the design for cleanup. Regulators and property owners reviewed the design. Then USACE approved or changed it.

Remedial Action = Workers followed the design and completed remedial actions, which primarily includes soil removal.

Final Status Survey = Investigators verify that the cleanup meets ROD remediation goals. The FSSE is documented in a PRAR for properties requiring remediation and in a PDIR/FSSE for properties not requiring remediation.

3.2 ST. LOUIS AIRPORT SITE

3.2.1 Location

SLAPS is a 21.7 acre property in St. Louis County, approximately 11 miles north from downtown St. Louis, is owned by the city of St. Louis through the Airport Authority, although it lies outside of city limits. SLAPS is north of the Lambert-St. Louis International Airport and is bordered by the Norfolk Southern Railroad and Banshee Road on the south, Coldwater Creek on the west, and McDonnell Boulevard and adjacent recreational fields to the north and east (Figure 3-4).

Land use adjacent to SLAPS is varied, but is generally used for transportation and commercial functions.

3.2.2 History

From 1942 to 1957, Mallinckrodt Chemical Works processed uranium from ore on property known today as SLDS in St. Louis, Missouri. Under national defense contracts with MED/AEC, processing activities at SLDS included ores with varying concentrations of uranium.

In 1946, AEC bought a 21.7-acre tract of land (now known as SLAPS) in what was then an undeveloped area of north St. Louis County. AEC used the property to store uranium processing waste and scrap from uranium processing at the Mallinckrodt Plant. Contaminants included uranium, radium, barium, and hazardous residues.



Figure 3-4. Aerial View of SLAPS and the Ballfields Cleanup Area (circa 1998)

Uranium tailings were stored along the northwest portion of SLAPS. Scrap metal, empty drums, and other debris were placed in low areas on the western end of the property. By 1960, there were approximately 50,000 empty drums and 3,500 tons of miscellaneous contaminated steel and alloy scrap stored at SLAPS. Over time, various streams off Coldwater Creek were backfilled to support construction, resulting in some commingling of site soils and sediments with wastes brought to SLAPS. The alignment of McDonnell Boulevard has also changed through time.

In 1966, a private company, Continental Mining and Milling Company, purchased from MED the SLAPS residues, which contained valuable metals. Under an AEC license, they hauled the residues to a site on Latty Avenue in Berkeley, Missouri (now known as HISS and Futura). Storing, handling, and transporting these materials spread the materials along haul routes to SLAPS VPs.

In February 1967, the Commercial Discount Corporation obtained possession of the residues and shipped much of the material, after drying, to Canon City, Colorado. Cotter Corporation purchased the remaining residues in 1969 and dried and shipped more material to the company's mill in Canon City during 1970. In 1973, Cotter shipped material to Canon City, Colorado, and to Westlake Landfill in western St. Louis County.

After removing most of the residues, storage sheds on SLAPS were demolished and buried on the property in 1969. One to three feet of clean fill material was spread over SLAPS to achieve acceptable levels of surface radioactivity. However, soil contamination resulted from releases of these residues while they were on site. In 1973, the U.S. government and city of St. Louis agreed to transfer ownership of SLAPS by quitclaim deed from AEC to the St. Louis Airport Authority.

In 1974, AEC established FUSRAP to address sites contaminated as a result of the nation's early atomic weapons development program. SLDS, SLAPS, SLAPS VPs, and the Latty Avenue Properties were placed under FUSRAP. SLAPS, HISS, and the Futura property were added to the EPA's NPL in 1989.

Before the ROD was signed in September 2005, USACE conducted removal actions at the North St. Louis County Sites under an Action Memoranda with recommendations set in an EE/CA. The EE/CA and Action Memorandum addressed SLAPS and the Ballfields (a SLAPS VP area) and required excavation of soil. USACE excavated the last of accessible soil at SLAPS in December 2006. Confirmation sampling was conducted and the final portion of the site was released for unrestricted use in 2009. This was the culmination of a nine-year cleanup effort in which radiologically contaminated material was removed and shipped to an out-of-state, licensed disposal facility.

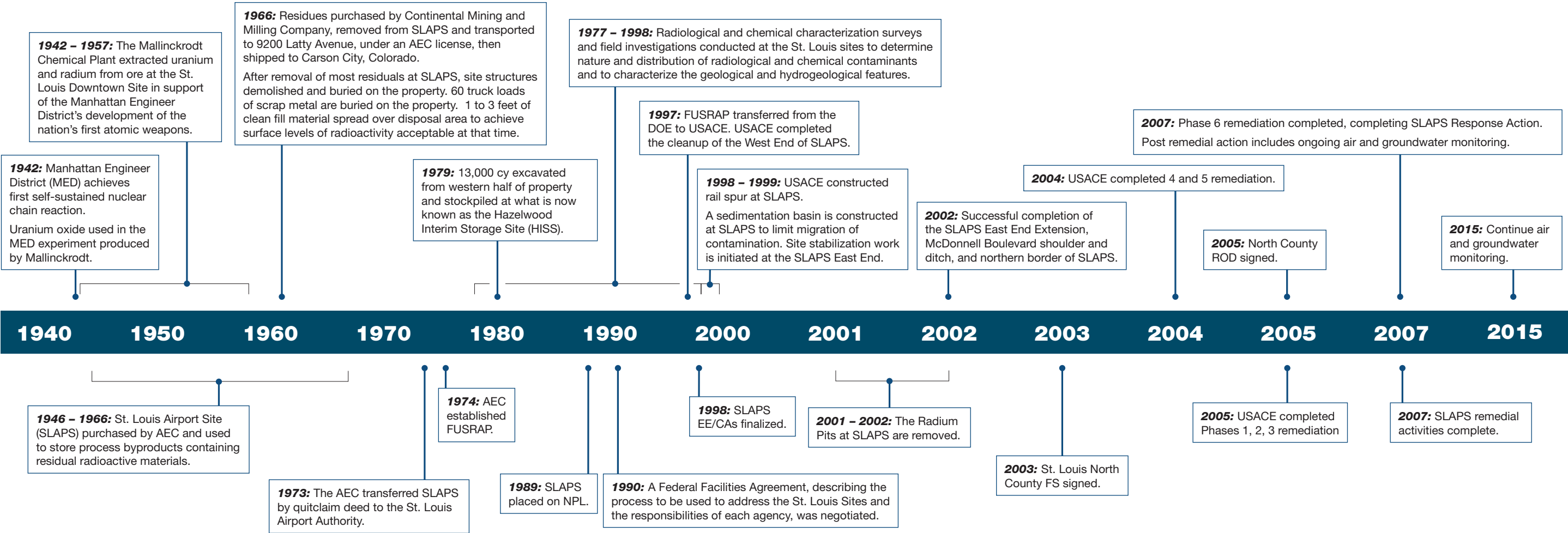
3.2.3 FUSRAP Work Completed at SLAPS to Date

USACE released a PRAR/FSSE in 2009 when cleanup was complete at SLAPS. For remediation, the SLAPS excavation was divided into several work areas: Sedimentation Basin and North Ditch; East End; East End Extension; Radium Pits; and Phases 1, 2, 3, 4, 5, and 6. USACE published the results of the final status surveys of each work area, as documented in the PRAR/FSSE. Figure 3-5 provides a map of SLAPS investigation areas (IAs).



FUSRAP History at the St. Louis Airport Site

FUSRAP



THIS PAGE INTENTIONALLY LEFT BLANK.

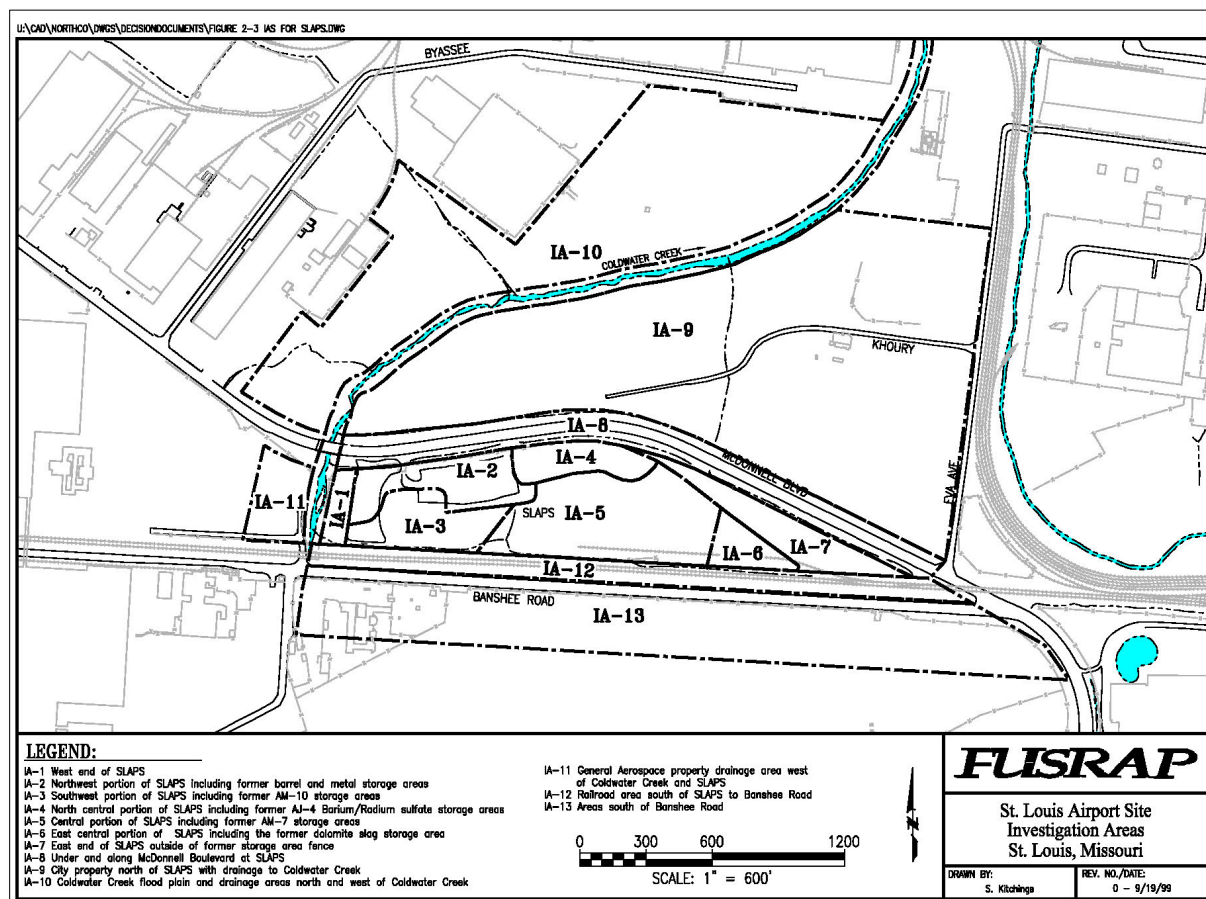


Figure 3-5. Locations of SLAPS

The SLAPS project required remediation of 10 contaminated areas as illustrated in Table 3-2, which gives the status of work accomplished at SLAPS. By the end of the SLAPS project, the St. Louis FUSRAP remediation team had removed over 621,534 cubic yards of soil and other materials from SLAPS property.

Since 1998, when the EE/CA was authorized by Action Memoranda, the following removal actions and environmental documentation were performed. 1998 and 1999 removal actions involved constructing a sedimentation basin on the western portion of SLAPS, excavating radiologically affected soil from the North Ditch (the area between James S. McDonnell Boulevard and the former Ballfields), and removing radiologically affected soil from the East End area of SLAPS. These activities were initiated as part of the site stabilization effort to prevent surface water runoff from carrying radiologically affected materials from the site.

USACE completed PRAR/FSSEs for all SLAPS work areas in May 2009.

Table 3-2. Work Accomplished at SLAPS (as of 1/2014)

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey Documented
Sedimentation Basin and North Ditch	×	×	×	×
East End	×	×	×	×
East End Extension	×	×	×	×
Radium Pits	×	×	×	×
Phase 1	×	×	×	×
Phase 2 and 3	×	×	×	×
Phase 4 and 5	×	×	×	×
Phase 6	×	×	×	×

Characterized = Scientists surveyed the site to locate and identify contaminants.

Remedial Design = Engineers completed the design for cleanup. Regulators and property owners reviewed the design then USACE approved or changed it.

Remedial Action = Workers followed the design and completed remedial actions, which primarily includes soil removal.

Final Status Survey = Investigators verify that the cleanup meets ROD remediation goals. The FSSE for a property is documented in a PRAR for properties requiring remediation and in a PDIR/FSSE for properties not requiring remediation.

3.3 ST. LOUIS AIRPORT SITE VICINITY PROPERTIES

3.3.1 Location

Over 78 identified SLAPS VPs are located in North St. Louis County. Sometimes called “North County,” these properties include over 78 identified VPs within the FUSRAP boundary haul routes; Coldwater Creek, the Ballfields, and part of the Norfolk Southern Railroad properties and several unidentified VPs, as identified in Figure 3-6.

3.3.2 History

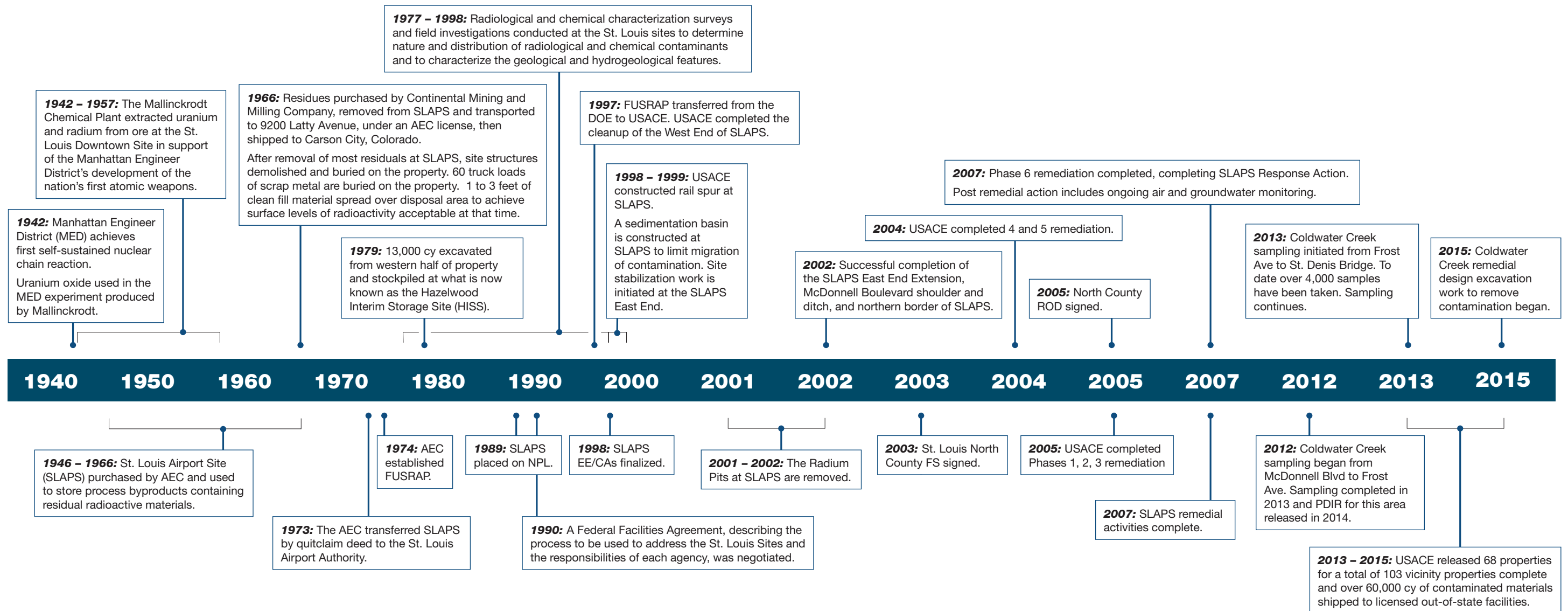
Low-level radioactive contamination at SLAPS VPs is linked to SLAPS and HISS/Latty Avenue Properties. In 1966, the Continental Mining and Milling Company of Chicago, Illinois, purchased uranium-bearing residues from MED and transported the residues from SLAPS to the HISS property on Latty Avenue. Contamination at the VPs resulted from spillage during transportation and subsequent airborne and/or waterborne dispersion. Spillage from trucks transporting material from SLAPS to HISS sites was another major cause of contamination along the haul routes and adjacent VPs. Rainwater runoff from affected areas contaminated Coldwater Creek sediment. Floods moved the contaminated sediment within the floodplain as well as downstream.

The “Ballfields” are one such area in North St. Louis County. Historically, the 60-acre area was used as agricultural land, a baseball field, and a part of the former Brown Road. Contamination of the area occurred when residues migrated from SLAPS via runoff, wind, or soil transport vehicles.



FUSRAP History at the St. Louis Airport Site Vicinity Properties

FUSRAP



THIS PAGE INTENTIONALLY LEFT BLANK.

Of the more than 78 properties comprising the SLAPS VPs, cleanup activities are complete or are substantially complete on over half of the properties. The volume of residues was estimated at 195,000 cubic yards in 1996. Commercial enterprises, private residences, or local governments own SLAPS VPs. Cleanup alternatives for the North St. Louis County Sites, which included SLAPS VPs, were identified in the FS and PP. These documents were released for public review in May 2003. Comments on the documents were accepted through July 14, 2003. The final cleanup remedy was outlined in the ROD for the North St. Louis County Missouri Sites (SLAPS, Latty Avenue Properties, and SLAPS VPs) released in 2005.

3.3.3 FUSRAP Work Completed at SLAPS Vicinity Properties to Date

SLAPS VPs consist of more than 78 properties between SLAPS, HISS, Coldwater Creek, and the properties along Coldwater Creek. Removal actions for SLAPS VPs were combined into one EE/CA, published in 1992, and approved by an Action Memorandum in 1995. Remedial actions for SLAPS VPs are covered by the North St. Louis County ROD released in 2005.

Table 3-3 gives the status of work accomplished at the FUSRAP SLAPS VPs as of January 2015. Work areas that did not require remediation are also listed. Not listed are work areas that have not been characterized. A map of SLAPS VPs is presented in Figure 3-6.

Table 3-3. Work Completed at SLAPS VPs (as of 1/2015)

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey Documented
IA-09 – Ballfields (Phase 1)	×	×	×	(950)
IA-09 – Ballfields (Phase 2)	×	×	×	(30,300)
IA-09 – Ballfields (Phase 2B)	×	×	×	(partial)
IA-10	×			
IA-12	×	×	×	(9,403)
IA-13	×	×	×	(2,000)
McDonnell Boulevard South Ditches Adjacent to SLAPS (IA-8)	×	×	×	(244)
McDonnell Boulevard East Section B	×	×	×	(1,296)
McDonnell Boulevard (under road)	×	×	×	(partial)
Hazelwood Ave. and Adjacent Properties (VP-32, -33, -34, -35, -35(A), -36, -37, -39, -40, -42 and -47)	×	×	not needed	×
VP-01, -02, -07, -13, -14, -15 and IA-11	×	not needed	not needed	×
VP-03 and -04	×	not needed	not needed	×
VP-05 and -06, -53, -54, -55, and -63	×	×	×	(3,000)
VP-08 and -09	×	×	×	(252)
VP-10, -11, and -12	×	×	×	(5,764)
VP-16	×	×	×	(68)

Table 3-3. Work Completed at SLAPS VPs (as of 1/2015) (continued)

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey Documented
Eva Loadout	×	×	×	
VP-17, -18, -19, -20, -20(A), and 25	×	not needed	not needed	×
VP-21, -22, -23, -24, -26, -28, -29, -30, and -31	×	not needed	not needed	×
VP-27	×	×	× (123)	×
VP-31A	×	×	× (166)	×
VP-38	× (partial)	× (partial)	× (partial)	
VP-40A SLAPs VP (partial)	×	not needed	not needed	×
VP-41, -43, -44, -45, -46, -48, -48(A), -49, -50, -51 and -52	×	not needed	not needed	×
VP-53	×	×	× (104)	×
VP-54	×	×	× (65)	×
VP-55	×	×	× (228)	×
VP-01C, -56, -59 and the Pershall Road South Ditch	× (partial)			
VP-57 and -58	×	×	ongoing	
VP-60, -61, -62 and Parcels 09K130104- a and -b	×	not needed	not needed	×
VP-63	×	×	× (63)	×
Coldwater Creek – McDonnell Blvd to Frost Ave	×	×		
Coldwater Creek – Frost Avenue to St. Denis Bridge	× (ongoing)			
Coldwater Creek – North of St. Denis Bridge	× (ongoing)			
VP-02(C), -03(C), -04(C), -05(C), -06(C), -07(C) and -08(C)	× (partial)			
VP-09(C) and -10(C)	×	not needed	not needed	×
Eva Avenue	×	×	× (63)	
Frost Avenue (Partial) beside VP-21	×	×	×	
Frost Avenue (remainder)				
Byassee Properties	×	not needed	not needed	×
Banshee Road	×	×	×	×
Pershall Avenue	× (partial)			

Characterized = Scientists surveyed the site to locate and identify contaminants.

Remedial Design = Engineers completed the design for cleanup. Regulators and property owners reviewed the design then USACE approved or changed it.

Remedial Action = Workers followed the design and completed remedial actions, which primarily includes soil removal.

Final Status Survey = Investigators verify that the cleanup meets ROD remediation goals. The FSSE for a property is documented in a PRAR for properties requiring remediation and in a PDIR/FSSE for properties not requiring remediation.

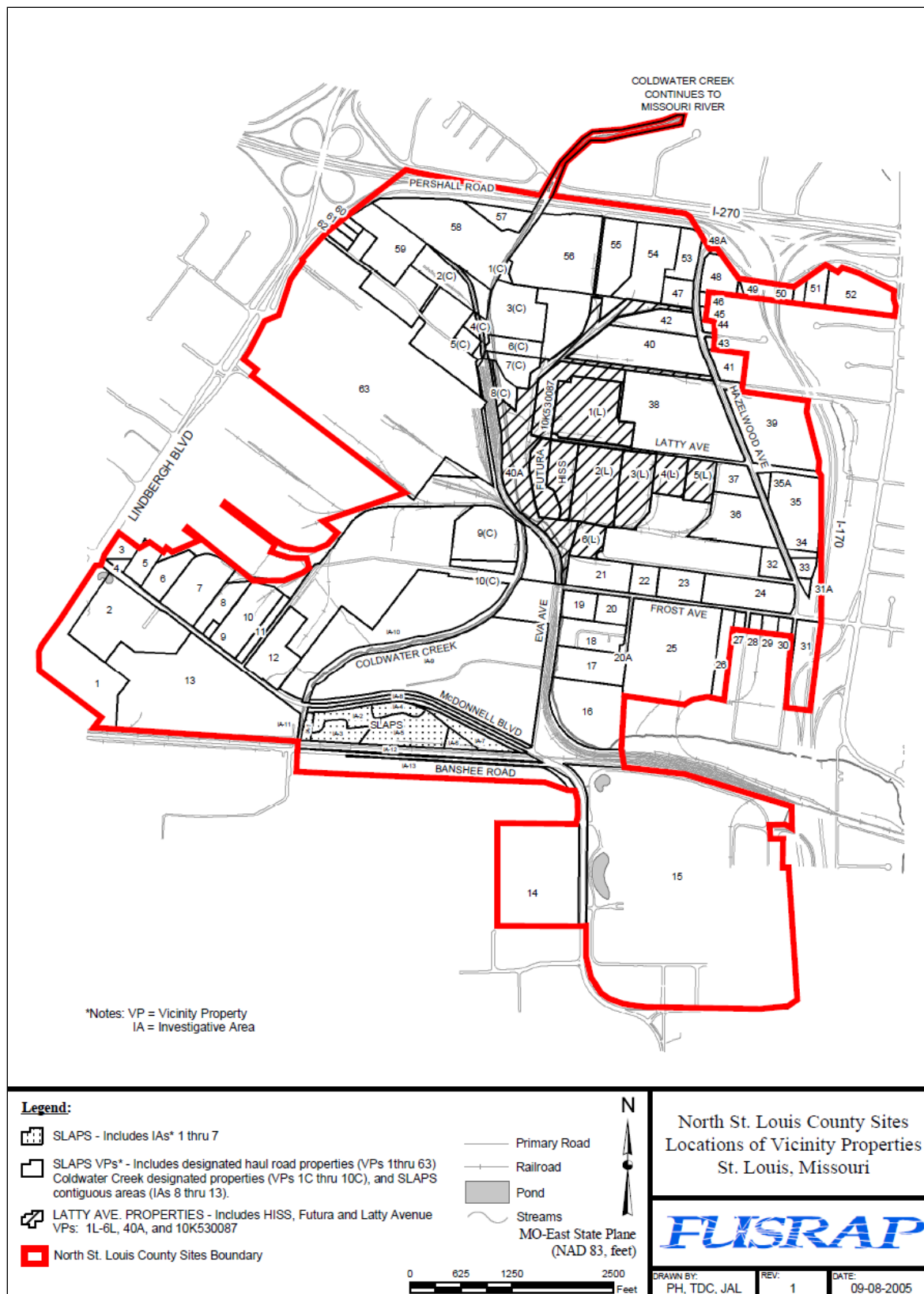


Figure 3-6. Locations of Vicinity Properties

Coldwater Creek

Coldwater Creek is the major drainage mechanism for SLAPS, SLAPS VPs, and the Latty Avenue Properties. Coldwater Creek flows adjacent to SLAPS and SLAPS VPs and meanders near HISS, Futura, and other Latty Avenue VPs. Monitoring stations at these sites along the creek's course are shown in Figure 3-7. As illustrated in Figure 3-8, Coldwater Creek flows through northern St. Louis County until it discharges into the Missouri River. In the industrial area located between the airport and Pershall Road, the water quality in Coldwater Creek is generally poor. The present and reasonably anticipated future uses of the lower reach of Coldwater Creek are recreation and livestock/wildlife watering.

In 1982, DOE performed a radiological characterization of the ditches to the north and south of SLAPS and of portions of Coldwater Creek. The characterization sampling effort indicated radioactive levels exceeding DOE guidelines then in effect. Erosion in 1985 on the western side of SLAPS along Coldwater Creek necessitated emergency maintenance. Sloughing and seepage caused erosion of contaminated fill and soil into the creek. The problem was temporarily corrected by installing a gabion wall (constructed of rock-filled wire baskets) along the western edge of the property. A complete radiological characterization of original transportation routes conducted in 1987 determined the nature and extent of contamination along Coldwater Creek. USACE requested that DOE survey an additional portion of Coldwater Creek as part of the Coldwater Creek Local Flood Protection Project. The 1989 characterization studies of the section of Coldwater Creek from Banshee Road to Old Halls Ferry Road indicated low-level radioactive contamination were present in the Coldwater Creek channel. In addition, radiological surveys in 1987 in the vicinity of two bridges over Coldwater Creek in Florissant were performed to support upcoming bridge replacements.

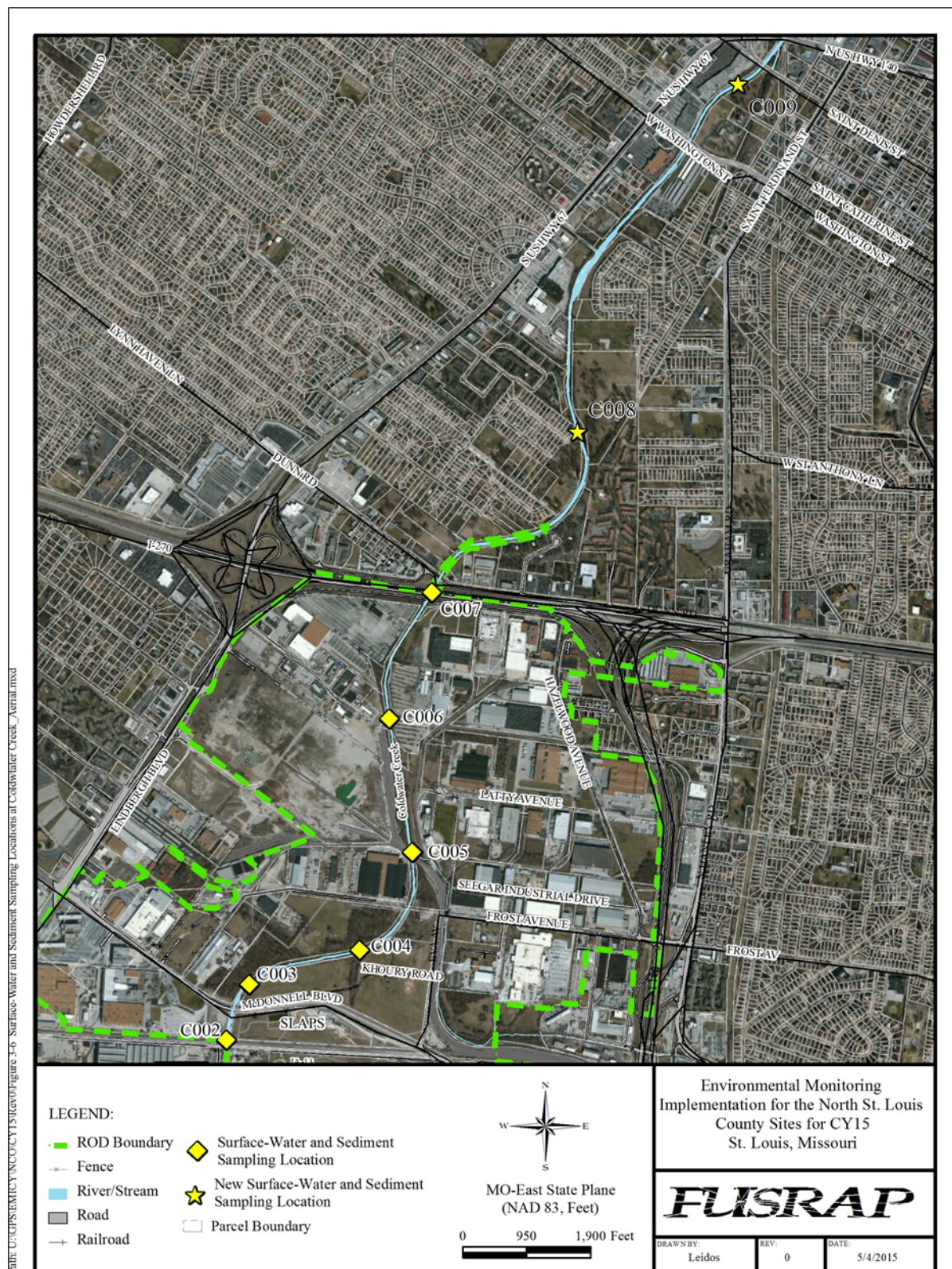


Figure 3-7. Eight Monitoring Stations on Coldwater Creek

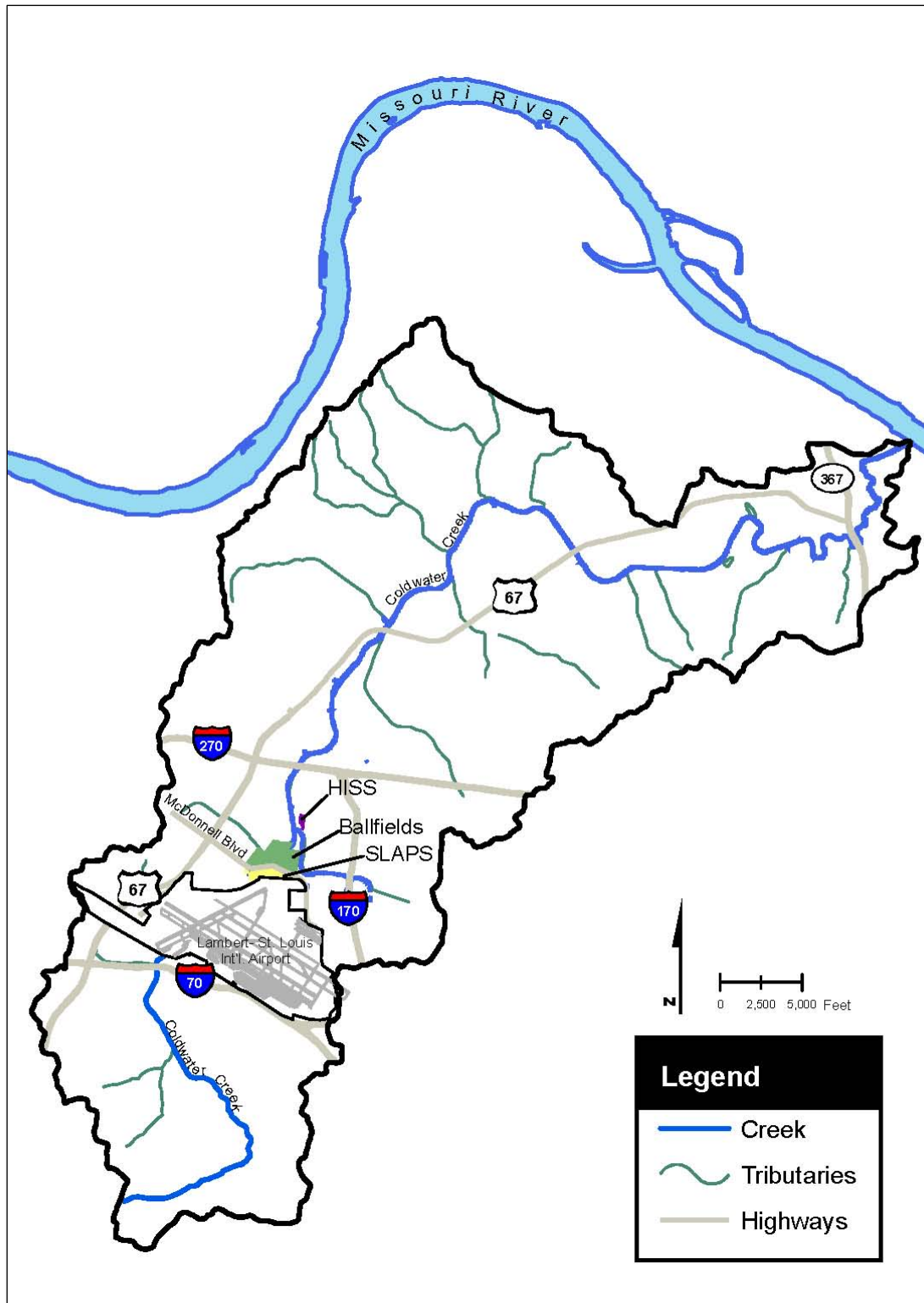


Figure 3-8. Coldwater Creek Watershed (Map) (2011)

Coldwater Creek Monitoring Since 1998, as part of the St. Louis FUSRAP Environmental Monitoring Program, USACE has monitored surface water and sediment for radiological and chemical parameters at six different monitoring stations along Coldwater Creek Reach A, adjacent to and downstream from the North County Sites. These sampling events continue to be conducted biannually and have the following objectives: document compliance with appropriate standards, provide the public with information, provide a historical record for year-to-year comparisons, and identify environmental impacts. The Environmental Monitoring Program for Coldwater Creek evaluates the water quality and radiological and chemical parameters present in the surface water and sediment. Recently, USACE added two additional monitoring sites downstream from I-270 to St. Denis Bridge.

Surface water and sediment data collected from Coldwater Creek are evaluated relative to historical sample results obtained at each station. In addition, the ROD established sediment remediation goals for radium-226, thorium-230, and uranium 238; these criteria are also being used in evaluating Coldwater Creek sediment. Although Coldwater Creek is not a source of drinking water, the drinking water standard for total uranium is used as a monitoring guide for surface water.

Coldwater Creek Monitoring Analysis A trend analysis of the data from each station was also performed to determine effects of remedial actions on surface water and sediment in Coldwater Creek. This trend analysis is reported annually in the Environmental Monitoring Data and Analysis Report. This assessment evaluates if surface water and sediment could adversely affect human health. Assessments conducted since 1998 indicate that radiological dose levels in Coldwater Creek are 100 times less than the regulatory limit.

It should be noted that FUSRAP was created to address environmental waste resulting from MED/AEC operations. Non-FUSRAP discharges are relatively common along the sampled reaches of Coldwater Creek; consequently, sample parameters could be influenced by existing industrial sources rather than former MED/AEC operations.

Coldwater Creek Sampling from McDonnell Boulevard Bridge to Frost Avenue In 2012, USACE initiated sampling in Coldwater Creek from the McDonnell Boulevard Bridge to Frost Avenue. USACE collected over 1,000 samples to characterize this segment of the creek. The results of this effort indicated contamination exceeds FUSRAP remedial goals at McDonnell Bridge and two other isolated locations of deposition along the creek bank. A section of Coldwater Creek was remediated between Banshee Road and McDonnell Blvd. during SLAPS remediation. This remediation is discussed in Section 3.2.3. A 2013 conceptual site model identified sources, receptors, and pathways associated with North St. Louis County Sites, including Coldwater Creek. The model revealed the original sources were materials stored at SLAPS, at the Latty Avenue Site, and from truck transportation. By identifying these sources, potential transport mechanisms—like stormwater runoff—are known.

Coldwater Creek Sampling Frost Avenue to St. Denis Bridge USACE initiated sampling in Coldwater Creek from Frost Avenue to the St. Denis Bridge in the fall of 2013. To date, over 4,000 samples have been collected in this area. USACE encourages residents living within the Coldwater Creek floodplain between Frost Avenue and St. Denis Bridge to sign an access agreement for sampling on their property. Before sampling soil on private properties, USACE mails postcards to the affected households. See Figure 3-9. After sampling, workers leave information tags on household doors. See Figure 3-10.

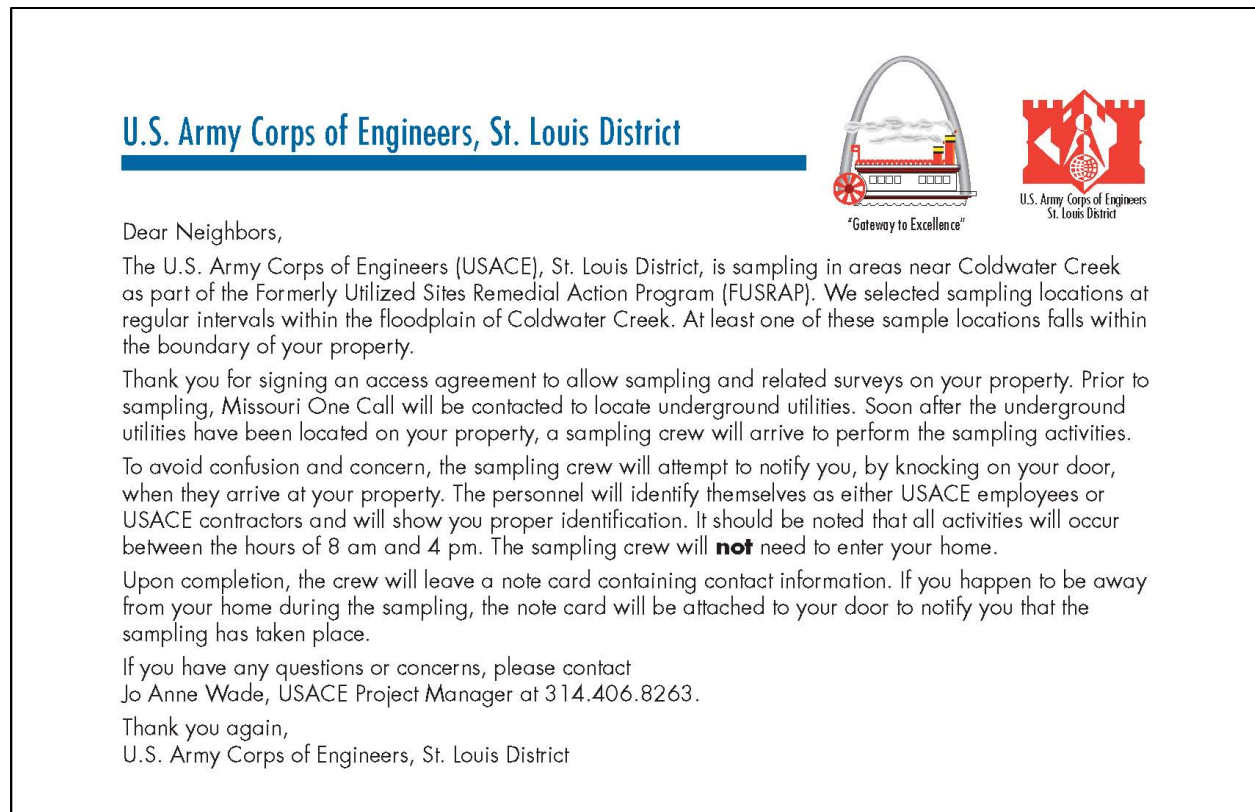


Figure 3-9. Post Card Sent to Residents at Sampling Sites

3.4 LATTY AVENUE VICINITY PROPERTIES

3.4.1 Location

Latty Avenue VPs, including Latty Avenue Properties, HISS, and Futura, are located in northern St. Louis County within the city limits of Hazelwood and Berkeley. HISS and Futura are located approximately 0.5 mile northeast from SLAPS. The addresses for HISS and Futura are 9170 and 9200 Latty Avenue, respectively. The Latty Avenue VPs include 1L, 10K530087, 2L, 3L, 4L, 5L, 6L and parts of VP-40A (Norfolk Southern Railroad property) and 10K530065 and 10L530076. Land use near the properties is primarily industrial. The nearest residential areas are approximately 0.3 mile to the east in Hazelwood off of Hazelwood Avenue.

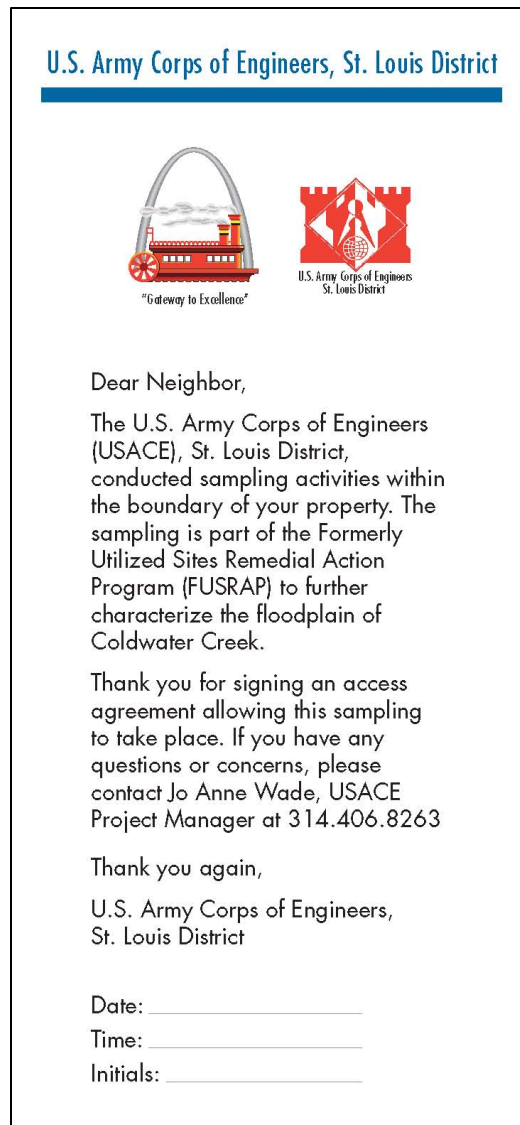


Figure 3-10. Information Tags Left for Residents at Sampling Sites

3.4.2 History

In 1966, the Continental Mining and Milling Company purchased from MED ore residues and uranium- and radium-bearing process wastes produced at the Mallinckrodt plant (See Section 3.1) and stored at SLAPS (See Section 3.2). Under an AEC license, the company moved the wastes from SLAPS to a storage site on Latty Avenue. These wastes were generated at the Mallinckrodt plant in St. Louis from 1942 through the late 1950s under contracts with MED/AEC. Residues at SLAPS consisted of 74,000 tons of Belgian Congo pitchblende raffinate, which contained approximately 13 tons of uranium; 32,500 tons of Colorado raffinate containing roughly 48 tons of uranium; and 8,700 tons of leached barium sulfate containing about seven tons of uranium. The Commercial Discount Corporation of Chicago, Illinois purchased the residues in January 1967. Much of the material was then dried and shipped to

Canon City, Colorado. The material remaining at the Latty Avenue storage site was sold to Cotter Corporation in December 1969. From August through November 1970, Cotter Corporation dried some of the remaining residues and shipped them to its mill in Canon City. In December 1970, an estimated 10,000 tons of Colorado raffinate and 8,700 tons of leached barium sulfate remained at the Latty Avenue properties.

In April 1974, Cotter Corporation informed the Nuclear Regulatory Commission that the remaining Colorado raffinate had been shipped in mid-1973 to Canon City without drying and that the leached barium sulfate had been diluted with 12 to 18 inches of soil and transported to a landfill in St. Louis County.

Before the present owner occupied the HISS/Futura property, the Oak Ridge National Laboratory performed a radiological characterization. Thorium and radium contamination in excess of federal guidelines was found in and around the buildings and in the soil. Subsequently, in preparing the property for use, the owner demolished one building, excavated portions of the western half of the property, paved certain areas, and erected several new buildings. Material excavated during these activities (approximately 13,000 cubic yards) was piled on the eastern portion of the property.

In 1981, Oak Ridge Associated Universities conducted a radiological characterization of the pile and surveyed portions of the northern and eastern VPs for radioactivity. Levels of contamination similar to those on the pile were found in both areas.

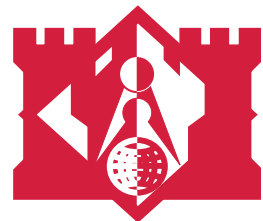
As a follow-up to this survey, Oak Ridge National Laboratory conducted a detailed radiological survey of the northern and southern shoulders of Latty Avenue; results indicated that contamination in excess of federal guidelines was present along the road beyond Hazelwood Avenue. Properties adjacent to HISS were also found to be contaminated in excess of guidelines.

A decontamination research and development project was conducted, under the authority of the 1984 Energy and Water Appropriations Act (Public Law 98-360), at sites throughout the nation, including 9200 Latty Avenue and properties in its vicinity. Subsequently, U.S. Congress added the Latty Avenue VPs to FUSRAP in order to expedite decontamination.

In 1984 and 1985, DOE added an additional 14,000 cubic yards of contaminated soil to the pile from the cleanup along Latty Avenue and from an area used for office trailers and a decontamination pad. Approximately 4,600 cubic yards of contaminated soil was stored next to the existing pile. A total of approximately 32,000 cubic yards of contaminated soil was stored at the property.

In October 1989, EPA placed the HISS and Futura properties on the NPL as one property. This list required cleanup to proceed under CERCLA and the NCP. In July 1990, DOE and EPA Region VII signed an FFA that established a procedure and schedule for remediating the Latty Avenue Properties.

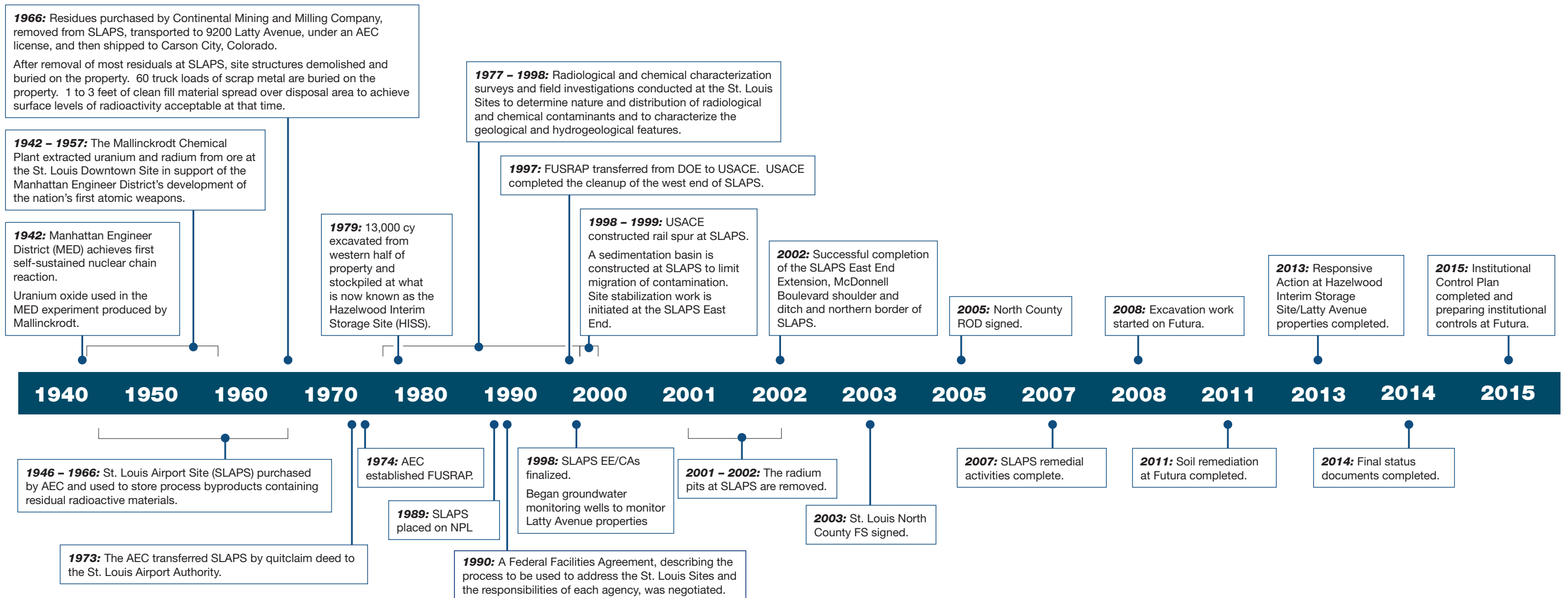
In 1996, the owner of 9150 Latty Avenue (Latty Avenue VP-2L), located to the east of HISS, expanded the facility and stockpiled about 8,000 cubic yards of contaminated soil. This stockpile, consisting of two piles known as the eastern piles, was located on the southwestern corner of the property.



US Army Corps
of Engineers®,
St. Louis District

FUSRAP History at the Latty Avenue Vicinity Properties

FUSRAP



THIS PAGE INTENTIONALLY LEFT BLANK.

Until 1997, DOE was the lead agency responsible for the cleanup of the HISS/Latty Avenue VPs. In October 1997, FUSRAP was transferred from DOE to USACE by the U.S. Congress through the Energy and Water Development Appropriation Act. Since that transition, the property has fallen under the responsibility of the USACE, St. Louis District. Figure 3-11 shows the HISS site in 1999.



Figure 3-11. Aerial View of HISS Piles (1999)

3.4.3 FUSRAP Work Completed at Latty Avenue Properties to Date

In 1998, USACE prepared an EE/CA proposing to remove the HISS piles and impacted soil from three adjacent Latty Avenue properties until a comprehensive cleanup could be achieved. Following the public comment period, an Action Memorandum authorizing removal actions was executed and plans were developed to allow work to proceed.

In early 2000, USACE began to refer to SLAPS, SLAPS VPs, HISS/Latty Avenue Properties, Futura, and Coldwater Creek as the North St. Louis County Sites. USACE chose to develop cleanup alternatives to address all of these sites. Cleanup alternatives for the North St. Louis County Sites, identified in the FS and PP, were released for public review in May 2003. Comments on the documents were accepted through July 14, 2003. The final cleanup remedy was outlined in the ROD for the North St. Louis County Sites, including HISS and Latty Avenue, and released in September 2005. USACE completed remedial activities at the accessible portions of the Latty Avenue properties as listed in Table 3-4.

Table 3-4. Work Completed at Latty Avenue VPs (as of 3/2015)

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey Documented
HISS	×	×	× (53,000)	×
Futura	×	×	× (20,950)	×
VP-01(L) and 10K530087	×	×	× (26,000)	×
VP-02(L)	×	×	× (29,804)	×
VP-03(L), VP-04(L), VP-05(L), VP-06(L)	×	not needed	not needed	×
VP-40A (Latty)	×	×	× (29,960)	× (partial)
Parcel 10K530076	×	not needed	not needed	×
Parcel 10K530065	×	not needed	not needed	×

Characterized = Scientists surveyed the site to locate and identify contaminants.

Remedial Design = Engineers completed the design for cleanup. Regulators and property owners reviewed the design. Then USACE approved or changed it.

Remedial Action = Workers followed the design and completed remedial actions, which primarily includes soil removal.

Final Status Survey = Investigators verify that the cleanup meets ROD remediation goals. The FSSE for a property is documented in a PRAR for properties requiring remediation and in a PDIR/FSSE for properties not requiring remediation

HISS/Futura

The HISS/Futura property covers an 11-acre tract that consists of commercial, industrial, and warehouse facilities and buildings. Continental Mining and Milling Company of Chicago purchased uranium-bearing residues from MED and removed them from SLAPS in 1966. The company placed the residues in storage at a property on Latty Avenue (later known as the HISS/Futura properties). Much of the material was sold and shipped for disposal to other sites or to out-of-state, licensed disposal facilities.

In 1979, contaminated soil from the Futura parcel was stockpiled at HISS in support of construction of a manufacturing facility. The Futura portion of the site consists of a manufacturing facility surrounded by paved and grassy areas. The HISS/Futura properties were listed on the NPL in 1989. A 700-foot-long rail spur, constructed in 1999 to support remediation, extended along the eastern edge of the property. From 2000 and 2001, USACE removed 26,975 cubic yards from the HISS piles. In 2008, excavation work started at HISS/Futura. USACE removed the rail spur at HISS in 2011. In 2011, USACE also removed and remediated beneath the HISS rail spur, completing remediation of HISS after remediated soil was transferred offsite for disposal at an out-of-state, licensed facility. 53,000 cubic yards of material were removed from the HISS from 2008 to 2011. The HISS/Futura properties contained several underground

storage tanks that were no longer in use. USACE removed the tanks and hazardous materials surrounding the tanks. USACE also removed all soil from under the storage tanks that exceeded ROD cleanup goals.

USACE worked with the property owner to remediate the areas around buildings at Futura and HISS. Excavation work started in February 2008 on the Futura property. Soil remediation was completed in February 2011 with 20,950 cubic yards of contaminated material removed from Futura. USACE removed all accessible soil that exceeds ROD cleanup goals at HISS in 2011. USACE further investigated Futura buildings in the fall of 2011 and created a remedial design for the Futura Buildings. Building 4 was remediated in the summer 2012 and Building 2/3 in the winter of 2013. After USACE transferred remediated soil offsite for disposal at an out-of-state, licensed facility, a PRAR/FSSE for HISS was issued in 2013. The PRAR/FSSE for the Futura property was issued in 2014. USACE will use institutional controls to contain soil under the Futura buildings.

THIS PAGE INTENTIONALLY LEFT BLANK

4.0 COMMUNITY BACKGROUND

4.1 HISTORY OF ST. LOUIS AREA

The city of St. Louis, Missouri was established in 1764 when Pierre Laclède selected the site as a trading post for French fur traders. St. Louis offered convenient access to major rivers (the Missouri and Mississippi) and to the port of New Orleans. Animal pelts could be easily shipped and managed from this location. The city was named for King Louis IX, who had been named a saint.

Settlers, trappers, and explorers gradually arrived, expanding the city's population. The Louisiana Purchase helped to open the west, and St. Louis became a key point in the westward expansion of the United States. In 1857, a rail link to the East Coast was completed. This link opened the city to immigrants from Ireland, Germany, and many other countries. By the 1870s, the city boasted a population of 300,000 and thriving industry. In 1874, a railroad bridge was constructed across the Mississippi River, making it easier to reach Illinois coal fields. With plentiful fuel supplies, the city's suburbs began to grow, and the city became an important manufacturing center.

St. Louis continued its growth throughout the early 1900s, hosting the World's Fair and the Olympic games in 1904. Growth slowed during World War I, the Great Depression, and Prohibition, but St. Louis' vitality was carried by Charles Lindbergh on his historic flight from the United States to France. Lindbergh's plane, the Spirit of St. Louis, was sponsored by the St. Louis business community.

During World War II, St. Louis factories were put to work manufacturing military equipment for the Allies. By 1950, the city of St. Louis had reached nearly 857,000 people, but this population decreased to 750,000 by 1960. As in other American communities, the suburbs absorbed much of the population, and living conditions declined in the city. Community leaders in St. Louis responded with public works programs to build new schools, expressways, and housing.

The St. Louis area has one of the largest railroad terminals in the country. Area residents work in a variety of fields, including retail, transportation, construction, recreation, and manufacturing. Greater St. Louis is home to 17 *Fortune* 1000 companies, eight of which are *Fortune* 500. Major corporations include such medical science organizations as pharmaceutical and medicine research, electronic, furniture, and footwear manufacturing, and energy production and distribution. Firms headquartered in St. Louis include Emerson Electric, Boeing, Monsanto, and Express Scripts. The U.S. Air Force, Wal-Mart, BJC HealthCare, and SSM Health Care are also major employers. MasterCard plans to build research labs in St. Louis and has its Global Operations Headquarters in O'Fallon, Missouri.

4.2 COMMUNITY PROFILES

The greater St. Louis area is comprised of 12 counties, five in Illinois and seven in Missouri. St. Louis County is divided into municipalities, including incorporated and unincorporated areas. St. Louis County has 91 municipalities and nine unincorporated census-designated places. This county is unusual in that it is separate from the city. The city of St. Louis is not part of St. Louis County. The 2010 U.S. Census reported 2.8 million people live and work in the greater St. Louis area, the 19th most populous

metropolitan area in the United States. The metropolitan area includes more than 30 universities and colleges that produce about 53,000 bachelor, post-bachelor, or professional graduates each year.

The 2013 census estimates that Missouri has more than 6 million people with about 1 million people in St. Louis County. In St. Louis County, 41 percent of the people have a Bachelor's degree or higher. Using U.S. Census Bureau terms, the county defines itself as:

- 68 percent White alone
- 24 percent Black or African American alone
- 4 percent Asian alone
- 3 percent Hispanic or Latino
- 2 percent Two or More Races
- 0.2 percent American Indian and Alaska Native alone

[Note: these percentages are rounded, and total does not equal 100 percent. More information is available at <http://quickfacts.census.gov/qfd/states/29/29189.html>]

The U.S. census also reports that the 2013 median household income in the city of St. Louis is \$34,582 per year. Household income in St. Louis County is \$58,910 per year. Households living below the poverty level account for 27.4 percent of the population in St. Louis and 11 percent in St. Louis County.

The St. Louis Sites are located in several communities within the larger St. Louis metropolitan area.

- SLDS lies within the city limits of St. Louis proper.
- SLAPS and the SLAPS VPs are located in the North St. Louis County cities of Hazelwood and Berkeley. SLAPS is owned by the city of St. Louis through the Airport Authority, even though it lies outside St. Louis city limits.
- HISS and the Latty Avenue Properties are also located in the North St. Louis County cities of Hazelwood and Berkeley.
- Coldwater Creek VPs extend from Banshee Road to the Missouri River and encompass several municipalities, including Berkeley, Hazelwood, Florissant, and Black Jack.

4.2.1 Downtown St. Louis Area

SLDS is located within the city of St. Louis. The city had an estimated population of 318,416 in the 2013 U.S. census. Of those residents who were working, 82,480 worked within the city, while 54,563 worked outside the city limits within Missouri state boundaries. Approximately 3,704 worked outside the state.

The city of St. Louis is governed by an elected mayor and a board of aldermen of 28 members elected from wards.

The St. Louis downtown area contains many landmarks and historic buildings, including the St. Louis Arch; the Basilica of St. Louis, King (fondly known as the Old Cathedral); and the Old St. Louis County Courthouse where the Dred Scott slavery case was first tried. The Memorial Plaza lies west of the business district and houses City Hall and other municipal and federal buildings. Sports and entertainment complexes, including Busch Stadium, the Scottrade Center, and the Edward Jones Dome, are also located in downtown St. Louis.

The city of St. Louis also hosts Forest Park, which includes the St. Louis Zoo, Missouri History Museum, St. Louis Science Center, a planetarium, an art museum, and public sports fields. The Missouri Botanical Garden is also located in St. Louis.

4.2.2 North St. Louis County Area

The North St. Louis County Sites include SLAPS, the SLAPS VPs, and the HISS/Latty Avenue Properties.

Hazelwood. Some of the North St. Louis County FUSRAP properties are located in the city of Hazelwood, Missouri. According to a 2013 estimate of census data, Hazelwood had a population of 25,668.

The Hazelwood community was first settled in 1797 by the Musick family, who ran a ferry business across the Missouri River. Afterward, new families entered the area and formed a farming community. In 1828, Kentucky Senator Henry Clay gave the area its name. Incorporated as a village in 1949, Hazelwood became an incorporated city in 1970.

The top employers in Hazelwood are Boeing (5660 employees), Mallinckrodt LLC (1,065 employees), IBM (880 employees), Convergys Corp. (785 employees), and GKN Aerospace Services (609 employees). Retail trade, professional, scientific, management, administrative, and waste management services make up much of the remaining business activity. Ford Motor Company closed its Hazelwood plant in 2006, idling 2,433 workers.

The city has a council/manager form of government. The eight-member council consists of six members elected from districts, one member elected at large, and a mayor elected at large.

Berkeley. Many North County FUSRAP sites are located in the city of Berkeley, Missouri. Berkeley has a population of 9,099 (2013 census estimate). The city is home to 3,355 households and 2,310 families, out of which 30.5 percent had children under the age of 18 living with them. It was incorporated in 1937. In the early 1800s, Berkeley established itself as a home for the well-to-do and contained large estates. In 1910, Berkeley opened an airfield and entered the age of aviation. The first St. Louis-built airplane took off from the field. Berkeley further pioneered in aviation, hosting the first International Air Meet. Until December 1996, Berkeley was the home of McDonnell Douglas World Headquarters. At that time, the firm merged with Boeing to become part of the Boeing Company. Boeing headquarters are located in Berkeley.

Berkeley is within one mile of Lambert-St. Louis International Airport and accesses several interstate highways. According to the U.S. Census Bureau, the city of Berkeley has a total area of 4.97 square miles.

Economic activity is concentrated in manufacturing, especially manufacturing related to aircraft (approximately 14 percent), retail trade (9.9 percent), education (5.4 percent), transportation (8.6 percent), and health services (15.4 percent). Finance institutions, personal services, and accommodations and food services make up much of the remainder of business activity.

The city has a council city manager form of government. The seven-member council consists of six members elected from districts and a mayor elected at large.

4.2.3 St. Louis Airport Site Vicinity Properties

The SLAPS VPs include those properties contiguous to SLAPS; the Ballfields north of SLAPS; Coldwater Creek from SLAPS northward to the Missouri River; and the VPs along Hazelwood Avenue, Pershall Road, McDonnell Boulevard, Eva Road, and Frost Avenue.

The VPs are owned by commercial enterprises, local governments, and private residents. The cleanup actions that have been completed or are being performed assume that the land use of SLAPS VPs will be the same as its current uses, which include residential, recreational, commercial, and industrial.

5.0 COMMUNITY CONCERNS

5.1 CHRONOLOGY OF COMMUNITY CONCERNS

1981. DOE, in conjunction with EPA, MDNR, and the Nuclear Regulatory Commission, held a meeting in October at the Bridgeton City Hall to provide information about several properties in the St. Louis area, including SLAPS, HISS, SLDS, Weldon Springs, and the West Lake Landfill. The meeting was designed to help the public understand the problems posed by radioactive contamination of the properties and response actions being planned.

The League of Women Voters, in cooperation with MDNR, met with 85 individuals at the Bridgeton Community Center. State and local officials and the Airport Director expressed frustration with the lack of DOE action to cleanup the radioactively contaminated properties in the St. Louis area. The concerns discussed included assigning final responsibility for the properties, the cost of cleanup, and health problems of residents and Mallinckrodt workers.

1982. DOE announced plans to clean SLAPS ditches and to take the resulting waste to Weldon Springs. DOE also proposed developing Weldon Springs as a permanent disposal site for all St. Louis Sites waste and for a small amount of FUSRAP waste from other states. This proposal was met with considerable opposition, culminating at a public meeting in Weldon Springs on August 10, 1982. In response to this concern, DOE postponed action on the SLAPS ditches and the Weldon Springs disposal site pending further study.

Members of the Coalition for the Environment held a public hearing on health and how it is affected by radiation. The coalition urged federal officials to clean all area properties and remove waste from the St. Louis area. A select Interim U.S. House Energy and AEC committee conducted a series of hearings across the state to review the problems of low-level radioactive waste disposal. Hazelwood city officials requested that the contaminated soil be moved from Latty Avenue. Local environmentalists opposed storage at Latty Avenue and preferred that soil be moved and stored at Callaway Nuclear Power Plant. One environmental group, the Crawdad Alliance, suggested that contaminated soil be taken to a DOE-operated and -licensed site.

The Missouri House and Energy Committee held a public hearing at Florissant City Hall, which was attended by 50 people. The purpose of the hearing was to discuss possible solutions to the problem of low-level radioactive waste disposal. The federal plan to bury low-level radioactive waste at Weldon Springs was opposed by politicians, residents, and environmental groups.

1984 and 1985. DOE coordinated activities with local governments during remedial action for the ditches along Latty Avenue and during the repair of erosion on the western side of SLAPS property.

On November 19, 1985, USACE held a public hearing on a proposed flood control project for Coldwater Creek. At that meeting, several individuals and organizations expressed concern about the potential for Coldwater Creek to contain contaminated materials from SLAPS.

1986. DOE held discussions with the St. Louis Mayor and Board of Aldermen early in the year concerning transfer of SLAPS property to DOE. The board postponed action on the transfer until DOE conducted further characterization to define the quantity and extent of contamination.

1987. In April, DOE reported to officials of St. Louis, Berkeley, and Hazelwood that studies had shown the SLAPS property would not accommodate a disposal cell large enough for all the contaminated material from SLAPS, the Latty Avenue Properties, and SLDS. DOE further reported that it was initiating studies to determine the feasibility of acquiring additional land in the airport area for a disposal cell site. A news release describing the situation was issued. Subsequently, DOE representatives met on several occasions with the Berkeley and Hazelwood City Councils, the St. Louis Mayor and Board of Aldermen, and MDNR to discuss disposal alternatives. These meetings were reported in the media.

1988. DOE conducted community interviews to identify public issues and concerns related to the St. Louis Sites. DOE participated in meetings and made presentations to public officials, citizen/special interest groups, and the general public. DOE took part in a series of hearings held by the Transportation and Commerce Committee of the St. Louis Board of Aldermen to discuss the matter of transferring land at SLAPS from the city to DOE. Information on the site and the remediation process was provided to the public during meetings sponsored by the Airport Community Program Committee and the St. Louis Municipal League. DOE and EPA participated in a hazardous waste forum sponsored by Congressman Jack Buechner in 1989. This public meeting was conducted to update St. Louis residents on the CERCLA status of the sites.

1989. Congressman Buechner introduced a proposal for legislation (H.R. 1559) that would require DOE to consider alternative sites for disposing St. Louis waste. Should DOE fail to find an appropriate alternative, this proposed legislation would forbid storing any waste from outside North County at the airport site. In 1990, the U.S. Congress closed without taking action on this proposed legislation.

The *St. Louis Post-Dispatch* published a seven-part newspaper series entitled “Legacy of the Bomb” about St. Louis nuclear waste.

1990. The St. Louis Board of Aldermen adopted a plan to transfer the property near Lambert Field to DOE. Citizens opposed to that action collected signatures on petitions to place the issue of the land transfer on the city ballot.

DOE postponed a project that would prevent Coldwater Creek from flooding areas of north St. Louis County because segments of the creek banks and sediment that would be excavated were radioactively contaminated.

Community interviews were conducted to identify issues and concerns of affected residents. In response to community concerns and to make information more available, a DOE Public Information Center was opened at 9170 Latty Avenue in Hazelwood. (The center provided opportunities for public comment and information on all the St. Louis Sites.)

The St. Louis Board of Aldermen voted to place a non-binding referendum on the November 1990 ballot that would require voters to decide whether they favored a nuclear waste disposal cell at Lambert Field. Supporters of the referendum rallied at the site of the original Mallinckrodt Chemical Works, where the waste was first generated during World War II. A similar non-binding referendum was also placed on the

ballot in St. Louis County through the efforts of Citizens Against a Radioactive Environment. Results of the referendum in the city and county of St. Louis indicated that citizens strongly opposed storing radioactive waste near Lambert Field.

The Media Research Bureau of the University of Missouri at Columbia conducted a survey of 480 registered voters in St. Louis for the *St. Louis Post-Dispatch* and KMOX Radio. Those surveyed opposed a radioactive waste disposal cell at Lambert by 81.9 percent to 7.3 percent, with 10.8 percent undecided.

Senator Christopher S. Bond sent a letter to DOE Secretary James D. Watkins to inform him that the voters in the city and county of St. Louis rejected the construction of a permanent disposal cell to store radioactive waste. Senator Bond requested that DOE examine the option of moving the waste out of state to a storage site approved and certified by DOE and expressed his belief that an in-depth analysis of other potential storage sites would enable better evaluation of the alternatives.

Councilman Anthony Green held a special meeting for Berkeley residents to discuss issues related to airport expansion and Natural Bridge business and to provide updated information on the proposed radioactive waste dump.

On December 6, 1990, DOE held a public scoping meeting pertaining to the programmatic Environmental Impact Statement in St. Louis. The meeting was one of a series held nationally to notify the public of DOE's intent to prepare a statement on its proposed integrated environmental restoration and waste management program. The purpose of this program was to provide a broad, systematic approach to addressing cleanup activities and waste management practices. Of the 177 attendees, 97 made comments. Speakers identified themselves as citizens, housewives and mothers, environmentalists, politicians, educators, students, religious representatives, organization members, state agency representatives, media representatives, and employees. Most of the speakers addressed site problems. The most frequent comment was that storage of radioactive waste should be moved to a non-urban, less heavily populated area either elsewhere in Missouri or out of state.

1991. Public officials announced their intent to draft a plan to move contaminated soil from the St. Louis area to a less populated area in the state. Representative Joan Kelly Horn, St. Louis County Executive George R. "Buzz" Westfall, and County Councilman John R. Shear said the plan would include establishing a search committee to locate a community willing to take the waste and possibly using incentives to compensate that community.

Representative James H. Schueuer (Chairman of the Science, Space, and Technology Subcommittee on the Environment) and Representative Horn sent a letter to Secretary Watkins requesting his assistance in dealing with waste at the FUSRAP properties in St. Louis. They requested additional information and technical assistance in resolving the problem as soon as possible.

1992. As part of the process of conducting a comprehensive environmental review of the St. Louis Sites, DOE held a public scoping meeting on January 28th at Berkeley Senior High School. More than 250 individuals attended, with 30 private citizens and 16 public officials presenting testimony.

The proposed interim removal action for the North St. Louis County VPs was discussed in detail in an EE/CA released to the public in spring 1992.

The St. Louis County Radioactive and Hazardous Waste Oversight Commission were appointed by St. Louis County to address concerns raised during the public comment period; these concerns were related to the techniques and equipment used for waste management and transportation. This group worked with DOE representatives to resolve potential conflicts and identify a mutually agreeable approach to the removal action.

1993. In an effort to begin final remedial activities for the St. Louis Sites, DOE drafted documents required by CERCLA for public review. The list of documents prepared for public comment in 1994 included the Baseline Ecological Risk Assessment, Environmental Impact Statement, RI, Initial Screening of Alternatives, FS, Work Plan-Implementation Plan, CIP, and PP.

1994. DOE released a plan for St. Louis Site remediation, which detailed a plan to consolidate radioactive waste from the St. Louis Sites into a disposal cell located at SLAPS near Lambert Airport. DOE encountered strong opposition as a result of this proposal.

Mr. Thomas Grumbly, DOE Assistant Secretary for Environmental Management, met with St. Louis stakeholders to discuss concerns regarding DOE's remediation plans for the sites. DOE withdrew its proposal and urged interested stakeholders to form a group to work with DOE representatives to find a suitable alternative. As a result, the SLSRTF was established to identify and evaluate remedial action alternatives for the cleanup and disposal of radioactive waste materials at the St. Louis Sites and West Lake Landfill.

In September, a technology demonstration was held to compare contemporary treatment methods with those traditionally used to cleanup the sites.

1995. The SLSRTF held a series of public meetings to examine remediation alternatives for the eventual disposal of radioactive material from the St. Louis Sites. The task force established working groups to review alternate sites, health risks/cleanup standards, priorities, remediation alternatives, technologies, communications, and membership. A delegation from the task force traveled to South Carolina for a tour of the Clemson Technical Center Laboratory to further examine soil separation, a promising soil treatment technique shown at the technology demonstration held at SLAPS in 1994.

1996. The task force released its report in September detailing its recommendations for cleanup and removal of radioactive contaminants from the St. Louis area. The recommendations presented were based, in part, upon the characterization data, as well as information provided to the SLSRTF by DOE representatives and contractors. The task force also included background information on the St. Louis Sites to provide others with an understanding of the rationale behind their recommendations.

1997. In May, DOE, EPA, MDNR, and public-office-holding stakeholders attended a two-day session to discuss site issues and develop a path forward for remediating the St. Louis Sites. At the end of the workshop, DOE was directed by these stakeholders to begin cleanup of the SLAPS West End to a level of 5/15/50 picocuries per gram.

At the direction of stakeholders attending the workshop in May, DOE held a technology review to re-examine the available technologies for a more cost-effective remediation of all the sites. A total of 11 technology vendors provided proposals and abstracts for evaluation by DOE representatives and technical experts in a public meeting held at the World Trade Center in St. Louis County in July.

In September, DOE held a public meeting at the Hazelwood Civic Center to gather comments on an EE/CA for cleanup work on the western end of SLAPS, with contaminated material being shipped to an out-of-state, licensed disposal facility. Although the public approved of this work proceeding, they strongly recommended that cleanup proceed at a level of 5/15/50 picocuries per gram rather than the higher levels suggested in the preferred alternative.

At the request of local utility companies, a policy was implemented to make site personnel available 24 hours per day to respond to requests for support of utility workers in possible radiologically contaminated areas.

Under the Energy and Water Resources Appropriations Act of 1997, U.S. Congress directed that USACE assume responsibility for executing FUSRAP. Beginning in October, USACE began functioning as the lead agency for FUSRAP actions, with EPA continuing to monitor progress at these sites.

In November, USACE, St. Louis District opted not to pursue alternative technologies as a stand-alone event. Rather, USACE chose to direct contractors to evaluate and implement, as deemed appropriate, effective and cost-efficient technologies.

1998. In March, USACE held a public meeting at Hazelwood Civic Center on Dunn Road to gather public comments on two EE/CA documents for SLAPS and HISS. At that meeting, the public approved the construction of rail spurs on both sites. The public also emphatically requested that contaminated material above background, but below cleanup criteria, not be used as backfill. USACE, St. Louis District complied with this request in its work on both sites.

In April, USACE held a public meeting at the Henry Clay Elementary School near SLDS to solicit comments on the SLDS FS/PP. A complete transcript of the meeting was kept and provided to individuals upon request. The detailed Responsiveness Summary, including responses to comments received during the public meeting on the FS/PP, was included in Appendix B of the final SLDS ROD. USACE accepted and complied with the public's recommendation for remediation work to follow Alternative 6 rather than USACE's preferred Alternative 4. In August 1998, EPA signed the final ROD developed by USACE in accordance with Alternative 6. The SLDS ROD is available to the public through the Administrative Record or on the USACE St. Louis District FUSRAP website at: <http://bit.ly/FUSRAPstl>.

In June, USACE, St. Louis District began the process of updating the 1993 DOE CIP, resulting in Revision 0 of this document. In the fall of 1998, USACE published the first issue of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to attendees of public meetings who indicated an interest in receiving information.

1999. In February, USACE held an open house at Henry Clay Elementary School to explain the remedial design developed to implement the approved criteria described in the SLDS ROD.

On June 5 and 6, USACE participated in the St. Louis Earth Day Community Festival. An exhibit display was set up, and project representatives were available to answer stakeholder's questions and distribute informational materials.

In September, USACE participated in two open houses sponsored by local groups. On September 18th, Mallinckrodt held an open house for its employees. On September 23, USACE also set up and manned a

display, at the invitation of MDNR, for its open house in St. Ferdinand Park in Florissant. Project representatives were available at both events to answer questions and distribute informational materials.

In December, USACE released the St. Louis District FUSRAP website for public access. USACE published four issues of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2000. In February, USACE held a public meeting in Madison City Hall to solicit comments on the Madison Site RI/FS and PP. A complete transcript of the meeting was provided to individuals upon request. Detailed responses to comments, including those received during the public meeting, on the PP were included in the final Madison Site ROD as a Responsiveness Summary. USACE accepted and complied with the public's recommendation for remediation work to follow Alternative 4, "Decontamination for Accessible Surfaces and Release of Buildings."

In June, USACE issued the final approved ROD that outlined the final cleanup remedy for the site. The approved Declaration of Remedial Action Completion Statement, the Final Madison Site PRAR, and other supporting information have been placed within the site Administrative Record, which may be viewed during regular business hours at the USACE, St. Louis District FUSRAP Project Office in Berkeley, Missouri, and at the Madison Public Library in Madison, Illinois. It was removed from the list of active FUSRAP sites.

In December, USACE released the updated FUSRAP St. Louis Sites CIP in preparation for release of the North St. Louis County Sites decisional documents. USACE published three issues of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2001. On April 22, USACE participated in the St. Louis Earth Day Celebration at Forest Park. The second annual Earth Day symposium highlighted national, regional, and local models of environmental topics. Intended participants were elected officials and staff of municipal, county, and state government; consulting engineers; agencies; and interested citizens.

In June, USACE issued letters regarding FUSRAP contamination to property owners and tenants of the SLAPS VPs. Although owners were aware of the presence of contamination on their properties, the letters were sent to ensure that everyone understood how to request assistance with managing contamination on their properties. Owners were encouraged to contact the USACE, St. Louis District FUSRAP Project Office before making property improvements. USACE could then verify the presence of radiological contamination in the impacted area and advise owners of potential impacts it might have on their work, thereby minimizing the adverse effects of contamination. USACE published three issues of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2002. In March, USACE distributed a letter to SLDS property owners similar to the one issued to North St. Louis County Sites property owners in June 2001. The letter offered help and provided guidance as to how to get assistance from USACE in obtaining radiological support during subsurface work on impacted properties.

LTS responsibilities (consisting of records management) for the Madison Site in Madison, Illinois, were transferred to DOE in July.

In August, USACE hosted a two-day public workshop/training session on a series of environmental and legal topics affecting site work to facilitate review of the North St. Louis County Sites FS and PP. The training session was open to any interested parties but targeted North St. Louis County property owners and tenants. USACE published two issues of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2003. In accordance with CERCLA requirements, a five-year review was initiated in January to ensure that human health and the environment were protected by the response action implemented at SLDS and the North St. Louis County Sites. A team led by USACE, including representatives from EPA and MDNR, documented conditions at each site and the surrounding area. Initiation of the review was announced through issuance of a news release to local media and the newsletter in March. A special web page was designed and published on the Internet to provide additional information to the public regarding the review, and a briefing was presented at the March St. Louis Oversight Committee meeting, which was open to the public. In addition, members of the community were contacted for their views about the cleanup process to date. USACE released the draft report documenting the findings of the review in September. The final report was issued and made available to the public in the summer of 2004.

In May, the North St. Louis County Sites FS and PP were released for public review and comment over a 30-day period. Six alternatives to address the presence of MED/AEC-related contamination in northern St. Louis County were presented in the FS. The North St. Louis County Sites include SLAPS, HISS/Latty Avenue Properties, and the SLAPS VPs. The PP summarized the six alternatives proposed and identified USACE's preferred alternative.

To more widely disseminate information related to the North St. Louis County Sites FS/PP, USACE launched a web page providing copies of both documents. The web page also contained site background information, public information fact sheets, Administrative Record locations, USACE telephone and project office locations, and public announcements relative to the FS and PP process. The web page provided the ability to e-mail comments directly to USACE.

USACE extended the 30-day comment period on the FS and PP, originally scheduled to close on May 30, 2003, to July 14, 2003, in response to public request. USACE held a public meeting at Hazelwood Civic Center-East on May 29. The meeting consisted of a poster/question-and-answer session, a USACE presentation on the North St. Louis County Sites FS/PP and the USACE-preferred alternative, and a public hearing. After reviewing the public comments received, USACE selected the final remedy for the North St. Louis County Sites. The final remedy for the site and responses to comments received on the FS/PP were outlined in the ROD for the North St. Louis County Sites (SLAPS, HISS/Latty Avenue, and SLAPS VPs) released in 2005. USACE published two issues of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2004 through 2005. The ROD for the North St. Louis County sites (SLAPS, HISS/Latty Avenue, and SLAPS VPs) was released during the summer of 2005. Work continued on SLAPS Phases 2, 3, 4, 5, and 6, as well as on Coldwater Creek. Community involvement activities leading to the signing of the ROD

were extensive, and information releases through the newsletter, media releases, Draft Five Year Review Report, and monthly St. Louis Oversight Committee meetings/briefings continued to keep stakeholders informed of progress.

Work continued on various SLDS sites. Plant 6EH was returned to Mallinckrodt and a PRAR is on hold until Plant 6 is completed. Excavation and removal of contaminated soil from the city of Venice, Illinois VP also was completed. Excavation started at the Thomas and Proetz Lumber Company VP site. Working closely with Mr. Thomas, USACE identified the risks for each party and developed a cleanup approach for the Thomas and Proetz Lumber Company property that was agreeable to USACE and Mr. Thomas. USACE started the cleanup in November 2004, removing contaminated soil and restoring one section at a time, careful to minimize disruption to ongoing business operations at the lumberyard. In February 2005, USACE returned the property free of contamination.

During the summer of 2005, support was provided to a Latty Avenue property owner, General Investment Funds Real Estate Holding Company, a North St. Louis County Sites VP. USACE support of the owner's property drainage plans resulted in the removal and shipment of an estimated 800 cubic yards of contaminated soil to an out-of-state, licensed disposal facility.

USACE announced signature and release of the final ROD for the North St. Louis County Sites in the fall of 2005. All stakeholders were invited to attend an open house at the USACE, St. Louis District FUSRAP Project Office in Berkeley on November 10 to view the document and ask questions. The ROD also was posted on the FUSRAP public website and was available for public review at Administrative Record locations.

At SLDS, USACE collected soil samples from 12 properties west of Broadway, located between Bremen Street on the north and Dock Street on the south. USACE crews successfully completed remediation of the Mallinckrodt Plant 7S, Thomas and Proetz Lumber Company, and Midtown Garage. USACE also initiated plans to cleanup Plant 7N and relocate the rail load-out facility to Plant 6WH. These cleanup efforts resulted in the off-site disposal of 11,134 cubic yards from the site. Similarly, USACE completed the data analysis on properties where excavation was required. Reports for the release of Mallinckrodt Plant 10, the city of Venice, Heintz Steel, Midwest Waste, and Midtown Garage were issued. Letters were issued to the property owners documenting the investigation and subsequent release of the property for future development without restriction. USACE published four issues in 2004 and 2005 of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2006. Under the ROD for the North St. Louis County Sites, USACE is required to develop an Institutional Controls Implementation Plan to ensure land use does not change and site conditions remain protective over the long-term use of institution controls such as zoning restrictions and deed notices. USACE is responsible for implementing this plan for two years after site completion. At that time, these responsibilities will be transferred to DOE under an agreement between USACE and DOE.

On May 11, the St. Louis Oversight Committee met with representatives from DOE's Office of Legacy Management at a special meeting called for the purpose of discussing several LTS issues, including DOE's role in LTS, site transition from USACE to DOE management, DOE process for funding LTS activities, and public involvement opportunities in the LTS process. St. Louis Oversight Committee Co-

Chairman Ric Cavanaugh, stated, “This meeting was a unique opportunity for us to learn firsthand about DOE’s operations in LTS. It also gave us a chance to voice concerns about how DOE will perform these tasks in St. Louis once the cleanup of radioactive waste at the sites is completed.”

Meeting attendees included representatives of USACE, MDNR, St. Louis County Government, and the cities of Berkeley and Hazelwood.

The details of the LTS plan were closely coordinated with other federal, state, and local government agencies as well as land owners. Under the ROD for the St. Louis North County sites, USACE is drafting the Institutional Controls Implementation Plan to document processes and procedures for long-term surveillance and maintenance activities at St. Louis Sites. USACE remains committed to maintaining a careful balance between contamination remediation and minimizing project impacts on peoples’ lives and livelihoods. USACE assured stakeholders that, in all matters pertaining to this balance, the final decision has always been in favor of public safety and security. USACE published one issue of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2007. Excavation at SLAPS was completed in mid-December 2006. After confirmation sampling in early January 2007, USACE released the final portion of the site for unrestricted use. To commemorate the completion of one of the nation’s CERCLA sites, USACE hosted a site closeout ceremony at SLAPS on May 30, 2007.

During the course of the SLAPS cleanup project, USACE worked closely with stakeholders, providing routine community involvement activities and access to project information to ensure stakeholders had up-to-date information, as well as ongoing opportunities to provide input to USACE and participate in the decision-making process. Several stakeholders, who had worked closely with USACE during this nine-year effort, attended the closeout ceremony to celebrate this milestone. Those who spoke at the ceremony made a point of paying tribute to the significance of the team effort necessary to successfully complete this cleanup.

USACE initiated activities to develop the Inaccessible Areas ROD for the SLDS site. The 1998 SLDS ROD deals with the excavation of accessible soil and ground water. Inaccessible soil is described as soil under railroads, buildings and structures, and roads. USACE held a meeting with MDNR to discuss the SLDS Inaccessible Areas ROD in 2007 and 2008. USACE began sampling activities at SLDS in preparation for the Inaccessible Areas ROD. USACE published one issue of the *FUSRAP Update: The St. Louis Sites* community newsletter, which was circulated to a regularly updated mailing list and is posted on the website.

2008. USACE continued to participate in the St. Louis Oversight Committee’s meetings and issued newsletters to keep the public informed about the progress of remedial activities. *FUSRAP Update: The St. Louis Sites* Spring 2008 newsletter was distributed in April. The public and USACE attended the St. Louis Oversight Committee meetings held on June 20 and again on November 7.

Activities involving the community in the five-year review began in the spring of 2008. Information about the second five-year review was presented in the spring 2008 issue of *FUSRAP Update: The St. Louis Sites* newsletter that was sent to 500 recipients on the site mailing list. In October, USACE, St.

Louis District representatives announced the start of the second five-year review at the St. Louis Oversight Committee meeting, which, as always, was open to the public.

The purpose of the five-year review is to determine whether the cleanup response continues to be protective of human health and the environment. These reviews begin five years after the initiating the first response and continue in five-year cycles to perpetuity or at least until the site is documented in a five-year review to meet unlimited use/unrestricted exposure requirements.

The documents used as part of the five-year review identify the background and goals of the remedies and any changes in laws and regulations that may affect the response action. These documents also provide background information on the sites, basis for action, cleanup levels, and address community concerns and preferences. All response action documents are available for public review in the Administrative Record.

2009. USACE conducted 19 St. Louis Sites community interviews as a part of the FUSRAP five-year review. Respondents included property owners; business owners; representatives of city, county, and federal elected officials; utility company representatives; citizen interest groups (e.g., St. Louis Oversight Committee); residents not otherwise affiliated with interest groups; and state and local government agency representatives. A summary of concerns and other related issues raised during the interviews is presented in Section 5.2.

FUSRAP Update: The St. Louis Sites community newsletter was distributed in the summer of 2009.

2010. A public notice published in *FUSRAP Update: The St. Louis Sites* newsletter, at the St. Louis Oversight Committee Meeting, and on the FUSRAP website announced that the second five-year review report for the St. Louis Sites was complete and available at the USACE, St. Louis District FUSRAP Project Office and the St. Louis Public Library.

The St. Louis Oversight Committee met on February 2, 2010, at the city of Florissant Government Center and again on July 21, 2010, at the Sunset Park Lodge in Florissant, Missouri. These meetings were open to the public. *FUSRAP Update: The St. Louis Sites* community newsletter was distributed in the winter and again in the summer of 2010.

2011. In February, USACE issued letters regarding FUSRAP contamination to property owners, tenants, and utility companies. Although owners were aware of the presence of contamination on their properties, the letters were sent to ensure that everyone understood how to request assistance with managing contamination on their properties. Owners were encouraged to contact the USACE, St. Louis District FUSRAP Project Office before making property improvements. USACE could then verify the presence of radiological contamination in the impacted area and advise owners of potential impacts it might have on their work, thereby minimizing the adverse effects of contamination.

FUSRAP Update: The St. Louis Sites community newsletter was distributed in the winter and again in the summer of 2011.

2012. A St. Louis Oversight Committee meeting was held on April 26, 2012, at the Florissant Civic Center. USACE gave a presentation on FUSRAP, summarizing remediation work that is taking place at all of the St. Louis Sites. Mr. Jonathan Garoutte of the Missouri Department of Health and Senior

Services gave a presentation on the biological effects of radiation. Dr. Bruce Stinchcomb gave a presentation on the geology of Coldwater Creek.

FUSRAP Update: The St. Louis Sites community newsletter was distributed in the winter and again in the summer of 2012.

2013. USACE initiated activities for the third FUSRAP five-year review. USACE, EPA, and MDNR performed the site inspections in early 2013. USACE anticipates the third five-year review will be completed in 2015. USACE met with the St. Louis Sites Oversight Committee on April 25, 2013 to update citizens about current remediation work and to answer questions. USACE also encouraged residents living within the Coldwater Creek floodplain between Frost Ave. and St. Denis Bridge to sign agreements for sampling on their property. Section 3.3.3 provides more information.

FUSRAP Update: The St. Louis Sites community newsletter was distributed in the winter and again in the summer of 2013.

2014. In accordance with CERCLA, USACE prepared a PP indicating No Further Action for the SLDS ISOU Group 1, using information gathered during the RI. The PP for Group 1 properties identifies the preferred alternative, provides a rationale for this preference, and includes summaries of other cleanup alternatives evaluated. A public hearing took place on January 30 to present the plan to the stakeholders and record comments and concerns. USACE is reviewing the Group 2 properties FS and a ROD will be prepared.

USACE met with the St. Louis Oversight Committee on January 14, 2014 to update citizens on the current remedial activities at the St. Louis Sites. USACE also updated citizens on the current sampling within Coldwater Creek. The PDIR for Coldwater Creek from McDonnell Bridge to Frost Avenue was released in 2014 and made available on the website for public review.

On November 18, 2014, the St. Louis Oversight Committee requested that USACE brief them on FUSRAP site activities because it was almost a year since the last St. Louis Oversight Committee meeting. USACE invited the members of the St. Louis Oversight Committee, regulators, and members from the Cities of Berkeley, Hazelwood, and Florissant to attend the private briefing. USACE presented updates on the remedial activities at the St. Louis Sites and the sampling effort in Coldwater Creek and the adjacent 10-year flood plain.

FUSRAP Update: The St. Louis Sites community newsletter was distributed in the winter of 2014 and again in the summer of 2014.

2015. For the third five-year review, USACE interviewed businesses, property owners, representatives from government agencies, utility companies, and private citizens to collect information about community concerns and preferences. The questionnaire used for the 2015 community interviews and the answers received are provided in Appendix B. The results of these community interviews will assist in judging whether the strategies and activities of the selected remedy remain responsive to the needs of FUSRAP stakeholders. USACE updated their Utility Support Policy in 2015. This policy outlines methods used by USACE to ensure the radiological safety and protection of utility personnel and property/business owners at the St. Louis FUSRAP sites during all intrusive, utility repair work in areas suspected or known to be contaminated with MED/AEC residual radiological contamination. A copy of this policy was sent to

utility companies and remaining property/business owners within the St. Louis FUSRAP boundaries whose property has not yet been remediated.

Most of the remaining properties within the FUSRAP boundaries that have not been remediated to date are adjacent to Coldwater Creek. USACE is currently sampling these properties and is in contact with the remaining property owners through the Right-of-Entry process. The Utility Support Policy was also sent to these property owners/business owners. The revised Utility Support Policy was sent to EPA and MDNR.

USACE met with the St. Louis Oversight Committee on January 29, 2015 to update citizens on the current remedial activities at the St. Louis Sites. USACE also updated citizens on the current sampling within Coldwater Creek. USACE participated in a question and answer period to address the public's concern regarding Coldwater Creek.

FUSRAP Update: The St. Louis Sites community newsletter was issued in January 2015.

5.2 KEY CURRENT COMMUNITY CONCERNS

USACE began the third five-year review in 2012 and anticipates issuing it in 2015. A team led by USACE, with representatives from EPA and MDNR conducts the five-year review. Of its many considerations, the team seeks community input regarding the implementation of response actions through community interviews. Members of the community, site personnel, state/local authorities, community groups, property owners and neighboring residents/businesses are asked to identify any problems that need to be addressed at the sites and to identify concerns regarding the impacts of the cleanup as it progresses.

The interviews represent USACE's continuing efforts to engage the community. More details on the interviews can be found in the sections that follow. A list of the questions asked and the answers received can be found in Appendix B of this CIP.

Note to readers: The summary provided in this CIP is intended to accurately present the issues, concerns, and questions expressed to USACE by those who were interviewed. The summaries reflect the beliefs, thoughts, and feelings as expressed by the members of the community and, therefore, may or may not be based in fact. Interviewees identified specific concerns related to these CERCLA sites and general environmental or health risks in the area. Some of their concerns are not related to the St. Louis FUSRAP Sites as currently defined.

5.2.1 Trusted Sources in Community

Eleven interviewees used the word "responsive" to describe their interactions with USACE. They described USACE and their contractors as being "well-informed," "helpful," "prompt," and "easy to work with."

5.2.2 General Impressions

The consensus of interviewees agreed that USACE takes the time needed to hear and respond to community concerns and questions. When asked about the cleanup progress of the past and ongoing activities at the sites nearly all people described the work quality as excellent to very good. With the

exceptions of specific concerns listed below, the community interviewed expressed that they were well-informed on the progress made and knew what was done and why in historic and ongoing site cleanup.

Most agreed that the current community involvement approach is appropriate and adequately tailored to their needs and expectations. About half of the participants described themselves as extensively concerned and involved in the sites, but said the majority of the community was unaware or unconcerned about the cleanup. The representative from MDNR said that the regulators “appreciate USACE’s continued efforts to keep us informed.”

5.2.3 Concerns Expressed During Community Interviews

Slow Progress. Nine interviewees expressed concern over the length of time USACE has worked on the local sites. Five people felt the progress was slowed because of a deficit of workers allotted to the sites and/or a lack of adequate funding to do the work.

Health Effects. Several of those interviewed wanted to know more about health risks the FUSRAP site might pose. Six residents expressed concern about the health effects of pollution at specific sites in the area. The predominant concern was Coldwater Creek, though interviewees also mentioned Destrehan Street, the Ballfields area, and Latty VPs. Two residents mentioned their concern about the Westlake site and its associated health effects. One understood that Westlake is not a FUSRAP site under USACE, but she urges congressional action to include it. One interviewee expressed concern about the local cancer rate and wondered if that may be linked to contamination from the sites.

Specific Contaminants. Several individuals expressed concern about a specific site chemical and what health risks it might pose. When asked if they were aware of community concerns regarding the site, three people named thorium-230 as a concern. One said the remediation goals set by the ROD are “permissive” and should be changed.

Land Use Issues. The regulator interviewed said she is “aware of community concerns about possible fencing and signage along Coldwater Creek to minimize public intrusion on these areas until they are fully characterized.” Three residents said they believe signage is necessary.

5.2.4 Continued Community Outreach

Several residents commented that they are interested in continuing to participate in outreach activities and receiving outreach materials from USACE. Six people commended the newsletter and felt that it met their information needs. Four residents praised the public meetings (particularly those hosted by the St. Louis Oversight Committee) and USACE’s participation in them. Three business owners praised the communications they received from USACE. One said that if he were to have a question or concern that he could pick up the phone for an answer. Two people praised the website for information and one person said the site was not “well informed.” One person requested email updates from USACE between newsletter distributions and meetings.

5.3 PAST COMMUNITY INTERVIEW CONCERNS

Activities to involve the community in the five-year review were initiated for the first time in spring 2008. Information about the second five-year review was presented in the spring 2008 St. Louis FUSRAP Sites newsletter that was issued to the site mailing list. In October 2008, USACE, St. Louis District representatives announced the start of the second five-year review at the St. Louis Oversight Committee meeting, which was open to the public.

In 2009, USACE conducted 19 St. Louis Sites community interviews as a part of the FUSRAP five-year review. Respondents included property owners; business owners; representatives of city, county, and federal elected officials; utility company representatives; citizen interest groups (e.g., St. Louis Oversight Committee); residents not otherwise affiliated with interest groups; and state and local government agency representatives.

Respondents generally reported feeling well informed of the site activities and progress; although, several mentioned not following the project as closely as they had earlier. They reported they were satisfied with the current communication plan (means and frequency of information distribution through various meetings, newsletters, and news releases) and USACE's responsiveness to community concerns. Currently, community concern about contamination from the St. Louis Sites is moderate, which does not mean that citizens are indifferent to the environmental problem posed by the sites. On the contrary, conversations with community members have revealed that many stakeholders are keenly interested in site response actions and regularly check the continued progress of cleanup activities.

Many of the people interviewed also expressed satisfaction with the progress of cleanup activities at the FUSRAP sites, as well as USACE's openness in sharing information regarding site activities and efforts to build relationships with the various entities impacted the project.

5.3.1 Primary Concerns Raised During 2009 Interviews

Contaminant Migration Issues. The public expressed concerns regarding the migration of contamination during cleanup activities, especially during unforeseen events such as Coldwater Creek flooding in 2008. USACE should continue to take appropriate steps to minimize the potential for contaminant migration and keep the community informed about monitoring results when unexpected weather or other disruptive events occur at project sites.

Inaccessible Soil and Long-Term Stewardship Issues. The public expressed concerns about contamination remaining at the site in inaccessible soil. Utility companies expressed concerns about whether the existing utility support agreements will be honored in the future after active remediation is complete. The current agreement provides utilities with a sense of security and reassurance that their workers will be supported during work in impacted areas. State and local representatives wanted broader community involvement in developing plans for the various sites to ensure stewardship requirements fit the current and planned future land use. USACE is drafting the LTS plan with institutional control design and implementation plans to document processes and procedures for long-term surveillance and maintenance activities at St. Louis Sites.

5.3.2 Other Important Issues Raised in the Community Involvement Activities

The CERCLA Cleanup Process. The community involvement program at the St. Louis Sites should continue to educate area residents and local officials about the procedures, policies, and requirements of the Superfund program. The community expressed great satisfaction with past education efforts and encouraged continuation of this effort.

The Pace of the Cleanup and Funding. While the lengthy, careful, and methodical approach to the cleanup was recognized as being partially determined by funding limitations, some respondents were concerned that different congressional priorities could eventually lead to insufficient funds being

allocated to complete the entire project. While successful in the past, the program needs to continue aggressive pursuit of project funds.

Community Relations. Stakeholders have requested continuation of existing communication methods to relate information about progress and problems encountered during cleanup efforts. Some respondents expressed concern that the St. Louis Oversight Committee were on hiatus and wanted its continuation ensured. Since this input, concerned citizens have re-initiated the St. Louis Oversight Committee, which now schedules their meetings twice a year, inviting the general public and USACE to attend. USACE provides updates on projects and meets stakeholders. These meetings are open to the general public. The St. Louis Oversight Committee is not funded by FUSRAP or USACE. It is strictly a citizens' group for people interested in St. Louis FUSRAP. Though the committee has no authority over FUSRAP, their recommendations are heard and considered. The committee primarily works with USACE to update committee members and the interested public in FUSRAP matters of public concern.

Other communication methods include the public website, <http://bit.ly/FUSRAPstl>, which USACE regularly updates to inform interested stakeholders of cleanup progress. The website offers contact information for the FUSRAP project office, public affairs office, and other offices.

The community newsletter, *FUSRAP Update: The St. Louis Sites*, is published twice a year and announces information about upcoming events, public meetings, and recently released documents that are available for public review. USACE mails copies to individuals who add their names to a regularly updated mailing list. Electronic files of the newsletters are also available online, along with instructions for adding readers' names to the mailing list.

USACE established information repositories for FUSRAP. These repositories consist of an Administrative Record (or an "Administrative Record File") and are established to offer the community access to site-related information. Information, such as the documents used to select a cleanup method, documents regarding site activities, and general CERCLA information, are placed in the Administrative Record. The information is available to the public so that they may make informed comments on selecting a final site remedy. More information about the Administrative Record is available online at the St. Louis FUSRAP public website.

THIS PAGE INTENTIONALLY LEFT BLANK

6.0 COMMUNICATION OBJECTIVES AND ACTIVITIES

Effective, efficient communication is essential for a coordinated community involvement effort. Communication between USACE, St. Louis District and the public—government officials, special interest groups, area residents—encourages understanding of FUSRAP activities in order to prevent the spread of misinformation. The purpose of this CIP is to facilitate and encourage open lines of communication between USACE and stakeholders.

6.1 COMMUNITY INVOLVEMENT OBJECTIVES

This CIP is the framework for ongoing communications between the public and personnel involved with the St. Louis Sites. The following subsections detail objectives developed as guidelines to be implemented in St. Louis FUSRAP community involvement activities.

6.1.1 Inform Area Residents, Media, and Local Officials of the CERCLA Cleanup Process and the Role of the U.S. Army Corps of Engineers

Not all area residents, local news media, and other members of the public are familiar with the CERCLA and NCP cleanup process or the role of USACE, St. Louis District in site investigation and remedial activities. Information about FUSRAP is provided primarily through the St. Louis Sites newsletter, the website, and St. Louis Oversight Committee meetings (see Section 6.2) with the goal of enhancing community understanding of the roles of those involved in the investigation and cleanup at the sites.

6.1.2 Inform Area Residents, Media, and Local Officials of the Progress of Each Site in Relation to the Cleanup Process

Because of the number of sites, each with a unique history, St. Louis FUSRAP is a complex combination of decisions and program activities to understand. At any one time, each of the St. Louis Sites is at a different stage of completion in the remediation process. A specific objective of the FUSRAP community involvement program is to clarify these processes whenever and wherever possible. This objective is achieved by multiple means, including public meetings facilitated by the St. Louis Oversight Committee, newsletter publications, and website information. All printed materials intended for the public are written in a clear, concise, and easily understood format. These materials, along with technical program documents, are available on USACE's St. Louis District FUSRAP website at <http://bit.ly/FUSRAPstl>. They also can be found in the Administrative Record maintained at the USACE FUSRAP Project Office, 8945 Latty Avenue, Berkeley, Missouri, and at the St. Louis Public Library, Government Information Room, 1301 Olive Street, St. Louis, Missouri.

6.1.3 Address Potential Risks of Site Contaminants on Human Health, Wildlife, and the Environment

USACE is concerned with protecting human health and the environment. Since the remedial actions of the SLDS operable unit and the North St. Louis County operable unit are under construction and not completed, the remedies for the SLS operable unit are expected to be protective of human health and the environment upon completion. In the interim, exposure pathways that could result in unacceptable risks are being controlled. This information is available to the public by multiple means, including public

meetings facilitated by the St. Louis Oversight Committee, newsletter publications, and website information. Potential risk information is also available in RODs, which are posted on the website and available in the Administrative Record. This information describes the agency's cleanup and responses to site-specific risks. The primary goal of FUSRAP is to protect human health, wildlife, and the environment from unacceptable levels of risk.

6.1.4 Provide Updated Information

Local citizens and government officials alike are concerned about any impact on areas near the St. Louis Sites, activities associated with their cleanup, and the welfare of area residents and businesses. The USACE, St. Louis District FUSRAP Project Office regularly provides affected communities with current and accurate information about site activities to reduce or eliminate misinformation. The FUSRAP website posts regular updates on current activities and newsletters.

6.1.5 Establish a Communication Link between the FUSRAP Project Team and Other Interested Parties Involved at the Sites

Regular communication with all parties interested in the sites will result in a strong, positive, professional relationship. This relationship will continue to be facilitated through the USACE, St. Louis District FUSRAP Project Office, which will regularly listen to the questions and concerns of the public, provide answers, and relay feedback to the project team. USACE meets at least twice a month with EPA and MDNR to update these agencies on the current activities and discuss issues that may arise regarding the remedial activities at the St. Louis FUSRAP Sites. USACE also meets with the St. Louis Oversight Committee, local business/property owners, homeowners, congressional leaders, and other community representatives upon request.

The USACE, St. Louis District FUSRAP Project Office phone, home page address, and mailing address are consistently displayed in site publications and advertisements.

6.2 COMMUNITY INVOLVEMENT ACTIVITIES

CERCLA requires that community involvement activities be conducted throughout the various stages of investigation and cleanup for each site. USACE, St. Louis District FUSRAP has undertaken, and continues to engage in activities to strengthen communications with interested parties and provide the community with multiple opportunities to be involved with the decision process at the St. Louis Sites. The RODs for SLDS and North County Operable Units are complete. The ISOU process for the SLDS Inaccessible Areas ROD was initiated in 2009. The Group 1 ROD was issued in 2014.

6.2.1 Administrative Record

CERCLA has specific reporting requirements that require an Administrative Record to be collected. This legal file includes documents used to select a cleanup method, including documents concerning on-site activities, general information about the CERCLA program, and site-specific information. Its purpose is to provide the public with access to site-related information so they can make informed comments on the selection of a cleanup remedy.

The USACE, St. Louis District currently maintains the Administrative Record for North County and SLDS Accessible Operable Unit. The Administrative Record for the SLDS ISOU will be available for public view when it is complete. A copy of the Administrative Record for the two complete St. Louis Sites and for SLDS ISOU Group 1 is available for public review at the USACE, St. Louis District FUSRAP Project Office. The public may review copies of the Administrative Records by appointment during normal business hours at the St. Louis Public Library located at 1301 Olive Street in St. Louis, Missouri. Appointments can be made by calling Mr. Bill Olbrich at (314) 539-0376.

Until all required documents have been developed and all necessary data have been gathered to select a response action, a complete Administrative Record for that particular site does not exist. The Administrative Record is maintained with all available information. Locations of the Administrative Record are listed in Appendix D. Contact names and numbers are also provided so that assistance can be obtained.

Parties interested in reviewing the complete Administrative Record for an operable unit are referred to the St. Louis Public Library, the USACE, St. Louis District FUSRAP Project Office, or the St. Louis FUSRAP website: <http://bit.ly/FUSRAPstl>.

6.2.2 Public Comment Periods

A 30-day public comment period is required after the publication of the PP for a recommended alternative for each ROD and ROD Amendments. The purpose of the comment period is to provide all interested parties, including local officials, residents, and interest groups, an opportunity to express their opinions on the PP based on the content of the FS. The comment period also encourages public participation in the final decision-making process for site remediation. Comment periods will be announced in major local newspapers of general circulation, such as the *St. Louis Post-Dispatch* or the *Suburban Journals*. In addition, the USACE, St. Louis District FUSRAP Project Office will contact news media to announce comment periods. Appendix E includes a listing of the local newspapers. Documents for which public comment is sought can be requested by interested parties or reviewed at the locations published in the public notices. Although other locations may be used in the future, listed here are locations historically used for seeking public comment: Julia Davis Branch Library, St. Louis Public Library; Prairie Commons Branch Library, St. Louis County Library; St. Louis County Library Headquarters; Washington University, Planetary School Library; and the USACE, St. Louis District FUSRAP Project Office.

6.2.3 Published Notices

CERCLA and the NCP require a notice and brief description of a PP for remediation of sites to be published in a major local newspaper of general circulation during the ROD process. Notices or advertisements will be published to announce public meetings. USACE also keeps the public informed of site activities by providing a calendar of events in the newsletter, on the website, and by giving updates at the St. Louis Oversight Committee meetings, which are open to the public.

In compliance with the requirements of CERCLA and the NCP and in an effort to provide the public with the maximum opportunity to participate in the public involvement activities for each site, USACE, St. Louis District FUSRAP will continue to publish announcements for public meetings. While CERCLA requires that public notices be published in a newspaper of general circulation for various milestones in

the CERCLA process, further publication may be implemented if necessary. USACE will meet legally required communications to local media through mailed event notifications and emailed or faxed notices prior to and on the scheduled date of the event. Public meeting notices also may be published, as appropriate, in the *Federal Register*.

In addition, public notices will be published to announce a public review period on a PP, the public meeting following the completion of a PP, and the availability of an Administrative Record following the completion of a ROD for a site.

6.2.4 Public Meetings

CERCLA and the NCP also require a public meeting to be held during the comment period and before selecting a PP for an NPL site. The public meeting held during the public comment period will provide stakeholders an opportunity to directly express concerns to FUSRAP representatives and to ask questions or provide comments on the recommended remedial alternatives.

Planning for public meetings should remain flexible to allow for fluctuations in public interest. USACE will announce meeting locations in newspaper notices and will also post that information on the public website.

USACE, St. Louis District FUSRAP will continue to provide the public with an opportunity to speak with representatives of the government agencies involved at the St. Louis Sites at public meetings during the PP/ROD process.

6.2.5 Public Meeting Transcripts

In accordance with the NCP, USACE will ensure that a verbatim transcript is taken of each public meeting held during the public comment period for a recommended alternative. A copy of each public meeting transcript shall be maintained in the appropriate Administrative Record and at the USACE, St. Louis District FUSRAP Project Office. Public meeting transcripts will be available to the public and copies may be obtained upon request.

6.2.6 Responsiveness Summary

The ROD for each operable unit identifies the final cleanup remedy, summarizes the way in which the remedy was chosen by the lead agency, and includes a Responsiveness Summary. The Responsiveness Summary documents significant comments, criticisms, and new relevant information submitted during the public comment period and the lead agency's response to each issue.

6.2.7 Meetings with Local Officials and Interested Groups

Local government officials and interested community groups will be informed of investigation and cleanup activities at the St. Louis Sites primarily through the St. Louis Oversight Committee meetings, newsletter publications, and website information. Regularly scheduled phone contact is maintained with EPA and MDNR. USACE, St. Louis District FUSRAP officials will continue to maintain regular contact on a schedule satisfactory to all parties. USACE, St. Louis District FUSRAP also will publicize any reasonable opportunities for members of the community to attend public meetings.

THIS PAGE INTENTIONALLY LEFT BLANK.

