



SPRING VALLEY FORMERLY USED DEFENSE SITE PROJECT
Community Meeting:
SITE-WIDE PROPOSED PLAN

Thursday, July 14, 2016
Butler Board Room (6th Floor), Bender Arena at American University
4400 Massachusetts Ave, NW
Washington D.C. 20016
6:30 – 9 PM

- I. 6:30 – 7:15 PM: *Open House****

- II. 7:15 – 7:20 PM: *Welcome and Introductions***
USACE Spring Valley Project Team

- III. 7:20 – 7:45 PM: *USACE Presentation***
Dan Noble, USACE Project Manager
Review of the Site-Wide Proposed Plan
Project-Wide Schedule

- IV. 7:45 – 8:15 PM: *Community Questions***

- V. 8:15 – 8:20 PM: *Closing Remarks***

- VI. 8:20 – 9 PM: *Adjourn to Individual Questions & Answers****

*The Corps of Engineers will have a representative available to record comments as part of the comment period.

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.”



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



SITE-WIDE PROPOSED PLAN



SPRING VALLEY FUDS

Keys to our success:

Community Involvement:

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

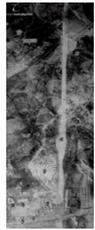
Interagency Partnerships:

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



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.

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.



Proposed Plan



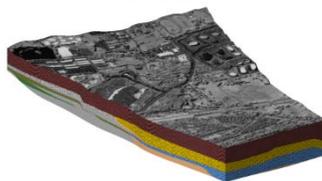
General Purpose: Presents the evaluation of clean-up alternatives and provides a recommendation for the preferred alternative.

This document is made available for public review and comment.



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.



Remedial Design/ Remedial Action

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

5



Long Term Monitoring

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

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.



WHAT IS THE SITE-WIDE PROPOSED PLAN?

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.



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 1×10^{-4} . This objective will be achieved by removing soil that exceeds site-specific background levels for PAHs.



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



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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			✓

Analysis of Remaining Contaminated Soil Remedial Alternatives

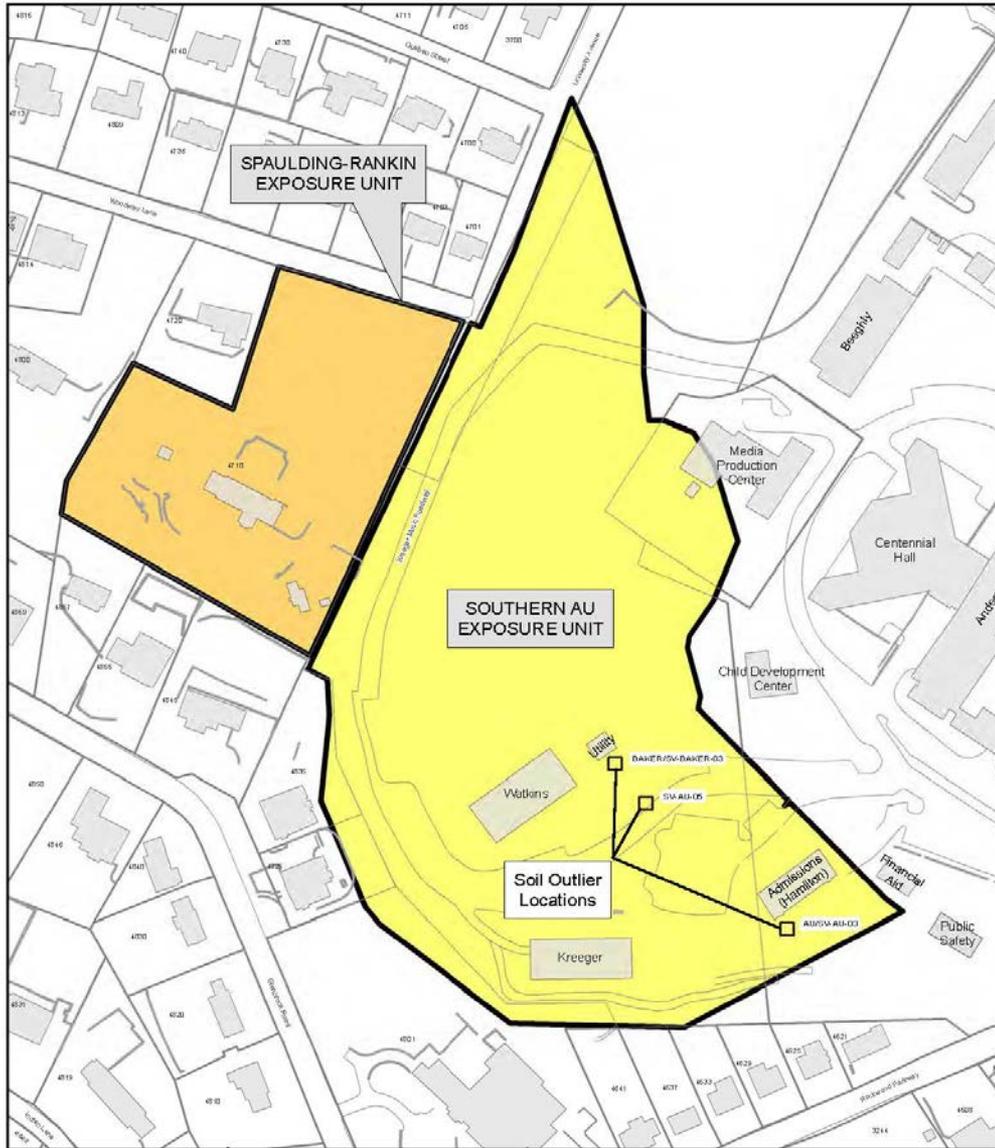
The initial broad screening eliminated Alternative 1 and 2 as alternatives because they failed key elements of the effectiveness and implementability screening criteria.

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



REMEDIAL ACTION OBJECTIVES (RAOs)

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

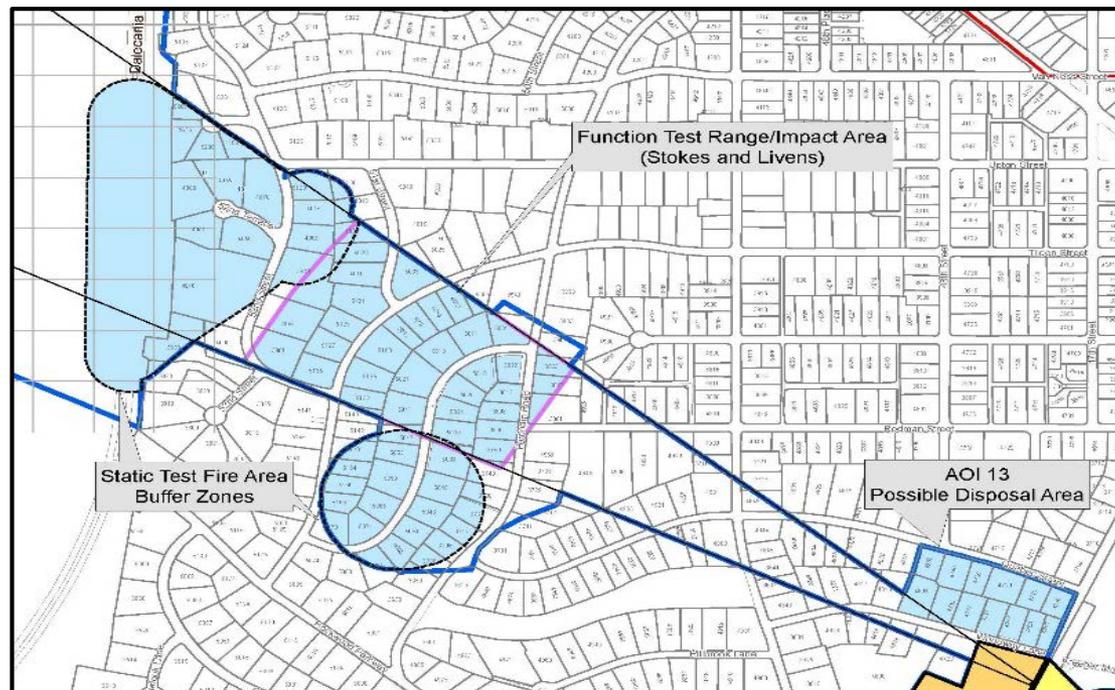
- Reduce the potential for encountering MEC in the identified focus areas of potential explosive hazards by investigating and removing subsurface anomalies that are most likely military munitions, to the depth of detection of the technology used.
- Reduce the probability of residents, workers, and visitors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



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.



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



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					✓

Analysis of Remaining Explosive Hazards Remedial Alternatives

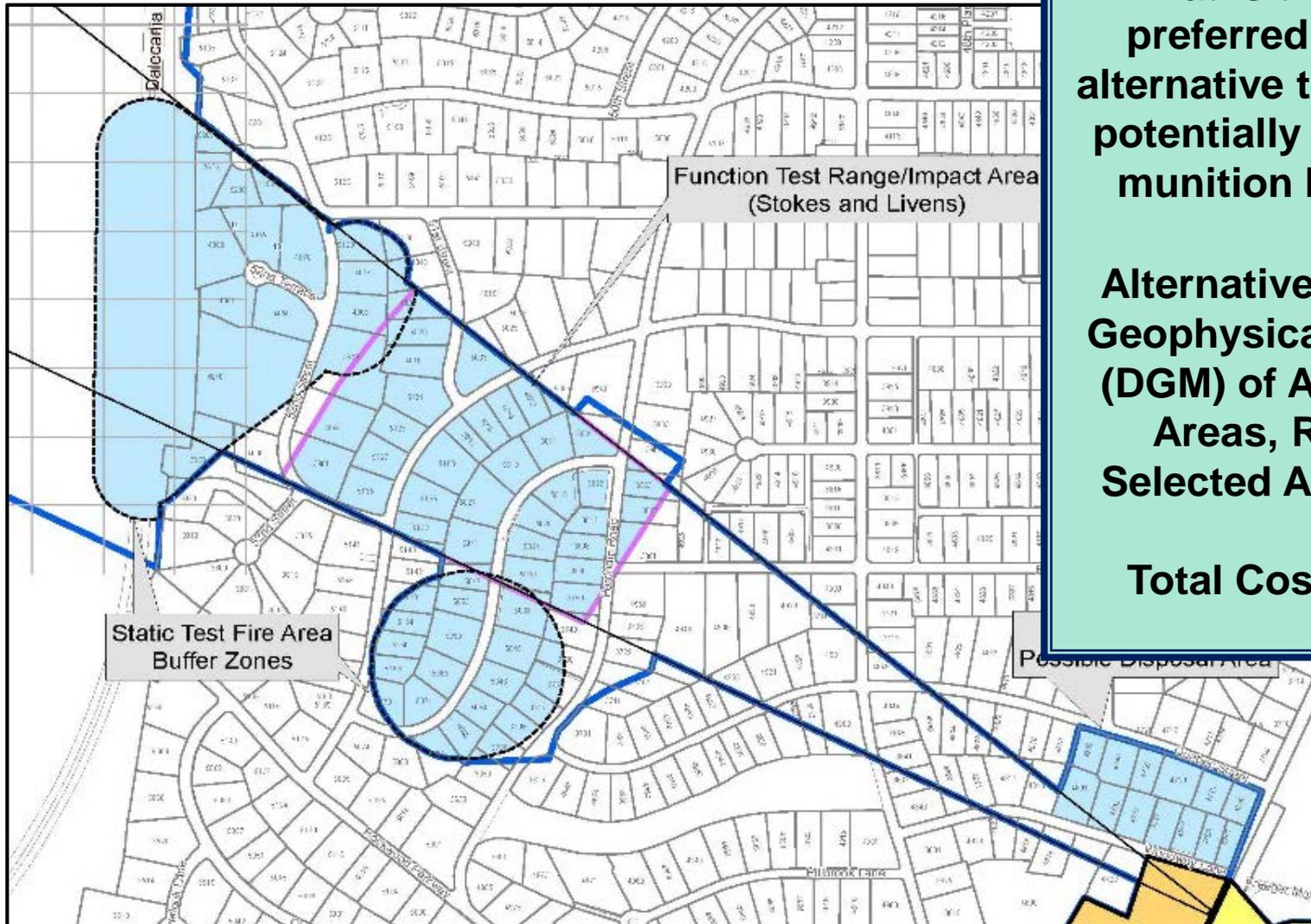
The initial broad screening eliminated Alternative 1 and 2 as alternatives because they failed key elements of the effectiveness and implementability screening criteria.

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



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**.

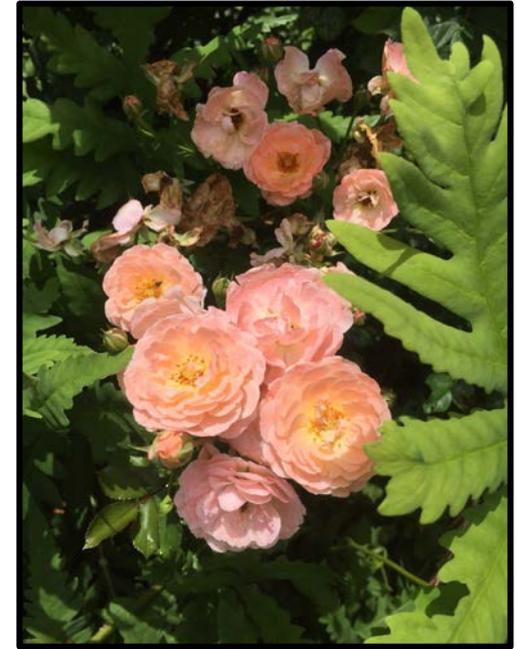


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SPRING VALLEY FUDS

Community Questions

Closing Remarks



**US Army Corps
of Engineers.**

**U.S. Army Corps of Engineers
Spring Valley Formerly Used Defense Site
Butler Board Room on the 6th Floor of the Bender Arena at American University
Minutes of the July 14, 2016 Community Meeting**

ATTENDING PROJECT PERSONNEL	
Dan Noble	Military Co-Chair/USACE, Spring Valley MMRP Manager
Todd Beckwith	USACE, Spring Valley Project Manager
Alex Zahl	USACE, Spring Valley Technical Manager
Cliff Opdyke	USACE, Risk Assessor
Eleanor Gordon	USACE
Brenda Barber	USACE, Spring Valley Project Manager
Chris Gardner	USACE, Corporate Communications Office
Steve Hirsh	Environmental Protection Agency (EPA) Region III
James Sweeney	Agency Representative – District Department of Energy and Environment (DOEE)
Tom Bachovchin	ERT, Project Manager
Maya Werner	ERT
Rebecca Yahiel	Spring Valley Community Outreach Program
Carrie Johnston	Spring Valley Community Outreach Program
Holly Hostetler	ERT
HANDOUTS FROM THE MEETING	
I. Army Corps of Engineers Presentation II. Spring Valley Project Timeline III. CERCLA Remedial Action Timetable IV. Site-Wide Proposed Plan Community Meeting Agenda V. April <i>Corps' pondent</i> VI. Spring Valley June 2016 Monthly Project Summary VII. Spring Valley Project website URL. VIII. Site-Wide Proposed Plan Summary of the Preferred Alternative to Mitigate Potential Unacceptable Explosive Hazards IX. Site-Wide Proposed Plan Summary of the Preferred Alternative to Mitigate Potential Unacceptable Risks Posed by Soil Contamination X. Map of Site-Wide Proposed Plan Areas Identified in the Remedial Action Objectives XI. Summary of Remedial Action Objectives XII. Analysis of Remaining Explosive Hazards Remedial Alternatives XIII. Analysis of Remaining Contaminated Soil Remedial Alternatives XIV. Summary of Preferred Remedial Alternatives 4 and 6	

AGENDA

Starting Time: The July 14, 2016 Community meeting began at 7:17 PM.

I. Welcome and Introductions

A. Welcome

Colonel Edward Chamberlayne, Commander, Baltimore District, U.S. Army Corps of Engineers (USACE): On behalf of USACE, and on behalf of the Baltimore District, I would like to welcome you tonight. I am Colonel Ed Chamberlayn; the USACE Baltimore District Commander. Many of you have

met a series of commanders from our district, we rotate every three years. I have been in the command for about a year. We will give you an update and answer any of your questions of what we are doing. I can give you an assurance that in my one year time here in the District, this project has received a lot of attention; not just from me, but my leadership within USACE, and the USACE staff. There is a lot of attention to this project for us to be as conscientious as we can, to be as detailed as we can, and to give great outreach to the public and answer any questions so there are no surprises.

I will tell you, as a little personal history of myself, that I grew up in Alexandria, VA and I was very familiar with this project back in 1993. I then went on to have a career in the Army, and did not realize I would come right back here. I am very proud to be associated with this project. Our team that is associated with this project are some of the best project managers and associated team in our District. We have a lot of responsibilities in our district; a lot of other environmental projects, military construction, and navigation projects all over the country. We put our very best team on this. I will be here all night, answering questions. We hope that we answer and address any of the concerns that you have. I introduce Dan Noble, Spring Valley Project Manager and Military Co-Chair.

Dan Noble, USACE: Thank you, sir. My name is Dan Noble; I am the Project Manager for the Spring Valley Formerly Used Defense Site (FUDS) Project. I want to thank you all for coming this evening. Like Col. Chamberlayne said, we will stay as long as you would like. I have a presentation I am going to give. There is a lot of information on the slides, and we do have handouts of the slides. I will not say every word that is on a slide, but if there is something you see that I am not talking about and you would like me to, please go ahead and interrupt me and let me know. I am going to try to move through fairly efficiently, because I want to take questions and hear what is on your minds and focus on what you are concerned about.

B. Introductions

D. Noble, USACE: Let me introduce some of the folks that are here tonight so you realize who is in the room with you. Jim Sweeney, District Department of the Environment (DDOE), is the District's representative on the project. Steve Hirsh, United States Environmental Protection Agency (USEPA), Region III, keeps track of our project for the Environmental Protection Agency. Editor's Note: [D. Noble introduced all project personnel in attendance for USACE and from ERT, Inc. All USACE and contractor personnel are listed in the above table.]

II. USACE Presentation

D. Noble, USACE: This evening's presentation is about the Site-Wide Proposed Plan (PP). When we present here tonight as USACE, we want to assure you that it is not just USACE that is collecting this data, looking at this data, and making these decisions. The process involves a lot of other agencies and stakeholders, including the community. USACE focuses a lot on community involvement as Colonel Chamberlayne mentioned, so we have a Restoration Advisory Board (RAB) that is made up of community members. The RAB meets 6 times a year, every other month. The meetings are open to the public if you would like to come to those meetings. We have the information on our website about the dates and times of those meetings. USACE reaches out in many ways to residents, American University (AU), and to elected officials. USACE tries to communicate and be as transparent as we can about the project; what we are doing, the decisions we are making, and why we are making them. As I mentioned, USACE works very closely with District Department of Energy and Environment (DOEE) and EPA Region III. When we have major decisions that need to be made on the project, we make them in a consensus manner. We need to have all three agencies in agreement that we are making the right decision before we proceed. So again, it is not just USACE making the important decisions on the project.

A. The CERCLA Process

D. Noble, USACE: The process we are in is a process that is laid out by a federal regulation called the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), sometimes

referred to as ‘Superfund.’ This is not a ‘Superfund’ site, but USACE follows the ‘Superfund’ process to clean up the site. We are in the Site-Wide PP phase. We have completed the investigation phase and have written a Site-Wide Remedial Investigation Report (RI). USACE wrote a Site-Wide Feasibility Study (FS) and then a Site-Wide Proposed Plan (PP). It was in the Site-Wide RI that USACE identified the issues that needed to be addressed in order to close out the project. The Site-Wide FS looked at several alternatives that could address those issues, and then the Site-Wide PP is the spot in the process where USACE formally states to the community what was chosen as the preferred alternative to deal with each of the issues that were identified in the Site-Wide RI report.

By the CERCLA regulation, USACE must have a public comment period on that Site-Wide PP document. We are in the middle of the public comment period right now. As part of that public comment period, it is recommended in the guidance that a public meeting such as this be held if there is interest in the project, and if the meeting will help the community. That is what we are doing tonight. Once the Site-Wide PP public comment period ends on July 28, 2016, USACE will move forward with writing a Decision Document (DD).

USACE will modify the preferred alternative if necessary based on the comments received. The DD will be signed by the appropriate authority within the Department of Defense (DoD), funds will be authorized and made available to carry out the preferred alternative, and the project will move into the Remedial Design and then Remedial Action phase. The Remedial Action phase is typically the ‘shovels in the ground’ phase. That is usually when people notice that USACE is out in the community.

B. Site Overview

D. Noble, USACE: The Spring Valley project started in 1993 with the discovery of a munitions disposal pit at 52nd Court when a home was being built there. We put this summary slide up to try to emphasize that the Remedial Investigation report was a challenging report to write because it had to cover all of the project’s history and try to make sense of all of this, talk about what we have learned and what we have done along the way, and then hopefully point out those issues that still need to be dealt with to bring the project to an end.

D. Noble, USACE: In addition to the investigation, USACE has been doing some remediation work as well, because there were issues that USACE felt needed to be addressed right away. USACE understands that the process can and does take years, as I am sure you are all well aware. If there is an issue that is identified going through the process that needs to be addressed sooner rather than later, USACE goes ahead and does that. There is a mechanism in the law and in the process to allow USACE to take early action if that is needed. For example, USACE did arsenic testing of all the properties in Spring Valley. If arsenic was elevated at a property, then USACE performed arsenic removal actions. Those removal actions began around 2003 and were completed in 2012. Out of the 1600 properties and lots that were tested, about 170 of them did have elevated arsenic that needed to be addressed, so that has been accomplished. You can tell from that timeline it took us 9 years and that was an action that we felt needed to be done sooner rather than later, and it still took 9 years. There are times when addressing these issues can be very time consuming.

USACE is doing a groundwater investigation. The groundwater investigation is not part of the current Site-Wide PP. USACE is treating groundwater as a separate unit, going through the CERCLA process itself as its own topic of concern. USACE is close to releasing a Groundwater RI report. USACE will do a Groundwater FS, write a Groundwater PP, and will write a DD about groundwater as well. There will be another public meeting; you can come hear about groundwater if you are interested.

During the site-wide investigations, if USACE came across a disposal of munitions or a single munition they were not left in place. For safety reasons, if USACE finds munitions, then USACE is required to clean them up right away. There has been a lot of work that has been done over the years to clean up munitions that have been left behind by the Army in Spring Valley. The large project at 4825 Glenbrook Road that has been going on for several years is an example of that.

D. Noble, USACE: The Site-Wide PP summarizes the issues that were identified in the Site-Wide RI as needing to be addressed. The Site-Wide PP discusses the alternatives that were evaluated in the Site-Wide FS to sort through those alternatives and then, most importantly, formally identifies the preferred remedial alternative.

There were two major issues that were identified in the Site-Wide RI. There were areas of the site that did have unacceptable risk posed by chemical contamination that had been left behind in the soil by Army activity. There were two areas USACE felt where there were still these risks; one was the Spaulding and Captain Rankin Area (SCRA) and the other area was a southern portion of the AU campus.

There were also certain focus areas within the site where the Army conducted activities with munitions back in World War I (WWI), and USACE feels there is a chance there is an unacceptable munition hazard that remains with respect to the chance that the Army may have left behind a munition in these areas. USACE wants to do something about looking at those areas and if possible, find those potential munitions and gather them up if they are out there.

D. Noble, USACE: When USACE identifies an issue and alternatives to address the issue, how does USACE evaluate those alternatives? What is the evaluation process? The evaluation process is laid out in the CERCLA regulation that I mentioned earlier. The regulation instructs USACE that there are 9 criteria that we evaluate all remedial alternatives against. There are ‘threshold criteria’ that have to be met, ‘balancing criteria’ that begin to give a priority ranking of which alternatives might be better than others, and then there are ‘modifying criteria;’ both regulator acceptance and comment on the alternatives, and also community acceptance and comment on the alternatives as a way to address the issue. Those are modifying criteria that could modify the actual cleanup that ends up being performed. Another thing we do is formally establish what we call our Remedial Action Objectives (RAOs) in the Site-Wide PP; or what will actually be achieved if this preferred alternative is undertaken. The RAOs describe what the cleanup will be, and the extent of the cleanup.

D. Noble, USACE: We will first discuss the unacceptable risks posed by soil contamination. When I say ‘unacceptable,’ it probably means something a little bit different to me than it might to most people. The regulation instructs USACE to look at things in a very conservative manner. So when I call an issue unacceptable, it is arguable that there could be someone that could hear the same issue and say, ‘Well, that does not sound so bad to me, why do you need to do anything?’ I am just trying to say do not be alarmed by the term unacceptable. If it was not unacceptable, then there would be no action to take, everything would be acceptable, USACE would have nothing to do, and we would all go home. The only way that we reach the process of taking a cleanup and improving the community is we have to declare that something is unacceptable and must be addressed. These are the RAOs with respect to soil contamination that has been left behind in those two specific areas in the site mentioned previously. There are four compounds that USACE is concerned about: mercury, vanadium, cobalt, and then a class of compounds that are referred to as PAHs, which stands for polycyclic aromatic hydrocarbons.

D. Noble, USACE: The four cleanup alternatives that were examined in the Site-Wide FS to address the soil contamination issues include:

1. No Further Action – USACE is required by regulation to always look at no further action.
2. Land Use Controls – for example, putting up a fence with a sign on the fence that says “keep out.” That would be a land use control; you are controlling the use of the land.
3. Phytoremediation –certain plants that can extract the contamination out of the soil as they grow.
4. Excavation and Offsite Disposal – contaminated soil is dug up and disposed of at a proper facility, then the contaminated soil is replaced with clean soil.

D. Noble, USACE: You will notice that Alternatives 1 and 2 did not meet the threshold criteria. If the alternatives do not meet the threshold criteria, they do not move forward to the in-depth evaluation with the

balancing criteria and decide whether or not the alternatives meet those criteria. If you look at the legend at the bottom of the alternatives' analysis chart, you see that a checkmark means USACE felt the alternative favorably met the balancing criteria. The circle is moderately favorable, which would not necessarily cause the alternative to be rejected, but is not as good as the checkmark. The 'x' means that USACE felt that the alternative did not meet the criteria. Just because an alternative does not meet a balancing criteria, that does not cause it to be rejected as a possible alternative. If there were an 'x' in the threshold criteria, then the alternative would have to be rejected. In this case, you will see these two alternatives met the threshold criteria and so then USACE evaluated them against the balancing criteria.

D. Noble, USACE: USACE chose Alternative 4, which is Excavation and Offsite Disposal of the contaminated soil. The cost of this alternative is projected to be about \$500,000. The reason for the relatively low price tag is that the two areas are not heavily contaminated; they are contaminated in a couple spots. For instance, on the southern part of AU campus, the four contaminants that USACE is concerned about are elevated at three discreet locations. USACE is proposing to go to those three locations, dig the contaminated soil up, and then send it off for offsite disposal.

The second area where USACE has concerns is the SCRA exposure unit. The area has three locations that happen to be in the backyard of this particular property. There will be three locations there that will also be excavated and disposed of.

Allen Hengst, Community Member: Do you know how many grids you will be looking at and what are the dimensions of the grid?

D. Noble, USACE: USACE assumes that there are 2 grids at each location that will need to be disposed of, at 20 feet by 20 feet. But again, those are just assumptions for the purpose of coming up with metrics on what the alternative would cost. There could be a little more than that, there could be a little bit less than those 2 grids, but the assumption is that these are fairly discreet locations and 2 grids will cover it.

D. Noble, USACE: Let us move on to the other issue that the Site-Wide RI report identified as needing to be addressed, and that is the issue of unacceptable explosive hazard that might be present from the fact that munitions may have been left behind by the Army while it conducted its activities here. The term that is used frequently is Munitions and Explosives of Concern (MEC). I will just use 'munitions' this evening, but you will see the acronym MEC appears in our Remedial Action Objectives (RAOs). The RAO for MEC is to do our best to try to find and remove them. The second RAO addresses the fact that a munition is not very big, and we have a fair amount of acreage that we are concerned about. As we go out to try to find those munitions, there are going to be things in our way that make it more difficult. What we have to acknowledge is that no matter what alternative we chose in order to look for munitions, and no matter how long we look for them, and how thorough we try to be, there is always going to be a chance that a munition is going to be left behind by us. We will not be able to guarantee 'yes, we found them all.' If there is a chance that a munition will be left behind, then some of the hazard will also be left behind. So, how do you address that residual hazard? What would be the appropriate steps to take to address that residual hazard? This second RAO speaks to that, it discusses the need to address what is going to be a residual hazard that will be here because this is a FUDS and that status will not change.

D. Noble, USACE: What were the alternatives evaluated for potential explosive hazards? First, let me describe a little bit about the location of these focus areas. There are 4 focus areas; 2 were static test fire facilities back in WWI. A static test fire facility is a facility where you would take a munition; you would not fire it through a weapon, but lay the munition out on the test range, maybe put it on a wooden stand, hook up electrical wires to the munition, back off, and then detonate the munition by use of those electrical wires. Here at the American University Experiment Station (AUES), they were interested in developing the munition; they were not interested in firing the munition so much. They used already existing standard weapons and adapted them to be used as deliverers of chemical agent. They were interested in how they can adapt these munitions to become chemical weapons. They had 2 static test fire facilities that we identified as areas where potential munitions could have been left behind. There was a mortar firing range

here, so even though they were not necessarily interested in the ballistics of these weapons, they did fire them, and we know they tested them by firing them.

There is what we call a range fan, and basically the highlighted area is where we feel is the most likely area that represents the impact zone of that range fan. There were target areas in the middle of the range fan, and then you draw a buffer around those targets and establish the area that could be the impact zone. Back by the firing point, there was an area just off what is now part of the campus in the neighborhood where they had a storage area for munitions components. There were things that were referred to as detonator shacks, fuze storage shacks, and explosive storage shacks; so we feel that this storage area for munitions from WWI could be an area where a munition may have been left behind when the Army left the facility.

C. Potential Munition Hazards

D. Noble, USACE: 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

D. Noble, USACE: The last four alternatives are really different mixing and matching of the same alternative. I want to spend just a little bit of time attempting to describe what it is we are talking about here. Basically it consists of two components; which is to perform what we call Digital Geophysical Mapping (DGM) and then to remove what that mapping finds. Anomalies are what are identified when you do the mapping, and then you have to make the decision, 'ok, I have identified a metallic anomaly in the ground. Do I want to dig it up or not?' Basically that is what we are proposing in all four of these alternatives, we are going to do this DGM, and then we are going to remove the anomalies that we find. We have to make decisions about how much of that mapping we need to do, based on what we feel the hazard level is at any particular property, in order to achieve an appropriate cleanup that will be protective of public safety. We defined these two terms, where we would do full coverage or we would get coverage of what we call accessible areas.

D. Full Coverage

D. Noble, USACE: What would full coverage be? For full coverage, if we came to your property, we would not look under your house, detached garage, guest house, or swimming pool; but pretty much everything else we are saying we have to look at. So if there is a driveway, and we cannot see through the driveway with our instruments, then we would have to remove the driveway and then look at the area of land underneath the driveway. If you have walkways that we cannot see through, we have to remove the walkways and then look. If there are large trees that have very large trunks, and we cannot get underneath the tree, we would cut the tree and take the tree out of the way so we could look at the ground underneath the tree. If you have a tennis court, and we could not see through your tennis court, we would remove the tennis court so we could look under the tennis court. It would be a very complete, thorough, and probably destructive process, because we would be removing a lot of things in your yard to get them out of our way so we could use our mapping instruments to look at the ground.

E. Accessible Areas

D. Noble, USACE: As we come to your property, what we are really concerned about are those areas that are still accessible to you; where you might be digging in the ground and where you could encounter a munition item if you were digging. The definition of accessible area is not as all-encompassing as the full

coverage, because in this case, if we cannot see under the driveway, we are not going to worry about it because we assume you are not going to dig through your driveway every day. The driveway would be in place, and you would not be going under your driveway. Same thing if you have a tennis court. If you have placed a tennis court there, you are playing tennis on top of it. You are not going to then try to dig and plant a plant in the middle of your tennis court. We would look at those areas that are accessible to us and where our instruments will work, on the theory that those are the areas most likely where you would be digging into the soil on your own property.

Now, if you, say, have a mature vegetable garden, and we would say to ourselves, ‘well, that is an accessible area, we can get to that area.’ Yes, unfortunately we would have to move the vegetable garden out of the way, which means we would have to cut it all down. But then we can run our instruments over that ground and we can check it out. So by our definition, that area is accessible. You might disagree with us. You might say, ‘no, that is not an accessible area. I have been digging in it for years, I have never found anything, I have never had any problem, and you are not touching my vegetable garden.’ That is fine; you can identify inaccessible areas for us. I can tell you, ‘I can get in there, I can do it.’ You can say, ‘yes, but you are not going to.’ And that is ok. We are just going to have to judge at the end when we are done. We wanted to achieve a certain amount of coverage, we know that we are capable of getting a certain amount of coverage at your property, but you chose to keep us out of certain areas. What does that add up to? In the end, do we think that our effort was good enough or was it not good enough. So if we achieve 90% of what we thought we could do when we first showed up, that is probably pretty good. But if we only achieved 50% of what we thought we could do because you had a lot of areas that you wanted to keep us out of, that might not be good. We might have to have more discussion about what to do.

F. All Anomalies vs. Selected Anomalies

D. Noble, USACE: ‘All anomalies’ is pretty obvious; any anomaly we find we dig it up. So if we find an anomaly in the middle of the driveway, we put a hole in the driveway and go see what the anomaly is. The best way, of course, to determine what an anomaly is, is to get it out of the ground and look at it, actually see what it is. There is a lot of very recent technology that is performing very well that allows us to look at an anomaly in the ground. If we can see it with the instrument, the instrument is able to tell us whether it is potentially a munition item or not. If we look at an anomaly in the driveway, and the instrument tells us in all likelihood there is something metal buried here, but it is not a munition, in that case we would not dig it up. If the instrument tells us there is a metal item buried in the ground here and it kind of looks like a munition, we would dig it up. So that is where the ‘selected anomaly’ term comes from. When the instrument tells us that most likely the anomaly is due to the presence of a munition item, then we would select that anomaly to be dug up. These are just a different ordering of the different mapping coverages and then the decision points on whether to bring an anomaly out of the ground or not.

D. Noble, USACE: We put these Alternatives through the same evaluation. Alternatives 1 and 2 fall out again because we do not feel they meet the threshold criteria. Each alternative was scored based on the balancing criteria. We have regulator input already; we are still waiting for your input. USACE is proposing to do Alternative 6 to address the explosive hazards that we feel could remain at the site; which is we would come to your property and do the DGM of accessible areas, and then we would remove those selected anomalies that the instruments tell us are most likely caused by the presence of munition items. We have in these 4 focus areas 96 private properties that we have to get to, plus a portion of city owned property along Dalecarlia Parkway. Our estimate of the cost of performing this at 96 homes is approximately \$20 million.

A. Hengst, Community Member: The rectangle in the right bottom corner, Area of Interest 13, possible disposal pit...

D. Noble, USACE: Possible disposal area.

A. Hengst, Community Member: Ok. If someone wanted to find out more about the background, I suspect it is not going to be on the PP. But there should be an Area of Interest Task Force report on Area of Interest 13, right?

D. Noble, USACE: Yes.

A. Hengst, Community Member: Is there any place other than the Area of Interest Task Force where someone could find out more about what is in that area or why the Army believes it is a possible disposal area? Were there any other reports generated other than the Area of Interest task force report?

D. Noble, USACE: Well, there is the Site-Wide RI report.

A. Hengst, Community Member: There is more detail in that on Area of Interest 13?

D. Noble, USACE: In that this was investigated as part of the Site-Wide RI and what was found that is not summarized in the Area of Interest report, but is summarized in the Site-Wide RI. The Area of Interest report was written before the area was investigated. The Site-Wide RI report was written after the area was investigated.

A. Hengst, Community Member: So that was last summer?

D. Noble, USACE: Yes, July 2015 for the Site-Wide RI report. Tom, is there another source for Area of Interest information?

Tom Bachovchin, ERT: Everything should be in the Site-Wide RI report, it is pretty thorough.

G. Tentative Schedule

D. Noble, USACE: The only thing that is not tentative is that our Site-Wide PP will be final on July 28, 2016. That is when the public comment period will end, and once that public comment period is over, the Site-Wide PP phase is over. The alternatives as I have laid them out for you here might need to be modified, based on input we received from the public comment period. If there are modifications that need to be done to the alternatives, they will be written up and described in the Decision Document (DD). We hope by fall of this year that we will be done with the DD and have it signed. We will then have an approved project, and we can acquire a contractor to carry out the project for us.

By late fall or winter of this year at the latest, we will begin the Remedial Design work that we have to do to design the remedy. We hope to begin to conduct the Remedial Action as early as we can in 2017. We put down that the remedial action will take about 3 years to perform. That is of course just an estimate that is based on what I mentioned for the Site-Wide RI. This process of doing DGM at a property and then digging up some selected anomalies to see what they are; that is exactly what we did during the Site-Wide RI phase to determine if we had a problem or not. In a sense, the remedy is very similar to the methods used in the investigation. We looked at about 90 properties in the investigation in various areas of the site. As we were working our way through these 90 properties in our busy, highly productive years, we were getting to about 30 properties in a year to conduct the investigation. With 96 properties that we are suggesting that we would visit during the remedy, and being able to do about 30 a year, that led us to the 3 year estimate.

D. Noble, USACE: We hope you will participate in the public comment period. We have a formal 45-day public comment period underway. It began on June 13, 2016 and will end on July 28, 2016. You can submit to us comments in many ways. You can write them down and put them in the box here this evening and we will take your comment. You can speak to Holly after the meeting if you would just like to give an oral comment, and she will record it for you, and we will put it into the record. You can send us a letter with your comments, and this would be the mailing address that you would send that to. Chris Gardner, USACE, will receive your comments through the mail, or if you would like to e-mail Chris and give him your comments. We would just ask that you have your letter postmarked by 28 July, or you hit the 'send' button on the e-mail before midnight on 28 July. And then as I mentioned, turn in written or oral comments

here this evening. You can find the Site-Wide PP at www.nab.usace.army.mil/Home/Spring-Valley/Proposed-Plan/, it is up online, and you can download it and look at it, or read it online. There is a physical copy of it at the Tenley-Friendship Branch Library if you would like to go and actually read a hard copy of it.

Community Member 1: Dan, is this presentation also on the website?

D. Noble, USACE: It will be placed on the website, yes, and we also have handouts of it this evening if you would like to take a paper copy home with you.

III. Community Questions

D. Noble, USACE: Alright, so I think I have spoken enough and I thank you for your attention. Can I answer questions, or do you have questions?

Community Member 2: We are in a situation where we will be replacing our driveway at some point. Because of subsidence, I suspect they will need to have a deeper base or foundation to make it work; so we will not just be replacing what we have, but going lower. What would the construction company need to do in that situation? And indeed, I am curious about how this works before the remediation occurs, because behind us there is a tear-down, and two houses are being built where one existed, so they are digging in new places all the time. Do they come to you for a consultation, and should I come to you for a consultation even before you have reached my property?

D. Noble, USACE: It is not required, but if you would like to, you certainly can. In that case, that developer did. We met with them and we went over a lot of this information with them. We spoke to their builder as well. We gave them our contact information and said, 'as you dig, if you find something that you think is unusual or interesting, we are here in the neighborhood every day, so call us and we will be over there in a few minutes to look at it.'

Community Member 2: But you did not do any of your testing. They did not ask you to?

D. Noble, USACE: No. Did they ask us to? They might have. I think we had to explain to them that we must go through this process. If you want to wait for us to do that you can, but you better put your project on hold. Of course they were not interested in that. We gave them some information about what we found and where we found it. We tried to put the idea of what the unacceptable hazard is in perspective for them. We have done that with other projects in the neighborhood as well when people reach out to us. But it is not required. Certainly if the hazard was at such a level that we thought it should be required, we would be working with DOEE to make that a requirement. We have not done that over the 20 some years of the project. There was a time when for a while we advertised to 'call us before you dig,' but we do not do that anymore. We were doing it at the time because we had just finished all of the testing for the arsenic and we had not started on cleaning it up yet. We knew where the 170 houses were. We felt with all of the arsenic contaminated soil out in the neighborhood, before people dug into it, if they would speak with us we could lay it out for them at their project site whether or not there was an issue with arsenic in the soil. The arsenic has been addressed and removed, so we stopped the 'call us before you dig' recommendation.

Community Member 2: Are there any precautions that the construction company or crew should have available to them or anything they should undertake to reduce the risk further or what do you advise them?

D. Noble, USACE: Well, the interesting thing, or maybe not so interesting, is that this is not just a problem in Spring Valley. There are many sites across the country where there have been munitions left behind by military activity. People have moved into those areas and are moving into those areas and developing them, so USACE has a program that we call the 3 Rs, Recognize, Retreat, and Report. Certainly you could make your contractor aware that the project is taking place in a Formerly Used Defense Site (FUDS). If they see anything unusual, we literally are in the neighborhood every day and I could have someone over at your house very quickly to look at something if there is a concern. If they see something strange or unusual and

they think it looks like a munition, go ahead and retreat, call us, and we will be there very quickly. We will not hold you up, we can tell you if it is something to worry about or not.

Community Member 2: Then they may want to charge me more.

D. Noble, USACE: The contractor?

Community Member 2: Yeah, because it is not a normal site.

D. Noble, USACE: There are hazards to digging everywhere. There is always a possibility and people who dig and excavate for a living, they know this. I think if they know it ahead of time, I do not know that it is really going to drive the cost all that much. It is what it is. It is a FUDS.

Community Member 3: Two questions. One is, have you determined whether there have been actual health problems created by any of this stuff, and if so, what are they? What should we be doing about those? My second question is, when you are finished with all of this stuff, including the groundwater and anything else that is in the planning stage that I may not know about; where do you hope to be, and where will we homeowners who live here expect to be? Will this all be remedied?

D. Noble, USACE: With respect to the groundwater?

Community Member 3: With respect to any of these problems that will have been created by what was going on here during the First World War.

D. Noble, USACE: Let me address the first question first, and I might ask you to remind me about the second question again. My answer to your first question is going to sound a little bureaucratic; but USACE is not a public health agency. So no, USACE does not attempt to try to determine if there have been health outcomes, if there have been health impacts that have already occurred. USACE does not do that. There are other agencies that do that. They have come to Spring Valley and they have looked at different aspects of the project and have written different reports. The Agency for Toxic Substances and Disease Registry (ATSDR) has written several reports about Spring Valley. DOE has hired the Johns Hopkins Bloomberg School of Public Health (JHSPH) to perform 2 investigations, and they wrote 2 reports about their investigations and what they thought health impacts and health outcomes might be. I would refer you to those reports and documents because they are written by people who know what they are doing. We have linked to them through our website, so if you go to our website you can get to all of the health consultations and all the health reports that have been written.

Community Member 3: I understand that you are not a health agency, but I presume that given what you are doing, that you have looked at these reports and have some sense as to what they might say. I will not hold you to vouching for what they have said. But can you give us a brief summary of what they have concluded?

D. Noble, USACE: I might ask Steve Hirsh, EPA Region III to help me with this. My sense is the way they approached the problem is they tried to gather health statistics about the Spring Valley community, they compared those to national averages, and then they compared those to the similar statistics that they saw in what they felt was a comparable nearby community. In this case they chose the community of Chevy Chase, so they compared the health of the people in Spring Valley to the health of the people in Chevy Chase, and tried to see what the differences were. I think the basic conclusions of the report were that the health of the Spring Valley community is very good; it is certainly well above national averages. It also compares very favorably when compared against Chevy Chase. I would say that was the strategy that JHSPH took when they did their reports for DOE. When ATSDR has come and done reports, they have oftentimes looked at more specific issues and problems. For instance, there was a concern for the children who attended the Child Development Center (CDC) here at AU back in the early 2000s. They specifically looked at that cohort of people, the children who were students at CDC on campus. I think they actually did different types of direct medical testing of the children and they did not see an impact. That was driven by a concern of elevated arsenic that was found in the ground at the playground of the facility. I think

generally when people have looked at it, they have come to the conclusion that health is very good; but there are always a few numbers and statistics that turn up, that to me seem to say, 'we are not sure if there is a problem, but this is a little different than when we look at a comparison community,' or, 'this might be a little bit higher than we would have expected.' Steve, are there any other points you can give about health?

Steve Hirsh, EPA Region III: I think Dan just gave a good summary. There were specific things that were looked at, like the kids at the CDC. They took hair and urine samples to make sure, because you can, that you can do. There was the DOEE health study that JHSPH did; they generally confirmed what other people had said, that in general the health was good. There were a couple things like Dan was mentioning. Part of the issue with these sorts of questions is that some diseases are seen 1 in 100,000. Well, if there is 1 here, and there is not 100,000 people, depending on how you look at it, you could say it looks like we have more than we would have expected. We expected none and we saw 1, or we expected 1 and we saw 2. They raised those exponential issues and sometimes had suggestions for how you might tease that data out.

What Dan did not mention is the last study that was done by ATSDR, which is part of the Centers for Disease Control and Prevention, which looked very specifically at 4825 Glenbrook Road. In that case they did determine that some health impacts probably happened to the people that lived in that house and the people that constructed that house. That is sort of what has been done with respect to health. Again, all this has been done by health organizations. What we do and what USACE does is we look at risk: What happens if we leave this stuff here? What is likely to happen in the future? It is health people, medical doctors, public health specialists that look at health records and they talk to people and they talk to doctors. They gather information about individual people. The way we do this is we look at the population and the contamination and say, 'how much do we have to take away to prevent something from happening?' An 'unacceptable' level, which Dan talked about earlier.

Community Member 3: Which leads me to my second question?

D. Noble, USACE: Right. The standard that we have to meet with our cleanup remedy and our cleanup alternatives are that at the end of the day, with respect to risk, we have to clean up to a level such that there are no unacceptable risks to human health or the environment. So our remedies have to protect human health, and they have to protect the environment, to the extent that we can determine it. We gather data, we look at the data, we try to calculate a risk that we think the data is telling us, and then we reduce that risk to an acceptable level. There is a lot of modeling; there is a lot of risk calculations that are done, so it is done to the best of our knowledge and the best of our ability. We are making a lot of assumptions and decisions along the way that you cannot directly measure. The regulations instruct us to be very conservative, because you have to do modeling, and you have to make assumptions. And so we do that. At the end of the day, our remedies have to meet those two very broad criteria. Steve Hirsh, EPA Region III and Jim Sweeney, DOEE are here to oversee us and make sure they agree. So my answer is yes, when we are done there will be no unacceptable risk in the community to the extent that we can determine it, and there will be no unacceptable hazards left behind by munitions to the extent that we can assure that.

Community Member 3: So this has been an iterative process, it seems to me from the beginning, because we have lived in Spring Valley since before the first discovery of this stuff occurred. It has felt like an iterative process, that there has been a lot of learning along the way, and a lot of discovery of new things, and expanded and contracted geographic areas of concern. Is it your expectation when you are completed with what you are working on now, including the groundwater stuff, that there will be no further discoveries, no further iterative processes you will have to go through?

D. Noble, USACE: Well, again, like I say we actually have a Remedial Action Objective that discusses the residual hazard that might be left behind. There is always this caveat that is written into the regulation that says, when you come to the end of the process you are done, unless new information comes to light or an opinion changes on something. So if for instance, we decide that arsenic is actually much more dangerous than we thought it was, and it really needs to be cleaned up to a much lower level than what we did, then all those 170 arsenic cleanups that I mentioned, we might have to look at them and say, 'are they still

protective of human health and the environment?' And if we feel the answer is no, then we are coming back and knocking on everyone's door again. We are very conservative up front and so hope never to have to do that, but for that reason USACE will continue to pay attention to the Spring Valley FUDS, and so will EPA and DOEE.

Colonel E. Chamberlayne, USACE: I would like to add one thing, and I know you have probably heard this before, and appreciate your patience of 23 years of the project. The other thing is that for USACE and EPA and DOEE, we are not walking away from this area. We have lots of things that we do in the region that we are responsible for, but we are responsible for this area. So if there is something that is found, or a concern that is redefined for instance, we will be here to respond. The Army created this problem; right, wrong, or indifferent. So we will address it, if there is a problem in the future, even when we think we are done. We are not walking away from the area. I just want to assure you of that.

Community Member 4: I have a property in the MEC area. You have helped me get to the practical a little bit, but I know between 2017 and 2020 something is going to happen. You said you are going to be selective; you are not going to dig up my driveway. Can you go a little bit further beyond that, will I have 1 months warning or will you tell me a year out we are planning to hit you then. When you arrive, what is it going to be like? You said you are going to level a vegetable patch, do you need to level the garden in order to investigate it, or is it just like an oversized metal detector? Are you going to leave just little mole hills where you have dug, or are you going to be digging the whole thing up? How long is it going to take? What happens at the back end of it? Can you paint that picture out a little bit, please?

D. Noble, USACE: Throughout the process we will be staying in touch with you and giving you updates as to how we are doing and what our progress is. I would hope we would give you somewhere around 2 to 3 months advance notice that we are getting ready to come to your property, and can begin the upfront administrative work with you to make it happen. You can imagine when the government comes on your property and causes some damage and then owes you money for that damage, there is a lot of paperwork involved with that. So we have to go through the paperwork with you on that.

Community Member 5: What does that involve?

D. Noble, USACE: What we would do first is we would come to your property and assess the value of your entire landscape, because we are not sure what might get damaged, and what might not. We would present the value of the landscape to you, so you could go through it and agree or disagree with us. We will reach agreement finally on what is the proper value of something. Then we would bring the folks who are actually going to collect the data for us, and they would walk around the property and identify the things that they would like to have moved out of the way. So we will identify that plant, that trampoline, things like that. We will bring this all to you and say, 'this is what we would like to do.' Then you can look at what we are proposing to do and you can agree, or you can say, 'well, not that. I am not letting you do that.'

At that point we would need you to sign a Right of Entry (ROE). You give the government formal permission to come onto the property and do this work. We present the documents to you, you would have to sign them, we counter-sign them, and then the ROE is in effect. We would have the landscape crews come and remove any landscape, equipment, or trampolines that need to be moved out of the way. We would ask you not to park your car on the driveway or out on the street that day, because anything metal is detected by our instruments. We do not want a big piece of metal sitting at the street because that will interfere with the data we collect in the front yard.

I do not think collecting the data will take more than two or three days to go over the property and collect the data. We would then go away for a period of time to look at the data and determine where there are anomalies in the ground. The technology then requires us to return to each spot on the ground where there is an anomaly, collect more data to see if it is a munition item or not, and then based on the results of what we see as we go around to each of these locations, come up with a dig list. We would give you a date when

we would come to essentially dig everything up and see what it is. Again, that will not take long, only a day or two, to dig up what we need to dig up. We will see what the items are, we will remove them, and then it will become a process of putting your property back together. We feel we are under a responsibility to return your property to the condition it was when we first set foot on it. If there is a patched hole in the driveway now, we will replace the driveway for you. If there are plants that are missing, we will replant them or we will give you the value of those plants, whichever you prefer. Generally what we try to do when we do this restoration is we try to do ourselves things that relate to security or access on your property. We do not want you to have trouble with security or access at your property, so if we had to take a fence down we would want to replace the fence for you immediately. We would have contractors lined up to replace the fence. If we had to damage your driveway, we would have the contractor standing by to replace the driveway right away so you do not have issues with access to your property. Generally what we find is that for things like shrubs or grass, oftentimes people prefer simply to receive a check and manage that portion of the job themselves. We can do it for you, but if you have the funds then you can work directly with the people that you prefer to work with on landscaping and get what you want. That is generally how it has gone, but it does not have to be. We will replant everything for you if that is what you want.

Community Member 5: What about, say, shrubs that are 20 or 30 feet high, like arborvitae trees?

D. Noble, USACE: The size of the shrub is a part of its value calculation. The shrub in place might be worth several hundred dollars and what we can go out to buy to replace it only cost \$30.00. In that case we would give value of the shrub in place as it is, as we cut it; acknowledging that we cannot replace it.

Community Member 5: You think you can go out and buy a 30 foot arborvitae?

D. Noble, USACE: No. It would be valued, and I would give you a check for that, and say this is something that I cannot replace so I am going to pay you for it.

Community Member 5: Are you willing to accept a homeowner's objection to removing his arborvitae trees?

D. Noble, USACE: Yes, absolutely. If we define it as an accessible area, you hold the final trump card. We then simply have to take into consideration how much of your property that we would have liked to have gotten, and how much did we actually get when we do the work. Is it 90% coverage? Okay. Is it 50%? Maybe we try to talk more.

Community Member 5: What about 70% for example?

D. Noble, USACE: Then I start talking with Steve Hirsh, EPA Region III and Jim Sweeney, DOEE and start asking what they think.

S. Hirsh, EPA Region III: These decisions are going to be site specific. We know a lot about the properties, we know what is to your right, to your left, and to your rear. We would look at that and we would do some mental math and think about how likely is it that there is something there. There is some qualitative stuff. We have these discussions a lot, because people do not want to lose a mature tree. We have been through this and in almost every case we have been able to come out with an acceptable solution.

Community Member 5: As you know, a lot of property lines have very tall shrubs. In fact my next door neighbor has 30 to 35 foot trees lining the fence on his property. If you are proposing to cut down all of those trees, that is likely to be unacceptable to him. Maybe he would be willing to let you do what you want to do elsewhere on his property, up to a point. I gather you are willing to negotiate to some extent on allowing unusual pieces of shrubbery to remain?

D. Noble, USACE: Absolutely. If there is a particular reason, even knowing that we could replace it, it does not matter because that individual specimen is what is important to me.

Community Member 4: When you say remove the landscape, is the starting point an expectation that all trees go, or is it more like we think there might be something under that particular shrub, therefore that

particular shrub we would like to remove. Broadly, your garden is going to look like it did. What is your starting point?

D. Noble, USACE: The general determination is going to be things need to go if they are in the way. We do not know if there is anything under them or not. We will not be able to tell until we can run the instruments over that specific spot.

Community Member 4: You would like to have a totally cleared space to run an instrument back and forth over the entire landscape.

D. Noble, USACE: Right, that would be ideal. We are out in the middle of the desert and it is just all open, we could run the instruments everywhere we want. That would be great.

Community Member 4: What is your interaction with the city on large trees?

D. Noble, USACE: Well, this time we are proposing accessible areas. The area under a large tree is not an accessible area. We are not proposing to cut down large trees, but we had to do that during the arsenic removal. A lot of large trees were cut down. When they were city trees, we had an agreement with the city that we would replace the trees by trunk inch. So if it was a 30-inch diameter tree, and we could buy 3-inch diameter trees, we would replace it with 10 3-inch diameter trees and the city told us where they would like them to be planted. That is how we worked that out. So we did not give money to the city, we replaced the trees by trunk inch.

Community Member 4: Thank you.

Community Member 6: For properties that were looked at relatively late in the process that are still considered within the 90 plus properties, is there the expectation that if they were looked at rather later that they might not need to be looked at again?

D. Noble, USACE: We are proposing to return to all properties in these areas because the first time that we went through and looked at properties during the investigative phase, we gathered enough information that we thought we needed to be able to make decisions like this. So if we did come up against a whole back of the property which is planted with arborvitae that formed a privacy screen and we could not get in there, we decided that was okay, we are not going to get that area, so we got the area in front of it. Now what we are saying during the cleanup phase is, now we are interested in the area where those trees are. So yes, we would propose to cut the shrubs this time and incur that cost because we believe it is worth it. Then we will try to get that area covered underneath the shrubs.

Just about every property during the investigation we did not get the 100% accessible area coverage that we are trying to propose we would collect now. We did not have the technology at the time that could give you an opinion on whether or not that buried anomaly might be a munition item. We had an algorithm process we went through where if we identified 100 anomalies on a property; we would dig up 50 of them, just to get an idea of what was there. We chose what we thought maybe were the 50 most likely objects that could be a munition item, but we did not have a sophisticated manner of choosing which one of those. We did the best we could, but we were limited by the technology. On just about every property there were a lot of anomalies left behind. Now we feel like we have this technology where we can go and relocate the anomaly, gather this new data on it, and see if maybe it is worth digging it up or not now. So very few properties did we dig up all the anomalies that we found, and on very few properties did we cover the area as to the extent that we are proposing we would cover them now, if the homeowner allows us to.

Community Member 6: Is the driveway considered an accessible area or no?

D. Noble, USACE: If we can see through it, yes. If we cannot see through it, then it is not an accessible area. Some driveways are concrete driveways with a lot of steel rebar in them, and that just masks the signal. Other driveways are just asphalt on top of maybe a gravel pad, and so we can usually see through that. So if there was a metallic anomaly buried under a driveway like that we could see it, and so we could make a determination as to whether we want to dig it up or not.

Community Member 1: At the end of the process, you identify some anomalies, and the homeowner agrees and goes along with your digging and doing whatever you have to do. What is the end game in terms of a closure letter, and conversely, if they agree to 1, 3, and 5, but not 2, 4, and 6, do they get any kind of letter?

D. Noble, USACE: If we can, to a high degree, achieve what we want to achieve on the property, we will give a closure letter at that time as soon as the work is done, so that not everybody has to wait until 2020. If we come to your house in 2017, we would like you to have a letter then that says you have been through the process and it is over. If it comes down to there is a lot of area that we were not able to get to because the homeowner did not want us to, I am of the mind that we might have to wait until closer to the end. We are worried about these focus areas as geographical units that were used by the Army in WWI. That they have been carved up into individual properties now was not important to soldiers in WWI, they used the area. If we step back at the end of what we do on any one of these focus areas, and we say you know, there was this one homeowner that did not let us do much, but everywhere else we pretty much got what we wanted, we really covered this area pretty darn well. Everybody is off the hook. So you might have to wait until the end where we can make that determination.

Community Member 1: In that latter case though, the owner that did not let you look at much, might also get a closure letter?

D. Noble, USACE: Well, no, because there would be a closure report that says we set out to achieve this and we achieved it. So everyone can go throw out their closure letter, because I have this report that says everything is okay. This is really the better document that you can show people. You can say, look, I was in this area, but here is the report from the Army that says they came into the area and they did what they needed to do, and everything is okay now; so I am covered. But of course if I give you an individual closure letter I do not expect you to throw it away, you can hold on to it if you want. So that person might not get a closer letter, but in the end he might be able to hold up this report and say, 'oh look, this report says everything is okay.'

Community Member 1: How do you plan to deal with patios? Are those things you can see through?

D. Noble, USACE: Some we can, some we cannot. That would be the same way as driveways. If we can see through it, it is an accessible area, if we cannot see through it, it is not. Patios are like sidewalks and driveways.

Community Member 1: Let us say you cannot see through it, you then want to dig it up?

D. Noble, USACE: No.

Community Member 1: Let us say you do see through it, do you want to dig it up?

D. Noble, USACE: We would dig it up if our instruments tell us there is most likely a munition item buried under it. So then we would dig right there in that spot and see if indeed that was a munition item. Then we would repair the damage for you or replace the patio for you if that is what it took to return it to its pre-investigation condition.

Community Member 1: Well, that raises the driveway question I had coming in here, which is: I have an old asphalt driveway, probably not a deep foundation. Do I just wait and find out whether you are going to find a serious anomaly underneath, rather than taking any action in the immediate future, because you may just tear up what I do myself?

D. Noble, USACE: I would say the likelihood of us finding a hazardous munition on any individual property is pretty low. I think in these four areas, we will find a few hazardous items during the cleanup action, but again, I feel it is going to be a handful of items. So my response would be no, do not wait for us, because the chance that there is something hazardous under your driveway right now is extremely low. So I would say move ahead on your schedule and do what you want to do. When we get to your driveway,

we will see if we can see through it or not, and if we can, we are only going to damage it if we think there is a really good reason to damage it. Then we will replace it exactly the way you had originally built it.

Community Member 1: What you are saying, I am finding hard to accept, given that I am at ground zero, as far as the function test range. It sounds like it would all be concentrated there.

D. Noble, USACE: We did not really find that when we went to the function test range. I do not know if that is because they did not do a lot of ballistic firing, or when they did do the ballistic firing, because it was an experiment and development station, they were very interested in the munitions; how they functioned, and what they looked like after they functioned as well. They went out and cleaned up everything as they went along so they could look at it, study it, and see if it functioned the way they wanted it to function. We think they did a lot of that. So no, all of the four areas in the Site-wide RI report that I mentioned received about the same hazard category ranking, so none of those four focus areas ranked higher than the others. It is not what we found. I will say we did find one hazardous item in each of the four areas during the investigation, and that drove a lot of our consideration of wanting to go back to these areas and look at them further. For the community meeting last year, we tried to pull the numbers together for the work that we did do in these areas; the number of houses that had been looked at during the investigative phase. I think we dug up about 2,700 anomalies. We found that about 60 or 70 of them were anomalies that were from the Army in WWI. As I mentioned, four of them were hazardous items. So those are the numbers that we are looking at. We looked at 2,700 things, and 4 of them were hazardous items left behind by the Army. It just so happened that there were 50 houses in the area that we looked at during the investigation. There are about 100 properties total in these areas, so we need to go to about 50 houses that we have never been to. Numbers would tell you that we are probably going to find about 3 or 4 more hazardous items from those properties as well. But that is just an average and averages can jump around.

Community Member 1: Do you have an idea of what order you will get to each of the four areas?

D. Noble, USACE: I do not. As I mentioned, none of the areas rank higher than the others. If there was one that ranked higher than the other, I would tell you that I probably would want to go to that one first, but that is not the case here. We discussed this at the last couple RAB meetings. I discussed this with a couple of folks before the meeting tonight. I really think as we get to the point where we are ready to begin work, I think we are going to ask everybody. We are going to send you all a letter and ask if you would like to be first. Respond in writing and tell us if you would. I will see how many responses I get. If 20 people care enough to sit down, send me a letter, and say 'I would like to be first,' then I will say, 'ok, all 20 of you are in the first group.' If 96 people write back to me and say I would like to be first, then I am sort of back to square one. At that point, it would probably just be a lottery.

Community Member 1: But you are saying you are willing to do that?

D. Noble, USACE: Yes, we are going to do that, we are going to see. I predict that there are about 15 or 20 people that are concerned enough to write me a letter and say 'yes, I would like to be first,' and so they will go in the first group. I figure I can do about 30 properties per year. If I get 30 responses of homeowners who want to be first, at least I can get back to you and say you will go in the first year. If I get more than 30, then I do not know; I might have to start to say we have gone past the tipping point here and maybe we should just do a lottery. I will emphasize that I do not have any particular reason to go to anyone's individual property over anyone else's. It is that level of hazard. Again, as the regulations instruct us, it is a very conservative look at what the hazard is. That is how we came up with the 96 properties.

Community Member 4: I know one property owner who plans to do some major landscaping this fall. What is your advice to him? You want to be able to come in and dig up all these plants that he intends to plant this fall. Would you tell him not to do that?

D. Noble, USACE: I guess I would tell him if it is something you have been planning for a long time and you want to do it, and you are a little frustrated that you now might have to wait another 2 or 3 years, go ahead and do it. When I get to the property, the condition I find will be what I will restore the property to

when I am done. I would imagine that if they do it, let us say this year, and I come in 2 or 3 years, that plant that they been planted is not going to reach the 30-foot size that we are talking about. It will still be a relatively small plant; I can take it out and replace it for that individual. Replace it with what they put in. I know it sounds inefficient, but when you consider that we are going through a process that I outlined here, and then we have to go through a planning process that is going to last several months, and I am not even sure what order I am going to go to the properties, I do not feel right telling somebody definitely wait until I come. I might not come for 3 or 4 years. If that person wants to do their project and enjoy the result of that project for 3 or 4 years while they wait for me, understand that I will do my very best when I get there to leave their property in the way I found it so that you can continue to enjoy it with that improvement.

D. Noble, USACE: If there are no further questions, I would like to say we will all hang around this evening and will be more than happy to talk to you individually. Again, thank you all for coming. If you do live in one of these areas, we will be in touch with you in the coming months and years. Please, if you have a comment you would like us to formally pay attention to, please submit it. I should mention that part of the DD is actually a listing of the comments that we receive, and then a written response from us to those individual comments. If you do turn in a comment to us, when we make the DD available you will see your comment and you will see our written response. Thank you very much.

IV. Closing Remarks

D. Noble, USACE: Thank you very much.

The meeting was adjourned at 8:32 PM.