SPRING VALLEY FORMERLY USED DEFENSE SITE

Site-Wide Proposed Plan Community Meeting

14 July 2016

"The USACE Mission in Spring Valley is to identify, investigate and remove or remediate threats to human health, safety or to the environment resulting from past Department of Defense activities in the area."

"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."

US Army Corps of Engineers

AGENDA REVIEW

Welcome and Introductions
- USACE Spring Valley Project Team

USACE Presentation
- Dan Noble, USACE Project Manager
  - Review of the Site-Wide Proposed Plan
  - Project-Wide Schedule

Community Questions

Closing Remarks

Adjourn to Open House

US Army Corps of Engineers.

SITE-WIDE PROPOSED PLAN

US Army Corps of Engineers.

SPRING VALLEY FUDS

Keys to our success:

Community Involvement:

- **Restoration Advisory Board**
- **Residents, American University, and Elected Officials**
- **Transparency**

Interagency Partnerships:

- **U.S. EPA Region III**
- **D.C. Dept. of Energy and Environment**
- **U.S. Army Corps of Engineers**

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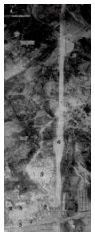
The CERCLA Process

(The Comprehensive Environmental Response, Compensation, and Liability Act)



Preliminary Assessment

Site Inspection

Remedial Investigation

General Purpose: Collect data to characterize site conditions: Determine the nature of the waste; Assess risk to human health and the environment; & Evaluate treatment options.

Feasibility Study

General Purpose: To develop, screen, and evaluate alternatives for clean-up.

Information gathered as part of the RI influences the development of the FS which, in turn, may require further data collection and field investigations.

Removal Action

General Purpose: If prompt action is deemed appropriate prior to the completion of the RI/FS process, USACE will begin removal of the contaminants of concern.

Proposed Plan

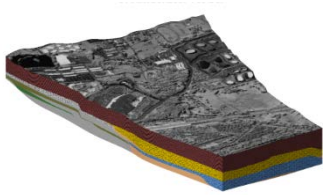
General Purpose: Presents the evaluation of clean-up alternatives and provides a recommendation for the preferred alternative.

This document is made available for public review and comment.

Decision Document

General Purpose: Select the alternative as well as provide an overview of the project. This would include site history, previous and current investigations, and characterization of contamination.

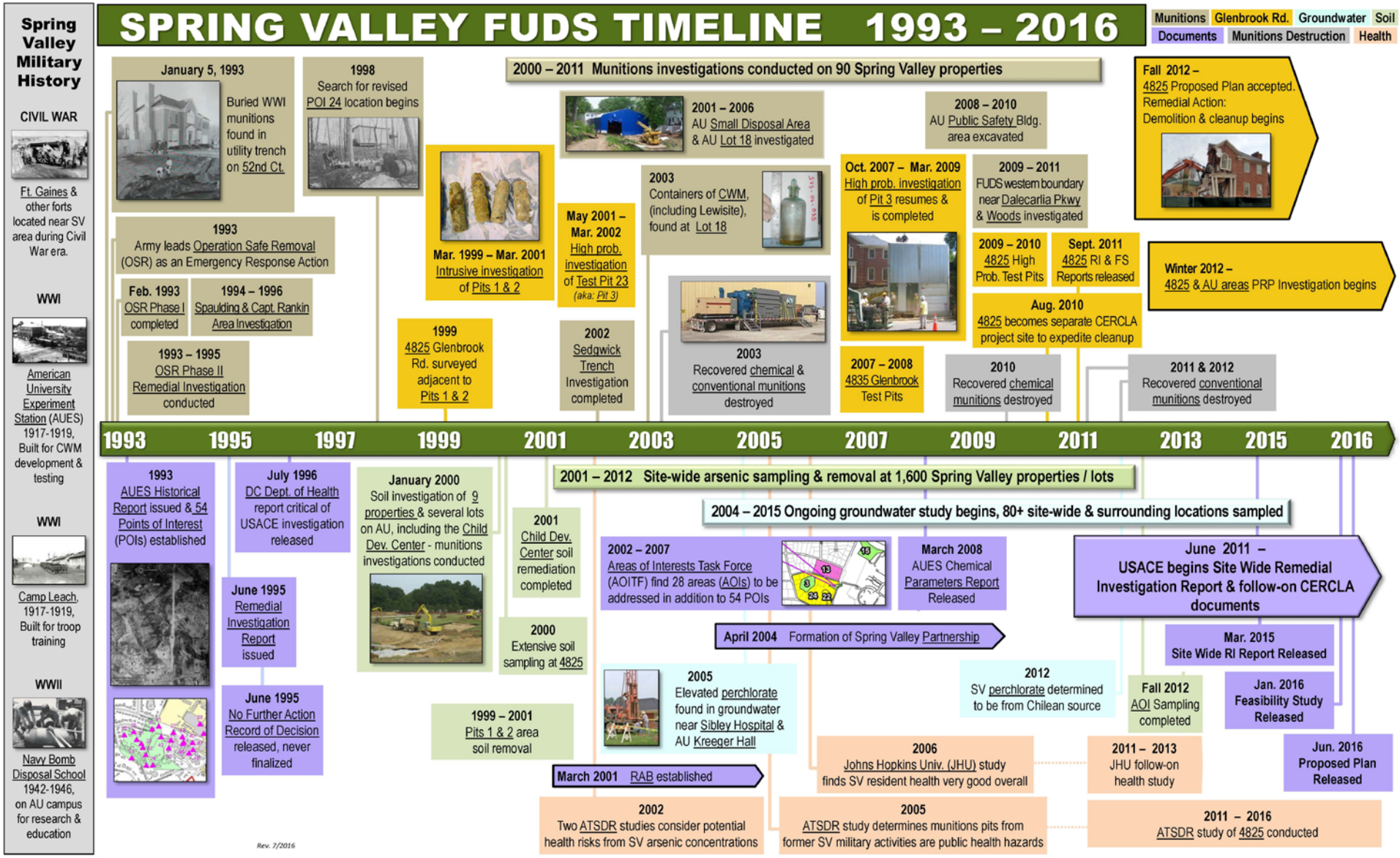
Remedial Design/ Remedial Action



General Purpose: Implementation of the action determined in the Decision Document.

Long Term Monitoring

General Purpose: To conduct any long term monitoring necessary and conduct five year reviews of the Formerly Used Defense Site.


SPRING VALLEY FUDS TIMELINE 1993 – 2016
Munitions
Glenbrook Rd.
Groundwater
Soil
Documents
Munitions Destruction
Health
Spring Valley Military History
CIVIL WAR
Ft. Gaines & other forts located near SV area during Civil War era.
WWI
American University Experiment Station (AUES) 1917-1919, Built for CWM development & testing
WWI
Camp Leach, 1917-1919, Built for troop training
WWII
Navy Bomb Disposal School 1942-1946, on AU campus for research & education
January 5, 1993
Buried WWI munitions found in utility trench on 52nd Ct.
1998
Search for revised POI 24 location begins
1993
Army leads Operation Safe Removal (OSR) as an Emergency Response Action
Feb. 1993
OSR Phase I completed
1994 – 1996
Spaulding & Capt. Rankin Area Investigation
1993 – 1995
OSR Phase II Remedial Investigation conducted
Mar. 1999 – Mar. 2001
Intrusive investigation of Pits 1 & 2
1999
4825 Glenbrook Rd. surveyed adjacent to Pits 1 & 2
May 2001 – Mar. 2002
High prob. investigation of Test Pit 23
(aka: Pit 3)
2002
Sedgwick Trench Investigation completed
2000 – 2011 Munitions investigations conducted on 90 Spring Valley properties
2001 – 2006
AU Small Disposal Area & AU Lot 18 investigated
2003
Containers of CWM, (including Lewisite), found at Lot 18
2003
Recovered chemical & conventional munitions destroyed
2008 – 2010
AU Public Safety Bldg. area excavated
Oct. 2007 – Mar. 2009
High prob. investigation of Pit 3 resumes & is completed
2009 – 2011
FUDS western boundary near Dalecarlia Pkwy & Woods investigated
2009 – 2010
4825 High Prob. Test Pits
Sept. 2011
4825 RI & FS Reports released
Aug. 2010
4825 becomes separate CERCLA project site to expedite cleanup
2007 – 2008
4835 Glenbrook Test Pits
2010
Recovered chemical munitions destroyed
2011 & 2012
Recovered conventional munitions destroyed
Fall 2012 –
4825 Proposed Plan accepted. Remedial Action: Demolition & cleanup begins
Winter 2012 –
4825 & AU areas PRP Investigation begins
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2016
1993
AUES Historical Report issued & 54 Points of Interest (POIs) established
July 1996
DC Dept. of Health report critical of USACE investigation released
June 1995
Remedial Investigation Report issued
June 1995
No Further Action Record of Decision released, never finalized
January 2000
Soil investigation of 9 properties & several lots on AU, including the Child Dev. Center - munitions investigations conducted
2001
Child Dev. Center soil remediation completed
2000
Extensive soil sampling at 4825
1999 – 2001
Pits 1 & 2 area soil removal
2001 – 2012 Site-wide arsenic sampling & removal at 1,600 Spring Valley properties / lots
2004 – 2015 Ongoing groundwater study begins, 80+ site-wide & surrounding locations sampled
2002 – 2007
Areas of Interests Task Force (AOITF) find 28 areas (AOIs) to be addressed in addition to 54 POIs
March 2008
AUES Chemical Parameters Report Released
June 2011 –
USACE begins Site Wide Remedial Investigation Report & follow-on CERCLA documents
April 2004 Formation of Spring Valley Partnership
Mar. 2015
Site Wide RI Report Released
2005
Elevated perchlorate found in groundwater near Sibley Hospital & AU Kreeger Hall
2012
SV perchlorate determined to be from Chilean source
Fall 2012
AOI Sampling completed
Jan. 2016
Feasibility Study Released
March 2001 RAB established
2006
Johns Hopkins Univ. (JHU) study finds SV resident health very good overall
2011 – 2013
JHU follow-on health study
Jun. 2016
Proposed Plan Released
2002
Two ATSDR studies consider potential health risks from SV arsenic concentrations
2005
ATSDR study determines munitions pits from former SV military activities are public health hazards
2011 – 2016
ATSDR study of 4825 conducted
Rev. 7/2016

SITE-WIDE REMOVALS AND INVESTIGATIONS

Arsenic Removal

- Close to 100% of **1,632** properties/lots screened for presence of arsenic and all required arsenic removals **completed in 2012**.

Groundwater Investigation

- Groundwater **not used** as a drinking water source.
- Data does not indicate a current or future threat to Reservoir.
- Groundwater generally flowing toward Potomac River.

Munition Investigations

- Ordnance disposal investigations.
- **Geophysical survey** and metallic **anomaly investigation** at residential properties, AU, and Dalecarlia Woods.
- Site-wide, we have **recovered over 1100 munition items** (MEC and MD), 85 known or suspected chemical.

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WHAT IS THE SITE-WIDE PROPOSED PLAN?

FINAL
SITE-WIDE PROPOSED PLAN

SPRING VALLEY FORMERLY USED DEFENSE SITE
WASHINGTON, DC

Contract No.: W912DR-09-D-0061, Delivery Order 0011
DERP FUDS MMRP/CWM Project No. C03DC091801 and
DERP FUDS HTRW Project No. C03DC091802

Prepared for:

US ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

US Army Corps of Engineers
BUILDING STRONG

JUNE 07, 2016

The Proposed Plan summarizes cleanup alternatives evaluated in the Feasibility Study, and identifies the Army's preferred cleanup alternatives:

- To mitigate unacceptable **risks posed by chemical contamination in soil** identified at specific locations within two areas *(the Spaulding Captain Rankin Area and the southern portion of American University)*

- And to mitigate unacceptable explosive **hazards due to munitions and explosives of concern (MEC)** that may remain within the Spring Valley Formerly Used Defense Site (FUDS).

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EVALUATING CLEANUP ALTERNATIVES

In the Feasibility Study, alternatives were evaluated against **three broad criteria**: *effectiveness* to protect human health and the environment, *implementability*, and *cost*.

The remaining alternatives were evaluated with the US Environmental Protection Agency's *nine criteria*. The criteria are grouped in three major categories: *Threshold, Balancing, and Modifying*.

- ***Threshold*** criteria include protection of human health and the environment, and compliance with applicable or relevant and appropriate requirements (ARARs).
- ***Balancing*** criteria include short term effectiveness, long term effectiveness, reduction of toxicity, implementability, and cost.
- ***Modifying*** criteria include regulator acceptance and community acceptance of the alternatives.

The preferred alternative must also meet the Remedial Action Objectives (RAOs) outlined in the Remedial Investigation/Feasibility Study reports.

- **RAOs** describe what the proposed site cleanup is expected to accomplish.

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REMEDIAL ACTION OBJECTIVES (RAOs)

RAOs for unacceptable ***risks posed by soil contamination***:

- Prevent direct contact with mercury or vanadium-contaminated soil having a non-carcinogenic Hazard Index (HI) exceeding 1. This HI value will be obtained by achieving an average concentration across the EU for mercury of 1.3 parts per million (ppm), and for vanadium of 390ppm.

- Prevent direct contact with cobalt-contaminated soil having a non-carcinogenic HI exceeding 2. This HI value will be obtained by achieving an average concentration across the EU for cobalt of 43ppm.

- Prevent direct contact with carcinogen PAH-contaminated soil having a cancer risk of $1x10^{-4}$. This objective will be achieved by removing soil that exceeds site-specific background levels for PAHs.

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REMAINING SOIL CONTAMINATION RISKS

Remaining soil contamination risks were identified at specific locations within two areas, (referred to as *Exposure Units* in the Remedial Investigation Report):

- Spaulding Captain Rankin Area (SCRA)
- Southern portion of American University

Four cleanup alternatives were evaluated:

1. No Further Action
2. Land Use Controls
3. Phytoremediation
4. Excavation and Off-Site Disposal

FINAL
SITE-WIDE PROPOSED PLAN

SPRING VALLEY FORMERLY USED DEFENSE SITE
WASHINGTON, DC

Contract No.: W912DR-09-D-0061, Delivery Order 0011
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SITE-WIDE PROPOSED PLAN – *SOIL RISKS*

Screening Criterion		Alternative 3: Phytoremediation	Alternative 4: Excavation and Off-site Disposal
Threshold	Overall Protection of Human Health and Environment	✓	✓
	Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)	✓	✓
Balancing	Long-Term Effectiveness	●	✓
	Reduction of Toxicity, Mobility and Volume Through Treatment	✖	✖
	Short-Term Effectiveness	✖	✓
	Implementability	●	✓
	Technical Feasibility	●	✓
	Administrative Feasibility	●	✓
	Availability of Materials and Services	●	✓
	Cost	**$15,000 per grid**	**$30,000 per grid**
Modifying	Regulatory Acceptance	✖	✓
	Community Acceptance	TBD	TBD
Recommended			✓

✓ Favorable ('YES' for threshold criteria) ● Moderately Favorable ✖ Not Favorable ('NO' for threshold criteria)

Analysis of Remaining Contaminated Soil Remedial Alternatives

The initial broad screening eliminated Alternative 1 and 2 as alternatives because they failed key elements of the effectiveness and implementability screening criteria.

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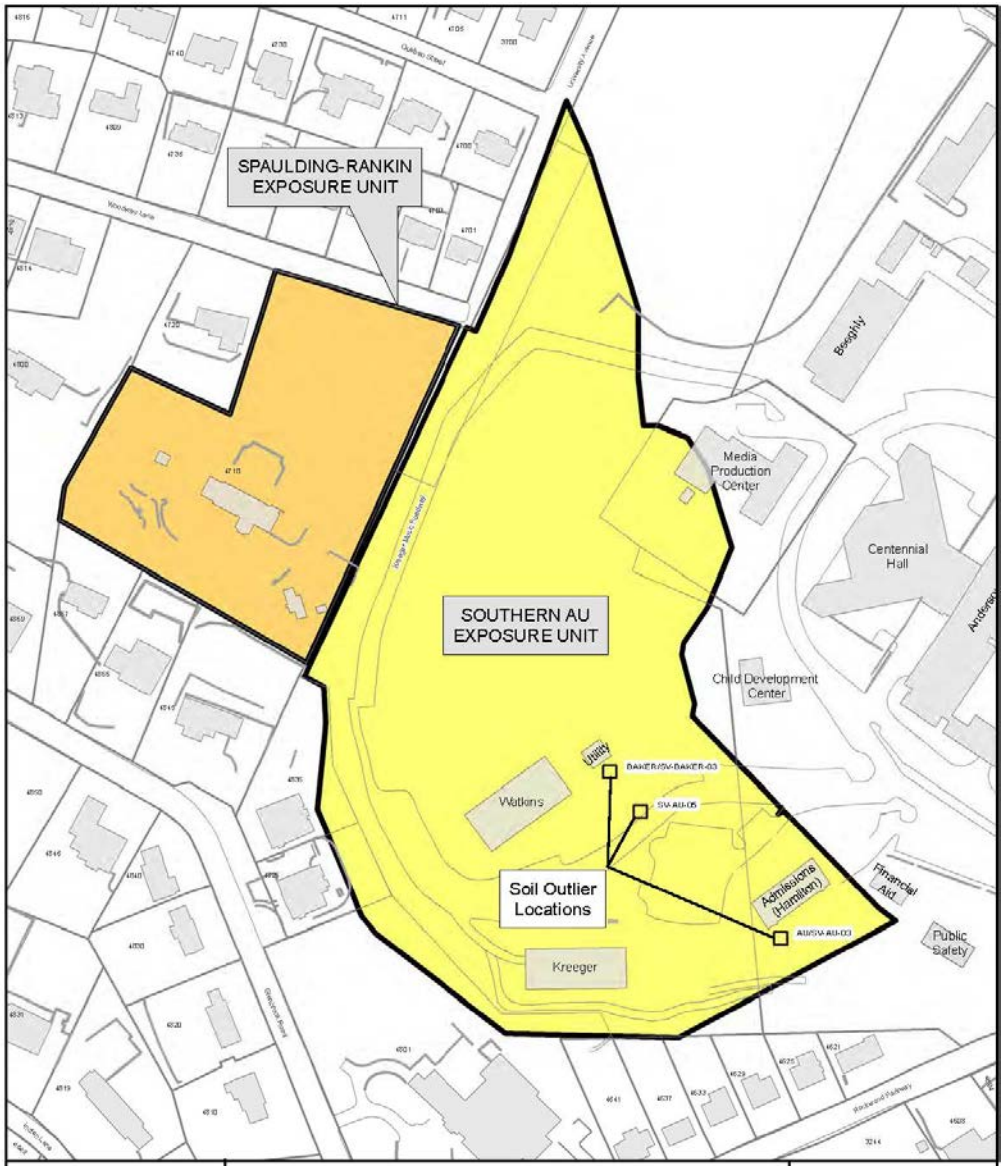
SITE-WIDE PROPOSED PLAN – *SOIL RISKS*



What is the Army's preferred cleanup alternative to address remaining soil contamination?

Alternative 4: *Excavation and Off-Site Disposal*

Total Cost ≈ $500K

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REMEDIAL ACTION OBJECTIVES (RAOs)

RAOs for unacceptable *explosive **hazards** posed by munitions and explosives of concern (MEC) potentially remaining within the Spring Valley FUDS*:

- Reduce the potential for encountering MEC in the identified focus areas of potential explosive hazards by investigating and removing subsurface anomalies that are most likely military munitions, to the depth of detection of the technology used.

- Reduce the probability of residents, workers, and visitors handling MEC encountered during residential or construction activities conducted within Spring Valley FUDS Munitions Response Site (MRS)-01, through education and awareness initiatives
  - In addition to the focus areas, these initiatives will also be applied to all areas of the Spring Valley FUDS to address the possibility that MEC could be relocated or, less likely, found there.
  - The education and awareness initiatives RAO serves as a conservative measure to ensure the entire community is educated about munitions issues even though the USACE does not propose active responses beyond the MRS-01 boundary.

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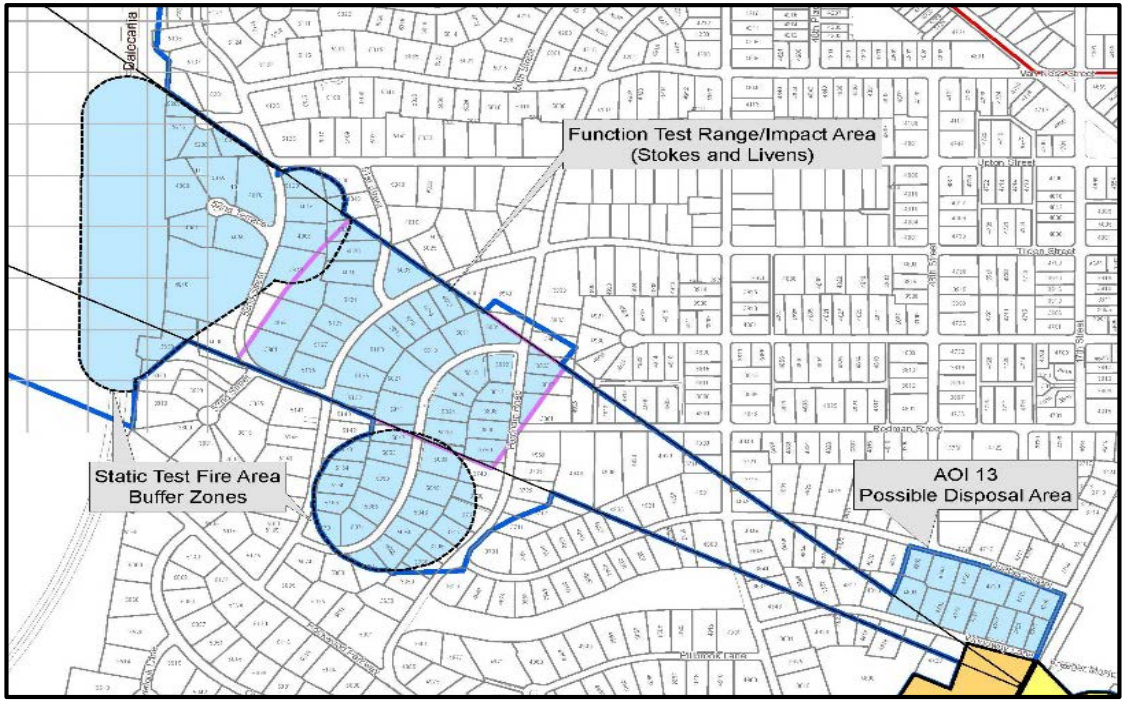
POTENTIAL MUNITION HAZARDS

The focus areas where munition hazards potentially remain are within four general locations:

- Two static test fire area buffer zones,
- The function test range/impact area,
- And Area of Interest 13 – possible disposal area.



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POTENTIAL MUNITION HAZARDS

The six cleanup alternatives evaluated for the **potentially remaining munition hazards**:

1. No Further Action
2. Land Use Controls
3. Full Digital Geophysical Mapping (DGM) Coverage, Remove All Anomalies
4. Full DGM Coverage, Remove Selected Anomalies
5. DGM of Accessible Areas, Remove All Anomalies
6. DGM of Accessible Areas, Remove Selected Anomalies

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POTENTIAL MUNITIONS HAZARDS

Screening Criterion		Alternative 3: Full DGM Coverage, Remove All Anomalies	Alternative 4: Full DGM Coverage, Remove Selected Anomalies	Alternative 5: DGM of Accessible Areas, Remove All Anomalies	Alternative 6: DGM of Accessible Areas, Remove Selected Anomalies
Threshold	Overall Protection of Human Health and Environment	✓	✓	✓	✓
	Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)	✓	✓	✓	✓
Balancing	Long-Term Effectiveness	✓	●	●	●
	Reduction of Toxicity, Mobility and Volume Through Treatment	✓	●	●	●
	Short-Term Effectiveness	●	●	✓	✓
	Implementability	●	●	✓	✓
	Technical Feasibility	●	●	✓	✓
	Administrative Feasibility	●	●	✓	✓
	Availability of Materials and Services	✓	✓	✓	✓
	Cost	**$230,000 / property**	**$225,000 / property**	**$197,500 / property**	**$192,500 / property**
Modifying	Regulatory Acceptance	●	●	●	✓
	Community Acceptance	TBD	TBD	TBD	TBD
Recommended					✓

✓ Favorable ('YES' for threshold criteria) ● Moderately Favorable ✖ Not Favorable ('NO' for threshold criteria)

Analysis of Remaining Explosive Hazards Remedial Alternatives

The initial broad screening eliminated Alternative 1 and 2 as alternatives because they failed key elements of the effectiveness and implementability screening criteria.

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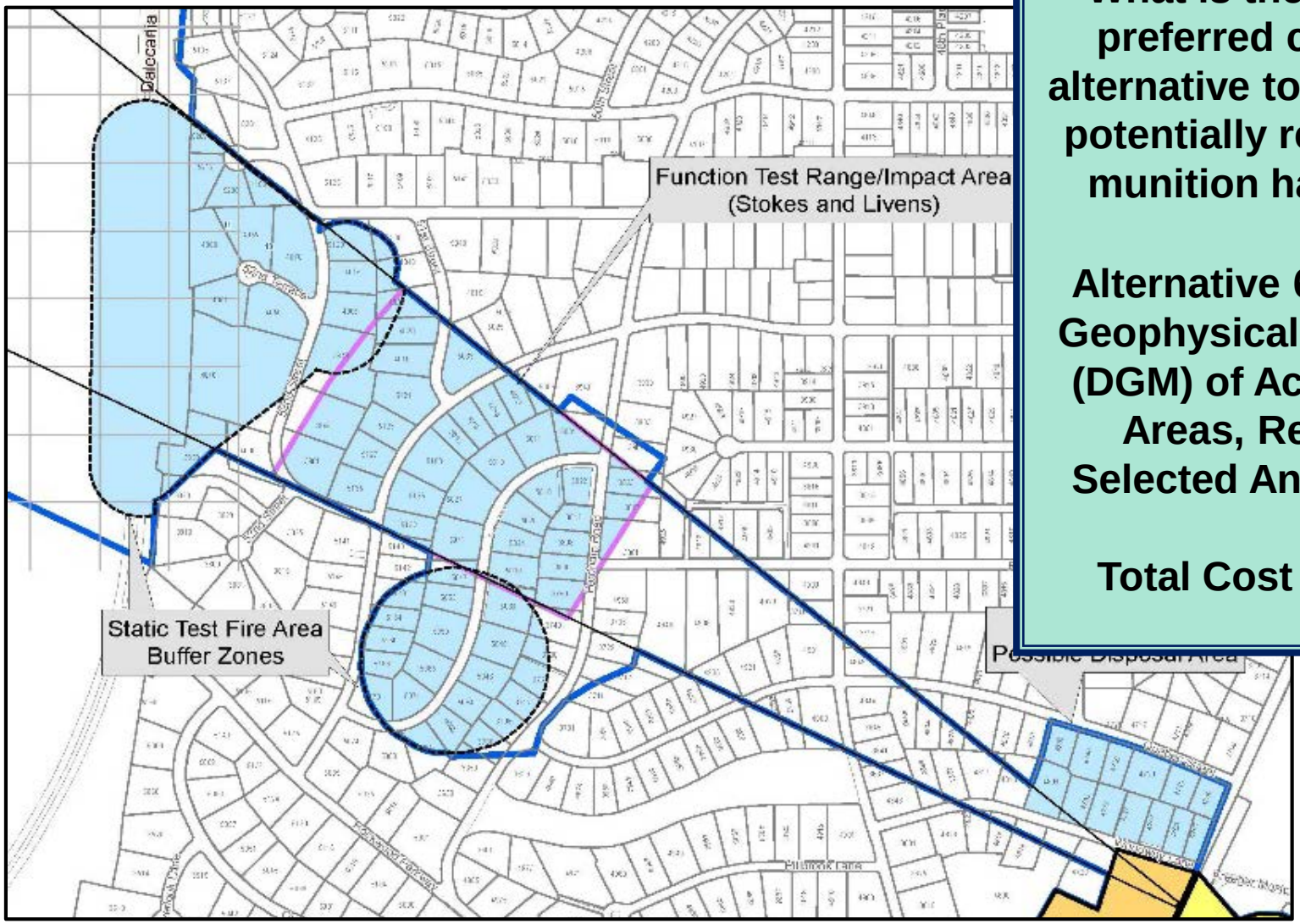
POTENTIAL MUNITIONS HAZARDS



What is the Army's preferred cleanup alternative to eliminate potentially remaining munition hazards?

Alternative 6: Digital Geophysical Mapping (DGM) of Accessible Areas, Remove Selected Anomalies.

Total Cost ≈ $20M

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TENTATIVE SCHEDULE

July 28, 2016	End public comment period on the **Proposed Plan**.
Late Summer/ Fall 2016	Prepare and sign the **Decision Document**.
Late Fall/ Winter 2016	Contract acquisition work. Begin **Remedial Design**.
~2017-2020	Conduct **Remedial Action**.

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HOW CAN YOU PARTICIPATE?

The Site-Wide Proposed Plan was made available to the public on June 13th for a formal 45-day **public comment period**, which will run until **July 28th**.

Written **comments can be sent** to the following mailing address:

- U.S. Army Corps of Engineers, ATTN: **Chris Gardner**, Rm. 11400, 10 South Howard St., Baltimore, MD 21201, post-marked by **28 July**;
- By **e-mail** to: christopher.p.gardner@usace.army.mil by **July 28**;
- Or provide **oral** comments or **written** comments to the Meeting Recorder tonight.

The Proposed Plan is available on our **project website** (www.nab.usace.army.mil/Home/Spring-Valley/Proposed-Plan/) and at the **Tenley-Friendship Library**.

US Army Corps of Engineers.

SPRING VALLEY FUDS

Community Questions

Closing Remarks

US Army Corps of Engineers.