

# Community Involvement Plan

St. Louis FUSRAP Sites

December 2020



US Army Corps  
of Engineers®

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

**FOR**

**ST. LOUIS, MISSOURI**

December 2020

Prepared for

U.S. Army Corps of Engineers,  
St. Louis District  
Contract No. W912P9-17-D-0014  
Delivery 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 FUSRAP 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) (which include Coldwater Creek), 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 2020. It also describes past, present, and planned community involvement activities implemented in response to concerns. This plan contains a brief description of the St. Louis FUSRAP 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 (Comprehensive, Environmental Response, Liability, and Compensation Act [CERCLA] 42 U.S.C. §9601 et. seq and its specific regulations National Oil and Hazardous Substances Pollution Contingency Plan [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>
<b>1 INTRODUCTION.....</b>	<b>1-1</b>
<b>1.1 THIS COMMUNITY INVOLVEMENT PLAN’S ORGANIZATION .....</b>	<b>1-1</b>
<b>1.2 OVERVIEW OF FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM, ST. LOUIS SITES.....</b>	<b>1-2</b>
1.2.1 St. Louis Downtown Site .....	1-2
1.2.2 North St. Louis County Sites.....	1-3
<b>2 THE CERCLA PROCESS, PROJECT ORGANIZATION, AND AGENCY AGREEMENTS .....</b>	<b>2-1</b>
<b>2.1 THE CERCLA REMOVAL PROCESS.....</b>	<b>2-1</b>
2.1.1 Removal Action/Remedial Action .....	2-2
2.1.2 Engineering Evaluation/Cost Analysis.....	2-2
<b>2.2 THE CERCLA REMEDIATION PROCESS .....</b>	<b>2-2</b>
2.2.1 Site Identification .....	2-3
2.2.2 Preliminary Assessment/Site Inspection .....	2-3
2.2.3 Remedial Investigation.....	2-3
2.2.4 Feasibility Study/Proposed Plan.....	2-5
2.2.5 Record of Decision.....	2-5
2.2.6 Remedial Design/Remedial Action .....	2-5
2.2.7 Five-Year Review .....	2-5
2.2.8 Site Closeout .....	2-6
2.2.9 Long-Term Monitoring, Operations, and Maintenance .....	2-6
<b>2.3 ROLES AND RELATIONSHIPS OF THE AGENCIES AND PARTIES INVOLVED AT FUSRAP.....</b>	<b>2-6</b>
<b>2.4 FORMAL AGREEMENTS AT THE ST. LOUIS SITES.....</b>	<b>2-8</b>
<b>2.5 COMMUNITY INVOLVEMENT ROLES AND RESPONSIBILITIES.....</b>	<b>2-8</b>
<b>3 FUSRAP ST. LOUIS SITE DESCRIPTIONS .....</b>	<b>3-1</b>
<b>3.1 ST. LOUIS DOWNTOWN SITE AND VICINITY PROPERTIES.....</b>	<b>3-2</b>
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
<b>3.2 ST. LOUIS AIRPORT SITE.....</b>	<b>3-9</b>

3.2.1	Location.....	3-9
3.2.2	History.....	3-9
3.2.3	FUSRAP Work Completed at SLAPS to Date.....	3-10
<b>3.3</b>	<b>ST. LOUIS AIRPORT SITE VICINITY PROPERTIES .....</b>	<b>3-14</b>
3.3.1	Location.....	3-14
3.3.2	History.....	3-16
3.3.3	FUSRAP Work Completed at SLAPS Vicinity Properties to Date.....	3-19
<b>3.4</b>	<b>LATTY AVENUE PROPERTIES .....</b>	<b>3-28</b>
3.4.1	Location.....	3-28
3.4.2	History.....	3-28
3.4.3	FUSRAP Work Completed at Latty Avenue Properties to Date.....	3-33
<b>4</b>	<b>COMMUNITY BACKGROUND.....</b>	<b>4-1</b>
<b>4.1</b>	<b>HISTORY OF ST. LOUIS AREA.....</b>	<b>4-1</b>
<b>4.2</b>	<b>COMMUNITY PROFILES .....</b>	<b>4-1</b>
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
<b>5</b>	<b>COMMUNITY CONCERNS.....</b>	<b>5-1</b>
<b>5.1</b>	<b>CHRONOLOGY OF COMMUNITY CONCERNS .....</b>	<b>5-1</b>
<b>5.2</b>	<b>KEY CURRENT COMMUNITY CONCERNS .....</b>	<b>5-14</b>
5.2.1	Trusted Sources in Community.....	5-14
5.2.2	General Impressions.....	5-15
5.2.3	Concerns Expressed During Community Interviews .....	5-15
5.2.4	Continued Community Outreach.....	5-16
<b>5.3</b>	<b>PAST COMMUNITY INTERVIEW CONCERNS.....</b>	<b>5-17</b>
5.3.1	Primary Concerns Raised During 2014 Interviews .....	5-17
5.3.2	Other Important Issues Raised in Community Involvement .....	5-18
<b>6</b>	<b>COMMUNICATION OBJECTIVES AND ACTIVITIES .....</b>	<b>6-1</b>
<b>6.1</b>	<b>COMMUNITY INVOLVEMENT OBJECTIVES .....</b>	<b>6-1</b>
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
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
6.1.6	Establish a Utility Support Policy .....	6-2
<b>6.2</b>	<b>COMMUNITY INVOLVEMENT ACTIVITIES .....</b>	<b>6-2</b>
6.2.1	Administrative Record .....	6-3
6.2.2	Public Comment Periods .....	6-3
6.2.3	Published Notices .....	6-4
6.2.4	Public Meetings .....	6-4
6.2.5	Responsiveness Summary .....	6-4
6.2.6	Meetings with Local Officials and Interested Groups.....	6-4
6.2.7	St. Louis FUSRAP Sites Website.....	6-4
6.2.8	Fact Sheets.....	6-4
6.2.9	Newsletters .....	6-5
6.2.10	Press Releases .....	6-5
6.2.11	Mailing List.....	6-5
6.2.12	Information Contact .....	6-6
6.2.13	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 Removal Process .....	2-1
Figure 2-2. CERCLA Remediation Process .....	2-4
Figure 2-1. 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 and 2018).....	3-9
Figure 3-5. Locations of SLAPS.....	3-13
Figure 3-6. Locations of SLAPS Vicinity Properties.....	3-15
Figure 3-10. Post Card Sent to Residents at Sampling Sites.....	3-26
Figure 3-11. Information Tag Left for Residents at Sampling Sites When Samplings are Completed on Their Properties .....	3-27
Figure 3-12. Aerial View of HISS Piles in 1999 and 2018.....	3-33
<i>Tables</i>	<i>Page</i>
Table 3-1. Work Completed at SLDS (as of 8/2020).....	3-8
Table 3-2. Work Accomplished at SLAPS (as of 1/2020).....	3-14
Table 3-3. Work Completed at SLAPS VPs (as of 1/2020).....	3-20
Table 3-4. Work Completed at Latty Avenue VPs (Accessible Soils) (as of 3/2020).....	3-34

## LIST OF APPENDICES

<i>Appendices</i>	<i>Page</i>
APPENDIX A	Chronology of Community Involvement Activities to Date..... A-1
APPENDIX B	Community Interviews .....
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 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 community interviews were conducted in 1998, 2003, 2009, 2015, and 2019 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 FUSRAP 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), which include Coldwater Creek and adjacent properties to the Missouri River, 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 FUSRAP 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 FUSRAP 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 2019 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 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 FUSRAP Sites are part of a larger U.S. Department of Energy (DOE)/USACE environmental program known as FUSRAP. The U.S. Congress transferred the responsibility for executing FUSRAP from 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.

### **1.2.1 St. Louis Downtown Site**

All of the FUSRAP community involvement to date pertains to SLDS and North St. Louis County Sites. SLDS consists of the Mallinckrodt LLC (Mallinckrodt) plant and surrounding vicinity properties (VPs). 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, 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.

Group 1 properties were addressed in the 2014 Proposed Plan (PP). 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 were included in the subsequent ROD. The ROD was signed in September 2014 with the selected remedy of no further action for the inaccessible soils on 31 properties. USACE investigations determined that ISOU media at each of the Group 1 properties did not contribute to property-wide risks above background and do not exceed the USEPA's acceptable risk range. Nor were the combined risks determined for accessible soil areas at the same properties determined to exceed the acceptable risk range.

Group 2 properties are those properties where the ISOU media contributes to the property-wide risk, creating a property-wide risk above USEPA's acceptable risk range. These SLDS properties are still under evaluation.

### **1.2.2 North St. Louis County Sites**

FUSRAP's North St. Louis County Sites consist of SLAPS, the Latty Avenue Properties including the HISS and the Futura Coatings Property, the SLAPS VPs, which include Coldwater Creek. USACE signed the Final ROD for the North St. Louis County Sites on September 2, 2005. The public was encouraged to review and comment on the document during a 75-day review period from May 1, 2003 to July 14, 2003. The final remedy was selected and identified in the ROD after USACE considered all public comments and new information. In response to the potential risk of radioactive exposure, USACE chose and has implemented *Alternative 5, Excavation with Institutional Controls for Soils under Roads, Rail lines and Other Permanent Structures* to protect human health and the environment.

**THIS PAGE INTENTIONALLY LEFT BLANK.**

## 2 THE CERCLA PROCESS, PROJECT ORGANIZATION, AND AGENCY AGREEMENTS

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

CERCLA response actions are divided into two broad categories: removal actions and remedial actions. 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.

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.

### 2.1 THE CERCLA REMOVAL PROCESS

The CERCLA removal process 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 2-1).

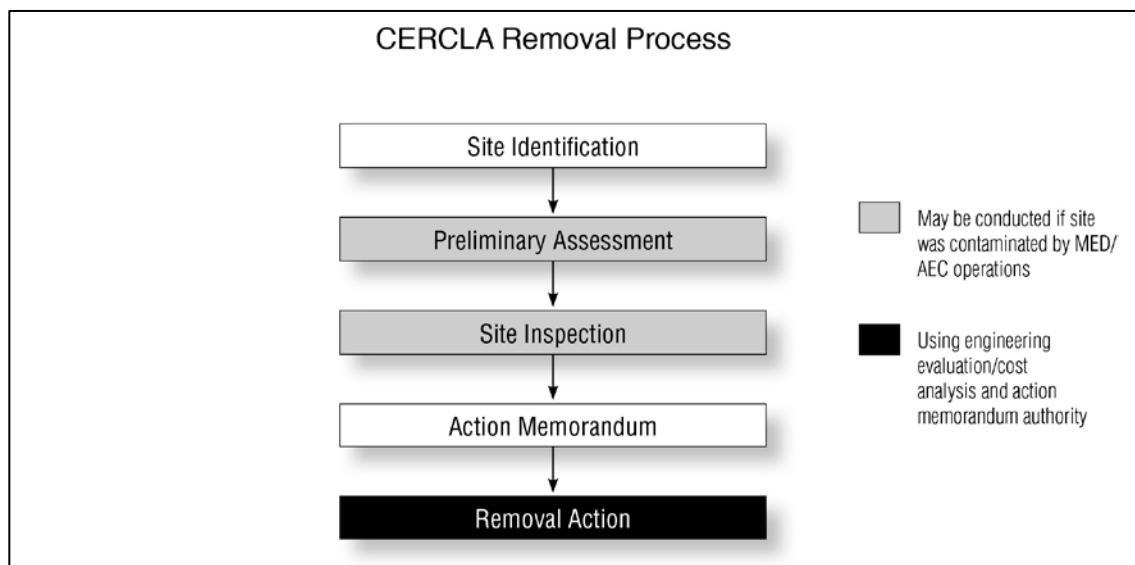


Figure 2-1. CERCLA Removal Process

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.

### **2.1.1 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.

### **2.1.2 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. A SLAPS EE/CA was used to remove radioactively contaminated materials in 1991 and 1997. The 1991 EE/CA, which included four interim actions at SLDS, was reviewed by the public, and DOE prepared a responsiveness summary to address their comments. 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.

## **2.2 THE CERCLA REMEDIATION PROCESS**

The CERCLA remedial process is similar to the removal process described in Section 2.1. However, remedial actions are performed later in the process. A remedial action 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 FUSRAP Sites is conducted according to CERCLA cleanup or remedial action processes (**Figure 2-2**). 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 FUSRAP Sites have been, and have continued to be, addressed by the CERCLA process. The sites consist of:

- SLDS, including Accessible Soil OU, ISOU Group 1, and ISOU Group 2
- North St. Louis County Sites; including SLAPS, SLAPS VPs, HISS, Futura, and the Latty Avenue Properties

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. Under a 1991 EE/CA, DOE completed four interim actions at SLDS.

### **2.2.1 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 for further consideration. 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>.

### **2.2.2 Preliminary Assessment/Site Inspection**

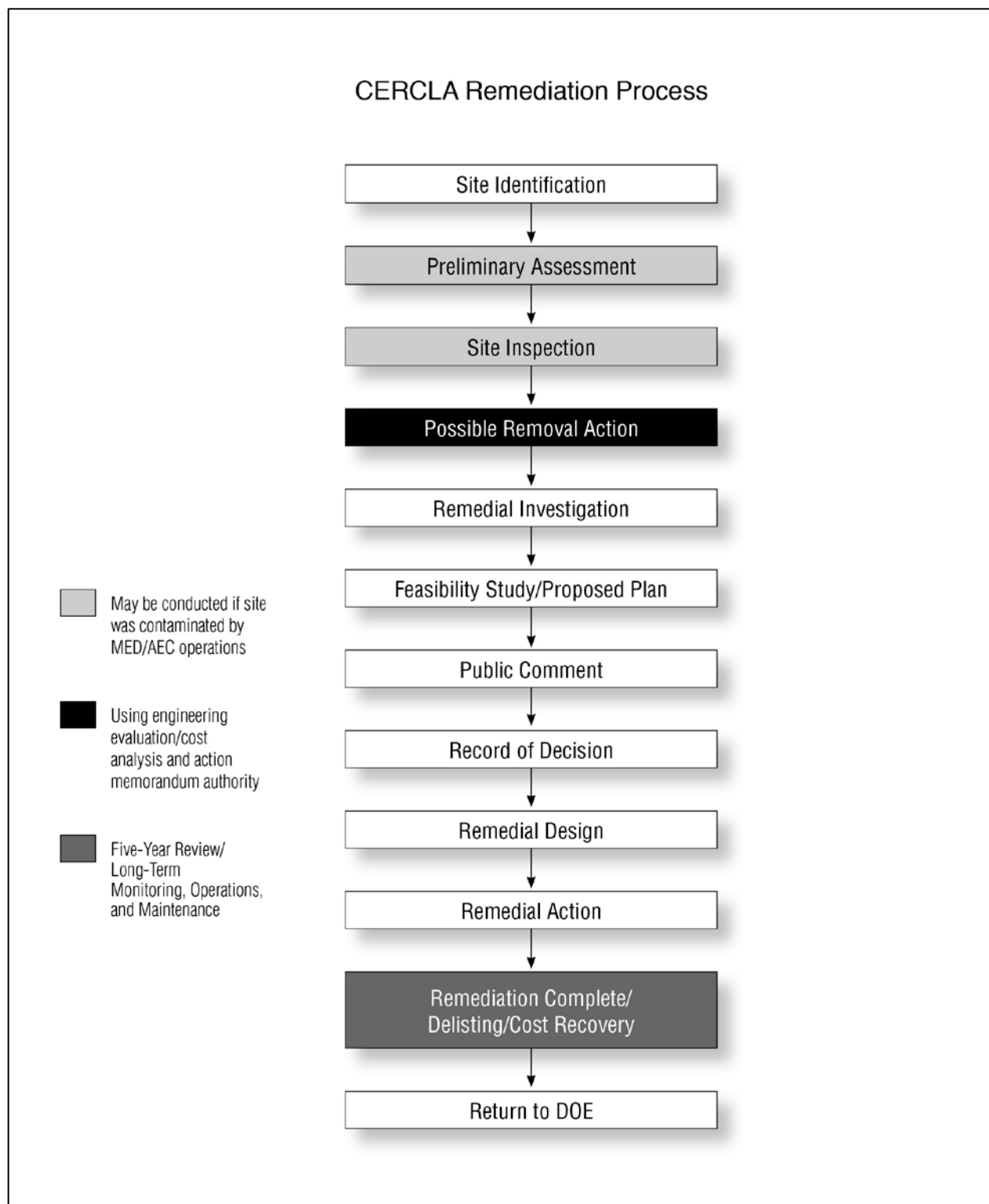
The preliminary assessment is a historical record review of activities at the site that is used to determine probable locations of hazardous waste disposal areas. Initially, the preliminary assessment establishes the extent of contamination.

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.

### **2.2.3 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.





**Figure 2-2. CERCLA Remediation Process**

#### **2.2.4 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 or emailed to USACE, or spoken during a public meeting.

#### **2.2.5 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 document that identifies the remedial action plan for a site, certifies that remedy selection process has followed the requirements of CERCLA and the NCP, describes the technical components of the remedy, and provides a consolidated source of information about the site to the public. 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.

#### **2.2.6 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. If sampling shows that contaminant goals are met, USACE will produce a Pre-Design Investigation Report/Final Status Survey Evaluation (PDIR/FSSE). This report provides the property owner a statement that no radiological contamination was found on the property. It also allows the property to be released to the property owner for appropriate beneficial use.

#### **2.2.7 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.

### **2.2.8 Site Closeout**

USACE is responsible for implementing, maintaining, reporting, and enforcing the institutional controls until two years after site closeout in accordance with EPA guidance on close out procedures for National Priorities List (NPL) sites. In accordance with the provisions of CERCLA, NCP, and USACE procedures, USACE must publish a public notice of the intent to delete the site from the NPL. At that time, these responsibilities will be transferred to DOE as agreed under the Memorandum of Understanding between USACE and DOE, dated March 17, 1999.

### **2.2.9 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 NPL. After all remediation 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.

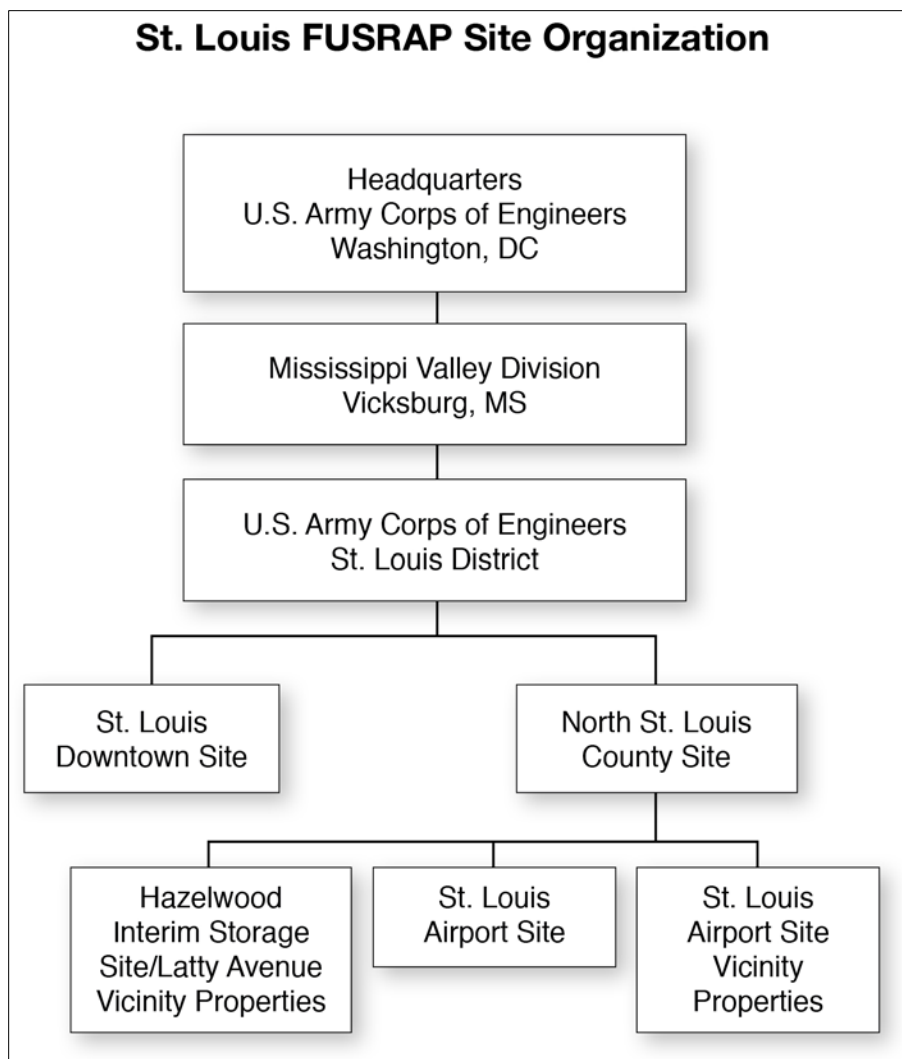
## **2.3 ROLES AND RELATIONSHIPS OF THE AGENCIES AND PARTIES INVOLVED AT FUSRAP**

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 FUSRAP 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 with 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 at sites included on the National Priorities List. EPA has a regulatory role to the lead agency for the St. Louis Sites.



**Figure 2-1. FUSRAP Site Organization, 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 FUSRAP Sites started meeting in 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 provided comments, recommendations, and constructive criticism for USACE in its efforts to address the FUSRAP sites. Currently, there is no official Oversight Committee.

**DOE.** Under the MOU between USACE and DOE Office of Legacy Management, USACE is executing 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/land use controls that have been imposed on a site.

## **2.4 FORMAL AGREEMENTS AT THE ST. LOUIS SITES**

In June 1990, EPA Region VII (which oversees Missouri Sites) and DOE signed an FFA.

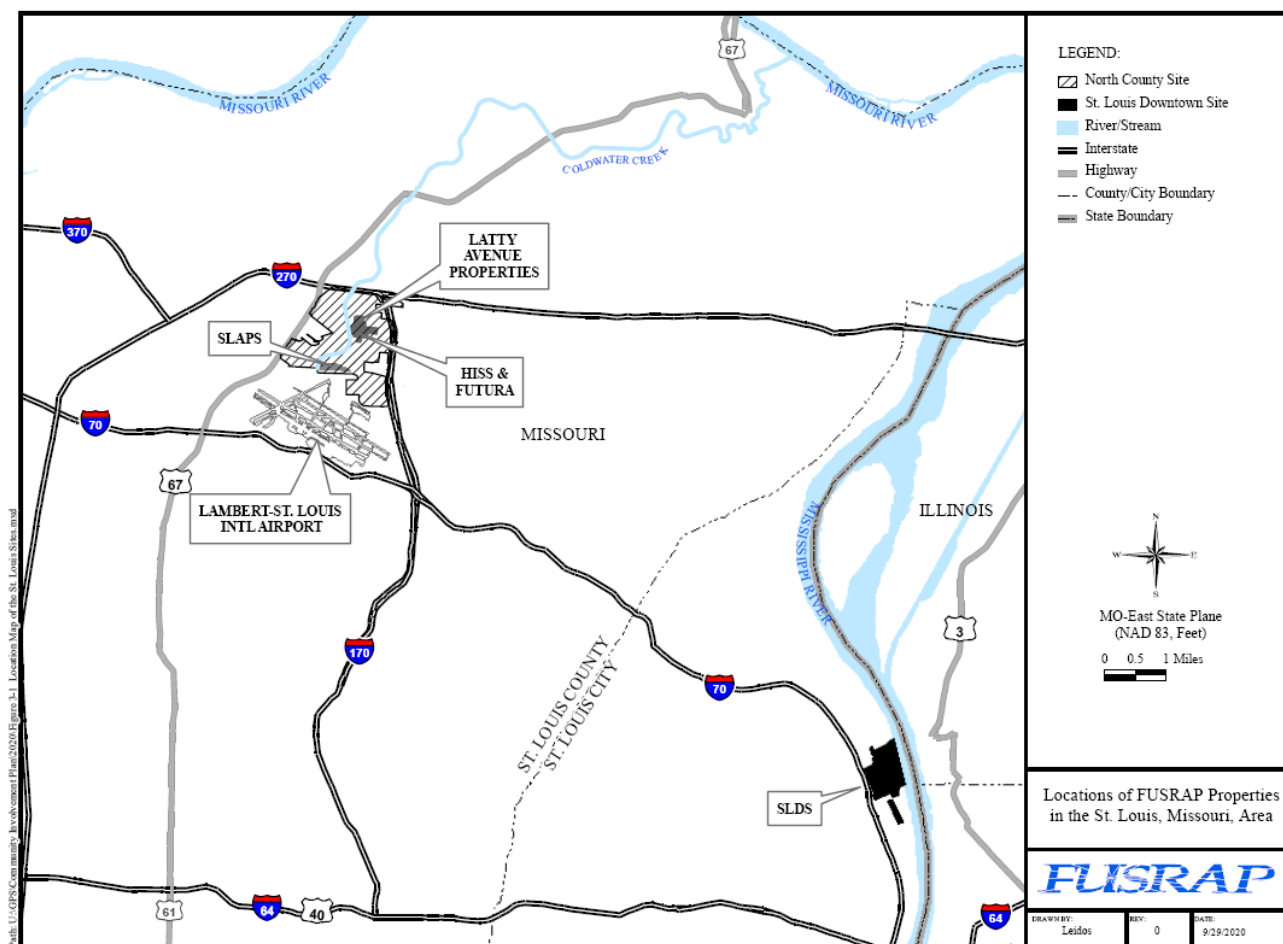
## **2.5 COMMUNITY INVOLVEMENT ROLES AND RESPONSIBILITIES**

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 FUSRAP ST. LOUIS SITE DESCRIPTIONS

Even though FUSRAP sites may contain levels of radioactivity above current regulatory guidelines, none of the St. Louis FUSRAP Sites poses 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 FUSRAP 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. SLDS are about 11 miles southeast of SLAPS and the Lambert-St. Louis International Airport. The surrounding 40 VPs are also a part of SLDS. Of these 37 are labeled properties and 3 are unnumbered.

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).

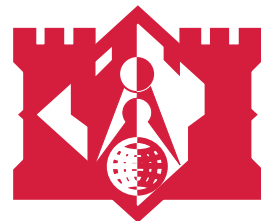


Figure 3-2. Aerial View of SLDS (1998)

#### 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.

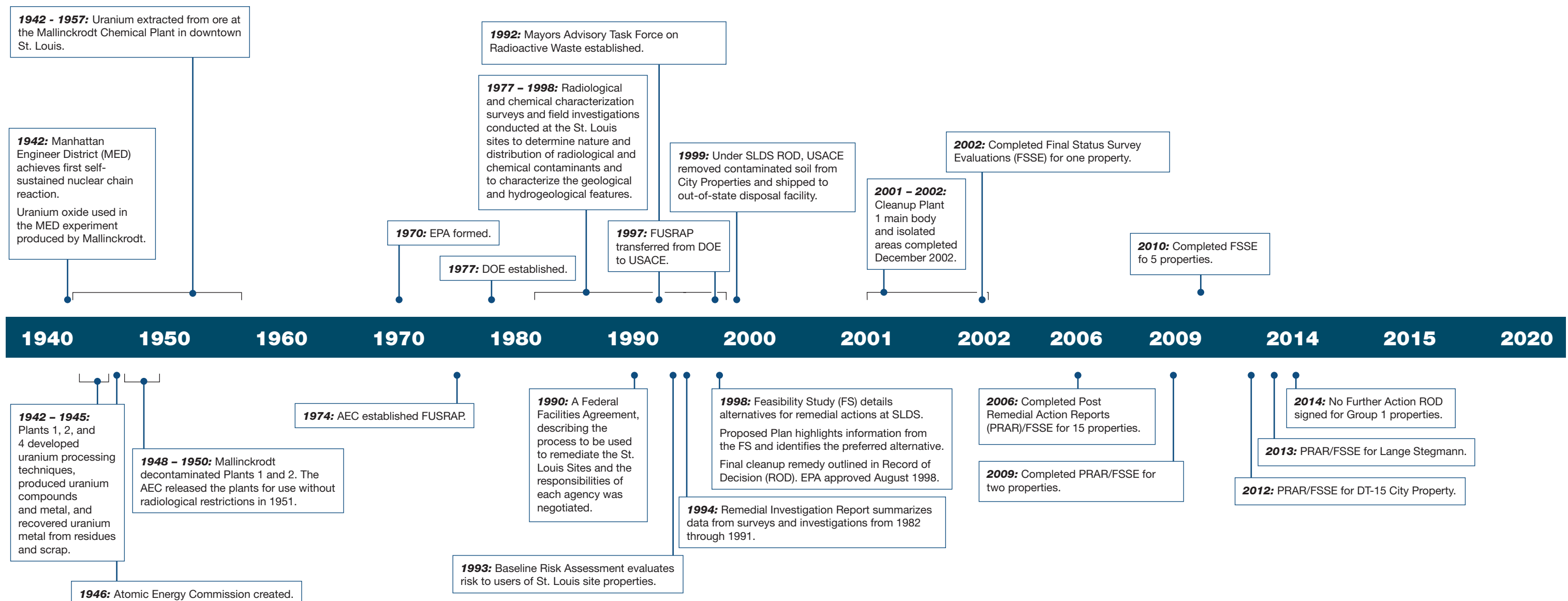


US Army Corps  
of Engineers®,  
St. Louis District

# FUSRAP History at the St. Louis Downtown Site

*FUSRAP*

(which includes Mallinckrodt and Vincinity Properties)





**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 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 FUSRAP 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 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, Tyco International bought Mallinckrodt, Inc. Tyco Healthcare separated in 2007 from Tyco International and renamed itself Covidien, an independent company that included Mallinckrodt. In June 2013 Mallinckrodt, LLC, officially separated from Covidien and kept ownership of the property's

land and building assets. DOE will assume stewardship responsibility beginning two years after completing the response action at the St. Louis Sites.

### **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**

The SLDS project required investigation and, where necessary, remediation of 40 properties. A map of SLDS properties is presented in Figure 3-3. Table 3-1 lists the status of work accomplished at each of the FUSRAP properties at SLDS. All properties listed in Table 3-1 have been characterized and the majority have a PDIR/FSSE. 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. As inaccessible soil areas become available, they will be remediated under the 1998 ROD.

Path: U:\GPS Community Involvement Plan\2020 Figure 3-3 Location of SLDS\2.mxd

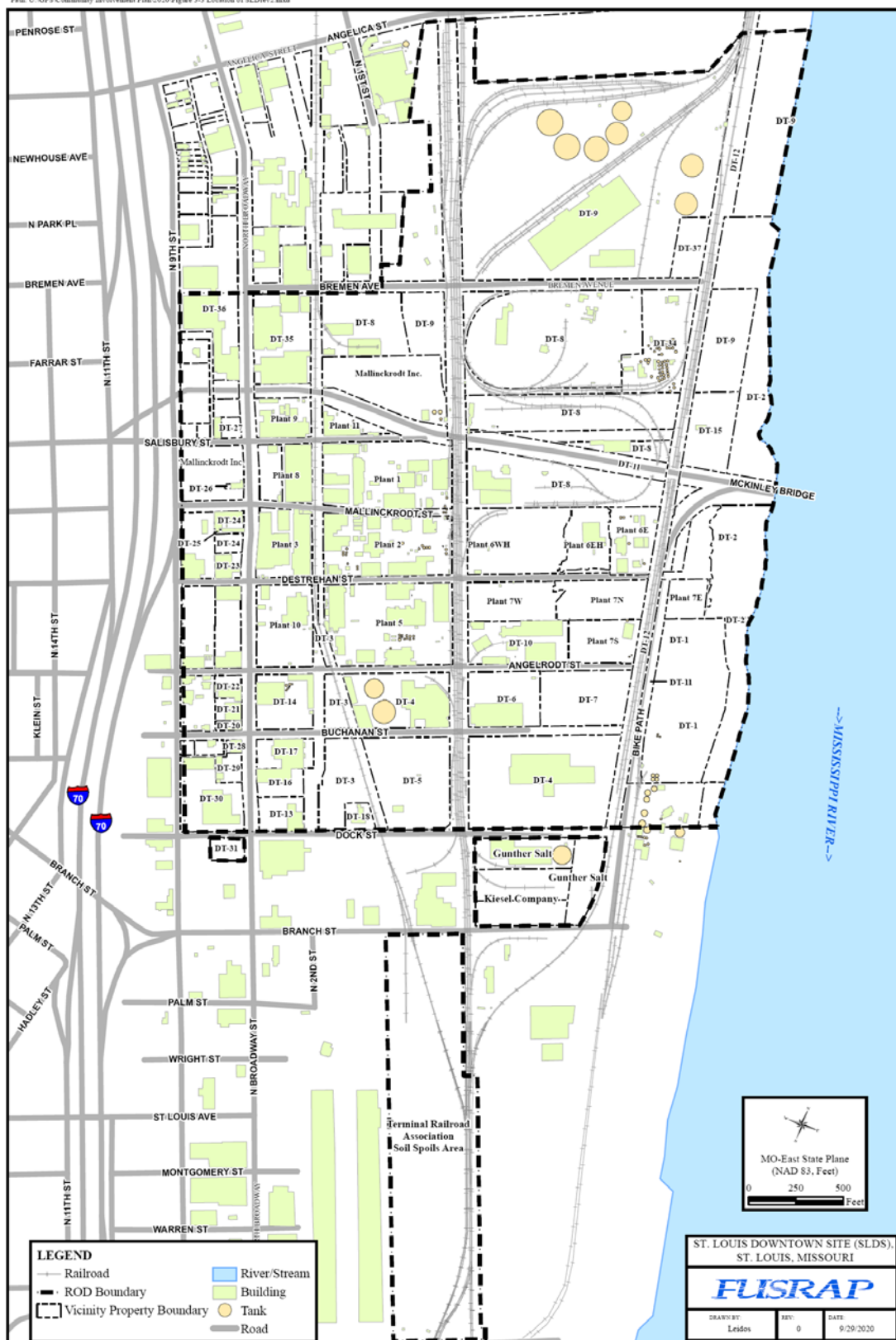


Figure 3-3. Locations of SLDS

Table 3-1. Work Completed at SLDS (as of 8/2020)

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey
Plant 1	×	×	× (3,076)	×
Plant 1 (Former Building 17)	×	×	× (2,300)	×
Plant 2	×	×	× (9,659)	×
Plant 6 East Half, East, and West Half	×	×	× (36,230)	
Plant 6 EH/WH – Building 101	×	×	× (61,616)	×
Plant 7 East, South, North, and West 700 Pad	×	×	× (29,057)	
Plant 7W areas associated with Destrehan Street	×	×	× (25,624)	
Plant 9 Gate 49	×	×	× (22)	×
DT-1 (Kiesel; formerly Archer Daniels Midland)	×	not needed	not needed	×
DT-2 (St. Louis City Property)	×	×	× (30,589)	×
DT-3 (Norfolk Southern Railroad)	×	×	× (243)	×
DT-4 (Gunther Salt North and South)	×	×	× (2,871)	×
South of Angelrodt (DT-5, -13, -14, -16, -18 and the Second Street Corridor)	×	not needed	not needed	×
DT-6 (Heinz Steel and Manufacturing)	×	×	× (1,830)	×
DT-7 (Midwest Waste)	×	×	× (3,910)	×
DT-8 (PSC Metals, Inc.)	×	×	× (8,071)	×
DT-9 (Terminal Railroad Association)	×	×	× (2,587)	×
DT-10 (Thomas and Proetz Lumber Company)	×	×	× (1,995)	×
DT-11 (City of Venice, Illinois [Formerly McKinley Bridge] IDOT and MODOT)	×	×	× (2,834)	×
DT-12 (Burlington-Northern Santa Fe Railroad)	×	×	× (2,290)	×
DT-15 (City Properties [Metropolitan St. Louis Sewer District Lift Station])	×	not needed	not needed	×
DT-17 (Christina Court)	×	×	× (47)	×
DT-29 (Midtown Garage)	×	×	× (51)	×
DT-31 (Porter Poultry)		not needed	not needed	×
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	×
Destrehan Street	×	×	× (26,439)	×
Kiesel Hall Street Properties	×	×	× (10,503)	×

**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 St. Louis Lambert 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 “former Ballfields” 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.

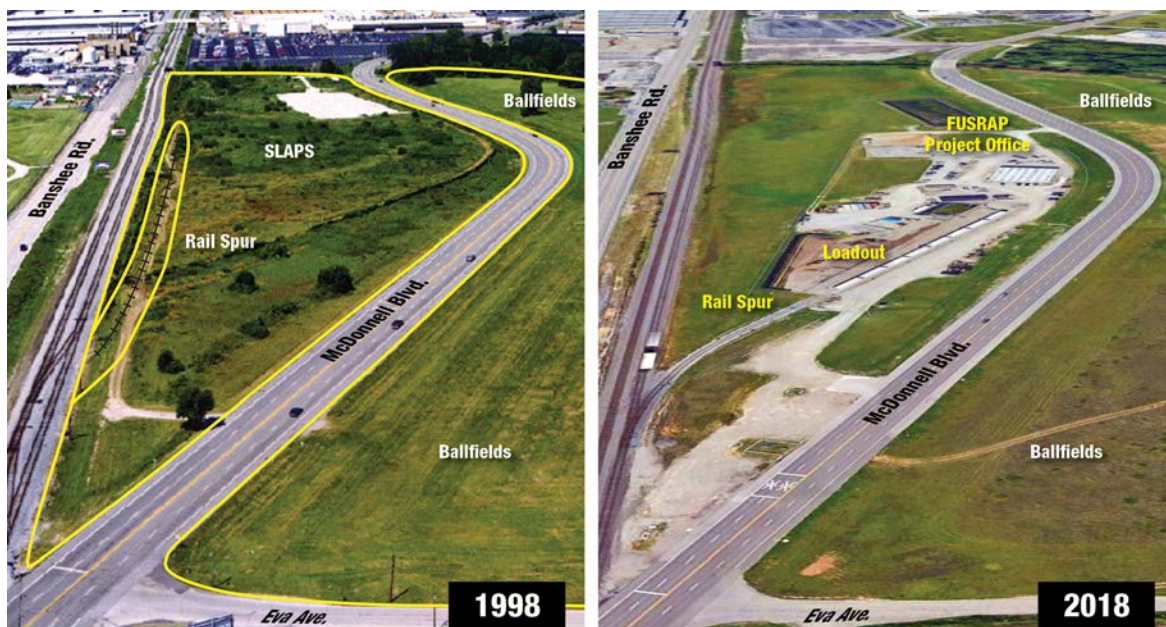


Figure 3-4. Aerial View of SLAPS and the Ballfields Cleanup Area (circa 1998 and 2018)

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, 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 shipped radiologically contaminated material to West Lake 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 by the nation's early atomic weapons development program. The Latty Avenue Properties were placed under FUSRAP in 1983. SLDS, SLAPS, and SLAPS VPs were placed under FUSRAP the next year. 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.

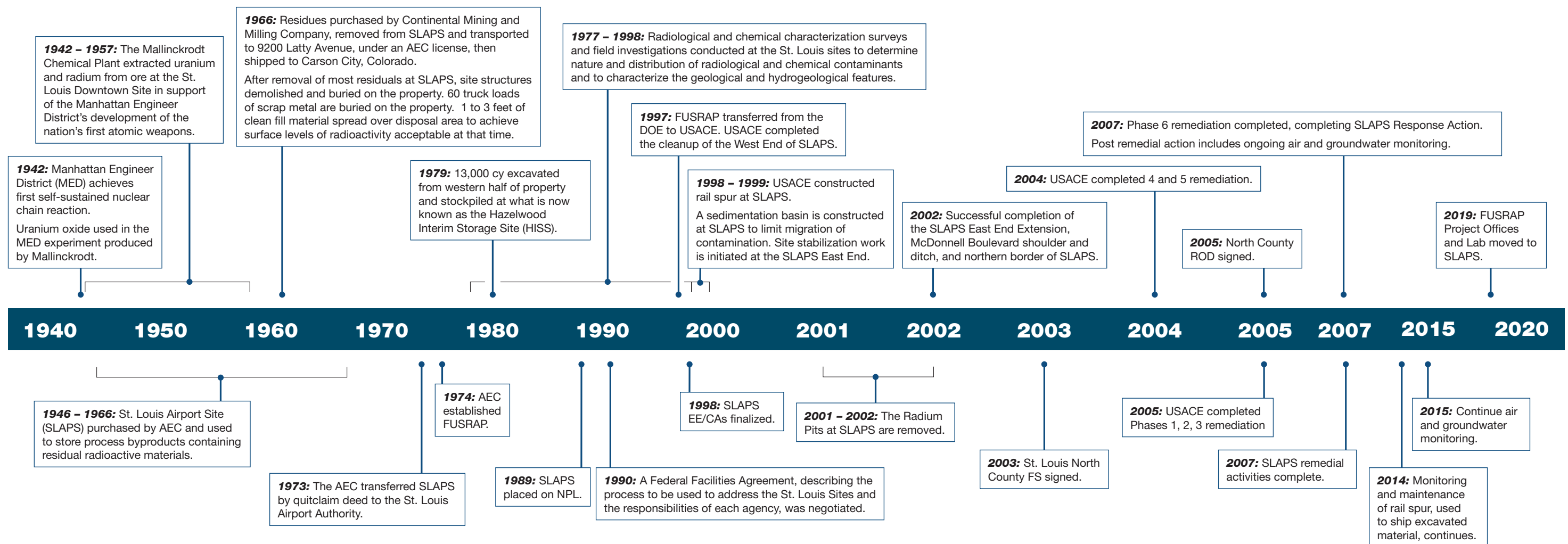
### **3.2.3 FUSRAP Work Completed at SLAPS to Date**

USACE released a Post Remedial Action Report/Final Status Survey Evaluation (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.**



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 more than 379,470 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 1/2020)**

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

The SLAPS VPs are located in North St. Louis County and consist of 78 Coldwater Creek-named VPs and more than 70 un-named VPs. These properties include the FUSRAP boundary haul routes; Coldwater Creek; Coldwater Creek adjacent properties identified as the “C” properties located from Frost Avenue to Pershall Road; the former Ballfields; part of the Norfolk Southern Railroad properties, and several unidentified VPs; as shown in **Figure 3-6**, are properties that are considered un-impacted by the North County FS and ROD.

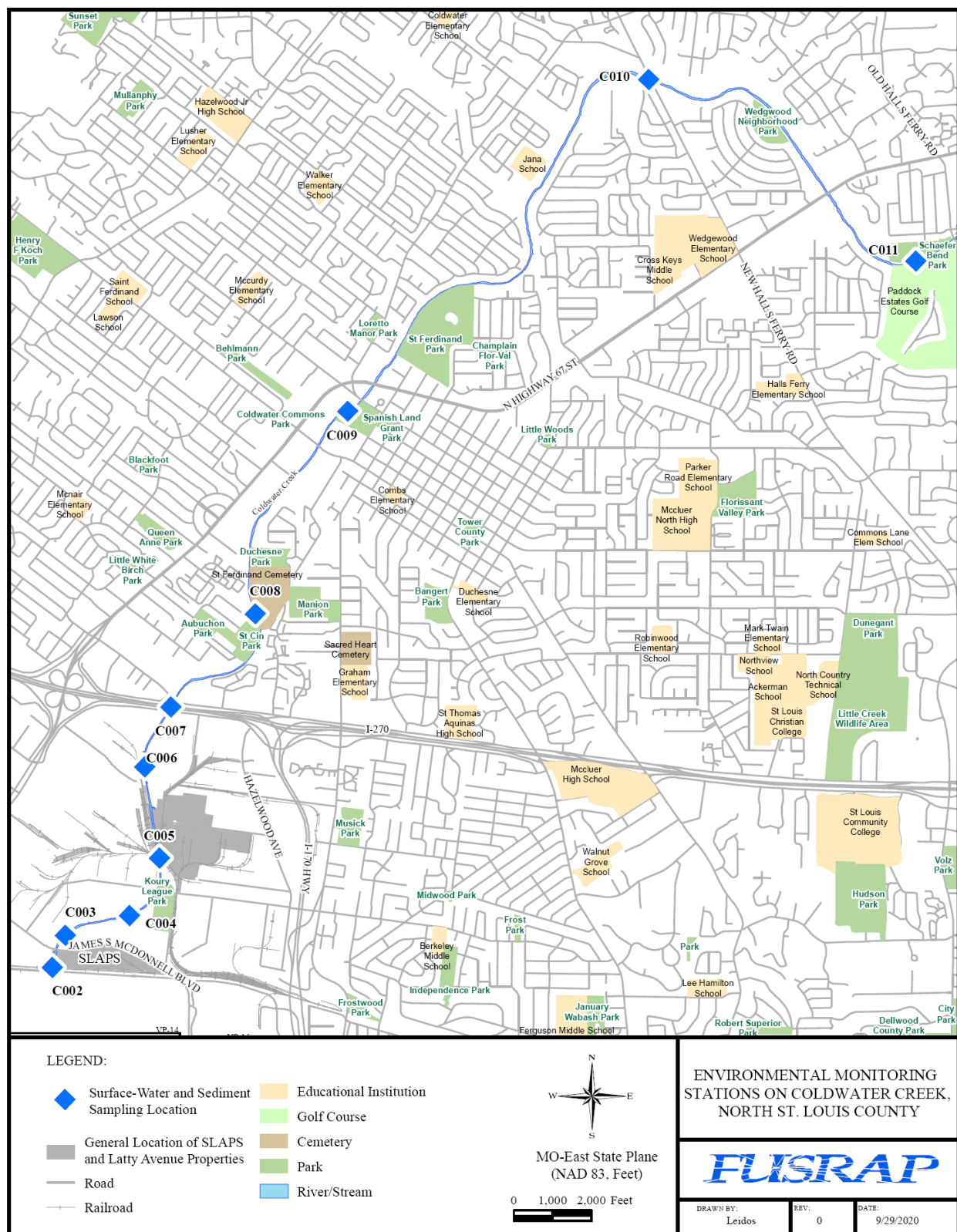


Figure 3-6. Locations of SLAPS Vicinity Properties

### 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.

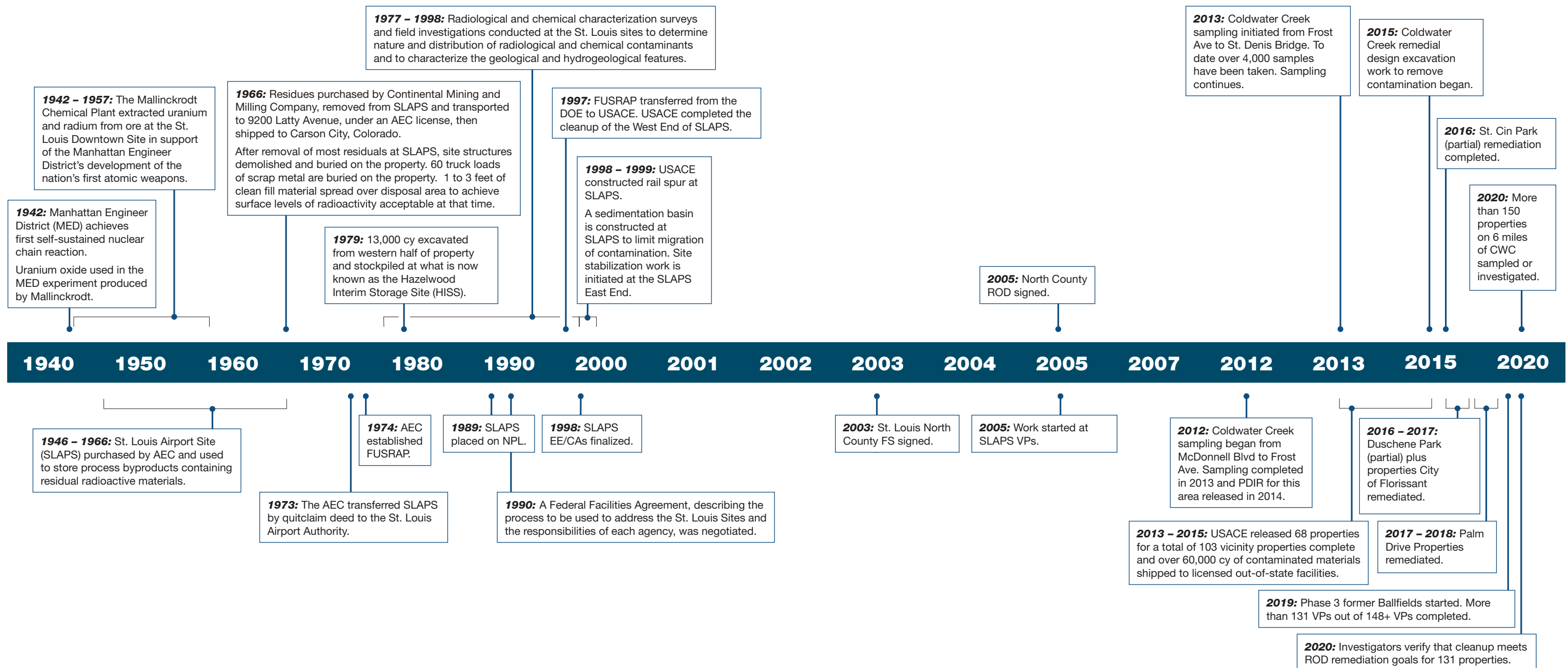
Of the more than 148 properties comprising the SLAPS VPs, cleanup activities are complete or are substantially complete on 131 properties (2020). The volume of residues was estimated at 195,000 cubic yards in 1996 and is now estimated to have increased to 250,000 cubic yards in 2020. Commercial enterprises, 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 Sites (SLAPS, Latty Avenue Properties, and SLAPS VPs) released in 2005.





# FUSRAP History at the St. Louis Airport Site Vicinity Properties

*FUSRAP*







### **3.3.3 FUSRAP Work Completed at SLAPS Vicinity Properties to Date**

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 2020. Work areas that did not require remediation are also listed. Not listed are work areas that have not been characterized.

Former Ballfields Phase 3 remediation consists of approximately 48 acres on the east side of the former Ballfields adjacent to Coldwater Creek. USACE placed 32,000 cubic yards of clean overburden over contaminated material in this area of the Ballfields to build up the area for development and flood prevention. In order to remove the contaminated material from Phase 3; the clean overburden must be removed first. There is 95,000 cubic yards of contaminated material approximately 6 to 19 feet below ground surface. Excavation of Phase 3 former Ballfields started on July 15, 2019. As the clean overburden is removed, it is surveyed to ensure it meets North County ROD remediation goals. The material meeting ROD remediation goals will be stockpiled and used to backfill in Phase 3 excavated areas.

Table 3-3. Work Completed at SLAPS VPs (as of 1/2020)

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey Documented
IA-09 – Ballfields (Phase 1)	×	×	×	×
IA-09 – Ballfields (Phase 2)	×	×	×	×
IA-09 – Ballfields (Phase 2B)	×	×	×	×
IA-09 – Ballfields (Phase 3)	×	×	ongoing	
IA-10 (part of Phase 3 Ballfields RA)	×	×	ongoing	
IA-12	×	×	×	
IA-13	×	×	×	×
McDonnell Boulevard South Ditches Adjacent to SLAPS (IA-8)	×	×	×	×
McDonnell Boulevard East Section B	×	×	×	
McDonnell Boulevard (under road)	×	×	×	
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	×	×	×	×
VP-08 and -09	×	×	×	×
VP-10, -11, and -12	×	×	×	×
VP-16	×	×	×	×
VP-57 and VP-58	×	×	×	
Pershall Road – South Ditch	×	×	ongoing	
St. Cin Park (Coldwater Creek-56)	×	×	×	×
Duchesne Park	×	×	×	×
Palm Drive and Chez Paree	×	×	×	×
Eva Avenue North	×	×	ongoing	
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	×	×	×	×
VP-31A	×	×	×	×
VP-38	×	×	×	
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	×	×	×	×
VP-54	×	×	×	×
VP-55	×	×	×	×

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey Documented
VP-01C, -56, -59 and the Pershall Road South Ditch	×			
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	×	×	ongoing	
Frost Avenue (Partial) beside VP-21	×	×	×	
Frost Avenue (remainder)	×			
Byassee Properties	×	not needed	not needed	×
Banshee Road	×	×	×	×
Pershall Avenue	×			

**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.

### 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 watershed 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.

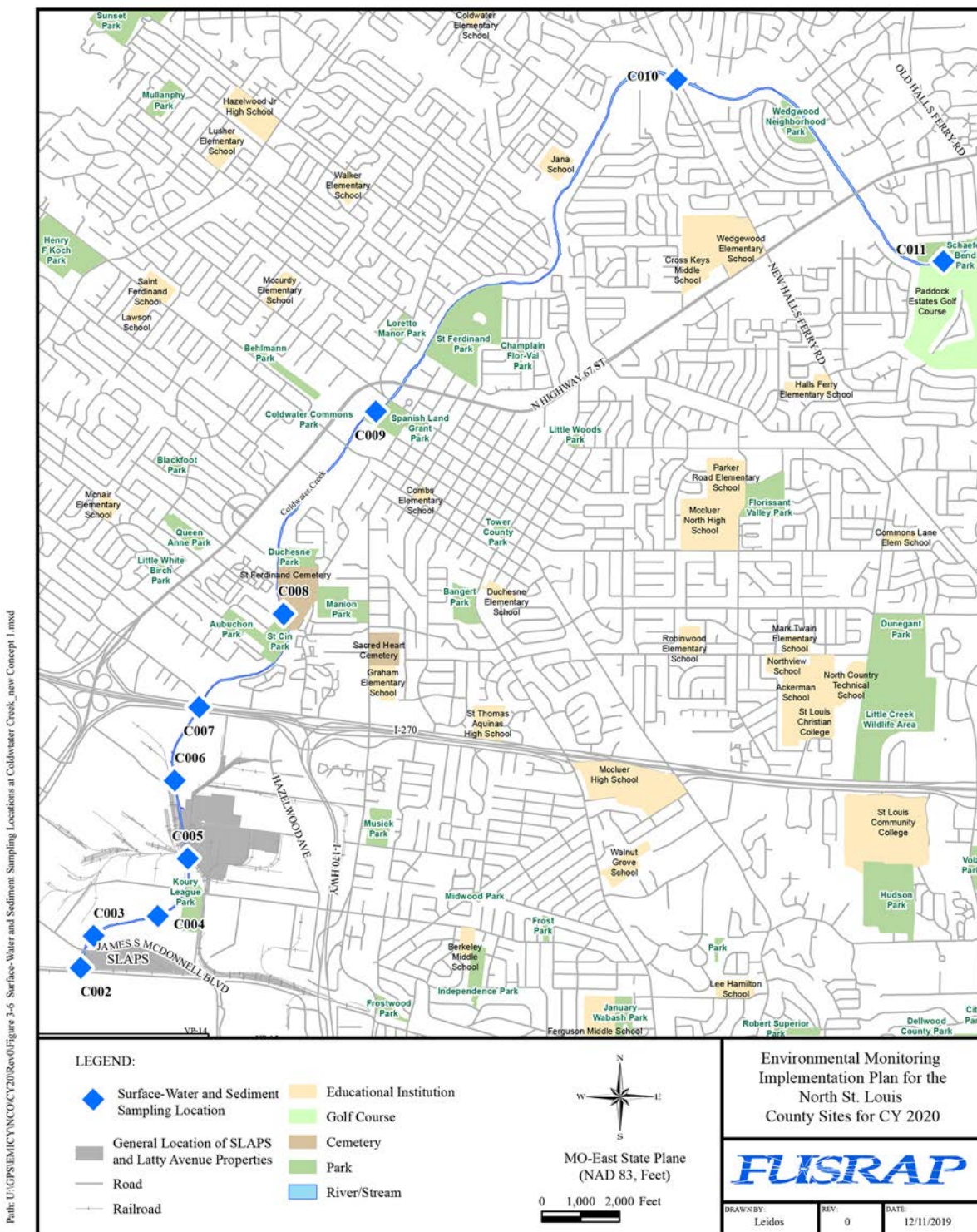
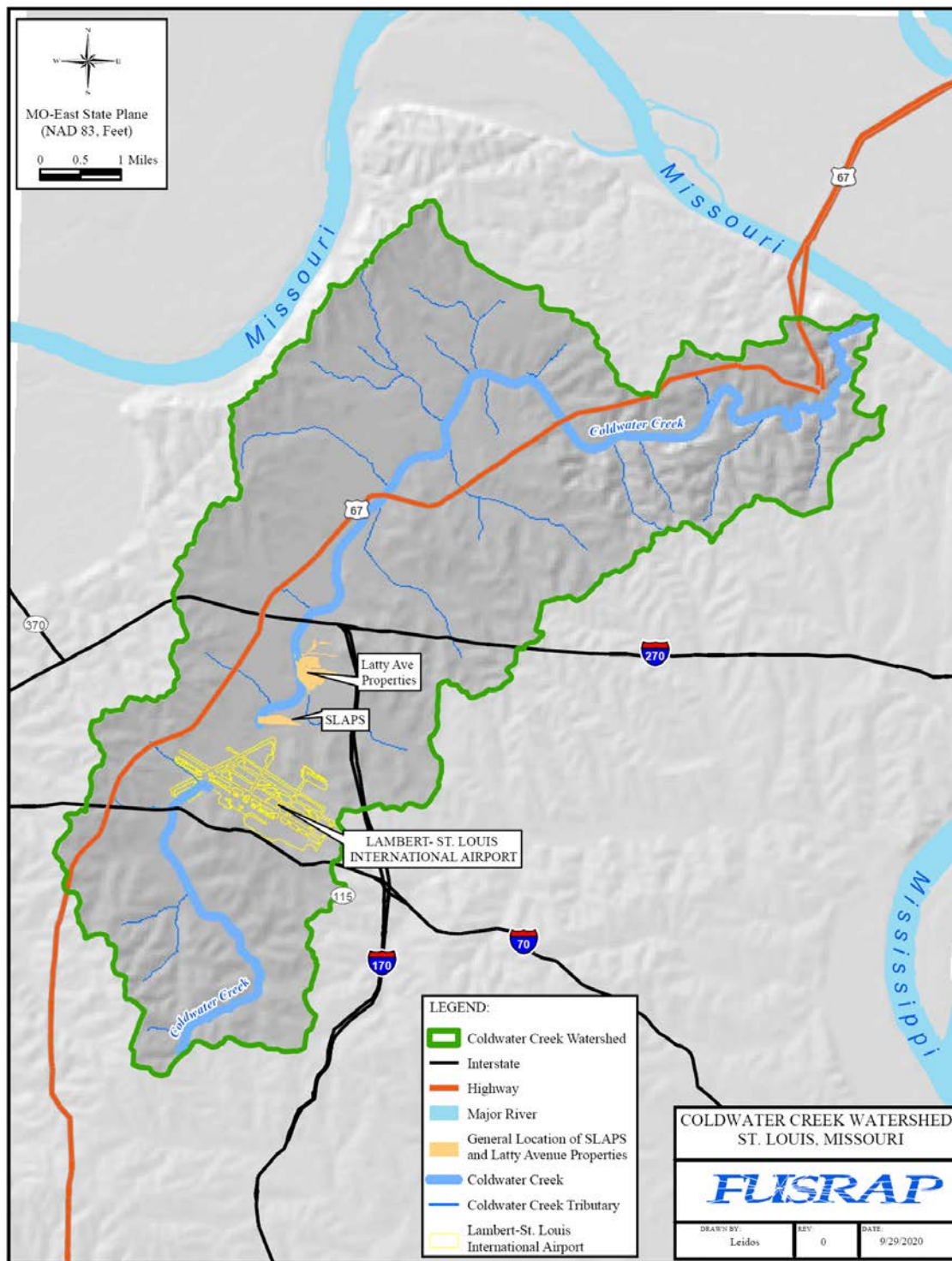


Figure 3-7. Ten Monitoring Stations on Coldwater Creek





**Figure 3-8. Coldwater Creek Watershed**

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 near two Florissant bridges over Coldwater Creek were performed to support upcoming bridge replacements.

Coldwater Creek flows for 500 feet along the western border of SLAPS. The creek originates 3.6 miles to the south of SLAPS and continues for 15 miles in a northeasterly direction through the City of Hazelwood, the City of Florissant, unincorporated areas of St. Louis County, and along the northern edge of the community of Black Jack, until it discharges into the Missouri River. Coldwater Creek frequently floods areas in North St. Louis County, including SLAPS, SLAPS VPs and Latty sites, and many areas downstream, which include residential, recreational, and commercial areas in North St. Louis County.

Low-lying areas outside the Coldwater Creek corridor were evaluated as areas that, due to flooding and subsequent receding of water, may have become depositional areas for contaminated material. The area outside the Coldwater Creek corridor was evaluated to identify low-lying areas that are outside of the creek banks, but within the 10-year floodplain. Low-lying areas were identified through a geospatial analysis of the Coldwater Creek floodplain using Light Detection and Ranging (LiDAR)-based elevation data, as well as historical aerial photography. This evaluation resulted in the identification of several representative low-lying areas for which soil data (existing or new) will be used to determine whether deposition of contaminated material has occurred in these areas. Evaluation of existing data within Coldwater Creek indicates correlation between the low-lying areas within the 10-year floodplain and samples that exhibited radiological contamination above 2005 ROD remedial goals. Several low-lying areas were identified for which biased sampling is recommended. These areas fulfill the criteria of being within the 10-year floodplain of Coldwater Creek and being localized low areas in which floodwaters would collect. Historical changes in land contours and land use were also evaluated, as current low areas may be caused by recent construction activities and not indicative of historical elevations.

The Coldwater Creek, Missouri, Feasibility Report and Environmental Impact Statement (USACE 1987a) states that a drainage district was established in 1927 to straighten, widen, deepen, and alter Coldwater Creek and that most of the channel has been re-aligned to a more curvilinear shape. The drainage district was annexed by the Metropolitan St. Louis Sewer District in 1956. The reason the channel was altered was to reduce flooding, which was caused by increased storm water discharge and sheet water runoff due to land use development of the surrounding area. The document also concluded that the erosion was concentrated in areas immediately downstream of obstructions, such as storm-sewer outfalls, bridge piers, bank protection, and culverts, particularly during or immediately after high water flow events. The study notes the propensity for the eroded material to be transported via suspension and, subsequently, re-deposited downstream during low-flow conditions. Bank erosion protection controls (e.g., riprap and concrete) have been placed since the time that MED/AEC contamination was stored in North St. Louis County.

The Coldwater Creek corridor has undergone improvements throughout the timeframe in which MED/AEC contamination was stored in North St. Louis County. These improvements vary from minor bank stabilization efforts to reduce erosion to large-scale construction projects (e.g., bridges) to the installation of underground utilities. The improvements were necessary to support residential, commercial, and industrial land use development within and near the Coldwater Creek floodplain area.

### **Coldwater Creek Sampling**

The strategy to cleanup Coldwater Creek is to work upstream to downstream. First, the main sources of contamination were remediated (SLAPS and HISS/Futura). Several VPs were also remediated during the remediation of the main sources of contamination. USACE started pre-design investigation sampling of

Coldwater Creek in 2012. To date June 2020, USACE has sampled approximate 6 miles of the creek to past Old Halls Ferry Road. Coldwater Creek sampling is conducted from bank to bank (creek corridor) and sampling adjacent properties within the 10-year floodplain. The 10-year floodplain is a starting point to sample the Coldwater Creek adjacent properties. Additional sampling beyond the 10-year floodplain occurs when required to identify additional contamination.

Properties north of Pershall Road/I-270 are not included/identified in the FS or the 2005 North County ROD. However, the 2005 ROD on Page 2-1, Section 2.1.1, states “SLAPS VPs include Coldwater Creek and properties near SLAPS and along Coldwater Creek.” There are more than 700 properties adjacent to Coldwater Creek from Dunn Road to the Missouri River.

The NC ROD describes the selected remedy as:

*“The selected remedy is to excavate contaminated soils from all properties to levels that allow for unlimited use and unrestricted exposure (UUUE), except for some limited areas where the soils are not currently accessible because they are located under permanent structures such as active roads, railways, or buildings where excavation is considered impractical under current conditions. Potential risks from contaminants in these inaccessible areas will be managed by imposing appropriate use restrictions through institutional controls. Contaminated sediments will also be removed from Coldwater Creek to levels that allow for UUUE. Contaminated structures will be removed or cleaned up to levels that allow for UUUE. Residual contamination in the shallow ground water does not present an exposure concern or threaten potentially usable ground-water systems.”*

Contaminated sediment from Coldwater Creek was distributed during flooding events to areas in the floodplain properties adjacent to Coldwater Creek. Sampling of Coldwater Creek downstream from the original group of identified VPs in the North St. Louis County Sites revealed MED/AEC contamination above ROD remediation goals in the creek corridor and in the floodplain properties adjacent to Coldwater Creek. Contamination was found from just below ground surface to approximately 5 feet below ground surface. The contamination does not pose an immediate risk to human health or the environment in its current configuration. However, disturbance of the soil on these properties could spread the contaminated material and increase the exposure risk.

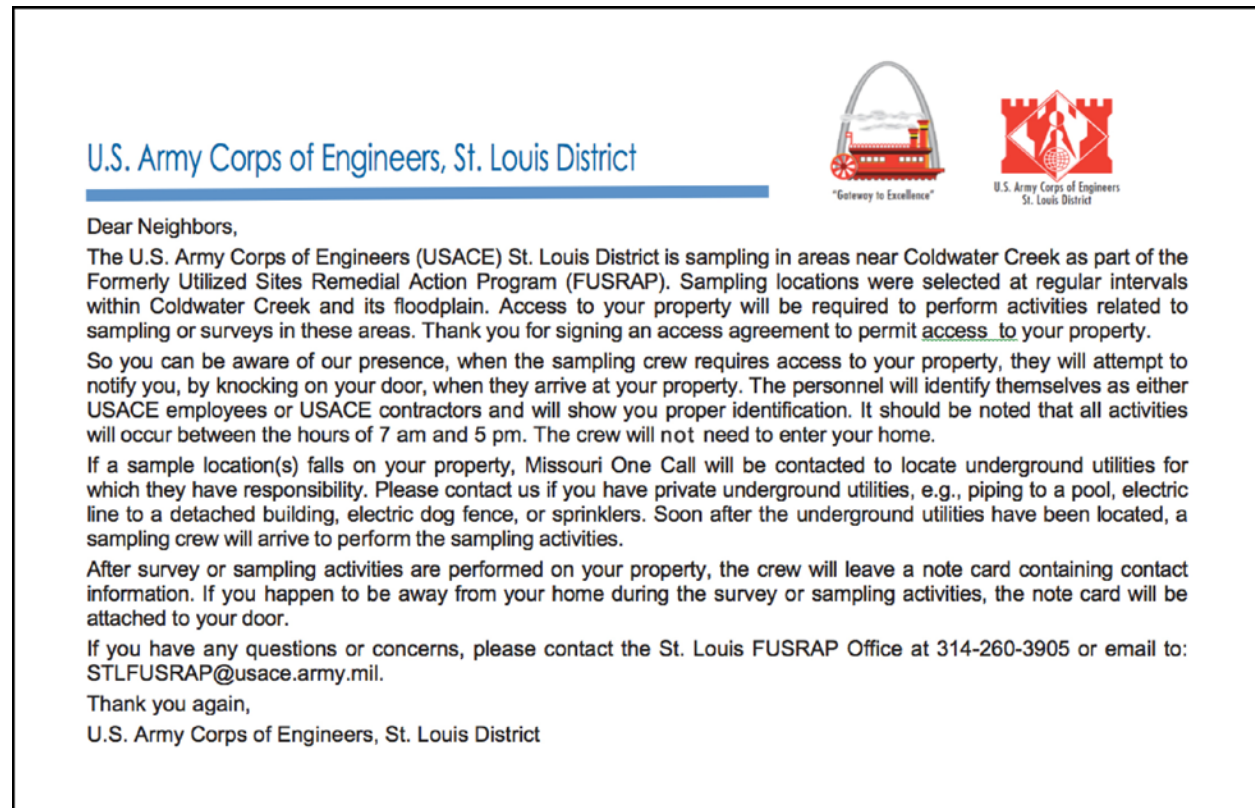
USACE identified contaminated soil at two parks (St. Cin Park in Hazelwood, Missouri and Duchesne Park in Florissant, Missouri) and at the area located between Coldwater Creek and the St. Ferdinand Cemetery. USACE completed remediating both parks (St. Cin Park and Duchesne). Contamination was also found in the back yards of five residential properties and an open area directly adjacent to Coldwater Creek. These are known as the Palm Drive Properties. Remedial activities (2016 to 2018) were completed at the Palm Drive Properties. The PRAR/FSSE was finalized in 2019. Concentration of the radionuclide thorium-230 in exceedance of the ROD remediation goals (USACE 2005) was found at the remediation area. In 2017 and 2018, approximately 8,000 cubic yards of soil were excavated from the Palm Drive properties and shipped via rail to the properly licensed, out-of-state disposal facilities in Grand View, Idaho, Belleville, Michigan, and in Clive, Utah. Radiological surveys were conducted on structures within excavations and within the 10-year floodplain. Measurements collected on the surface of these structures met remediation goals, so no remediation or removal of the structure surface was required.

Other areas of contamination adjacent to Coldwater Creek have been found during the ongoing sampling campaign. At this time, these areas are not accessible to the public and, therefore, do not pose a risk to



public health. These areas will be remediated later. If USACE finds contamination in Coldwater Creek or on adjacent properties, which pose a risk to the public, these areas will be remediated as soon as possible.

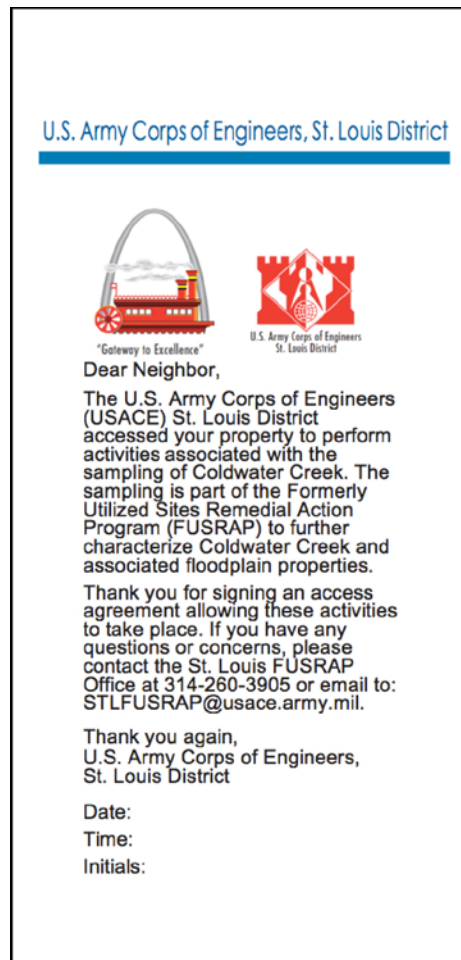
Property owners sign a Right-of-Entry, giving USACE permission to remove a sample from or take a survey of the property. Before performing sampling activities on private properties, USACE mails postcards to the affected households. See Figure 3-9. After sampling activities, workers leave information tags on household doors. See Figure 3-10.



**Figure 3-4. Post Card Sent to Residents at Sampling Sites**

**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 monitoring stations along Coldwater Creek. In 2020, 10 different stations are monitored adjacent to and downstream from the North County Sites. These monitoring events continue to be conducted biannually and to 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.

Surface water and sediment data collected from Coldwater Creek are evaluated relative to historical monitoring 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



**Figure 3-5. Information Tag Left for Residents at Sampling Sites  
When Samplings are Completed on Their Properties**

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.

### **3.4 LATTY AVENUE PROPERTIES**

#### **3.4.1 Location**

Latty Avenue Properties, including HISS, Futura, and Latty Avenue VPs, 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 Hazelwood Avenue. Part of VP40A (railroad property) is a railroad spur located between Coldwater Creek and the HISS Futura property. USACE is in the process of transferring the railroad spur portion of VP40A from a Latty Avenue property to a SLAPS VP. .

#### **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 generated at the Mallinckrodt plant in St. Louis from 1942 through the late 1950s were 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 inside the buildings and around them 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 Latty Avenue Properties 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 Properties 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.

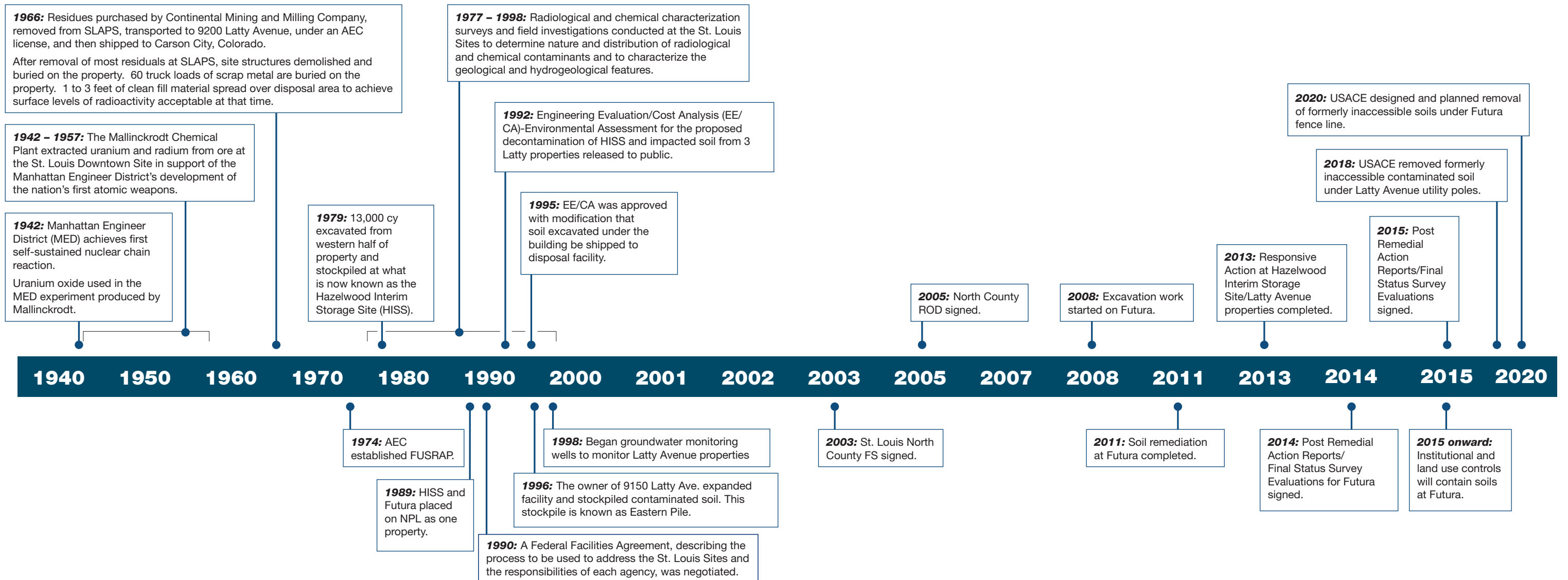
In 1996, the owner of 9150 Latty Avenue (Latty Avenue VP-2L), located to the east of HISS, expanded the facility and stockpiled about 8,000 cubic yards of contaminated soil. This stockpile, consisting of two piles known as the eastern piles, was located on the southwestern corner of the property.

**THIS PAGE INTENTIONALLY LEFT BLANK.**



# FUSRAP History at the Latty Avenue Properties

*FUSRAP*



**THIS PAGE INTENTIONALLY LEFT BLANK.**



Until 1997, DOE was the lead agency responsible for the cleanup of the Latty Avenue Properties. In October 1997, the execution of 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 and 2018. After remedial activities are completed, FUSRAP sites will be transferred back to DOE.



**Figure 3-6. Aerial View of HISS Piles in 1999 and 2018**

### **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 (Accessible Soils) (as of 3/2020)**

Work Area	Characterized	Remedial Design	Remedial Action (cubic yards)	Final Status Survey Documented
HISS	×	×	× (53,000)	×
Futura	×	×	× (21,038)	×
VP-01(L) and 10K530087	×	×	× (26,000)	×
VP-02(L)	×	×	× (29,804)	×
VP-03(L), VP-04(L), VP-05(L), VP-06(L)	×	×	× (9)	×
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. In 1999, USACE constructed a 700-foot-long rail spur to support remediation that extended along the eastern edge of the HISS property. From 2000 and 2001, USACE removed 26,975 cubic yards from the HISS piles. In 2008, in situ 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 to an out-of-state, licensed facility. More than 53,000 cubic yards of material was 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. Excavation work started in February 2008 on the Futura property. Accessible soil remediation was completed in February 2011 with more than 20,950 cubic yards of contaminated material removed. USACE removed all accessible soil that exceeded ROD cleanup goals at Futura 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 sent 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/land use controls to contain soils on the Futura property.

These areas include the inaccessible soil around and beneath three buildings, the transportation corridor of the Norfolk Southern Railroad rail lines (mostly located on the adjacent property west of Building 2/3) under the Futura fence line adjacent to Norfolk Southern rail road property (VP-40A), and inaccessible soil surrounding two Ameren UE utility poles on the northeast end of the site.

#### **Futura (Ameren Poles Area)**

In December 2018, remediation was initiated to remove contaminated materials under the two Ameren UE utility poles on Futura. Approximately 530 square feet of ground surface area were affected, to a maximum depth of approximately 7 feet, by the remediation activities. The remedial action was completed in December 2018 and resulted in the removal of 88 in situ cubic yards from the Ameren poles area. Remedial activities under the poles were stopped because of the instability of the poles with depths below 7 feet. USACE performed additional sampling around the poles to delineate the area of contamination. The remainder of the contaminated soils beneath the poles will be placed in land use controls.

#### **Contamination beneath Futura Fence Line**

In 2020, USACE will initiate remedial activities at Futura to remove the contamination beneath the Futura fence line adjacent to VP-40A railroad property. The contaminated soils were not removed during the remediation of Futura because of railroad regulations/restrictions remediating close to the rail spur. The Norfolk Southern Railroad gave FUSRAP special authorization to remediate this area. Remediating this area will reduce the areas that need land use controls at Futura. Removing the contaminated material will also reduce the risk to the public and the environment.

**THIS PAGE INTENTIONALLY LEFT BLANK.**



## 4 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 coalfields. 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 with headquarters or major operations in St. Louis include Emerson Electric, Boeing, Bayer, and Express Scripts (Cigna owned). 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. The City of St. Louis is not part of St. Louis County. The 2019 U.S. Census reported 2.9 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 33 universities and colleges that produce about 53,000 bachelor, post-bachelor, or professional graduates each year.

The 2019 census estimates that Missouri has more than 6 million people with about 1 million people in St. Louis County. In St. Louis County, 43 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
- 25 percent Black or African American alone
- 4.5 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://www.census.gov/quickfacts/fact>]

The U.S. census also reports that the 2019 median household income in the City of St. Louis is \$41,107 annually in 2018 dollars. Household income in St. Louis County is \$65,300 per year. Households living below the poverty level account for 24.2 percent of the population in St. Louis and 10.5 percent in St. Louis County.

The St. Louis FUSRAP 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 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 adjacent properties extend from I-270 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 302,838 in the 2019 U.S. census. Of those residents who were working, 24 minutes is the mean travel time of workers over the age of 16. 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 Enterprise Center, and The Dome at America's Center, 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 Latty Avenue Properties.

**Hazelwood.** Some of the North St. Louis County FUSRAP properties are located in the City of Hazelwood, Missouri. According to a 2019 estimate of census data, Hazelwood had a population of 25,204.

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.

Amazon built a distribution center in Hazelwood in 2017. They hired 350 employees at that time and had plans to increase their numbers to more than 1,000 by 2020. When many area businesses saw declines in production and businesses closed due to the global pandemic, COVID-19, Amazon had an increase in demand for its products and services to homebound customers. They hired 100,000 new employees across the United States, including in Hazelwood. Top 10 employers in 2020 in Hazelwood were Boeing, Amazon.com, Inc., bioMerieux, Inc., Concentrix CVG Corp., GKN Aerospace, Mallinckrodt LLC, IBM, SAK Construction, Fiserve Solutions, Inc., and First Bank. 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 8,897 (2018 census estimate) The city is home to 3,602 households with an average of 2.5 persons per household out of which 27 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..

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 former Ballfields north of SLAPS; Coldwater Creek from SLAPS northward to the Missouri River; and the SLAPS 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.

The Coldwater Creek adjacent properties, which are also considered SLAPS VPs, are located adjacent to Coldwater Creek from Dunn Road to the Missouri River. These properties mostly consists of residential, recreational (city parks), and commercial properties. The creek also flows through the Cities of Florissant and Black Jack and an unincorporated county.

## 5 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 clean up 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 FUSRAP 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 the effects of 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 removal 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 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, DOE opened and made information more available at a Public Information Center 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, homemakers 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 28 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 SLAPS 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 FUSRAP Sites into a disposal cell located at SLAPS near Lambert Airport. DOE encountered strong opposition because 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 FUSRAP 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 FUSRAP 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 FUSRAP 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. Eleven 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 <https://www.mvs.usace.army.mil/Missions/Centers-of-Expertise/Formerly-Utilized-Sites-Remedial-Action-Program/> or [www.mvs.usace.army.mil/Missions/FUSRAP](http://www.mvs.usace.army.mil/Missions/FUSRAP) or the 2020 shortened web page address, <https://go.usa.gov/xwjzB>.

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 cleanup method selected 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 staffed a



display, at the invitation of MDNR, an 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 USACE circulated to a regularly updated mailing list and posted on their 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 Madison Site was removed from the list of active FUSRAP sites. The approved Declaration of Remedial Action Completion Statement, the Final Madison Site PRAR, and other supporting information were placed within the Administrative Record and for five years could be viewed during regular business hours at the USACE, St. Louis District FUSRAP Project Office and at the Madison Public Library in Madison, Illinois. The Administrative Record is now managed by DOE Legacy Management. The public can read the file online at [www.lm.doe.gov/CERCLA/SiteSelector.aspx](http://www.lm.doe.gov/CERCLA/SiteSelector.aspx) or on the St. Louis FUSRAP's website (as of September 2020).

In December 2000, USACE released the updated St. Louis FUSRAP 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 USACE circulated to a regularly updated mailing list and posted on their 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 (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 USACE circulated to a regularly updated mailing list and posted on their 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 Sites property owners and tenants. USACE published two issues of the *FUSRAP Update: The St. Louis Sites* community newsletter, which USACE circulated to a regularly updated mailing list and posted on their 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, 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, Latty Avenue Properties, and SLAPS VPs) released in 2005. USACE published two issues of the *FUSRAP Update: The St. Louis Sites* community newsletter, which USACE circulated to a regularly updated mailing list and posted on their website.

**2004 through 2005.** The ROD for the North St. Louis County sites (SLAPS, Latty Avenue Properties, 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. 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 the property owner, 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 the property owner. 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, at VP2L, a Latty 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 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 USACE circulated to a regularly updated mailing list and posted on their website.

**2006.** Under the ROD for the North St. Louis County Sites, USACE is required to develop an Institutional Controls Implementation Plan (finalized in 2015) 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 Office of Legacy Management at a special meeting called to discuss 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 landowners. Under the ROD for the St. Louis North County sites, USACE is drafting the Institutional Controls Implementation Plan (USACE 2015) 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 USACE circulated to a regularly updated mailing list and posted on their 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 SLDS. 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 USACE circulated to a regularly updated mailing list and posted on their 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 if the remedy is still 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 FUSRAP Sites community interviews as a part of the 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 FUSRAP 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. Bruce L. Stinchcomb, PhD (author of *Missouri Fossils* and 11 other texts, retired professor of geology and paleontology) 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 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.** 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.

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. A No Further Action ISOU Group 1 ROD was finalized in September 2014. The remaining Group 2 properties are currently undergoing further characterization to determine if they represent No Further Action and can be included with the Group 1 ROD, could be remediated under the accessible ROD with property owner concurrence, or if a Group 2 ROD will be needed.

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. Members of the St. Louis Oversight Committee, regulators, and members from the Cities of Berkeley, Hazelwood, and Florissant attended the briefing. USACE presented updates on the remedial activities at the St. Louis FUSRAP Sites and the sampling effort in Coldwater Creek and the adjacent 10-year flood plain. USACE confirmed the presence of contamination within the 10-year flood plain during the sampling campaigns. Contamination was found in two parks, at four Palm Drive properties, the Chez Paree Apartment Complex, and the Metropolitan Sewer District property adjacent to Coldwater Creek.

*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 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.



The City of Hazelwood closed St. Cin Park, a popular park along Coldwater Creek, in August 2015 for FUSRAP remediation. Portions of the park were closed to the public, not because of the residual contamination, but because of the inherent dangers associated with heavy equipment at a construction site. The St. Louis Oversight Committee meet in January and August.

*FUSRAP Update: The St. Louis Sites* community newsletter was issued in January 2015 and again in the summer of 2015.

**2016.** The St. Louis Oversight Committee met with USACE at a public meeting on February 17 in Florissant. USACE announced to a crowd of about 300 people that remediation work was completed at St. Cin Park by removing contaminated soil and shipping it to an out-of-state, licensed facility. USACE spoke about the plans to address Duchesne Park, private properties on Palm Drive along Coldwater Creek, and Metropolitan Sewer District property adjacent to the creek in the 10-year floodplain. USACE committed to informing residents during the process of times when utilities and roads would be affected. USACE also described requirements for the cleanup of Duchesne Park in the City of Florissant, which began in July. St. Louis County Health Department gave an update on their efforts regarding Coldwater Creek. A follow-up St. Louis Oversight Committee and public meeting was held on July 29 to present information on air dispersal of historic contamination in North St. Louis County. This meeting was held to address specific public concerns about contamination spreading in air and “what happened during past severe weather conditions?” USACE answered these questions and others about thorium and radon, speaking about how modeling is used to show how dust travels and how USACE combats dusts at work sites. In July, the City of Hazelwood re-opened St. Cin Park for public use. On September 14, USACE provided a site tour for the oversight committee of locations near Coldwater Creek where contaminated soil was removed or clean soil backfilled.

USACE issued *FUSRAP Update: The St. Louis Sites* community newsletter in January 2016 and in August 2016.

**2017.** USACE hosted a public meeting on February 16 in Hazelwood to announce the completion of remedial activities at Duchesne Park and discuss plans for future sampling and remediation work. Representatives from USACE, USEPA, and the Agency for Toxic Substances and Disease Registry (ATSDR) answered questions and listened to concerns from the public. Topics included the sequence of events for remediation of Palm Drive and Elm Grove area residences and presentation of some sample results from areas along Coldwater Creek. ATSDR presented an update on the public health assessment and discussed the assessment with the community.

USACE backfilled, seeded, and mulched the remediated area in April just before the City of Florissant reopened Duchesne Park to the public. USACE kept residents informed and updated of remedial activities on their properties. USACE took every precaution at Duchesne Park to protect residents and the public during the excavation of the properties and to ensure the remediation would take place efficiently and safely. The excavated area was cordoned off from the public and several air-monitoring stations were placed around the excavation to obtain air dispersion data during excavation and loading activities.

*FUSRAP Update: The St. Louis Sites* community newsletter was issued in winter and summer of 2017. St. Louis District USACE Facebook page ([www.facebook.com/teamsaintlouis](http://www.facebook.com/teamsaintlouis)) started including

announcements of St. Louis FUSRAP public meetings and other St. Louis FUSRAP Sites news on February 16, 2017.

**2018.** At a February 22 public meeting in Hazelwood, USACE directed the discussion to the ongoing FUSRAP cleanup in the St. Louis region, including Coldwater Creek and residential properties. In attendance at this meeting was about 100 members of the public, many of whom were alarmed by an HBO film, “Atomic Homefront,” which featured waste stored in West Lake Landfill in St. Louis County. USACE made clear at the meeting that West Lake Landfill is not under the jurisdiction of FUSRAP and that USEPA will address public concerns about the landfill. Other public comments included requests for signage along Coldwater Creek, concerns about flooding re-contaminating previously remediated areas, and disclosure of real estate conditions at the time of sale. USACE answered these questions at the meeting; the answers are captured on the St. Louis FUSRAP website and St. Louis District USACE Facebook page.

Later in 2018, the public expressed concerns about ATSDR’s July publication of the *Public Health Assessment for CWC*. In the assessment, ATSDR conveyed their evaluations of possible health impact of exposures and recommendations for actions. From *FUSRAP Update: The St. Louis Sites* newsletter, citizens learned that, in fact, ATSDR used USACE data to form their report. While FUSRAP has no direct medical support mission, their mission to protect human health and the environment has produced more than 20 years of survey and soil test data. USACE uses the data to find the sources of contamination and restrict or eliminate them, thus fulfilling their mission.

USACE published *FUSRAP Update: The St. Louis Sites* community newsletter in winter and summer of 2018.

**2019.** USACE announced in January the beginning of its fourth Five-Year Review of the St. Louis Sites. USACE will be contacting and interviewing businesses, property owners, representatives from government agencies, utility companies, and private citizens. The interviews seek to determine whether the FUSRAP cleanup response continues to be protective of human health and the environment and to identify problems and concerns regarding the cleanup as it progresses.

USACE hosted an open house on February 28 in Hazelwood where all members of the community were invited and had the opportunity to discuss cleanup activities and other environmental issues with USACE staff and technical experts. Working from multiple display stations around the room, staff interacted with citizens offering project progress updates on such topics as soil and water sampling and monitoring, ongoing remediation, transportation, and disposal efforts. The setting also provided an arena to ask and answer questions directly.

*FUSRAP Update: The St. Louis Sites* community newsletter was issued in winter and summer of 2019.

**2020.** For the fourth five-year review, USACE interviewed business and property owners and representatives from governments and the public to collect information about community concerns and preferences. The results of these interviews assist in determining whether the strategies and activities of the selected remedy and this CIP remain responsive in meeting the information needs of the FUSRAP community. The interviews questions and answers are presented in Appendix B of this CIP. The publication the five-year review will be announced in *FUSRAP Update: The St. Louis Sites* community newsletter and

available for the public to read at the FUSRAP Project Office, at the St. Louis Public Library, and on the public website at [www.mvs.usace.army.mil/Missions/FUSRAP](http://www.mvs.usace.army.mil/Missions/FUSRAP).

An open house for the interested public, postponed from its twice-rescheduled spring and summer 2020 dates, was held online due to the COVID-19 Pandemic. The 2020 public meeting is a “virtual” open house with videos showing planning, design, investigation, and remediation site work. Citizens can ask questions via an email link called “Ask an Expert.”

*FUSRAP Update: The St. Louis Sites* community newsletter was distributed to a mailing list of 300 interested stakeholders in the winter of 2020.

## **5.2 KEY CURRENT COMMUNITY CONCERNS**

USACE began the fourth five-year review in 2019 and issued it in 2020. A team led by USACE, with representatives from EPA, MDNR, and DOE conducted site inspections at each site to verify that the remedy was proceeding as stated and continues to be protective. As part of the five-year review process, members of the community, business, utilities, and government officials were interviewed. Interviewees were 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 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**

The consensus of 17 people interviewed commended USACE as a source for information about FUSRAP operations. They used the words “responsive” or “very responsive” to describe their interactions with USACE. They described USACE and their contractors as “very respectful,” “open and direct,” “very impressive,” “very accommodating,” “professional and quite satisfactory,” “good people to work with,” and “transparent.”

One respondent noted that USACE’s responsiveness had improved since 2011 “when it was discovered that contamination was present in residential areas and the cleanup program was expanded to include the length of the entire creek.” The same respondent also said, “Over the past year...there has been some changing of the guard and communication between FUSRAP and the community has not been as open as it has been in the past, specifically with the FUSRAP PR department. Thankfully there are other FUSRAP team members that I can call that are very responsive to community questions/concerns.”

Three respondents expressed that while the FUSRAP PR representatives had done a great job in the past, the FUSRAP PR manager in 2018 was less responsive and less open with the community. One person said he had “disregard for several concerns that were brought to him.”

### 5.2.2 General Impressions

Fifteen of the 17 interviewees have a positive opinion of the program, citing that USACE’s work is “a significant project being done in an effective manner,” “thorough and complete,” “effective,” “sound and well-executed,” and “organized.” They commended USACE for its “excellent communication,” its “clear schedule and timely mandates,” “its overall coordination with property owners,” and its “commitment to completion of the project with dedication to protecting human health and the environment.”

They also credit USACE with its “professionally run, capable staff” that “takes time to listen to community concerns and patiently answers questions” and is “easy to converse with about technical and human impact issues concerning the project.” Several interviewees commented on the positive impact of remediation efforts in the community.

Two respondents expressed concerns about the funding challenges and displeasure with the slow pace of the project.

### 5.2.3 Concerns Expressed During Community Interviews

Thirteen respondents identified their own and others’ specific concerns about the effects of site operations on the surrounding community. Concerns included potential long-term health effects of radiological contamination exposure, psychological impacts to residents from cleanup activities, and potential economic impacts. Four respondents reported that they had no concerns or were not aware of any community concerns.

**Health Effects.** Several interviewees expressed concerns about and fear for the health effects of long-term exposure to radioactive contamination, as one person put it “especially in light of ATSDR’s [Agency for Toxic Substances and Disease Registry] 2019 Public Health Assessment of the project.”

One person said that public concerns may be amplified when soil sample testing occurs and speculated that such sightings may then lead to rumors and negative social media conversations by area residents. One respondent wrote that for those who grew up near Coldwater Creek who have “lost so much” due to health impacts over generations, “it’s not a comforting sight when we see you all in your moon suits.”

**Coldwater Creek.** Multiple concerns were expressed about Coldwater Creek and the need for more data collection and testing throughout its drainage area, downstream floodplains, tributaries, residential neighborhoods, and storage facilities.

One property owner responded extensively about the historic flooding that occurred before the 1990’s Flooding Control Project and its effects on the tributaries and countless residential interiors and exteriors that were flooded throughout the Coldwater Creek area. The same property owner said, “This extensive flooding occurred during the period of higher risk of possible exposure to contaminants of concern as found by the ATSDR in their Public Health Assessment finalized in 2018.” The respondent believed that the St. Louis Metropolitan Sewer District (MSD) is responsible for “extensive movement and removal of large areas of soil/sediment in the [Coldwater] creek, the creek banks, and creek contiguous properties.”

The participant expressed uneasiness about the contaminated soil and sediment removed by MSD during the Flooding Control project, believing FUSRAP needs to locate it, “especially as the ATSDR has reported the increased likelihood of developing cancer from exposure to the contaminants of concern in their PHA [public health assessment] finalized in 2018.” This same citizen said in later answer that he is “very satisfied with the site operations” and desires FUSRAP to “continue to provide detailed information on recent testing, recent remediation efforts in process.” Several other interviewees expressed similar concerns that testing for these Coldwater Creek-impacted areas should be prioritized.

**Remaining hotspots.** One interviewee expressed his concern that “the creek bed and sides” and remaining hotspots in Hazelwood should be remediated. One respondent would like FUSRAP to provide more information about the soil testing activities to help residents understand the process. That respondent suggested providing the information about the status of the soil sampling and remediation in a visual format, such as a color-coded map, so residents could more easily understand how the sampling and remediation process will affect their neighborhoods.

**Disruptions to businesses and residents.** The consensus of interviewees reported no impact to their businesses or to area residents. About a third of the interviewees reported disruptions due to greenways and traffic re-routings, bridge and park closures, and construction-like inconvenience during remediation activities. They acknowledged that FUSRAP was coordinating their activities with property/business owners and local agencies to ensure the operations had minimal impacts.

A few interviewees expressed concerns about property values, property sales potential, and the presence of irremovable contaminants around structural foundations and perimeters.

**FUSRAP Cleanup Records.** One respondent expressed awareness of public concerns over potential impacts to the surrounding community because of the transport of excavated materials through the community. The respondent suggested more community outreach be conducted to educate the public about the safety measures taken during the transport of wastes and their disposition at the disposal site. DOE expressed a concern that future property owners might not be fully informed of site conditions because the Final Status Survey (FSS) information is not being recorded by local government agencies. DOE recommended that USACE should make efforts to record the FSS for each parcel with the appropriate city/county agency to ensure this information is tied to the property deed.

#### **5.2.4 Continued Community Outreach**

The majority of interviewees reported that USACE’s community outreach has been effective and informative. About one-third receive the FUSRAP newsletter while others stated that they no longer receive it. A similar number of respondents attend FUSRAP public meetings or have done so in the past. Some receive the newsletter but do not attend public meetings and vice versa. About one-third do not receive the newsletter or attend public meetings.

A couple of interviewees recommended that future FUSRAP community outreach address the need for sampling of soil and sediments in the basements of homes affected by past Coldwater Creek and tributary flooding as well as the “indoor dust” of homes whose yards have been remediated or are in need of it.

Several respondents cited concerns that the public is not well informed, and that fear-based rumors and negative social media conversations result from this perceived lack of awareness, especially with regard to



health concerns. A few interviewees mentioned the ongoing need for community education in clear, understandable language “at the audience level of understanding” in all communications.

Several interviewees offered suggestions for improvement, such as “more frequent” public meetings, stricter meeting protocols, and expanding community outreach beyond emails, websites, and the newsletter to include social media announcements, pamphlets, and community announcement boards. A couple of respondents cited the need for improved safety information regarding transportation and disposal of removed contaminants and the installation of warning signage in areas of potential exposure risk. About one-third of the interviewees offered no recommendations for improvement in community outreach.

### **5.3 PAST COMMUNITY INTERVIEW CONCERNS**

Activities to interview the community initiated in spring of 2003 during a first five-year review. Information was also collected during the second five-year review in the spring 2008. In October 2008, St. Louis District USACE representatives announced the start of the second five-year review at the St. Louis Oversight Committee (now defunct) meeting, which was open to the public.

In 2009, USACE conducted 19 St. Louis FUSRAP 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.

For the third five-year review released in 2015, USACE interviewed businesses, property owners, representatives from government agencies, utility companies, citizen interest groups (e.g., Coldwater Creek – Just the Facts Please) and private citizens to collect information about community concerns and preferences in 2014.

The consensus of the 2014 interviewees agreed that USACE took 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 they said that 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.”

#### **5.3.1 Primary Concerns Raised During 2014 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.

### 5.3.2 Other Important Issues Raised in Community Involvement

USACE regularly hosts public meetings and open houses to provide an opportunity for the community to learn more about FUSRAP, ask questions, and share concerns. Over time, these events have evolved to include multiple topic stations focused on specific community concerns, with each station equipped with posters, handouts, and demonstrations. Attendance at these open houses has been steady and the atmosphere has been productive.

Other communication methods include the public website, [www.mvs.usace.army.mil/Missions/FUSRAP](http://www.mvs.usace.army.mil/Missions/FUSRAP), 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 to announce information about upcoming events, public meetings, and site updates. USACE mails copies to approximately 300 individuals who add their names to a regularly updated mailing list. The list is available for additions at the sign-in table at public meetings. 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 and offer the community access to site-related information. The complete collection of documents that forms the basis for selecting a response action is placed in the Administrative Record. Appendix C lists all three locations and contact information for the Administrative Record.

## **6 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 FUSRAP Sites newsletter, the website, and USACE public meetings/open houses 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 FUSRAP 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 USACE, 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 [www.mvs.usace.army.mil/Missions/FUSRAP](http://www.mvs.usace.army.mil/Missions/FUSRAP).

Under CERCLA, an Administrative Record “file”, a collection of documents compiled before a decision is made on a response action, is also available for the public. It is described in Section 6.2.1.

#### **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 Sites operable units are under construction and not completed, the remedies for the St Louis FUSRAP Sites operable units 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. 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 once a month with EPA and MDNR, and DOE 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 will also meet with local business/property owners, homeowners, congressional leaders, and other community representatives upon request.

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

#### **6.1.6 Establish a Utility Support Policy**

USACE responded to the September 1997 request by local utility companies to establish and implement a Utility Support Policy that makes FUSRAP site personnel available 24 hours per day to respond to requests for support of utility workers in possible radiologically contaminated areas. 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. USACE updated the Utility Support Policy in February 2018. The updated Utility Support Policy was re-sent to the utility companies, business and property owners, and to EPA and MDNR.

### **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 had undertaken, and continues to engage in activities to strengthen communications with interested parties. The community had multiple opportunities to be involved with the decision process at the St. Louis FUSRAP Sites during the development of the ROD. 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

Under CERCLA, an Administrative Record is the complete collection of documents that forms the basis for selecting a response action. (That is, it includes documents considered or relied upon by the lead agency in selecting a remedy.) (40 CFR 300.800-300.825). The Administrative Record under CERCLA serves two primary purposes. First, it limits the judicial review concerning the adequacy of a response action. That is, when a response action is challenged, the court will review only the documents that are contained in the administrative record. Second, it provides an opportunity for the public to be involved in the process of selecting a remedy for the site as information is available in the publicly accessible administrative record file.

Under CERCLA, an administrative record “file” is the collection of documents compiled before a decision is made on a response action. Clearly distinguishing between the administrative record file and the Administrative Record avoids the perception that the administrative record file is complete prior to the selection of a response action. All documents considered or relied on in selecting the response action should be in the administrative record file and should be listed in the index to the administrative record file when a decision document is signed. At that point, the administrative record file normally closes and becomes the Administrative Record.

USACE currently maintains the administrative record file for North County, SLDS Accessible Operable Unit, and SLDS ISOU Group 1 (inaccessible areas). A copy of the Administrative Record for the two complete St. Louis FUSRAP 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 record files and 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. Jason Sutterfield at (314) 539-0375. Other FUSRAP Administrative Record contact names and phone numbers are provided in Appendix C so that special assistance can be obtained if needed. .

### 6.2.2 Public Comment Periods

When a ROD is in development, 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. When a comment period is required, they are 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 contacts news media to announce comment periods. Appendix D 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 by appointment only.

### **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 for the ROD process under CERCLA.

In addition, public notices are 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.

### **6.2.5 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.

### **6.2.6 Meetings with Local Officials and Interested Groups**

Local government officials and interested community groups are informed of investigation and cleanup activities at the St. Louis FUSRAP Sites through the USACE public meetings/open houses, newsletter publications, and website information.

USACE site representatives have and will continue to discuss cleanup efforts or areas of expertise such as engineering, management, chemistry, geology, and safety. USACE representatives will continue to meet with community groups, local officials, and others as requested. The phone number and address of the USACE, St. Louis District FUSRAP Project Office are included in all publications, notices, advertisements, press releases, and other printed material in an attempt to make information as available to the public as possible.

### **6.2.7 St. Louis FUSRAP Sites Website**

USACE maintains a website with current information about the status of the St. Louis FUSRAP sites and historical documentation. Newsletters are distributed throughout the community semi-annually.

### **6.2.8 Fact Sheets**

Fact sheets were developed during the FUSRAP process for SLDS and North County RODs. This outreach provided the community with information about site activities in easy-to-read language. USACE released fact sheets at the beginning of the RI for these sites to explain the FUSRAP process and the activities to be conducted during the study. USACE also prepared fact sheets to explain the findings of the RI for each site.



Fact sheets, describing the alternatives being considered for the remediation of the St. Louis Sites, were prepared following the FS and development of the PP.

Fact sheets were developed to describe the process to develop the SLDS ISOU ROD. Copies of the fact sheets were placed in the USACE, St. Louis District FUSRAP Project Office Administrative Record and at the St. Louis Public Library. Electronic files of all fact sheets prepared for the North County and SLDS RODs are on the FUSRAP website at [www.mvs.usace.army.mil/Missions/FUSRAP](http://www.mvs.usace.army.mil/Missions/FUSRAP).

#### **6.2.9 Newsletters**

Newsletters are issued by USACE, St. Louis District FUSRAP to inform the community of the status and progress of work at the St. Louis FUSRAP Sites. The *FUSRAP Update: The St. Louis Sites* newsletter announces upcoming events, such as USACE FUSRAP public meetings/open houses; online forums; and recently released documents that are available to the public and where they may be found. Currently, the newsletters are developed and distributed twice a year.

Copies of the newsletters are mailed to the 313 stakeholders on the mailing list. For stakeholders who indicated an interest in receiving a paperless copy, an electronic file of the newsletter is emailed to a mailing list of 174 members of the community. Electronic files of these newsletters are also available on USACE's public-access website for the St. Louis FUSRAP Sites at [www.mvs.usace.army.mil/Missions/FUSRAP](http://www.mvs.usace.army.mil/Missions/FUSRAP). In order to make the newsletter accessible to people with disabilities, USACE posts files that comply with Section 508 of the Rehabilitation Act of 1973. These files present the newsletter with features that allow assistive technologies (e.g., screen readers) to read aloud the document.

#### **6.2.10 Press Releases**

USACE offers press releases before public sessions to summarize the purpose and main points of the event in order to assist the accuracy of media coverage. A press release delivers information related to a project or event, provides individual interviews with expert staff, or gives statements made by USACE representatives to be used as quotes by the media. Illustrations may also be included with a press release. Press releases have been issued when a PP or ROD is completed for any St. Louis FUSRAP Site addressed by the CERCLA process. Press releases are sent to those on the media list in Appendix D. Press releases will be placed in the Administrative Record for the sites and will be available for at least 30 days on USACE's public-access website for the St. Louis Sites.

#### **6.2.11 Mailing List**

USACE compiled a mailing list of the names of several hundred individuals and organizations interested in activities at the St. Louis Sites. The list was created when the St. Louis FUSRAP Sites were placed on the NPL and/or in FUSRAP. This list contains names of residents, government officials, interest-group representatives, media contacts, and other interested individuals. The mailing list is maintained by the USACE, St. Louis District FUSRAP Project Office. An opportunity for individuals to be included on the mailing list is provided in each fact sheet, newsletter, and public announcement, as well as in other public information documents. Mailing list sign-up cards also are provided at USACE public meetings, workshops, and open houses.



#### **6.2.12 Information Contact**

The USACE, St. Louis District FUSRAP Project Office will serve as the main point of contact to receive and respond to requests for information on USACE, St. Louis District FUSRAP activities and to coordinate the implementation of this CIP. The project telephone number and mailing address will be prominently displayed in all site publications and advertisements published by the lead agency.

The USACE, St. Louis District FUSRAP Project Office's mailing address and phone number have been displayed on all public notices, fact sheets, updates, and other correspondence. Appendix E lists the names, addresses, and phone numbers of managers for each agency involved in the remediation process.

#### **6.2.13 Revisions or Future Updates to This Community Involvement Plan**

During the CERCLA remediation process, USACE will revise this CIP when site or community conditions significantly change or to account for the changing concerns of the community. Revisions to this CIP will include an assessment of the community involvement activities appropriate for the remediation phases of each St. Louis FUSRAP Site.

Other CIPs have been prepared for the St. Louis FUSRAP Sites in the past under DOE. These plans cited the goals and objectives for community involvement efforts at the sites. The original plan, prepared in 1993, described community involvement tasks that had been implemented by the agencies during response activities at the St. Louis FUSRAP Sites and identified opportunities for public participation in future activities.

Using the terminology EPA considered appropriate at the time, *The Community Relations Plan for the FUSRAP, St. Louis Sites* (Revision 1) was prepared in the fall of 1998. It was the first plan developed by USACE, St. Louis District. USACE updated the plan's information regarding remediation and public involvement activities conducted since 1993 and identified other activities to be conducted in the near future.

The issuance of this updated 2020 CIP will mark the fifth by USACE. St. Louis District's routine updates ensure that the document remains an effective communication tool.

